


INTEGRATED SYSTEMS TM

INTER-TEL AXXENT

INSTALLATION AND FIELD
MAINTENANCE MANUAL

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FCC REGULATIONS

IMPORTANT:

1. This equipment complies with Part 68 of FCC rules. On the rear of the KSU is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. Customers connecting this equipment to the telephone network shall, before such connection is made, give notice to the telephone company of the particular line(s) to which such connection is to be made, and shall provide the telephone company with the following information:

- Complies with Part 68 of FCC rules
- FCC registration number: BE2USA-22055-MF-E (for MF-rated systems) or BE2USA-22029-KF-E (for KF-rated systems)
- USOC numbers of required interface jacks (see chart on next page)
- Service order code (SOC), as applicable (see chart on next page)
- Facility interface code (FIC) (see chart on next page)
- Ringer equivalence number (REN), as applicable (see chart on next page)

NOTE: The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

The telephone company should also be given notice upon final disconnection of this equipment from the particular line(s).

It is also the responsibility of the customer to provide the telephone company with registration numbers of any other devices which are configured for connection to the telephone network.

2. This equipment cannot be used on public coin service provided by the telephone company. Connection to party line service is subject to state tariffs. (Contact the state public utility commission, public

service commission, or corporation commission for information.)

3. If this equipment causes harm to the telephone network, the telephone company will notify the customer in advance that service may be temporarily discontinued. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, the customer will be advised of the right to file a complaint with the FCC, if necessary.
4. The telephone company may make changes in its facilities, equipment, operations, or procedures which may affect the operation of this equipment. If so, the customer shall be given advance notice so that any necessary modifications can be made in order to maintain uninterrupted service.
5. If trouble is experienced with this equipment, contact a local authorized factory service representative for repairs and/or warranty information. The customer, users, and unauthorized technicians should not repair, make adjustments to, or attempt to service this equipment in any way.

In the event of trouble with the telephone line(s), this equipment must be disconnected from the telephone line(s). If trouble ceases, the equipment must be repaired by an authorized factory service representative. If the trouble continues to occur with the equipment disconnected, the telephone company should be notified that they have a problem. If this is the case, repairs or adjustments made by the telephone company will be made at their expense.

6. Allowing this equipment to be operated in such a manner as to not provide proper answer supervision signaling is in violation of Part 68 of FCC rules. This equipment returns answer supervision signals to the public telephone network when: answered by the called station, answered by the attendant, routed to a recorded announcement that can be administered by the equipment user, and routed to a dial prompt. This equipment also returns answer supervision on all DID calls forwarded back to the public telephone network. Permissible exceptions are: a call is unanswered, busy tone is received, and reorder tone is received.
7. This equipment is capable of providing users access to interstate providers of operator services through the use of equal access codes. Failure to provide equal access capabilities is a violation of the Telephone Operator Consumer Services Improvement Act of 1990 and Part 68 of the FCC Rules.

TYPE OF PORT INTERFACE	FACILITY INTERFACE CODE (FIC)	RINGER EQUIVALENCE NO. (REN)	SERVICE ORDER CODE (SOC)	USOC JACK CONNECTOR
2-Wire Loop	02LS2	0.6B	—	RJ11C, RJ14C
OPX Class C*	0L13C	—	9.0F	RJ11C, RJ21X
2-Wire DID	02RV2-T	0.0B	AS.2	RJ11C, RJ21X

* Also interfaces with Class A and B.

NOTICE: *THE TELEPHONE INSTRUMENTS SPECIFICALLY DESIGNED FOR THIS SYSTEM HAVE HEARING-AID COMPATIBLE HANDSETS THAT ARE IN COMPLIANCE WITH SECTION 68.316 OF THE FCC RULES.*

WARNING: This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rule. Operation of this equipment in a residential area may cause unacceptable interference to radio and TV reception requiring the operator to take whatever steps are necessary to correct the interference. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off

and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Relocate the KSU with respect to the receiver
- Check that the KSU and receiver are not on the same circuit; the KSU must be powered from an isolated, dedicated AC outlet

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the FCC helpful: "How to Identify and Resolve Radio-TV Interference Problems"

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00398-5.

If RFI problems persist, contact Inter-Tel Customer Support.

SAFETY REGULATIONS

The Inter-Tel Axxent System is Listed by Communication Certification Laboratory (CCL) as meeting the Product Safety Requirements of UL 1459, Standard for Telephone Equipment. CCL is approved by the Occupational Health and Safety Administration (OSHA) as a Nationally Recognized Testing Laboratory (NRTL). *Before installation, also check the local electrical codes for important information concerning the installation of telephone and electronic equipment.*

IMPORTANT SAFETY INSTRUCTIONS

The following safety information is reprinted from UL 1459. When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

1. Read and understand all instructions.
2. Follow all warnings and instructions marked on the product.
3. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use this product near water (for example, in a wet basement).
5. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
6. Slots and openings in the cabinet and the back or bottom are provided for ventilation, to protect it from overheating; these openings must not be blocked or covered. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.
7. This product should be operated only from the type of power source indicated in the manual. If you are not sure of the type of power source to your building, consult your dealer or local power company.
8. This product is equipped with a three-wire grounding type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding type plug.
9. Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.
10. Do not use an extension cord with this product's AC power cord. The AC outlet for this product should not be used for any other electrical equipment.
11. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.
12. To reduce the risk of electric shock, do not disassemble this product, but take it to a qualified serviceman when some service or repair work is required. Opening or removing covers may expose you to dangerous voltages or other risks. Incorrect reassembly can cause electric shock when the product is subsequently used.
13. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - A. When the power supply cord or plug is damaged or frayed.
 - B. If liquid has been spilled into the product.
 - C. If the product has been exposed to rain or water.
 - D. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions because improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
 - E. If the product has been dropped or the cabinet has been damaged.
 - F. If the product exhibits a distinct change in performance.
14. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
15. Do not use the telephone to report a gas leak in the vicinity of the leak.

SAVE THESE INSTRUCTIONS



This exclamation point within an equilateral triangle (which, for example, is on a label on the side of the Inter-Tel Axxent KSU chassis) is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product. ***Be sure to read and follow all of the instructions included in this manual.***

LIMITED WARRANTY

For a period of two (2) years from the date of shipment to Buyer, INTER-TEL warrants the Equipment (except for fuses and lamps) to be free from defects in material, workmanship, or both, and to comply with specifications for the Equipment, as set forth in the *Installation and Field Maintenance Manual*. Buyer's sole and exclusive remedy for breach of this Limited Warranty shall be to have the defective Equipment (or parts) repaired or replaced at INTER-TEL's option. Shipping costs incurred returning warranty work to INTER-TEL shall be paid for by the Buyer. ***This Limited Warranty extends only to the Buyer, not to any customer, user, or third party.*** This Limited Warranty does not apply to Equipment (or parts) damaged by improper handling, normal wear and tear, accidents, lightning damage, negligence, or improper use or maintenance, and does not apply to Equipment altered without authorization by INTER-TEL. This Limited Warranty does not extend to any claims, suits, damages, liabilities, costs, and expenses arising from any act, action, or inaction of Buyer. Although the Moss-Magnuson Act should not apply, in the event that it is held to apply by a court of competent jurisdiction, the implied warranty of fitness for a particular purpose shall extend for the two-year (2-year) period from the date that the Equipment was shipped to the Buyer.

THIS WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THIS LIMITED WARRANTY. IN NO EVENT SHALL INTER-TEL BE LIABLE FOR LOSS OF ANTICIPATED PROFITS, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF TIME OR OTHER LOSSES INCURRED BY BUYER IN CONNECTION WITH THE PURPOSE, POSSESSION, OPERATION, OR USE OF THE EQUIPMENT, SUCH CLAIMS BEING EXPRESSLY WAIVED BY THE INSTALLING COMPANY.

For complete information on returning equipment, refer to the ***current*** Inter-Tel *Customer Service Policy* (document part no. 835.1065). This document includes specific information on the following subjects: warranty, procedures to follow when returning equipment, equipment damaged in shipment, insurance, repair policy, and advance replacement policy.

OVERVIEW

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1. INTRODUCTION

1.1 The Inter-Tel Axxent System is a state-of-the-art, digital, voice/data, hybrid telephone system. As a hybrid system, it incorporates many of the user-friendly features of key systems with many of the expanded features and flexibility of private branch exchange (PBX) systems.

1.2 The Inter-Tel Axxent System is designed to meet the needs of growing businesses. In fact, the system's unique digital signal processing (DSP) structure allows it to be easily adapted and expanded as business communication needs change, especially with the new Caller ID, Automatic Number Identification (ANI), Dialed Number Identification Service (DNIS), and Integrated Services Digital Network (ISDN) features. The modular design makes the system easy to install and service. And, the programmable features provide an abundance of user-friendly applications to meet each customer's needs. Highlights of the system's design include:

- Advanced microprocessor technology.
- Modular, easily replaceable hardware with add-on capabilities for optional features.
- Flexible programming to customize many system and station features.

2. SYSTEM CAPACITIES

2.1 The Key Service Unit (KSU) has five telecom slots available for station and trunk cards and three PC slots available for optional integrated voice processing cards. *The actual number of stations and trunks available depends on the number and type of cards and station instruments installed.*

2.2 For example, there could be as many as eight trunks installed (using two Loop Start Cards). And,

there could be as many as 16 keysets installed (using two Digital Keypad Cards). Or, in place of all but one keypad, there could be as many as 30 single-line sets (using 15 Single-Line Adapters.) In most circumstances, the maximums listed below will never be reached due to the variety of cards and station instruments installed.

2.3 A fully loaded Inter-Tel Axxent System has the capacity for *up to*:

- **44 Non-Blocking Ports** (Thirty-two station ports, eight trunk ports, and four voice processing ports. See page 2-5 for details on system time slot capacities.)
- **8 Central Office (CO) Trunks** (Loop start trunks installed in increments of up to four, depending on the number of Loop Start Cards [LSCs] installed in the KSU.)
- **31 Stations** (Combinations of keysets and single-line sets in increments of up to eight or 16, depending on the number of Digital Keypad Cards [DKSCs] installed in the KSU. If desired, single-line sets can be attached to keypad circuits that are equipped with Single-Line Adapters [SLAs].)

NOTE: At least one DKSC circuit must be installed with a display keypad to provide an attendant/administrator to program selected system data, act as the attendant for unsupervised CO recalls, receive system alarm messages, etc.

- **10 Direct Station Selection/Busy Lamp Field (DSS/BLF) Units** (Up to ten keysets may be equipped with single DSS/BLF Units or up to five keysets may be equipped with tandem DSS/BLF Units, or any combination of these up to ten total units. Since each unit is powered by its own AC transformer, the units do not require a DKSC circuit that is separate from the keypad.)

3. SOFTWARE CONFIGURATIONS

3.1 The Inter-Tel Axxent System is available in a variety of software configurations. Both KF-rated and MF-rated systems are available. The KF-rated systems permit only one trunk to be accessed per trunk key, and users can access only one trunk in each of the trunk groups. (Note that KF-rated systems cannot use the automatic route selection feature.) The MF-rated systems permit one-key access to multiple outgoing trunks.

3.2 The part numbers for the available software configurations are as follows:

SOFTWARE CONFIGURATION	PART NO.
MF-Rated 15-Unit PAL	827.8298
MF-Rated 25-Unit PAL	827.8299
MF-Rated 50-Unit PAL	827.8300
MF-Rated 75-Unit PAL	827.8301
KF-Rated 15-Unit PAL	827.8302
KF-Rated 25-Unit PAL	827.8303
KF-Rated 50-Unit PAL	827.8304
KF-Rated 75-Unit PAL	827.8305

3.3 The *Premium* system features have been assigned the values listed in the following table. If a customer purchases a 15-, 25-, or 50-unit PAL configuration, the programmer can enable any of the desired *Premium* features until the units are used up. If a 75-unit PAL config-

uration is purchased, all the features listed in the following table are available. (Refer to page 6-3 for additional information.)

FEATURE	UNIT VALUE
Directories	2
Automatic Route Selection (ARS)	3
System Forwarding	3
Analog Voice Mail Hunt Groups	5
Uniform Call Dist. (UCD) Hunt Groups	5
Auto. Call Dist. (ACD) Hunt Groups	5
Advanced CO Interfaces	7
Desktop Interface	10
System Open Architecture Interface (OAI)	30

3.4 Customers can change from KF to MF (or vice versa), or upgrade from one unit level to another, simply by purchasing and installing the appropriate PAL.

NOTE: According to FCC regulations, if a customer wishes to change from an existing KF-rated system to an MF-rated system (or vice versa), the installing company must advise the customer "to notify the telephone company of the change if they want the [KF or MF] rate and that they may have to certify in writing to the telephone company that the equipment is configured as a key system and pay appropriate service order charges."

4. HARDWARE SUMMARY

4.1 The SPECIFICATIONS section of this manual explains environmental requirements of the system, describes the hardware, and gives pre-installation information. The hardware descriptions include: KSU, power supply unit, circuit cards, station instruments, and additional equipment needed for the optional features.

5. INSTALLATION, PROGRAMMING, AND MAINTENANCE SUMMARY

5.1 The modular design and self-diagnostic capabilities of the system facilitate installation and repair with minimal down-time. Strict quality control standards for manufacturing and thorough field testing provide the system with the reliability demanded by today's high-technology market.

5.2 The INSTALLATION section contains instructions for assembling the main distribution frame (MDF) and for installing the KSU, power supply, circuit cards, station instruments, and other optional hardware.

5.3 The PROGRAMMING section describes the procedures for programming the system features. After the system is installed, the flexible software allows the database to be customized to meet the customer's needs. An external, customer-provided, personal computer (PC) is used to perform this task.

5.4 The TROUBLESHOOTING section gives instructions for correcting system problems and replacing defective parts. Part numbers and a recommended inventory of spare parts are listed in the REPLACEMENT PARTS section.

6. FEATURES SUMMARY

6.1 System, keyset, single-line set, DSS/BLF Unit, and administrator features are listed on the following pages. *Those features marked with an asterisk (*) require additional equipment.* For complete descriptions and operating instructions, refer to the SPECIFICATIONS and FEATURES sections of this manual.

A. SYSTEM FEATURES

Hardware and General System Features

- Wide variety of software configurations
- System open architecture interface (OAI) for communication with an external computer (e.g., for specialized ACD applications)
- Desktop interface for connecting an AXCESSORY Connect
- Flexible station instrument configuration and numbering plan
- RS-232-C serial port connectors for connecting optional SMDR/error message output devices, optional Axxent Talk integrated voice processing, or an external PC for programming

NOTE: The system can have a maximum of eight RS-232-C ports used for system services. This includes the RS-232-C ports on the KSU and any PC Data Port Modules. If Axxent Talk integrated voice processing is installed, at least one of the eight system RS-232-C ports must be dedicated to the Axxent Talk PC CPU Card.

- Database battery back-up with voltage test points
- Adjustable baud rates for on-site programming and the optional SMDR/error message output devices (300, 1200, 2400, 4800, and 9600 baud, depending on the selected port)
- Variable system timers
- * Optional multi-port Axxent Talk hardware and applications software for integrated voice processing (voice mail, automated attendant, hunt group announcement and overflow, SMDR storage, etc.)
- * Optional PC wall-mount shelf (accommodates most PC models)
- * Optional modem kit
- * Optional station message detail recording (SMDR) and/or error message recording output device(s)
- * Music port for connecting an optional external music source
- * Optional Single-Line Adapters (SLAs) for connecting single-line sets to the system

- * Optional off-premises extensions (OPXs) with variable ring cadence
- * Optional OPX repeaters
- * Optional facsimile machine
- * Optional doorbox
- * Optional battery back-up
- * Optional external paging equipment
- * Optional playback devices for use with the automated attendant and hunt group features

System Organization and Record Keeping Features

- Five paging zones
- * Station message detail recording (SMDR)
- * Error message recording
- * Programmable reports for toll restriction, automatic route selection (ARS), station data, etc.
- Call cost accounting (estimated)
- Forced, standard, and optional account codes
- Flexible attendant arrangements
- Hunt groups with individually-programmed timers
- * Uniform call distribution (UCD) (may have optional overflow, announcement, and recall destination stations with playback devices and/or supervisor with call monitoring ability)
- * Automatic call distribution (ACD)
- * Analog voice mail hunt groups
- System alarm display and reporting

Trunk Features

- * Caller ID
- * Automatic Number Identification (ANI)
- * Dialed Number Identification Service (DNIS)
- Trunk groups (restricted to accessing a single trunk on KF-rated systems)
- Automatic incoming trunk answering
- One-key outgoing call access
- Dual-tone multi-frequency (DTMF) or dial-pulse signaling
- Loop start compatibility using Loop Start Cards
- Hybrid balancing (normal or short) for optimal CO trunk performance
- Outgoing-access, allowed-answer, and ring-in assignments on a station-by-station basis (day lists and night lists)
- Day and night modes of operation
- Day and night toll restriction on a station-by-station and trunk group-by-trunk group basis (including

- provisions for three area/office code restriction user groups)
- Absorbed-digit dialing
- Automatic route selection (ARS) — not available in KF-rated software configurations
- Direct inward system access (DISA)
- * Automated attendant (via Axxent Talk)
- * Direct inward dialing (DID) trunks (requires
- Flexible DID ring-in assignments
- Programmable wink, immediate, or delay start options for DID

General Station Features

- Programmable feature codes for easy station operation
- Call privacy
- Station-to-station intercom calls
- * Off-hook voice announce (OHVA) calls (the ability to place or receive OHVA calls depends on the type of station instrument used, and may be enabled/disabled on a station-by-station basis)
- Inter-station messages and message cancel
- Silent messaging (leaves a message at a station without placing an actual call)
- Ring intercom always
- Automatic camp on to busy stations, trunks, and ARS (ability to camp on to ARS may be disabled on a station-by-station basis)
- Busy trunk/station callback (queue)
- Individual hold
- Hold recall
- Call waiting
- Call transfer to extension numbers and outside telephone numbers
- Transfer to hold
- Transfer recall
- Reverse transfer and group call pick-up
- Conference calls (unamplified) — resources for connecting up to 12 parties in multiple conferences (up to four parties per conference); if desired, more conference circuits may be enabled using optional DSPs
- System forwarding (routes calls based on the type of call and the status of the intended station)
- Call forward to extension numbers and hunt group pilot numbers

- Call forward to outside telephone numbers
- System speed dialing (including non-display numbers) — can be programmed to override toll restriction
- Station speed dialing
- Redial (last number dialed or last number saved)
- Do-not-disturb with customized messages (the ability to place a station in do-not-disturb may be enabled/disabled on a station-by-station basis)
- Cancel miscellaneous operations
- Hookflash
- Hunt group remove/replace
- House phone

B. KEYSSET FEATURES

NOTE: For a complete listing of all the optional equipment that may be installed on each keyset, refer to pages 2–12 and 2–13 in SPECIFICATIONS.

- Basic Digital Keysets (non-display only), Standard Digital Keysets (display and non-display), and Executive Digital Keysets (display only) all allow the user to individually control voice and tone volume levels for intercom calls, outside calls, background music, etc.
- * Liquid crystal display (LCD) (optional on Standard keysets) for viewing: numbers dialed; speed-dial numbers; inter-station, do-not-disturb, and reminder messages; date/time; keyset identification; station programming; user prompts; etc.
- * Optional Off-Hook Voice Announce (OHVA) Module on Standard and Executive keysets for off-hook voice announce receive capability
- * Optional Personal Computer Data Port Module (PCDPM) on Standard and Executive keysets for off-hook voice announce receive capability and to allow a DSS/BLF Unit and/or an optional Modem Data Port Module to be installed (may also be used to connect an output device or a programming PC)
- * Optional Modem Data Port Module (MDPM) on Standard and Executive keysets for installing a modem-equipped data device (for simultaneous voice/data communication) or a single-line set — requires a PCDPM
- 12-key pushbutton keypad
- “Hot” keypad — allows dialing of feature codes, extension numbers, and trunk access codes without pressing the SPCL key or lifting the handset
- Up to 10 key maps for determining the exact layout and function of the keys

- Feature keys for one-key access to feature codes (some of the keys may be designated as user programmable)
- Speed-dial (SD) keys with light-emitting diode (LED) indicators
- Call appearance keys with LED indicators (for incoming call indication/access)
- Individual trunk keys with LED indicators (for incoming and outgoing call indication/access)
- Trunk group keys with LED indicators (for outgoing call access and trunk group status)
- * Speakerphone — allows handsfree operation on outside calls and intercom calls (for Basic and Standard keysets, speakerphone capability requires optional DSPs on the CPU Motherboard)
- Speakerphone on/off
- Slide-out directory card
- User-programmable ring tone
- Self-test function
- Hearing aid-compatible (HAC) handset
- Reversible baseplate for wall mounting
- * Optional headset
- * Background music
- Microphone mute
- Handsfree answer enable/disable
- On-hook dialing/monitoring
- System hold
- Station call monitoring (hunt group supervisors only)
- Do-not-disturb override (the ability to override do-not-disturb may be enabled/disabled on a station-by-station basis)
- Page remove/replace
- Intercom (extension number) and outside (system speed-dial number) directories
- Feature directory to locate and/or dial feature codes
- Automatic intercom and/or outside call access

C. SINGLE-LINE FEATURES

- Audio message waiting indication capability
- Programmable hookflash recognition
- Programmable ring cadence and gain levels for OPX applications

D. DIRECT STATION SELECTION/BUSY LAMP FIELD (DSS/BLF) UNIT FEATURES

- * Up to ten total units per system (e.g., five keysets equipped with tandem units)
- Each single unit has 60 keys with LED indicators for one-key access to up to 60 extension numbers/features (the LEDs show the status of the assigned stations, hunt groups, or other resources)
- Up to three key maps for determining the layout and numbers accessed by the keys

E. ATTENDANT FEATURES

- Accessed by dialing 0 at the stations they serve
- Central operator for incoming calls
- Message center
- Recall destination for unanswered calls
- * Immediate off-hook voice announce (OHVA) calls (requires special programming and a DSS/BLF Unit or a keyset with assigned DSS/BLF keys)

F. ADMINISTRATOR FEATURES

- System speed-dial number/name programming
- System alarm reporting/clearing
- Enable/disable system night mode
- Set date and time of day
- Station feature programming (user name and attendant)
- Freeze and unfreeze system database history
- Limited database programming through the keyset

G. MAXIMUM CAPACITIES

6.2 Some of the features have maximum capacities that are dependent on the availability of system channels and/or circuits. The features with such capacities are listed in the following table. For a list of Axxent Talk integrated voice processing maximum capacities, see page 2-18.

FEATURE	CAPACITY
Non-blocking ports	44
Station	32
Trunk	8
Axxent Talk	4
Station instruments	31 ^a
Keysets	16
Single-Line Sets	30
DSS/BLF Units	
DSS/BLF units per system	10
Units per keyset	2
Extension numbers per unit	60
Trunks	8
Trunk groups	9
Trunks per group	8
System RS-232-C ports	8
Paging zones	5
Conference circuits available	12 ^b
Parties per conference	4
Simultaneous 4-party conferences	3 ^b
System speed dialing	
Numbers per system	100
Digits per number	32
Station speed dialing	
Numbers per station (CO &/or IC)	10
Digits per entry (CO &/or IC)	16
Redial numbers per station	1
Digits per number	32
ARS	
Route groups	16
Trunk groups per route group	8
Dial rules (16 digits each)	
- total	16
- programmable	12
Callback requests per system	31 ^c
Camp on requests per system	31 ^c
Callback (queue) requests per station	1
Camp on by a station	1
Stations camped on to a station	30 ^c
Stations camped on to a trunk group	31

FEATURE	CAPACITY
Inter-station messages per system	31
Programmable reminder messages	20
Message requests per system	31
Do-not-disturb messages	20
Messages per system	31
System forwarding paths	20
Paths per station	3
Points per path	4
Toll restriction user groups	3
Area code tables per user group	1
Area codes per table	800
Extended area codes per user group	4
Office code tables per extended area code	1
Office codes per table	800
Station class of service designations	16
Absorbed digit patterns per system	50
Digits per pattern	32
Account codes	
Forced	32
Standard	32
Digits per code	3-12
Hunt groups	
Per system	10
Stations per hunt group	500 ^d
Announce. stations per hunt group	1
Overflow stations per hunt group	1
Recall destinations per hunt group	1
Map group assignments	
Keyset	10
DSS/BLF	3
Extension lists per system	10
Station or trunk numbers per list	500 ^d
Secondary call key stations per primary station	10
Secondary call keys per station	16

- ^a At least one display keyset should be installed to provide an administrator to receive system alarm messages, program system data, and receive unsupervised CO recalls.
- ^b Additional conferencing circuits can be added by installing one or two optional DSP upgrade kits. Each kit has one DSP, and each DSP can be programmed to provide up to 12 or 16 additional conference circuits. Conferencing is not amplified.
- ^c Each station can have only one camp on and one queue request registered at a time.
- ^d Limited only by the combined total of the extension number lists, which are used to assign to hunt groups, UCD groups, page zones, outgoing access, allowed answer, ring-in, and trunk groups. The combined maximum of all these lists is 500 entries.

SPECIFICATIONS

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1. INTRODUCTION

1.1 This section of the manual describes the following Inter-Tel Axxent System hardware specifications:

- Cabling and Main Distribution Frame (MDF)
- Key Service Unit (KSU)
- Power Supply Unit
- Circuit Cards
- Station Instruments
- Additional System Equipment

1.2 The Central Office (CO) trunks and the station instruments are controlled by the circuit cards in the Key Service Unit (KSU). The KSU has five telecom slots available for station and trunk cards and three PC slots available for optional integrated voice processing cards.

1.3 *The maximum number of stations and trunks that can be installed depends on the number and type of cards and station instruments used.* For example, there could be as many as eight trunks installed (using two Loop Start Cards). And, there could be as many as 16 keysets installed (using two Digital Keypad Cards). Or, in place of all but one keypad, there could be as many as 30 single-line sets (using 15 Single-Line Adapters.)

1.4 A variety of station instruments can be used on the Inter-Tel Axxent System, including:

- Basic Digital Keypads (also referred to as Basic Digital Terminals) — non-display only
- Standard Digital Keypads (also referred to as Standard Digital Terminals) — display and non-display
- Executive Digital Keypads (also referred to as Executive Digital Terminals) — display only
- Digital Direct Station Selection/Busy Lamp Field (DSS/BLF) Units — single or tandem
- Industry-standard single-line, dual-tone multi-frequency (DTMF) sets

1.5 A wide variety of optional system equipment can also be installed, including:

- Multi-port Axxent Talk hardware and applications software for integrated voice processing (voice mail, automated attendant, hunt group announcement and overflow, SMDR storage, etc.); refer to page 2-23.
- Inside Track's station message detail accounting (SMDA) software and, if Axxent Talk is not used, optional PollCat (Pollable Call Accounting Terminal) call record buffer box; refer to the manual included with the Inside Track software.
- External paging speaker equipment; refer to pages 2-5 and 3-68.
- External music source; refer to pages 2-8 and 3-67.
- Off-premises extensions (OPXs) and OPX repeaters; refer to pages 2-16 and 3-17.
- Playback devices (if Axxent Talk is not used); see pages 2-17 and 3-51.
- Output device(s) for the station message detail recording (SMDR) and error message recording features; refer to pages 2-20 and 3-67.
- System battery back-up (uninterruptable power supply or standby power supply); refer to page 2-23.
- Modem kit; refer to page 2-22.
- Facsimile machine; refer to page 2-23.
- Doorbox; refer to page 2-23.
- Wall-mount shelf; refer to REPLACEMENT PARTS beginning on page 8-1.

2. CABLING AND THE MAIN DISTRIBUTION FRAME (MDF)

2.1 Connections between the trunks, station instruments, external equipment, and the KSU circuit cards are made at the MDF. The MDF is made up of industry-standard, 66M1-50-type terminal blocks and, depending on the type of telephone company trunk termination, modular jack assemblies. Bridging clips are used on all terminal blocks to complete the connections. As many as four blocks may be needed, including any combination of the following:

- 1 block for CO trunk terminations and Loop Start Card (LSC) terminations (unless the telephone company has terminated the CO trunks on RJ-type jacks, then a CO block is not necessary).
- 1 block for DID trunk terminations and Single-Line Adapter (SLA) terminations (unless the telephone company has terminated the DID trunks on RJ-type jacks, then a DID block is not necessary).
- 1–2 blocks for station cabling terminations and Digital Keypad Card (DKSC) terminations.

2.2 The MDF requires at least a 4 × 6-foot (1.2 × 1.8-meter), ¾-inch plywood backboard. (Depending on the number of stations and trunks installed, a larger backboard may be necessary.) This will allow room to mount the KSU, terminal blocks, Single-Line Adapters (SLAs), modular jack assemblies, AC transformers, and any optional peripheral equipment.

A. STATION CONNECTIONS

2.3 For each keyset, single-line set, and playback device, twisted single-pair (24 AWG, level-1) cable is run from the station location to the MDF. (For a complete list of station cabling requirements, refer to page 3–8.) All station cables are terminated on blocks at the MDF and on four-conductor modular jack assemblies at the station locations.

NOTE: If desired, two- or three-pair twisted cable and four- or six-conductor modular jacks may be used for all station connections. This allows the various types of station instruments to be easily interchanged, if necessary. (If three-pair cable is used, extra terminal blocks and the use of cross-connect wiring techniques are required.)

2.4 Industry-standard, 25-pair telephone cable and custom DKSC interface cables are used to connect the station blocks to their corresponding station cards. Female 50-pin amphenol-type connectors on the telephone cables attach to the male 50-pin connectors on the custom cables. The male 25-pin connectors on the cus-

tom cables attach to the DB25 connectors on the station cards in the KSU.

B. TRUNK CONNECTIONS

2.5 The Central Office (CO) trunks are terminated on telephone company RJ-type jacks or on an RJ-type block, as required by FCC regulations. Three methods of connecting CO trunks to the KSU are outlined in the INSTALLATION section, along with details concerning necessary supplies. Briefly, the three methods are as follows:

- **If the CO trunks are terminated on RJ-type jacks mounted near the MDF:** Using two-pair mod-to-mod line cords, every two CO trunks are connected directly to the corresponding CO jacks on the Loop Start Cards (LSCs) in the KSU.

CAUTION

If the above installation method is used, the lightning protection procedures outlined in paragraph 2.8 cannot be followed. For lightning protection capability, use one of the following installation methods instead.

- **If the CO trunks are terminated on RJ-type jacks mounted away from the MDF:** Using two-pair mod-to-mod line cords, every two CO trunks are first terminated from the RJ-type jacks onto four-conductor modular jack assemblies mounted next to the RJ-type jacks. Then, using standard two-pair cable, the CO trunks are extended to modular jack assemblies mounted at the MDF. Finally, two-pair mod-to-mod line cords complete the connection from the modular jack assemblies to the corresponding CO jacks on the LSCs in the KSU. For a diagram of this method, see Figure 3–8 on page 3–19.
- **If the CO trunks are terminated on an RJ-type block:** A 25-pair cable is used to connect the RJ-type block to a CO terminal block on the MDF. Then, for every two CO trunks, two-pair cable (or cross-connect cable) is connected from the CO block to four-conductor modular jack assemblies mounted next to the KSU. Finally, two-pair mod-to-mod line cords complete the connection from the modular jack assemblies to the corresponding CO jacks on the LSCs in the KSU. For a diagram of this method, see Figure 3–10 on page 3–20.

2.6 Similarly, the Direct Inward Dialing (DID) trunks are terminated on telephone company RJ-type modular jacks (or on an RJ-type block that is then cross-connected to modular jack assemblies), as required by FCC regulations. Two-pair, non-reversing, mod-to-mod line cords are used to connect each DID trunk to the ap-

appropriate jack on the corresponding Single-Line Adapter (SLA).

2.7 To help reduce electromagnetic interference (EMI) and radio frequency interference (RFI), it may be necessary to equip the trunk cables with ferrite beads. (See INSTALLATION, page 3-18.) Two ferrite "split" beads (two half beads) are installed on each 25-pair cable just below the amphenol-type connector. The part number for a single split bead is 808.1195.

2.8 It is recommended that gas discharge tubes with silicon avalanche suppressors be installed on all trunks for lightning protection. Also, in areas with frequent occurrences of lightning, it is recommended that the cable between the telephone company termination and

the gas discharge tubes be at least 75 feet long (the cable may be coiled up if desired).

2.9 The Inter-Tel Axxent System has the following trunk characteristics:

CHARACTERISTICS

Loss from:	
CO to keyset	0dB (@1kHz, 0 ft.)
CO to single-line set	0dB (@1kHz, 0 ft.)
CO to CO	0dB (@1kHz, 0 ft.)
Ringer equivalence	0.6B
Ring voltage	40VRMS minimum
Ring frequency	17-63Hz
Loop current	18mA minimum

PROTECTION

Tip-to-ring	400V transient
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3. KEY SERVICE UNIT (KSU)

A. KSU DESCRIPTION

3.1 The Inter-Tel Axxent KSU consists of an off-the-shelf personal computer (PC) mid-tower case (chassis and cover). It houses the system power supply unit and the system circuit cards, including: Central Processing Unit (CPU) Motherboard, Memory Card, Loop Start Cards (LSCs), and Digital Keypad Cards (DKSCs). It can also house the parts required for optional Axxent Talk integrated voice processing, including: PC CPU Card, Voice Processing Card, hard disk drive, and floppy disk drive.

3.2 Located on the front of the KSU are the ON/OFF power switch, a reset switch, two LED indicators, and bays for at least two disk drives. Located on the rear of the KSU are the eight card slots, music-on-hold connector, external paging connector (not currently used), keyboard connector, various-size serial port connectors, power supply fan, and power supply connector.

3.3 For illustrations of the KSU, see Figures 2-2 and 2-3 on pages 2-24 and 2-25. For installation instructions, see page 3-22.

3.4 The *approximate* dimensions of the KSU are:

Height	16.0 in. (40.6 cm.)
Width	7.25 in. (18.4 cm.)
Depth	16.75 in. (42.5 cm.)
Weight	
– 4×8	21.0 lbs. (9.45 kg.)
– Loaded	30.0 lbs. (13.5 kg.)

B. FUNCTIONAL DESCRIPTION

3.5 Together, the circuit cards in the KSU perform the switching activities for the system; detect incoming calls; process data-controlled features; and, control the interaction of station instruments, trunks, intercom calls, and voice processing applications; etc.

3.6 The system is a microprocessor-controlled, pulse code modulation (PCM), time-division multiplex (TDM) system. Memory includes 4 megabytes (MB) of flash read only memory (ROM) and 1MB of random access memory (RAM). In addition, each keyset contains a microprocessor that communicates via the Digital Keypad Card with the microprocessor on the CPU Motherboard.

Time Slots (also called ports or voice channels)

3.7 The circuitry and software in the KSU combine to produce an “integrated switching matrix” of 256 time slots (8 PCM highways [buses] × 32 time slots per high-

way). Each telecom circuit card is assigned to its own highway. The optional voice processing system is assigned to one highway, the standard DSP on the CPU Motherboard is assigned to one highway, and the two optional DSPs share one highway. Therefore, there are at least 32 time slots available for each telecom card installed in the KSU. Since no card installed in the system currently requires more than 16 time slots, the Inter-Tel Axxent System is a totally non-blocking system.

3.8 With the exception of shared speakerphone devices, each DSP resource (e.g., conference circuit, DTMF receiver, etc.) requires one time slot per resource. Each shared speakerphone device (for Basic and Standard keysets) requires two time slots. To aid in calculating the number of time slots required/available, the System Configuration programming window displays time slot allocation information (see page 6-211).

External Paging Ports

3.9 As many external paging ports as desired can be used for connecting external paging speaker equipment. Each external paging port can be connected to an available LSC circuit or to the speaker wires on a keyset. (For installation instructions, see page 3-68.) In addition, the KSU has its own dedicated external paging port reserved for possible future use (see page 2-8).

NOTE: When connecting external paging equipment to an LSC circuit, use a paging amplifier that provides talk battery. When connecting external paging equipment to a keyset, use a paging amplifier that *DOES NOT* provide talk battery.

CAUTION

Using a paging amplifier with talk battery on a keyset may damage the keyset or the Digital Keypad Card.

Music Source

3.10 A music source can be connected to the back of the KSU to provide keyset background music and outside caller music-on-hold. Internal users also hear music when placed on hold or when camped on.

Card Slot Arrangement

3.11 The first five slots (labeled 1-5) in the KSU (i.e., card slot connectors on the CPU Motherboard) are reserved for DKSCs and LSCs. DKSCs can only be installed in slots 1-3; LSCs can be installed in any of the first five slots. Slots 6-8 (labeled A-C) are reserved for the optional Axxent Talk integrated voice processing circuit cards.

NOTE: Information on the type of card installed in each card slot must be entered through database programming. See page 6-210 in PROGRAMMING.

C. ENVIRONMENTAL REQUIREMENTS

3.12 The KSU and the station instruments require the following environmental conditions:

REQUIREMENTS	IN OPERATION	IN STORAGE
Temperature (KSU)	32° to 104° F 0° to 40° C	-40° to 185° F -40° to 85° C
Temperature (Station Instruments)	32° to 113° F 0° to 45° C	-40° to 185° F -40° to 85° C
Relative Humidity (Non-Condensing)	5% to 95%	5% to 95%
Altitude	Up to 10,000 ft. (3,048 m.)	Up to 40,000 ft. (12,192 m.)

NOTE: It is recommended that the maximum operating temperature (as listed above) *never* be exceeded. There-

fore, when installing the KSU and station instruments, allow a sufficient margin for error in case of air conditioning failure, routine mechanical maintenance, plant shutdown, etc. As a general guideline, if the conditions are suitable for office personnel, they are also suitable for all equipment and station instrument operation. A properly controlled environment will help to extend the operating life of the equipment.

3.13 While in operation, a fully-loaded KSU generates approximately 600 British Thermal Units (BTUs) of heat per hour. The maximum amount of heat generated per individual station instrument is 6.8 BTUs per hour.

NOTE: This information is provided so that any cooling needed to meet the proper environmental conditions (as listed in the preceding chart) can be calculated.

D. SYSTEM POWER SUPPLY UNIT

3.14 The system power supply unit provides power to all of the circuit cards and stations. It *must* have an isolated, dedicated, 105–125VAC, 15A, 57–63Hz, single-phase commercial power source (for details, refer to the first NOTE on page 3–5 in INSTALLATION).

3.15 The unit itself is an industry-standard PS/2-type PC power supply that is rated for 200–230 watts of power. It is equipped with industry-standard connectors for powering standard PC equipment, such as hard drives, floppy drives, and motherboards. It also has an AC power connector and cord, a cable and ON/OFF power switch for the front of the KSU, a cooling fan, and a 115V/230V voltage selection switch.

3.16 The power supply provides +5V, –5V, +12V, and –12V to the system. The higher voltage required by the digital keysets is derived using the +12V supply and a custom DC/DC voltage converter found on each Digital Keypad Card.

3.17 The unit's maximum power outputs are:

+5VDC, 18A	+12VDC, 8A
–5VDC, 0.5A	–12VDC, 0.5A

CAUTION

If the power supply unit ever needs replacement, use only an Inter-Tel-approved unit. Using a non-approved power supply unit voids the system warranty and could cause unreliable system operation.

Voltage Surge and Spike Protection

3.18 To reduce the effects of AC voltage surges and spikes that may cause system malfunctions, false logic, and/or damage to the electronic components, a surge/spike protector with the following specifications is recommended:

- Clamp voltage transients at 300VDC within 5 nanoseconds when exposed to waveforms as described in the ANSI/IEEE Standard C62.41–1980 (IEEE 587).
- Reduces RFI/EMI noise by at least 20dB at frequencies between 5kHz and 30MHz.
- Ground lug for grounding Single-Line Adapters, trunk gas discharge tubes, etc. to the KSU's AC outlet.

3.19 Inter-Tel's Factored Products division sells a surge/spike protector (model DTK–3GTP) that has all of these specifications.

Battery Back-Up

3.20 To provide back-up power in the event of a power failure or brownout condition, the power supply can have optional battery back-up using a customer-provided uninterruptible power supply (UPS) unit or a standby power supply (SPS) unit. (Refer to page 2–23 for more information.)

E. CIRCUIT CARDS

3.21 In addition to the power supply unit, the KSU houses the circuit cards that control and coordinate the functions of the system. The following cards may be installed in the KSU:

- 1 Central Processing Unit (CPU) Motherboard — required
- 1 Memory Card — required
- 1–2 Digital Keypad Cards (DKSCs) — at least one is required
- 1–2 Loop Start Cards (LSCs)

3.22 For optional Axxent Talk integrated voice processing, the system must also be equipped with the following cards:

- 1 PC CPU Card — required
- 1 Voice Processing Card — required

3.23 Descriptions of the cards are given in the following paragraphs. Drawings of the cards are located in the INSTALLATION section.

CAUTION

The Inter-Tel Axxent System *does not* support “hot” card insertion. Always turn off the system power before inserting or removing any of the card in the KSU.

Central Processing Unit (CPU) Motherboard

3.24 The Inter-Tel Axxent CPU Motherboard is the heart of the system. It contains the main controlling microprocessor and associated control logic and memory circuits. It is under the control of a program stored in flash memory, which is activated when the system is powered up.

3.25 The CPU Motherboard is equipped with the following system resources (see Figure 3–15 on page 3–30 for an illustration of the card):

- **Circuit card connectors** (eight 98-pin) for connecting the station, trunk, and optional Axxent Talk integrated voice processing circuit cards. The first five slots (1–5) form a proprietary telecom bus for the DKSC and LSC cards. The last three slots (A–C) form an industry-standard PC bus for the optional Axxent Talk PC CPU Card and Voice Processing Card.
- **Memory Card connector** (80-pin, SIMM) for connecting the Memory Card that contains the system software and the selected feature PAL.
- **Power supply connector** (12-pin, two-socket [P8 and P9]) for connecting to an industry-standard PC power supply.

- **RS-232-C (serial port) headers, cables, and external connectors** (two 9-pin, D-subminiature, female) for connecting an SMDR/error message output device, a personal computer for programming the system database, or a modem for remote programming and maintenance (see pages 2–20 to 2–22 for detailed requirements).

NOTE: The system can have a maximum of eight RS-232-C ports for system services. This includes the RS-232-C ports on the CPU Motherboard and PC Data Port Modules. If an Axxent Talk PC CPU Card is installed, at least one of the eight system RS-232-C ports must be dedicated to the PC CPU Card.

- **DB15 PCM header, cable, and external connector** (15-pin, D-subminiature, female) reserved for possible future use.
- **MVIP header, cable, and external connector** (40-pin) for connecting the optional Axxent Talk Voice Processing Card to the telecom side of the CPU Motherboard.
- **Keyboard headers, cables, and connectors** (5-pin DIN and 5-pin friction lock) for connecting a keyboard to perform troubleshooting/diagnostics procedures on the optional Axxent Talk integrated voice processing system.
- **Music header, cable, and external connector** (mini phono jack) for connecting an external music source (such as a radio, tape player, etc.) that is heard by callers when they are placed on hold or camped on. It may also be used for keypad background music. For installation instructions, see page 3–67. In database programming, music can be enabled or disabled, and each trunk group (as well as transfer audio) can be assigned music, silence, or tick-tones. See page 6–128.
- **External paging header, cable, and external connector** (RCA-type phono jack with an output impedance of 600 ohms) reserved for possible future use.
- **Reset header, cable, and external switch** to manually reset the system during troubleshooting. This is a software-controlled system reconfiguration. Pushing this switch does the following:
 - Preserves the battery-backed database information, all calls in progress, outside calls being dialed, pages in progress, camped-on calls, queue requests, system and user programming, inter-station messages, calls on system and individual hold, do-not-disturb messages, and reminder messages.
 - Restores DTMF receivers, modem access, and speech channels, and resets the station clocks to

match the system clock. Updates trunk key, DSS/BLF key, speed-dial key, and feature key lamp status.

— Disconnects calls ringing in.

- **LED headers, cables, and external indicators** (two) to show main processor operation (green) and minor system alarms/errors (red). In a normal PC, these LEDs would be used to indicate power and hard disk drive status. Refer to page 7-3 for detailed LED information.
- **Halt LED indicator** (red — on the CPU Motherboard itself) to show when a hardware failure has caused the system to halt operation. Refer to page 7-3 for detailed LED information.
- **System voltage test points** (-5V, -12V, +12V, +5V, and DGND) for testing voltage generated by the system power supply.
- **Database back-up battery** (3.6V, 1/2AA lithium battery) that can support the database and the real-time clock for at least two months of accumulated system down time.
- **Battery voltage test point** (3.6V) for checking the database back-up battery charge. If the battery voltage is not greater than 3.2VDC, replace the battery.

NOTE: When the battery voltage is low (below 3.2VDC), the system generates an alarm message at all administrator stations and prints an error message.

- **Battery back-up enable switch** for activating the database back-up battery. The switch should be placed in the ON (top) position before the CPU Motherboard is installed. When the card is taken out of service for repair or storage, the switch should be placed in the OFF (bottom) position to preserve the battery charge.

NOTE: Placing the BATTERY ENABLE switch in the OFF position erases the database when the KSU is unplugged or loses power. Also, when the system detects that the switch is not in the ON position, it generates an alarm message at all administrator stations and prints an error message.

- **Real-time clock** for accurate date and time function. (Preserved by the database back-up battery.)
- **Digital signal processor (DSP)** for providing the following four system resources:
 - *Conferencing resources* for connecting up to 12 parties in multiple conferences. There can be up to three simultaneous four-party conferences or

up to four simultaneous three-party conferences. Conferencing is not amplified.

- *DTMF receiver circuits* (two) are used when single-line sets connected to MDPMs are dialing and when features such as DISA and analog voice mail are used. These two receivers convert DTMF signals to the digital codes used by the system. They are in use only while the dialed number is being processed, not for the duration of the call. If both DTMF receivers are busy, the user may try again (DISA users are redirected to the primary attendant).
- *DTMF transmitter circuits* (two) generate DTMF tones whenever needed by the system. For example, when a Basic or Standard keyset user manually dials a number while on a call or when a station user uses one of the system auto-dial features (ARS, call forward to the public network, station or system speed dialing, etc.). Executive keysets can generate their own DTMF tones.
- *Tone generating circuit* produces all of the system tones (busy, reorder, do-not-disturb, etc.) heard by keyset, single-line set, DISA, and automated attendant users.

- **Optional DSPs** for providing the system with additional DSP resources. For one DSP, install upgrade kit part no. 828.1323; for two DSPs, also install upgrade kit part no. 828.1324. The optional DSP(s) provide the following system resources:

- *Caller ID receivers* (up to eight per DSP)
- *Shared speakerphones* (standard or enhanced) for Basic and Standard keysets (up to eight per DSP)
- *Additional conferencing circuits* (up to 16 more per DSP)
- *Additional DTMF receivers* (up to six more per DSP)

NOTE: For information on Caller ID features, refer to page 4-21. For information on shared speakerphones for Basic and Standard keysets, see page 4-34.

Memory Card

3.26 In order for the Inter-Tel Axxent System to function, the CPU Motherboard must be equipped with a Memory Card (part no. 520.2004). The Memory Card, which has 4MB of flash memory, contains the system software and the desired feature PAL.

NOTE: The pre-production 520.2001 and 520.2003 Memory Cards function the same as and are completely interchangeable with the production 520.2004 Memory Card.

Digital Keypad Cards (DKSCs) and Single-Line Adapters (SLAs)

3.27 Station instruments are connected to station circuit cards in the KSU. Keysets are connected directly to Digital Keypad Cards (DKSCs). Industry-standard single-line DTMF sets and playback devices (AC-ringing instruments only) are connected indirectly to DKSCs by using Single-Line Adapters (SLAs).

NOTE: At least one DKSC *must* be installed to provide an administrator (equipped with a display keypad) that can receive system alarm messages, program system data, etc.

3.28 Digital Keypad Card (DKSC): Each DKSC provides up to eight circuits for connecting digital keysets or Single-Line Adapters (SLAs) to the system. There is an onboard DC/DC converter on each DKSC that turns the +12V generated by the system power supply to the +22V needed for proper keypad operation.

3.29 DKSCs can be equipped with a custom DKSC interface cable that converts the DB25 connector on the card to a standard 50-pin amphenol-type connector for easy connection to the DKSC termination block on the MDF. The pin functions of the DKSC DB25 connector are listed in the following chart. The pinout of the 50-pin amphenol on the end of the custom cable is shown in Figure 3-7 on page 3-15.

DB25 PIN	FUNCTION
1	RING 1
14	TIP 1
2	RING 2
15	TIP 2
3	RING 3
16	TIP 3
4	RING 4
17	TIP 4
5	RING 5
18	TIP 5
6	RING 6
19	TIP 6
7	RING 7
20	TIP 7
8	RING 8
21	TIP 8
9-13	DGND
22-25	DGND

3.30 DKSCs have eight self-correcting thermistors (one for each circuit) to protect the system from damage due to a short circuit in the station cabling. If a short circuit causes a thermistor to open, it will automatically close when the short is removed.

3.31 Each DKSC has a green LED (CARD ON-LINE) to indicate the card's functional readiness and a yellow LED (CIRCUIT BUSY) to indicate whether any circuit on the card is busy (see Figure 3-17 on page 3-36). Also, each card has a metal EMI shield attached to the front

edge of the card to help prevent electromagnetic interference.

3.32 Up to ten keysets may be equipped with single DSS/BLF Units or up to five keysets may be equipped with tandem units (or any combination of the two up to ten total units; tandem units count as two units). Each unit is connected to the optional PC Data Port Module (PCDPM) on the back of the corresponding keypad. Unlike many other systems, the DSS/BLF Units do *not* require KSU cabling separate from the keypad's cabling; instead, they are powered by their own AC transformer.

3.33 Single-Line Adapter (SLA): An SLA, which can be installed on an available DKSC circuit, is used for connecting up to two AC-ringing single-line DTMF sets, playback devices, and/or off-premises extensions. Up to 15 SLAs can be installed (at least one DKSC circuit must be equipped with a display keypad) for a total of up to 30 single-line devices.

3.34 An SLA can also be used for connecting up to two direct inward dialing (DID) trunks. (Or one single-line set and one DID trunk.) Refer to FEATURES, page 4-20, for more information on using DID trunks.

3.35 AC-ringing off-premises stations can be connected directly to SLA circuits (*external* HVRA Units, power supplies, and ring generators are not needed).

NOTE: SLAs do not support *visual* message waiting applications. If single-line sets with message waiting lamps are installed on SLAs, the lamps will not function. However, single-line sets can be configured in database programming to receive *audible* message waiting indication tones.

3.36 Each SLA, whether used for single-line sets or DID trunks or both, is powered by its own AC transformer. Also, SLAs have two self-correcting thermistors. If a short circuit causes a thermistor to open, it will automatically close when the short is removed.

NOTE: For optimal system performance, the optional Axxent Talk integrated voice mail system should be used for voice mail and automated attendant functions, rather than using SLA circuits.

3.37 Station circuit and extension numbers: Each station card circuit is assigned a six-digit hardware address number (XX.YY.ZZ) according to the card's slot in the KSU (XX = 01-05), the location of the circuit on the card (YY = 01-08), and whether the circuit has more than one purpose (ZZ = 01-03). For example, circuit 01.02.01 is the second circuit on the first card installed in the KSU.

3.38 In some circumstances, a station circuit can have more than one purpose. For example, two single-line devices can be installed on a single DKSC circuit. The first

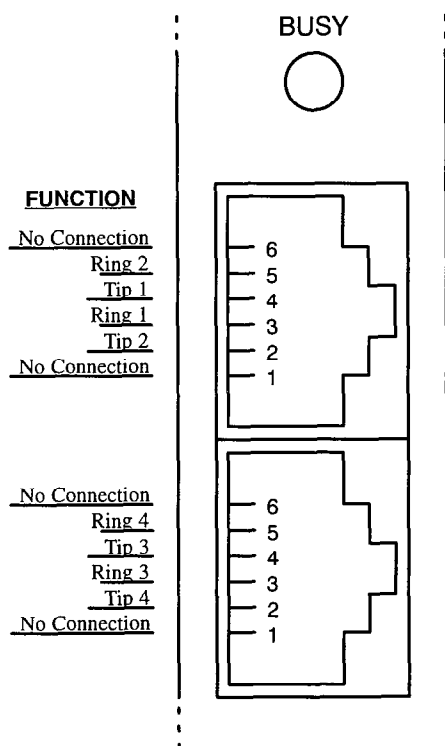
device is assigned circuit number XX.YY.01 and the second device is assigned circuit number XX.YY.02. Similarly, a keyset's PC Data Port Module and Modem Data Port Module can be assigned their own circuit numbers. In this case, the keyset is assigned circuit number XX.YY.01, the first data port is assigned number XX.YY.02, and the second data port is assigned number XX.YY.03. For more information, refer to page 6-213.

3.39 When the system is first powered up, the default configuration is used to assign extension numbers to the station circuits. Card slots 1-2 are considered DKSCs and slots 4-5 are LSCs. Changes to the default configuration can be made through database programming. See PROGRAMMING, page 6-210, for more information.

3.40 The default system assigns extension number 100 to station circuit 01.01.01, extension number 101 to station circuit 01.02.01, and so on to match the initial configuration. Circuit 01.01.01 is equipped as an administrator and as the primary attendant's keyset when the system is in the default configuration. If desired, the circuits can be assigned 1-5 digit extension numbers through database programming. Refer to PROGRAMMING, page 6-75, for more information.

Loop Start Cards (LSCs)

3.41 Each LSC has two RJ-type jacks for connecting up to four loop start trunks; ground start trunks cannot be used. The pin functions of the two jacks on the card are shown in the following diagram.



3.42 There are four self-correcting thermistors (one for each circuit) to protect the card from large voltage surges due to lightning. If a power surge causes a thermistor to open, it will automatically close when the over-current condition stops.

3.43 For optimal CO trunk transmission performance, each LSC circuit should be "hybrid balanced" in database programming. Hybrid balancing refers to selecting the balance network — normal or short — that best matches the trunk's impedance. See page 6-124 for details.

3.44 Each LSC has a green LED (CARD ON-LINE) to indicate the card's functional readiness and a yellow LED (CIRCUIT BUSY) to indicate whether any circuit on the card is busy (see Figure 3-18 on page 3-37). Also, each card has a metal EMI shield attached to the front edge to help prevent electromagnetic interference.

3.45 When the system is in the default configuration, all trunks are configured for DTMF signaling. If necessary, some or all of the trunks can be reprogrammed for dial-pulse signaling through database programming.

NOTE: Single-line sets generate their own DTMF tones when dialing. If used on dial-pulse trunks, both the DTMF tones generated by the phone and the dial-pulse signals generated by the system are sent to the central office, which may be a problem if the central office recognizes both. To avoid this problem, single-line sets should be restricted to ARS-only when using dial-pulse trunks. Then, only the ARS-generated dial-pulse signals will be sent to the central office.

3.46 The CO circuits are assigned hardware address numbers according to the card's slot in the KSU and the location of the circuit on the card. For example, when using the initial configuration (see paragraph 3.39), CO circuit 04.04.01 is the fourth circuit on the LSC installed in slot four. Each trunk card circuit is assigned a six-digit circuit number XX.YY.ZZ, where XX = the card slot location (01-05), YY = the circuit number on the card (01-04), and ZZ = whether the circuit has more than one purpose (currently 01 only). Refer to page 6-213 for additional information.

3.47 When the system is in the default configuration, the up to eight possible CO trunk circuits are assigned to individual trunk keys 1-8 on each keyset for incoming call indication/access. (The ANSWER key may also be used to access incoming calls.) No trunk group keys are assigned. Key assignments can be designated in database programming. Refer to PROGRAMMING, page 6-52, for more information.

4. STATION INSTRUMENTS

4.1 A variety of station instruments can be used on the Inter-Tel Axxent System. The combination of station instruments depends on the number and type of station cards installed. The system capacity for stations is as follows:

Total Station Instruments	31
Keysets	1*-16
Single-Line Sets	0-30
DSS/BLF Units	0-10**

* At least one display keyset must be installed to provide an administrator to receive system alarm messages, program system data, and receive unsupervised CO recalls. When the system is in the default configuration, circuit 01.01.01 is designated as a keyset, an administrator, and the primary attendant.

** Keysets and DSS/BLF Units do *not* use separate DKSC circuits. However, the software limits the total number of DSS/BLF Units to ten (tandem units count as two).

NOTE: Since most systems will be installed with a variety of station and trunk cards and a variety of station instruments, the maximum station and trunk capacities listed in this manual will rarely be reached.

A. KEYSETS

4.2 A maximum of 16 keysets may be connected to the KSU. (Refer to page 3-39 for installation instructions.) The following keyset models can be installed on the Inter-Tel Axxent System:

- Basic Digital Keysets (also referred to as Basic Digital Terminals) — non-display only
- Standard Digital Keysets (also referred to as Standard Digital Terminals) — display and non-display
- Executive Digital Keysets (also referred to as Executive Digital Terminals) — display only



4.3 For illustrations of the keysets, refer to the drawings beginning on page 2-26. The individual trunk keys, feature keys, speed-dial keys, and station programmable keys shown in the drawings are as they appear when the system is in the default configuration.

4.4 The *approximate* dimensions of the Basic, Standard, and Executive keysets are:

Height	3.0 in. (7.6 cm.)
Width	7.5 in. (19.1 cm.)
Length	9.0 in. (22.9 cm.)
Weight	2.3 lb. (1.0 kg.)

4.5 All keysets have the following design features in their default configuration:

- 12-key pushbutton keypad

- A variety of feature keys (some of which may be designated as user programmable)
- Eight individual CO trunk keys with LED indicators for incoming call access and indication
- Integrated speakerphone capability (optional on Basic and Standard keysets)
- Ring and voice volume controls (using the  VOL and  keys)
- Slide-out directory card
- Self-test feature (for testing keyset functions)
- Hearing aid-compatible (HAC) electret handset
- Reversible baseplate for wall mounting

Integrated Speakerphone

4.6 All Executive keysets have a built-in, integrated, speakerphone, which can be used in either standard or enhanced mode. (See page 4-34 for more information.)

4.7 All Basic and Standard keysets have a speaker and a microphone for handsfree intercom reply, but they do not have a true integrated speakerphone. However, the optional DSPs on the CPU Motherboard can be configured to provide shared speakerphone circuitry (in either standard or enhanced mode) for Basic and Standard keysets. (See pages 4-34 and 4-35 for more information.)

NOTE: If desired, speakerphone capability can be disabled on a station-by-station basis through database programming. (See page 6-34.)

4.8 The integrated speakerphone allows users to place and receive outside calls and intercom calls without lifting the handset. Once a call is connected, the keyset user may speak handsfree over the speakerphone or lift the handset to speak privately. When using the handset, the user may switch to the speakerphone by pressing the SPKR key and replacing the handset. If enabled, pages and/or background music may be broadcast over the speaker when the phone is not being used.

Liquid Crystal Display (LCD)

4.9 All Executive keysets and all “display” Standard keysets have an LCD with two 16-character lines at the top. The display helps the user to process calls more efficiently and reliably. There are display messages for date and time, numbers dialed, call cost data, reminders, do-not-disturb, forwarding, voice mail processing, incoming calls, station and system status, system alarms, user prompting, and programming. These display messages are indicated throughout the FEATURES section of the manual.

4.10 Executive keysets have four additional 16-character display lines that are associated with the eight menu selection keys that border them. The menu display changes to reflect the functions of the menu keys. Pressing the key next to the displayed option selects that option. (When there is only one option on a line, pressing the key on either end of the line will select that option.)

4.11 All "non-display" Standard keysets can be converted to display sets by installing an LCD Unit (part no. 828.1211). Basic keysets cannot be equipped with LCDs.

Electret Circuitry

4.12 The Inter-Tel Axxent keysets and handsets have been designed using "electret" microphone circuitry, rather than the "dynamic" microphone circuitry used on many previous Inter-Tel keyset models. Electret keysets and handsets are not electrically compatible with dynamic keysets and handsets.

4.13 If a dynamic handset is attached to an electret keyset, the handset transmit levels will be noticeably lower. If an electret handset is attached to a dynamic keyset, the handset will not transmit. (In both cases, neither the keyset nor the handset will be damaged.)

4.14 Electret keysets can be identified by the manufacturer's label on the bottom of the keyset. Electret handsets can be identified by the "E1" embossed in the recess for the wall-mount hook (near the receiver).

Optional Headsets

4.15 A headset may be attached to any keyset by unplugging the handset from the handset jack on the base of the keyset, plugging the headset into the handset jack, and entering a feature code to enable the headset. The SPKR key, which is used to turn the headset on and off, is lit when placing and receiving calls and unlit when the headset is not in use. The keysets are compatible with industry-standard, four-conductor, modular headsets that have electret microphones. Refer to page 3-43 for installation instructions.

Optional Off-Hook Voice Announce (OHVA) Module

4.16 For off-hook voice announce receive capability, any Standard or Executive keyset may be equipped with an optional OHVA Module (part no. 550.3114). Refer to page 3-43 for instructions on installing the optional OHVA Module.

NOTE: The OHVA Module is essentially a stripped-down version of the PCDPM described in the following section. OHVA Modules do *not* require AC transformers.

Optional Personal Computer Data Port Module (PCDPM)

4.17 For off-hook voice announce receive capability, and to allow an optional DSS/BLF Unit and/or an optional Modem Data Port Module to be installed, any Standard or Executive keyset may be equipped with an optional PC Data Port Module (part no. 550.3014). If a DSS/BLF Unit is not installed on the module's RS-232-C port, the port can be used to connect an SMDR/error message output device or a personal computer for programming the system database (maximum 4800-baud). Refer to pages 2-21 and 2-22 for RS-232-C connection requirements. Refer to page 3-45 for instructions on installing the optional PC Data Port Module.

NOTE: PCDPMs require AC transformers when they are connected to DSS/BLF Units only or PC/output devices only. PCDPMs do *not* require AC transformers when they are used for off-hook voice announce only or have attached MDPMs. For a diagram of AC transformer requirements, refer to Figure 2-1 on page 2-14.

Optional Modem Data Port Module (MDPM)

4.18 Keysets equipped with PC Data Port Modules may also be equipped with optional Modem Data Port Modules (part no. 550.3015). The MDPM contains a jack that can be used to connect a data device (such as a personal computer equipped with a modem) to the keyset. Each MDPM is powered by its own AC transformer.

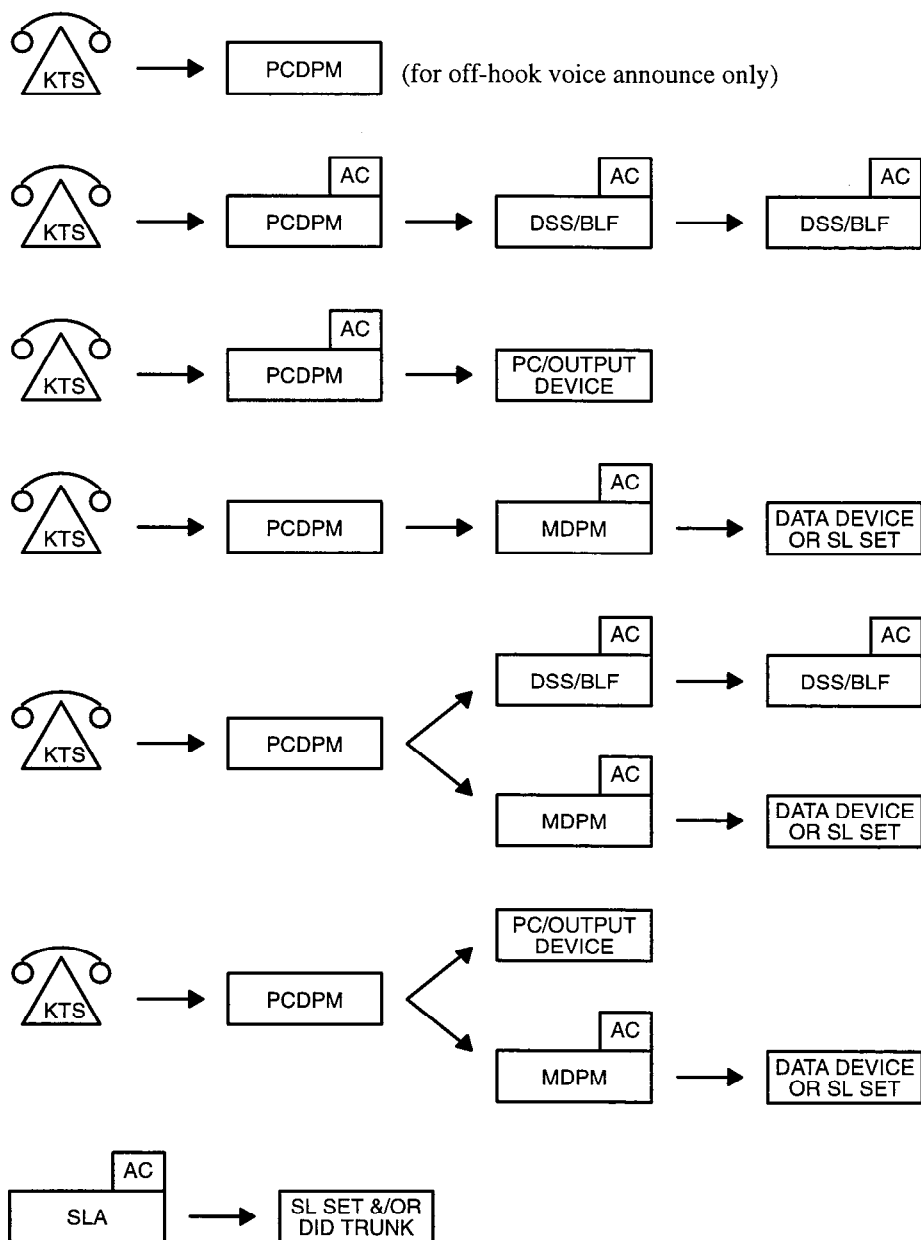
NOTE: MDPMs always require their own separate AC transformers. (For a diagram of AC transformer requirements, refer to Figure 2-1 on page 2-14.)

4.19 The data device attached to the MDPM must have a direct-connection modem. The modem must be externally powered (or capable of operating on 20mA of loop current) and have an RJ11 CO interface. The data device can be used by the associated keyset(s) to communicate with remote data equipment over voice channels being used for CO or intercom calls. Refer to pages 3-48 and 4-95 for installation and operation instructions.

NOTE: Each "equipped" MDPM installed counts as one single-line device.

FIGURE 2-1. AC TRANSFORMER REQUIREMENTS

AC = AC transformer required



NOTE: DSS/BLF Units, MDPMs, and SLAs always require their own separate AC transformers. PCDPMs require AC transformers when they are connected to DSS/BLF Units only or PC/output devices only. PCDPMs do not require AC transformers when they are used for off-hook voice announce only or have attached MDPMs.

**B. DIRECT STATION SELECTION/BUSY
LAMP FIELD (DSS/BLF) UNITS**

4.20 There may be a maximum of ten Digital DSS/BLF Units installed on the system. The units can be single or tandem; tandem units count as two units.

4.21 A DSS/BLF Unit consists of either a single unit or two units connected together to form a tandem unit. Each single unit provides one-key access to 60 extension numbers and/or other features/resources, while tandem units provide access to 120 extension numbers and/or other features/resources. (Refer to page 3-49 for DSS/BLF Unit installation instructions.)

4.22 DSS/BLF Units are physically attached to the RS-232-C ports on keysets equipped with PC Data Port Modules (PCDPMs). The units are powered by their own AC transformers and do not require a DKSC circuit that is separate from the keyset's circuit. If desired, all ten units can be connected to keysets installed on the same Digital Keyset Card.

NOTE: DSS/BLF Units always require their own separate AC transformers. For a diagram of AC transformer requirements, refer to Figure 2-1 on page 2-14.

4.23 For an illustration of the DSS/BLF Unit (and other station instruments), refer to the drawings beginning on page 2-26. DSS/BLF Unit dimensions are:

Height	3.0 in.	(7.6 cm.)
Width	7.5 in.	(19.1 cm.)
Length	9.0 in.	(22.9 cm.)
Weight	1.7 lb.	(0.8 kg.)

4.24 As stated earlier, each single DSS/BLF Unit provides one-key access to up to 60 extension numbers and/or other features/resources. These numbers can be station extension numbers, hunt group pilot numbers, or other resources/features. The layout of the keys and the numbers they access are assigned using one of up to three key maps in database programming. The intercom number/key assignments of each key map are programmed in two lists, page 1 and page 2. Single DSS/BLF Units are assigned page 1 of the desired key map. Tandem units are assigned both pages of the desired key map (page 1 for the first unit and page 2 for the second unit).

4.25 Together, the lamps in the keys create a busy lamp field that indicates the status of each station, hunt group, or other feature/resource assigned to the keys. If assigned to a station, the LED indicator in the key is solidly lit when the associated station is busy or unplugged, flashes slowly when the station is in do-not-disturb, flashes fast when the station has a call ringing in, or flutters continuously if the station is causing a STATION OFF-HOOK system alarm. If assigned to a hunt group, the LED indicator is solidly lit when all stations in the hunt group are unavailable (busy, in do-not-disturb, or removed from the hunt group) and it flashes fast when a call is camped on to a hunt group. If assigned to a feature or resource, the LED indicator is lit to show busy status and unlit to show idle status.

C. SINGLE-LINE SETS

4.26 Up to 30 industry-standard, AC-ringing, single-line DTMF sets may be installed on the Inter-Tel Axxent System. The single-line sets are connected to Single-Line Adapters (up to two per adapter) that are connected to available DKSC circuits.

NOTE: DC-ringing single-line devices may not be connected to SLAs.

4.27 Single-line set users access some station features simply by lifting the handset and entering a feature code. Other features are accessed using a combination of a hookflash and a feature code. Refer to the FEATURES section of this manual for details.

4.28 SLAs do not support *visual* message waiting applications. Single-line sets can, however, be configured in database programming to receive *audible* message waiting indication tones.

Optional Handset Amplifiers

4.29 The typical handset amplifier is an external device that plugs into the single-line set (where the handset is normally connected); the handset is then plugged into the amplifier. Receiver voice volume is controlled by turning a thumbwheel (or similar control) located on the amplifier. Such amplifiers are generally equipped with a transformer that requires a 110VAC outlet. Refer to page 3-51 for installation instructions.

D. OFF-PREMISES EXTENSIONS (OPXs)

4.30 An OPX is an AC ringer-equipped single-line DTMF set that is placed in a remote location and connected to the system through a telephone company OPX circuit or a customer-provided circuit.

4.31 Off-premises stations are connected directly to SLAs — up to two per SLA (*external* HVRA Units, power supplies, and ring generators are not needed).

4.32 The OPX circuits provided by the telephone company are identified with Facility Interface Codes (FIC): Class A, OL13A; Class B, OL13B; or Class C,

OL13C. The service order code is 9.0F (fully protected private circuit). If the impedance does not exceed a loop measurement of 800 ohms (loop of 15,600 feet using 24AWG wire), a customer-provided circuit between the remote location and the system may be used.

4.33 The 800-ohm loop limitation is usually suitable for accessing on-premises stations from off-premises stations. However, for applications where one off-premises station will be calling another through the station card, the impedance between the two off-premises stations (both circuits added together) must be less than 800 ohms (loop measurement). In this situation, a Class A or B FIC circuit is preferable.

4.34 When an SLA circuit is designated for OPX use in database programming (see page 6-58), its voice volume levels are increased approximately 3dB over normal single-line set voice volume levels. This is an attempt to compensate for any loss in the external OPX circuit. However, in certain off-premises applications, the voice volume levels may still be unacceptable. This degradation in voice volume is due to the natural voice frequency range limitations of the telephone company or customer-provided circuit. To increase the frequency range, installation of a two-wire, negative impedance repeater unit is recommended. Such units typically provide from 0-15 decibels of voice volume gain and allow regulation of the gain in each direction when simultaneous voice transmission occurs. The switching sensitivity on the unit should also be adjustable.

4.35 The repeater unit is installed at the MDF between the station block and the cabling to the off-premises station. (Refer to page 3-17 for OPX installation instructions.) When ordering a repeater unit, consult with the supplier for ordering the proper mounting shelf and power supply for the unit. Additional information on operating and adjusting the repeater unit is generally included with the product.

NOTE: Each OPX circuit can have extended ring cadence enabled or disabled (see page 6-31). The extended setting lengthens the duration of the ring signal to meet the requirements of many OPX and/or repeater applications. The default setting is *disabled*.

E. PLAYBACK DEVICES

NOTE: For automated attendant features and for optimal playback device performance and functionality, use the optional Axxent Talk integrated voice processing system instead of SLA circuits.

4.36 AC-ringing playback devices may be connected to SLAs (up to two per adapter). (Refer to page 3-51 for playback device installation instructions.) A playback device is an answering machine that answers the call, plays a message, and then disconnects from the call. Playback devices are installed like single-line sets, using one-pair twisted cable and four-conductor modular jacks. The device must be capable of the following functions: detect ringing, provide ring trip, and automatically disconnect when the announcement is completed.

4.37 Playback devices may be used with hunt groups to speed call processing. Hunt groups can have three types of special stations: announcement stations, overflow stations, and recall destination stations. These types of stations may be equipped with a playback device that answers the call, then disconnects to transfer it back to the hunt group. (Refer to FEATURES, page 4-15, for more information.)

4.38 The playback device is programmed as a regular single-line station and is assigned an extension number. If the device is sensitive to camp-on tones and disconnects calls, the programmer can disable the camp-on indications for that station circuit (refer to PROGRAMMING, page 6-30).

5. OPTIONAL INTER-TEL AXXENT TALK VOICE PROCESSING

5.1 The Inter-Tel Axxent System can be equipped with optional Axxent Talk hardware and software to provide integrated voice processing (voice mail, automated attendant, hunt group announcement/overflow, buffered SMDR, etc.). For detailed feature information, see AXXENT TALK FEATURES starting on page 5-1.

5.2 New Inter-Tel Axxent Systems can be configured with Axxent Talk directly from the factory. Or, Axxent Talk can be added to the KSU at a later date via a voice processing kit (part no. 520.5101). For complete installation instructions, see page 3-52.

5.3 To provide Axxent Talk features, the KSU is equipped with the following voice processing kit items:

- PC CPU Card (80386 SX or faster processor)
- Four-port Voice Processing Card (VPC)
- Hard disk drive (200MB or larger)
- Floppy disk drive (3½-inch, 1.44MB, double-sided/high-density)
- MS-DOS (version 6.2 or higher)
- Two COM ports (RS-232-C communications ports) and one parallel port
- Specially-designed applications software and hard drive CMOS setup software
- Miscellaneous brackets and cables

5.4 Optional equipment that can be used with the Axxent Talk hardware includes the following:

- ASCII-type programming terminal or monitor card, monitor, and keyboard (for diagnostics and, if necessary, for loading software and/or voice prompts)
- Diagnostics cable kit (part no. 828.1282)
- Parallel printer for producing various reports

Axxent Talk Applications Software

5.5 The Axxent Talk equipment is shipped with the applications software already installed on the hard disk drive. In addition, 3½-inch floppy disks containing the applications software are also included.

Diagnostics Software

5.6 For advanced troubleshooting purposes, the Axxent Talk applications software includes special diagnostics software (on installation disks 2 and 3). If an Axxent Talk applications problem cannot be resolved, Customer Support may instruct the installer on how to use the diagnostics software and the optional diagnostics cable kit.

CMOS Setup Software

5.7 The Axxent Talk equipment is shipped with the proper hard drive CMOS setup parameters already programmed on the PC CPU Card. In addition, a single 3½-inch floppy boot disk containing the hard drive CMOS setup parameters is also included. (Each hard drive model has its own unique CMOS setup boot disk.)

5.8 If the CMOS setup somehow becomes corrupted (e.g., due to a low battery on the PC CPU Card), use the boot disk to reboot the voice processing system and automatically restore the proper hard drive parameters.

PC Bus

5.9 The last three slots (A-C) on the CPU Motherboard in the KSU form an Industry Standard Architecture (ISA) PC bus for installing the Axxent Talk PC CPU Card and Voice Processing Card.

PC Central Processing Unit (CPU) Card

5.10 The PC CPU Card is an industry-standard 80386 SX (or faster) central processing card that controls the Axxent Talk portion of the KSU. It communicates directly with the CPU Motherboard via an RS-232-C serial communications port.

Voice Processing Card

5.11 The Voice Processing Card (VPC) provides integrated voice processing for up to four audio ports. It is connected directly to the CPU Motherboard using a special interface cable.

Maximum Capacities

5.12 Listed below are some of the Axxent Talk features with maximum capacities that are dependent on system resources.

FEATURE	CAPACITY
Voice Ports	4
Applications per System	25
Mailboxes and/or Extension IDs	500
Voice Mail Group Lists	100
Members per group list	100
Remote Message Notification	
Numbers per mailbox	2
Tables per system (for pager notification and outgoing access)	10
Custom Recordings per System	50
Message Notification/Retrieval Applications per System	1
System Passwords	4
Time Slot Groups	10

Message Storage Space

5.13 The amount of voice mail message storage space available depends on the size of the hard disk drive installed in the KSU. A 200MB hard disk drive can store approximately 16 hours of messages.

NOTE: This capacity does not include SMDR storage allocations. If this feature is used, there will be a corresponding reduction in available message storage space.

Parallel Printer Connection Requirements

5.14 If desired, the Axxent Talk DB25 parallel port on the rear of the KSU can be used to connect a parallel printer for producing various reports. The pin functions of the parallel port are listed in the following chart.

SIGNAL NAME	FUNCTION	PIN
-STROBE	OUT	1
DATA BIT 0	OUT	2
DATA BIT 1	OUT	3
DATA BIT 2	OUT	4
DATA BIT 3	OUT	5
DATA BIT 4	OUT	6
DATA BIT 5	OUT	7
DATA BIT 6	OUT	8
DATA BIT 7	OUT	9
-ACK	IN	10
BUSY	IN	11
PE	IN	12
SLCT	IN	13
-AUTO FEED XT	OUT	14
-ERROR	IN	15
-INIT	IN	16
-SLCT IN	OUT	17
GND	-	18-25

Diagnostics and SMDR Retrieval Connection Requirements

5.15 If necessary, the Axxent Talk DB25 (COM2) serial port on the rear of the KSU can be used to connect a programming terminal (for diagnostics or loading software) or another PC or modem (for SMDR data retrieval using Inter-Tel's Inside Track call accounting software).

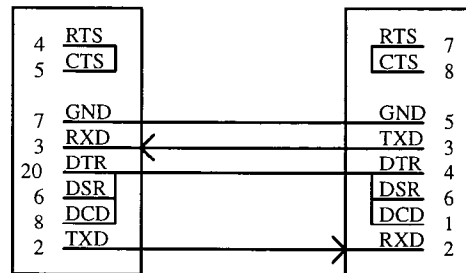
5.16 To do this, use the modular adapters and line cord included in the optional diagnostics cable kit (part no. 828.1282), as listed below and shown on page 3-61.

- DB25 Modular Adapter (female, reversing, four-wire) — part no. 804.2425 (MOD-TAP® part no. 06-986-G99-33)
- DB9 Modular Adapter (female, non-reversing, four-wire) — part no. 804.2420 (MOD-TAP® part no. 08-988-610-00)
- Line Cord (two-pair, reversing) — part no. 813.1592

5.17 If the diagnostics cable kit is not available, it is possible to use a standard straight-through cable along with a null-modem adapter and, if necessary, a gender changer. These items are readily available at most electronic/computer equipment stores.

5.18 Another option is to use the following wiring diagram to build the necessary cable/connectors.

AXX. TALK PC CPU DB25 PC/TERMINAL DB9



DB25 internal jumpers: 4-5 and 20-6-8.
DB9 internal jumpers: 7-8 and 4-6-1

NOTE: When building cable/connectors from this diagram, note that the connections between the Axxent Talk DB25 port and the other device include the modular adapters and a line cord. The connection must be made as indicated in the diagram (correct pins connected) regardless of whether a reversing or non-reversing line cord is used.

6. ADDITIONAL SYSTEM EQUIPMENT

A. PERSONAL COMPUTER (PC) FOR ON-SITE OR STAND-ALONE/REMOTE PROGRAMMING

6.1 The device used for on-site or stand-alone/remote programming must be an IBM-compatible PC with a minimum:

- 80286 or higher microprocessor (80386 recommended)
- 13 megabytes (MB) available memory on the hard disk drive (17 MB recommended)
- 5¼-inch (1.2MB) or 3½-inch (1.44MB) double-sided/high-density floppy disk drive
- Windows 3.1
- MS-DOS 3.3 or higher (MS-DOS 5.0 or 6.2 recommended)
- 2 MB available RAM
- EGA or better graphics monitor (VGA recommended)
- COM port (RS-232-C communications port) configured as Data Terminal Equipment (DTE)
- A programming mouse is optional but recommended (if a serial mouse is used, install on an unassigned COM port)

6.2 For remote maintenance, an external modem is also needed. (See PROGRAMMING, page 6–14, for additional information on remote system maintenance.) To connect the PC to the Inter-Tel Axxent System for on-site programming, refer to the following information.

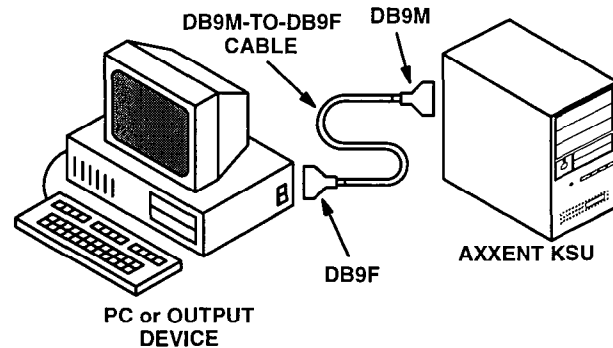
B. PROGRAMMING PC AND SMDR/ERROR MESSAGE OUTPUT DEVICE CONNECTION REQUIREMENTS

6.3 The on-site programming PC and the optional output device(s) for the SMDR and Error Message Recording features must be equipped with RS-232-C communications ports and they must be configured as Data Terminal Equipment (DTE). The Inter-Tel Axxent RS-232-C ports are always configured as Data Carrier Equipment (DCE).

NOTE: Most PCs/output devices are already configured as DTE. An output device may be a printer, a terminal, or a PC equipped with terminal emulation software.

KSU RS-232-C Connection

6.4 There are several ways to connect a PC or an output device to one of the two system RS-232-C serial ports (SERIAL #1 or SERIAL #2) on the rear of the KSU. The easiest method is to use an off-the-shelf, industry-standard, straight-through, DB9M-to-DB9F, RS232 cable (part no. 813.1622), as shown in the following diagram. This type of cable is also readily available at most electronic/computer equipment stores.



NOTE: If the PC or output device requires a DB25 connection instead, attach a 9–25 (DB9M-to-DB25F) converter (part no. 804.2483) to the DB9F end of the cable.

6.5 The pin functions of the Inter-Tel Axxent KSU RS-232-C ports (SERIAL #1 and SERIAL #2) are listed in the following chart.

<u>SIGNAL NAME</u>	<u>DCE FUNCTION</u>	<u>DB9 PIN</u>
Data Carrier Detect (DCD)	Signal from Axxent (always true)	1
Data	Data from Axxent	2
Data	Data to Axxent	3
Data Terminal Ready (DTR)	Not Used (always false)	4
Signal Ground	Reference Ground	5
Data Set Ready (DSR)	Signal from Axxent (always true)	6
Hardware Handshake	Signal to Axxent	7
Hardware Handshake	Signal from Axxent	8
Ring Indicator (RI)	Signal from Axxent	9

6.6 Handshaking: When the system is in the default configuration, both KSU RS-232-C ports are enabled for “software” handshaking. Most output devices are designed for software handshaking, which is the use of “X-ON” and “X-OFF” characters to indicate readiness to send or receive data. Refer to the device’s operating manual to determine if it uses X-ON/X-OFF characters.

6.7 If the device does not support X-ON/X-OFF characters, hardware handshaking may be enabled (see PROGRAMMING, page 6–218). When enabled for hardware handshaking, signals are sent over the cable to indicate readiness to send or receive data. The KSU RS-232-C port will send a logic true on pin 8 (Clear To Send) when it is ready to receive data. In addition, the

KSU RS-232-C port will monitor pin 7 (Request To Send) and will only send data if it receives a logic true. If the KSU RS-232-C port receives a logic false to indicate that the device is not ready or that the buffer on the attached device is full, it will not send data.

PC Data Port Module RS-232-C Connection

6.8 To connect a PC or an output device to one of the RS-232-C ports on a PCDPM, use the PCDPM-to-RS232C interface cable (part no. 813.1565) supplied with the PCDPM. One end of the cable connects to the RS-232-C port on the PCDPM. The DB9F end of the cable connects to the PC or output device.

6.9 The PC or output device must be configured to support hardware handshaking using the DTR and CTS lines. The pin functions of the PCDPM RS-232-C port are listed in the following chart.

NOTE: If the PC or output device requires a DB25 connection instead, attach a 9-25 (DB9M-to-DB25F) converter to the DB9F end of the cable.

SIGNAL NAME	DCE FUNCTION	DB9 PIN
Data Carrier Detect (DCD)	Signal from Axxent (always true)	1
Receive Data (RXD)	Data from Axxent	2
Transmit Data (TXD)	Data to Axxent	3
Data Terminal Ready (DTR)	Signal to Axxent	4
Signal Ground	Reference Ground	5
Data Set Ready (DSR)	Signal from Axxent (always true)	6
Request To Send (RTS)	<i>Not Used</i>	7
Clear To Send (CTS)	Signal from Axxent	8
Ring Indicator (RI)	<i>Not Used</i>	9

6.10 Handshaking: When used as system serial ports for connecting a PC or an output device, the PCDPM RS-232-C ports are enabled for "hardware" handshaking (see PROGRAMMING, page 6-218).

6.11 When enabled for hardware handshaking, signals are sent over the cable to indicate readiness to send or receive data. The PCDPM RS-232-C port will send a logic true on DSR (Data Set Ready) and CTS (Clear To Send) when it is ready to receive data. In addition, the PCDPM RS-232-C port will monitor DTR (Data Terminal Ready) and will only send data if it receives a logic true. If the PCDPM RS-232-C port receives a logic false to indicate that the device is not ready or that the buffer on the attached device is full, it will not send data.

Communication Parameters

6.12 The on-site programming PC and SMDR/error message output devices must communicate at 300, 1200, 2400, 4800, or 9600 baud, depending on the selected port. System baud rates are set independently in database programming. Other specifications include:

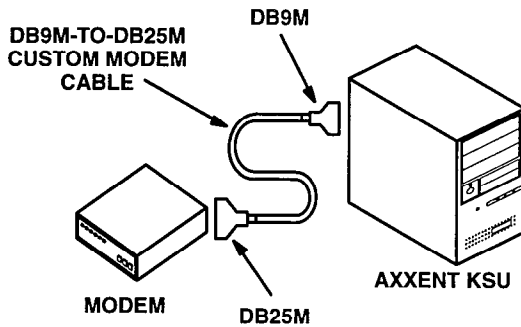
- The data format must be 8 bit standard ASCII
- Parity is off (ignored)
- Communication is full duplex
- There is one start bit and one stop bit

6.13 The output devices, whether used for SMDR or error messages, must be able to print reports with a width of 80 characters. The devices must not have cables longer than 50 feet (15 meters).

C. MODEM CONNECTION REQUIREMENTS

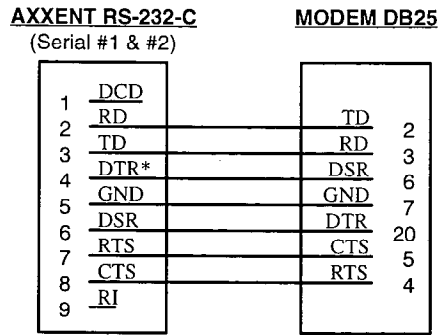
6.14 If desired, a modem for remote programming/maintenance can be connected to one of the RS-232-C ports on the rear of the KSU. Although PCDPM RS-232-C ports can also be used if necessary, they do not always provide reliable *modem* communication.

6.15 Inter-Tel sells an optional modem kit (part no. 520.3016) that allows the installer to easily connect a modem to one of the system RS-232-C ports (SERIAL #1 or SERIAL #2) on the rear of the KSU. If the optional modem kit is not used, Inter-Tel recommends using a custom DB9M-to-DB25M modem cable (part no. 813.1620) designed specifically for a system modem connection, as shown below.



NOTE: All status responses must be *disabled* on the modem connected to the Inter-Tel Axxent RS-232-C port. *English* status responses must be *enabled* on the modem connected to the remote programming PC. For database programming modem setup information, refer to page 6-14 in PROGRAMMING.

6.16 If the recommended modem kit or custom cable is not available, the following wiring diagram can be used to build a cable that will connect one of the system RS-232-C ports on the rear of the KSU to the DB25 port found on most modems.

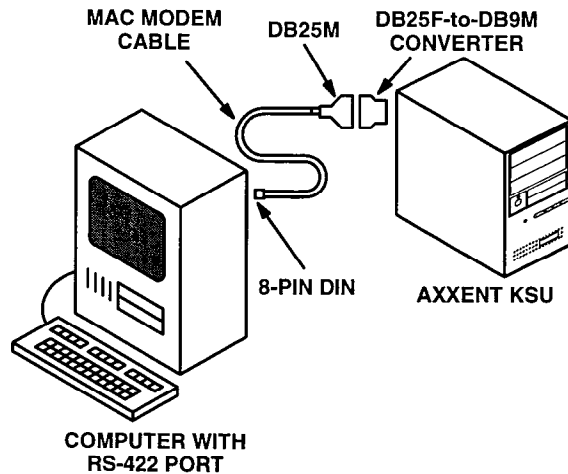


* The system RS-232-C ports do not support DTR.

D. RS-422 CONNECTION REQUIREMENTS

6.17 If desired, an RS-422 port (e.g., on an Apple Macintosh computer) can be connected to one of the RS-232-C ports on the rear of the KSU or to one of the RS-232-C ports on a PCDPM.

6.18 To connect an RS-422 port to one of the system or PCDPM RS-232-C ports, Inter-Tel recommends using a standard Macintosh modem cable and a standard 25-9 (DB25F-to-DB9M) converter, as shown below.



**E. SYSTEM BATTERY BACK-UP
REQUIREMENTS**

6.19 To provide back-up power in the event of an AC power failure or brownout condition, the system power supply can have optional battery back-up using a customer-provided uninterruptable power supply (UPS) unit or standby power supply (SPS) unit. Contact Inter-Tel's Factored Product division for a list of available models.

6.20 It is recommended that a power supply unit with the following characteristics be installed:

- Sine wave output
- Transfer time of less than 20 milliseconds
- Output rating of 250 Watts (minimum needed for a fully populated system)
- Low AC line transfer voltage (or cutoff circuit) of 100VAC (minimum)

NOTE: The system back-up time is determined by the battery ampere-hour ratings. The unit's batteries can be either external or internal. Also, even if the power supply unit has the specifications listed above, it cannot be guaranteed that it will work properly with the Inter-Tel

Axxent System. Contact Inter-Tel's Factored Product division and/or Customer Support for a listing of approved UPS/SPS units and installation instructions.

F. ADDITIONAL INFORMATION

6.21 If necessary, contact Inter-Tel's Customer Support department and/or Factored Products division for additional information on the following optional equipment:

- Standby Power (system battery back-up)
- Lightning and AC Surge Protection
- Headsets
- Paging Equipment
- Single-Line Telephones
- Cordless Telephones
- Music/Message-On-Hold
- OPX Repeaters
- Inside Track SMDA Software and Buffer Box
- Facsimile Machine
- Doorbox
- Playback Devices

FIGURE 2-2. KEY SERVICE UNIT (KSU) — FRONT VIEW

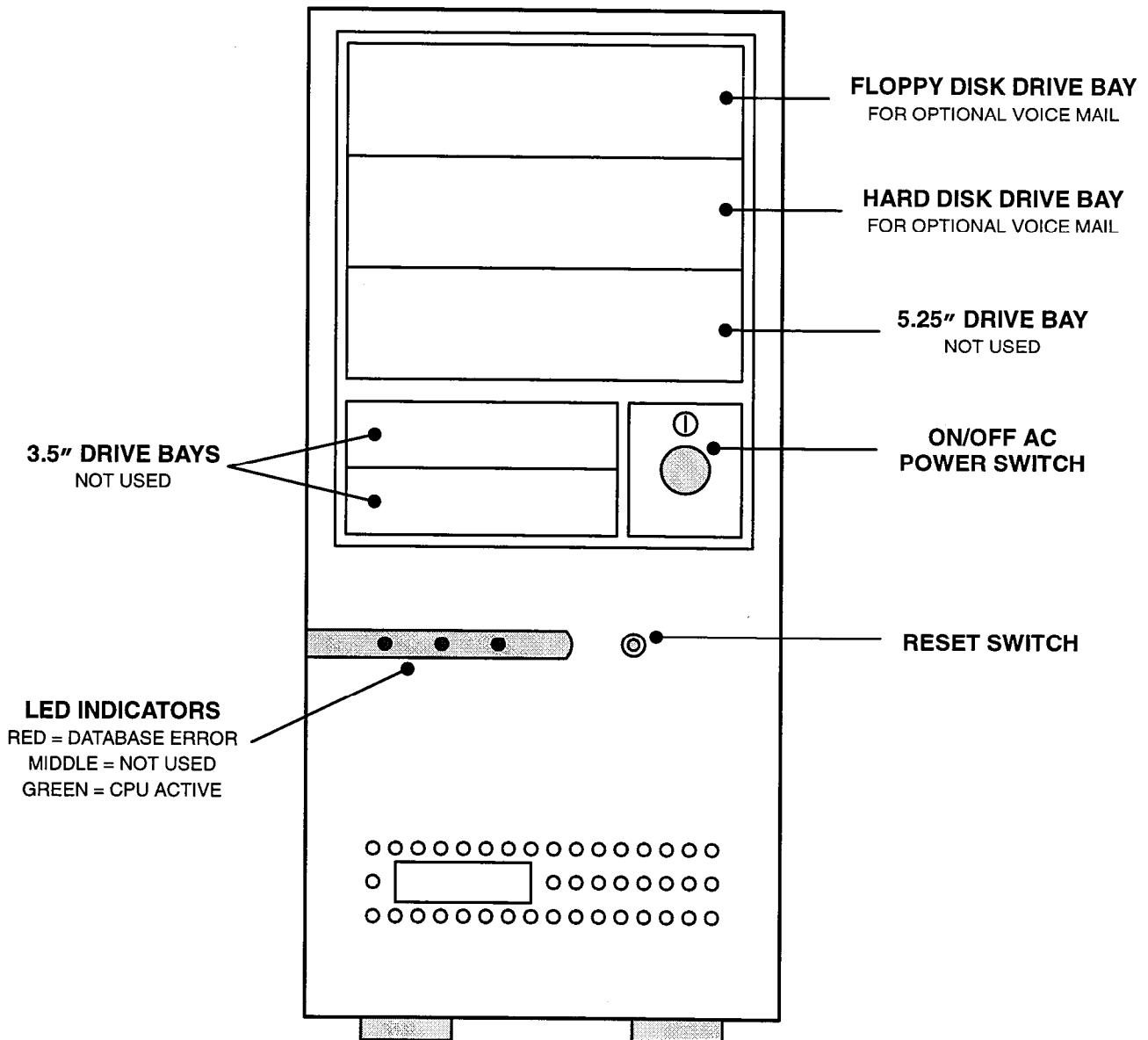
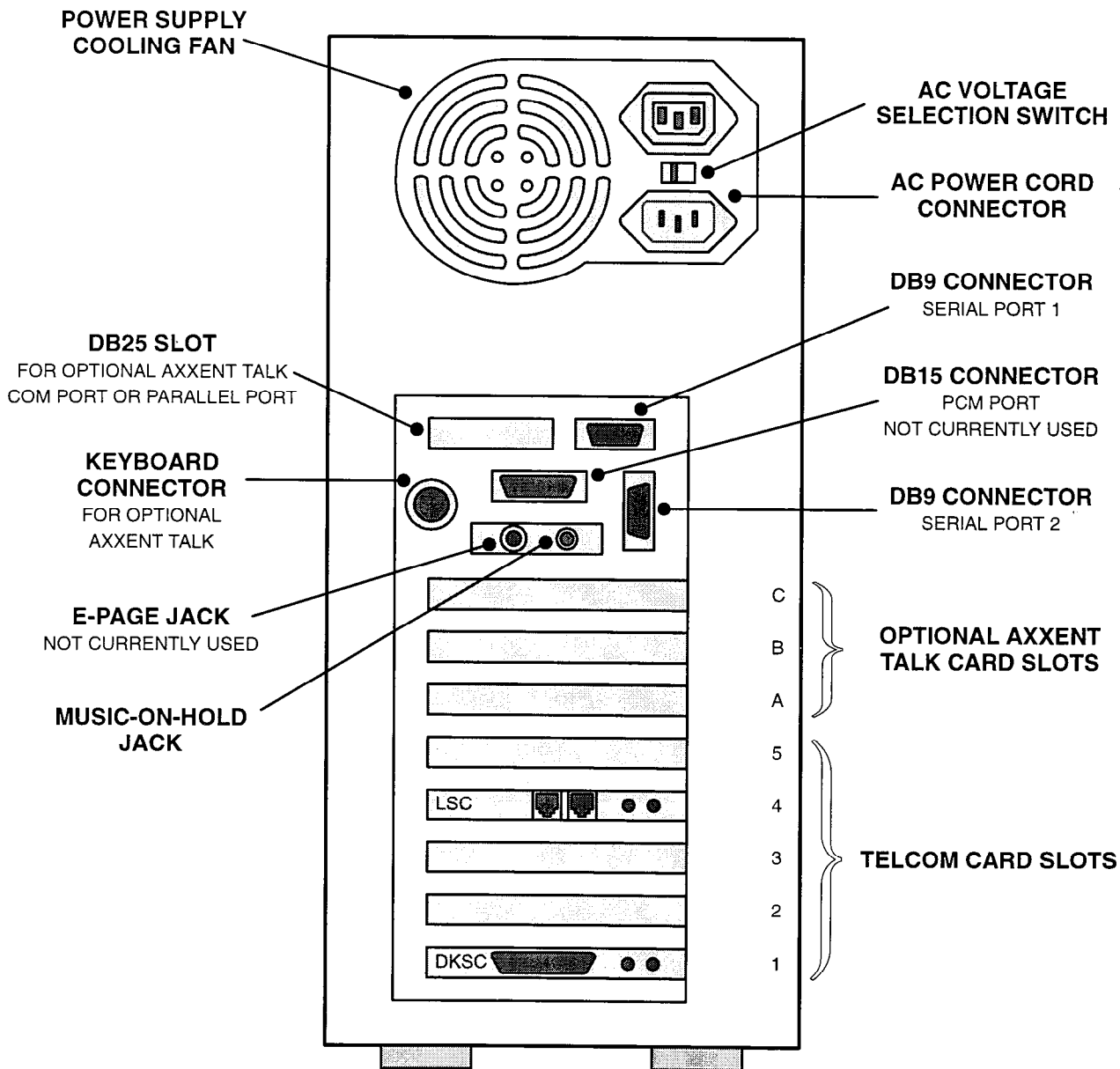
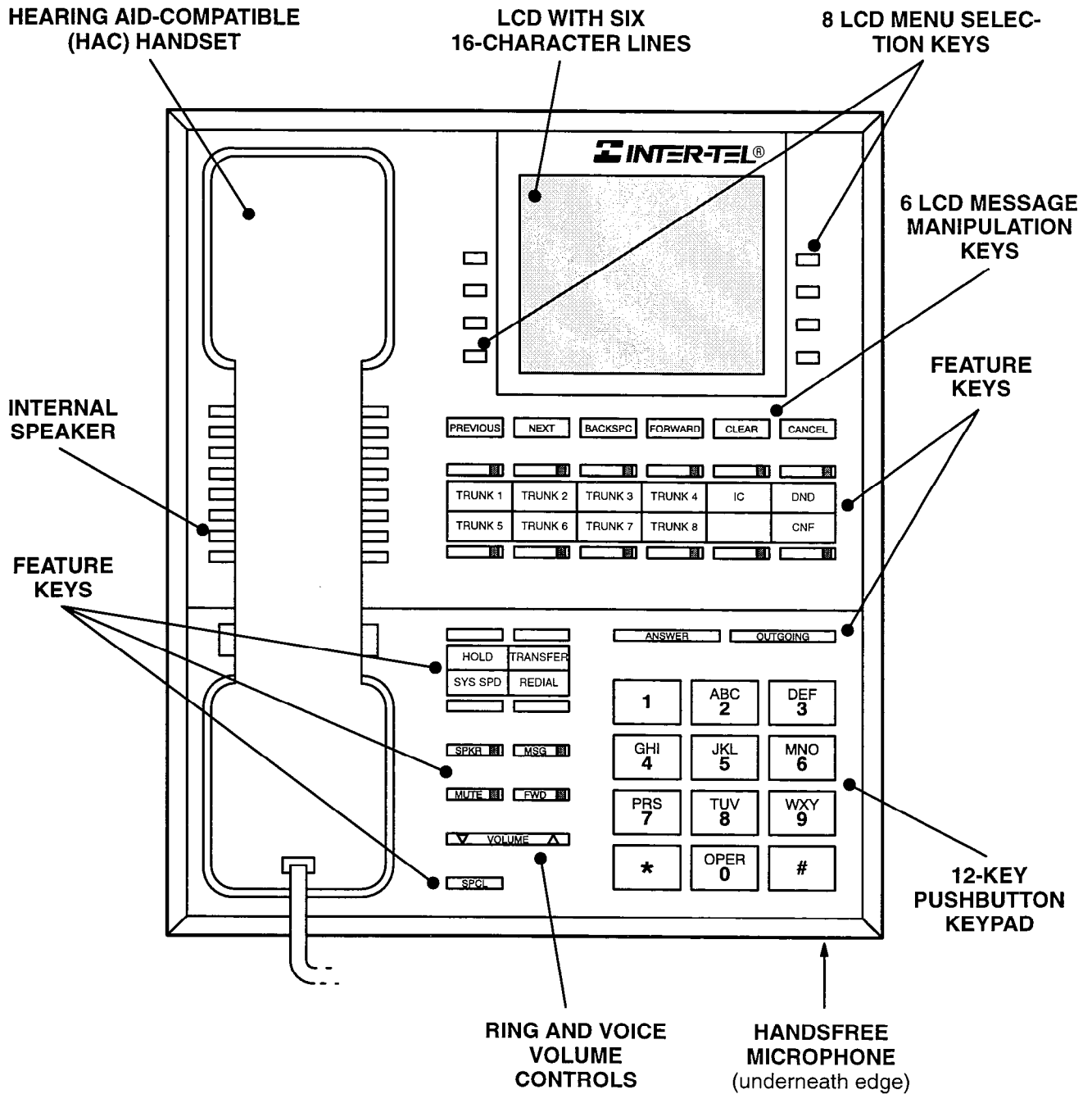


FIGURE 2-3. KSU — REAR VIEW



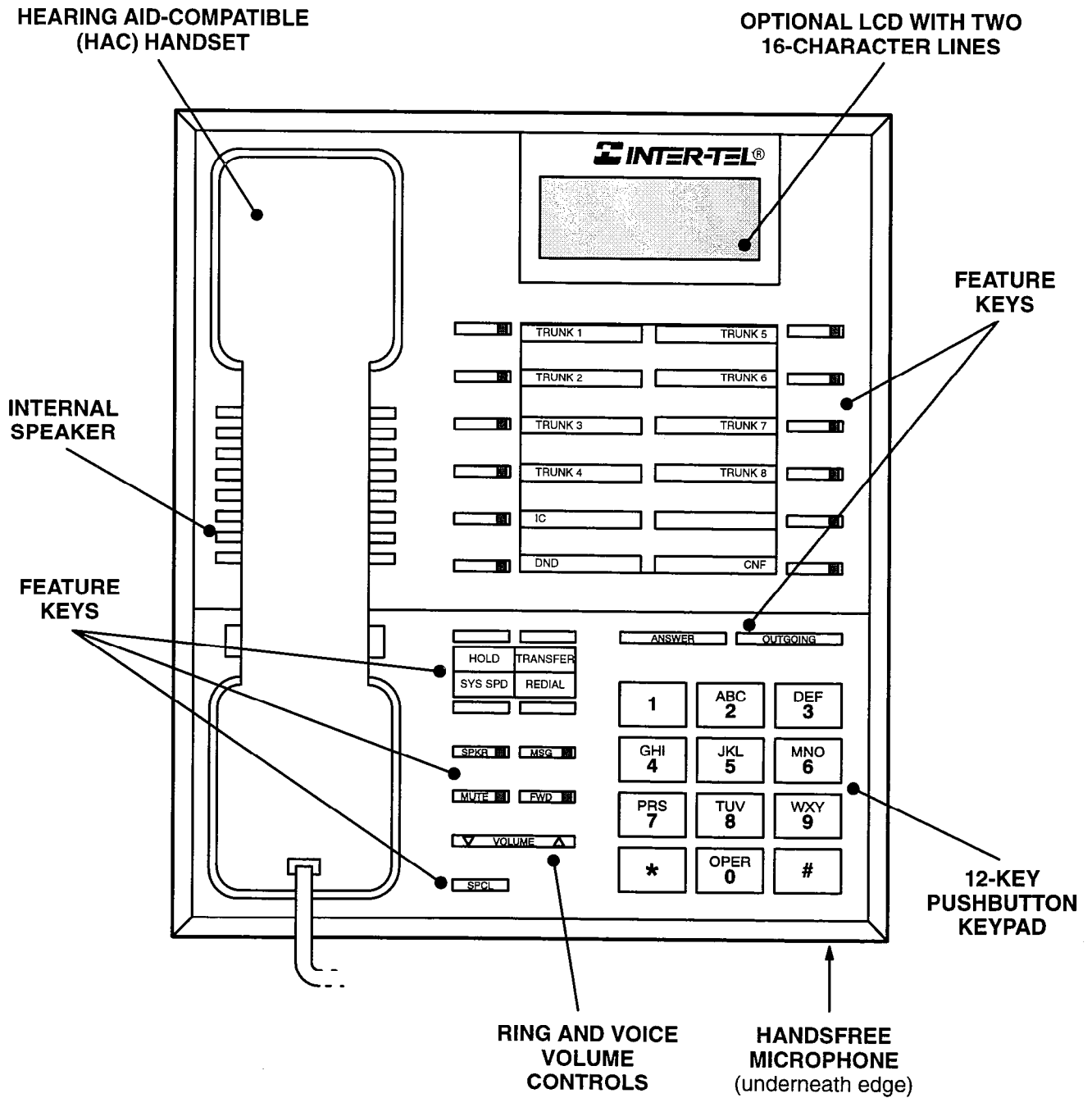
NOTE: For a drawing showing the rear of the KSU with the optional Inter-Tel Axxent Talk hardware installed, see Figure 3-26 on page 3-58.

FIGURE 2-4. EXECUTIVE DIGITAL KEYSSET (also called Executive Digital Terminal)



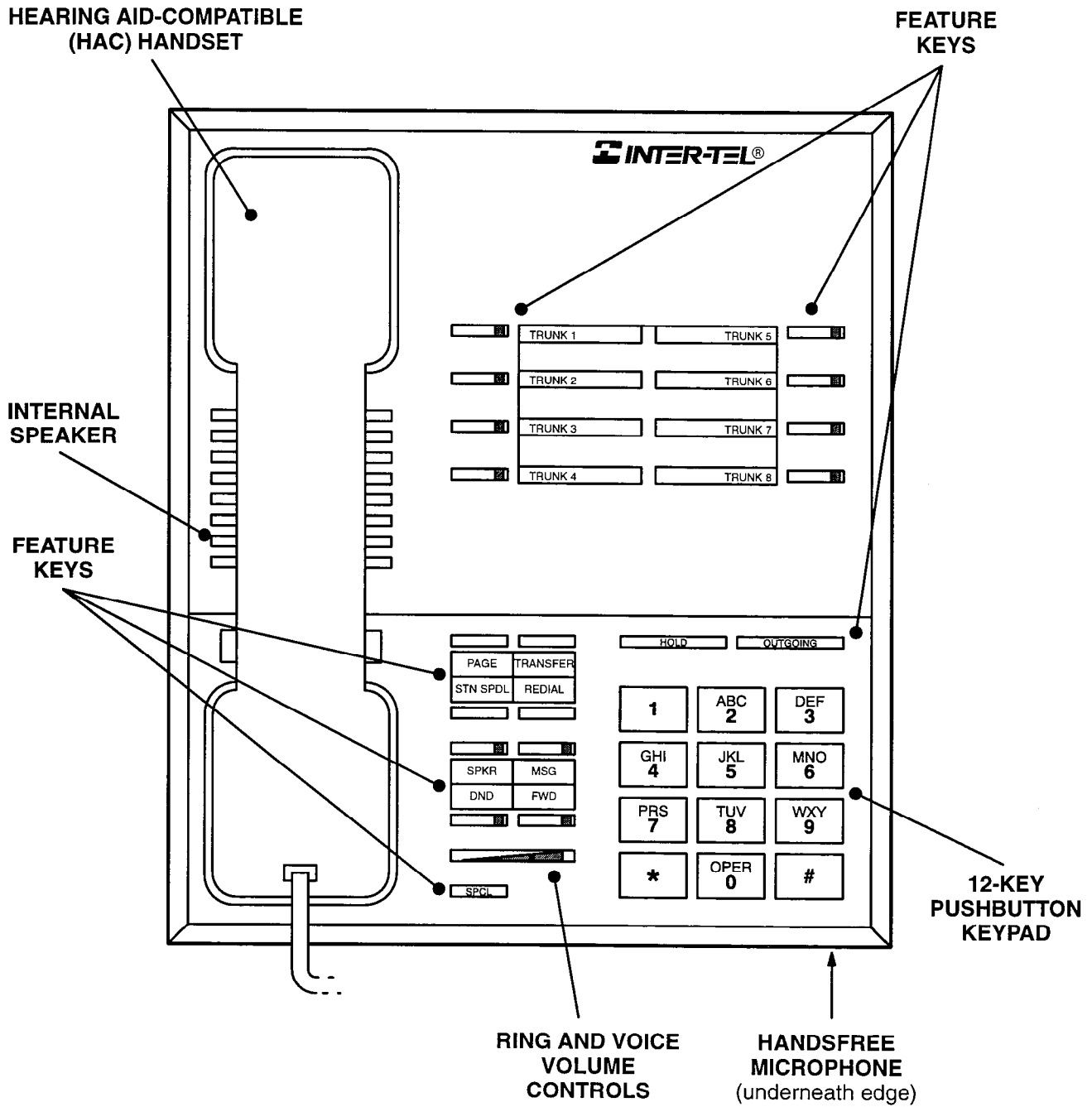
NOTE: The keys are shown as they appear in the default key map configuration.

FIGURE 2-5. STANDARD DIGITAL KEYS (also called Standard Digital Terminal)



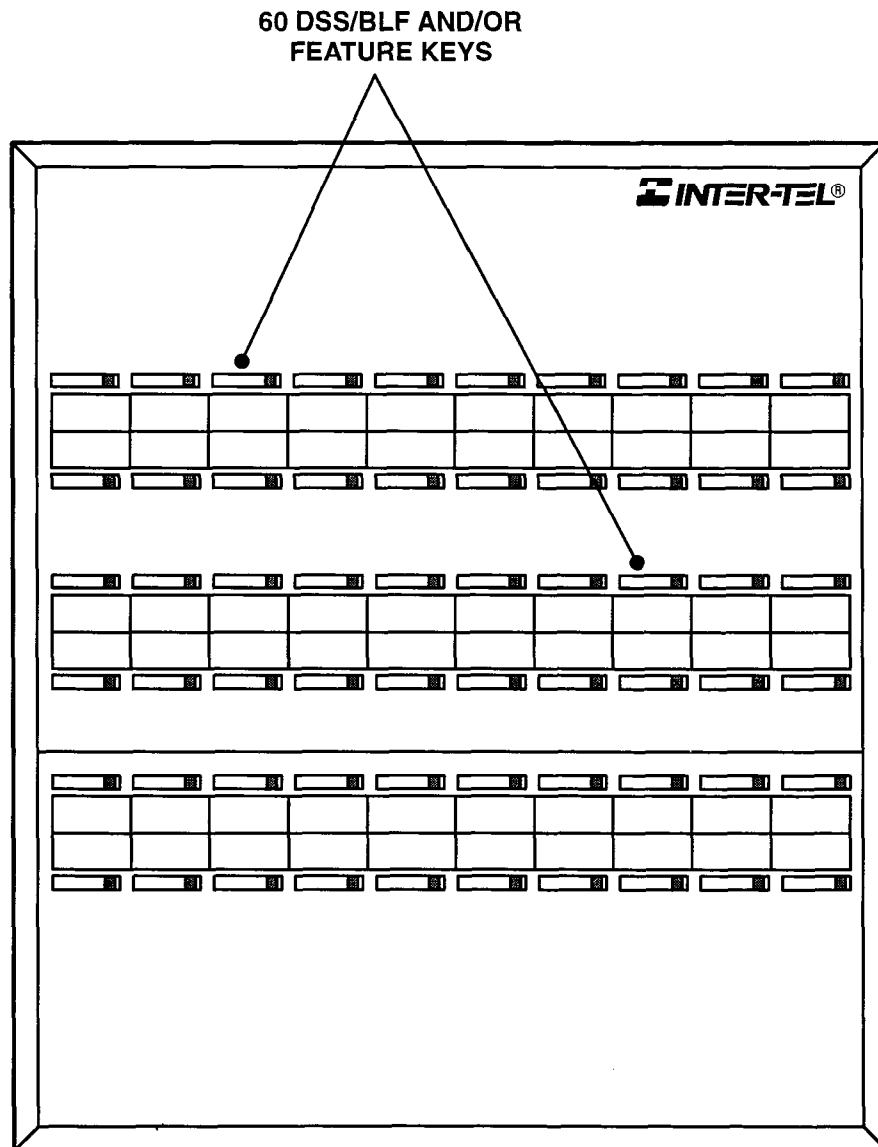
NOTE: The keys are shown as they appear in the default key map configuration.

FIGURE 2-6. BASIC DIGITAL KEYS (also called Basic Digital Terminal)



NOTE: The keys are shown as they appear in the default key map configuration. (The hold key on the Basic Digital Keypad defaults to system hold.)

FIGURE 2-7. DIGITAL DIRECT STATION SELECTION/BUSY LAMP
FIELD (DSS/BLF) UNIT



INSTALLATION

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1. INTRODUCTION

1.1 This section describes the recommended procedures for installing the Inter-Tel Axxent System. Refer to the SPECIFICATIONS section of the manual for hardware descriptions.

2. SYSTEM INSTALLATION OUTLINE

2.1 System installation is performed in the following order. Detailed instructions and figures for each step are located throughout the INSTALLATION section.

- (1) Plan the installation, including the Key Service Unit (KSU) and main distribution frame (MDF) location, station locations, cable runs, and optional equipment.
- (2) Run cables to the keysets, single-line sets, and playback devices. Run wiring to any optional equipment, such as the external paging equipment, music source, etc.

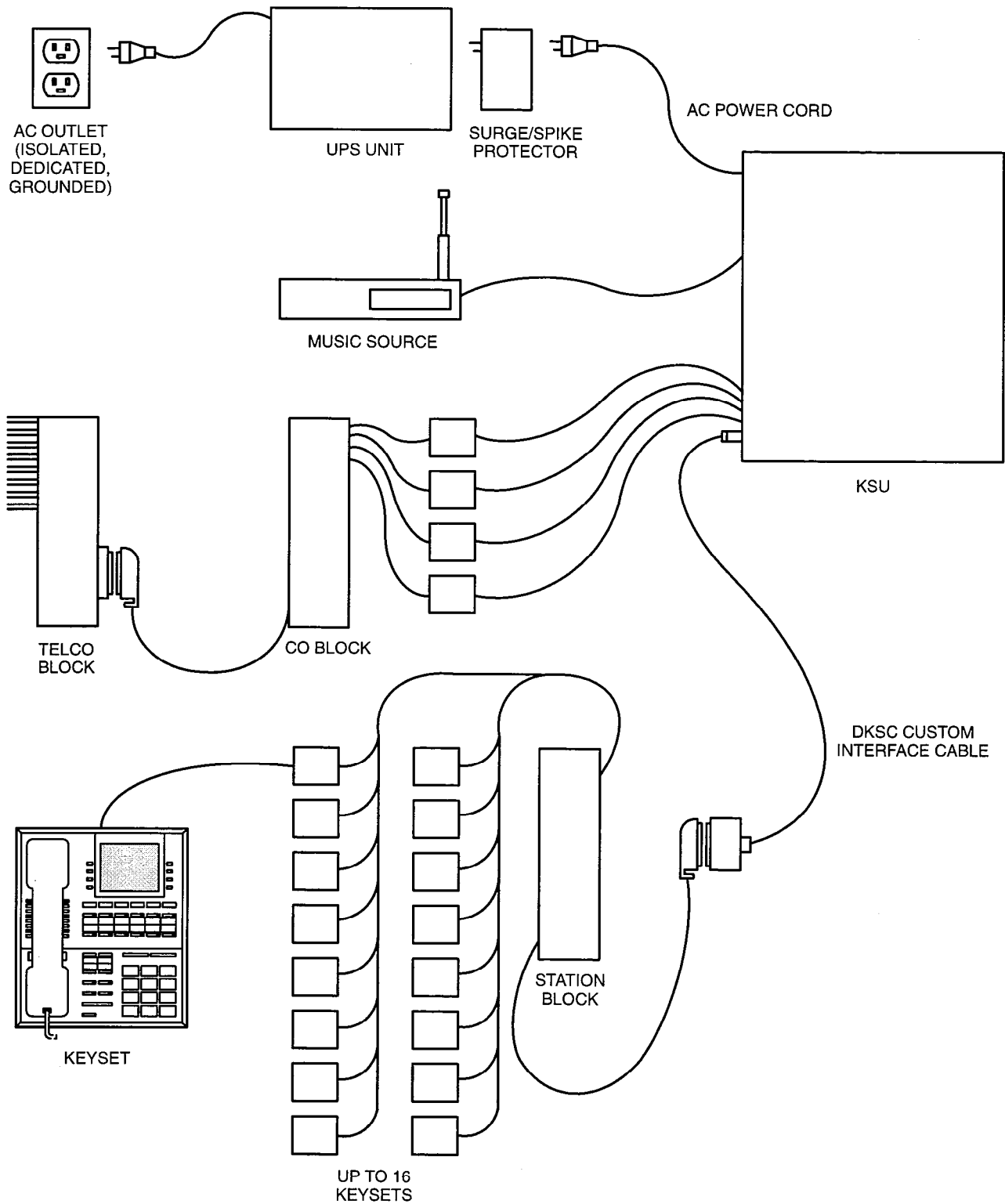
NOTE: DSS/BLF Units do not require a KSU cable run that is separate from the keyset's cabling. DSS/BLF Units are connected directly to keysets equipped with PC Data Port Modules, and they are powered by their own separate AC transformers.
- (3) Terminate the station cables on modular jack assemblies at the station locations.
- (4) Mount the MDF backboard and assemble the terminal blocks on the backboard. If necessary, terminate the CO trunks on modular jack assemblies. If installing any single-line sets, it may be desirable to attach the necessary Single-Line Adapters (SLAs) and their corresponding modular jack assemblies on the backboard.
- (5) Connect the trunks, station cables, and circuit-card cables to the corresponding terminal blocks or modular jack assemblies.

- (6) Perform the station loop resistance test for each station cable.
- (7) Position the KSU near the MDF backboard or mount the KSU on the backboard.
- (8) Install the circuit cards in the KSU (if not already installed) and connect them to the cables that run from the MDF blocks or modular jack assemblies.
- (9) Install the station instruments and any optional station equipment, such as headsets, handset amplifiers, PC Data Port Modules, etc.
- (10) Install any optional system equipment, such as Axxent Talk integrated voice processing, output device(s) for station message detail recording (SMDR) and error message recording, external paging network, external music source, etc.
- (11) Ensure that all equipment is working properly.
- (12) Refer to the PROGRAMMING section of this manual to configure and program the system.

NOTICE

This *Inter-Tel Axxent Installation and Field Maintenance Manual* instructs certified field technicians on the proper installation practices for the Inter-Tel Axxent System. This manual does *not* provide step-by-step instructions for premises wiring practices as dictated by the National Electrical Code, which includes, but is not limited to, cable layouts, cable installation, AC power installation, proper AC grounding, eliminating or preventing external interferences (including, but not limited to, RFI, EMI, lightning, AC power disturbances, static discharge), and other telephony practices standard within the industry. Cable installers, electricians, and field technicians are expected to be properly trained and, if applicable, licensed in their trade practices. ***Official Inter-Tel Axxent certification is required for technical assistance.***

FIGURE 3-1. SAMPLE SYSTEM LAYOUT



3. PRE-INSTALLATION CHECKLIST

3.1 To make installation easier, use the checklist on the following pages when preparing to install the system. (Hardware specifications are included in the SPECIFICATIONS section.)

A. ESTABLISH SUITABLE ENVIRONMENTAL CONDITIONS FOR THE SYSTEM

- Locate the KSU within 5 feet (1.5 meters) of an isolated, dedicated, 105–125VAC, 57–63Hz, 15A, single-phase commercial power source.

NOTE: This *must* be an isolated, dedicated AC circuit for proper operation. All three wires (power, neutral, and ground) must be run separately from the outlet to the breaker panel without being bonded to any other wire or circuit. *DO NOT* plug any other equipment into this outlet. To maintain the protection provided by the isolated, dedicated circuit, the length of the AC power cord limits the distance between the power supply and the outlet; *DO NOT* use an extension cord. *DO NOT* defeat (or leave floating) the ground wire in the AC power cord. Also, to protect the system from AC voltage surges, a surge/spike protector is recommended (refer to page 2–7 for specifications).

- Select the KSU location to minimize cable run length. Station instruments connected to the system must not exceed the limits (using 24AWG wire) listed in the table on page 3–16. The resistance values (in ohms) are loop measurements; the distance values (in feet/meters) are the maximum one-way measurements from the KSU.
- Do not expose the KSU location to direct sunlight, high humidity, heat, dust, or strong magnetic fields (such as those generated by heavy motors and large copy machines).

- The MDF requires at least a 4 × 6-foot (1.2 × 1.8-meter), ¾-inch plywood backboard. This should provide sufficient room for all blocks, modular jack assemblies, and peripheral equipment.

NOTE: If a number of AC transformers and SLAs (along with their corresponding modular jack assemblies) will be installed at the MDF, a larger backboard may be necessary.

- For cooling purposes, provide ample air space around the KSU assembly (minimum one foot on all sides). Do not place or store items on top of the KSU.
- The SMDR/error message output device(s) must not have cables longer than 50 feet (15 meters).

- Locate the equipment in a climate-controlled room with the following environmental conditions:

<u>REQUIREMENTS</u>	<u>IN OPERATION</u>	<u>IN STORAGE</u>
Temperature — KSU	32° to 104° F 0° to 40° C	–40° to 185° F –40° to 85° C
Temperature — Station Instruments	32° to 113° F 0° to 45° C	–40° to 185° F –40° to 85° C
Relative Humidity (Non-Condensing)	5% to 95%	5% to 95%
Altitude	Up to 10,000 ft. (3,048 m.)	Up to 40,000 ft. (12,192 m.)

NOTE: It is recommended that the maximum operating temperature (as stated above) *never* be exceeded. Therefore, when installing the KSU and station instruments, allow a sufficient margin for error in case of air conditioning failure, routine maintenance, plant shutdown, etc. As a general rule, if conditions are suitable for office personnel, they are also suitable for all equipment and station instrument operation. A properly controlled environment will help to extend the operating life of the equipment.

From UL 1459, a product safety specification governing telephone equipment:

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.

B. ASSEMBLE THE NECESSARY TOOLS AND SUPPLIES

- Industry-standard, one-pair (two-conductor) twisted cable to run from the MDF to all station instruments, including: keysets, single-line DTMF sets, and playback devices. (For exceptions, see the NOTE following paragraph 4.6 on page 3–8.)
- Four-conductor modular jack assemblies for all station instruments. (For exceptions, see the NOTE following paragraph 4.6 on page 3–8.)
- A high-impedance digital multimeter to check the power supply and ensure correct wiring of the modular jack assemblies. Multimeter accuracy must be ±0.5% or better.
- Standard terminal blocks (66M1-50 type) and bridging clips for terminating the station cables at the MDF.

- Industry-standard, 25-pair cable for connecting the MDF station blocks to the station cards in the KSU.
- Industry-standard, cross-connect wire may be needed for certain applications.
- 50-pin female amphenol-type connectors (with recommended non-conducting, plastic covers) and a connecting machine.
- Ferrite beads for all trunk cables, if necessary. (Refer to SPECIFICATIONS, page 2-4.)
- Trunk gas discharge tubes with silicon avalanche suppressors for lightning protection on the DID and OPX trunks.
- 10AWG wire for grounding the Single-Line Adapters, trunk gas discharge tubes, etc. to the system's surge/spike protector.

NOTE: The KSU itself is grounded through the AC power outlet.

- Standard telephone hand tools and the mounting hardware for the MDF backboard, trunk and station blocks, modular jack assemblies, etc.
- For on-site or stand-alone/remote system programming, an IBM-compatible personal computer (refer to page 2-20 for specifications).

3.2 Depending on the type of CO termination used by the telephone company and how close it is to the MDF, the following tools and supplies are also needed.

For CO trunks terminated on RJ-type jacks near the MDF:

- Two-pair mod-to-mod line cords (one for every two CO trunks installed).

For CO trunks terminated on RJ-type jacks away from the MDF (see Figure 3-8 on page 3-19):

- Four-conductor modular jack assemblies (two for every two CO trunks installed).
- Two-pair mod-to-mod line cords (two for every two CO trunks installed).
- Industry-standard, two-pair cable (enough to extend from each RJ-type jack location to the MDF).
- Gas discharge tubes with silicon avalanche suppressors for lightning protection on the CO trunks.

For CO trunks terminated on an RJ-type block (see Figure 3-10 on page 3-20):

- One 66M1-50 type terminal block and a supply of bridging clips.
- Industry-standard, 25-pair cable for connecting the RJ-type block to the CO block.
- A 50-pin male amphenol-type connector and a connecting machine.
- Four-conductor modular jack assemblies (one for every two CO trunks installed).
- Two-pair mod-to-mod line cords (one for every two CO trunks installed).
- Industry-standard, two-pair cable (enough to extend from the CO block to each modular jack assembly on the MDF).
- Gas discharge tubes with silicon avalanche suppressors for lightning protection on the CO trunks.

C. PLAN STATION LOCATIONS AND TYPES OF STATION INSTRUMENTS

- Prepare a cable identification plan using station *circuit* numbers; do not use extension numbers (see page 3–8 for details).
- **Keysets:** The Inter-Tel Axxent KSU has the capacity for up to 16 keysets. Refer to page 2–12 for a listing of the available keyset models and for more information on maximum station capacities. Any non-display Standard keyset can be converted to a display keyset by installing an optional Liquid Crystal Display (LCD) Unit.
- **DSS/BLF Units:** Up to ten DSS/BLF Units can be installed on the system. These can be single units or tandem units (two units connected together). Tandem units count as two units.

NOTE: DSS/BLF Units do not require a KSU cable run that is separate from the keyset's cabling.
- **Single-Line Sets:** Up to 30 industry-standard, single-line DTMF sets can be installed on the system. Single-line sets are connected to Single-Line Adapters (SLAs), which are in turn connected to available Digital Keyset Card circuits.
- **Playback Devices:** Playback devices can be used in place of single-line stations. If the optional Axxent Talk integrated voice processing system is not used, playback devices are especially useful as hunt group overflow/announcement stations. (See page 2–17 for specifications.)

D. ASSEMBLE THE OPTIONAL EQUIPMENT

- Axxent Talk hardware and applications software for integrated voice processing (voice mail, automated

attendant, hunt group announcement and overflow, buffered SMDR, etc.).

- Headsets (electret compatible) for keyset stations and handset amplifiers for single-line set stations.
- Off-Hook Voice Announce (OHVA) Modules for using OHVA features.
- Personal Computer Data Port Modules (PCDPMs) for using OHVA features, and for installing a DSS/BLF Unit and/or an optional Modem Data Port Module. If a DSS/BLF Unit is not installed, the module's RS-232-C port (4800-baud) can be used to connect an SMDR/error message output device or a personal computer for programming the system database.
- Modem Data Port Modules (MDPMs) for connecting modem-equipped data devices or single-line sets.
- SMDR/error message output device(s) must not have cables longer than 50 feet (15 meters). (See page 2–20 for specifications.)
- System battery back-up — uninterruptable power supply or standby power supply. (Refer to page 2–23 for specifications.)
- OPX repeater(s) for amplifying voice volume levels, if necessary. (Refer to page 2–16 for specifications.)
- External music source.
- External paging speakers and amplifier(s). (Refer to the NOTE and CAUTION on page 2–5.)
- Facsimile machine. (Refer to page 2–23.)
- Wall-mount shelf. (Refer to REPLACEMENT PARTS beginning on page 8–1.)

4. STATION CABLING AND TERMINATIONS

4.1 Floor plans should be developed to aid in proper station cabling in a star (home run) configuration from the KSU. The cables are run from the station locations to the station blocks at the MDF. Refer to page 2–3 for cabling requirements.

4.2 Both ends of each cable should be labeled with the station's circuit number (hardware address). The circuit number (XX.YY.ZZ) designates the station card's position in the KSU (XX = 01–03), the circuit position on the card (YY = 01–08), and whether the circuit is a multi-purpose circuit (ZZ = 01–03; see next paragraph). For example, circuit number 02.06.01 identifies the sixth circuit on the card installed in slot number two.

4.3 In some circumstances, a station circuit can have more than one purpose. For example, two single-line devices can be installed on a single DKSC circuit. The first device is assigned circuit number XX.YY.01 and the second device is assigned circuit number XX.YY.02. Similarly, a keyset's PC Data Port Module and Modem Data Port Module can be assigned their own circuit numbers. In this case, the keyset is assigned circuit number XX.YY.01, the first data port is assigned number XX.YY.02, and the second data port is assigned number XX.YY.03. For more information, refer to page 6–213.

4.4 When the system is first powered up, the default configuration is used to assign extension numbers to the station circuits. Card slots 1–2 are considered DKSCs and slots 4–5 are LSCs. Changes to the default configuration can be made through database programming. Refer to PROGRAMMING, page 6–210, for more information.

4.5 The default system assigns extension number 100 to station circuit 01.01.01, extension number 101 to station circuit 01.02.01, and so on to match the initial configuration. Circuit 01.01.01 is equipped as an administrator and as the primary attendant's keyset when the system is in the default configuration. Through database programming, the circuits can be assigned 1–5 digit extension numbers. Refer to PROGRAMMING, page 6–75, for more information.

NOTE: DSS/BLF Units do *not* require a DKSC circuit and KSU cabling that is separate from the associated keyset's circuit and cabling. Instead, each unit is connected directly to the keyset (equipped with a PC Data Port Module) and is powered by a separate AC transformer.

A. RUNNING CABLE

4.6 From the MDF location, run industry standard, one-pair (two-conductor) twisted (24AWG, level-1 or

better) cable to keysets, single-line sets, and playback devices. Follow these guidelines:

NOTE: If desired, two- or three-pair twisted cable and four- or six-conductor modular jacks may be used for all station connections. This allows the various types of station instruments to be easily interchanged, if necessary. (If three-pair cable is used, extra terminal blocks and the use of cross-connect wiring techniques are required.)

- Install proper type cable for the application according to the National Electrical Code and local building codes.
- Avoid cable runs parallel to fluorescent light fixtures or AC lines not in conduit. If these obstacles are unavoidable, run the cables across them at right angles.
- Do not run station cables inside electrical conduit already occupied by AC power cable. (To do so is a violation of the National Electrical Code.)
- Do not run cables near equipment with electric motors or through strong magnetic fields, such as those generated by large copy machines, arc welding equipment, heavy motors, etc.
- Do not place station cables where they can be stepped on or where they can be rolled over by office furniture.
- Do not exceed the loop limit measurements (using 24AWG wire) for the station cable lengths as outlined in the table on page 3–16. The resistance values (in ohms) are loop measurements; the distance values (in feet/meters) are the maximum one-way measurements from the KSU.

4.7 Since the Inter-Tel Axxent System utilizes digital voice and data transmission between the keysets and the KSU, there are some additional keyset-only cabling requirements:

- Do not use shielded cable, and do not use cable smaller than 24AWG.
- Do not parallel cables (i.e., do not “double up on the copper”).
- Do not “bridge” or “Y” off the cable to another location.
- Unlike analog keysets, the Inter-Tel Axxent digital keysets do not need to be routed in separate multi-pair cable runs. For example, if using 25-pair cable runs to multiple station locations, it is acceptable to include single-line sets, auxiliary equipment, and trunks in a cable being used for keysets.

**B. TERMINATING THE CABLES AT
STATION LOCATIONS**

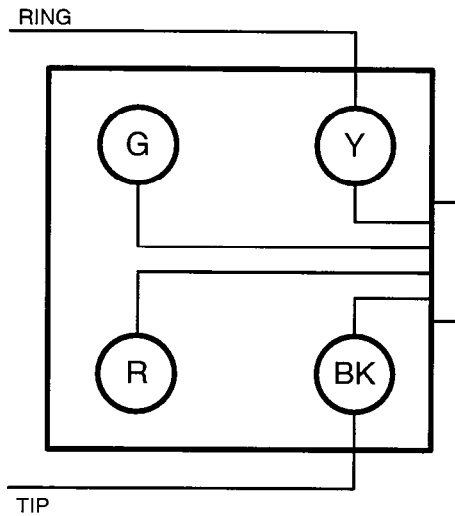
4.8 Terminate the keyset, single-line set, and playback device station cables on four-conductor modular jack assemblies at the station locations. (For exceptions to this, refer to the NOTE following paragraph 4.6 on the previous page.)

4.9 Do not mount the assemblies on the wall at this time; they will be wall mounted later when the station instruments are installed. Refer to Figure 3-2 below for a wiring diagram.

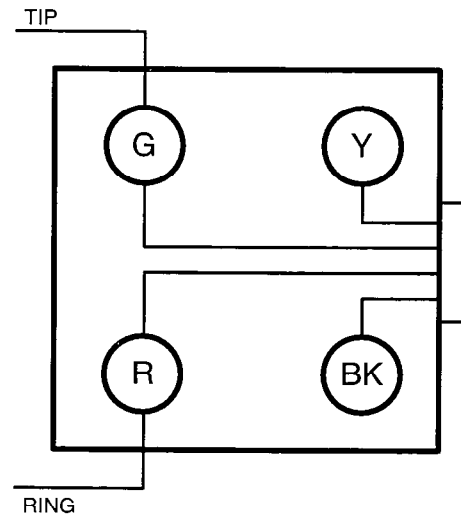
CAUTION

If tip and ring are reversed when installing a keyset, the keyset will not function.

FIGURE 3-2. STATION MODULAR JACK ASSEMBLY WIRING



**FOR KEYSETS AND SINGLE-
LINE ADAPTERS**



**FOR SINGLE-LINE SETS
AND PLAYBACK DEVICES**

C. ASSEMBLING THE MAIN DISTRIBUTION FRAME (MDF) BACKBOARD

4.10 The MDF is the point at which the station instruments, trunks, and auxiliary system equipment are connected to the circuit cards in the KSU. It is extremely important that the connections be made carefully and accurately.

NOTE: To simplify the MDF installation instructions, this manual outlines basic one block-to-one card installation using bridging clips. However, it is quite acceptable, and in some situations more functional, to use additional blocks and then cross connect between them.

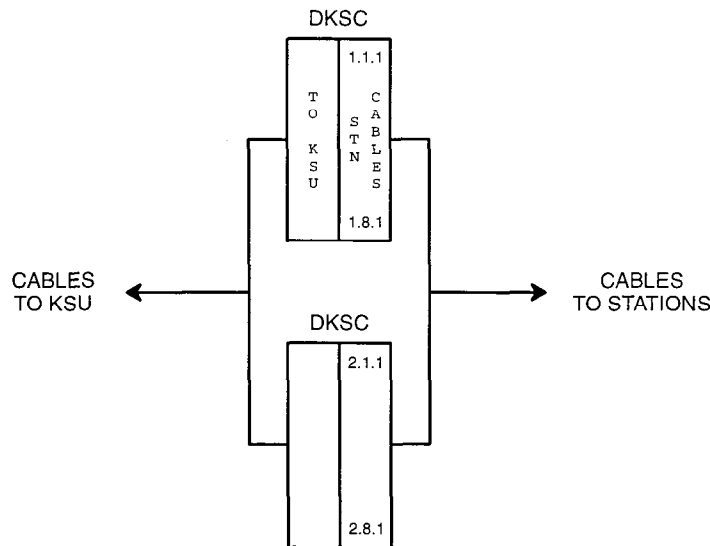
4.11 Assemble the MDF as follows:

- (1) Mount at least a 4 × 6-foot (1.2 × 1.8-meter), ¾-inch plywood backboard at the MDF location. (Depending on the number of stations and trunks to be installed, a larger backboard may be necessary.)
- (2) Attach the 66M1-50-type terminal blocks to the plywood backboard. Refer to Figure 3-3 below for a sample MDF block layout and cable assignments. Blocks include:

- Up to two blocks for connecting station cables and the 25-pair cables for the Digital Keyset Cards (DKSCs).

NOTE: If three-pair cable is used, extra terminal blocks and the use of cross-connect wiring techniques are required.

FIGURE 3-3. SAMPLE MDF STATION BLOCK LAYOUT AND CABLE ASSIGNMENTS



- (3) *If installing any single-line devices or DID trunks*, attach the necessary SLAs and corresponding modular jack assemblies to the plywood backboard. See Figure 3-6 on page 3-14 and Figure 3-11 on page 3-21 for complete diagrams of the SLA setup.

The SLA can be placed horizontally on a table or it can be wall-mounted using the two L-shaped brackets that accompany the unit, as described below:

- a. Remove the two screws on one side of the unit and use them to attach the two L-shaped

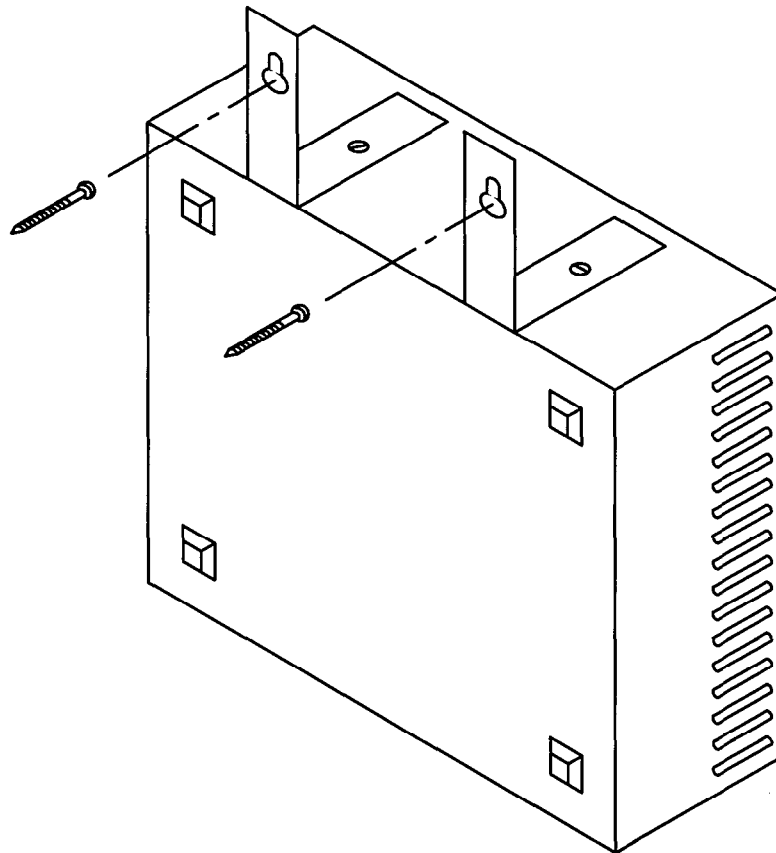
wall mounting brackets (see Figure 3-4 below).

- b. Position the SLA on the MDF backboard and mark the location of the mounting screw holes on the wall. Set the SLA aside.
- c. Drive a screw into the center of each mounting hole marking, allowing the heads of the screws to protrude slightly.

NOTE: Use screws of sufficient strength to support the SLA.

- d. Hang the SLA on its screws. If necessary, adjust the screws to ensure that the SLA is held firmly in place.

FIGURE 3-4. WALL MOUNTING THE SLA



D. CONNECTING STATION CABLES TO THE MDF

4.12 Keysets are connected directly to Digital Keypad Cards (DKSCs). Single-line sets and playback devices are connected to Single-Line Adapters (SLAs), which are in turn connected to available DKSC circuits.

NOTE: Besides single-line sets, playback devices, and off-premises extensions, SLAs can also be used to install DID trunks. Any combination using the two circuits on the SLA is possible. Refer to pages 3-18 and 3-21 for DID trunk installation instructions.

4.13 After the station cables are run, connect them and the 25-pair cables to the DKSC station blocks on the MDF as follows:

- (1) Ensure that both ends of each station cable are labeled with the circuit number of the associated station instrument.
- (2) Terminate each station cable on the *right* side of the corresponding station block. Refer to Figures 3-5 through 3-7 on the following pages for station cable terminations.

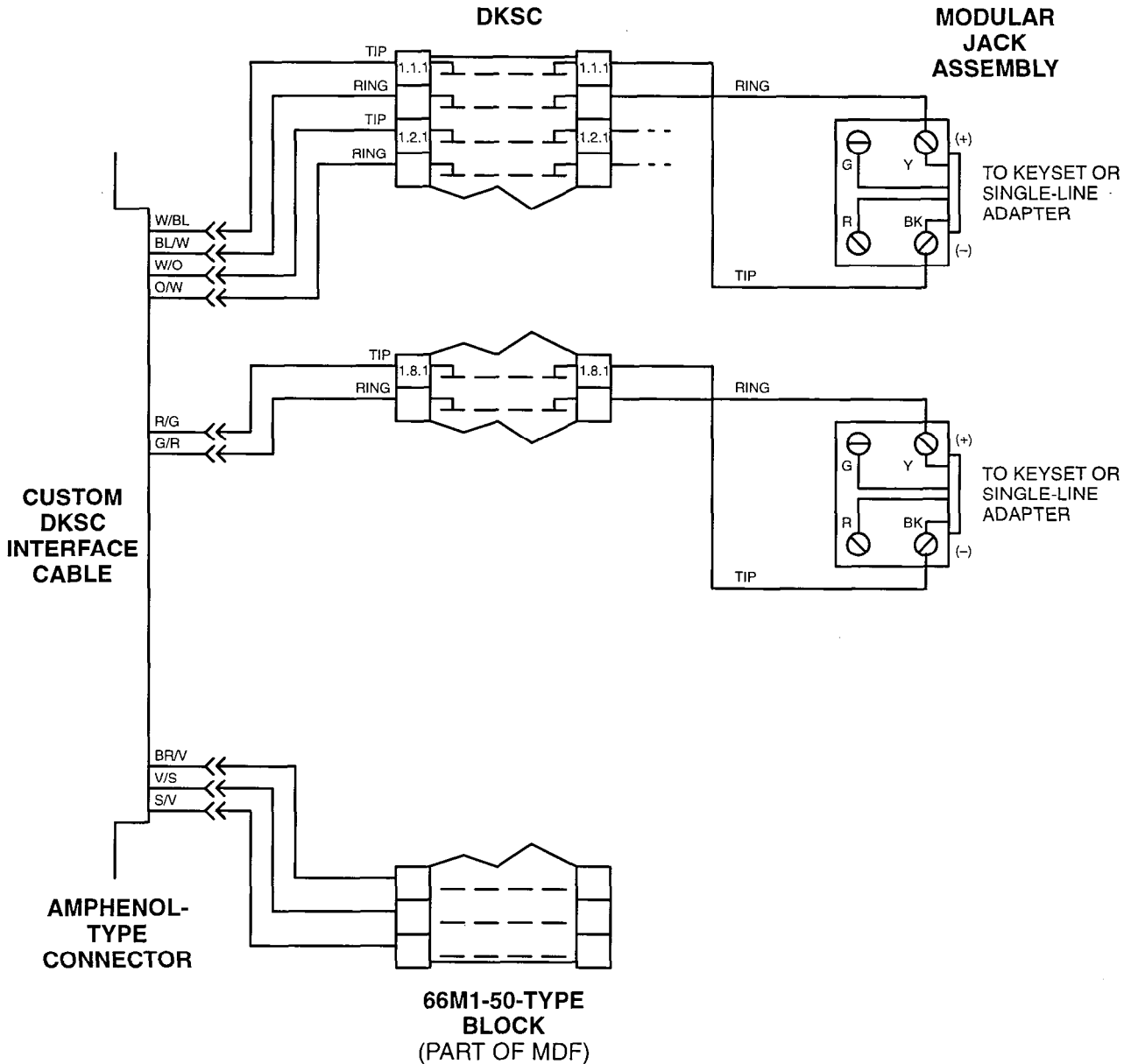
NOTE: For simplicity, the figures show station instruments being installed using one-pair cable and four-conductor modular jacks. Of course, if three-pair cable and six-conductor modular jacks are used instead, extra terminal blocks and the use of cross-connect wiring techniques are required.

- (3) Using enough 25-pair cable to run from each block to each station card in the KSU, make the termination cables. Attach a 50-pin female amphenol-type connector to one end of each cable. Label each connector and cable end with the appropriate slot number (for example, SLOT-2).

NOTE: Each 50-pin female connector will later be attached to the appropriate station card via a custom DKSC interface cable that converts the DB25 connector on the card to a standard 50-pin male amphenol-type connector.

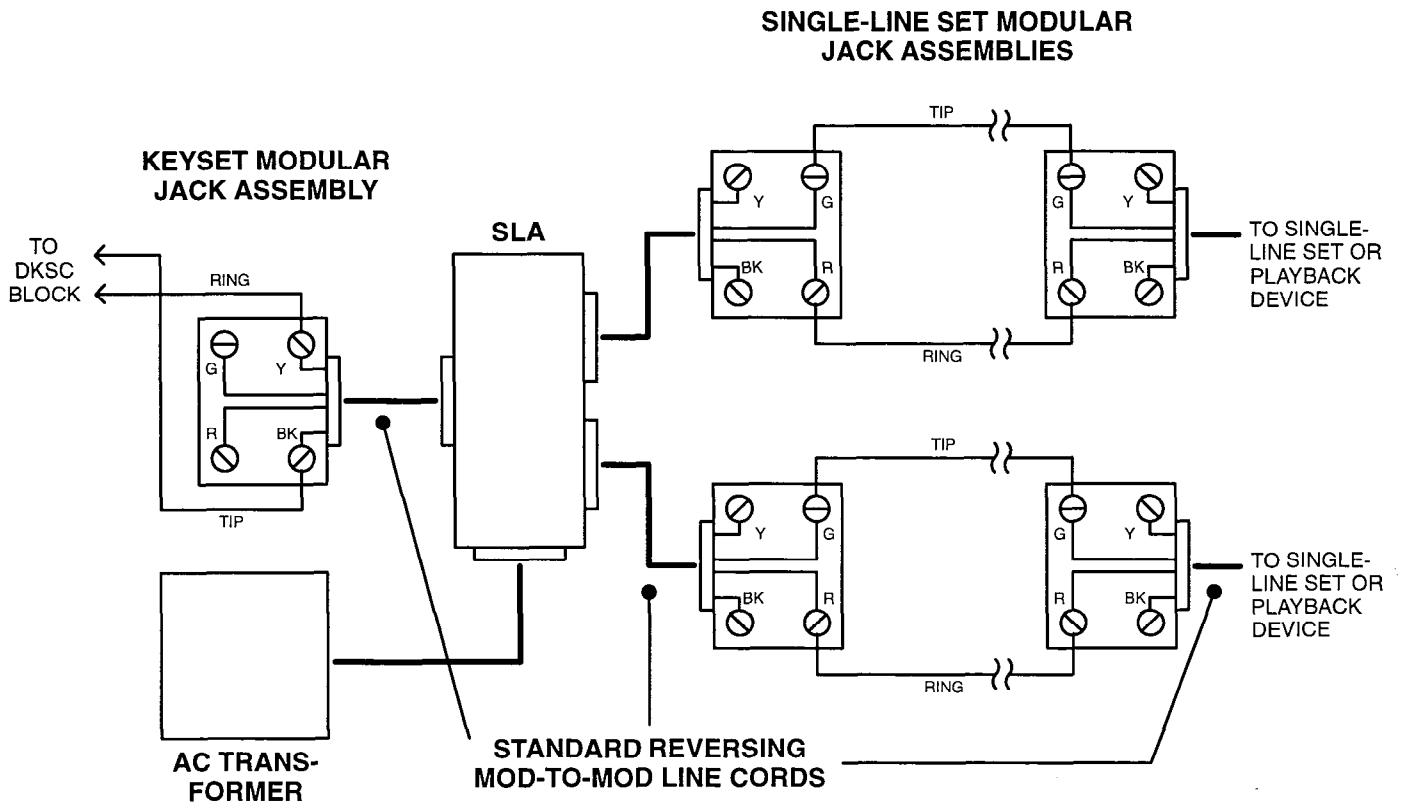
- (4) Terminate the other end of each 25-pair cable on the *left* side of the corresponding station block.
- (5) *DO NOT* attach bridging clips until the loop resistance tests have been performed (as described on page 3-16).

FIGURE 3-5. DKSC BLOCK CABLE TERMINATIONS FOR KEYSETS



NOTE: For simplicity, this figure shows keysets being installed using one-pair cable and four-conductor modular jacks. Of course, if two-pair cable or three-pair cable is used instead, extra terminal blocks and the use of cross-connect wiring techniques are required. Note that tip and ring are connected to the *second pair* of terminals (black and yellow) on the modular jack.

FIGURE 3-6. SLA TERMINATIONS FOR SINGLE-LINE SETS



NOTE: If a single-line set or playback device is located near the SLA, it can be plugged directly into the unit.

FIGURE 3-7. STATION CABLE TERMINATIONS ON THE STATION BLOCKS

AMPHENOL NO.	CABLE PAIR	DKSC	CIRCUIT NO.*	EXT. NO.*
26	W-BL	TIP	01.01.01	100
1	BL-W	RING		
27	W-O	TIP	01.02.01	101
2	O-W	RING		
28	W-G	TIP	01.03.01	102
3	G-W	RING		
29	W-BR	TIP	01.04.01	103
4	BR-W	RING		
30	W-S	TIP	01.05.01	104
5	S-W	RING		
31	R-BL	TIP	01.06.01	105
6	BL-R	RING		
32	R-O	TIP	01.07.01	106
7	O-R	RING		
33	R-G	TIP	01.08.01	107
8	G-R	RING		
34	R-BR	NOT USED		
9	BR-R	NOT USED		
35	R-S	NOT USED		
10	S-R	NOT USED		
36	BK-BL	NOT USED		
11	BL-BK	NOT USED		
37	BK-O	NOT USED		
12	O-BK	NOT USED		
38	BK-G	NOT USED		
13	G-BK	NOT USED		
39	BK-BR	NOT USED		
14	BR-BK	NOT USED		
40	BK-S	NOT USED		
15	S-BK	NOT USED		
41	Y-BL	NOT USED		
16	BL-Y	NOT USED		
42	Y-O	NOT USED		
17	O-Y	NOT USED		
43	Y-G	NOT USED		
18	G-Y	NOT USED		
44	Y-BR	NOT USED		
19	BR-Y	NOT USED		
45	Y-S	NOT USED		
20	S-Y	NOT USED		
46	V-BL	NOT USED		
21	BL-V	NOT USED		
47	V-O	NOT USED		
22	O-V	NOT USED		
48	V-G	NOT USED		
23	G-V	NOT USED		
49	V-BR	NOT USED		
24	BR-V	NOT USED		
50	V-S	NOT USED		
25	S-V	NOT USED		

* The station circuit numbers shown above are for the first station card installed in the KSU. The extension numbers are the default numbers assigned to those circuits.

E. STATION LOOP RESISTANCE TEST

4.14 Perform the loop resistance test for each station cable individually.

- (1) Ensure that bridging clips have not been installed on the station blocks and that the station instrument is not connected to the modular jack assembly.
- (2) Place a short across the BLACK and YELLOW wires (keysets) or RED and GREEN wires (single-line sets) on the modular jack assembly.
- (3) At the MDF, measure the resistance across the TIP and RING wires on the *right* (station) side of the station block. The reading should not exceed the limits (for 24AWG, level-1 or better wire)

listed in the chart below. The resistance values (in ohms) indicate loop measurements; the distance values (in feet/meters) indicate the maximum one-way measurements from the KSU. If necessary, longer loop lengths can be achieved by using a heavier gauge cable, such as 22AWG.

NOTE: Excessive and/or improperly made connections increase the resistance of a cable, which reduces the allowable cable run length.

- (4) Remove the short after the test is complete.
- (5) Repeat this test for each station cable.
- (6) Install bridging clips on the station blocks to complete the cable connections.

<u>TYPE OF INSTRUMENT</u>	<u>LOOP LIMITS</u>
From KSU to Digital Keysets (Basic, Standard, and Executive; display and non-display) . . .	51 ohms/1000 ft. (305 m.)
From KSU to Digital Keysets with attached PC and Modem Data Port Modules	25 ohms/525 ft. (160 m.)
From Modem Data Port Modules to single-line sets	195 ohms/3800 ft. (1158 m.)
From KSU to Single-Line Adapters (SLAs)	128 ohms/2500 ft. (762 m.)
From SLAs to single-line sets or playback devices	800 ohms/15560 ft. (4742 m.)

NOTE: Do not use shielded cable. Longer loop lengths can be achieved by using heavier gauge cable, such as 22AWG. (For additional station cabling requirements, refer to page 3-8.)

**F. CONNECTING OPTIONAL
OFF-PREMISES EXTENSIONS (OPXs)**

4.15 Off-premises extensions are remote single-line DTMF sets that are connected to the Inter-Tel Axxent System through telephone company OPX circuits (or customer-provided circuits). The circuits are connected to Single-Line Adapter (SLA) circuits, which are in turn connected to available Digital Keypad Card (DKSC) circuits.

NOTE: SLAs do not support *visual* message waiting applications. If single-line sets with message waiting lamps are installed on SLAs, the lamps will not function. However, single-line sets can be configured in database programming to receive *audible* message waiting indication tones.

4.16 Off-premises station instruments must be AC ringer-equipped. The SLA's onboard high-voltage ringing adapter (HVRA) provides isolation from the telephone company OPX circuits as required by FCC regulations.

4.17 Each SLA can support up to two off-premises extensions. (On premises, SLA circuits can be used for installing AC-ringing single-line sets, playback devices, etc.)

4.18 In certain off-premises applications, voice volume levels may not be acceptable. This degradation in

voice volume is due to the natural voice frequency range limitations of the telephone company or customer-provided circuit. To increase the voice frequency range, installation of a two-wire, negative impedance repeater unit is recommended. (Refer to page 2-16 for specifications.)

4.19 The repeater unit is installed at the MDF between the SLA and the cabling to the off-premises single-line station. For proper installation with the Inter-Tel Axxent System, the following are connected to the appropriate "pins" on the repeater unit (refer to the manufacturer's instructions for proper pin locations): -Battery (-24 to -56VDC), Ground, System Tip, System Ring, OPX Tip, and OPX Ring. Information on operating and adjusting the repeater unit is included with the product.

4.20 Install the off-premises extensions as follows (refer to Figure 3-6 on page 3-14):

- (1) At the MDF, terminate each telephone company OPX circuit (or customer-provided circuit) on the desired SLA circuit.
- (2) At the off-premises location, terminate each telephone company OPX circuit (or customer-provided circuit) on the appropriate single-line set modular jack assembly.

5. TERMINATING THE CO TRUNKS AT THE MDF

5.1 The installation procedure used to terminate CO trunks at the MDF is dependent on the type of termination used by the telephone company and how close it is to the MDF. The CO trunks may be terminated on RJ-type jacks or on an RJ-type block.

5.2 Follow one of the three CO termination methods (A, B, or C) outlined on the following pages.

IMPORTANT NOTES:

- The first CO jack on the first Loop Start Card (LSC) connects trunks 1 and 2, while the second CO jack connects trunks 3 and 4. The first CO jack on the second LSC connects trunks 5 and 6, while the second CO jack connects trunks 7 and 8. Trunks are normally connected in this sequence. For example, if three trunks are installed, trunks 1 and 2 would terminate on the first CO jack, and trunk 3 would terminate on the second CO jack.
- For additional lightning protection, install gas discharge tubes with silicon avalanche suppressors to ground on each CO, DID, and OPX trunk. This must be done external to the system. Each gas discharge tube is installed directly between the telephone company termination and the CO/DID/OPX modular jack assemblies mounted next to the KSU. This protection should give energy absorption and filter low-level surge potentials on the CO/DID/OPX trunks. If CO termination method A (direct KSU connection) is used, gas discharge tubes cannot be installed; use method B instead. Also, in areas with frequent occurrences of lightning, it is recommended that the cable between the telephone company termination and the gas discharge tubes be at least 75 feet long (the cable may be coiled up if desired).
- *If necessary:* Using standard electrical tape, tape two ferrite split beads (part no. 808.1195) around the mod-to-mod line cords just below where they connect to the Loop Start Card(s). See Figure 3-8 on page 3-19 for an example of ferrite bead installation.

NOTE: Ferrite beads may be necessary to help reduce electromagnetic interference (EMI) and radio frequency interference (RFI).

A. CO TRUNKS TERMINATED ON RJ-TYPE JACKS NEAR THE MDF

5.3 Before using this procedure, read the *IMPORTANT NOTES* following paragraph 5.2. Plug one end of a two-pair mod-to-mod line cord into each telephone company RJ-type jack. The other end will *later* be plugged into a CO jack on a Loop Start Card in the KSU.

B. CO TRUNKS TERMINATED ON RJ-TYPE JACKS AWAY FROM THE MDF

5.4 Before using this procedure, read the *IMPORTANT NOTES* following paragraph 5.2. Also, refer to Figure 3-8 on the next page for a diagram of the complete layout.

- (1) Mount one four-conductor modular jack assembly next to each telephone company RJ-type jack.
- (2) For each modular jack assembly mounted in step 1, also mount a corresponding four-conductor modular jack assembly on the MDF backboard.
- (3) To connect the modular jack assemblies mounted in steps 1 and 2:
 - a. Run two-pair cable between the corresponding modular jack assemblies.
 - b. Wire each end of the two-pair cables onto their respective modular jack assemblies. Refer to Figure 3-9 on the next page for a diagram of the wiring.
- (4) Plug one end of a two-pair mod-to-mod line cord into each RJ-type jack and plug the other end into the corresponding modular jack assembly beside it.
- (5) At the MDF backboard, plug one end of a two-pair mod-to-mod line cord into each modular jack assembly. The other end will *later* be plugged into a CO jack on a Loop Start Card in the KSU.

FIGURE 3-8. CO TRUNK TERMINATIONS FROM RJ-TYPE JACKS

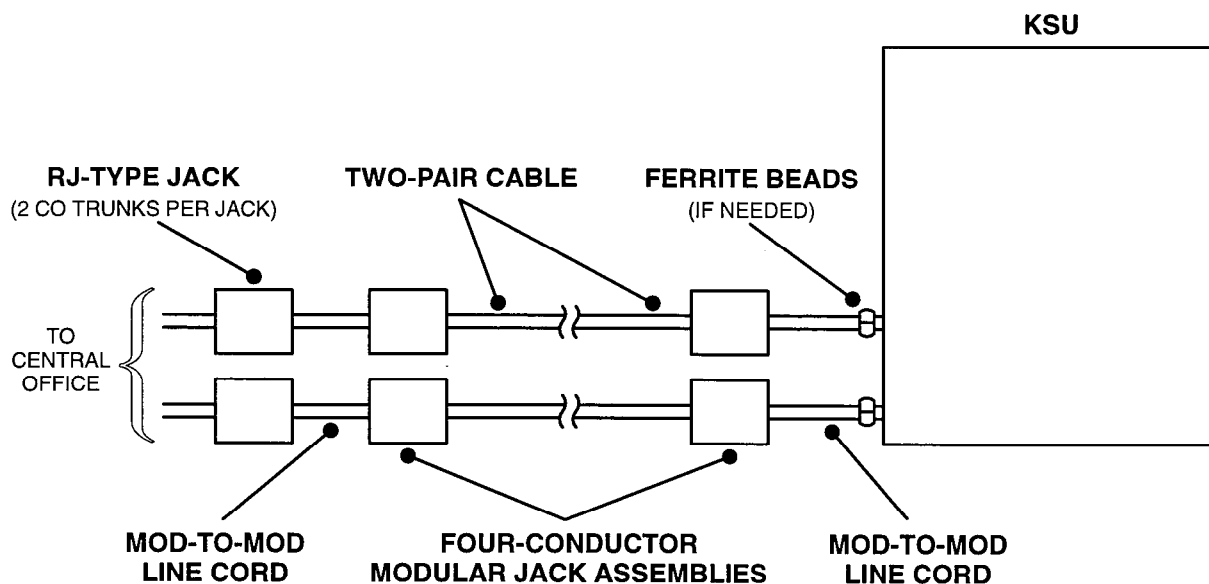
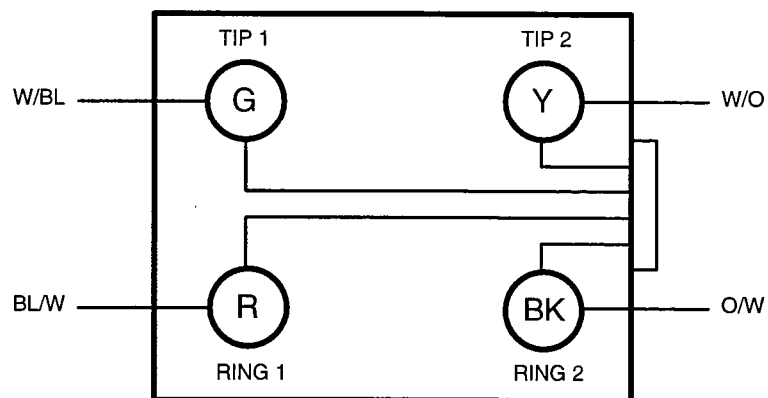


FIGURE 3-9. MODULAR JACK ASSEMBLY WIRING FOR CO TRUNKS

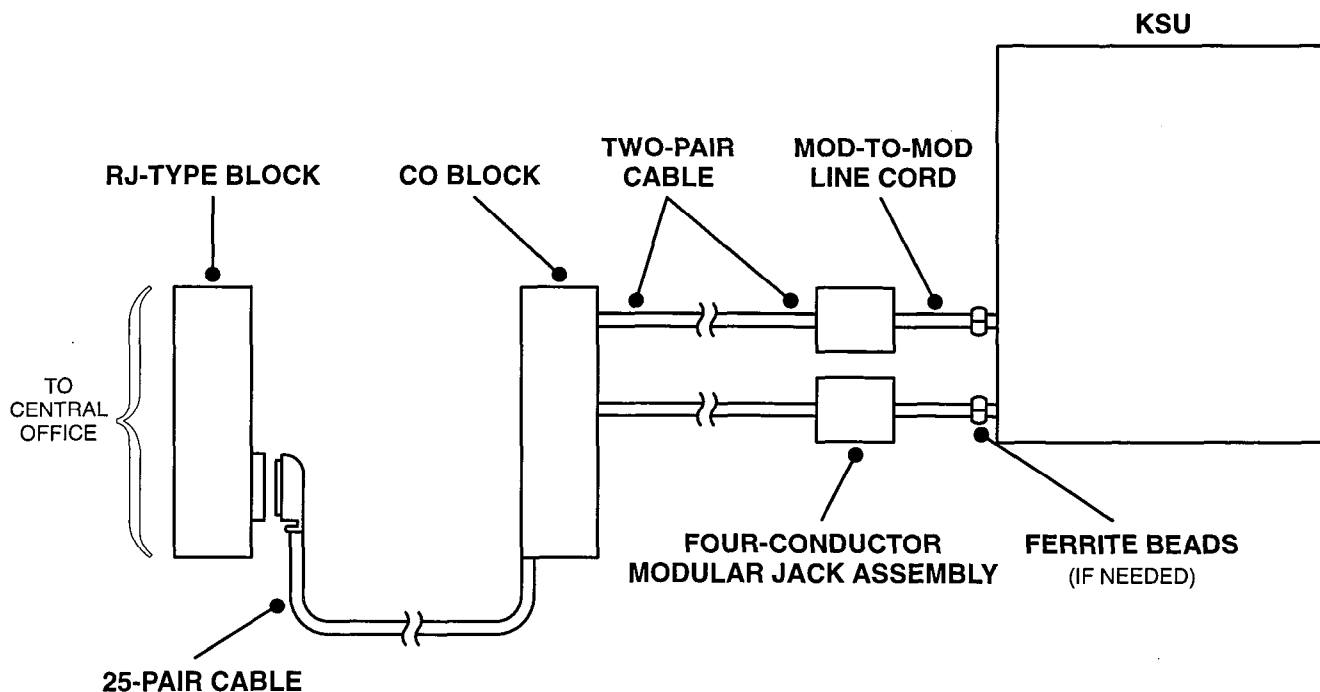


C. CO TRUNKS TERMINATED ON AN RJ-TYPE BLOCK

5.5 Before using this procedure, read the *IMPORTANT NOTES* on page 3-18. Also, refer to Figure 3-10 below for a diagram of the complete layout.

- (1) Mount a CO block (66M1-50-type connecting block) on the MDF backboard.
- (2) For every two CO trunks, mount a four-conductor modular jack assembly on the MDF backboard near the KSU. The modular jack assemblies should be positioned between the CO block (mounted in step 1) and the KSU.
- (3) For each modular jack assembly (mounted in step 2), connect two-pair cable (or cross-connect cable) from it to the CO block as follows:
 - a. Terminate one end of a two-pair cable on each modular jack assembly. Refer to Figure 3-9 on the previous page.
 - b. Terminate the other end of the two-pair cable on the *right* side of the CO block, with CO trunk 1 tip and ring first, then CO trunk 2 tip and ring, and so on.
- (4) Plug one end of a two-pair mod-to-mod line cord into each modular jack assembly (mounted in step 2). The other end will *later* be plugged into a CO jack on a Loop Start Card in the KSU.
- (5) To interface between the CO block and the telephone company RJ-type block:
 - a. Run a 25-pair cable between the CO block and the RJ-type block.
 - b. Terminate the MDF end of the 25-pair cable on the *left* side of the CO block. Install bridging clips to complete the connections.
 - c. On the other end of the 25-pair cable, attach a 50-pin male amphenol-type connector.
 - d. Plug the male connector into the female connector on the RJ-type block.

FIGURE 3-10. CO TRUNK TERMINATIONS FROM AN RJ-TYPE BLOCK



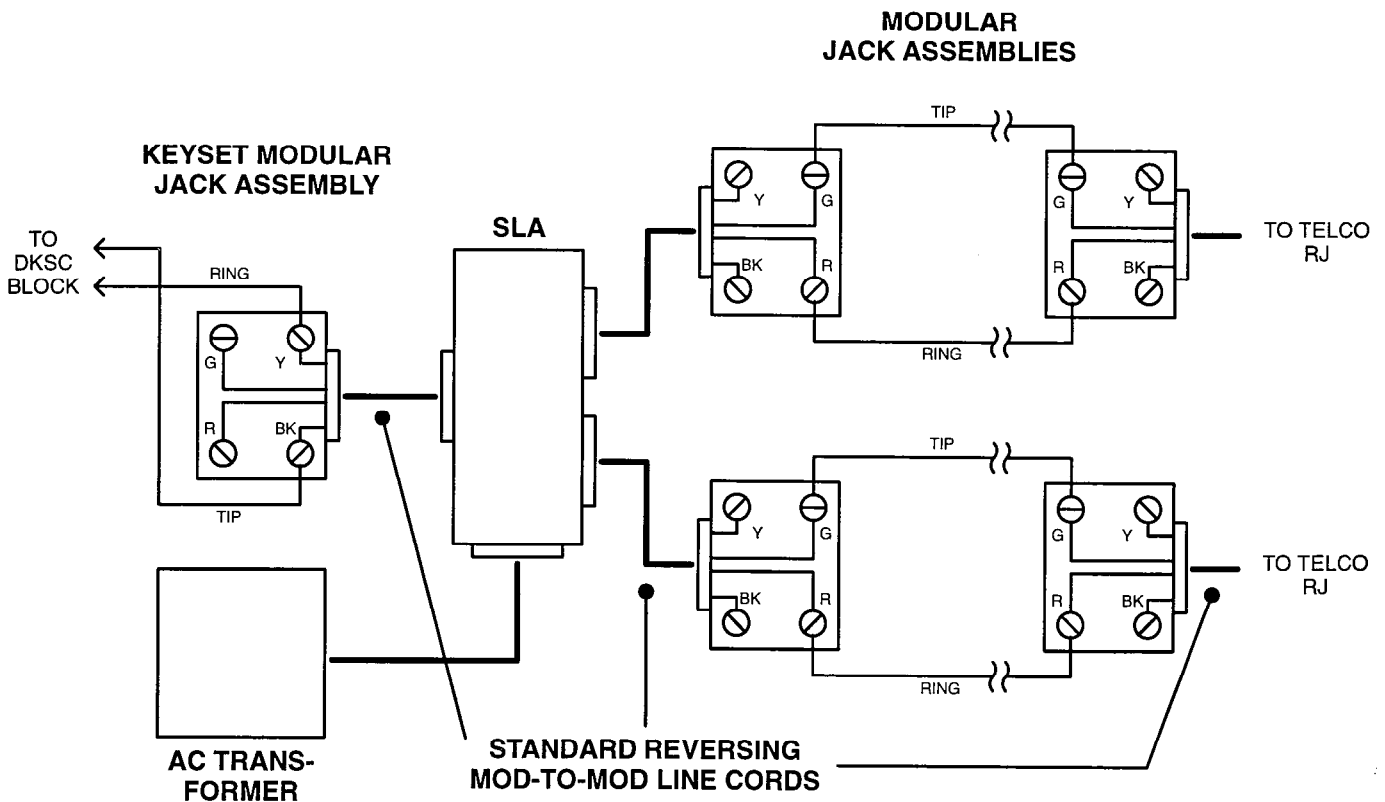
6. TERMINATING THE DID TRUNKS AT THE MDF

6.1 Connect the Direct Inward Dialing (DID) trunks to the Single-Line Adapters as outlined below. Refer to Figure 3-11 below for a diagram.

NOTE: Besides DID trunks, SLAs can also be used to install single-line sets, playback devices, and off-premises stations. Any combination using the two ports on the SLA is possible. Refer to pages 3-12 to 3-15 for station installation instructions.

- (1) Mount one four-conductor modular jack assembly next to each telephone company RJ jack.
- (2) For each modular jack assembly mounted in step 1, also mount a corresponding four-conductor modular jack assembly near the SLA location.
- (3) To connect the modular jack assemblies mounted in steps 1 and 2:
 - a. Run one-pair cable between the corresponding modular jack assemblies.
 - b. Wire each end of the one-pair cables onto their respective modular jack assemblies. Refer to Figure 3-11 below for a diagram of the wiring.
- (4) Plug one end of a two-pair mod-to-mod line cord into each RJ jack and plug the other end into the corresponding modular jack assembly beside it.
- (5) At the MDF backboard, plug one end of a two-pair mod-to-mod line cord into each modular jack assembly. The other end will *later* be plugged into the corresponding DID jack on the SLA.

FIGURE 3-11. SLA TERMINATIONS FOR DID TRUNKS



NOTE: If the telephone company termination is near the SLA, it can be plugged directly into the unit.

7. KEY SERVICE UNIT (KSU) INSTALLATION

A. UNPACK THE EQUIPMENT

7.1 Unpack the equipment and inspect the KSU and all accompanying parts following these guidelines:

- (1) Check the parts against the packing slip and inspect them for damage. If any item is missing or damaged, contact Customer Support immediately.
- (2) Check all optional circuit card assemblies as follows:

NOTE: *The cards contain static-sensitive components. Handle all cards by the edges only; however, avoid touching the gold contacts on the side of the card that plugs into the KSU. (For additional precautionary information, refer to the CAUTION on page 3-28.)*

- a. Check each card to ensure there is no shipping foam or tape attached.
- b. Inspect each card for shorted components.
- c. Return all cards to their protective bags until they are ready to be installed in the KSU.

B. CHECK THE KSU PRE-ASSEMBLY

NOTICE

Although Inter-Tel makes every effort to ensure secure packaging, it is possible that during shipment one or more of the circuit cards inside the KSU could work loose. Before installing the KSU, remove the cover and check to see that all of the circuit cards (including the Memory Card in slot J20) are securely seated in their appropriate slots on the CPU Motherboard, as outlined in this section of the manual. If the cards are not securely seated, the KSU will not operate properly and could, in fact, be damaged when power is turned on.

7.2 The KSU is generally shipped as a fully assembled 4x8 system. It comes equipped with a power supply, a CPU Motherboard, a Loop Start Card (for installing up to four CO trunks), a Digital Keypad Card (for installing up to eight keysets), a Memory Card, various cable/connector assemblies, and an installation quick-reference label.

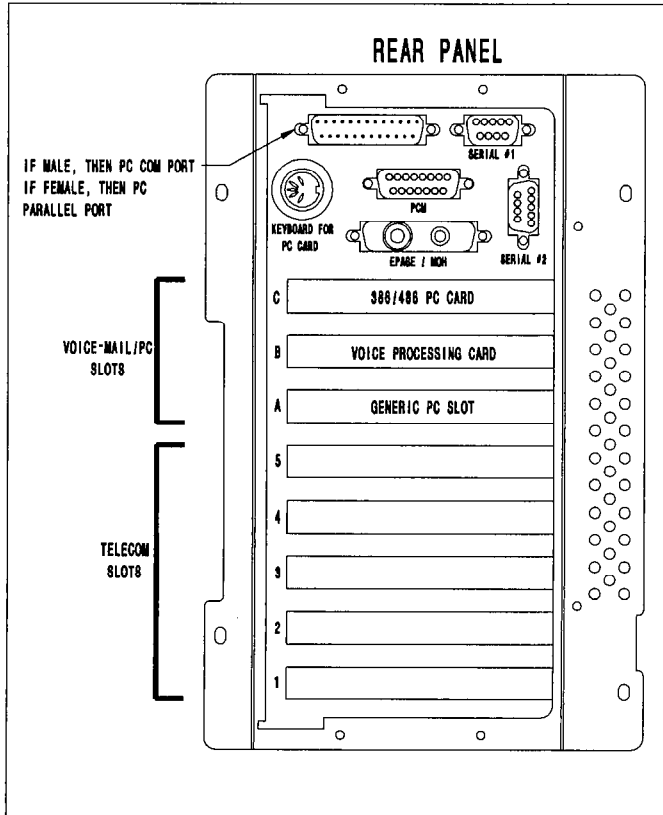
7.3 If desired, the KSU can also be shipped with the optional Axxent Talk integrated voice processing system hardware and software already installed. The Axxent Talk hardware includes a PC CPU Card, a 4-port Voice Processing Card, a hard disk drive, a floppy disk drive, and various cable/connector assemblies.

7.4 To ensure that none of the items have been damaged or have worked loose during shipment, follow these steps.

- (1) Remove the four screws securing the cover to the rear of the KSU.
- (2) Slide the cover toward the rear of the KSU until the front tabs on the cover are released from the chassis. Lift the cover off and set it aside.
- (3) Check to see that the CPU Motherboard is securely attached to the chassis wall on the inside of the KSU. For a drawing of the CPU Motherboard, see Figure 3-15 on page 3-30.
- (4) Check to see that the power supply unit is securely installed in the top of the KSU chassis.
- (5) Ensure that all cables/wires are securely attached to their appropriate connectors. For example, the wires coming from the reset switch and the LED indicators on the front of the KSU should be attached to connectors J14 and J15 on the CPU Motherboard, as indicated by the silkscreen on the board and the label on KSU chassis.
- (6) Check to see that all telecom cards and voice processing cards (if installed) are securely seated in their appropriate slots on the CPU Motherboard. (See the NOTICE at the start of this section.)
- (7) **DO NOT** plug in the system AC power cable until the power supply electrical test, as outlined on page 3-25, has been performed.
- (8) Ground the system according to the instructions on page 3-24.
- (9) Position the KSU near the MDF backboard.

NOTE: The KSU can be placed on a table or other secure horizontal surface, or it can be mounted on the wall using the optional PC wall mount shelf (part no. 691.3109). Instructions are included with the shelf.

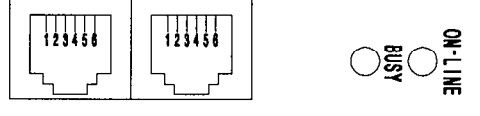
- (10) *If desired*, attach the installation quick-reference label (part no. 809.1811) included with the system to the cover on the KSU or to the MDF backboard. See Figure 3-12 on the following page for a sample copy of the label.



FRONT-PANEL LEDs

GREEN - CPU ACTIVE
RED - DATABASE ERROR/DEFAULT DATABASE

LOOP START CARD (LSC) RJ14C CONNECTORS



- | | |
|------------|------------|
| 1 - NC | 1 - NC |
| 2 - TIP 4 | 2 - TIP 2 |
| 3 - RING 3 | 3 - RING 1 |
| 4 - TIP 3 | 4 - TIP 1 |
| 5 - RING 4 | 5 - RING 2 |
| 6 - NC | 6 - NC |



CAI

TURN OFF POW
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USE ONLY THE
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(1/T P/N 812
UP THE KEYS

WHEN INSTALL
BOARDS, CABL
THE FOLLOWIN

TURN POWE
INSERT OR
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OBSERVE C
INSTALLIN

STATIC SE
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GROUNDING
ANY ITEMS

FAILURE TO O
PRECAUTIONS
THE WARRANTY

RS-232 INFORMATION

PC COM PORTS ON 386/486 PC CARD ARE D-SUB, MALE CONNECTORS CONFIGURED AS DTE DEVICES.
SERIAL #1 AND SERIAL #2 ARE D-SUB, 9-PIN, FEMALE CONNECTORS CONFIGURED AS DCE DEVICES.

SERIAL #1 AND SERIAL #2 PIN DEFINITIONS

PIN #	DESCRIPTION	DCE DIRECTION	COMMENTS
1	DATA CARRIER DETECT (DCD)	OUTPUT	INTERNALLY TIED TO +12V THR
2	DATA	OUTPUT	
3	DATA	INPUT	
4	DATA TERMINAL READY (DTR)	INPUT	NOT USED, INTERNALLY TIED TO GROU
5	GROUND		
6	DATA SET READY (DSR)	OUTPUT	INTERNALLY TIED TO +12V THR
7	HARDWARE HANDSHAKE	INPUT	
8	HARDWARE HANDSHAKE	OUTPUT	
9	RING INDICATOR (RI)	OUTPUT	INTERNALLY TIED TO -12V THR

CARD SLOT DESIGNATIONS

CARD TYPE	TELECOM		VOICE-MAIL/PC
	1 - 3	4 - 5	A - C
DKSC			
LSC			
386/486 PC CARD			
VOICE PROC.			

ALLOWED

NOT ALLOWED

Grounding Requirements

7.5 The KSU must be plugged into a properly grounded AC power source. (See page 3-5 for additional AC power requirements.) *DO NOT* defeat (or leave floating) the ground wire in the AC power cord.

7.6 In addition, all optional Single-Line Adapters, trunk gas discharge tubes, and UPS/SPS battery compartments that are used must be properly grounded to the KSU's AC outlet. Inter-Tel's Factored Products division sells a surge/spike protector (model DTK-3GTP) that has a built-in ground lug just for this purpose.

7.7 The grounding wire should be 10AWG or larger and should not exceed 25 feet (7.5 meters) to help provide RFI/EMI protection, or should not exceed 10 feet (3 meters) to help provide both RFI/EMI and lightning protection.

7.8 To ground the optional system equipment (see Figure 3-13 below):

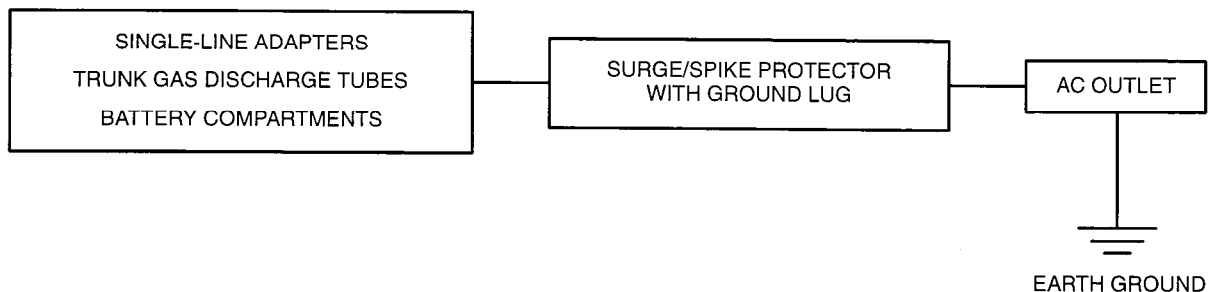
- (1) Use a surge/spike protector with a built-in ground lug and connect it to:

- a. The ground lug (indicated by the symbol ⊕) on each Single-Line Adapter, if used.
- b. Trunk gas discharge tubes, if used.
- c. Battery compartments, if used.

7.9 If AC power-related problems appear on the system while in operation, one of the following three methods can be used to test the ground.

- Use a digital multimeter to measure the difference of potential between the KSU chassis and the power neutral, and between the KSU chassis and the third wire ground. If the voltage measurement exceeds 0.5V, noise may develop on the system. If this occurs, call an electrician.
- Use a Megger to test the AC ground wire. (A Megger should be available through the local power company.) The reading should be 5 ohms or less.
- Unplug the AC power cord from the outlet and insert a ground isolation plug into the outlet. Plug the AC power cord into the ground isolation plug. If the problem ceases, call an electrician. When finished, remove the ground isolation plug to restore ground protection.

FIGURE 3-13. OPTIONAL EQUIPMENT GROUNDING



C. PERFORM THE POWER SUPPLY ELECTRICAL TEST

7.10 Perform the following electrical check on the power supply:

- (1) Ensure that the system AC power cable is not plugged in and the AC POWER switch on the front of the KSU is OFF.
- (2) Plug the recommended surge/spike protector provided into a 105–125VAC, 57–63Hz, 15A, single-phase commercial power source.

NOTE: This *MUST* be a properly grounded isolated, dedicated circuit. *DO NOT* use an extension cord when installing the power supply. Also, *DO NOT* plug any other equipment into the same AC outlet.

- (3) Plug the system AC power cable into the surge/spike protector and turn ON the AC POWER switch.
- (4) Observe the LEDs on the front of the KSU. The green LED (which indicates main processor activity) should be lit solid. The red LED (which indicates database errors) may be either lit or unlit at this time.

<u>NAME</u>	<u>CORRECT INDICATION</u>
CPU ACTIVE	Lit (Green)
DATABASE ERROR	Off* (Red)

* When a new system is installed, the DATABASE ERROR LED remains lit until the system database has been programmed.

- (5) Referring to Figure 3–15 on page 3–30, measure the following system voltages on the CPU Motherboard. A digital voltmeter of $\pm 0.5\%$ accuracy is required. Insert the “common” voltmeter probe into the ground point and insert the other probe into the desired voltage test point. The measurements should be within the limits listed in the following chart.

<u>VOLTAGE</u>	<u>TOLERANCE</u>
–5VDC	$\pm 5\%$
+5VDC	$\pm 5\%$
–12VDC	$\pm 5\%$
+12VDC	$\pm 5\%$


- (6) *If the voltages are within the specified limits, turn OFF the AC POWER switch and proceed to the next section.*

If voltage measurements are not within the specified limits, turn OFF the AC POWER switch and replace the defective power supply unit as outlined on the following page.

CAUTION
DO NOT attempt to adjust the power supply voltages. Damage caused by unauthorized voltage adjustment will not be covered by the warranty.

**D. REPLACING THE POWER SUPPLY UNIT,
IF NECESSARY**

CAUTION



HIGH VOLTAGE. When the system power is turned on, the power supply unit contains 110VAC. Before inserting or removing the power supply unit, make sure that the AC POWER switch has been turned OFF for *at least five minutes*. Failure to allow the high voltage to dissipate properly could cause bodily injury.

7.11 The KSU is shipped with the power supply unit already installed. If the power supply fails, replace the unit as follows (see Figure 3-14 on the following page):

- (1) Unpack the new power supply unit. (There may be four hex/Phillips-head screws included with the unit.)

CAUTION

Use only an Inter-Tel-approved unit. Using a non-approved power supply unit voids the system warranty and could cause unreliable system operation.

- (2) Turn OFF the AC POWER switch on the front of the KSU and wait at least five minutes for the power supply voltage to dissipate.
- (3) Disconnect the AC power cable, station and trunk cables, etc. from the rear of the KSU.
- (4) Place the KSU upright on a table and remove the four screws securing the cover to the rear of the KSU.
- (5) Slide the cover toward the rear of the KSU until the front tabs on the cover are released from the chassis. Lift the cover off and set it aside.
- (6) One at a time, disconnect, tape, and label each of the power supply unit's cables and wires that are connected to the various parts in the KSU.

NOTE: The AC POWER switch on the front of the KSU does not have to be replaced (unless it is defective). However, be sure to note the location of the four wires that are disconnected.

- (7) Using a #2 Phillips-head screwdriver, remove the four screws securing the power supply unit to the rear of the KSU chassis (see Figure 3-14).

- (8) Slide the power supply unit an inch toward the front of the KSU and lift the unit out.
- (9) Lower the new unit onto the power supply shelf in the KSU and slide it back into place.
- (10) Replace the four screws removed in step 7 (or, if desired, use the four new screws that may have been included with the new unit).
- (11) Verify that the 115V/230V selection switch on the power supply unit is set to the 115V setting.
- (12) Using the old power supply unit as a guide, route and reconnect all of the required cables and wires to their proper connectors in the KSU.
- (13) Reconnect the AC power cable to the rear of the KSU.
- (14) Remove all station, trunk, and voice mail circuit cards from the KSU, then perform the power supply electrical test as outlined on page 3-25.

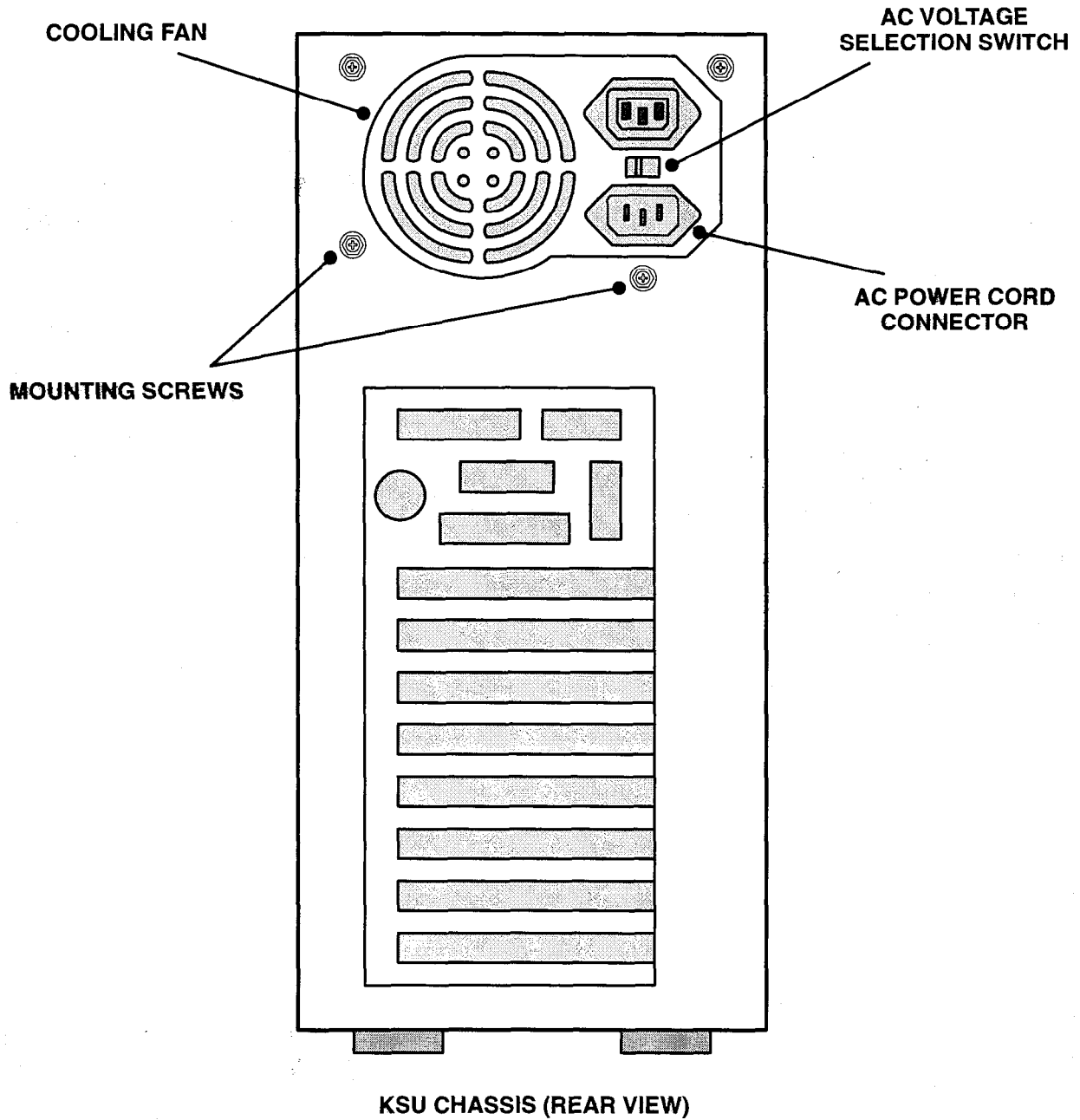
WARNING: The power supply must be properly tested to prevent possible system damage.

- (15) Ensure that the AC power source is properly grounded by performing one of the following tests:
 - Use a digital multimeter to measure the difference of potential between the KSU chassis and the power neutral, and between the KSU chassis and the third wire ground. If the voltage measurement exceeds 0.5V, noise may develop on the system. If this occurs, call an electrician.
 - Use a Megger to test the AC ground wire. (A Megger should be available through the local power company.) The reading should be 5 ohms or less.

NOTE: For additional information on grounding requirements, refer to page 3-24.

- (16) Turn OFF the system AC POWER switch and replace the circuit cards in the KSU.
- (17) Re-attach all station cables, trunk cables, etc. to the back of the KSU.
- (18) Slide the KSU cover back into place, replace the screws, and turn the system AC POWER switch back ON.
- (19) To receive proper credit for the advance replacement, return the defective power supply unit to Inter-Tel.

FIGURE 3-14. POWER SUPPLY UNIT REPLACEMENT



8. CIRCUIT CARD INSTALLATION

CAUTION

The cards and components are static sensitive. Handle the cards by the edges only and keep them in their protective bags until they are to be installed. Do not bend or touch the pins of the components or subject them to a static charge. When working with the cards, use a properly terminated anti-static wrist strap and cover the work surface with the bag that protected the card during shipping. Any static charge (no matter how small the charge) must be discharged from the body before touching the cards or components. *The warranty for this equipment does not cover damage caused by static or mishandling. Cards or components damaged in such a manner will not be replaced.*

A. CHECK THE CPU MOTHERBOARD

8.1 Before attaching the other circuit cards to the CPU Motherboard, perform the following steps. Refer to Figure 3-15 on page 3-30 for an illustration of the card.

- (1) Ensure that all integrated circuits and components on the card are seated securely in their sockets and that no pins are bent.
- (2) Place the BATTERY ENABLE switch (S2) in the ON (top) position to enable database battery back-up.

NOTE: If the switch is placed in the OFF (bottom) position, the battery will not function during a power loss.

- (3) Check to make sure the DSP BOOT-EPROM jumper strap (JP2) is placed in the 27C256/512/010 position (over the left two pins). Also, check to make sure there is no jumper strap installed in location JP4.
- (4) Turn ON the AC POWER switch.
- (5) Measure the database back-up battery voltage. The voltage test points (TP6 to TP5) are located along the top edge of the card. Insert the "common" voltmeter probe into the ground point (TP5) and insert the other probe into the voltage test point (TP6). If the voltage is not greater than 3.2VDC, replace the battery as described in section C on this page.
- (6) Turn OFF the AC POWER switch.

CAUTION

The Inter-Tel Axxent System *does not* support "hot" card insertion. Always turn off the system power before inserting or removing any of the card in the KSU.

- (7) *If desired*, equip the CPU Motherboard with additional DSP resources (as outlined on page 3-31) before installing any additional circuit cards in the KSU.

B. REPLACE THE CPU MOTHERBOARD, IF NECESSARY

8.2 The KSU is shipped with the Inter-Tel Axxent Central Processing Unit (CPU) Motherboard already installed and tested. If there is ever a problem with the CPU Motherboard that cannot be corrected in the field, remove the following items from the system and return the rest of the KSU (including the attached CPU Motherboard) for repair:

- Station cards
- Trunk cards
- Memory Card
- Optional DSP kit parts
- Optional voice processing kit parts

NOTE: The CPU Motherboard itself cannot be replaced in the field. Also, some of the cards and cables inside the KSU may have been spot-glued into place to help prevent them from working loose during shipment. To remove one of these cards or cables from the KSU, first break the glue seal by gently wiggling the connector with a pair of pliers.

C. REPLACE THE DATABASE BACK-UP BATTERY, IF NECESSARY

8.3 The CPU Motherboard is equipped with a 3.6V, 1/2AA, lithium battery (part no. 815.1011) that can support the database and the real-time clock for at least two months of accumulated system down time.

8.4 If the battery's voltage is not greater than 3.2VDC (as measured in step 5 on page 3-28), replace the battery as outlined in the following steps:

- (1) Ensure that the system AC POWER switch is turned OFF.
- (2) *If the Memory Card is already installed*, temporarily remove the Memory Card from the memory module slot (J20) on the CPU Motherboard and set the card aside (see Figure 3-15 on page 3-30).

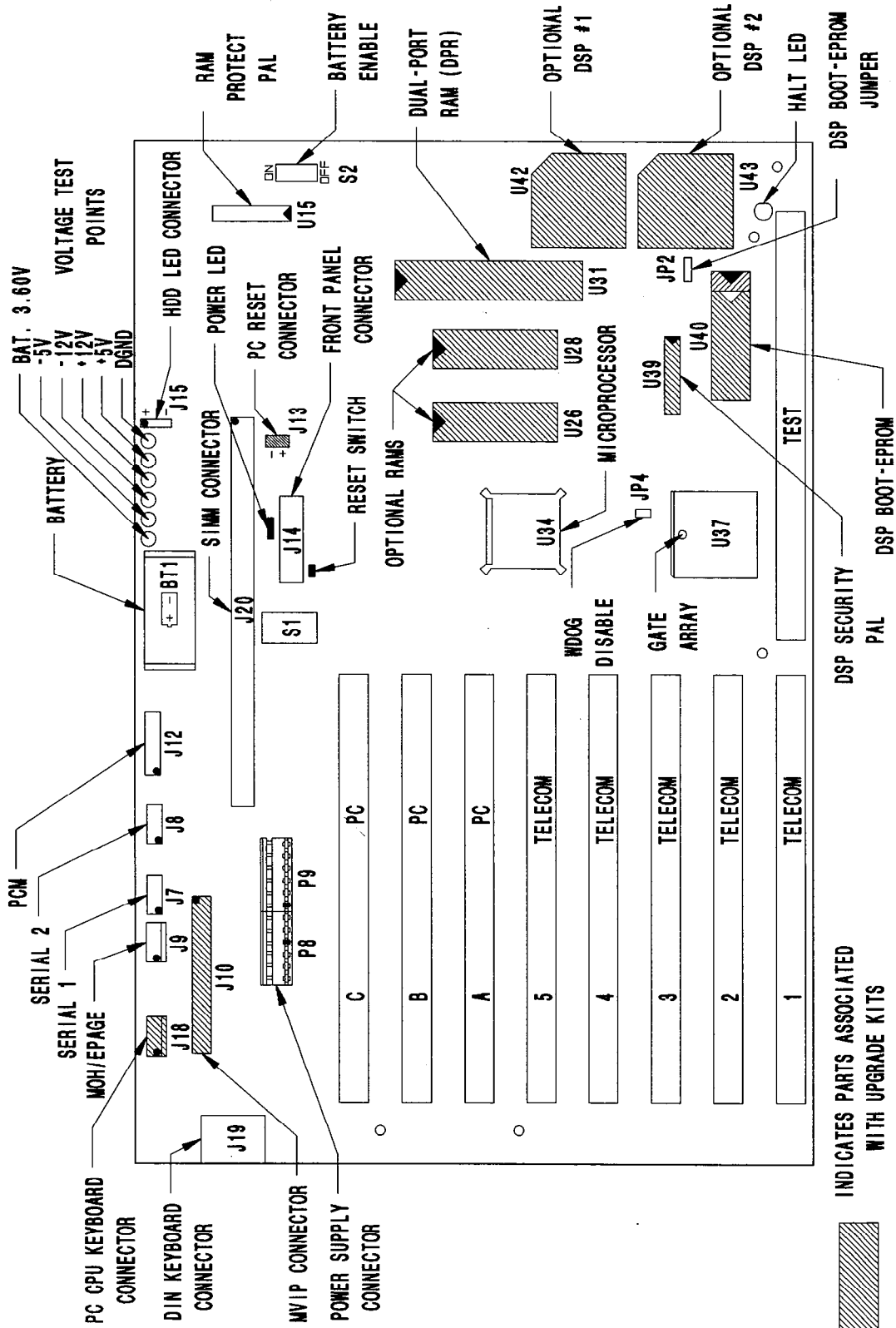
NOTE: To remove the card, spread the two metal clips (one on each side) that hold the card in place.

- (3) On the CPU Motherboard, remove the plastic cover housing the existing battery in location BT1 (see Figure 3-15 on page 3-30).
- (4) Remove the existing battery and dispose of it properly.
- (5) Observing the proper polarity, install the new battery and replace the plastic cover.
- (6) *If the Memory Card was previously removed (step 2),* replace the card in the memory module slot (J20) on the CPU Motherboard.

NOTE: See step 2 on page 3-33 for a list of precautions that should be observed when installing the Memory Card.

- (7) Turn ON the AC POWER switch.
- (8) Measure the database back-up battery voltage. The voltage test points (TP6 to TP5) are located along the top edge of the CPU Motherboard. Insert the "common" voltmeter probe into the ground point (TP5) and insert the other probe into the voltage test point (TP6). If the voltage is not greater than 3.2VDC, try another battery.
- (9) Turn OFF the AC POWER switch.

FIGURE 3-15. CPU MOTHERBOARD



D. INSTALL THE OPTIONAL DSP UPGRADE KITS, IF DESIRED

8.5 If desired, the CPU Motherboard can be equipped with one or two optional DSP upgrade kits to provide additional DSP resources (see page 2–9 for details). For one additional DSP, install upgrade kit part no. 828.1323; for two additional DSPs, also install upgrade kit part no. 828.1324. Although the installation instructions for the two kits are similar, they do vary somewhat.

NOTE: Both kits are required for two additional DSPs.

8.6 To install the first DSP upgrade kit (part no. 828.1323), follow these steps (see Figure 3–15 on page 3–30 for an illustration showing the DSP locations):

- (1) Check to make sure the kit has no missing or damaged parts. There should be three chips: 827.8311 (U39), 827.8312 (U40), and 834.2566 (U42).
- (2) Ensure that the system AC POWER switch is turned OFF.
- (3) Temporarily remove all circuit cards plugged into the five telecom card slots (1–5) and the three PC card slots (A–C) on the CPU Motherboard and set the cards aside.

NOTE: Be sure to note which cards were plugged into which slots and be sure to note and mark any cables that are disconnected.

- (4) On the CPU Motherboard, use an integrated circuit (IC) puller to remove the existing 1–DSP Security PAL (part no. 827.8309) from socket U39 and set the chip aside.
- (5) Use an IC puller to remove the existing DSP Boot EPROM (part no. 827.8314) from socket U40 and set the chip aside.
- (6) Noting the orientation, carefully install the new 2–DSP Security PAL (part no. 827.8311) in socket U39.

NOTE: The notch (or small dot in the corner) indicating pin 1 on the component must match the notch of the outline silkscreened on the motherboard. If installed incorrectly, the chip will be damaged.

- (7) Noting the orientation, carefully install the new, DSP Boot EPROM (part no. 827.8312) in socket U40.

NOTE: The notch (or small dot in the corner) indicating pin 1 on the component must match the notch of the outline silkscreened on the mother-

board. If installed incorrectly, the chip will be damaged.

- (8) Install the DSP chip (part no. 834.2566) in socket U42. Both the chip and the socket are keyed so that the chip can only be installed one way.

NOTE: If the keys are not lined up, the chip will not easily fit into the socket. Forcing the chip into the socket with the keys misaligned will damage the chip and the socket.

- (9) *If the second DSP upgrade kit will also be installed, refer to 8.7 section below.*
- (10) Replace all of the circuit cards removed in step 3 and reconnect any cables that had to be disconnected.
- (11) After the system is installed, program the database to include the optional DSP and verify its proper operation. Then discard the old chips.

8.7 To install the second DSP upgrade kit (part no. 828.1324), follow these steps (see Figure 3–15 on page 3–30 for an illustration showing the DSP locations):

- (1) Check to make sure the kit has no missing or damaged parts. There should be three chips: 827.8313 (U39), 834.2340 (U31), and 834.2566 (U43).
- (2) Ensure that the system AC POWER switch is turned OFF.
- (3) Temporarily remove all circuit cards plugged into the five telecom card slots (1–5) and the three PC card slots (A–C) on the CPU Motherboard and set the cards aside.

NOTE: Be sure to note which cards were plugged into which slots and be sure to note and mark any cables that are disconnected.

- (4) On the CPU Motherboard, use an integrated circuit (IC) puller to remove the existing 2–DSP Security PAL (part no. 827.8311) from socket U39 and set the chip aside.
- (5) Use an IC puller to remove the existing 1K-Byte Dual-Port RAM chip (part no. 834.2268 — labeled 2130 or 7130) from socket U31 and set the chip aside.
- (6) Noting the orientation, carefully install the new 3–DSP Security PAL (part no. 827.8313) in socket U39.

NOTE: The notch (or small dot in the corner) indicating pin 1 on the component must match the notch of the outline silkscreened on the motherboard. If installed incorrectly, the chip will be damaged.

- (7) Noting the orientation, carefully install the new, 2K-Byte Dual-Port RAM chip (part no. 834.2340 — labeled 2132 or 7132) in socket U31.

NOTE: The notch (or small dot in the corner) indicating pin 1 on the component must match the notch of the outline silkscreened on the motherboard. If installed incorrectly, the chip will be damaged.

- (8) Install the DSP chip (part no. 834.2566) in socket U43. Both the chip and the socket are keyed so that the chip can only be installed one way.

NOTE: If the keys are not lined up, the chip will not easily fit into the socket. Forcing the chip into the socket with the keys misaligned will damage the chip and the socket.

- (9) Replace all of the circuit cards removed in step 3 and reconnect any cables that had to be disconnected.
- (10) After the system is installed, program the database to include the optional DSP and verify its proper operation. Then discard the old chips.

E. INSTALL THE MEMORY CARD

8.8 Before attaching the Memory Card to the CPU Motherboard, install the software PAL (which determines the system software configuration) as outlined below. (For programming software installation instructions, refer to page 6-12.)

- (1) Check the part number on the label of the software component. It must match the software configuration purchased by the customer (e.g., MF-rated, 75-unit PAL).
- (2) Check the socket number printed on the label. It should read U9.
- (3) Place the Memory Card on a clean, flat, anti-static, non-conductive surface.
- (4) Carefully install the software component in the corresponding socket on the Memory Card. (See Figure 3-16 on page 3-34.) The notch (or small dot in the corner) indicating pin 1 on each component must match the notch of the outline silk-screened on the card.
- (5) Check that all components on the card are seated securely in their sockets and that no pins are bent.

8.9 After installing the software component, attach the Memory Card to the CPU Motherboard as outlined below.

- (1) *Make sure the KSU's AC POWER switch is turned OFF. Installing the Memory Card with the power on may damage the circuitry on the card.*

CAUTION

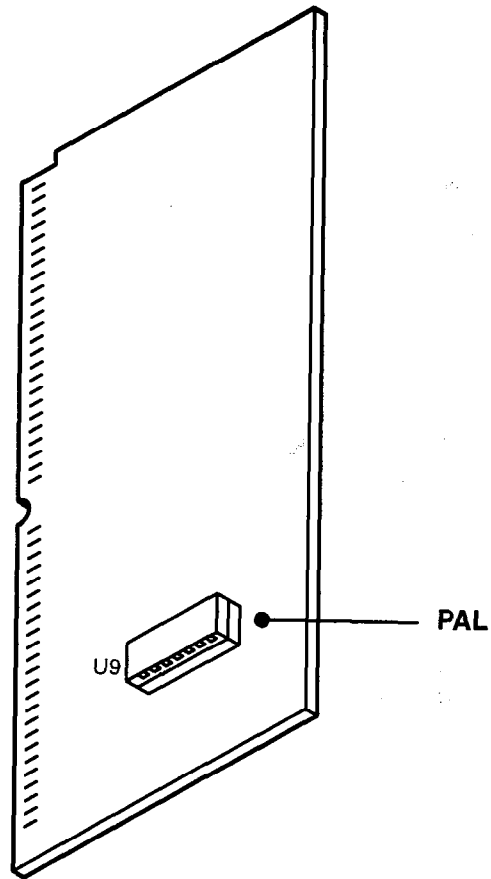
The Inter-Tel Axxent System *does not* support "hot" card insertion. Always turn off the system power before inserting or removing any of the card in the KSU.

- (2) While observing the following list of precautions, carefully insert the Memory Card in the memory module slot (J20) on the CPU Motherboard (see Figure 3-15 on page 3-30 for slot locations).

- The component side of the card should face toward the power supply.
- Pin 1 (the notched edge) on the card must align with pin 1 of the connector.
- The card slides into the connector at a slight angle from the vertical and then snaps into place. If installed properly, the angle between the Memory Card and the CPU Motherboard will be approximately 80-85°, and the Memory Card will point slightly upward when the KSU is setting upright.
- Make sure the card is securely latched into place on both sides of the connector.
- Do not over-install the card (i.e., push or pull the card until it pops over backwards). If over-installed, the Memory Card will point slightly downward when the KSU is setting upright.

NOTE: If the PAL is not properly seated and/or if the card itself is not properly seated, the CPU ACTIVE LED on the front of the KSU may flash when power is turned on and the card will not operate properly. Also, if the card is not seated properly, the HALT LED on the CPU Motherboard may light to indicate that a hardware failure has halted the system.

FIGURE 3-16. MEMORY CARD



F. INSTALL THE STATION AND TRUNK CARDS

Digital Keypad Card (DKSC)

8.10 The KSU is generally shipped with one DKSC already installed in telecom slot number one. If desired, a second DKSC can be installed in telecom slots two or three as described below. Refer to Figure 3-17 on page 3-36 for an illustration of the DKSC.

NOTE: Turn off the system power before inserting or removing any circuit card.

- (1) Check to see that all components on the card are seated securely in their sockets and that no pins are bent.

NOTE: If installing any off-premises extensions, refer to page 3-17 before installing the DKSC.

- (2) Install the DKSC in any vacant telecom slot 1-3. (There is a key tab on the edge of the card that prevents it from being installed in slots four or five. Do not attempt to force the card into the wrong slot.) The component side of the card must *face toward the power supply*.

NOTE: DKSCs may be installed in any of the first three telecom slots, and slots may be skipped, if desired. However, to facilitate installation and programming, it is recommended that the cards be installed to match the default configuration as closely as possible. (Refer to page 2-11 for information on the default configuration.)

- a. Remove the bracket that covers the opening to the appropriate slot on the rear of the KSU, and set the bracket and screw aside.
- b. Insert the DKSC into the appropriate connector on the CPU Motherboard and attach it to the KSU rear chassis using the screw removed in step 2a. Make sure the card is securely attached to the CPU Motherboard and does not touch any adjacent cards.

8.11 If, when first powered up, the actual cards installed do not exactly match the default configuration,

adjustments must be made in database programming. Circuit 1.1.1 (a DKSC circuit) is preset as an administrator and as the primary attendant. If changing card types (e.g., changing from a DKSC to an LSC), refer to the programming procedures on page 6-210 and to the information on pages 3-8 and 3-9.

Loop Start Card (LSC)

8.12 The KSU is generally shipped with one LSC already installed in telecom slot number four. If desired, a second LSC can be installed in any vacant telecom slot as described below. Refer to Figure 3-18 on page 3-37 for an illustration of the LSC.

NOTE: Turn off the system power before inserting or removing any circuit card.

- (1) Check to see that all components on the card are seated securely in their sockets and that no pins are bent.
- (2) Install the LSC in any vacant telecom slot 1-5. The component side of the card must *face toward the power supply*.

NOTE: LSCs may be installed in any of the five telecom slots, and slots may be skipped, if desired. However, to facilitate installation and programming, it is recommended that the cards be installed to match the default configuration as closely as possible. (Refer to page 2-11 for information on the default configuration.)

- a. Remove the bracket that covers the opening to the appropriate slot on the rear of the KSU, and set the bracket and screw aside.
- b. Insert the LSC into the appropriate connector on the CPU Motherboard and attach it to the KSU rear chassis using the screw removed in step 2a. Make sure the card is securely attached to the CPU Motherboard and does not touch any adjacent cards.

8.13 If, when first powered up, the actual cards installed do not exactly match the default configuration, adjustments must be made in database programming. If changing card types (e.g., changing from an LSC to a DKSC), refer to the programming procedures on page 6-210 and to the information on pages 3-8 and 3-9.

FIGURE 3-17. DIGITAL KEYSER CARD (DKSC)

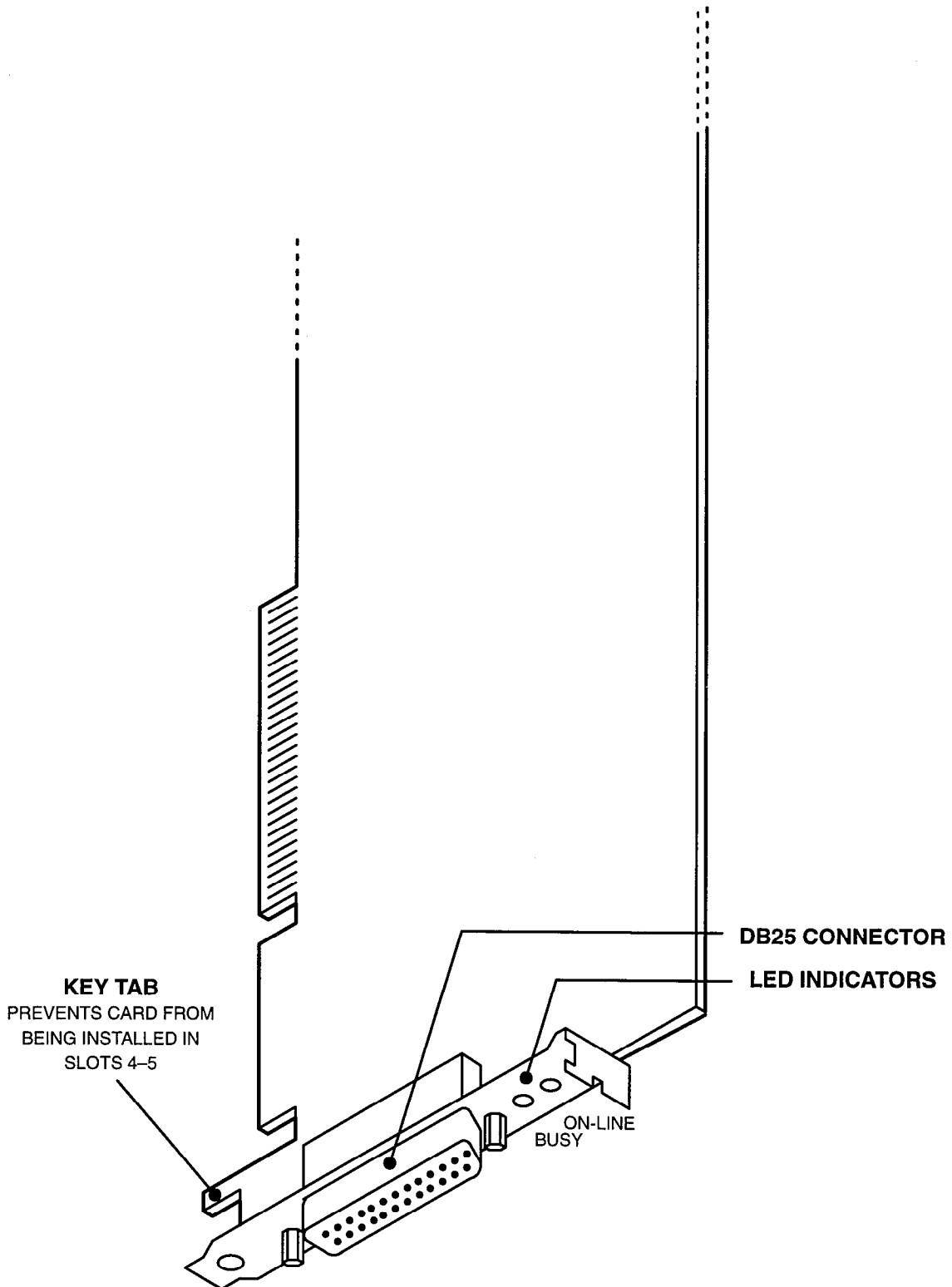
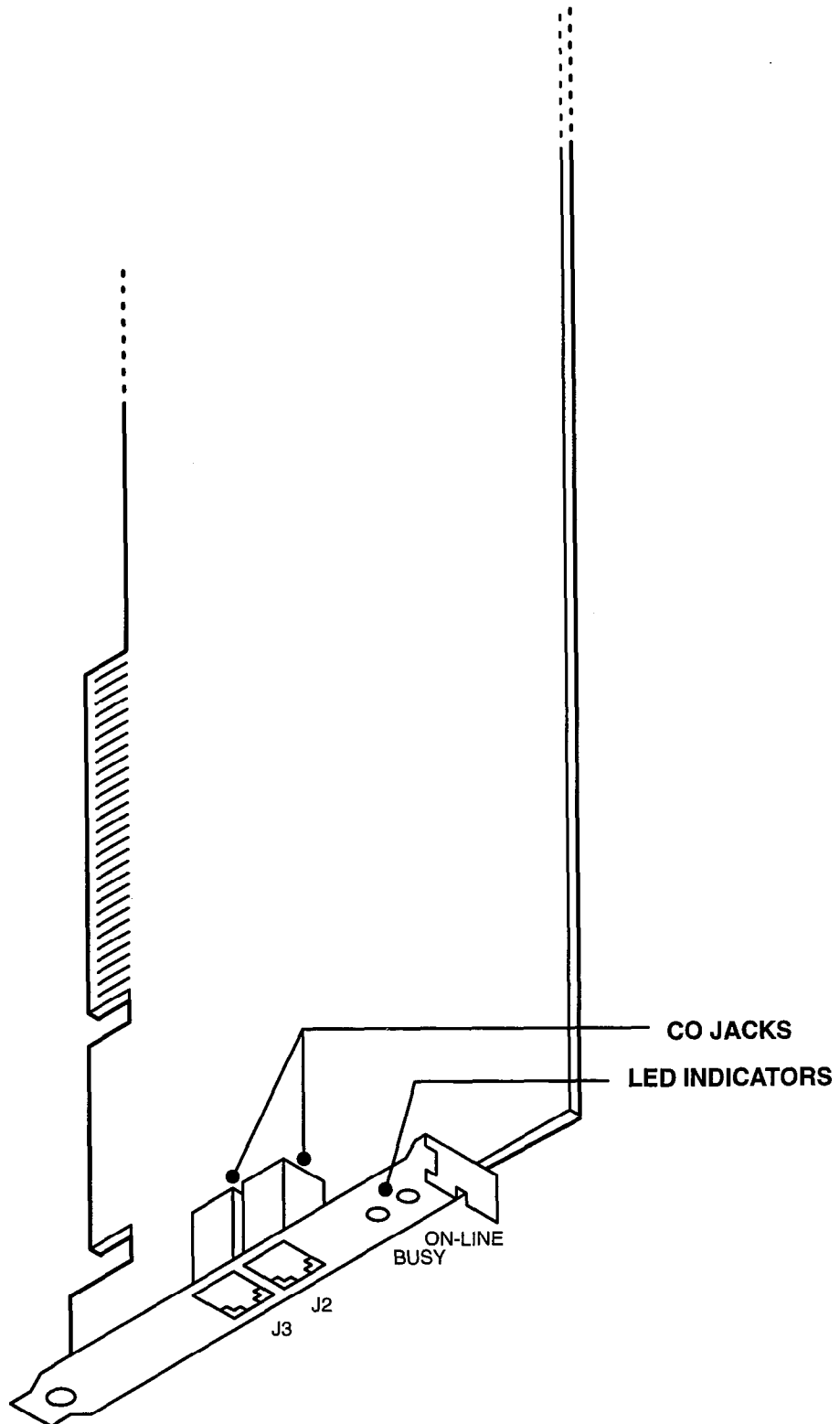


FIGURE 3-18. LOOP START CARD (LSC)



**G. CHECK THE CIRCUIT CARDS AND
COMPLETE THE KSU INSTALLATION**

8.14 After all of the circuit cards have been installed in the KSU, check and complete the KSU installation by performing the following steps.

- (1) Turn ON the AC POWER switch and observe the top (green) LED on each DKSC and LSC installed in the KSU.
- (2) *If, after one minute, the top (green) LED on every card is lit, proceed to step 3.*

If not, follow these steps:

NOTE: If, when first powered up, the actual cards installed do not exactly match the default configuration, adjustments must be made in database programming (refer to the programming procedures on page 6-210).

- a. Turn OFF the AC POWER switch.
- b. Remove all cards that do not have a lit green LED and check them for shorted or loose components, bent pins, etc.
- c. Re-insert the cards one at a time, turn ON the AC POWER, and check the top LED again. *If the LED is not lit after one minute, replace the defective card.*

- (3) On each DKSC, connect the custom DKSC interface cable that converts the DB25 connector on the card to a standard 50-pin male amphenol-type connector. (See Figure 3-1 on page 3-4 for a diagram showing the custom cable.)
- (4) Connect each labeled station female amphenol-type connector to the male amphenol-type connector on the appropriate custom cable.
- (5) Connect each mod-to-mod CO line cord to the appropriate CO jack on the corresponding trunk card.
- (6) *If attaching an output device or other peripheral device to the KSU, connect the cables to the corresponding connectors.*
- (7) *If installing the optional Axxent Talk integrated voice processing system, refer to page 3-52.*
- (8) Slide the KSU cover back into place and replace the screws.
- (9) After installing the KSU, the optional music source, output device, external paging equipment, etc. may be connected at any time. (See page 3-67 for output device installation instructions. Refer to page 3-67 for external music source installation instructions. For external paging equipment installation instructions, see page 3-68.)

9. STATION INSTALLATION

9.1 Keysets (and any attached DSS/BLF Units) are connected to Digital Keypad Cards (DKSCs). Single-line DTMF sets and playback devices are connected to Single-Line Adapters, which are in turn connected to available DKSC circuits.

A. KEYSSET INSTALLATION

9.2 Before installing keysets, unpack each one and check for damage. If items are damaged or missing, contact Customer Support. Each keyset should have the following:

- Baseplate
- One six-foot, three-pair line cord
- One handset
- One four-conductor coiled handset cord
- Slide-out directory card
- Extra feature key templates

Optional Liquid Crystal Display (LCD)

9.3 All Executive keysets are equipped with LCDs. Standard keysets are available in both display and non-display models. Basic keysets cannot have LCDs.

9.4 To convert a non-display Standard keyset to a display keyset, install the optional LCD Kit (part no. 828.1211) as outlined in the following steps (refer to Figure 3-19 on page 3-40):

- (1) Unpack the LCD kit. There should be a clear plastic display window, an LCD unit, a ribbon cable, and four small Phillips-head screws.
- (2) Remove the line cord and handset cord from the keyset. Then loosen the four screws on the bottom of the keyset.
- (3) Carefully open the keyset to expose the control board. To fully open the keyset, disconnect the following wires from the keyset control board: line (J2), microphone (J4), handset (J5), and, if equipped, data port (J3). See Figure 3-19.
- (4) Disconnect the speaker wires (J6) from the keyset control board.
- (5) Remove the single screw securing the control board and carefully flip the control board back to expose the inside of the faceplate top housing.
- (6) Remove the dummy cover from the display opening in the top housing of the faceplate by pushing on the cover from the front of the keyset. (On some models, it may also be necessary to re-

move tape that is securing the dummy cover from the inside.)

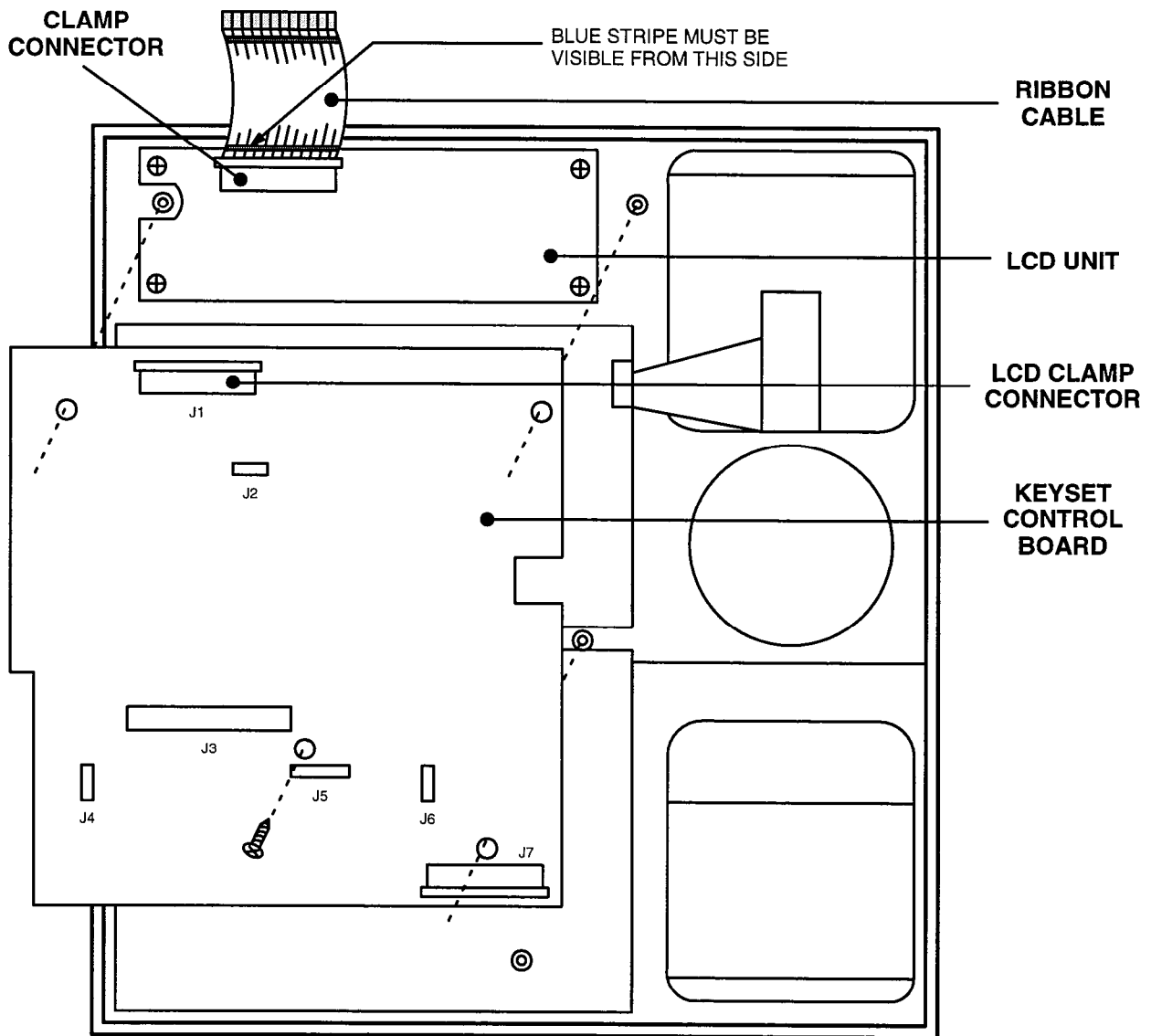
- (7) From the inside of the faceplate top housing, insert the top edge of the clear plastic window into the display opening and slide the window up into place.
- (8) Remove the covering from the LCD unit and install as follows:
 - a. *If not already connected*, slide open the bar of the clamp connector on the back of the LCD unit, insert one end of the ribbon cable into the connector, and close the bar.



NOTE: The blue stripe on the near end of the ribbon cable should be visible from the back side of the LCD unit (see Figure 3-19). Also, ensure that the metal strips on the end of the ribbon cable are fully seated and properly aligned in the connector.

- b. Position the LCD unit on the clear plastic window so that the screw holes in the LCD unit align with the screw holes in the faceplate top housing. Install the four Phillips-head screws to hold the LCD unit in place.
 - c. Leaving the free end of the LCD ribbon cable exposed, flip the control board back over, place it in its original position, and re-insert the single screw that held it in place.
 - d. Slide open the bar of the LCD clamp connector (J1) on the control board (see Figure 3-19), insert the free end of the ribbon cable into the connector, and close the bar.
- NOTE:** The blue stripe on the free end of the ribbon cable should face down toward the control board. Also, ensure that the metal strips on the end of the ribbon cable are fully seated and properly aligned in the connector.
- (9) Reconnect the line (J2), microphone (J4), handset (J5), speaker (J6), and, if equipped, data port (J3) wires to the keyset control board.
 - (10) Ensure that the ribbon cable connecting the keyset control board (J7) to the board in the bottom of the faceplate housing is still fully seated and properly aligned.
 - (11) Reattach the back of the keyset.
 - (12) To ensure the LCD unit and keyset control board are properly connected and functioning, perform the keyset self-test as described on page 3-41.

FIGURE 3-19. STANDARD DIGITAL KEYSSET LCD INSTALLATION



FACEPLATE HOUSING (INSIDE VIEW)

Keypad Installation

9.5 Install all keysets as follows:

- (1) Before mounting the modular jack assembly and connecting the keypad, measure the voltage on the YELLOW terminal of the modular jack assembly with respect to the BLACK terminal. (The "common" probe of the voltmeter is placed on the BLACK terminal.) It must measure +22VDC (± 2.0 VDC). If a negative voltage is measured, check the cabling for a reversed pair.

CAUTION

If tip and ring are reversed, the keypad will not function.

- (2) Mount the modular jack assembly on the wall.
- (3) Attach the coiled handset cord to the handset and to the handset jack on the bottom of the keypad. Place the handset on hook.
- (4) Plug one end of the line cord into the wall-mounted modular jack assembly. Plug the other end into the line cord jack on the bottom of the keypad.

NOTE: To aid in installation and troubleshooting, display keysets show their station circuit number, extension number, and assigned user name for several seconds when power is turned on and the line cord is first plugged in. This display also appears after a system reset, and whenever the line cord is removed and replaced while power is on. The station identification displays for several seconds, then the keypad changes to the appropriate display, depending on its current status.

- (5) Perform the keypad self-test:
 - a. While pressing the asterisk (*) and pound (#) keys, unplug and replace the keypad line cord.
 - b. Release the keys. The keypad rings momentarily. (Display keysets show a dark display — all pixels lit.)
 - c. Lift and replace the handset. The keypad rings momentarily. (Display keysets show a blank display — no pixels lit.)
 - d. Lift and replace the handset. The keypad rings momentarily and all LED-equipped keys light. (Display keysets show DKTS SELF TEST LED MATRIX.) If any of the LEDs do not light, return the keypad for repair.

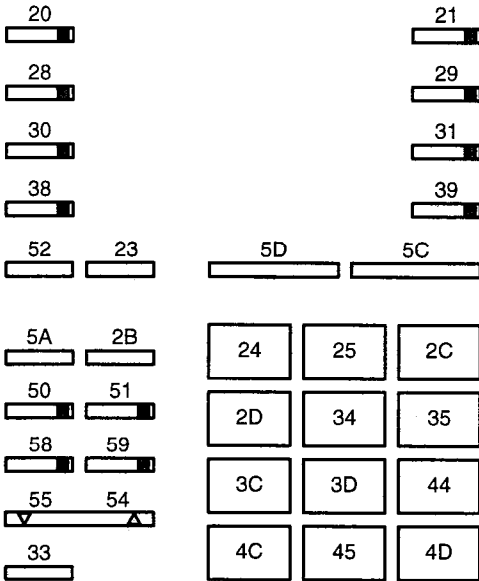
- e. Lift and replace the handset. The keypad rings momentarily and all of the LEDs go out. (Display keysets show DKTS SELF TEST KEY MATRIX 00.)
- f. One at a time, press each of the keys on the keypad in any order. If the key is functioning properly, a key tone (or a DTMF tone for Executive keypad keys) is heard and, on display keysets, a specific code is shown. (The proper code for each key is diagrammed in Figure 3–20 on the next page.) If the signal is not heard or the displayed code is incorrect, the key is faulty; return the keypad for repair.
- g. Lift and replace the handset. The speaker tones are broadcast over the speakerphone speaker. (Display keysets show DKTS SELF TEST SPEAKER TONES.)
- h. Lift and replace the handset. Tones of various volume levels, from softest to loudest, are broadcast over the speakerphone speaker. (Display keysets show DKTS SELF TEST SPEAKER VOLUME.)
- i. Lift the handset, then press and release the hookswitch. The handset tones are broadcast over the handset receiver. (Display keysets show DKTS SELF TEST HANDSET TONES.)
- j. Place the handset back in its cradle. The keypad rings momentarily and it takes approximately five seconds for the keypad to return to normal operation. (Display keysets show DKTS SELF TEST COMPLETED! for several seconds. Then, as described in the NOTE to step 4, the keypad's identification displays for several seconds.)

NOTE: If the keypad watchdog timer fails, the DKTS SELF TEST COMPLETED! display is followed by a DKTS SELF TEST WATCHDOG ERROR display and eight short bursts of ring tone. Replace the defective keypad.

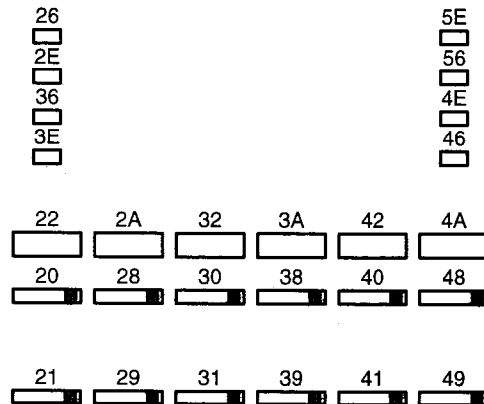
- k. Replace the keypad if faulty.
- (6) The keypad ring tone can be changed by performing the steps described in the FEATURES section on page 4–43.
- (7) *If necessary*, replace the keypad's paper template with one labeled to match the programmed feature keys.

FIGURE 3-20. KEYSSET SELF-TEST KEY MATRIX

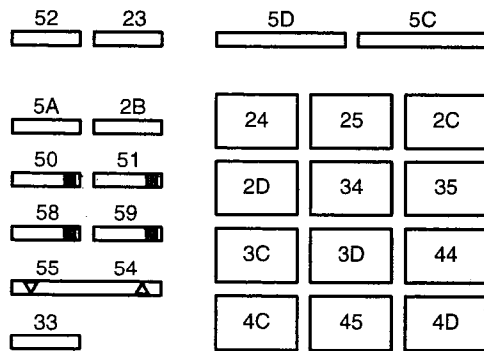
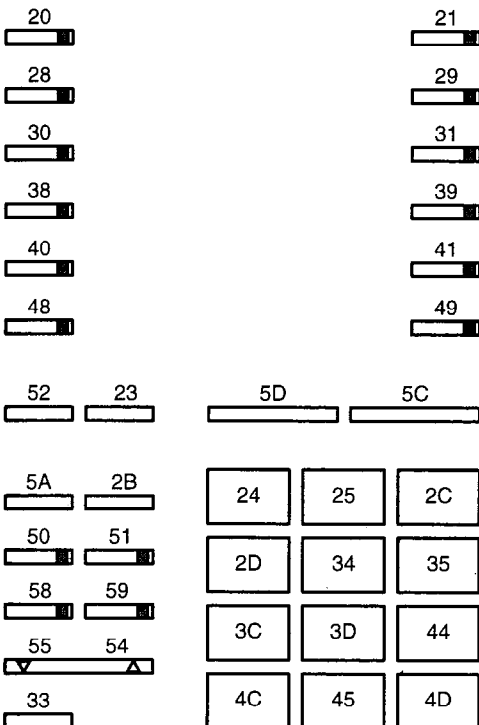
**BASIC DIGITAL
KEYSET**



**EXECUTIVE DIGITAL
KEYSET**



**STANDARD DIGITAL
KEYSET**



Wall Mounting Keysets

9.6 To mount the keyset on a wall, use an industry-standard wall-mount bracket (sometimes called a wall jack assembly).

9.7 If a wall-mount bracket is not available, use the two-screw method described below.

- (1) Remove the keyset baseplate from the top half of the back of the keyset.
- (2) Rotate the baseplate 180° and attach it to the bottom half of the back of the keyset.

NOTE: If a PCDDPM (or OHVA Module) is already installed inside the baseplate, first open the keyset and reroute the PCDDPM-to-keyset interface cable (or module-to-keyset interface cable) through the knockout in the bottom half of the keyset (see Figure 3-22 on page 3-46).

- (3) Using a ruler, mark the location of the keyset mounting holes on the wall. (The centers of the two perpendicular mounting holes on the back of the keyset are four inches apart.)
- (4) Drive a screw into the center of each mounting hole marking. Allow the head of the screw to protrude approximately ¼ inch.
- (5) In order to hold the handset in place while the keyset is wall-mounted, slide the reversible cradle hook out, rotate it 180°, and reinsert it.
- (6) Position the keyset mounting holes over the screws and slide the keyset into position on the wall. (If necessary, adjust the screws to ensure that the keyset is held firmly in place.)

Optional Headsets

9.8 Refer to SPECIFICATIONS, page 2-13, for headset requirements. To attach a headset to a keyset:

- (1) Remove the coiled handset cord from the handset jack on the bottom of the keyset. Leave the handset in the cradle.
- (2) Insert the headset modular plug into the jack. Plug in the headset power source, if used.
- (3) If the headset has an on/off switch, turn on the headset.
- (4) On the keyset, press SPCL and enter the Headset Enable feature code (default value is 315).

- (5) *To disable the headset*, press SPCL and enter the Headset Disable feature code (default value is 316). Then unplug the headset and reconnect the handset.

Optional Off-Hook Voice Announce (OHVA) Modules

9.9 For off-hook voice announce receive capability, any Standard or Executive keyset may be equipped with an optional OHVA Module (part no. 550.3114).

NOTE: The OHVA Module is essentially a stripped-down version of the PCDDPM described on page 3-45. OHVA Modules do *not* require AC transformers.

9.10 Install the OHVA Module as outlined below. For a diagram of the installation, see Figure 3-21 on page 3-44.

- (1) Unplug the keyset line cord from its modular jack on the back of the keyset.
- (2) Remove the keyset baseplate.
- (3) On the back of the keyset, use a pair of cutting pliers to remove the plastic knockout covering the OHVA Module connector (J3) on the keyset control board (see Figure 3-21).

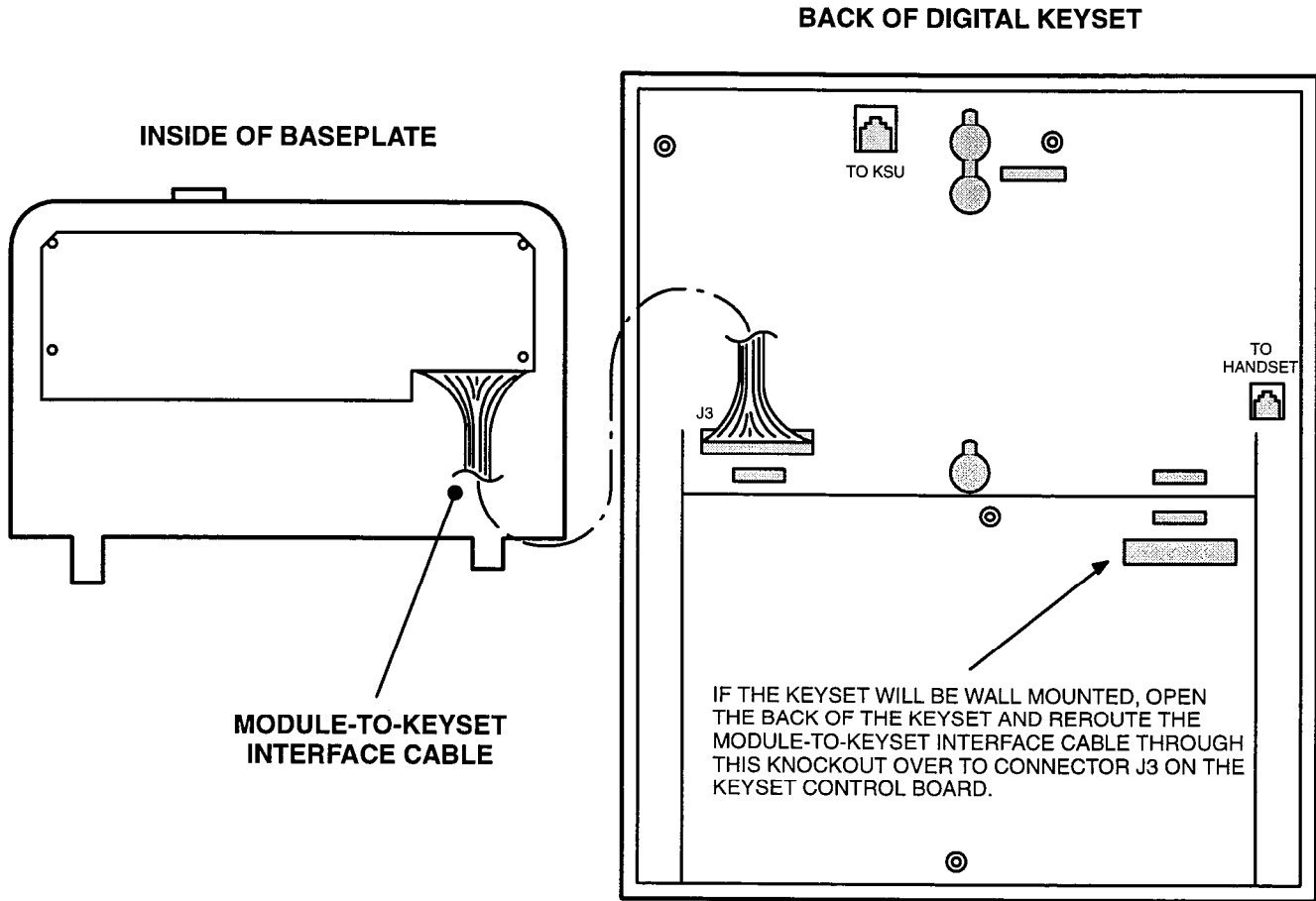
NOTE: Be careful not to let the plastic knockout fall inside the keyset. If the keyset will be wall mounted, use the knockout in the bottom half of the keyset instead (see Figure 3-21).

- (4) *If not already installed*, attach one end of the module-to-keyset interface cable to the connector on the back of the OHVA Module.
- (5) Align the OHVA Module over the four posts protruding from the inside of the baseplate and insert the screws (do not over tighten).
- (6) Plug the free end of the module-to-keyset interface cable into connector J3 on the keyset control board (where the plastic knockout was previously removed).

NOTE: Use a pencil (eraser end) or other suitable rod-like instrument to press each end of the cable connector into connector J3. Apply pressure until the connector clicks securely into place, one end at a time.

- (7) Being careful not to pinch the cable attached to the OHVA Module, reattach the baseplate.

FIGURE 3-21. OFF-HOOK VOICE ANNOUNCE (OHVA) MODULE INSTALLATION



Optional Personal Computer Data Port Modules (PCDPMs)

9.11 For off-hook voice announce receive capability, and to allow an optional DSS/BLF Unit and/or an optional Modem Data Port Module to be installed, any Standard or Executive keyset may be equipped with an optional PC Data Port Module (part no. 550.3014). If a DSS/BLF Unit is not installed, the module's RS-232-C port can be used to connect an SMDR/error message output device or a personal computer for programming the system database.

9.12 Install the PC Data Port Module as outlined below. For diagrams of the installation, see Figures 3-22 and 3-23 on pages 3-46 and 3-47.

- (1) Unplug the keyset line cord from its modular jack on the back of the keyset.
- (2) Remove the keyset baseplate.
- (3) On the back of the keyset, use a pair of cutting pliers to remove the plastic knockout covering the PC Data Port Module connector (J3) on the keyset control board (see Figure 3-22).

NOTE: Be careful not to let the plastic knockout fall inside the keyset. If the keyset will be wall mounted, use the knockout in the bottom half of the keyset instead (see Figure 3-22).

- (4) *If not already installed*, attach one end of the PCDPM-to-keyset interface cable to the connector on the back of the PCDPM.
- (5) Align the PC Data Port Module over the four posts protruding from the inside of the baseplate and insert the screws (do not over tighten).
- (6) Plug the free end of the PCDPM-to-keyset interface cable into connector J3 on the keyset control board (where the plastic knockout was previously removed).

NOTE: Use a pencil (eraser end) or other suitable rod-like instrument to press each end of the cable connector into connector J3. Apply pressure until the connector clicks securely into place, one end at a time.

- (7) *If a DSS/BLF Unit (or a PC/output device) will be attached to the PC Data Port Module:*
 - a. Attach one end of a PCDPM-to-DSS interface cable (or PCDPM-to-RS232C interface

cable) to the RS-232-C connector (J2) on the module, as shown in Figure 3-22. (The other end of the cable will later be attached to the DSS/BLF Unit [or PC/output device] after it is installed.) For complete RS-232-C cable pinout requirements, see page 2-20.

NOTE: Pin 1 of the cable (indicated by the stripe on the edge of the cable) must correspond to pin 1 on the RS-232-C connector (indicated by the notch silkscreened on the module).

- b. Plug the AC transformer cable into the power connector (P1) on the module.

NOTE: PCDPMs do *not* require AC transformers when they are used for off-hook voice announce only or have attached MDPMs. For a diagram of AC transformer requirements, see Figure 2-1 on page 2-14.

- c. Plug the main AC transformer unit into an available AC power source. *DO NOT* use the outlet for the KSU.

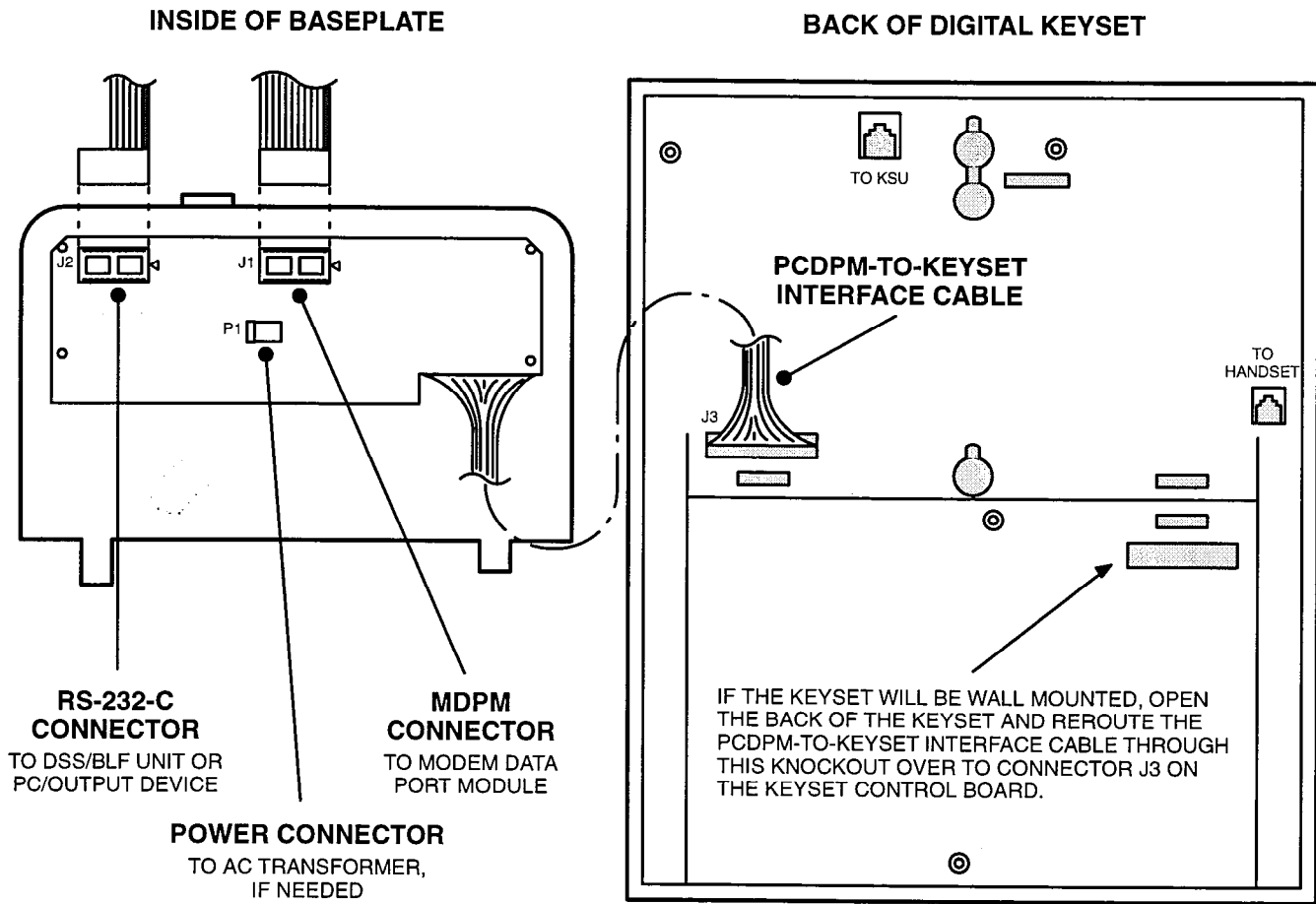
If a Modem Data Port Module will be attached to the PC Data Port Module, plug the appropriate end of the PCDPM-to-MDPM interface cable into the MDPM connector (J1) on the module. (The other end of the cable will later be attached to the Modem Data Port Module after it is installed.)

NOTE: Pin 1 of the cable (indicated by the stripe on the edge of the cable) must correspond to pin 1 on the MDPM connector (indicated by the notch silkscreened on the module). Some early PCDPM-to-MDPM cables may have the stripe on the wrong edge. If the MDPM doesn't respond properly, try reversing the connector on the PCDPM.

- (8) Being careful not to pinch any of the cables attached to the PCDPM, reattach the baseplate.
- (9) *If a Modem Data Port Module will be attached to the PC Data Port Module*, refer to the instructions on page 3-48.

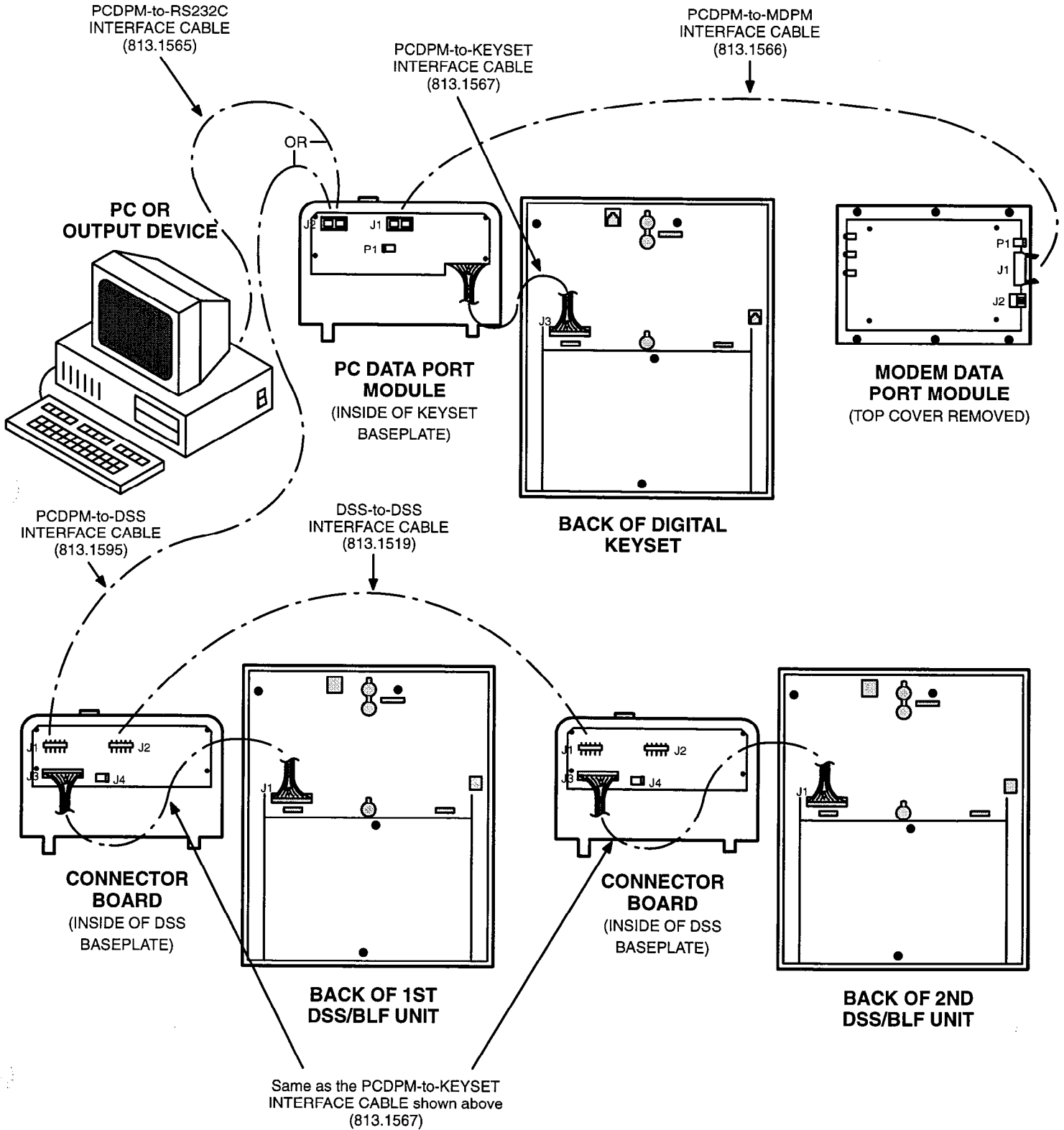
If a Modem Data Port Module will not be attached to the PC Data Port Module, reconnect the keyset line cord.

FIGURE 3-22. PC DATA PORT MODULE (PCDPM) INSTALLATION



NOTE: PCDPMs require AC transformers when they are connected to DSS/BLF Units only or PC/output devices only. PCDPMs do *not* require AC transformers when they are used for off-hook voice announce only or have attached MDPMs. For a diagram of AC transformer requirements, refer to Figure 2-1 on page 2-14. Also, Some early PCDPM-to-MDPM cables may have the stripe on the wrong edge. If the MDPM doesn't respond properly, try reversing the connector on the PCDPM.

FIGURE 3-23. SAMPLE PCDPM CABLE CONNECTIONS



Optional Modem Data Port Modules (MDPMs)

9.13 Keysets equipped with PC Data Port Modules may be equipped with optional Modem Data Port Modules (part no. 550.3015). The MDPM contains a four-conductor modular jack that can be used to connect a data device (such as a personal computer with a direct-connect modem) or a single-line set to the keyset.

NOTE: Each "equipped" MDPM installed counts as one single-line device.

9.14 The data device can be used by the associated keyset(s) to communicate with remote data equipment over voice channels being used for CO or intercom calls. The data device's modem must be externally powered (or capable of operating on 20mA of loop current) and have an RJ11 CO trunk interface.

9.15 The data device can be activated by the associated keyset(s) or by an auto-dial modem. (For more details and an explanation of transferring the data connection, refer to page 4-95 in FEATURES). The data device is disconnected whenever one of the following occurs: the modem attached to the keyset disconnects from the call, the called modem disconnects from the call, or the data connection is transferred to the keyset's primary voice path and the call is disconnected.

9.16 Install the Modem Data Port Module and attach the data device as outlined below. For diagrams of the

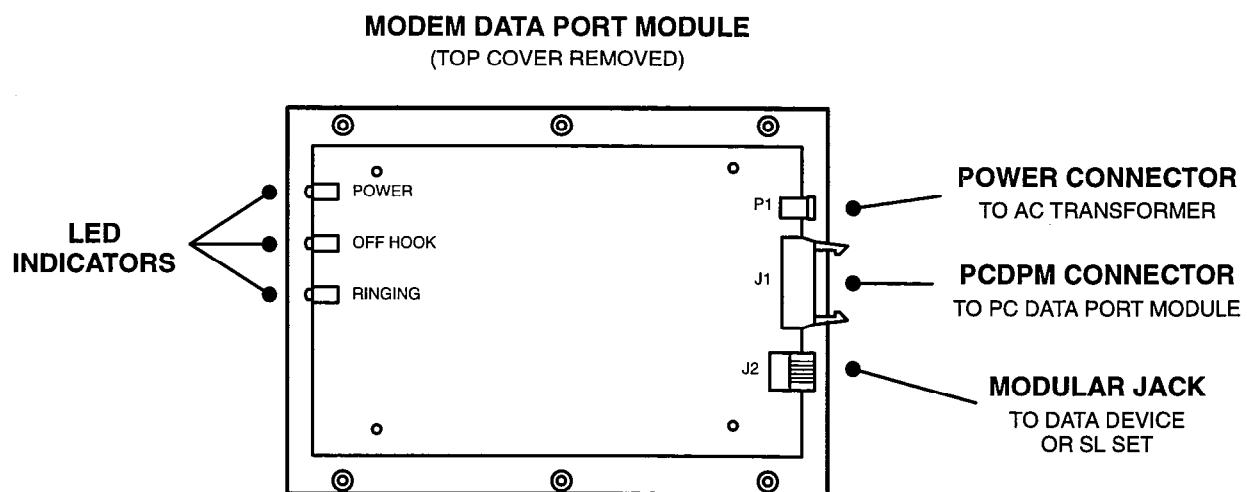
installation, see Figure 3-23 on page 3-47 and see Figure 3-24 below.

- (1) Ensure that the keyset line cord is unplugged from its modular jack on the back of the keyset.
- (2) Plug the free end of the PCDPM-to-MDPM interface cable into connector J1 on the Modem Data Port Module. (The other end of the cable was previously attached to the PC Data Port Module; see page 3-45.)
- (3) Insert the modem line cord (which would normally be connected to a CO jack) into the modular jack (J2) on the Modem Data Port Module.
- (4) Plug the AC transformer cable into the power connector (P1) on the Modem Data Port Module.

NOTE: MDPMs always require their own separate AC transformers. (For a diagram of AC transformer requirements, refer to Figure 2-1 on page 2-14.) Also, make sure the AC transformer is plugged in and working.

- (5) Plug the main AC transformer unit into an available AC power source. *DO NOT* use the outlet for the KSU.
- (6) Reconnect the keyset line cord.

FIGURE 3-24. MODEM DATA PORT MODULE (MDPM) INSTALLATION



**B. DIRECT STATION SELECTION/BUSY
LAMP FIELD (DSS/BLF) UNIT
INSTALLATION**

9.17 Up to ten DSS/BLF Units (one or two per keyset) can be installed on the system. These can be single or tandem units; tandem units count as two units. Each single DSS/BLF Unit has 60 keys for directly accessing up to 60 extension numbers and/or other features/resources. The numbers can be station extension numbers, hunt group pilot numbers, or other system features or resources.

9.18 DSS/BLF Units are physically attached to the RS-232-C ports on keysets equipped with PC Data Port Modules (PCDPMs). The units are powered by their own AC transformer and do not require a DKSC circuit that is separate from the keyset's circuit. If desired, all ten units can be connected to keysets installed on the same Digital Keyset Card.

9.19 Unpack and inspect the DSS/BLF Units before installing them.

9.20 Install each DSS/BLF Unit as outlined below. For diagrams of the installation, see Figures 3-23 and 3-25 on pages 3-47 and 3-50.

- (1) Remove the baseplate on the back of the DSS/BLF Unit.
- (2) On the connector board located in the baseplate, plug the free end of the PCDPM-to-DSS interface cable into the main RS-232-C connector (J1). (The other end of the cable was previously attached to the PC Data Port Module on the corresponding keyset.)
- (3) Plug the AC transformer cable into the power connector (J4) on the baseplate connector board. (The transformer will later be plugged into an AC power source.)

NOTE: DSS/BLF Units always require their own separate AC transformers. For a diagram of AC transformer requirements, refer to Figure 2-1 on page 2-14.

- (4) To attach a second DSS/BLF Unit to the first unit:
 - a. Plug one end of a DSS-to-DSS interface cable into the secondary RS-232-C connector

(J2) on the baseplate connector board in the first unit.

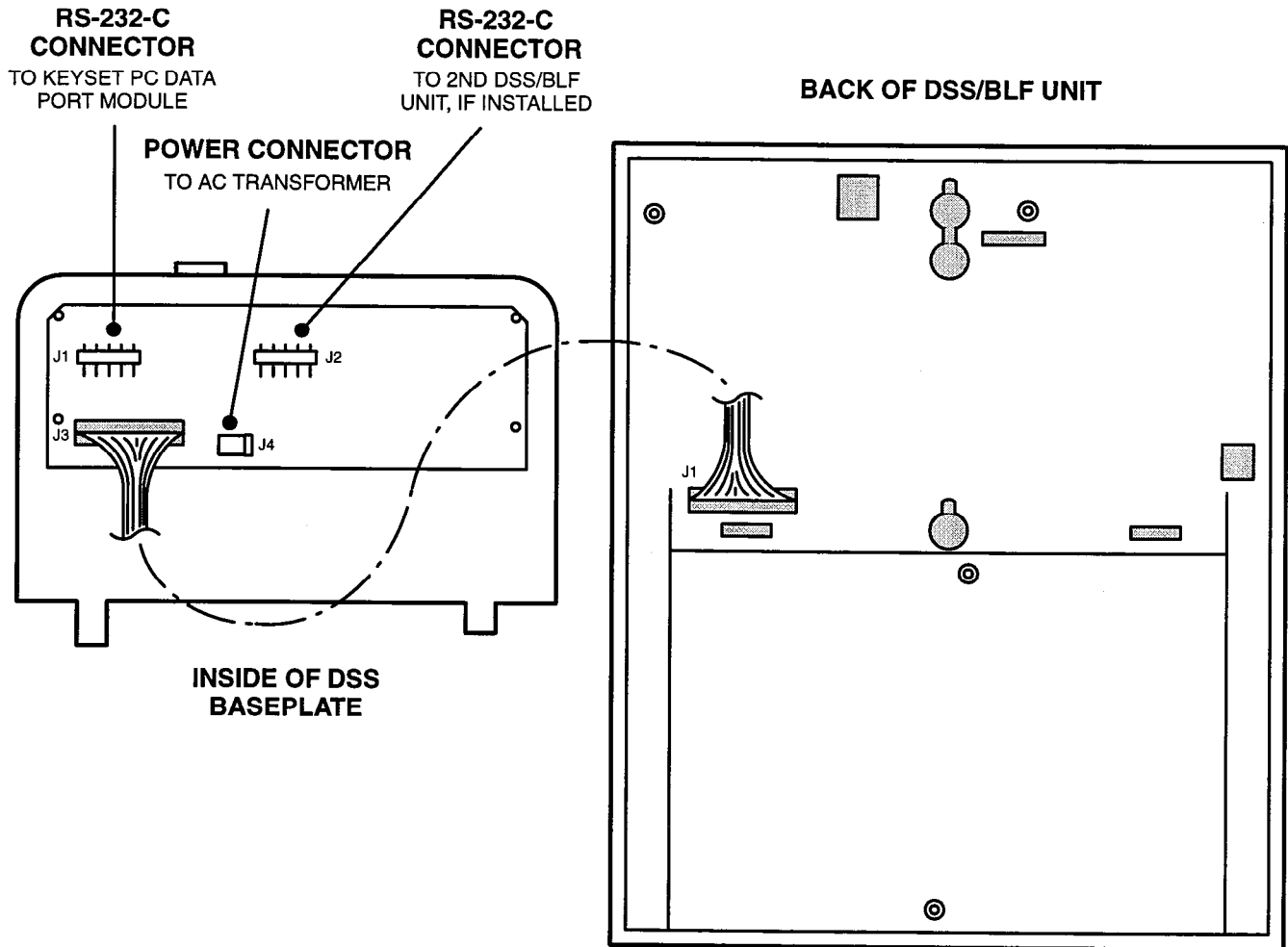
- b. Remove the baseplate on the back of the second DSS/BLF Unit.
- c. Plug the other end of the DSS-to-DSS interface cable into the main RS-232-C connector (J1) on the baseplate connector board in the second unit.
- d. Plug the AC transformer cable into the power connector (J4) on the baseplate connector board in the second unit. (The transformer will later be plugged into an AC power source.)

NOTE: If a tandem DSS/BLF Unit is installed, each individual unit must be equipped with its own AC transformer. In addition, the PC Data Port Module on the corresponding keyset must be equipped with its own AC transformer.

(5) Perform the DSS/BLF Unit self-test:

- a. While holding down the first two keys in row one (extension numbers 100 and 101 in the default database), plug the main AC transformer unit into an available AC power source. (*DO NOT* use the outlet for the KSU.) All the keys should light up. If an LED does not light, unplug the AC transformer unit and plug it in while holding down the first two keys in row one (ext. 100 and 101). If the test fails again, replace the DSS/BLF Unit.
- b. Press each key individually (in any order) to remove the lit status. When finished, all keys should be unlit. If an LED does not go out, unplug the AC transformer unit and repeat steps a and b. If the test fails again, replace the DSS/BLF Unit. After all the keys have been tested, it takes approximately five seconds for the DSS/BLF Unit to return to normal operation.
- c. Being careful not to pinch any of the attached cables, replace the baseplate on the back of the DSS/BLF Unit.

FIGURE 3-25. BACK OF DSS/BLF UNIT



C. SINGLE-LINE SET AND PLAYBACK DEVICE INSTALLATION

Single-Line Sets

9.21 Single-line sets are connected to Single-Line Adapters (SLAs), which are in turn connected to DKSC circuits. The single-line sets (including OPXs) must be equipped with AC ringers.

NOTE: DC-ringing single-line devices may not be connected to SLAs.

9.22 SLAs do not support *visual* message waiting applications. If single-line sets with message waiting lamps are installed on SLAs, the lamps will not function. However, single-line sets connected to SLAs can be configured in database programming to receive *audible* message waiting indication tones.

Playback Devices

NOTE: For automated attendant features and for optimal playback device performance and functionality, use the Inter-Tel Axxent Talk instead of SLA circuits as outlined below.

9.23 Playback devices can be used in place of single-line sets on SLA circuits. These devices answer an incoming call, play a recorded message, and automatically disconnect from the call. They are installed like single-line sets, using the same cabling and modular jack assemblies. A playback device uses the extension number that is associated with its station circuit.

Single-Line Set And Playback Device Installation

9.24 To install a single-line set or a playback device:

(1) *For SLAs only:*

- a. Plug the AC transformer cable into the power connector on the corresponding Single-Line Adapter (SLA).

NOTE: SLAs always require their own separate AC transformers. For a diagram of AC transformer requirements, refer to Figure 2-1 on page 2-14.

- b. Plug the main AC transformer unit into an available AC power source. *DO NOT* use the outlet for the KSU.

- (2) Before connecting a single-line set or playback device to the system, measure the voltage on the RED terminal of the modular jack assembly with respect to the GREEN terminal. (The common probe of the voltmeter is placed on the GREEN terminal.) It must measure -48VDC ($\pm 2\text{VDC}$). If $+48$ is measured, check the cabling for a reversed pair.
- (3) Mount the modular jack assembly on the wall at the station location.
- (4) Plug one end of the line cord into the modular jack assembly and plug the other end into the jack on the single-line set or playback device.

Optional Handset Amplifiers

9.25 Single-line set users may wish to have a handset amplifier installed. Typically, the amplifier is an external unit that is placed between the single-line set and the handset (refer to page 2-16 for specifications).

9.26 To install such an amplifier:

- (1) Unplug the coiled handset cord from the single-line set.
- (2) Plug the coiled handset cord into the amplifier jack labeled HANDSET.
- (3) Plug the amplifier line cord (coming from the jack labeled TELEPHONE) into the single-line set handset jack.
- (4) Plug the amplifier power supply cord into an AC outlet.
- (5) The handset volume can be increased or decreased, using the thumbwheel located on the amplifier. Verify that the amplifier is functioning correctly by placing a call and adjusting the volume from low to high.

10. OPTIONAL INTER-TEL AXXENT TALK VOICE PROCESSING INSTALLATION

10.1 For integrated voice processing (voice mail, automated attendant, hunt group announcement and overflow, buffered SMDR, etc.), the KSU can be equipped with the optional Axxent Talk hardware and software. For more information on Axxent Talk, see SPECIFICATIONS, page 2-18, and AXXENT TALK FEATURES, beginning on page 5-1.

10.2 New Inter-Tel Axxent Systems can be configured with Axxent Talk directly from the factory. Or, Axxent Talk can be added to the KSU at a later date via a voice processing kit (part no. 520.5101), as described in the following sections.

A. HARDWARE INSTALLATION

NOTICE

Personal computer (PC) technology is continually evolving. As it does, the Inter-Tel Axxent Talk voice processing system will continue to incorporate important design enhancements. Thus, depending on the actual version of equipment that is shipped, the following installation instructions could vary somewhat. If revised instructions are included with the equipment, refer to the new information instead.

10.3 Install the Axxent Talk voice processing system hardware as outlined in the following steps. See Figure 3-26 on page 3-58 for diagram of the KSU with Axxent Talk installed.

- (1) Ensure that the KSU's AC power switch is turned off and the AC power cord is unplugged.
- (2) Remove the four screws securing the cover to the rear of the KSU.
- (3) Slide the cover toward the rear of the KSU until the front tabs on the cover are released from the KSU chassis. Lift the cover off and set it aside.
- (4) Remove the plastic faceplate that covers the front of the KSU and set it aside. (The faceplate simply snaps onto the metal KSU chassis.)
- (5) *To provide additional working room in the KSU, if necessary:* Using a properly grounded anti-static wrist strap, temporarily remove any card installed in telecom slot number five, if one exists, and set the card aside.

CAUTION

The cards and components are static sensitive. Handle the cards by the edges only and keep them in their protective bags until they are to be installed. Do not bend or touch the pins of the components or subject them to a static charge. When working with the cards, use a properly terminated anti-static wrist strap and cover the work surface with the bag that protected the card during shipping. Any static charge (no matter how small the charge) must be discharged from the body before touching the cards or components. *The warranty for this equipment does not cover damage caused by static or mishandling. Cards or components damaged in such a manner will not be replaced.*

- (6) *If the metal plate that covers the top 5-inch drive bay is not already removed, pop it out using a hammer or the butt of a screwdriver.*
 - (7) *If the 3.5-inch **hard** drive is not already installed in a 5-inch Universal Mounting Frame (UMF), install it as follows:*
 - a. Slide the drive into the UMF until the mounting holes on both are properly aligned.
 - b. Secure the drive to the UMF using the screws supplied with the frame.
- NOTE:** Although there may be six mounting holes (three on each side), only four holes (two on each side) are needed to properly secure the drive. Also, if the UMF came with a plastic front cover, discard it; it will not be used. Save any other hardware that came with the UMF for now.
- (8) *If the hard drive is labeled with any of the following CMOS setup parameters, write this information down and save it.*
 - Disk Type
 - Cylinders
 - Heads
 - Sectors
 - WPCOM
 - LZONE

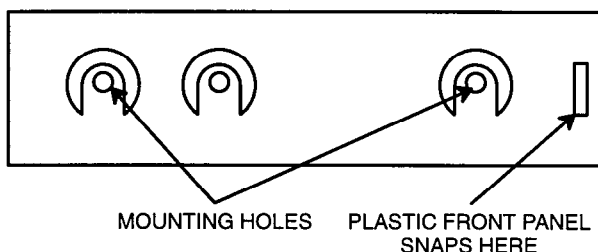
NOTE: All Inter-Tel hard disk drives have a label with the necessary setup information on it.

- (9) *If the 3.5-inch **floppy** drive is not already installed in a 5-inch Universal Mounting Frame (UMF), install it as follows:*

- a. Snap the plastic front panel onto the metal UMF (refer to the drawing below).
- b. Slide the drive into the UMF until the front of the drive is flush with the plastic front panel.
- c. Align the mounting holes (see diagram below) and secure the drive to the UMF using the screws supplied with the frame.

NOTE: Although there may be six mounting holes (three on each side), only four holes (two on each side) are needed to properly secure the drive. Save any other hardware that came with the UMF for now.

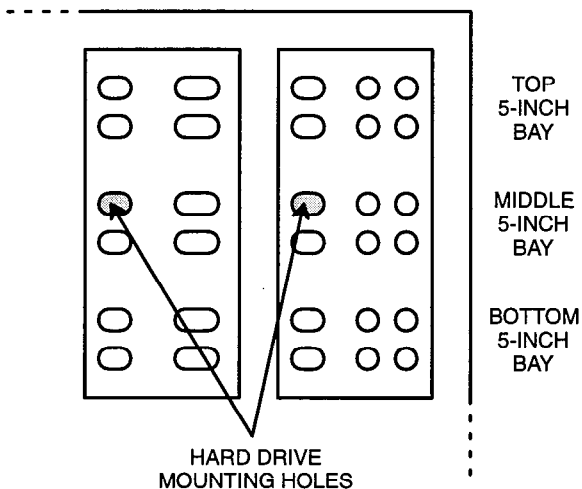
SIDE VIEW OF FLOPPY DRIVE UMF



- (10) Insert the *hard* drive (which is mounted in a UMF) into the *middle* 5-inch drive bay in the KSU chassis. Secure the UMF to the KSU chassis using the four screws supplied with the voice processing kit (two screws on each side, as shown in the diagram below).

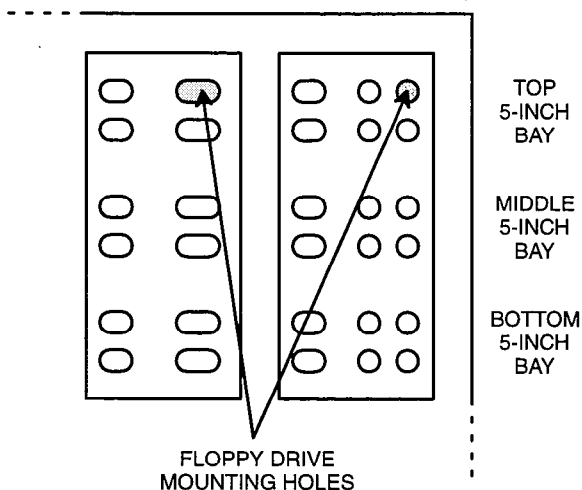
NOTE: There are three 5-inch drive bays in the KSU chassis. The top bay houses the floppy drive, the middle bay houses the hard drive, and the bottom bay is empty.

SIDE VIEW OF KSU CHASSIS (TOP CORNER)



- (11) Insert the *floppy* drive (which is mounted in a UMF) into the *top* 5-inch drive bay in the KSU chassis. Secure the UMF to the KSU chassis using the four screws supplied with the voice processing kit (two screws on each side, as shown in the diagram below).

SIDE VIEW OF KSU CHASSIS (TOP CORNER)



- (12) After ensuring that the drives are properly mounted in the KSU, discard the UMF boxes and any unused UMF hardware that remains.
- (13) Remove and discard the top 5-inch bay cover from the plastic KSU faceplate that was set aside in step 4.
- (14) Snap the plastic faceplate back onto the front of the KSU chassis. If the floppy drive was installed correctly, its plastic front panel should fit nicely within the cutout on the faceplate.
- (15) With the anti-static wrist strap still attached, place the PC CPU Card on top of its anti-static bag. (See Figure 3-27 on page 3-59 for a drawing of the card.)

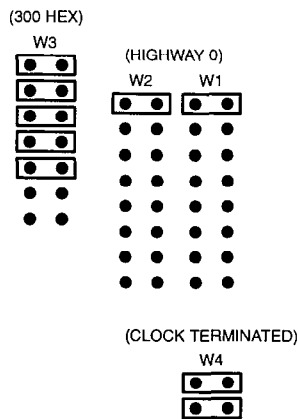
CAUTION

The PC CPU Card has a battery-backed CMOS setup and real-time clock. Static can corrupt the CMOS setup, which may have been preset at the factory. **DO NOT** lay the PC CPU Card down on a metal surface where the pins of the card could short the battery power to the CMOS memory.

- (16) *If not already installed*, insert the four single in-line memory modules (SIMMs) into the appropriate sockets on the PC CPU Card (see Figure 3-27 on page 3-59).

NOTE: The SIMMs are keyed and can only be inserted into the sockets in one direction. Be sure they are inserted all the way and that the retainer tabs snap fully into place. Improper installation can cause intermittent voice processing failure.

- (17) Place the Voice Processing Card (VPC) on top of its anti-static bag and check to make sure that jumper straps are installed in the following locations on the card (see Figure 3-28 on page 3-60 for card orientation):



- (18) On the rear of the KSU chassis, use a Phillips screwdriver to remove the metal brackets that cover the openings to slots B and C (see Figure 3-26 on page 3-58 for slot locations). Keep the screws; they will be re-used. The metal brackets can be discarded.

NOTE: The main KSU chassis *may* have a removeable CPU Motherboard chassis. Although some extra steps are involved, some installers may find it more convenient to install the VPC, PC CPU Card, and their associated cables with the motherboard chassis removed, as outlined in the following step.

- (19) *If desired and if applicable (see note above),* remove the CPU Motherboard chassis from the main KSU chassis by carefully disconnecting and labeling all cables/wires already connected to the motherboard, unscrewing the four motherboard chassis screws on the rear of the KSU, and sliding the motherboard chassis out the rear of the KSU.
- (20) Insert the VPC into slot B on the CPU Motherboard and attach it to the KSU chassis using one of the screws removed in step 18. Make sure the card is securely attached to the motherboard and does not touch any adjacent cards.

NOTE: To allow the card to seat properly, it may be necessary to slightly bend the bottom of the card's metal bracket to get the bracket to slip into the KSU chassis without obstruction. Also, once installed, the metal bracket may not set flush against the chassis — there may be a small gap (up to 3/32-inch) where the screw is inserted. If necessary, use a small, metal washer to fill in the gap. **DO NOT** attempt to force the metal bracket flush with the chassis; it could damage the card and/or the CPU Motherboard.

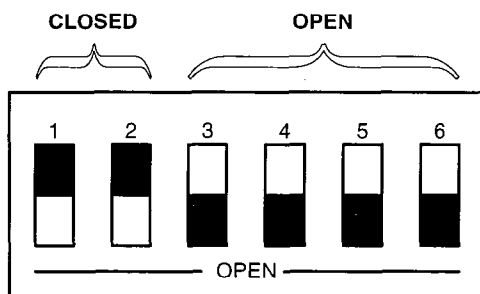
- (21) In the remaining steps, a number of cables will be installed, including:

- DB25 cable assembly (included with the PC CPU Card)
- MVIP cable assembly (18-inch, 40-pin, flat-ribbon cable; part no. 813.1618)
- Keyboard cable assembly (18-inch, 5-pin, flat-ribbon cable; part no. 813.1612)
- Floppy drive cable assembly (34-pin, flat-ribbon cable; part no. 813.1619)
- Hard drive cable assembly (40-pin, flat-ribbon cable; part no. 813.1617)
- PC reset cable assembly (two-wire, black and red cable; part no. 813.1588)
- DB9F-to-DB9M cable assembly (9-pin, flat-ribbon cable; part no. 813.1615)

NOTE: When installing these cables, keep the following objectives in mind: (1) Try to keep all cables clear of the Memory Card on the CPU Motherboard. (2) To preserve space in the KSU, route the cables in a neat and orderly fashion. (3) After the cables are attached at both ends, dress the cables so that they are as short as possible. This can be done by folding the cable back and forth upon itself and then using one of the nylon wire ties supplied with the voice processing kit to hold the bundled cable in place.

- (22) *If not already done,* remove and discard the metal DB25 punch-out or cover plate located just above the circular keyboard connector on the rear of the KSU chassis (see Figure 3-26).
- (23) Connect the DB25 end of the DB25 cable assembly that came with the PC CPU Card to the inside of the DB25 opening uncovered in the previous step. The long row (13 pins) of the DB25 connector should be above the short row (12 pins) of the connector for proper orientation. (See Figure 3-12 on page 3-23 for an example.)

- (24) Route the other end of the DB25 cable assembly over the already-installed MOH/E-Page and serial port cable assemblies and let it hang. It will later be attached to the PC CPU Card.
- (25) Noting the orientation, attach one end of the MVIP cable assembly to the MVIP connector (J10) on the CPU Motherboard (see Figure 3-15 on page 3-30).
NOTE: Pin 1 on the cable (indicated by the red stripe) must align with pin 1 on the MVIP connector (on the side near connector J7).
- (26) Route the other end of the MVIP cable assembly over the already-installed MOH/E-Page and serial port cable assemblies and let it hang. It will later be attached to the Voice Processing Card.
- (27) Attach one end the keyboard cable assembly to the KEYBOARD connector (J18) on the CPU Motherboard (see Figure 3-15 on page 3-30). The friction-lock connector is keyed so that it can only be installed one way.
- (28) Route the other end of the keyboard cable assembly over the already-installed MOH/E-Page and serial port cable assemblies and let it hang. It will later be attached to the PC CPU Card.
- (29) On the CPU Motherboard (see Figure 3-15 on page 3-30), check DIP switch S1 (located next to the Memory Card) to ensure that all six switches are set properly, as outlined below.



NOTICE

Steps 30-39 refer specifically to the Toronto MicroElectronics Inc. (TME) F386SX-33 Industrial Single Board Computer card. If your voice processing kit has a different brand or model, refer to the revised instructions included with the kit.

- (30) On the PC CPU Card, check to make sure that jumper straps are installed in the following locations (see Figure 3-27 on page 3-59 for card

orientation): JP4 = strap placed over pins 2 and 3 (the two pins on the left); JP5 = no strap; JP6 = strap placed over both pins; JP7 = no strap.

- (31) Insert the PC CPU Card into slot C on the CPU Motherboard and attach it to the KSU chassis using one of the screws removed in step 18. Make sure the card is securely attached to the motherboard and does not touch any adjacent cards.

NOTE: To allow the card to seat properly, it may be necessary to slightly bend the bottom of the card's metal bracket to get the bracket to slip into the KSU chassis without obstruction. Also, once installed, the metal bracket may not set flush against the chassis — there may be a small gap (up to 3/32-inch) where the screw is inserted. If necessary, use a small, metal washer to fill in the gap. *DO NOT* attempt to force the metal bracket flush with the chassis; it could damage the card and/or the CPU Motherboard.

- (32) Plug the free (10-pin) end of the DB25 cable assembly into the COM2 serial port connector (J6) on the PC CPU Card (see Figure 3-27 on page 3-59). Then dress the cable by taking up any slack and securing it with a nylon wire tie.

NOTE: The DB25 end of the cable was previously attached to a DB25 opening on the rear of the KSU chassis. Also, pin 1 on the cable (indicated by the red stripe) must align with pin 1 on the connector (on the side near the DB9 connector).

- (33) Plug the appropriate end of the floppy drive cable assembly into the floppy drive connector (J5) on the PC CPU Card. (See Figure 3-27 on page 3-59.)

NOTE: Pin 1 on the cable (indicated by the red stripe) must align with pin 1 on the connector.

- (34) Plug the appropriate end of the hard drive cable assembly into the hard drive connector (J2) on the PC CPU Card. (See Figure 3-27 on page 3-59.)

NOTE: Pin 1 on the cable (indicated by the red stripe) must align with pin 1 on the connector.

- (35) Attach the free end of the MVIP cable assembly to the 40-pin connector (J2) on the Voice Processing Card (see Figure 3-28 on page 3-60). Then dress the cable by taking up any slack and securing it with a nylon wire tie.

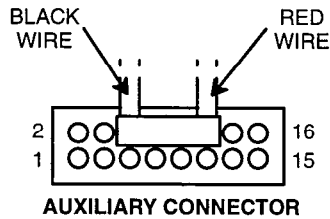
NOTE: The other end of the cable was previously attached to the MVIP connector (J10) on the CPU Motherboard. Also, pin 1 on the cable (indi-

cated by the red stripe) must align with pin 1 on the connector.

- (36) Plug the free end of the Keyboard cable assembly into KEYBOARD connector (J3) on the PC CPU Card (see Figure 3-27 on page 3-59). Then dress the cable by taking up any slack and securing it with a nylon wire tie.

NOTE: The other end of the cable was previously attached to the KEYBOARD connector (J18) on the CPU Motherboard. Also, the friction-lock connector is keyed so that it can only be installed one way.

- (37) To enable the KSU's external speaker to work with the PC CPU Card, plug the free end of the two speaker wires into the AUXILIARY connector (JP1) on the PC CPU Card, as shown below.



NOTE: The speaker wires are included in the bundle of wires coming from inside the front panel on the KSU. Although there are only two wires (red and black), they have a four-pin header. Place the header over pins 6, 8, 10, and 12.

- (38) Attach one end of the PC Reset cable assembly to the RESET TO PC-CPU connector (J13) on the CPU Motherboard (see Figure 3-15 on page 3-30).

NOTE: The red wire goes to the positive (+) pin and the black wire goes to the negative (-) pin. *If the polarity is reversed, the PC CPU Card will continuously reset.*

- (39) Attach the other end of the PC Reset cable assembly to the RESET SW1 connector on the PC CPU Card (see Figure 3-27 on page 3-59).

NOTE: The black wire goes to pin 1, which is the pin closest to the hard drive cable connector. The red wire goes to the pin that is closest to the keyboard cable connector. *If the polarity is reversed, the PC CPU Card will continuously reset.*

- (40) Dress the PC Reset cable by taking up any slack and securing it with a nylon wire tie. Be sure to route the cable in such a way that it does not obstruct the Memory Card.

- (41) *If the CPU Motherboard chassis was previously removed from the main KSU chassis in step 19, slide the motherboard chassis back in through the rear of the KSU, replace the four chassis screws, and carefully reconnect all the cables/wires that were disconnected and labeled.*

- (42) Pull the free end of the floppy drive cable assembly up through the KSU chassis and into the 5-inch drive bay area. Do not leave any excess cable in the motherboard compartment.

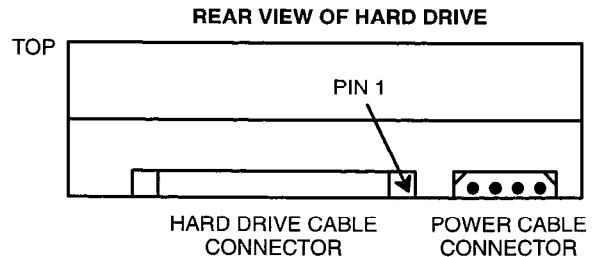
NOTE: Route the cable over (above) the P8/P9 power cable so that the power cable acts as a rest or restraint for the floppy drive cable. If routed properly, the floppy drive cable will not block access to the Memory Card connector (J20) on the CPU Motherboard.

- (43) Pull the free end of the hard drive cable assembly up through the KSU chassis and into the 5-inch drive bay area. Do not leave any excess cable in the motherboard compartment.

NOTE: Route the cable over (above) the P8/P9 power cable so that the power cable acts as a rest or restraint for the hard drive cable. If routed properly, the hard drive cable will not block access to the Memory Card connector (J20) on the CPU Motherboard.

- (44) Attach the *far* end of the hard drive cable assembly to the appropriate connector on the back end of the hard drive, as shown below. (Use the 2x20 connector on the end of the cable; do not use the connector in the middle of the cable.)

NOTE: The other end of the cable was previously attached to the hard drive connector (J2) on the PC CPU Card. Also, pin 1 on the cable (indicated by the red stripe) must align with pin 1 on the connector.

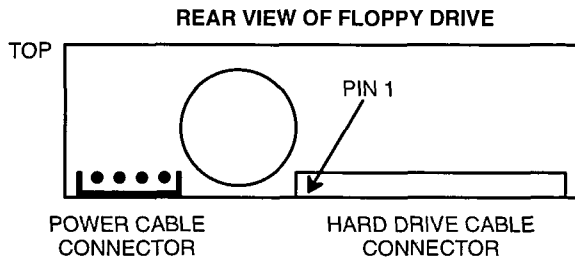


- (45) Hide the excess hard drive cable underneath the hard drive in the empty 5-inch bay.

- (46) Plug one of the available Molex-type power cable connectors coming from the power supply into the Molex-type power connector on the back of the hard drive. The connector is keyed so that it can only be plugged in one way.

- (47) Attach the *far* end (twisted end) of the floppy drive cable assembly to the appropriate connector on the back end of the floppy drive, as shown in the following diagram. (Use the 2x17 A drive connector on the end of the cable; do not use the B drive connector in the middle of the cable. The CMOS setup for the PC CPU Card is configured to use the A drive.)

NOTE: The other end of the cable was previously attached to the floppy drive connector (J5) on the PC CPU Card. Also, pin 1 on the cable (indicated by the red stripe) must align with pin 1 on the connector.

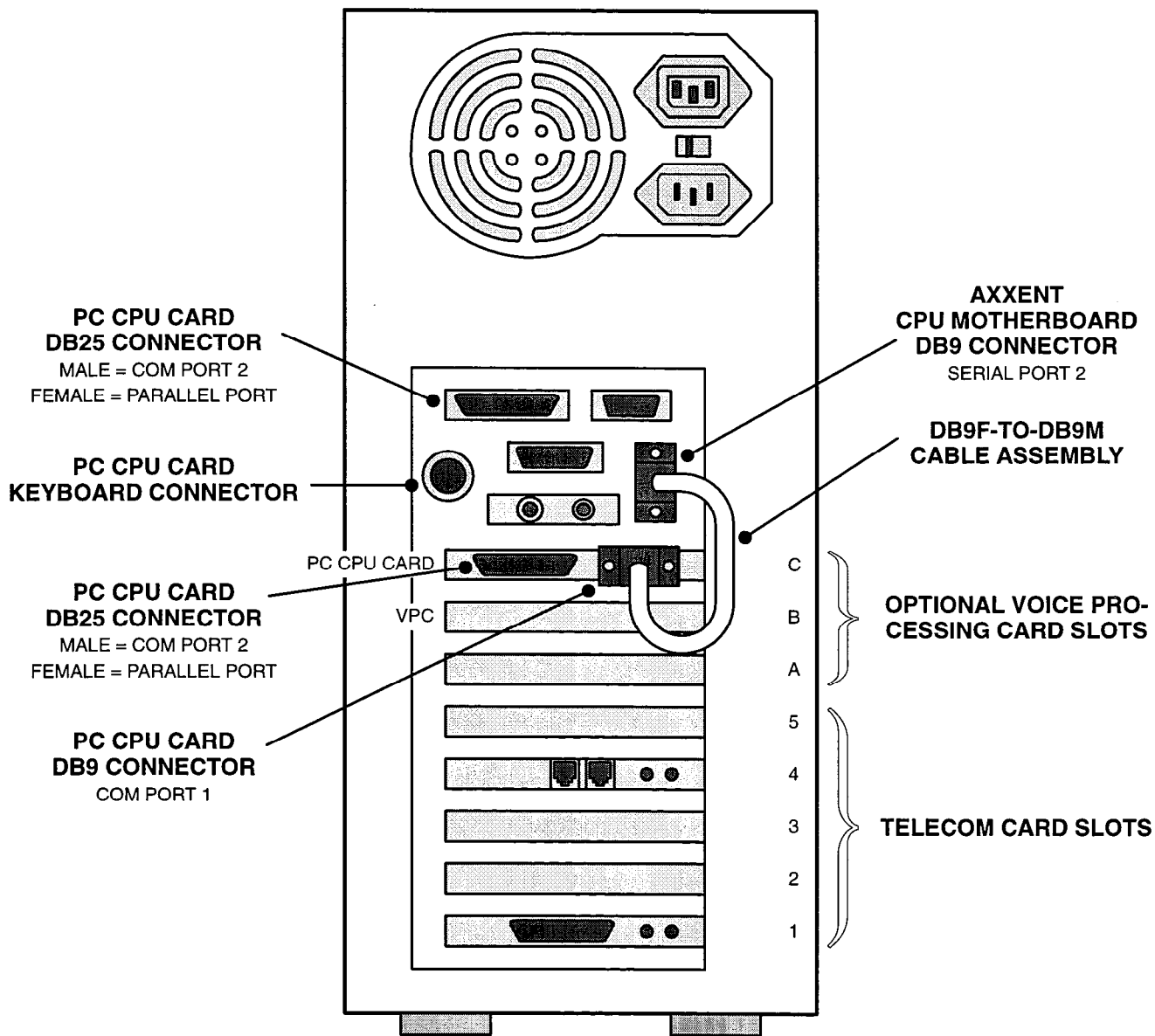


- (48) Hide the excess floppy drive cable underneath the hard drive in the empty 5-inch bay.
- (49) Plug one of the available power cable connectors coming from the power supply into the power connector on the back of the floppy drive. The connector is keyed so that it can only be plugged in one way.

NOTE: The power cable connector to the floppy drive is smaller than the power connector to the hard drive.

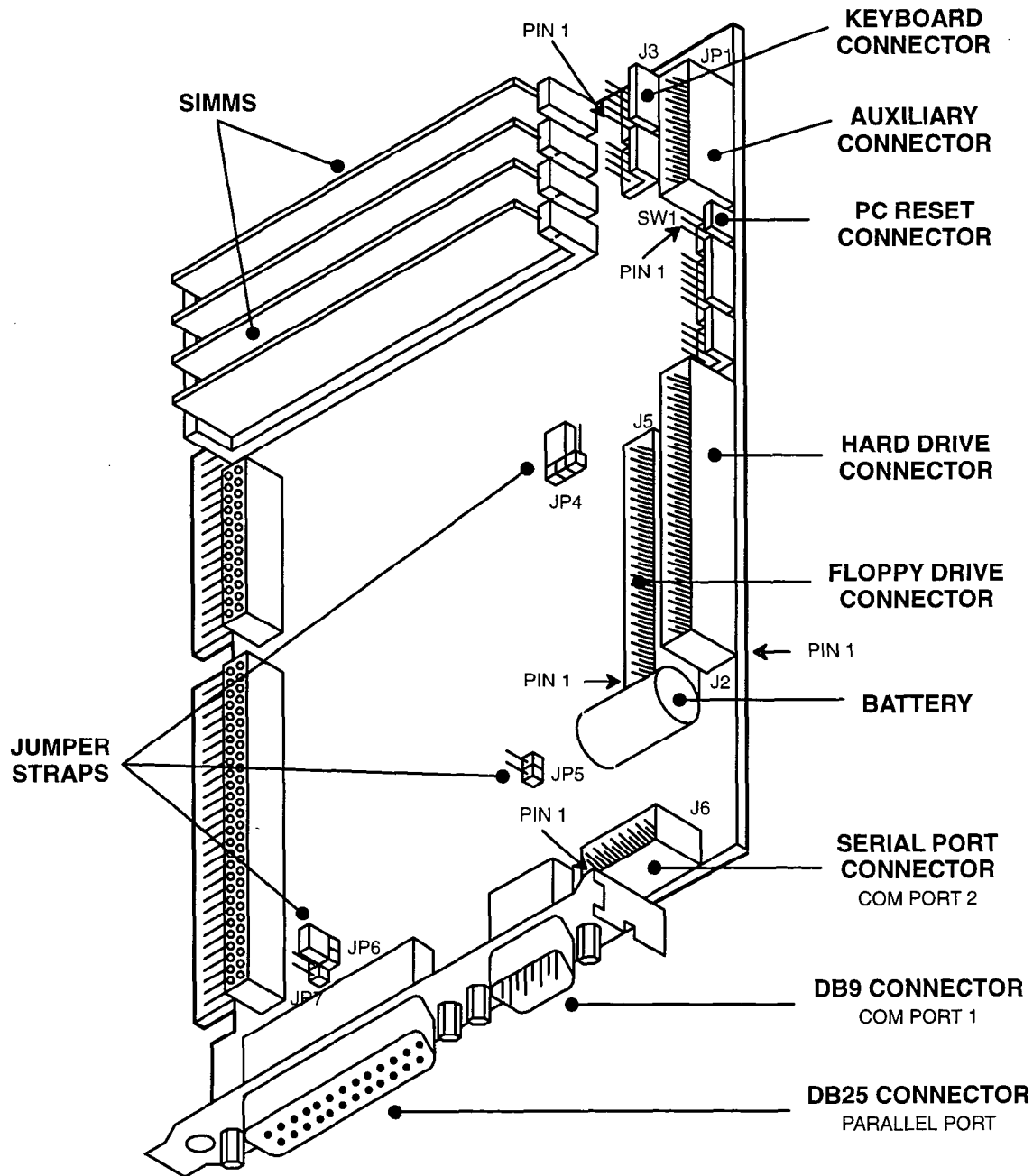
- (50) Attach the male end of the DB9F-to-DB9M cable assembly to the female DB9 connector (SERIAL #2) on the rear of the KSU chassis. Tighten the thumb screws to secure the connector to the KSU.
- (51) Attach the female end of the DB9F-to-DB9M cable assembly to the male DB9 connector (COM1) on the bracket edge of the PC CPU Card at the rear of the KSU chassis. Tighten the thumb screws to secure the connector to the KSU.
- (52) *If necessary*, re-install the telecom card that was removed in step 5.
- (53) Slide the KSU cover back into place and replace the screws.
- (54) Reconnect the AC power cable to the rear of the KSU and then turn ON the AC POWER switch on the front of the KSU.
- (55) After the system boots up (which takes approximately three minutes just for the voice processing portion), verify proper operation of the Axxent Talk voice processing system by dialing the default voice mail extension number (299) and accessing the default system greeting.
- (56) The Inter-Tel Axxent System, including the Axxent Talk voice processing portion, comes with a "plug and play" default database. To make changes to the database, refer to the AXXENT TALK FEATURES and PROGRAMMING sections of the manual.

FIGURE 3-26. KSU WITH INTER-TEL AXSENT TALK INSTALLED — REAR VIEW



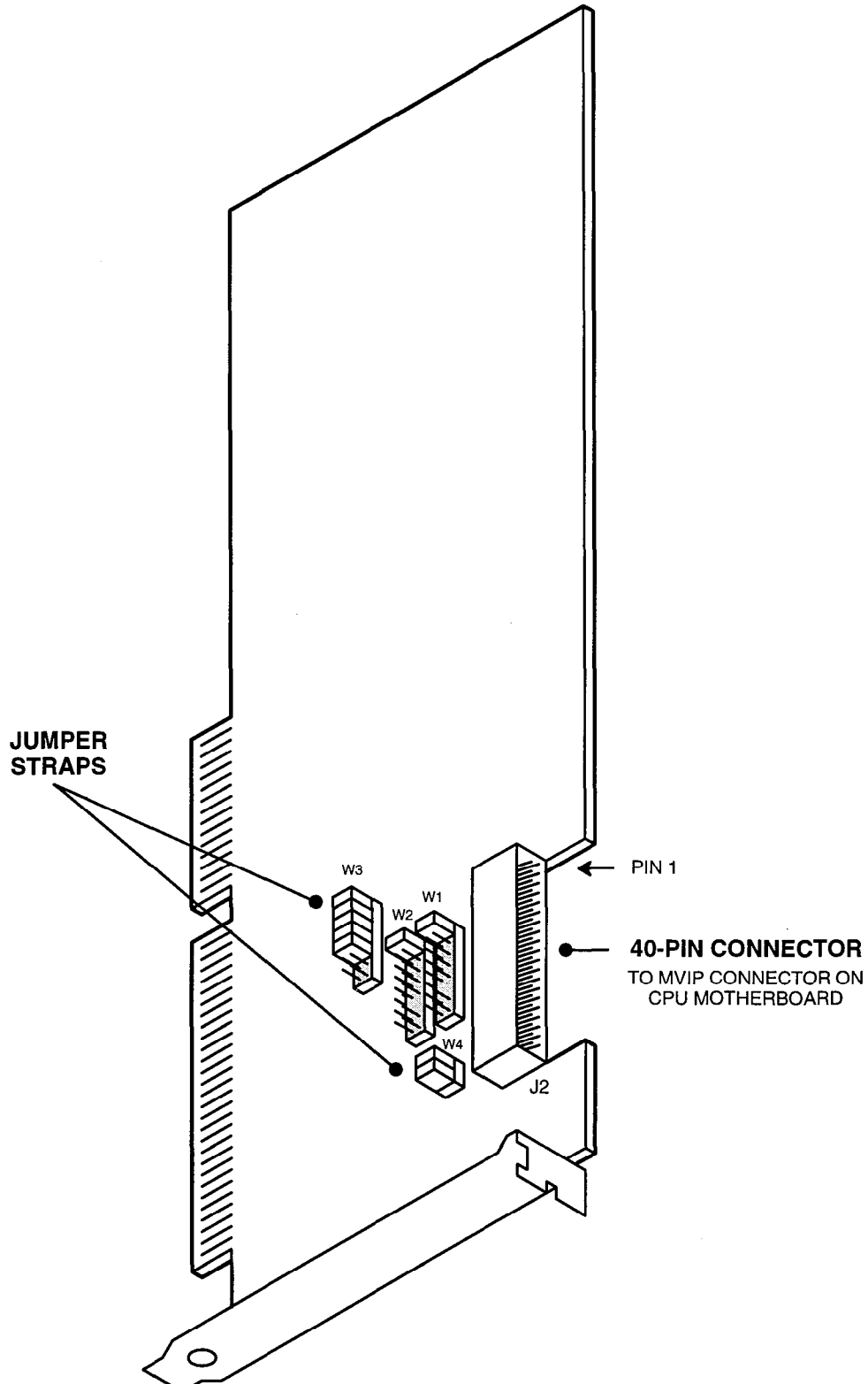
NOTE: For a drawing showing the rear of the KSU without the optional Inter-Tel Axxent Talk hardware installed, see Figure 2-3 on page 2-25.

FIGURE 3-27. PC CPU CARD



NOTE: The above drawing is based on the Toronto MicroElectronics Inc. (TME) F386SX-33 Industrial Single Board Computer card. Depending on the specific model of PC CPU Card being used, the location and function of the various connectors shown above could vary somewhat. If your voice processing kit has a different brand or model, refer to the revised instructions included with the kit.

FIGURE 3-28. VOICE PROCESSING CARD (VPC)



B. SOFTWARE INSTALLATION

10.4 The Axxent Talk hardware is shipped with the following software-related items already installed:

- Proper CMOS setup on the PC CPU Card
- MS-DOS installed on the hard drive
- Axxent Talk applications software installed on the hard drive

10.5 As a back-up, 3½-inch floppy disks containing the system software and CMOS setup software are also included. If the software is upgraded at a later time, a new set of system software disks will be provided.

10.6 If necessary, use one of the following procedures (either with or without a programming terminal) to install the Axxent Talk applications and CMOS setup software.

Installing Applications Software Without A Programming Terminal

NOTE: To install the Axxent Talk applications software, the hard disk drive must be properly formatted and must have MS-DOS version 6.2 (or later) installed.

- (1) Insert Applications Software Disk 1 of 4 in the Axxent Talk floppy disk drive.
- (2) Turn ON the AC POWER switch on the front of the KSU and wait for the files on the software disk to be copied onto the hard disk drive. (When finished, the KSU beeps twice every seven seconds to indicate it is ready for the second software disk.)
- (3) After the two beeps, remove the first software disk, insert Applications Software Disk 2 of 4, and wait for the files to be copied. (When finished, the KSU beeps three times every seven seconds to indicate it is ready for the third disk.)

NOTE: If the wrong software disk is inserted, the KSU beeps for 1.5 seconds, pauses for three seconds, and then beeps the appropriate number of times to indicate which software disk should be inserted.

- (4) After the three beeps, remove the second software disk, insert Applications Software Disk 3 of 4, and wait for the files to be copied. (When finished, the KSU beeps four times every seven seconds to indicate it is ready for the fourth disk.)
- (5) After the four beeps, remove the third software disk, insert Applications Software Disk 4 of 4, and wait for the files to be copied. (When finished, the KSU beeps for 1.5 seconds and then

pauses for five seconds to indicate the installation is complete.)

- (6) After the installation is complete, remove the last disk. (The voice processing portion of the KSU automatically reboots.)

Installing Applications Software With A Programming Terminal

NOTE: To install the Axxent Talk applications software, the hard disk drive must be properly formatted and must have MS-DOS version 6.2 (or later) installed.

- (1) Referring to the diagram below, attach the DB25 modular adapter (part no. 804.2425; from the optional diagnostics cable kit) to the PC CPU Card's male DB25 connector (COM2) on the rear of the KSU.

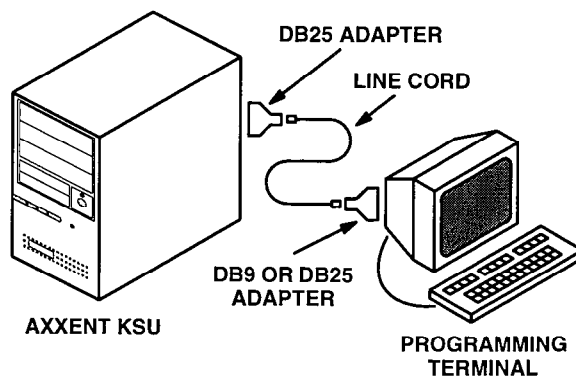
NOTE: If the diagnostics cable kit is unavailable, refer to the wiring diagram on page 2-19.

- (2) Attach the DB9 modular adapter (part no. 804.2420; from the optional diagnostics cable kit) to a customer-provided ASCII-type programming terminal configured with the following parameters:

- The transmit and receive baud rate is 9600
- The data format is 8 bit standard ASCII
- Parity is off (ignored)
- Communication is full duplex
- There is one start bit and one stop bit

NOTE: If the destination terminal requires a DB25 connection, attach a 9-25 (DB9M-to-DB25F) converter to the DB9 modular adapter.

- (3) Plug one end of the mod-to-mod line cord (part no. 813.1592; from the optional diagnostics cable kit) into the DB25 modular adapter installed in step 1. Plug the other end of the line cord into the DB9 modular adapter installed in step 2.



- (4) Insert Applications Software Disk 1 of 4 in the Axxent Talk floppy disk drive.
- (5) Turn ON the AC POWER switch on the front of the KSU and follow the installation instructions displayed on the terminal.

NOTE: If re-installing Axxent Talk applications software, the terminal may occasionally display error messages such as "file not found" or "directory already exists." Ignore these messages and continue with the installation.

- (6) After the installation is complete, remove the last software disk and disconnect the terminal. (The voice processing portion of the KSU automatically reboots.)

Voice Prompts Installation

10.7 Should it become necessary to re-install the voice prompts only (e.g., because one or more of the prompts is garbled or incomplete), follow the procedure below.

- (1) Connect a customer-provided programming terminal to the KSU as described in steps 1–3 in the preceding section.
- (2) Insert Applications Software Disk 2 of 4 in the floppy disk drive and turn ON the AC POWER switch on the front of the KSU. (The terminal displays "Delaying for 5 seconds. Press any key to abort.")
- (3) Before the five seconds expire, press ENTER (or any key on the keyboard) to abort. (The terminal displays the Axxent Talk applications directory prompt "C:\AVDAP>".)
- (4) Remove Applications Software Disk 2 of 4 and insert Applications Software Disk 1 of 4.
- (5) At the C:\avdap> prompt, type "cd \util" and press ENTER. (The terminal displays the utilities directory prompt "C:\UTIL>".)
- (6) At the C:\util> prompt, type "pmtinst" and press ENTER. (The terminal displays the files being copied and the number of files copied.)
- (7) Follow the installation instructions displayed on the terminal.
- (8) After the installation is complete, remove the last software disk and disconnect the terminal. (The voice processing portion of the KSU automatically reboots.)

Default Database Procedure

10.8 Should it become necessary to return only the Axxent Talk database (and not the system call processing database) to its default values, use the following procedure:

- (1) Connect a customer-provided programming terminal to the KSU as described in steps 1–3 in the second column on the preceding page.
- (2) Insert Applications Software Disk 2 of 4 in the floppy disk drive and turn ON the AC POWER switch on the front of the KSU. (After the initial driver installation information, the terminal eventually displays "Delaying for 5 seconds. Press any key to abort.")
- (3) Before the five seconds expire, press ENTER (or the space bar) to abort the voice processing application and exit to DOS. (The terminal displays the Axxent Talk applications directory prompt "C:\AVDAP>".)
- (4) At the C:\AVDAP> prompt, type "delldb" and press ENTER. (The terminal displays a message about removing old Inter-Tel Voice Processing System files, followed by the Axxent Talk applications directory prompt "C:\AVDAP>".)
- (5) Remove the floppy disk and disconnect the programming terminal.
- (6) Reboot the voice processing portion of the KSU and verify that the database is now in the default state.

CMOS Setup Procedure

10.9 If the CMOS setup somehow becomes corrupted and the system cannot access the hard drive after a reset (e.g., due to a low battery on the PC CPU Card), use the following procedure to reboot the voice processing system and automatically restore the proper hard drive CMOS setup parameters.

NOTE: Each hard drive model has its own unique CMOS setup boot disk. Be sure to use the appropriate boot disk for the specific hard drive model installed.

- (1) Insert the appropriate CMOS Setup Boot Disk in the floppy disk drive and press the reset switch on the front of the KSU.
- (2) Wait for the hard drive parameters on the boot disk to be copied into the CMOS setup. (When finished, the KSU beeps several times.)
- (3) After the beeps, remove the boot disk and then reboot the system by pressing the reset switch on the front of the KSU.

C. AXXENT TALK HARD DISK DRIVE REPLACEMENT

10.10 If necessary, the hard disk drive in the Axxent Talk section of the KSU can be replaced with a new drive as outlined below. The instructions are divided into five sections. Follow the steps outlined in each section, as needed.

NOTE: Inter-Tel's replacement hard disk drives are properly formatted and loaded with DOS prior to shipment. It is generally *not* necessary to reformat the disk and re-install DOS. Simply save the database, replace the old disk, program the CMOS setup, install the applications software, and restore the database.

10.11 To replace the hard disk drive, the following software items are needed:

- One set of Axxent Talk applications software floppy disks (included with the voice processing system)
- A single floppy boot disk containing the CMOS setup software (included with the voice processing system)

10.12 If reformatting the disk and re-installing DOS, these items are also needed:

- Keyboard, monitor, and compatible monitor card
- One set of MS-DOS version 6.2 (or later) floppy disks (included with the voice processing system)

Replacing The Hard Disk Drive

10.13 Remove the existing Axxent Talk hard disk drive and replace it with the new hard disk drive, as described in the steps below.

- (1) If possible, save the existing Axxent Talk database on properly formatted floppy disks. (For details, refer to page 6-191 in PROGRAMMING.)

NOTE: To save time and disk space, you may first want to have voice mail users delete all messages that do not need to be saved.

- (2) Turn off the KSU's AC power switch and unplug the AC power cord.
- (3) Remove the four screws securing the cover to the rear of the KSU.
- (4) Slide the cover toward the rear of the KSU until the front tabs on the cover are released from the KSU chassis. Lift the cover off and set it aside.
- (5) Disconnect the cables on the back of the existing hard disk drive, remove the four screws securing

it to the KSU chassis, and remove it from its drive bay in the KSU.

- (6) Remove the Universal Mounting Frame (UMF) from the existing hard disk drive and attach it to the new hard disk drive.
- (7) *If the new hard drive is labeled with any of the following CMOS setup parameters, write this information down and save it.*
 - Disk Type
 - Cylinders
 - Heads
 - Sectors
 - WPCom
 - LZone

NOTE: All Inter-Tel hard disk drives have a label with the necessary setup information on it.

- (8) Attach the cables that were disconnected in step 5 to the back of the new hard disk drive.
- (9) While guiding the cables, carefully insert the new hard disk drive into the previously vacated, middle, 5-inch drive bay in the KSU chassis. (Check to make sure the cables are not strained in any way.) Secure the UMF to the KSU chassis using the four screws removed in step 5.

Using The CMOS Setup Boot Disk

10.14 To ensure that the Axxent Talk PC CPU Card is "set up" to work properly with the new hard disk drive, use the following procedure to reboot the voice processing system and automatically restore the proper hard drive CMOS setup parameters.

NOTE: Each hard drive model has its own unique CMOS Setup Boot Disk. Be sure to use the appropriate boot disk for the specific hard drive model being installed.

- (1) Insert the appropriate CMOS Setup Boot Disk in the Axxent Talk floppy disk drive.
- (2) Plug in the KSU's power cord, turn on the AC power switch on the front of the KSU, and wait for the hard drive parameters on the boot disk to be copied into the CMOS setup. (When finished, the KSU beeps several times.)
- (3) After the beeps, remove the boot disk and then reboot the system by pressing the reset switch on the front of the KSU.

Checking The PC CPU Card Setup (If Necessary)

10.15 If the proper CMOS Setup Boot Disk is not available (as described in the previous section), use the following procedure to ensure that the Axxent Talk PC CPU Card is "set up" to work properly with the new hard disk drive.

NOTICE

Depending on the specific BIOS used by the PC CPU Card, the layout and editing functions of the setup screen could vary somewhat. If so, make any necessary changes by following the actual instructions displayed on the monitor, rather than those outlined in the following steps.

- (1) On the rear of the KSU chassis, use a Phillips screwdriver to remove the metal bracket that covers the opening to slot A (as shown in Figure 3-26 on page 3-58). Set the screws and bracket aside.
- (2) Using a properly grounded anti-static wrist strap, temporarily install a customer-provided monitor card in slot A on the CPU Motherboard. Make sure the card is securely attached to the motherboard and does not touch any adjacent cards.
- (3) Connect a customer-provided monitor to the appropriate connector on the bottom edge of the monitor card. Then, plug in the monitor's AC power cord and turn on the monitor's AC power switch.
- (4) Connect a customer-provided keyboard to the 5-pin DIN keyboard connector on the rear of the KSU.
- (5) Plug in the KSU's power cord and turn on the AC power switch on the front of the KSU. (The monitor displays the system memory check and then "Hit , if you want to run SETUP".)
- (6) Press the DEL key. (The monitor displays the main menu of options, as shown below.)

```
STANDARD CMOS SETUP
ADVANCED CMOS SETUP
ADVANCED CHIPSET SETUP
AUTO CONFIGURATION WITH BIOS DEFAULTS
AUTO CONFIGURATION WITH POWER-ON DEFAULTS
CHANGE PASSWORD
HARD DISK UTILITY
WRITE TO CMOS AND EXIT
DO NOT WRITE TO CMOS AND EXIT
```

- (7) Use the up or down arrow keys to highlight the STANDARD CMOS SETUP option and press

ENTER *twice*. (The monitor displays the Standard CMOS Setup screen, a portion of which is shown below.)

```
Date (mn/date/year): xx/xx/xx
Time (hour/min/sec): xx:xx:xx
Hard Disk C: Type : xx
Hard Disk D: Type : Not Installed
Floppy Drive A: : 1.44MB, 3.5"
Floppy Drive B: : Not Installed
Primary Display : Not Installed
Keyboard : Not Installed
```

- (8) After setting the correct date and time, check to see that the Hard Disk C field is set to the proper type (e.g., Type 47) for the new drive that was just installed. *If it is not*, use the up or down arrow keys to highlight the Hard Disk C field, then use the PG UP or PG DN keys to change the setting to the proper type. Finally, enter the other hard drive setup parameters as prompted (which was previously copied off of the drive):

- Cylinders
- Heads
- Sectors
- WPCom
- LZone

- (9) Ensure that the other fields are set as shown in the box in step 7. *If not*, use the up or down arrow keys to highlight the desired field, then use the PG UP or PG DN keys to change the setting.

NOTE: It is important that the Primary Display and Keyboard fields be set to "Not Installed" since these items will actually not be installed after the monitor and keyboard are removed.

- (10) Press the ESC key to exit. (The monitor again displays the main menu of options.)
- (11) Use the down arrow key to highlight the WRITE TO CMOS AND EXIT option and press ENTER. (The monitor displays: "Write to CMOS and exit (Y/N)? N")
- (12) Enter "y" (for yes) and press ENTER. (The monitor again displays the system memory check.)
- (13) *If the new hard disk drive already has some type of DOS installed*, the monitor eventually displays the C drive programming prompt "C:\>". If necessary, reformat the hard disk drive and re-install DOS as outlined in the following section.

If the new hard disk drive is blank, the monitor eventually displays "Insert BOOT diskette in A: Press any key when ready". Insert the MS-DOS

6.2 (or later) Setup Disk into the floppy disk drive and follow the instructions displayed on the monitor to set up and install MS-DOS. Then skip over the next section and proceed directly to Installing the Software.

NOTE: When installing MS-DOS 6.2, *do not* use the DoubleSpace (or DriveSpace) or Mem-Maker utilities.

Formatting The Hard Disk Drive And Installing MS-DOS (If Necessary)

10.16 After setting up the PC CPU Card as outlined in one of the previous two sections, format the disk and install MS-DOS using the following procedure (if necessary).

CAUTION: *Formatting the hard disk drive erases all information stored on the drive. DO NOT format the hard disk drive unless instructed to do so by authorized personnel.*

- (1) *If a monitor and keyboard are not already installed:*
 - a. On the rear of the KSU chassis, use a Phillips screwdriver to remove the metal bracket that covers the opening to slot A (as shown in Figure 3-26 on page 3-58). Set the screws and bracket aside.
 - b. Using a properly grounded anti-static wrist strap, temporarily install a customer-provided monitor card in slot A on the CPU Motherboard. Make sure the card is securely attached to the motherboard and does not touch any adjacent cards.
 - c. Connect a customer-provided monitor to the appropriate connector on the bottom edge of the monitor card. Then, plug in the monitor's AC power cord and turn on the monitor's AC power switch.
 - d. Connect a customer-provided keyboard to the 5-pin DIN keyboard connector on the rear of the KSU.
- (2) Insert the MS-DOS 6.2 Setup Disk into the floppy disk drive.
- (3) At the C:\> prompt, enter "a:" and press ENTER. (The monitor displays the A drive programming prompt "A:\>".)
- (4) At the A:\> prompt, enter "format c:/s" and press ENTER. (The monitor displays "WARNING: ALL DATA ON NON-REMOVABLE DISK

DRIVE C: WILL BE LOST! Proceed with Format (Y/N)?")

- (5) Enter "y" (for yes) and press ENTER. (The formatting process for drive C begins and continues for several minutes. After the formatting is complete, the monitor displays a format complete message and asks for a volume label.)
- (6) Type in a volume label (if desired) and press ENTER. (The monitor displays some disk usage information and then the A drive programming prompt "A:\>".)
- (7) At the A:\> prompt (and with the MS-DOS 6.2 Setup Disk still in the floppy disk drive), press the CTRL, ALT, and DEL keys all at the same time to restart the system.
- (8) Follow the instructions displayed on the monitor to set up and install MS-DOS.

NOTE: When installing MS-DOS 6.2, *do not* use the DoubleSpace (or DriveSpace) or Mem-Maker utilities.

Installing The Software

10.17 After installing the new hard disk drive and programming the CMOS setup (and, if necessary, after formatting the hard disk drive and installing MS-DOS), re-install the applications software and restore the database, as outlined in the following steps.

- (1) *If a keyboard, monitor, and monitor card were previously installed:*
 - a. Turn off the KSU's AC power switch and unplug the AC power cord.
 - b. Turn off the monitor's AC power switch, unplug the monitor, and disconnect it from the monitor card.
 - c. Remove the monitor card from its slot on the CPU Motherboard.
 - d. On the rear of the KSU chassis, use a Phillips screwdriver to replace the metal bracket that covers the opening to slot A.
 - e. Disconnect the keyboard from the connector on the rear of the KSU, replace the cover on the PC, and re-install the screws.
 - f. Plug in the KSU's power cord and turn on the AC power switch.
- (2) Insert Applications Software Disk 1 in the floppy disk drive, and then reboot the system by pressing the reset switch on the front of the KSU.

- (3) Install the Axxent Talk applications software. (For details, see page 3-61.)
- (4) Restore the saved database from step 1 on page 3-63. (For details, see page 6-191 in PROGRAMMING.)
- (5) After the restore is complete and the system resets, check the database programming to ensure that the system database has been successfully restored.

11. SMDR/ERROR MESSAGE OUTPUT DEVICE INSTALLATION

11.1 The output device(s) for the station message detail recording (SMDR) and error message recording features must meet the requirements and match the RS-232-C pinouts described in SPECIFICATIONS on page 2-20. The cables for the device(s) must not be longer than 50 feet (15 meters).

11.2 To connect an RS-232-C output device to the KSU or to a PC Data Port Module:

- (1) Match the baud rates on the output device and the RS-232-C port to which it will be attached. Refer to page 2-21 for the proper baud rate settings.
- (2) Turn on the AC power to both the device and the system *before* connecting the interface cable to the circuit card or PCDPM. This prevents any electrical surges from being transmitted by the interface.
- (3) Carefully connect the interface cable from the device to the appropriate connector on the KSU or PCDPM.
- (4) To set the parameters for the SMDR and error message outputs, refer to PROGRAMMING.

12. EXTERNAL MUSIC SOURCE INSTALLATION

12.1 If desired, a single external music source may be connected to the system for background music and music-on-hold. The music jack on the rear of the KSU is the input for the optional external music source (radio, tape player, etc.). For the music-on-hold feature, music, silence, or tick-tones can be assigned on a trunk group-by-trunk group basis. For more information, see SPECIFICATIONS, page 2-8.

NOTE: In some circumstances, there may be broadcast restrictions associated with the music. Check with the music's original distributor and/or the radio station for

copyright and broadcast restrictions concerning background music and music-on-hold.

12.2 If using a radio as a music source, place it 5 to 10 feet away from the KSU to avoid RFI generated by the KSU. If the radio is placed more than 10 feet away from the KSU, use twisted-pair cable. For better reception, a radio with an external antenna is recommended.

12.3 To install the external music source:

- (1) Attach a 1/8-inch, two-conductor, mini-phone plug to one end of a 5- to 10-foot (1.5- to 3.0-meter) length of shielded speaker cable (or twisted-pair cable) to run from the external music source to the KSU.

- (2) **EITHER**, connect the other end of the cable to the speaker output terminals of the music source.

OR, if the music source has an earphone jack, attach the necessary connector to the other end of the cable, and plug it into the earphone jack on the music source.

NOTE: If the earphone jack is "padded" so that the optimal volume level cannot be reached, the *EITHER* procedure (above) may be more effective.

- (3) Plug in the AC power cord for the music source. *DO NOT* use the outlet for the KSU.
- (4) Turn on the AC power to the music source.
- (5) Insert the 1/8-inch mini-phone plug into the jack labeled MOH on the rear of the KSU.
- (6) From a keyset:

EITHER, select a trunk and dial the telephone number of one of the other trunks to call back into the system. Put the call on hold to hear the music.

OR, place an intercom call to another station. Put the call on hold to hear the music.

- (7) While listening to music-on-hold, adjust the volume on the music source to an acceptable level.

13. EXTERNAL PAGING EQUIPMENT INSTALLATION

13.1 Optional external paging equipment can be connected to an available LSC circuit or to the speaker wires on a keyset. In addition, the KSU has its own dedicated external paging port reserved for possible future use (see page 2-8 for more information).

NOTE: When connecting external paging equipment to an LSC circuit, use a paging amplifier that provides talk battery. When connecting external paging equipment to a keyset, use a paging amplifier that *DOES NOT* provide talk battery.

CAUTION

Using a paging amplifier with talk battery on a keyset may damage the keyset or the card.

13.2 To install external paging equipment, follow these steps:

- (1) *If installing the paging equipment on an LSC circuit:*
 - a. Cut a length of shielded speaker cable to run from the paging amplifier to the MDF backboard.
 - b. At the MDF, terminate one end of the cable onto tip and ring of an available LSC circuit.
- If installing the paging equipment on a keyset speaker:*
 - a. Cut a length of shielded speaker cable to run from the paging amplifier to the keyset.
 - b. At the keyset, terminate one end of the cable onto the two wires leading from the keyset's internal speaker.
- (2) Connect the other end of the cable to the amplifier high-impedance input according to the manufacturer's instructions.
- (3) Connect the paging speaker(s) to the amplifier using speaker cable.
- (4) Plug in the amplifier's AC power cord. *DO NOT* use the outlet for the KSU.
- (5) Set the amplifier volume control to the lowest setting and turn on the amplifier.

- (6) *If installing the paging equipment on an LSC circuit:*

- a. Ensure that the LSC circuit is not toll restricted.
- a. From a station location, access the LSC circuit and adjust the amplifier to the desired level while placing the page.

If installing the paging equipment on a keyset speaker:

- a. From a station location, make a page by lifting the handset, pressing the PAGE key (or dialing 7 — the default Page feature code), and dialing a zone code that includes the external paging zone.
- b. Adjust the amplifier to the desired level while placing the page.

14. PREVENTATIVE MAINTENANCE

14.1 For optimal system performance, periodically conduct the following preventative maintenance routines:

- **Clean and Dust** — To ensure proper air circulation and reduce excess heat, clean and dust the ventilation slots on the KSU and the components on the circuit cards. Also, use compressed air to blow out the dust that collects on the two fans in the KSU (the one in the rear of the power supply and the one under the card slot grill on the inside of the plastic faceplate that covers the front of the KSU).
- **Check Component Connections** — Ensure that all components on the circuit cards are seated securely in their sockets and that no pins are bent.
- **Check Card Connections** — Ensure that all circuit cards are seated securely in their appropriate card slots.
- **Check Cable Connections** — Ensure that all system power and interface cables are properly connected.
- **Check System Voltages** — Ensure that all system power supply voltages are within tolerance, as outlined on page 3-25.

15. POST-INSTALLATION CHECKLIST

15.1 To ensure that the system has been installed properly, review the installation outline on page 3-3. Then review the items in the following list as a final check.

- KSU, MDF, and station locations, and cable runs meet environmental requirements and cable lengths are within loop limits.
- Ferrite beads are installed on all trunk cables, if necessary.
- Bridging clips are installed where required on all MDF blocks.
- Gas discharge tubes with silicon avalanche suppressors are installed on the trunks for lightning protection. Also, if extra protection is desired, the cable between the telephone company RJ-type block(s) and the gas discharge tubes is at least 75 feet long.
- If off-premises extensions are used, OPX or customer-provided circuits, and OPX repeaters (if needed), are connected at the MDF.
- The KSU's AC outlet is properly grounded. In addition, all optional Single-Line Adapters, trunk gas discharge tubes, and UPS/SPS battery compartments are properly grounded to the KSU's AC outlet.
- The system power supply is plugged into an isolated, dedicated AC outlet, and no other equipment has been plugged into the same outlet. An extension cord was *not* used. A voltage surge/spike protector is installed to reduce the effects of AC voltage surges and spikes.
- Power supply voltages are in tolerance.
- Amphenol-type connectors, modular jack connectors, and station instrument line cords are all connected securely. All keyset, DSS/BLF Unit, single-line, and playback device stations are working properly.
- All AC transformers are plugged into an AC outlet.
- All optional equipment is properly installed and working correctly (for example, printer has paper and ribbon, radio is tuned to a station, etc.).
- CO dial tone is present and calls can be placed and received using all trunks. (Refer to FEATURES and PROGRAMMING for configuring the system and for programming outgoing access, allowed answer, and ring in.)
- After programming the system, the database is saved. (Refer to the PROGRAMMING section for details.)
- A remote programming session can be established using the modem on the programming PC.

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1. INTRODUCTION

1.1 The Inter-Tel Axxent System is compact, easy to install and program, and its many features are easy to use. To describe the system, this FEATURES chapter has been divided into the following sections:

- **Access to the Features:** This section contains a list of the feature codes and their definitions.
- **System Organization:** This section describes possible Administrator assignments, attendant arrangements, and hunt groups (including UCD and ACD hunt groups).
- **Trunk Features:** This section explains the trunk functions and programmable features, including: dual-tone multi-frequency (DTMF) or dial-pulse signaling; types of trunks (loop start and DID); Caller ID, DNIS, and ANI; trunk groups; outgoing access, allowed-answer, and ring-in assignments; call routing tables; day and night modes of operation; automatic route selection (ARS); trunk and toll restriction; area/office code number plans; emergency calls; and direct inward system access (DISA).
- **Station Instruments:** This section describes the station instruments of the Inter-Tel Axxent System. Available station instruments include Executive, Standard, and Basic keysets, single-line sets, and Direct Station Selection/Busy Lamp Field (DSS/BLF) Units.
- **Intercom, Outside, and General Call Processing Features:** Several sections explain the use of the station features that are available to all station users, including intercom call features, outside call features, and general call processing features.
- **Attendant Features:** This section explains the special attendant-only features and the use of the DSS/BLF Unit.
- **Administrator Features:** This section explains the special Administrator-only features.
- **Record Keeping and Maintenance Features:** For record keeping purposes, the Inter-Tel Axxent System offers station message detail recording (SMDR). A system error reporting feature provides self-diagnostic information to make the system easier to service.

2. ACCESS TO THE FEATURES

A. FEATURE CODES

2.1 Each of the station features is assigned a feature code. Using the station's keypad, these codes are entered to select trunks, process calls, and use special features. Complete explanations of the feature codes begin on the next page.

2.2 The codes shown on the following pages are the values that are assigned when the system is in the default state. If desired, they can be changed in database programming to any one- to five-digit value.

CAUTION

Changing a feature code may affect the accessibility of other feature codes. See PROGRAMMING, page 6-77, for details.

B. FEATURE KEYS

2.3 Keysets have feature keys that allow one-key dialing of feature codes. Information is programmed in the database to determine the arrangement of the feature keys and their default values. If desired, some of the keyset feature keys can be designated as user-programmable keys.

C. SPCL KEY AND HOOKFLASH

2.4 In some instances, feature codes are entered immediately after lifting the handset or while on hook. Other times, the user must signal the system before entering the feature code. Keyset users signal the system by pressing the SPCL key. Single-line DTMF set users perform a hookflash (press and release the hookswitch quickly). If the user does not enter a code or begin dialing before the Dial Initiation timer expires, the system sends reorder tones.

D. TRUNK ACCESS CODES

2.5 These feature codes are used for selecting trunks when placing outgoing calls.

<u>FEATURE NAME</u>	<u>CODE</u>	<u>DEFINITION</u>
Automatic Route Selection (ARS)	9200	Allows the system to select the desired route for placing a call, as programmed in the database. <i>This feature must be enabled in Premium Feature Selection. See page 6-198 in PROGRAMMING.</i>
Trunk Group Access 1-9	9201-9208	Selects an available trunk from a programmed group of trunks for placing an outside call.
Emergency Call	911	Entering this feature code selects an outgoing trunk and automatically dials the programmed emergency number (defaults to Trunk Group 1 and 911).
Outgoing Call	8	Selects an outgoing trunk according to the programmed outgoing access mode for that station. See PROGRAMMING, page 6-33. (Keysets use the OUTGOING key or a Call key.)

E. STATION FEATURE CODES

2.6 The following pages list the general feature codes. When a default feature key can be used in place of the feature code, it is indicated at the end of the explanation. Refer to page 4-40 for a listing of the default keyset feature keys.

<u>FEATURE NAME</u>	<u>CODE</u>	<u>DEFINITION</u>
Account Code — All Calls Following	391	Allows the station user to enter a forced or optional account code that will apply to all calls following the entry of this feature code and will appear in the SMDR. To disable the All Calls Following feature, the feature code is entered again without an account code.
Account Code — Optional	390	Allows the station user to enter an optional account code for SMDR reports during an outside call.
ACD Agent Login	326	These feature codes allow an ACD hunt group member (agent) to log into and out of the ACD hunt group(s). The agent will only receive calls through the ACD hunt group(s) while logged in.
ACD Agent Logout	327	
ACD Agent Login/Logout Toggle	328	
ACD Agent Wrap-Up Terminate	329	When an ACD agent completes a call, no other ACD hunt group call will ring at the station until the ACD Wrap-Up Timer expires or the agent enters this feature code to terminate the wrap-up session.
Answer (Ringing Call)	351	Answers the call that has been ringing or holding the longest at that station. Refer to page 4-22 for the priority list. (Keysets use the ANSWER key.)
Automatic Trunk (CO) Access On/Off	360	<i>(Keysets Only)</i> Allows the keyset user to determine how ringing outside calls will be answered: simply by lifting the handset or pressing SPKR (automatic answer), or by lifting the handset or pressing SPKR and pressing a Call key, individual trunk key or the ANSWER key.
Automatic Intercom Access On/Off	361	<i>(Keysets Only)</i> Allows the keyset user to determine how ringing intercom calls will be answered: simply by lifting the handset (automatic answer), or by lifting the handset and pressing the IC key (or a Call key, if there is no IC key).

<u>FEATURE NAME</u>	<u>CODE</u>	<u>DEFINITION</u>
Automatic Trunk Answer	350	Using this feature code, station users with allowed answer can pick up trunks that are ringing into the system, but that are not actually ringing at their stations. This feature does not pick up transferred calls or recalls that are ringing at the station.
Background Music On/Off	313	<i>(Keysets Only)</i> Turns on and off background music heard through the keyset speaker.
Call Forward — All Calls	355	Immediately forwards all calls to another station or to an outside telephone number. (Keysets use the FWD key.)
Call Forward — If Busy	357	Immediately forwards all calls to another station or to an outside telephone number when the station is in use.
Call Forward — If No Answer	356	Forwards all calls to another station or to an outside telephone number if not answered within a predetermined time.
Call Forward — If No Answer/Busy	358	Forwards all calls to another station or to an outside telephone number if not answered within a predetermined amount of time, or immediately if the station is in use.
CO Hookflash	330	Sends a timed hookflash over the trunk while on an outside call.
Conference	5	Connects from three to four parties in a conference. A conference consists of any combination of inside and outside parties. (Keysets use the CNF key.)
Data	340	<i>(Executive and Standard Keysets Only)</i> Allows operation of a data device attached to a keyset that has a PC Data Port Module and a Modem Data Port Module (also requires a modem-equipped data device).
Default Station	394	This single feature code cancels do-not-disturb, manual call forwarding, background music, ring intercom always, and queue requests; restores handsfree mode, pages, hunt group calls, and system forwarding; and returns keyset volumes to default values.
Directory	307	<i>(Display Keysets Only)</i> Allows display keyset users to search for extension numbers or system speed-dial numbers. The number can then be dialed, if desired. <i>This feature must be enabled in Premium Feature Selection. See page 6–198 in PROGRAMMING.</i>
Display Time/Date	300	<i>(Display Keysets Only)</i> Temporarily displays the system date and time, user name, and extension number during a call or when other displays are shown.
Do-Not-Disturb	370	The Do-Not-Disturb feature code halts all intercom calls, transferred calls, and pages to the station. The Cancel code returns the station to normal operation. The on/off code can be used to turn do-not-disturb on or off. (Keysets use the DND key.)
Do-Not-Disturb Cancel	371	
Do-Not-Disturb On/Off	372	
Do-Not-Disturb Override	373	<i>(Keysets Only)</i> If enabled in the database, allows the keyset user to break through another station's do-not-disturb mode when placing an intercom call.

<u>FEATURE NAME</u>	<u>CODE</u>	<u>DEFINITION</u>
Enhanced Speakerphone Enable	310	<i>(Keysets Only)</i> When entered at an keyset station, this feature code enables the enhanced speakerphone as described on page 4-34. (Keysets can also use the SPCL + SPKR keys.)
Feature Key Default	395	<i>(Keysets Only)</i> Keysets have user-programmable feature keys that can be set to enter feature codes. This code returns the user-programmable keys to the database default values.
Handsfree On/Off	319	<i>(Keysets Only)</i> Disables/enables the keyset's handsfree intercom answering. Incoming intercom calls ring as private calls if handsfree answering is disabled.
Headset Enable	315	<i>(Keysets Only)</i> The enable code signals the system that a headset has been connected to the keyset. The disable code returns the keyset to normal operation. The on/off feature code can be used to toggle the feature on or off.
Headset Disable	316	
Headset On/Off	317	
Hold — Individual	336	Places a call on hold so that it can be picked up directly at that station or through a reverse transfer from any other station. (Keysets use the HOLD key.)
Hold — System	335	Places an outside call on system hold. It can be picked up directly at any keyset that has an individual trunk key and has allowed-answer and/or outgoing access for that trunk, or by the station that placed it on hold. (If used on conference or intercom calls, the system places the call on individual hold.)
Hunt Group Remove	322	Removes the station from its assigned hunt group(s) or places it in again. Does not affect non-hunt group calls. The remove/replace feature code can be used to toggle the feature.
Hunt Group Replace	323	
Hunt Group Remove/Replace	324	
Message	365	This feature code is used for leaving and retrieving a message waiting indication at a called station or the called station's message center. Depending on how the message was left, the called station user either retrieves the message from his/her message center or from the station that left the message. (Keysets use the MSG key.)
Message — Cancel	366	Allows the station user to cancel a message waiting indication that he or she left at another station.
Message — Cancel Current	368	Cancels a message waiting indication that is waiting at the station without requiring the user to respond to it. (Keysets can use the asterisk [*] key while viewing the message.)
Message — Silent	367	Leaves a message waiting indication at a station without first placing an intercom call. (This is the code that should be used by analog voice mail units connected to the system.)
Mute On/Off	314	<i>(Keysets Only)</i> Turns the microphone on or off during a call. If muted, the keyset user can hear the other party, but the party cannot hear the keyset user. (Executive and Standard Keysets use the MUTE key.)
Page	7	When followed by a paging zone code (0-4), it allows announcements to be made through keyset speakers.

<u>FEATURE NAME</u>	<u>CODE</u>	<u>DEFINITION</u>
Page On/Off	325	<i>(Keysets Only)</i> Halts pages through the keyset speaker or allows them to be received again.
Program Baud Rate	393	<i>(Executive and Standard Keysets Only)</i> This allow a Executive or Standard keyset user to change the baud rate of an attached PCDPM's serial port.
Program Keys	397	<i>(Keysets Only)</i> User-programmable feature keys and station speed-dial keys can be programmed using this feature code.
Queue Request	6	Requests (or cancels) an automatic callback when a busy trunk or station becomes available.
Redial	380	Redials the last outside telephone number dialed or saved at the station (up to 32 digits). Also used to save numbers at keysets programmed for last number saved. <i>(Keysets use the REDIAL key.)</i>
Reminder Message	305	<i>(Keysets Only)</i> The keyset user can set reminder messages that signal the station at specific times. Or, the user can cancel all reminder messages for the station.
Reminder Message Cancel	306	
Reverse Transfer (Call Pick-Up)	4	Picks up a call ringing or holding at a station or hunt group.
Review Keys	396	<i>(Display Keysets Only)</i> User-programmable feature keys and station speed-dial keys can be viewed using this feature code.
Ring Intercom Always On/Off	377	Enables/disables the feature that allows the station to always place private (non-handsfree) intercom calls.
Ring Tone Selection	398	<i>(Keysets Only)</i> Selects the type of ringing alert tone that will be heard from the keyset.
Station Monitoring	321	<i>(Hunt Group Supervisors Only)</i> Allows a designated hunt group supervisor to monitor a call of anyone in the associated hunt group.
Station Speed Dial	382	Dials/programs one of the 10 station speed-dial telephone numbers when followed by a location code (0-9).
Station Speed Dial Programming	383	
Switch Keymap	399	<i>(Keyset Only)</i> This allows a keyset user to switch between standard and alternate keymaps.
System Forward Enable	352	Enables/disables the database-programmed System Forwarding feature for this station. The on/off feature code can be used to toggle the feature on or off. <i>This feature must be enabled in Premium Feature Selection. See page 6-198 in PROGRAMMING.</i>
System Forward Disable	353	
System Forward On/Off	354	
System Speed Dial	381	Dials one of the 100 system speed-dial telephone numbers when followed by a location code (000-099). Also used for reviewing system speed-dial numbers. <i>(Keysets use SYS SPD key.)</i>
Transfer to Hold	346	Transfers a call to another station and places it on individual hold so that it does not ring or send call waiting signals until it recalls.
Transfer to Ring	345	Transfers a call to another station or to an outside telephone number. <i>(Keysets use TFR key.)</i>

F. ADMINISTRATOR FEATURE CODES

2.7 The following feature codes may be used only at designated Administrator stations. Non-Administrator station users hear reorder tones if they attempt to use these feature codes.

<u>FEATURE NAME</u>	<u>CODE</u>	<u>DEFINITION</u>
Clear System Alarm	9850	Cancels a system alarm display.
Diagnostics Mode	9900	Enables or disables system diagnostics mode so that the database can be frozen and/or unfrozen, message/reset logs can be printed, and devices seized using the diagnostic feature codes.
System History — Freeze	9993*	The system fault history can be halted (frozen) or re-enabled using these feature codes, when diagnostics mode is enabled. The fault history is used by service personnel when troubleshooting the system.
System History — Unfreeze	9998*	
Night Ring On/Off	9860	Places system in night mode or cancels night mode. While in night mode, the night toll and trunk restriction lists are used.
Print Message Log	9975*	Sends a report to a designated printer or file that lists system error messages, to be used for troubleshooting purposes.
Print Reset Log	9972*	Sends a report to a designated printer or file that shows system reset history information, to be used for troubleshooting purposes.
Program Database	9932	Allows the Administrator to make database changes using the keyset.
Program Station Data	9802	Can be used for programming station user name and serving attendant for any station in the system.
Program System Speed Dial	9801	Programs system-wide speed-dial numbers when followed by location codes (000–099).
Seize Device	9973*	Used during troubleshooting to seize a specific trunk or station by indicating the board number, port number, and device number.
Set Time/Date	9800	Programs system time and date.

*The Diagnostics Mode feature code (9900) must be entered at the Administrator's station to enable system diagnostic mode before these feature codes can be used.

G. EXTENSION NUMBERS

2.8 Extension numbers are recognized as feature codes by the system. They are programmed by the installer or an Administrator station. When the system is in the default state, the extension numbers are assigned as follows:

Attendant	0
Stations	100–115
Modem Data Port Modules (MDPMs)	220–251
Hunt groups 1–10	255–264
Inter-Tel Axxent Talk Applications	275–299
Page Zones	960–964 (Used only for programming a feature key to select a page zone.)
Individual Trunks	94001–94008 (Determined by card slot and device number. Used for programming and troubleshooting.)

3. ADMINISTRATOR STATIONS

3.1 Any keyset station (attendant or non-attendant) can be assigned as a system Administrator. Administrator stations provide the following services by using the feature codes shown on page 4-9:

- Make database changes using the keyset including:
 - Create or delete Administrator stations
 - Change station toll restrictions
 - Define do-not-disturb messages
 - Program new extension numbers for stations
 - Select a keyset database programming password
 - Program individual trunks (trunk group, supervision type, hybrid balance, signaling type, and Caller ID)
 - Program trunk groups (toll restrictions, lists of trunks, ring-in assignments, answer access assignments)
- Receive and clear displayed system alarms
- Place the entire system in night mode or day mode
- Program specific station information
- Program system speed-dial numbers
- Set the system time of day, date, and day of week
- Freeze and unfreeze system database history
- Print error logs
- Seize specific devices for troubleshooting purposes

3.2 The Administrator features are described in detail beginning on page 4-98.

3.3 Any keyset can be designated as an Administrator station during database programming (see page 6-37 in PROGRAMMING) or by another Administrator station (see page 4-99). All Administrator stations should be equipped with display keysets to show system alarms and make programming easier. Database programming requires a display keyset (an Executive Keyset is preferred, but not required).

4. ATTENDANT STATIONS

NOTE: For information on *automated* attendants, refer to page 5-4 in AXXENT TALK FEATURES.

4.1 Attendant stations can be called by dialing 0 at the stations they serve. Usually, they are also programmed to provide these services:

- Central operators for incoming calls
- Message centers
- Recall stations for unanswered calls

4.2 One attendant is designated as the primary attendant who can receive unsupervised outside call recalls, hunt group recalls, and calls that cannot be matched to patterns in call routing tables. (See page 6-89 in PROGRAMMING for primary attendant programming.)

4.3 Any station can be designated as an attendant station during database programming (see page 6-37 in PROGRAMMING). Attendant stations should be equipped with display keysets to show recall sources.

4.4 If using an Executive or Standard Keyset, an attendant's station can also be used with a PC Data Port Module (PCDPM) and single or tandem DSS/BLF Units for one-key intercom dialing of extension numbers and for constant station/hunt group status indications. (Non-attendant keysets can also be equipped with DSS/BLF Units. Up to 10 DSS/BLF units can be equipped per system. For example, you can have five stations with tandem units or 10 stations with single units (or any combination of single and tandem).)

4.5 A hunt group can be assigned to serve as an attendant. However, the individual stations in the hunt group are not required to be programmed as attendant stations, and the database will not reflect that the individual stations serve as an attendant for any other stations. (This feature is especially useful when a voice mail hunt group is assigned as an attendant.)

One-Attendant or Multiple-Attendant Operation

4.6 One attendant (designated as the primary attendant) provides all of the attendant services listed in paragraphs 4.1 and 4.2. All trunks (except private trunks) are usually programmed to ring in at this attendant's station.

4.7 Any or all stations can be assigned as attendants. (For example, there may be one or more attendants to serve each department in a business.) Trunk groups are programmed to ring at any or all attendant stations.

4.8 Attendants can be arranged in a hierarchy. That is, one attendant may be the attendant for another. In this case, the "serving" attendant is reached by dialing 0 at the "served" attendant.

Attendant Recall

4.9 When a call is placed on hold or is transferred from one station to another, the Hold and Transfer timers limit the amount of time the call may remain unattended. After that time, the call recalls the station that transferred it or placed it on hold and the Recall timer is started. If the call remains unanswered at the station until the Recall timer expires, it recalls the station's attendant and the Abandoned Call timer starts. (If there is no attendant, the call continues to recall at the station that transferred it or placed it on hold.) If the attendant station is busy, the call camps on and the display shows the source of the recall. If the call is not answered before the Abandoned Call timer expires, the system disconnects the call.

4.10 If an attendant station transfers a call and it is not answered before the Attendant Transfer timer expires, it will recall the attendant station.

4.11 If a station user transfers or forwards an outside call to an outside telephone number, it becomes an "unsupervised" CO-to-CO call because no inside parties are involved. The CO-to-CO call is limited by the Unsupervised CO timer. If unanswered when the timer expires, the call recalls the primary attendant station and causes the CNF key to flash. (Display keysets show UNSUPERVISED CO RECALL.) This serves two purposes:

- It allows the attendant to monitor the length of CO-to-CO calls. When a CO-to-CO call recalls, the attendant can disconnect the call or allow it to continue.
- If the callers hang up before the attendant receives the recall, the system may not have disconnected the trunks because a disconnect was not received from the central office. The attendant must disconnect the call.

4.12 When a recall rings at the attendant's station, a call or individual trunk key flashes at the medium rate.

4.13 If the attendant has calls forwarded, recalls from stations follow internal call forward requests. Recalls do not forward to outside telephone numbers, but recall the attendant's station until they are answered or the Abandoned Call timer expires. Placing the attendant's station in do-not-disturb does not block recalls or direct ring-in calls.

4.14 *TO ANSWER A HOLD OR TRANSFER RECALL AT AN ATTENDANT STATION:*

When you see a hold or transfer recall display (XXX RCL FROM YYY) and hear a recall ringing:

- (1) *If desired*, lift the handset.
- (2) **Outside call recall:** Press the medium-flashing Call key or individual trunk key, or press the

ANSWER key. (If more than one trunk is recalling, pressing the ANSWER key selects the outside call indicated on the display.)

Intercom call recall: Press the IC key or the ANSWER menu key. (If you are busy when the intercom call recalls, it will camp on. The IC key flashes at the medium rate, but you do not hear recall ring signals.)

Conference call recall: Press the flashing CNF key to connect with the conference call. The CNF key flashes slowly and the display shows CONFERENCE IN PROGRESS. *If the parties are still talking*, press the CNF key again and hang up to return the parties to their conversation. The CNF key flutters. You can enter the conference at any time by pressing the fluttering CNF key. If the Hold timer expires, the conference recalls your station again. *If the parties have hung up*, hang up to disconnect the call.

5. EXTENSION LISTS

5.1 An extension list is a group of intercom numbers or trunk numbers. These lists are used when programming features that use common devices. For example, a group of keyset stations could be assigned to the same paging zone, have ring-in for the same trunk groups, and share common toll restrictions. With an extension list, the programmer would have to enter only one extension list number instead of repeatedly entering all of the station numbers for each list. Up to 10 extension lists can be created in the database.

5.2 There are four possible types of extension lists:

- **Trunk Group:** A trunk group extension list includes only trunk group access numbers.
- **Stations:** A station extension list can include keyset and/or single-line intercom numbers.
- **Keyset:** This type of extension list includes only keyset intercom numbers.
- **Single-Line:** This type of extension list includes only single-line set intercom numbers.

5.3 Station extension lists can be included in hunt groups. For example, a hunt group can be programmed to send calls first to an individual station, then to an extension list (where it will ring all stations on the list), and then to another individual station or an extension list. Or, to create an "all ring" type of hunt group, you can program the hunt group as either linear or distributed and then assign an extension list at the only hunt group member. When the hunt group receives a call, all stations on the extension list will ring at once.

6. HUNT GROUPS

6.1 The Hunt Group feature permits calls to be placed to a group of stations and to be automatically transferred to an available station within the group. Up to 10 hunt groups can be programmed in the database. Hunt group lists can contain individual stations and/or extension lists.

6.2 The order in which hunt group stations receive incoming calls is determined by a list stored in the database. A station or extension list can appear in a single hunt group more than once and it can appear in multiple hunt group lists, if desired.

6.3 Hunt groups have a special extension number called a pilot number (defaults to 255–264). Individual stations within the hunt group can be called using their assigned extension numbers.

6.4 Two other Premium Feature hunt group types are also available: UCD Hunt Groups and ACD Hunt Groups. For UCD information, refer to page 4–15. For ACD, refer to page 4–17.

A. HUNT GROUP CALL DISTRIBUTION

6.5 When an intercom or outside call is transferred or rings in to the pilot number, it circulates through the hunt group in linear or distributed order until answered, as described below.

- **Linear order:** Incoming calls always start circulating by ringing at the first station (or extension list) on the hunt group list that is stored in the database.
- **Distributed order:** To even out the call load, distributed order shifts the starting point of each call. When a station user receives a call, the next station or extension list in the hunt group receives the next incoming call. If the receiving station is busy (or all stations in the extension list are busy), or if there is no answer before the No Answer Advance timer expires, the call goes to the next station or extension list on the hunt group list.

NOTE: See page 4–17 for information on the additional distribution types available in ACD hunt groups.

6.6 If an extension list is included in a hunt group, a call will ring all stations on the extension list when it reaches that point in the hunt group list. Therefore, to create an “all ring” type of hunt group, you can program the hunt group as either linear or distributed and then assign an extension list at the only hunt group member.

B. HUNT GROUP CALL PROCESSING

6.7 Hunt group stations receive the following indications when a call is ringing in:

- If an outside call is ringing, the station designated to receive the call first shows ring flash on the associated individual trunk key (if it has one) and a Call key until the call is answered or the No Answer Advance timer expires and the call moves to the next station.
- If all stations on the hunt group list (or any stations in an extension list in the hunt group) are unavailable (busy, in do-not-disturb, or with hunt group remove enabled), an intercom or outside call will camp on and the stations will receive the following indications:
 - *Busy stations* receive the hunt group camp-on tones (if enabled) and display. If there is an individual trunk key associated with the trunk, it shows ring flash. (There is a programmable station flag that can disable the camp on tones for hunt group calls. See page 6–30 in PROGRAMMING.)
 - *Stations with Hunt Group Remove enabled* receive the camp-on tones and display. If there is an individual trunk key associated with the trunk, it shows ring flash.
 - *Stations with Do-Not-Disturb enabled* receive no camp on indications, but if there is an individual trunk key associated with the trunk, it shows ring flash.
 - *The first station that becomes available* receives ringing and a flashing trunk and/or Call key. The camp-on and ring flash indications end at the other stations. (The associated trunk key will be steadily lit at the other stations to show that the trunk is busy.)

6.8 Stations within the hunt group can receive direct trunk ring-in, intercom, forwarded, or transferred calls to their individual extension numbers without affecting other stations in the hunt group.

6.9 Trunk groups can be programmed to ring in directly to either a pilot number or extension number(s). If assigned to a pilot number, ring in for the trunk group cannot be assigned to any other extension number(s).

6.10 If an outside call rings in to a pilot number that does not have hunt group station assignments, the call is sent to the primary attendant. If a station user attempts to transfer a call to an invalid pilot number, the call is placed on individual hold and the station user hears reorder tones. A station user attempting to place an intercom

call to an invalid pilot number will hear reorder tones and the display will show NO MEMBERS IN HUNT GROUP.

6.11 Hunt group programming affects the Call Forwarding feature in the following ways:

- If a station in a hunt group is in the unconditional call forward mode to another station, calls to the hunt group will follow the station forwarding request. A forwarded hunt group call will ring at the forwarding destination until the No Answer Advance timer expires. If it is not answered before the timer expires, the call will return to the hunt group and continue circulating through the hunt group list.
- Stations with their calls conditionally forwarded (no answer, busy, or unavailable) to another station will receive the hunt group call until the hunt Forward No Answer timer expires. At this point, if the hunt group's No Answer Advance timer has not expired, then the call will be forwarded. Once the No Answer Advance timer expires, the call will circulate to the next station in the hunt group list.
- Hunt group calls will not forward to voice mail, outside numbers, or system forwarding paths.
- If an announcement or overflow station has call forward enabled, hunt group calls will follow the forward and the forwarding destination station will act as the announcement or overflow station.
- Stations can forward calls to a hunt group's pilot number.

6.12 Hunt groups can be assigned as message centers and/or alternate message sources for individual stations.

C. HUNT GROUP TIMERS

6.13 Four timers are programmed on a hunt group-by-hunt group basis: No Answer Advance timer, Announcement timer, Overflow timer, and Recall timer.

- **No Answer Advance:** This timer determines the amount of time a call will ring at a hunt group station or extension list (unanswered) before advancing to the next station or extension list on the hunt group list. The default value is 18 seconds. It can be programmed for 1–255 seconds.

- **Announcement:** (*UCD Hunt Groups Only*) This determines the amount of time a call will remain unanswered before it is sent to the hunt group's announcement station. The default value is 18 seconds. It can be programmed for 1–255 seconds.
- **Overflow:** (*UCD Hunt Groups Only*) This determines the amount of time a call will circulate through the hunt group (unanswered) before being sent to the hunt group's overflow station. This timer is started when the Announcement timer expires or, if there is no announcement station, when the call is received by the hunt group. It is restarted each time the call leaves the overflow station. The default value is 72 seconds. It can be programmed for 1–255 seconds.
- **Recall:** This determines the amount of time a call will circulate through the hunt group (unanswered) before being sent to the hunt group's recall destination station. This timer is started when the call is received by the hunt group. The default value is 180 seconds. It can be programmed for 1–65535 seconds.
- **ACD Wrap-Up Duration:** (*ACD Hunt Groups Only*) Each time an agent ends an ACD hunt group call, the ACD Wrap-Up Duration timer is started. Until that timer expires, the agent will not receive another call through any ACD hunt group. (However, the agent can receive other non-ACD hunt group calls, direct ring-in calls, and transfers.) The default value is 15 seconds. The range is 1–65535 seconds.

D. RECALL DESTINATION STATIONS

6.14 An incoming call to a hunt group immediately registers the Recall timer if there is a recall destination identified for that hunt group. If a call is not answered by a hunt group station before this timer expires, the call will exit the hunt group and begin ringing at the recall destination station. The call will remain at this destination until it is answered or the caller hangs up.

6.15 If there is no recall destination station, the call will remain in the hunt group until it is answered or the caller hangs up.

6.16 If the recall destination is an Inter-Tel Axxent Talk application and the system cannot communicate with the Axxent Talk the call will remain in the hunt group until it is answered or the caller hangs up.

E. HUNT GROUP REMOVE/REPLACE AND DO-NOT-DISTURB

6.17 Hunt group members can temporarily stop hunt group calls from ringing at their stations by entering the Hunt Group Remove feature code as described below. (If a station is assigned to more than one hunt group, this halts calls from all hunt groups. Hunt group assignments cannot be removed individually.) Do-not-disturb can also be used to halt hunt group and other calls to the station (see page 4-91 for details).

NOTE: This feature has no effect on ACD hunt groups. See page 4-17 for ACD login/logout information.

6.18 When the Hunt Group Remove feature is enabled, the user will still receive the camp-on display and tone, and the individual trunk key flashes if one exists, for calls to the hunt group. (The station continues to receive calls placed to its extension number.) Hunt group overflow and announcement stations cannot block hunt group calls using this feature.

6.19 If a keyset user has programmed a key for entering the Hunt Group Remove/Replace feature code, and

if that key has a lamp, the lamp will be lit whenever the station is removed from the hunt group.

6.20 *TO REMOVE THE STATION FROM ITS HUNT GROUP(S) OR REPLACE THE STATION IN ITS HUNT GROUP(S):*

Keyset: While on or off hook, enter the Hunt Group Remove feature code (322) to halt hunt group calls or enter the Hunt Group Replace feature code (323) to return the station to its hunt group(s). Or use the Hunt Group On/Off feature code (324) to toggle the hunt group mode on or off. You hear a confirmation tone and the display shows ACCEPT (or DIVERT) HUNT GROUP CALLS. *If off hook, hang up.*

Single-Line Set: Lift the handset and enter the Hunt Group Remove feature code (322) to halt hunt group calls or enter the Hunt Group Replace feature code (323) to return the station to its hunt group(s). Or use the Hunt Group On/Off feature code (324) to toggle the hunt group mode on or off. You hear dial tone.

F. UCD HUNT GROUPS

NOTE: This feature must be enabled in Premium Feature Selection. See page 6-198 in PROGRAMMING.

6.21 Uniform Call Distribution (UCD) hunt groups provide additional features to improve hunt group efficiency. The features added when UCD is enabled are as follows:

- Announcement and overflow stations pick up unanswered calls when the hunt group stations are busy.
- Hunt group priority ranking will place calls to one hunt group before another at stations that are members of more than one hunt group.
- Hunt group supervisors can monitor outside calls of any member of the hunt group.

Announcement and Overflow Stations

6.22 Announcement and overflow stations are individual stations that receive unanswered calls when all of the hunt group stations are unavailable. (They are not usually included in the hunt group list.) Announcement and overflow stations can be separate stations or they can be the same station. Also, each of the hunt groups can have the same announcement and overflow stations or they can be assigned different stations.

6.23 Announcement Stations: When a call rings in or is transferred to a hunt group, the Announcement and Recall timers are started. The incoming call circulates through the hunt group until it is answered or the Announcement timer expires. When this timer expires, the unanswered call is picked up by the designated announcement station which is a playback device that answers the call and plays a message. Meanwhile, the call continues circulating through the hunt group (unless it was sent to an Inter-Tel Axxent Talk application and then transferred to a station). If it is answered by an available hunt group station while the announcement station is connected to the call, the call will leave the announcement station. Each direct ring-in call will transfer to the announcement station only once. If it remains unanswered when the Overflow timer expires, the call will be sent to the overflow station. Or, if there is no overflow station, the call will be sent to the recall destination station when the Recall timer expires.

6.24 Overflow Stations: The Overflow timer is started when the Announcement timer expires or, if there is no announcement station, when the call is received by the hunt group. If an incoming hunt group call is unanswered when the Overflow timer expires, the call is picked up by an overflow station. The overflow station is a playback device that answers the call and plays

a message. Meanwhile, the call continues circulating through the hunt group (unless it was sent to an Inter-Tel Axxent Talk application and then transferred to a station). If the call is answered by an available hunt group station while the overflow station is connected to the call, the call will leave the overflow station. The Overflow timer restarts each time the unanswered call leaves the overflow station. An unanswered call will return to the overflow station each time the Overflow timer expires, until the call is answered by a hunt group station or it is sent to the recall destination station.

6.25 The following chart outlines the path that an incoming hunt group call will follow for all possible combinations of the announcement and overflow stations:

ANN. STATION	OVERFLOW STATION	CALL PATH
No	No	Call remains in hunt group.
Yes	No	Call goes to announcement station only once, after Announcement timer expires.
No	Yes	Call goes to overflow station after each expiration of Overflow timer.
Yes	Yes	Call goes to announcement station once (after Announcement timer expires) then goes to overflow station after each expiration of Overflow timer.

6.26 If an announcement or overflow station has call forward enabled, hunt group calls will follow the forward and the forwarding destination station will act as the announcement or overflow station.

6.27 When an Inter-Tel Axxent Talk application is used as an announcement or overflow station, calls to the application automatically stop circulating through the hunt group if the call is transferred to a destination *outside of the Axxent Talk*. This allows the application to send the call to other stations without the call being "pulled back" into the hunt group when a hunt group station becomes available. However, if the caller does not dial a digit or if the call is sent to a destination within Axxent Talk (such as voice mail), the call will be pulled back if a hunt group member becomes available.

6.28 If an Inter-Tel Axxent Talk application is used as an announcement or overflow station or as the recall destination, and the system is unable to communicate with the Axxent Talk, outside calls will not be sent to the announcement or overflow application. They will continue to camp on to the hunt group.

UCD Hunt Group Priority List

6.29 Some stations may be members of more than one UCD hunt group. For this reason, hunt groups are assigned a "priority level." The priority level determines which hunt group's calls should be received first when calls ring in and/or camp on to several hunt groups at once.

6.30 UCD priority levels range from 0 (low priority) to 20 (high priority). If two hunt groups with the same priority level receive calls at once, the hunt group call that is handled first is selected randomly. (Non-UCD hunt groups are treated as if they have a priority level of 0.)

UCD Hunt Group Supervisors And Station Monitoring

6.31 The Station Monitor feature allows hunt group supervisors to monitor the outside calls of anyone in a specified hunt group. It can be useful in training or in evaluating the performance of hunt group members.

NOTE: As a courtesy, hunt group members should be notified in advance that their calls may be monitored. In addition, a programmable option can be enabled that sends a tone to the station being monitored whenever the hunt group supervisor joins an ongoing call. See page 6-93 in PROGRAMING. (Note that call monitoring may be illegal in some locations. It is up to the end user to ensure that use of this feature is in compliance with local laws.)

6.32 In database programming, each hunt group can have one or more keysets assigned as the hunt group supervisor(s). (An extension list can be assigned as the supervisor to provide multiple supervisors.) The supervisor is usually not a member of the hunt group. If the supervisor is a member of the hunt group, the Hunt Group Remove/Replace feature can be used at any time without affecting the Station Monitor ability. If desired, one keyset can be assigned as the supervisor for more than one hunt group.

6.33 To monitor a hunt group member's call, the supervisor enters the Station Call Monitoring feature code and dials the desired extension number. The supervisor is then connected to the ongoing call and can hear both parties, but cannot be heard by either one. If the monitored call is terminated, transferred, or placed on hold by the hunt group member, the monitor function is terminated.

6.34 In the associated hunt group, the supervisor may monitor any active intercom or CO-to-intercom call (both hunting and non-hunting), including incoming, outgoing, and DISA-to-intercom calls. Conference calls and calls that do not involve hunt group members cannot be monitored.

6.35 If the supervisor attempts to monitor a station that is not on an active CO-to-intercom call, the system sends reorder tones and allows the supervisor to dial another extension number. If the supervisor attempts to monitor a station that is not in the hunt group or an idle station in the hunt group, the system sends reorder tones and cancels the Station Call Monitor feature.

6.36 Station monitoring requires conferencing circuits. If resources are not available when a supervisor attempts to monitor a station, the supervisor's display will show NO CNF CIRCUITS AVAILABLE and the monitor will not be allowed.

6.37 TO MONITOR A HUNT GROUP CALL (DESIGNATED SUPERVISOR ONLY):

- (1) **To use the speakerphone:** While on hook, enter the Station Call Monitoring feature code (321). You hear a confirmation tone and the SPKR key lights. The display shows ENTER EXT TO MONITOR.

To use the handset: Lift the handset and enter the Station Call Monitoring feature code (321). You hear a confirmation tone. The display shows ENTER EXT TO MONITOR.

- (2) Dial the extension number (or press the lit station speed-dial or DSS/BLF key) of the station to be monitored. You are automatically connected to the call and the display shows MONITORING <username>. The MUTE key lights.
- (3) **To monitor another hunt group member's call:**

EITHER, Enter the Station Call Monitoring feature code (321), and dial the extension number (or press the speed-dial key).

OR, Press the DSS/BLF key for another station without entering a feature code.

To terminate the monitor feature: *If off hook,* hang up. *If on hook,* press the SPKR key.

G. ACD HUNT GROUPS

NOTE: The ACD Hunt Group feature must be enabled in Premium Feature Selection. To take full advantage of all hunt group features, the UCD Hunt Group premium feature should also be enabled. See page 6-198 in PROGRAMMING.

6.38 Automatic Call Distribution (ACD) can be programmed to distribute hunt group calls to equalize call time or call count among the available members. If the System Open Architecture Interface (OAI) premium feature is enabled, ACD can also provide call information records that can be processed by an external device connected to a system serial port.

6.39 ACD hunt groups can use the standard hunt group features described on page 4-12, and/or the UCD features described on page 4-15 (if the UCD Hunt Group premium feature is enabled).

ACD Call Distribution

6.40 When an intercom or outside call is transferred or rings in to the ACD hunt group, it can circulate in linear or distributed order (as described on page 4-12) or using one of the ACD distribution methods: Longest Idle or Balanced Call Count order.

- **Longest Idle:** An incoming call is sent to the station that has not been involved in a call to this hunt group for the longest period of time. (It does not count calls that were received through other hunt groups, direct ring-ins, or transfers.)
- **Balanced Call Count:** To balance the call load, each incoming call is sent to the station that has received the fewest calls through this hunt group. (It does not count calls that were received through other hunt groups, direct ring-ins, or transfers.)

6.41 If an extension list is included in an ACD hunt group set for Longest Idle or Balanced Call Count distribution, it will treat each station in the extension list as a separate agent; it will not ring all of the stations on the list at once. If the hunt group is set for linear or distributed order, a call will ring at all stations on an extension list at once when the call reaches that point in the hunt group list.

ACD Agent Login

6.42 ACD hunt group members are referred to as "agents." Agents can log in to and out of the ACD hunt group at any time. While logged in, the agent will receive calls through the ACD hunt group. When the agent

is logged out, calls to that ACD hunt group will bypass the station. (The Hunt Group Remove/Replace feature, described on page 4-14, does not have any effect on ACD hunt group calls when entered by an ACD agent. However, placing the agent's station in do-not-disturb will halt all ACD and non-ACD hunt group calls.)

6.43 There are three feature codes that can be used for logging in to and out of the ACD hunt groups: ACD Agent Login, ACD Agent Logout, and ACD Agent Login/Logout. The first two perform only one operation. The third (Login/Logout) is a toggle feature code that logs the station in or out of *all* associated ACD hunt groups at once. If the toggle feature code or Login feature code is programmed in a user-programmable key with a lamp, the lamp will be lit when the agent is logged in to an ACD hunt group.

6.44 *TO LOG INTO OR OUT OF ALL OF YOUR ACD HUNT GROUPS AT ONCE:*

While on or off hook (single-line users must lift the handset), enter the ACD Agent Login/Logout feature code (328). The display shows AGENT LOGGED INTO ALL ACDS or AGENT LOGGED OUT OF ALL ACDS, and you hear a confirmation tone. Hang up if off hook.

6.45 *TO LOG IN TO AN ACD HUNT GROUP:*

- (1) While on or off hook (single-line users must lift the handset), enter the ACD Agent Login feature code (326). You hear a confirmation tone and the display shows AGENT LOGIN ACD NUMBER.
- (2) Enter the pilot number of the desired ACD hunt group or press # to log in to all of your ACD hunt groups at once. You hear a confirmation tone and the display shows AGENT LOGGED INTO <hunt group>.

If you were already logged in, the display shows ALREADY LOGGED INTO <hunt group>.

If you entered an invalid hunt group number, the display shows NOT AN ACD HUNT GROUP and you hear reorder tones. Start over.

If you are not a member of the entered hunt group, the display shows NOT AN AGENT IN THIS HUNT GROUP and you hear reorder tones. Start over.

- (3) If off hook, hang up.

6.46 TO LOG OUT OF AN ACD HUNT GROUP:

- (1) While on or off hook (single-line users must lift the handset), enter the ACD Agent Logout feature code (327). One of the following will occur:
 - a. *If you were logged in to only one hunt group*, you hear a confirmation tone and the display shows AGENT LOGGED OUT OF <hunt group>. The procedure is complete. Hang up if you were off hook.
 - b. *If you were logged in to more than one hunt group*, you hear a confirmation tone and the display shows AGENT LOGOUT ACD NUMBER go to the next step.
 - c. *If you were not logged in to any hunt group*, the display shows NOT LOGGED INTO ANY ACD GROUP and you hear reorder tone.
- (2) Enter the pilot number of the desired ACD hunt group or press # to log out of all of your ACD hunt groups. You hear a confirmation tone and the display shows AGENT LOGGED OUT OF <hunt group>.

If you were not logged in to the hunt group number that you entered, the display shows NOT LOGGED INTO <hunt group>. Start over.

- (3) If off hook, hang up.

ACD Agent Wrap-Up Timer

6.47 Each time an agent ends an ACD hunt group call, an ACD Wrap-Up Duration timer is started. Until that timer expires, the agent will not receive another call through any ACD hunt group. (However, the agent can receive non-ACD hunt group calls, direct ring-in calls, and transfers.)

6.48 The range of the ACD Wrap-Up Duration timer is 1 to 65535 seconds. The default value is 15 seconds. It is programmed individually for each ACD hunt group.

6.49 If an agent wishes to end the wrap-up session before the timer expires, he or she can use the following procedure.

6.50 TO TERMINATE ACD AGENT WRAP-UP:

While on or off hook (single-line users must lift the handset), enter the ACD Wrap-Up Terminate feature code (329). The display shows ACD WRAP-UP TERMINATED. (*If you were not logged in to an ACD hunt group*, the display shows CANNOT ACCESS RESERVED FEATURE.)

ACD Serial Port

NOTE: The System Open Architecture Interface (OAI) feature must be enabled in Premium Feature Selection for this feature to be used. See page 6–198 in PROGRAMMING.

6.51 In database programming, each ACD hunt group is assigned a list of system serial ports. These serial ports can be used to provide ACD-related call information to an external device. The information can then be processed by the device to generate reports on call traffic, answer times, and other management issues. For more information, refer to the manual provided with your Open Architecture Interface product.

H. ANALOG VOICE MAIL HUNT GROUPS

NOTE: The Analog Voice Mail feature must be enabled in Premium Feature Selection. See page 6–198 in PROGRAMMING.

6.52 A hunt group can be designated as a “voice mail hunt group” to enable it to contain the multiple ports of an analog voice mail unit (not Inter-Tel Axxent Talk). Each voice mail unit port is programmed in the distribution list like a regular hunt group station. With this feature, incoming calls to the voice mail unit can be sent to a single pilot number where they can be processed even if one port is busy or out of service.

6.53 If the voice mail hunt group is assigned as the message center for a station, it is called after the Message Wait timer expires. When the voice mail unit answers the call, the called party’s mailbox number is automatically dialed. **NOTE:** Analog voice mail units should use the Silent Message feature code (367) instead of the Message feature code (365).

6.54 If the voice mail hunt group is a system forwarding point (see the system forwarding description on page 4–76) or if a station is forwarded to the voice mail hunt group, the mailbox number that is dialed when the voice mail unit answers is the original destination station’s extension number. (For example: The principal station is called, the call is sent to the first system forwarding point, and then is sent to a voice mail forwarding point where the principal station’s extension number is dialed.)

6.55 The voice mail hunt group can also be assigned as the alternate message source for each of the voice mail ports. Then, when a port leaves a message at a station, and the station user responds to the message, the hunt group will be called instead of the individual port. (For more information on alternate message sources, refer to page 4–58.)

7. TRUNK FEATURES

7.1 The Inter-Tel Axxent System can contain up to 8 trunks. This section explains the trunk functions and programmable features. Trunk capacities are explained in SPECIFICATIONS on page 2-2.

7.2 The following trunk programming can be performed at an Administrator station. (See page 4-106.)

- **Individual trunks:** trunk group, supervision type, hybrid balance, signaling type, and Caller ID
- **Trunk groups:** toll restrictions, lists of trunks, ring-in assignments, answer access assignments

NOTE REGARDING TRUNK SECURITY

While this system is designed to be reasonably secure against CO trunk misuse by outside callers, there is no implied warranty that it is invulnerable to unauthorized intrusions and toll fraud. If the central office does not provide supervision and disconnect the call when one party hangs up, it is possible for a caller to remain connected to a CO trunk circuit. If this happens, and the caller begins dialing, the call could be placed through the Inter-Tel Axxent System and would then be billed to the system's owner. The system cannot check this type of call for toll restriction and may not register the call in SMDR. This problem could arise when a call is connected to a station, when a call is in an unsupervised conference, or when a call is forwarded or transferred to the public network.

To determine if disconnect supervision exists on a trunk, connect a test set to that trunk. Then place a call to an outside party using the trunk to be tested and have the called party hang up while you remain off hook. If there is disconnect supervision, you will hear dial tone within 30 seconds. If you do not hear dial tone, there is no supervision. If supervision does not exist, contact the telephone company to determine if it can be enabled. Centrex and loop start trunks frequently do not provide disconnect supervision. Each trunk should be checked when it is first installed and periodically rechecked to reduce the probability that the trunk will be used for unauthorized calls.

A. DUAL-TONE MULTI-FREQUENCY (DTMF) OR DIAL-PULSE SIGNALING

7.3 Trunks can be designated for DTMF or dial-pulse signaling through database programming (see PROGRAMMING, page 6-124), or at an Administrator station (see page 4-106).

7.4 Keysets can be used on either type of trunk. While on a dial-pulse trunk, a station user can switch from dial-pulse to DTMF signals, while using a dial-pulse trunk, by pressing the pound (#) or asterisk (*) keys. After the pound or asterisk key is pressed, all digits that follow during that call are sent out as DTMF tones. (This is useful when calling computerized services that require a DTMF telephone, such as voice mail.)

B. TYPES OF TRUNKS AVAILABLE

7.5 The Inter-Tel Axxent System supports the following types of trunks:

- **Loop start trunks on the Loop Start Card (LSC):** Loop start trunks support the Caller-ID feature. (See page 4-21 for details.)
- **DID trunk interface on a Single-Line Adapter (SLA):** Each SLA can be configured to support up to two DID trunk interfaces. DID trunks can use ANI and DNIS features. (See page 4-21 for details.)

7.6 Because loop start trunks frequently do not provide supervision, unsupervised trunk-to-trunk calls (such as unsupervised conferences and forward to an outside number), are limited by the Unsupervised CO timer. When this timer expires, the call recalls the primary attendant who can determine whether the trunks are still in use or if the call should be disconnected. (Refer to page 4-11 for attendant recall information.) If the trunk connections are ground start or DID trunks, this timer is not needed as they supply reliable disconnection signals.

C. DIRECT INWARD DIALING (DID) TRUNKS

7.7 Direct Inward Dialing is available on Single-Line Adapter (SLA) interfaces. (See page 2–10 in SPECIFICATIONS for more information.)

7.8 Direct inward dialing (DID) allows an outside party to dial into the system without attendant intervention. To gain direct access to the system, an outside party dials a number that was assigned by the telephone company to the DID trunks installed on the Inter-Tel Axxent System. The system then provides ring signal to the proper station(s), hunt group, or DISA according to the programmed ring-in for that DID number.

7.9 DID trunks are purchased with blocks of numbers. When a caller dials one of the numbers, the central office rings the trunk that contains that number. When the system answers the call, it handshakes with the central office and receives digits that tell it which DID number was dialed. The system then routes the call according to the call routing programmed for that number.

7.10 When a call is placed to a DID trunk, one of three things will happen:

- If the receiving DID trunk is programmed for “Immediate” start type, it will immediately begin receiving the dialed digits to the receiving system.
- If programmed for “Wink” start type, the DID trunk performs a “handshake” to signal that it is ready to receive the incoming digits. (This is the default start type.)
- If programmed for “Delay Dial” start type, the DID trunk will perform a handshake and pause before receiving any digits.

7.11 Each DID trunk is programmed with a base number and is programmed to collect a set number of digits. The base number is made up of the digits that are dialed by the caller that are *not* redialed by the central office after the handshake. For example, if the dialed number is 961–9000 and the base number is 9619, the central office would send only 000 after the handshake. The system would then send the call to the ring-in destination associated with 000 in the trunk’s call routing table. The number sent to the keyset display could combine the base number and the collected digits to show 961–9000 or can be programmed to show a name.

7.12 DID trunks are programmed into trunk groups. However, because DID trunks do not allow outgoing

calls to be placed, the outgoing access programming for the trunk group is ignored. If a user attempts to seize a DID trunk for an outgoing call, the user will hear reorder tones and the keyset display will show OUTGOING ACCESS DENIED.

7.13 The DID Receive Busy Instead Of Camp-On station flag determines whether DID callers will receive busy signal or receive ringback and camp on when calling a busy station. In the default state, busy tones are disabled and the callers will hear ringback while camped on to the called station. This flag is programmed on a station-by-station basis (see page 6–30 in PROGRAMMING).

7.14 The following programming is required to use the DID feature:

- (1) Enable the Advanced CO Interfaces feature in Premium Features (see page 6–198 in PROGRAMMING).
- (2) Install the SLA on a Keypad Card circuit and configure the card, as described on page 6–213 (System Configuration) in PROGRAMMING.
- (3) Program the station circuit as required. See page 6–37 (Individual Station Programming) in PROGRAMMING.
- (4) Program the individual trunks. See page 6–124 (Individual Trunk Programming) in Programming. For DID trunks, refer to page 6–127.
- (5) Create a trunk group that contains the DID trunks. Program the trunk group to ring in to a Call Routing Table. (Note the Call Routing Table number. It will be programmed in step 6.) If there are only DID trunks in the trunk group, or the trunks will be used only for incoming calls, you can flag the trunk groups as “Incoming Only.” See page 6–128 (Trunk Groups) in PROGRAMMING.
- (6) Program a Call Routing Table to be used by the DID trunk group. See page 6–117 (Call Routing Tables) in PROGRAMMING. Also refer to page 4–23 for more information regarding Call Routing Tables. Set up the table using the DID numbers to match the programming performed in step 4.
- (7) Enable caller information for keyset displays (see page 6–93 in PROGRAMMING).

D. CALLER ID, DNIS, AND ANI

NOTE: The Advanced CO Interfaces feature must be enabled in Premium Feature Selection to use these features (see page 6–198 in PROGRAMMING).

7.15 The AXXESS System supports Caller ID, ANI, and DNIS. These features provide information about the source of the call.

- **Caller ID:** Caller ID information gives the caller's telephone number and/or name.
- **ANI:** Automatic Numbering Identification (ANI) information identifies the caller's telephone number.
- **DNIS:** Dialed Number Identification Service (DNIS) identifies the number that was dialed to reach your location.

7.16 Using these features and the call routing tables, each incoming call can be identified and sent to selected destinations. For example, calls identified with Caller ID or ANI from specific regions of the country can be sent to the appropriate sales representative or calls from specific locations can be sent to selected individuals. Or, using DNIS information, responses to advertisements using one 800 number can be sent to one hunt group and calls from other 800 numbers can be sent to other hunt groups. Or, they can all be sent to the same destination with different identifying names for the keyset displays (such as Magazine Ad, TV Ad, etc.).

7.17 Caller information services (Caller ID, ANI, and DNIS) must be enabled for the individual trunks by the installer (see page 6–124 in PROGRAMMING) or an Administrator station (see page 4–106). Loop start trunks can use Caller ID. DID trunks can use ANI and DNIS.

7.18 Caller information displays (on keysets and Desktop Applications) can be enabled or disabled in database programming (see page 6–93). If enabled, the AXXESS determines the content of the displays using the following priority list:

- (1) If Desktop Interface is enabled, the *name* provided by the Desktop Application is displayed.

- (2) If a Caller ID name is supplied for the call, that *name* will be displayed.
- (3) If the incoming information exactly matches an entry in the trunk's call routing table, the *name* programmed in the table is used.
- (4) If the incoming information exactly matches a system speed-dial number, the *name* associated with that speed-dial bin is used.
- (5) If Desktop Interface is enabled, the *number* provided by the Desktop Application is displayed.
- (6) If Caller ID, ANI, DNIS or DID digits are provided, the *number* provided by the central office is displayed. If DID or DNIS information is provided, the programmed base number is combined with the collected digits to display the number that the caller dialed.
- (7) If no other information is provided, or if the Caller Information option is disabled, the display will show the programmed name for the trunk group.

7.19 ANI and Caller ID information is also sent to the Inter-Tel Axxent Talk voice mail application to provide the caller's telephone number as part of the message envelope.

7.20 Caller Information features require the following special programming:

- The Advanced CO Interfaces feature must be enabled in Premium Feature Selection (see page 6–198 in PROGRAMMING).
- Caller information features require OPC programming (see page 6–217 in PROGRAMMING). Caller ID uses Caller ID receivers. Because DTMF receivers are required to receive DID and ANI information, you should enable additional receivers.
- Caller information displays must be enabled in database programming (see page 6–93 in PROGRAMMING).
- The caller information services must be enabled for the individual trunks (see page 6–124 in PROGRAMMING).

E. TRUNK GROUPS

7.21 Each trunk is assigned to one of 8 possible trunk groups. Trunk group feature codes and trunk group keys are used to select a trunk in one of the programmed trunk groups. Each trunk must be assigned to a trunk group. For example, all local trunks could be in one group, while another group could contain WATS trunks that are used for long distance calling. Unused trunks are placed in a single trunk group that is labeled "unused."

7.22 The trunk group is programmed to process outgoing calls in linear or distributed order:

- **Linear trunk group:** Requests for an outgoing trunk are always processed beginning with the highest numbered trunk circuit on the list and move through the list until an available trunk is found.
- **Distributed trunk group:** The first request will be processed beginning with the highest numbered trunk circuit on the list. The next request will begin with the second highest numbered trunk, and each subsequent request will begin one trunk lower on the list. When the end of the list is reached, requests begin again with the highest numbered trunk on the list.

7.23 The following trunk group programming can be performed at an Administrator station. (See page 4-106.)

- Toll restriction class of service, "exempt from ARS" flag, and "subject to toll restriction" flag
- Lists of trunks
- Ring-in and answer access assignments

F. OUTGOING-ACCESS, ALLOWED-ANSWER, AND RING-IN ASSIGNMENTS

7.24 Each trunk group has programmed lists of stations for outgoing-access, allowed-answer, and ring-in assignments for day and night modes.

- **Outgoing-access** assignment for a particular trunk group permits the station user to place calls using trunks in that trunk group. Each station has a default outgoing access code programmed in the database. When the user presses the OUTGOING key, presses an idle Call key, or enters the Outgoing Call feature code (8), the system automatically selects an outgoing trunk. (Refer to page 6-34, in PROGRAMMING, for more information.)
- **Allowed-answer** assignment for a particular trunk group permits the station user to answer incoming calls on the trunks in that trunk group. Although the

call can be answered, it does not ring at the user's station. On keysets, the individual trunk key flashes to indicate the ringing call. If a station is programmed with allowed-answer assignment only (no ring-in) for a trunk group, direct ring-in calls on that trunk group can be answered by entering the Automatic Trunk Answer feature code (350) or pressing the flashing individual trunk key.

- **Ring-in** assignment for a particular trunk group can be assigned to one or more stations, extension lists, or Inter-Tel Axxent Talk applications; to a hunt group; to DISA; or to a call routing table. The ring in destination(s) for the trunk group will receive direct ring-in calls on trunks in that trunk group. On keysets with ring in, the individual trunk or Call key flashes and the display indicates a ringing call. Allowed answer for the trunk group is automatically assigned to a station with ring in.

7.25 When keyset stations have outgoing-access or ring-in assignments, the associated individual trunk keys show the status of their trunks.

7.26 Stations that do not appear on any of the lists cannot place or directly receive outside calls; they are limited to intercom calls, conferences, transferred calls, and retrieving calls on system hold. (A call on system hold can only be picked up at the station that placed it on hold or at a station that has an individual trunk key and has allowed-answer and/or outgoing access for that trunk.)

7.27 A private trunk group (with one or more trunks) can be established by programming outgoing-access, ring-in, and allowed-answer assignments for the trunk group to only one station.

7.28 The ring-in and allowed-answer lists can be programmed by the installer or an Administrator station. (See page 4-106.)

G. ANSWER FEATURE CODE

7.29 For calls that are ringing or holding at the station, the user may enter the Answer feature code (351) or press the ANSWER key. When more than one call is ringing or holding, the following priority list determines which call is answered first:

- Ringing outside calls (ring ins, recalls, callbacks, or transfers) are answered in the order they were received.
- Then calls on individual hold are answered in the order they were placed on hold.

H. CALL ROUTING TABLES

NOTE: The Advanced CO Interfaces feature must be enabled in Premium Feature Selection to use Call Routing Tables. See page 6–198 in PROGRAMMING.

7.30 A trunk group can be programmed to ring in to a call routing table to utilize the digits received from DID DNIS, or ANI number strings, and Caller ID information. This added information will allow the station user to receive helpful information about the callers (such as location, name, or which advertisement they saw) by looking at the keyset display.

7.31 Some call routing applications include the following:

- **DID:** DID trunks send a string of digits to indicate the desired destination. Each DID digit string can be programmed to ring in to a different destination and display a different name.
- **ANI/Caller ID:** ANI/Caller ID information identifies the source of the call. Each incoming call can be identified and sent to selected destinations. For example, calls from specific regions of the country can be sent to the appropriate sales representative or calls from specific telephone numbers can be sent to selected individuals.
- **DNIS:** DNIS identifies the number that was dialed to reach your location. Using this number, the call routing table can send the call to the desired destination. For example, responses to advertisements using one 800 number can be sent to one hunt group and calls from other 800 numbers can be sent to other hunt groups. Or, they can all be sent to the same destination with different identifying names for the keyset displays (such as Magazine Ad, TV Ad, etc.).

7.32 A call routing table consists of fields for dialing patterns strings, ring-in types, ring-in destinations, and names. The fields are used for analyzing the source of the call and directing it to the proper destination.

- **Pattern strings:** The patterns strings in the table are compared against the digits received from the trunk interface for the incoming call. If the digits match one of the pattern strings in the table, the call is routed according to the ring-in type and destination fields associated with that pattern. If a match is not found, the call is sent to the primary attendant. However, there are two wildcard patterns that allows any number to match (+) or an empty pattern to match (E).
- **Ring-in type and destination:** The call can ring in to a single extension number (station, hunt group, or

Inter-Tel Axxent Talk application), an extension list, or as a DISA call (which allows the caller to select a destination).

- **Name:** The name field determines how the call will be identified at display keyset stations. It can contain up to 12 characters. The name can be a word or number that identifies the call source. If the name is left blank, the system will use the priority list shown on page 4–21 to determine what will be displayed on the keyset.

7.33 The system can have up to 10 call routing tables. There is 5K of memory set aside for call routing tables, which permits a total of 100 patterns in all of the call routing tables combined. To program a call routing table, refer to the information on page 6–117 in PROGRAMMING.

7.34 Four sample call routing tables are shown on the next page. (Actual tables would have more than the sample entries, these are abbreviated lists to show how the tables work.)

- **Sample #1:** This is an example of a DID routing table. (An actual DID table would have more than four entries, this is an abbreviated list.) Each DID number is identified by the three digits that are sent by the central office (000–003). The base number of the DID numbers is 9619. Therefore, the names of each of the patterns combine the base number and the additional three digits to form the complete number for display (961–9000 to 961–9003).
- **Sample #2:** This is an ANI table for various area codes and a special 800 number. If the incoming ANI information begins with one of the indicated area codes, it will be routed to the designated destination and the display will show the state where the call was placed.
- **Sample #3:** This table is set up for Caller ID. It is like the ANI table except that it uses office codes instead of area codes and includes an entry for a complete telephone number. However, note that if the system Caller Information flag is enabled, the Caller ID information received from the central office overrides the call routing table's name on the keyset display (see the priority list shown on page 4–21).
- **Sample #4:** This is an example of a DNIS application pattern. If the DNIS digits match 8005586969, the call came in on the Technical Support 800 number and is sent to the Technical Help hunt group. The display will show that the call is from the "Help Line."

FIGURE 4-1. SAMPLE CALL ROUTING TABLES

Sample #1: Call Routing Table for DID Numbers 961-9(000-003)

PATTERN	RING-IN TYPE	RING-IN DESTINATION	NAME
000	Single	Extension Number 101	961-9000
001	DISA	Not Applicable	961-9001
002	Extension List	Extension List P004	961-9002
003	Single	Pilot Number 255	961-9003

Sample #2: Call Routing Table for ANI Numbers from area codes 602, 505, 801, and 904

PATTERN	RING-IN TYPE	RING-IN DESTINATION	NAME
602+	Single	Extension Number 201	Arizona
505+	DISA	Not Applicable	New Mexico
801+	Extension List	Extension List P005	Utah
904+	Single	Pilot Number 256	Florida

Sample #3: Call Routing Table for Caller ID Numbers from office codes 961, 893, 255, and telephone number 254-9400

PATTERN	RING-IN TYPE	RING-IN DESTINATION	NAME
602961+	Single	Pilot Number 257	Chandler
602893+	DISA	Not Applicable	Phoenix
602255+	Extension List	Extension List P006	Phoenix
6022549400	Single	Extension Number 203	Phx Branch

Sample #4: Call Routing Table pattern for DNIS Numbers using telephone number 800-669-5858 (the Technical Services Help Line)

PATTERN	RING-IN TYPE	RING-IN DESTINATION	NAME
8006695858	Single	Pilot Number 2001	Help Line

I. AUTOMATIC ROUTE SELECTION (ARS)

NOTE: This feature must be enabled in Premium Feature Selection. See page 6-198 in PROGRAMMING.

7.35 ARS is a money-saving feature that allows the system to be programmed to select the least expensive route for placing outgoing calls. It can be used for placing outgoing calls and transferring or forwarding calls to outside telephone numbers. Stations can be restricted to using only ARS for placing outgoing calls.

NOTE: The ARS feature cannot be used in the KF-rated system. If a KF system user attempts to enter the ARS feature code or presses an ARS key, the system sends reorder tones.

7.36 When ARS is selected, the user dials the number (including the area code, if needed), and the system does the following:

- **Checks the dialed number:** The database contains up to 16 lists of trunk groups called route groups. The system checks the route groups in numerical order (1-16) and selects the first group that applies to the dialing pattern of the number that was dialed. **NOTE:** If the Emergency Call feature is programmed to use ARS, the emergency calls will always go through route group 1, regardless of route group programming.
- **Checks for toll restrictions and outgoing access:** Before the number has been modified by dial rules, the system checks the station toll restrictions and outgoing access to determine whether the call is allowed. (All calls placed using ARS are toll restricted, regardless of whether the selected trunk is subject to toll restriction. However, Emergency Call feature calls are never toll restricted.) If allowed, the system continues to the next step. If not allowed, the system sends reorder tones and the call is not placed.
- **Adds or deletes digits according to the route group chosen:** Each route group has a programmed set of dial rules that tell the system what to dial. (The system can have up to 16 dial rules, 12 of which are programmable. Each route group can use up to 16 dial rules.) For example, if the selected route group

requires that the number contain "1" but no area code, the dial rules include the 1 and drop the area code. The modified telephone number can contain up to 32 digits. When programming ARS, you can use preset dial rules or create new dial rules that add up to 16 digits each. The pre-programmed dial rules are:

- *Dial Rule #1 — Echo Equal Access:* This non-programmable dial rule includes the equal access digits (10XXX or 101XXXX) in the number, if dialed.
- *Dial Rule #2 — Echo Toll Field:* The toll field (1, 0, 01, or 011) is included in the number, if dialed. This dial rule is non-programmable.
- *Dial Rule #3 — Echo 3 Digits After Toll Field:* With this non-programmable dial rule, the three digits after the toll field are included in the number. (These digits are usually the area code or country code.)
- *Dial Rule #4 — Echo Local Address:* This non-programmable dial rule allows ARS to dial the telephone number that was dialed by the station user.
- *Dial Rule #5 — Add #:* This dial rule adds a pound (#) to the number dialed. This dial rule can be programmed.

- **Dials the modified telephone number:** If the number is allowed, the system seizes an idle trunk in one of the selected trunk groups, waits for the Dialing Wait After Connect timer to expire, and then dials.

NOTE: If all of the trunks in the trunk group are busy, and the station is enabled for ARS camp on, the call will camp on to the route group until a trunk is available.

7.37 When ARS is used, the station user hears dial tone when the feature code is entered (manually or automatically using a Call key, the ARS key, or the OUTGOING key). The user then dials the number and hears silence until the trunk is seized and dialing is completed. (The user will not hear the digits being dialed.) The call appears under an available Call key.

J. TOLL RESTRICTION

7.38 The following features provide toll restriction on the Inter-Tel Axxent System. (They are described in further detail in this section.)

- **Trunk Group Toll Restriction:** Each trunk group can be designated as “subject to toll restriction” or “not subject to toll restriction.” If subject to toll restriction, station class of service is checked when the trunk group is selected for placing an outgoing call.
- **Exemption From ARS-Only Restriction:** Each trunk group may be designated as “exempt from automatic route selection (ARS) only.” If exempt, station users with the ARS-Only class of service can select the trunk group directly.
- **Absorbed Digits:** Trunk groups that are subject to toll restriction can be programmed to “absorb” (ignore) the first digit(s) dialed. This allows the system to handle the dialed digits just as they would be by the local telephone company or PBX to which the system is connected.
- **Station And Trunk Group Classes Of Service:** Each station and trunk group can be assigned one or more classes of service (COS) which can restrict or allow certain digit patterns when an outside call is dialed. (Trunk group COS is not checked when ARS is used.)
- **Toll Strings:** Toll string programming allows the programmer to define dialing patterns, which are abbreviated to single character “wildcards.” These programmable wildcards are used frequently in the toll restriction class of service programming and in other system areas such as ARS route group programming, trunk group absorbed digits programming, and others. *Note that changing these dialing patterns will affect all of the areas where they are used.*

Trunk Groups Subject To Toll Restriction

7.39 Each trunk group can be designated as “subject to toll restriction” or “not subject to toll restriction.” All trunk groups are subject to toll restriction when the system is in the default state.

- When a station user selects a trunk group that is designated as “subject to toll restriction,” the system checks the database for that station’s class of service and call cost is determined by the digits that are dialed (see page 4-116).

- When a trunk group is chosen that is “not subject to toll restriction,” the station’s COS is not checked (except ARS-Only restriction).

7.40 The exceptions to trunk group toll restriction are as follows:

- **Emergency Call Feature:** When the Emergency Call feature code is entered, the designated trunk access code is used to seize a trunk and the programmed emergency number is dialed regardless of any station or trunk group toll restrictions. (See page 4-32 for details.)
- **Automatic Route Selection (ARS):** Calls placed using ARS (except Emergency Call feature calls) are always subject to toll restriction, regardless of the selected trunk group’s toll restriction programming. Note that only the station’s COS is checked, the trunk group’s COS is not.

7.41 The “subject to toll restriction” flag can be programmed by the installer or by an Administrator. (See page 4-106.)

7.42 Trunk groups are often programmed as “not subject to toll restriction” to allow station users to have access to reduced-cost long distance carriers, or to use ringdown lines, dictation machines, voice mail systems, and other auxiliary equipment. When programming unrestricted trunk groups, one of five call cost factors can be selected to designate calls as free, local, toll local, toll long distance, or operator/international. The selected call cost is then used for all calls that are placed using that trunk group.

7.43 Note that whether or not a trunk is marked as “subject to toll restriction,” dialing is *not* required to hold the trunk. For example, when a user seizes a line to make an outgoing call (via any method), if there is an incoming call on the line for which ring-in had not yet been detected, the user can talk with the incoming caller without dialing any digits. (That is, the call will not be dropped when the Dial Initiation timer expires.) However, if the trunk is marked as “subject to toll restriction” and the user attempting to make the outgoing call dials one or more digits before realizing that there is an incoming call, and the digits dialed represent a restricted number for the station and trunk group being used, the call *will* be dropped. In other words, the system has protection for “glare” situations between incoming and outgoing calls, but the protection is overridden if the outgoing caller dials a restricted number.

Trunk Group Exemption From ARS Only

7.44 A trunk group may be designated as “exempt from Automatic Route Selection (ARS) Only.” This allows users with the ARS-Only class of service (see COS 01 on page 4–28) to select specified trunk groups by pressing the appropriate trunk group keys or by entering the appropriate trunk group access codes.

7.45 This capability is necessary if trunks are connected to auxiliary equipment, such as analog voice mail systems, dictation equipment, or ring-down lines. When such trunks are designated as exempt from ARS Only, stations with the ARS-Only COS (and allowed access) can use the special facilities.

7.46 The default assignment for all trunk groups is “*not exempt* from ARS Only.” This means that, by default, stations with the ARS-Only COS are denied direct access to the trunk groups.

7.47 This flag can be programmed by the installer or by an Administrator. (See page 4–106.)

Absorbed Digits

7.48 Trunk groups that are subject to toll restriction can be programmed to “absorb” (ignore) the first digit(s) so that the digits dialed are handled by the system just as they would be by the local telephone company or PBX to which the system is connected. There are two applications for this capability: PBX installations and installations in areas where part of the local office code is absorbed by the central office (CO). Trunk groups that connect to outside trunks in PBX installations are referred to as “PBX trunk groups.” Trunk groups that use trunks for which the CO absorbs part of the local office code are referred to as “local trunk groups.”

7.49 When an Inter-Tel Axxent System is installed behind a PBX, users must dial special PBX codes to select the CO trunks. The Inter-Tel Axxent System trunk group that is used for PBX trunk access must be programmed to absorb PBX digits. The PBX access codes are then programmed as the absorbed digit patterns for that PBX trunk group. Up to 50 absorbed digit patterns are allowed, with a maximum of 32 digits in each.

7.50 When a PBX trunk group is used and an absorbed digit string is *not* dialed, the system behaves as though the trunk group is “not subject to toll restriction” and does not perform toll restriction and call cost functions. The call is considered to be an internal PBX call; it is allowed no matter what digits are dialed. The call cost

rate is “PBX,” and the call is designated as free (000) in the SMDR report.

7.51 When a PBX trunk group is used and an absorbed digit string *is* dialed, the system absorbs the PBX access code and behaves as though the trunk group is “subject to toll restriction,” using the remaining digits for toll restriction and call cost processing. When the Redial, Speed Dial, or Call Forward features are used, the system automatically inserts a short pause after the absorbed digit string to provide for the delay that occurs while a trunk is seized.

7.52 In some rural areas, specific digits (dialed as all or part of the local exchange) are absorbed by the central office, thus reducing the number of digits required to dial local calls. These digits may also be “repeatable.” That is, they are absorbed if dialed more than once. To determine if a central office absorbs digits and whether the digits are repeatable, contact the telephone company.

7.53 When using this type of trunk, the system must be programmed to recognize the absorbed digits. That is, the absorbed digits must be programmed as an absorbed digit string for any trunk groups that include those trunks. For each local trunk group, only one string is allowed, with a maximum of 32 digits. The only characters allowed in the string are digits (0–9, #, and *) and the wildcards. (See page 4–31 for wildcard information.)

7.54 If the system is not programmed to recognize the absorbed digits for a PBX or local trunk, the system may be left open for users to bypass toll restriction. A user could bypass toll restriction by dialing the digits that are absorbed by the CO before dialing a toll number. If the system does not know that the first digits are absorbed, it will not recognize a toll digit that follows them. However, if the digits absorbed by the CO are programmed as an absorbed digit pattern for the trunk group, the system will recognize them, absorb them, and then recognize any digits that follow as possible toll digits.

7.55 When dialed, absorbed digits (PBX or local) appear in the SMDR record if they are not suppressed during SMDR programming. Repeatable (local) absorbed digits will appear in SMDR only once, even if dialed repeatedly.

7.56 Absorbed-digits are programmed on a trunk group-by-trunk group basis. In the default state, no trunk group absorbs digits. See page 6–135 in PROGRAMMING for more information.

Equal Access

7.57 Under the terms of the final divestiture agreement, Bell Operating Companies provide equal access to all long distance companies. The equal access provision requires each Bell Operating Company to modify existing switching equipment to make it possible for customers to have direct access to all available carriers serving their area code. Prior to equal access, routing long distance calls to long distance companies other than AT&T required a lengthy dialing process usually involving a local access number, authorization number, and public network number.

7.58 As central offices are converted to provide equal access, customers served by those offices may choose one of two options for the routing of long distance calls. The options are:

- **Presubscription:** Normal "1+" or "0+" dialing procedures may be used and a switching arrangement automatically routes calls to the predesignated long distance company.
- **Non-Presubscription:** A long distance company is not predesignated and a five or six digit equal access code identifying a long distance company (10XXX or 101XXXX) is required to be dialed preceding the desired "1+" or "0+" long distance telephone number to designate the long distance company to handle the call.

7.59 Presubscription does not limit long distance calling to the predesignated long distance company. An access code (10XXX or 101XXXX) may be dialed to direct a call to the long distance company of choice. Presubscription also does not affect the way an operator may be contacted. Any existing non-presubscription long distance company operator is called by dialing the carrier's access code followed by "0."

Class Of Service (COS)

7.60 Each station and each trunk group that is "subject to toll restriction" is assigned toll restriction classes of service (COS) that restrict or allow certain dialing patterns on outside calls.

7.61 The classes of service (COS) are programmed individually for stations, Inter-Tel Axxent Talk applications, and trunk groups. There are separate COS designations for day and night modes. A station or trunk group can be completely unrestricted or can have any combination of the classes of service.

7.62 Class of service for stations and trunks can be programmed by the installer or by an Administrator. (See pages 4-99 and 4-106.)

7.63 The first nine COS designations (01-09) have default values. COS designations (10-16) do not have default values and are blank. All of the classes of service are programmable. Each may be specified as an "allowed" or "denied" class of service, dialing patterns can be programmed for each, and each can be assigned to stations and trunk groups as needed. (Refer to page 6-107 in PROGRAMMING for COS programming information.) The default values of COS 01-09 are as follows. The toll string wild cards and non-programmable wildcards are described and listed on page 4-31.

- **COS 01 — ARS Only:** (*This is a station COS only. It is not used for trunk groups. Also, it cannot be used unless the ARS premium feature is enabled.*) Calls can only be placed using the Automatic Route Selection (ARS) feature when this restriction is assigned. The user will hear reorder tones when attempting to place a call using any other method. A restricted user can still select individual trunks if the trunks are designated as "exempt from ARS Only" (as described on page 4-27), were transferred, were placed on hold, or are recalling or ringing. Trunk restriction determines which trunks in the ARS route group can be selected by the station or application.
- **COS 02 — Deny Area/Office:** This restriction is divided into three user groups to allow the use of varying area/office code restriction tables. This is useful for reducing restrictions for some of the stations, Inter-Tel Axxent Talk applications, or trunk groups while increasing restrictions for others. Each station, application, and trunk group is assigned a day mode and a night mode user group in database programming. Within each user group, area codes can be designated as restricted, allowed, or extended. Restricting an area code prevents users from placing calls to that area code. Allowing an area code allows all office codes within that area code. Designating an area code as extended allows the programmer to determine which office codes (up to 800) are allowed or restricted within that area code. For each user group, 800 area codes can be marked as allowed or restricted in the database list, and up to four area codes can be marked as extended.
- **COS 03 — Deny Operator:** Calls to numbers that match the dial patterns for this class of service (defaults to [Q]RN+, [Q]R0, and [Q]RE) are restricted, unless the number also matches a dial pattern in an "allowed" class of service that is assigned to the station, Inter-Tel Axxent Talk application, or trunk group being used.

- **COS 04 — Deny Toll Access:** Calls to numbers that match the dial patterns for this class of service (defaults to [Q]TN+ and [Q]TE) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station, Inter-Tel Axxent Talk application, or trunk group being used.
- **COS 05 — Deny International:** Calls to numbers that match the dial patterns for this class of service (defaults to [Q]I+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station, Inter-Tel Axxent Talk application, or trunk group being used.
- **COS 06 — Deny Equal Access:** Calls to numbers that match the dial patterns for this class of service (defaults to Q+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station, Inter-Tel Axxent Talk application, or trunk group being used.
- **COS 07 — Deny Local Calls:** Calls to numbers that match the dial patterns for this class of service (defaults to N+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station, Inter-Tel Axxent Talk application, or trunk group being used.
- **COS 08 — Denied Numbers:** Calls to numbers that match the dial patterns for this class of service (defaults to 1900NXXXXXX+ and 976XXXXX+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station, Inter-Tel Axxent Talk application, or trunk group being used.
- **COS 09 — Allowed Numbers:** Calls to numbers that match with the dial patterns for this class of service (defaults to 1800NXXXXXX+) are allowed, even if number also matches a dial pattern in a restricted class of service that is assigned to the station, Inter-Tel Axxent Talk application, or trunk group being used.

7.64 When a station or Inter-Tel Axxent Talk application is actively connected to a trunk (that is, the dialed digits are being sent to the CO as they are dialed), the dialed number is restricted only if it *exactly* matches a pattern programmed for a “denied” class of service assigned to the station or trunk group being used. All numbers are allowed that do not match or only partially match the “denied” pattern(s).

7.65 When a station or Inter-Tel Axxent Talk application is *not* actively connected to a trunk (that is, the dialed digits are *not* being sent to the CO as they are dialed, as with ARS and forwarding to outside numbers), a complete or partial match a pattern in a “denied” station or trunk class of service will cause the dialed number to be restricted. The dialed number will be allowed only if there is a complete or partial match with a pattern in an “allowed” class of service assigned to the station or trunk group being used.

7.66 Exact (complete) pattern matches with classes of service marked as “allowed” always override exact pattern matches with classes of service marked as “denied.” Also, complete or partial pattern matches with classes of service marked as “allowed” always override partial pattern matches with classes of service marked as “denied.” The only time a pattern in a “denied” class of service overrides a pattern in an “allowed” class of service is when the match with the “denied” pattern is exact (complete) and the match with the “allowed” pattern is partial.

7.67 System speed-dial numbers can be programmed to bypass COS restrictions on a system-wide basis. If the option is not enabled, all system speed-dial numbers are subject to toll restriction.

7.68 Because a condition may exist where a critical or life threatening situation needs to be reported, using the Emergency Call feature code will override all toll restrictions and trunk access programming.

7.69 In the event that the classes of service for the station or Inter-Tel Axxent Talk application and the trunk group conflict, the decision to restrict or allow a number is based on the following ordered checks. Note that these ordered checks apply to *all* calls to outside telephone numbers, including calls forwarded to outside telephone numbers.

- (1) *Station or Inter-Tel Axxent Talk application COS is checked:* If the digits dialed *exactly* match a pattern included in a “denied” class of service assigned to the station or Axxent Talk application and not with a pattern included in an “allowed” class of service assigned to the station or application, the number is restricted.
- (2) *If ARS is not being used and forward to an outside number is not being programmed, trunk group COS is checked:* If the digits dialed *exactly* match a pattern included in a “denied” class of service assigned to the trunk group and not with a pattern included in an “allowed” class of service assigned to the trunk group, the number is restricted.
- (3) *If ARS is being used or a forward to an outside number is being programmed, station or Inter-*

Tel Axxent Talk application COS is checked: If the digits dialed **partially** match a pattern included in a “denied” class of service assigned to the station or application and not with a pattern included in an “allowed” class of service assigned to the station or application, the number is restricted.

- (4) *If a forward is being programmed to an outside number, trunk group COS is checked:* If the digits dialed **partially** match with a pattern included in

a “denied” class of service assigned to the trunk group and not with a pattern included in an “allowed” class of service assigned to the trunk group, the number is restricted.

- (5) *If none of the above cases apply:* The number is allowed.

7.70 Note that if the trunk group is “not subject to toll restriction,” neither the trunk group or station COS is checked, unless the call was placed using ARS. All ARS calls are subject to **station** toll restriction only.

Toll String Dialing Pattern Wildcards

7.71 Toll strings are dialing patterns that are abbreviated to single character "wildcards." These programmable wildcards are used frequently in the toll restriction class of service programming and in other parts of the system, including ARS route group programming, trunk group absorbed digits programming, and others. *Note that changing these dialing patterns will affect all of the other parts of the system where they are used.*

7.72 Toll strings can contain any digit 0-9, #, or *. In addition, a variety of special characters may be entered into the database to reflect particular digit strings, hookflashes, or special digit strings (as described below).

7.73 Each of the following toll string wildcards can be reprogrammed and/or renamed to meet the customer's requirements. The programmable toll string wildcards are as follows:

- **Operator Access (R):** Using the "R" wildcard represents the digit string that is required to reach a telephone company operator. In the default state, this dialing pattern is 0.
- **Toll Access (T):** Entering the "T" wildcard represents the digit(s) required when using long distance service. In the default state, this toll string is 1.
- **International (I):** An "I" wildcard represents the digits required for international dialing. In the default state, the dialing patterns for this toll string are 011 and 01.
- **Equal Access (Q):** Using the "Q" wildcard represents the digits required for access to secondary carriers using equal access dialing. In the default state, this toll string is 101XXXX, 10NXX, and 100XX.
- **Any Toll String (S):** The "S" wildcard indicates that any of the designated patterns can be dialed at that point in the digit string. In the default state, the dialing patterns for this toll string are International (I), Operator Access (R), and Toll Access (T).

Non-Programmable Wildcards

7.74 The following chart shows the special characters that may be used when specifying dialing patterns. These characters are not programmable.

CHARACTER	MEANING
X	Any digit 0-9
A	Any keypad entry (0-9, #, *)
N	Any digit 2-9
Z	Any digit 0 or 1
B	# or *
H	A hookflash
E	End of dialing; the pattern will not match if any digits are dialed beyond this point
+	Any additional dialing will be accepted, from this point in the string, with no further checking for a match. This also means that no further dialing is required beyond this point.

7.75 Unless otherwise noted, each wildcard character represents exactly one character position in the dialed number. For example, 258999X will accept 258999 plus any digit 0-9.

7.76 A character inside brackets indicates an optional pattern within another pattern. For example, the International Access character "I" could be defined as 01[1]. The 01 is followed by an optional 1. To add an optional equal access code to the beginning, the pattern would be [Q]01[1].

7.77 A range of numbers within parentheses, such as (00-99), indicates a range of digits within a pattern. The digits on either side of the hyphen and all digits that fall within the numerical range are included in the match. The digit strings on either side of the hyphen must be the same length, and the only digits that may appear in the range are 0-9 (#, *, and hookflashes are not allowed).

7.78 Patterns within angle brackets, such as <9>, indicate repeatable patterns within patterns. In other words, no matter how many times the digit string within the brackets is dialed, the system will consider the dialed digits to match the pattern. Note that a repeatable pattern is an entire pattern; no other characters are allowed before or after a repeatable pattern. In other words, a repeatable pattern cannot be included within any other pattern.

K. AREA/OFFICE CODE NUMBERING PLANS AND LOCAL AREA CODES

7.79 If any office codes in the local area code have a 0 or 1 as the second or third digit, the local office codes are probably used as area codes elsewhere, and the system requires special programming to allow toll restriction to work properly. During System-Wide Information database programming, the programmer can specify the following non-standard numbering plan information:

- **Office Codes Used as Area Codes:** Area codes in other locations are the same as office codes within the system site's area code.
- **Area Codes Used as Office Codes:** Office codes within the system site's area code are the same as area codes assigned to other areas.
- **Toll Digit Allowed On Toll Local Calls:** This option applies only if the area and office codes overlap. Callers in the site's area code usually dial a 1 when placing a call within the local area code(s).
- **Toll Digit Required On Toll Long Distance Calls:** This option applies only if the area and office codes overlap. Callers in the site's area code must dial a 1 when placing a call outside of the local area code(s).

7.80 The database requires that the programmer enter a "home" area code for the system site. It also allows up to three additional "local" area codes. The system refers to these area codes for toll restriction and call cost.

L. EMERGENCY CALL FEATURE

7.81 The Inter-Tel Axxent System will immediately allow access to local emergency facilities whenever a station user enters the Emergency Call feature code (defaults to 911). When activated, the Emergency Call feature will select a trunk and then automatically dial the necessary digit(s) to call the local emergency services facility (defaults to 911). Because a condition may exist where a critical situation needs to be reported, this feature will override all toll restrictions and trunk access programming.

7.82 When an emergency must be reported, any station user can lift the handset and dial 911 at intercom dial tone. At this point, the system will select an idle trunk using the trunk access code programmed for this

feature (defaults to Trunk Group 1). The system will allow the Dialing Wait After Connect timer to expire and will then dial the digit string programmed in the database as the emergency number.

7.83 At the time the call is processed, a minor alarm will be generated by the system and sent to all Administrator stations.

NOTE: If an off-premises extension is used for dialing 911, the 911 operators will see the address of the location of the Inter-Tel Axxent System, not the off-premises address. Off-premises personnel should be prepared to give the correct address and other pertinent information.

7.84 If the system is installed in an area where 911 service is not available, it is suggested that the number for the local police or fire department or the telephone company operator be substituted.

7.85 If the database programmer renders this feature inoperative by either removing all trunk access and/or by removing the dialed digit string, the database program will present a warning message notifying that the feature has been disabled and requiring the programmer to acknowledge or change this condition before being allowed to continue.

7.86 Like all other feature codes, the 911 feature code can be changed to another 1- to 5-digit code, if desired.

7.87 If a user selects an outgoing trunk before dialing 911 (or the programmed Emergency Call feature code), toll restriction is *not* automatically overridden for that call; toll restriction *is* applied. If the user selects ARS to place the call, route group 1 is automatically selected.

7.88 If the Emergency Call feature is programmed to use ARS, route group 1 (local calls) will be used even if its dial patterns are reprogrammed.

M. DAY AND NIGHT MODES

7.89 There are separate lists in the database for class-of-service, outgoing-access, allowed-answer, and ring-in assignments for day and night modes. When an Administrator enters the Night Mode feature code, the system uses the night mode lists. When the system is in day mode, the day lists are used. (Active calls are not affected when the mode is changed.)

N. DIRECT INWARD SYSTEM ACCESS (DISA)

7.90 DISA is a programmable feature that allows an outside party to dial into the system from an external DTMF telephone and then dial extension numbers and hunt group pilot numbers.

7.91 Any of the trunk groups can be programmed to receive incoming DISA calls in day and/or night mode. When not in use for DISA, the trunk group can be used for placing outgoing calls by stations with outgoing access permission.

NOTE: Due to the natural characteristics of the trunk, the volume level of DTMF tones transmitted over the trunk may be substantially reduced before reaching the Inter-Tel Axxent System. This natural degradation in tone volume may adversely affect the reliability of the DISA feature. Other factors which can affect DISA performance are trunk noise and the quality and strength of the DTMF tones generated by the off-premises phone itself. If the system cannot recognize a DTMF digit, the call is automatically sent to the primary attendant.

7.92 When a DISA user calls a station extension number, the call rings as a direct ring-in call, even if the called station is busy or in do-not-disturb. The DISA caller hears music or ringing (determined by a system-wide option in database programming) until the Transfer Available or Transfer Busy timer expires; then if the call is not answered it recalls the called station's attendant. If the called station is forwarded, the call follows the programmed forward.

7.93 When a hunt group pilot number receives a call through DISA, the call rings or circulates according to how the hunt group is programmed (i.e., linear or distributed).

7.94 If a caller dials a valid hunt group pilot number that has no members assigned to it, the call automatical-

ly rings at the primary attendant station until the Abandoned Call timer expires. If the call is not answered before the Abandoned Call timer expires, the call is disconnected.

Security Codes

7.95 DISA trunks can be assigned security codes (up to eight digits in length) that are required for access to the system. The installer can program separate codes for each DISA trunk group to be used during day and/or night modes.

7.96 During database programming, the programmer can determine the number of times that a caller may unsuccessfully attempt to enter a security code and/or dial an extension number. If the user does not succeed within the determined number of attempts, the call will be disconnected (if the security code is invalid) or transferred to the primary attendant (if the extension number is invalid).

Using DISA

NOTE: If DTMF decoders are unavailable when a DISA call is received, the incoming DISA call is automatically sent to the primary attendant.

7.97 TO USE DISA:

- (1) From a DTMF telephone, dial the telephone number of the DISA trunk. When the call is answered by the system, you hear system intercom dial tone.
- (2) *If you hear a single progress tone, enter the appropriate (day or night) DISA security code, followed by pound (#).*
- (3) Dial an extension number or a hunt group pilot number. (To call the primary attendant, dial 0.) You hear music or ringing until the call is answered.

8. STATION INSTRUMENTS

8.1 To allow system flexibility and cost efficiency, a variety of station instruments can be used on the Inter-Tel Axxent System. They are:

- Basic Digital Keypad (also referred to as Basic Digital Terminal) — non-display only
- Standard Digital Keypad (also referred to as Standard Digital Terminal) — non-display and display
- Executive Digital Keypad (also referred to as Executive Digital Terminal) — display only
- Digital DSS/BLF Unit — single or tandem
- Industry-standard single-line, dual-tone multi-frequency (DTMF) set

8.2 Digital Keypad Cards (DKSCs) are used to support keypad stations. Keypad Card circuits can be programmed to support two single-line stations (instead of a keypad). DSS/BLF Units are connected to Executive or Standard keypads that are equipped with PC Data Port Modules (see page 4-46 for details).

8.3 System software will support any configuration of station instruments, using up to two DKSCs (16 circuits) in the system. However, there should be at least one keypad for the Administrator/Attendant station.

A. KEYPADS

8.4 Three types of keypad are available: Executive, Standard, and Basic. Keypad design features are described in the following paragraphs.

Executive Keypad Speakerphones

8.5 Each Executive keypad has a built-in, integrated speakerphone that allows on-hook dialing and hands-free operation on outside calls and inside (intercom) calls. The Executive speakerphone can be used in standard mode or in enhanced mode which allows for full-duplex operation over a limited volume range (the range depends on trunk characteristics). Enhanced speakerphones are explained on the next page.

8.6 The Executive keypad's speaker can also provide background music (if an external music source is installed) and is used to receive pages.

8.7 A programming option can be used to disable the keypad's speakerphone capabilities (see page 6-33 in PROGRAMMING). Or, the user can disable the speakerphone for intercom calls using the Handsfree On/Off

and/or Ring Intercom Always On/Off feature codes as described on page 4-52.

NOTE: On certain handsfree-to-handsfree intercom calls, voice volume levels may cause feedback to occur. If this happens; one station user should pick up the handset. Two Executive Keypads cannot be in enhanced mode while on a call together; one keypad must be off hook to allow the other keypad to enter enhanced speakerphone mode. If both keypads are on hook, there is no benefit to having one keypad in enhanced mode.

Standard And Basic Keypad Speakerphones

8.8 Standard and Basic keypads have a built-in speaker and microphone that allow the user to answer intercom calls handsfree, dial while on hook, monitor calls, and listen to background music.

8.9 Standard and Basic keypads can be programmed in individual station programming to be allowed to use system resources for standard and enhanced speakerphones. Enhanced mode allows for full-duplex operation over a limited volume range (the range depends on trunk characteristics). Enhanced speakerphones are explained on the next page.

8.10 To provide standard and enhanced speakerphone resources for Standard and Basic keypads, the Inter-Tel Axxent System must be equipped with the optional DSP Upgrade kit. At least one DSP is required to support standard and enhanced speakerphones. The DSP must be programmed for speakerphone resources. (Each DSP can be programmed to support up to eight speakerphones. See page 6-217 in PROGRAMMING.) If programmed, the speakerphone resources are available to Standard and Basic keypads on a first-come, first-served basis.

8.11 Each time a Standard or Basic keypad user presses the SPKR key while on hook, the standard speakerphone function is activated and the DSP resource is assigned to that phone for the length of the call. If eight speakerphones are enabled in the database and a ninth Standard or Basic keypad user requests the speakerphone function, the user will hear reorder tones and the display will show NO SPKRPHN AVAIL STAY OFF HOOK. If the user attempts to change to the speakerphone and hangs up during a call when speakerphones are unavailable, the user will be forced into a monitor-only mode. The user will be able to hear the other party but will not be allowed to transmit to them. In this mode, the user's MUTE key will be lit and the display shows NO SPKRPHN AVAIL COME OFF HOOK. Pressing the lit MUTE key will result in a burst of reorder tone; you must lift the handset to speak.

Enhanced Speakerphones (All Keypad Types)

8.12 To provide enhanced speakerphone resources for Standard and Basic keysets, the Inter-Tel Axxent System must be equipped with the optional DSP Upgrade kit. At least one DSP can support up to eight enhanced speakerphones.

8.13 To use an enhanced speakerphone on any keypad, the user establishes a call and presses the SPCL key and then the SPKR key (or presses SPCL and enters the Enhanced Speakerphone feature code — 310). There will be about one second of white noise at this point. (Both parties should avoid speaking during this white noise.) This white noise is used to calibrate the echo-cancelling circuitry. After the white noise there will be a confirmation tone (Executive keypad users will hear the tone, but the other party will not. On a Standard or Basic keypad, both the user and the other party will hear the tone.) Then the user will be connected in an enhanced hands-free call. If the speakerphone cannot be calibrated correctly, due to trunk conditions, the enhanced speakerphone will not be enabled and the display will show CANNOT ENABLE ENHANCED MODE.

NOTE: It is normal for an outside party to hear a minimal amount of his or her own echo when speaking to a keypad in enhanced speakerphone mode. This is usually acceptable to most callers on local calls and on most long-distance calls.

8.14 If an enhanced speakerphone call is placed on hold and then taken off hold on an Executive keypad, it remains an enhanced speakerphone call. If it is placed on hold at a Standard or Basic keypad, the call is returned to standard speakerphone mode.

8.15 A station can only have one enhanced speakerphone call. For example, if an Executive keypad user makes an enhanced speakerphone call, puts it on hold, and establishes another enhanced speakerphone call, the first call will be turned back into a standard speakerphone call.

8.16 A keypad station user can set up a conference and then, once it is established, press SPCL and SPKR (or press SPCL and enters the Enhanced Speakerphone feature code — 310) to have an enhanced speakerphone call in the conference.

Executive Keypad Liquid Crystal Display (LCD)

8.17 All Executive keysets have a six-line display. Each line has 16 characters. (A picture of the Executive keypad is shown in the Figure below.) The top two lines are for standard call information and show the same displays as Standard display keysets. The remaining four lines are used for displaying feature-related menus that change with the function being performed by the keypad (intercom call, outside call, programming, etc.). These lines have menu selection keys on both sides (eight keys) that are used for menu features. When there are two prompts on a line, like PREVIOUS and NEXT, the key next to the word is the one that will select that feature. When there is only one prompt on a line, like DO NOT DISTURB, then pressing the key on either side of the prompt will select it.

8.18 Under the display are six display-oriented message manipulation feature keys. PREVIOUS and NEXT are used for scrolling through screens (or voice mail messages). BACKSPACE and FORWARD are used when doing text entry (like custom do-not-disturb messages). CLEAR erases all data that you have entered into a line (for example, an entire line of custom do-not-disturb text). CANCEL terminates whatever you are doing.

8.19 There is a system-wide flag, called "Alternate Keypad Menu Displays," that determines the display that Executive Keypad users will see during an outside call. In the default state, the display shows the following menu with Transfer-To-Hold on the first menu and Flash on the "More..." menu:

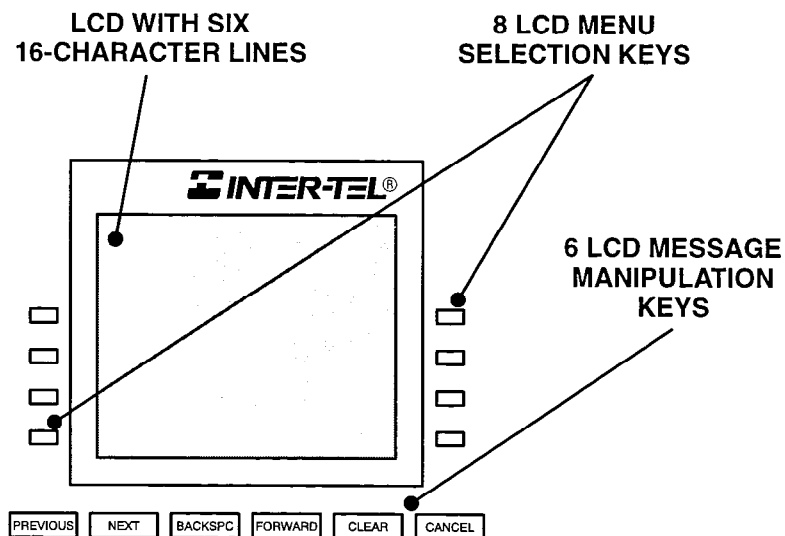
HOLD	SYS HOLD
TRANSFER	CNF
TRANSFER-TO-HOLD	
MUTE	MORE...

8.20 If the Alternate Keypad Menu Displays flag is enabled, the Executive Keypad users will see the following menu with Flash on the first menu and Transfer-To-Hold on the "More..." menu:

HOLD	SYS HOLD
TRANSFER	CNF
FLASH	
MUTE	MORE...

8.21 Enabling the Alternate Keypad Menu flag allows Centrex features to be accessed more easily, using the FLASH menu option.

FIGURE 4-2. EXECUTIVE KEYPAD DISPLAY



Standard Keypad Liquid Crystal Display (LCD)

8.22 Standard keysets are available in display and non-display models. The Standard display keysets have two-line displays with 16-characters per line. (A picture of the Standard keypad is shown on page 2-27 in SPECIFICATIONS.)

8.23 Standard non-display keysets can be converted to display keysets by installing LCD Units. (Installation instructions are on page 3-39 in the INSTALLATION section.) The LCD Unit has two 16-character display lines.

8.24 When the keypad is not in use, the LCD shows the station extension number, user name, time of day, and date. Other displays include: reminder messages, do-not-disturb messages, numbers dialed, call sources, elapsed time of calls, current call costs, error messages, station status, programming messages, etc. The displayed information is described throughout the instructions in this section of the manual.

Extension Number, Username, Time and Date Display

8.25 When a display keypad is idle, the extension number, username, time, and date are displayed. While on a call, in do-not-disturb, or unconditionally forwarded, other displays are shown. In these circumstances, use the following procedure to redisplay the date, time, name, and extension number for five seconds.

8.26 *TO DISPLAY THE DATE, TIME, USER NAME, AND EXTENSION NUMBER:*

Press the SPCL key and enter the Display Time/Date feature code (300). The date, time, user name, and extension number are displayed for five seconds.

Circuit Number On Power-Up

8.27 To aid in installation and troubleshooting procedures, display keysets show their station identification for five seconds when power is turned on, when the system is reset, or when the keypad line cord is first plugged in (or removed and replaced). The extension number and assigned user name appear on the top line of the display, and the circuit number appears on the bottom line. After the five-second identification display, the keypad returns to the appropriate display, depending on its current status.

“All Transient Displays” Station Flag

8.28 The “All Transient Displays” station flag, when enabled, will allow all transient call handling displays to appear on the keypad display. If it is disabled, the CALL TRANSFERRED TO XXX and MESSAGE LEFT FOR XXX transient displays will not appear. (See page 6-52 in PROGRAMMING.)

8.29 Each transient display is shown for five seconds before another display can take its place. Disabling the flag allows high-traffic stations (such as attendants) to change displays more quickly after a message is left by the station user or after a call is transferred.

8.30 This station option cannot be programmed by the user. It is a database-programmable flag.

“Alternate Transient Display Timer” Station Flag And Timer

8.31 As an alternative to (or in addition to) disabling the call transfer and message transient displays, as described above, the programmer can use a combination of a station flag and a timer to control *all* of the station’s transient displays (not just the call transfer and message displays). The “Alternate Transient Display Timer” station flag, if enabled, allows all transient displays to be controlled by the “DKTS Alternate Transient Display” timer. (See page 6-52 in PROGRAMMING.)

8.32 The “DKTS Alternate Transient Display” timer can be set to 1-255 tenths of a second (0.1-25.5 seconds). The default value is 10 tenths of a second (1 second). This timer affects only those keypad stations with the “Alternate Transient Display Timer” flag enabled.

“Hot” Keypad Keys

8.33 The keysets have “hot” keypad keys that allow dialing of feature codes, extension numbers, and trunk access codes without pressing the SPCL key or lifting the handset. As soon as a keypad digit is pressed, the digit is recognized by the Inter-Tel Axxent System.

8.34 If a keypad user presses the SPCL key while on hook, the display shows ENTER FEATURE CODE and the Executive keypad menu shows a list of feature codes. The user can enter the desired code or press a menu key.

Key Maps

8.35 A key map group determines the layout of the keys for all the stations assigned to that group. If any of the keys in the key map group are user-programmable or undefined, they can be changed by the station user. There can be up to 10 different keyset key map groups. Refer to PROGRAMMING, page 6–52, for more details. (There are also three maps for DSS/BLF Units.)

8.36 Each keyset is assigned a standard key map and can also have an alternate keymap. See page 4–39 for information about switching between standard and alternate keymaps.

8.37 When the system is in the default state there are two pre-programmed keymaps. Key map #1 is for Standard and Executive Keysets. Key map #10 is for Basic Keysets. When a keyset is plugged in, the system determines which type of keyset it is and assigns the appropriate key map (#1 for Standard/Executive or #10 for Basic). If the keyset type is changed, for example from a Basic to a Standard, the system automatically changes the default key map to match the new keyset type (in the example, it changes from #1 to #10). However, if the station has a key map other than its default map (maps 2–9), the key map will not be changed automatically if the keyset type is changes; you must manually change the key map.

8.38 The keys in each keymap can be assigned the following functions:

- **Call key:** Up to 10 Call keys can be assigned in each key map. These keys are used for call access. They are not associated with specific trunks. Instead, they are assigned to calls in the order that the calls are placed or received. In the following example, the user has three Call keys.

ACTION	CALL KEY 1	CALL KEY 2	CALL KEY 3
User places call #1	Shows status of call #1		
Call #2 rings in while call #1 is active	Shows status of call #1	Shows ring flash for call #2	
Calls #1 and #2 on hold, call #3 placed	Shows hold flash for call #1	Shows hold flash for call #2	Shows status of call #3

If there are more calls in progress than there are Call keys (e.g., if another call rings in to the keyset in the example), the new call will not have an available call key and will camp on to the station until a Call key

becomes available; it will then appear under the available key. Pressing an idle Call key will enter the programmed Outgoing Call feature for that station. If there is no IC key programmed in the key map, intercom calls will appear under Call keys. **NOTE:** All key maps should have at least one Call key if there is not an individual trunk key for every trunk.

- **DSS/BLF key:** A DSS/BLF key will dial the associated extension number when pressed. If assigned to a key with a lamp, it will also show status of the associated station as described for DSS/BLF Units on page 4–46. DSS/BLF keys cannot be changed by the station user.
- **Feature key:** These are programmed with feature codes. The feature code appears in the same key location on all stations assigned to the key map and cannot be changed by the keyset user.
- **Forward key:** The forward key can be programmed with any of the Call Forwarding feature codes. The forwarding code used by the key can be changed by the keyset user.
- **Hunt Group key:** Like a DSS/BLF key, this key dials a hunt group pilot number when pressed and, if assigned to a key with a lamp, will show the status of that hunt group.
- **Individual Trunk key:** This key is associated with one trunk. It can be used for placing outgoing calls, and for picking up calls on hold and answering incoming calls on that trunk.
- **Intercom (IC) key:** The IC key allows access to intercom channels for placing and answering calls. If an IC key is not assigned, an intercom call will appear under a Call key.
- **Page Zone key:** A page zone key is programmed with one of the page access codes (960–964) for quick access to page zones (0–4 respectively).
- **Programmable key:** Up to 11 user-programmable keys can be designated and given default values in the key map database. They can then be reprogrammed to enter any of the trunk group access codes, extension numbers, or feature codes by the individual keyset users as desired. Or, they can be programmed as system or station speed-dial bins. The keyset user or programmer can return the keys to default values at any time.
- **Speed-Dial (SD) keys:** Each key map can have up to 10 SD keys. Each SD key can be programmed by the keyset user to dial one digit string. If assigned to a key with a lamp, the lamp will show the status of an extension number if it is associated with that key.

- **Trunk Group key:** These keys are associated with specific trunk group access codes and are used for placing outgoing calls on trunks in the selected trunk group. If assigned to a key with a lamp, the lamp will be lit if all trunks in the trunk group are in use.
- **Undefined key:** Any key can be left undefined if it will not be needed. It can be programmed, like a user-programmable key, as described above. If the keyset user or programmer returns the keyset to default values, the key will return to being "undefined."

Standard/Alternate Keymap Switching

8.39 In database programming, each keyset is assigned a standard keymap and can also have an alternate keymap. The user can switch between the keymaps by entering a feature code. (The maps can also be switched in the database using the Alternate Keymap station flag; see page 6–30 in PROGRAMMING.)

8.40 Having two keymaps provides the user with access to more features or trunks. In most situations, the user would have one key programmed with the Switch Keymap feature code (399) in each keymap so that it would be easy to change the keymap. (If the user-programmed key has a lamp, the lamp is lit when the alternate keymap is active.)

8.41 When keymaps are switched, any user-programmable keys in the maps retain their user-programmed

values; they are not returned to default during the switch. However, if the keymaps do not have the same user-programmable keys in the same positions, the location of individual keys may change when the keymaps change.

8.42 If a user switches keymaps during an outside call, the call will appear on the appropriate trunk or Call key for that keymap. The key assignment may not be the same for both keymaps. For example, it could appear under a Call key on one map and an individual trunk key on the other.

8.43 If a key is not available in the currently active keymap when a call rings in, the user will still see the correct display, hear ringing, and can answer as usual.

8.44 *TO SWITCH BETWEEN KEYMAPS WHEN THE STATION IS IDLE:*

While on hook, enter the Switch Keymap feature code (399). The display shows STANDARD KEYMAP IS ACTIVE or ALTERNATE KEYMAP IS ACTIVE.

8.45 *TO SWITCH BETWEEN KEYMAPS DURING A CALL:*

While on a call, press SPCL and enter the Switch Keymap feature code (399). The display momentarily shows STANDARD KEYMAP IS ACTIVE or ALTERNATE KEYMAP IS ACTIVE.

Default Keypad Feature Keys

8.46 When the system is in the default state, Executive and Standard keysets are key map group #1 and Basic keysets are in keymap group #10. The key maps have the following feature keys. Feature code descriptions start on page 4–5.

8.47 The default values of the Executive and Standard Keypad programmable keys that can be assigned in the keymap, and their fixed-function keys are as follows:

EXECUTIVE AND STANDARD KEYPAD (#1) — PROGRAMMABLE KEYS:

KEY	FUNCTION
INDIVIDUAL TRUNK KEYS 1-8	Selects an outgoing trunk, if idle, or answers a call on the key. These keys are labeled as "LINE" keys 1–8.
IC	Selects a voice channel or picks up a holding or camped-on intercom call.
DND	Do-Not-Disturb On/Off (372)
CNF	Conference (5)
HOLD	Individual Hold (336)
TRANSFER	Transfer to Ring (345)
SYS SPD	System Speed Dial (381)
REDIAL	Redial (380)
FWD	Call Forward All Calls (355) — This feature key may be reprogrammed with any of the call forward options (however, other feature codes may not be used). Also used for canceling Call Forward.
SPCL	Signals the system to expect a feature code.
ANSWER	Answer (351)
OUTGOING	Selects a trunk for placing an outgoing call using the station's Outgoing Call feature (8).

EXECUTIVE AND STANDARD KEYPAD (#1) — FIXED-FUNCTION KEYS:

KEY	FUNCTION
SPKR	Speakerphone On/Off
MSG	Message (365) — Also retrieves messages when the flashing MSG key is pressed.
VOL UP/DOWN	Adjusts the keypad volumes and scrolls through displays. When pressed at the same time, acts as an Accept key.
MUTE	Microphone Mute On/Off (314)

8.48 The default values of the Basic Keypad programmable keys that can be assigned in the keypad, and the fixed-function keys are as follows:

BASIC KEYPAD (#10) — PROGRAMMABLE KEYS:

KEY	FUNCTION
INDIVIDUAL TRUNK KEYS 1-8	Selects an outgoing trunk, if idle, or answers a call on the key. These keys are labeled as "LINE" keys 1-8.
HOLD	System Hold (335)
OUTGOING	Selects a trunk for placing an outgoing call using the station's Outgoing Call feature (8).
PAGE	Page (7)
TRANSFER	Transfer to Ring (345)
STN SPDL	Station Speed Dial (382)
REDIAL	Programmable Key: Redial (380)
SPKR	Speakerphone On/Off
MSG	Message (365) — Also retrieves messages when the flashing MSG key is pressed.
DND	Do-Not-Disturb On/Off (372)
FWD	Call Forward All Calls (355) — This feature key may be reprogrammed with any of the call forward options (however, other feature codes may not be used). Also used for canceling Call Forward.

BASIC KEYPAD (#10) — FIXED-FUNCTION KEYS:


KEY	FUNCTION
VOL UP/DOWN	Adjusts the keypad volumes and scrolls through displays. When pressed at the same time, acts as an Accept key.
SPCL	Signals the system to expect a feature code.

Keypad Light-Emitting Diode (LED) Indications

8.49 The keypad Call keys, trunk keys, speed-dial (SD) keys, hunt group keys, and some of the feature keys contain light-emitting diodes (LEDs). The LED flash rates, shown below, indicate the status of the stations, trunks, and features. The rates are shown in interruptions per minute (IPM).

	STEADY 0 IPM	SLOW 30 IPM	MEDIUM 120 IPM	FAST 240 IPM	FLUTTER 60/960 IPM
DATA	Auto-dial modem is dialing and the data port is unavailable			Ring signal is being sent to the data device.	Data call is in progress and accessible. A continuous flutter indicates that the data device is off hook.
IC		Intercom call is in progress.	Recalling intercom call is camped on.	Intercom call is camped on (waiting).	Intercom call is on hold.
SPKR	Speakerphone is on or ready for use. Or, station programming is in progress.				
CNF		Conference is in progress.	Conference is recalling your station.		Initiating station left the conference, or a conference party is on conference wait hold.
MUTE	Microphone is muted.				
FWD	Calls are being forwarded.				
MSG	Station is in alphanumeric mode.		Message is waiting.		
DND	Your station is in do-not-disturb.				
SPEED DIAL	Station is busy or unplugged.	Station is in do-not-disturb.		Station has a call ringing in.	Continuous flutter indicates that the station was left off hook.
HUNT GROUP	All stations in hunt group are unavailable.			Hunt group has a call camped on.	
CALL		Call is active at your station.	Call is recalling from hold or transfer.	Call or queue call-back is ringing in or camped on (waiting).	Call is on hold.
TRUNK	Trunk is in use at another station or unplugged.	Trunk is in use at your station.	Trunk is recalling from hold or transfer.	Trunk is ringing in or camped on (waiting). Or, busy trunk queue call-back.	Trunk is on hold.

Volume Controls

8.50 On all keysets, volume is controlled by pressing one edge of the VOLUME feature key to adjust the volume up or down. On the Executive and Standard keysets there are up and down arrows on the key. On the Basic keyset, an illustration on the key (that looks like this ) represents higher and lower volume levels. Press the lower end in place of the down arrow and the higher end in place of the up arrow.

8.51 TO CHANGE VOLUMES ON A KEYSSET:

- (1) Press the VOLUME ▲ key to raise the volume or press the VOLUME ▼ key to lower the volume, while performing one of the following. A confirmation tone will alert you when you have reached the highest or lowest possible volume. On display keysets, the display shows VOLUME LEVEL X. The "X" represents the level and changes as the volume is raised or lowered.
 - a. **To change handset intercom voice volume:** Press the desired arrow while on an off-hook (handset) intercom call.
 - b. **To change handsfree intercom voice and paging volume:** Press the desired arrow while on an on-hook (speakerphone) intercom call.
 - c. **To change handset outside call voice volume:** Press the desired arrow while on an off-hook (handset) outside call.
 - d. **To change handsfree outside call voice volume:** Press the desired arrow while on an on-hook (speakerphone) outside call.
 - e. **To change background music volume:** Press the desired arrow while listening to music through the keyset speaker.

NOTE: The selected background music volume level is automatically saved.
 - f. **To change alerting tone (ring tone) volume:** Press the desired arrow while the keyset is ringing or idle. *OR*, while on hook, press both arrows to hear the currently programmed volume, then press the desired arrow to adjust it up or down.

NOTE: The selected alert tone volume level is automatically saved.
 - g. **To change handset progress tone volume:** Press the desired arrow while listening to intercom dial tone through the handset.
 - h. **To change speakerphone progress tone volume:** Press an arrow while listening to intercom dial tone through the speakerphone.

- (2) **To save the setting:** Press both VOLUME arrows at the same time. If this step is not performed, the keyset will return to the previous volume level when the call, or tone ends (except for the ringing alert tone or background music volume, which is automatically saved at the most recent volume level). The display shows VOLUME SAVED.

8.52 TO RETURN A KEYSSET TO DEFAULT VOLUME LEVELS:

While on or off hook, enter the Default Station feature code (394). *If off hook*, hang up. The display shows STATION DEFAULTED.

NOTE: Entering this feature code also cancels do-not-disturb, manual call forwarding, background music, ring intercom always, all calls following account code, headset mode, and queue requests; and restores handsfree mode, pages, hunt group calls, and system forwarding.

Selectable Ring Tone

8.53 The tone of the keyset ring signals (all tones except call waiting) can be changed by the user to create distinctive ringing. If stations are placed close together, changing the tone makes each station's ring easier to recognize. On all keysets, the tone is changed by entering a feature code and a ring tone selection code, as described below. There are ten ring tone options (0–9). Selection 0 will turn off the ring signals.

8.54 TO CHANGE KEYSSET RING TONE:

- (1) While on hook, enter the Program Ring Tone feature code (398). Displays SELECT RING TYPE (0–9) OR SCROLL.
- (2) **To select a specific ring tone:** Enter a number 1–9 for the desired ring tone. The display shows RING TYPE X SELECTED.

To scroll through the tones: Press VOLUME ▼ or PREVIOUS to scroll backward through the tones. Press VOLUME ▲ or NEXT to scroll forward. (You cannot scroll to selection 0, you must enter it as described below.) The display shows RING TYPE X SELECTED.

To turn off ringing: Enter 0 or press the RINGER OFF menu key. The display shows RING TYPE OFF SELECTED.

- (3) Lift and replace the handset or press pound (#), both VOLUME arrows, or ACCEPT to exit. The last tone selected will now be heard when the keyset rings (unless ringing was disabled). The display shows RING TYPE X SAVED.

Connecting A Headset

8.55 For convenience, an electret headset can be used at any keyset station. The SPKR key is used to connect and disconnect calls when the headset is attached. Refer to SPECIFICATIONS, page 2–13, when selecting a headset for use on the keyset.

8.56 TO CONNECT A HEADSET:

- (1) Disconnect the handset by unplugging the coiled handset cord from the base of the keyset. Leave the handset in the cradle.
- (2) Insert the headset plug into the vacant handset jack.
- (3) While on hook, enter the Headset On feature code (315) or the Headset On/Off feature code (317). The display shows HEADSET MODE ON.

8.57 TO DISCONNECT THE HEADSET:

- (1) Disconnect the headset by unplugging the headset cord from the base of the keyset.
- (2) Plug the coiled handset cord into the base of the keyset.
- (3) While on hook, enter the Headset Off feature code (316) or the Headset On/Off feature code (317). The display shows HEADSET MODE OFF.

Optional Data Port Modules

8.58 There are two types of Data Port Modules that can be connected to Executive or Standard keysets:

- **PC Data Port Module (PCDPM):** This is a digital device that is connected to the keyset which supports data transmission between the keyset and the Inter-Tel Axxent System for DSS/BLF, off-hook voice announce (OHVA), Desktop Interface, and/or serial port functions. A PCDPM is required if a Modem Data Port Module or DSS/BLF Unit will be installed, or if the user wishes to receive OHVA calls. (See page 2–13 in SPECIFICATIONS for information about a special PCDPM that provides only OHVA capability.)
- **Modem Data Port Module (MDPM):** The MDPM is an analog device that can be connected to a modem for data applications or it can be connected to a single-line set. The port itself has an individual extension number and complete station programming

setup including its own trunk access and toll restriction information. (See page 4–95 for data device information.)

8.59 Special programming is required to enable a Executive or Standard keyset circuit to support some of the PCDPM and MDPM functions. Refer to page 6–214 in PROGRAMMING for details.

8.60 Executive or Standard keyset users can adjust the baud rate of the serial port on the PCDPM connected to the keyset, if it is not configured for a DSS/BLF unit. The baud rate can be set to 300, 600, 1200, 2400, or 4800 (1200, 2400, or 4800 if it is a system serial port).

8.61 TO CHANGE THE BAUD RATE OF YOUR PCDPM:

- (1) While on hook, enter the Program Baud Rate feature code (393). If the port is not configured for a DSS/BLF unit, the display shows ENTER BAUD RATE. (If it is configured for DSS/BLF, the display shows CANNOT PROGRAM BAUD RATE.)
- (2) Enter a valid baud rate (300, 600, 1200, 2400, or 4800). Executive keyset users can press the appropriate menu key in the display. The display shows BAUD RATE UPDATED. (If the entered baud rate was already in effect, it shows NO UPDATE PERFORMED.)

Desktop Interface

8.62 Desktop Interface is a communications protocol that allows a PC, attached to a PCDPM on a Executive or Standard keyset, to emulate a keyset for call handling. This protocol will allow devices such as PC phones, operators' consoles, ACD supervisors, and integrated contact management tools to be developed for the Inter-Tel Axxent System. Contact Inter-Tel for information regarding these products.

8.63 There can be as many Desktop Interface devices on the system as there are keysets. The only limitation is on Desktop Interface devices that require DSS/BLF status updates (such as operators' consoles). The system can support up to 10 DSS/BLF status requests from external devices at one time. Therefore, if the device requires continuous DSS/BLF status updates, only 10 can be installed on the system at one time. Devices that require one-time or infrequent DSS/BLF updates (such as The AXXESSORY Connect) are not limited by this capacity, except that only 10 requests for updates can be processed at one time.

B. SINGLE-LINE SETS

8.64 Industry-standard single-line DTMF sets can be installed on the Inter-Tel Axxent System and/or used as an off-premises extension (OPX). On-premises single-line circuits can be used for installing AC-ringing single-line sets, playback devices, and other single-line devices.

8.65 The single-line sets are connected to Single-Line Adapter (SLA) circuits, which are in turn connected to available Digital Keypad Card (DKSC) circuits. (Off-premises stations can be connected to SLAs.) Each SLA can support any combination of up to two single-line sets or DID devices.

Single-Line DTMF Sets

8.66 Single-line DTMF set users gain access to the features by hookflashing (pressing and releasing the hookswitch quickly) and entering feature codes.

8.67 SLA circuits cannot support message waiting lamps.

Off-Premises Extensions

8.68 Off-premises extensions are remote single-line DTMF sets that are connected to the Inter-Tel Axxent System through telephone company OPX circuits (or customer-provided circuits).

8.69 Off-premises station users gain access to the features by hookflashing (pressing and releasing the hookswitch quickly) and entering feature codes.

8.70 Some telephone company off-premises extension (OPX) networks do not recognize certain single-line set ring cadences used in the Inter-Tel Axxent System. This incompatibility results in an inability to provide certain ring signals to off-premises extensions. Because of this, the system is equipped with a station option which allows the ring cadences be altered for individual single-line circuits. Refer to page 6-30 in PROGRAMMING for details.

8.71 Another programming option allows the receive and transmit gains to be automatically adjusted to improve OPX communication with the central office. Refer to page 6-30 in PROGRAMMING.

C. DIRECT STATION SELECTION/BUSY LAMP FIELD (DSS/BLF) UNITS

8.72 DSS/BLF Units are programmed to be used with specific Executive or Standard keysets. The keysets are equipped with PC Data Port Modules (PCDPMs) and the DSS/BLF Units are attached to the PCDPMs.

NOTE: All Executive or Standard keysets with DSS/BLF Units need to be identified in database programming and equipped with PCDPMs (see PROGRAMMING, page 6-214).

8.73 Each single DSS/BLF Unit provides one-key access to up to 60 extension numbers, pilot numbers, or feature codes, while tandem (two connected) units provide access to up to 120 numbers. The numbers are programmed in up to three different arrangements using the

DSS key maps in the database. There can be up to five single or tandem DSS/BLF Units in the system.

8.74 Together, the lamps in the keys create a busy lamp field that indicates the status of the resource (e.g., station, trunk, hunt group, or feature) assigned to the keys. The LED indicator in the key indications are shown in the table below.

8.75 In database programming, DSS/BLF keys may also be programmed for direct access to other resources (such as paging zones) or they can be assigned feature codes. Busy lamp indication is provided to show the idle/busy status of the resource or feature. Note that programming a DSS/BLF key as a resource does not always provide a transfer capability. For example, a DSS key programmed for paging will not transfer a party to the paging system.

INDICATION	MEANING
Solidly Lit	The associated resource is busy or all stations in the associated hunt group are unavailable (in do-not-disturb, busy, or with hunt group remove enabled). Or, the associated feature is on.
Slow Flash	The station is in do-not-disturb.
Fast Flash	The station has a call ringing in or a call is camped on to the hunt group. (This option is programmable. If DSS ring flash is disabled, a call ringing in to a station will show a solidly lit LED.)
Continuous Flutter	The station is causing a STATION OFF-HOOK system alarm.

9. USING DSS/BLF KEYS (DSS/BLF UNIT OR KEYSSET DSS/BLF)

9.1 Direct Station Selection/Busy Lamp Field (DSS/BLF) keys provide one-key access to extension numbers and show the status of the station or hunt group associated with the key. DSS/BLF keys can be programmed on keysets or on DSS/BLF Units.

9.2 The lamps in DSS/BLF keys (keyset or DSS/BLF unit) indicate the status of the station or hunt group assigned to the key using the flash rates described on page 4-46.

9.3 DSS/BLF keys that are programmed for feature code access can be used in place of the associated feature code or key in the procedures described in this FEATURES section.

NOTE: All Executive or Standard keysets with DSS/BLF Units need to be identified in database programming and equipped with PCDPMs (see PROGRAMMING, page 6-214). There can be up to 10 DSS/BLF Units in the system. (Tandem units count as two DSS/BLF Units.)

9.4 PLACING AN INTERCOM CALL USING DSS/BLF KEYS:

- (1) **To use the handset:** Lift the handset. The display shows ENTER EXTENSION NUMBER.

To use the speakerphone: While on hook, press the SPKR key or the IC key. The SPKR key lights. The display shows ENTER EXTENSION NUMBER.

- (2) *If you want to place a private (non-handsfree) call to a keyset, press the pound (#) key. The display shows RING EXTENSION NUMBER.*
- (3) Press the desired DSS/BLF key.

If calling a keyset with handsfree answering enabled, you are immediately connected.

If placing a private call, calling a hunt group, calling a single-line set, or calling a keyset with the Handsfree feature disabled, you hear repeating double tones until the call is answered.

If the called OHVA-enabled station is busy and your station is enabled for immediate OHVA transmit, do not hang up when calling a busy keyset. Press the DSS/BLF key again. If the keyset's secondary voice path is available, you are immediately connected for an off-hook voice announce call and may speak. (For more information concerning the Off-Hook Voice Announce feature, refer to page 4-59.)

9.5 TRANSFERRING CALLS TO STATIONS:

- (1) While on a call, press the desired DSS/BLF key. The call is placed on transfer hold.
 - a. **Transfer to a station that is forwarded to voice mail:** You hear repeating double tones and the display shows DEST FORWARDED TO VOICE MAIL.
 - b. **Transfer to voice mail:** The system waits for you to enter the mailbox number (display shows ENTER MAILBOX). Enter the desired mailbox number. *If you do not enter a mailbox number before you hang up, the caller will be connected to the voice mail unit and must enter the mailbox number after listening to the introductory voice prompts.*
 - c. **Transfer-to-park:** If transferring to a park location, hang up or press HOLD to complete the transfer. Then page the desired party and announce the call. The party must reverse transfer the call. Note that if the call is not answered, it will recall your station if transferred directly or will recall the called transfer-to-park location's attendant if transferred to hold.
- (2) *If desired, wait for an answer and announce the call. If you are calling a device (such as an automated attendant or transfer-to-park location) that does not accept call announcements, the display shows HANG UP TO FINISH TRANSFER.*
- (3) You have the following options:

To complete the transfer: Hang up or press another Call key. The display shows CALL TRANSFERRED TO (*username*).

To transfer the call to hold: Press the HOLD key, or press SPCL and enter the Individual Hold feature code (336). The call will not ring or send call waiting signals until the Hold timer expires.

To try another station: Press another DSS/BLF key.

To return to the caller: Press the lit Call key, trunk key, or IC key.

9.6 TO REVERSE TRANSFER (PICK UP) A CALL RINGING OR HOLDING AT ANOTHER STATION:

EITHER, enter the Reverse Transfer feature code (4) and then press the DSS/BLF key of the station where the call is ringing.

OR, press the desired DSS/BLF key and then press SPCL and enter the Reverse Transfer feature code (4).

10. USER-PROGRAMMABLE FEATURE KEYS (KEYSETS ONLY)

10.1 Individual keyset keys can be designated as "user-programmable" in the key maps during database programming. The installer can program the default feature codes (see PROGRAMMING, page 6–52) and the station user can reprogram the feature codes as desired. Default keyset feature codes are shown on page 4–40. User-programmable keyset keys can be programmed to enter any of the general feature codes.

10.2 The Executive keyset has a FWD key when the keys are in the default state. (However, it can be reprogrammed to use any of the Forward feature codes.) When the default Executive keyset FWD key is pressed, the display shows a menu of call forwarding options. The user must then select the desired option by pressing the corresponding key next to the display. If the FWD key is programmed to use any other Forward feature code (355–358) the forwarding options will not be displayed when the FWD key is pressed; the Executive keyset will operate the same as a Standard or Basic Keyset. A keyset user can make any user-programmable key a FWD key that uses any one of the forwarding feature codes (355–358).

10.3 Speed-dial (SD) keys are programmed using the procedure shown on page 4–83. Entering an extension number, using the following instructions, will create a DSS/BLF key for that extension number, not a speed-dial key (even if the key was previously programmed as an SD key).

10.4 TO DISPLAY THE CURRENT KEY ENTRIES:

- (1) While on hook, enter the Review Keys code (396). The display shows PRESS THE KEY TO REVIEW.
- (2) Press the feature or speed-dial key(s) to be displayed. The display shows the feature, user name, or speed dial location name and KEY VALUE: (*feature code, extension number, or location code*).

10.5 TO RETURN THE KEYS TO DEFAULT VALUES:

While on or off hook, enter the Feature Key Default feature code (395). *If off hook*, hang up. The display shows FEATURE KEYS DEFAULTED.

10.6 TO PROGRAM A FEATURE CODE IN A USER-PROGRAMMABLE KEY:

- (1) While on hook, enter the Program Keys feature code (397). (Display keysets show PRESS THE KEY TO PROGRAM.)
- (2) Press the desired feature key. The display shows the current feature, user, or speed dial location name and KEY VALUE: (*feature or location code*).
- (3) Enter the feature code or extension number to be stored under that key. (*If programming the FWD key, only Call Forwarding feature codes 355–358 will be accepted.*) You hear a single progress tone when the programming is completed. (Display keysets show the newly programmed feature.) If you attempt to program a non-programmable key or enter an invalid code, you will hear repeating reorder tones and the feature code assigned to the key will remain unchanged. (Display keysets show NON-PROGRAMMABLE KEY or FEATURE CODE INVALID.)

NOTE: If you do not enter a feature code, the programming mode times out when the Long Interdigit timer expires; the feature code assigned to the key remains unchanged.

- (4) To program other keys, repeat the procedure.

10.7 TO CREATE A SPEED-DIAL BIN IN A USER-PROGRAMMABLE KEY:

- (1) While on hook, enter the Program Keys feature code (397). (Display keysets show PRESS THE KEY TO PROGRAM.)
- (2) Press the desired feature key. The display shows the current feature, user, or speed dial location name and KEY VALUE: (*feature or location code*).
- (3) Enter the Station Speed-Dial feature code (382) or the System Speed-Dial feature code (381). The display shows SELECT STN SPEED or SELECT SYS SPEED.
- (4) Enter the desired speed-dial bin number (0–9 for station, 000–099 for system). The display shows the current contents of that bin.
- (5) To program a new number in a station speed-dial bin, follow the instructions given on page 4–83. Administrators can use the procedures on page 4–112 to program system speed-dial bins.

11. AUTOMATIC CALL ACCESS (KEYSETS ONLY)

11.1 This feature allows a keyset user to determine the way incoming calls are answered by entering a feature code to select the type of call access. The four variations are as follows:

- *No Automatic Call Access:* The user hears intercom dial tone when the handset is lifted and must press a call or individual trunk key (or the ANSWER key) to answer an outside call, or press the IC key (or Call key, if there is no IC key) to answer an intercom call.
- *Automatic Intercom Call Access Only:* The user can answer ringing intercom calls by simply lifting the handset, but outside calls must be answered by pressing a Call key, an individual trunk key, or the ANSWER key.
- *Automatic Outside Call Access Only:* The user can answer ringing outside calls by lifting the handset, but ringing intercom calls must be answered by pressing the IC key (or Call key, if there is no IC key).
- *Automatic Access For All Calls:* The user can answer any ringing call by lifting the handset. If no call is ringing, the user hears intercom dial tone when the handset is lifted. (This is the way single-line sets work. When the system is in the default state, all keysets have this type of call access.)

NOTE: In any of the above variations, keyset users may still receive handsfree intercom calls (if enabled).

11.2 The selected option determines how all types of ringing intercom or outside calls (direct calls, transferred calls, recalls, etc.) are answered. If more than one call is ringing at the station, the first call received is the first answered.

11.3 When programmed for automatic outside call access, a station user with allowed answer, but without ring in, for a ringing trunk must always press an individual trunk key for that trunk, or enter the Automatic Trunk Answer feature code (350) to answer the incoming call. Transferred calls and recalls can be answered by lifting the handset.

11.4 Camped-on calls cannot be answered by simply lifting the handset or pressing the SPKR key. For example, a station is programmed to automatically answer ringing outside calls, but requires pressing the IC key to answer ringing intercom calls. If a private intercom call rings in and is immediately followed by an outside call ringing in, the display shows the intercom call message and the outside call camps on. The intercom call also camps on when the handset is lifted. The user can then choose between the camped on calls by pressing either the IC key or the Call or individual trunk key (or ANSWER key).

11.5 The automatic call access options outlined below can be programmed at keyset stations only. Single-line sets are designed to automatically answer ringing intercom and outside calls by lifting the handset and cannot be changed.

11.6 TO PROGRAM OUTSIDE CALL ACCESS:

To change the current outside call access option to its opposite (toggle on or off), enter the Automatic Trunk Access On/Off feature code (360). You hear a confirmation tone. The display shows AUTO TRNK ACCESS ON (or OFF).

11.7 TO PROGRAM INTERCOM CALL ACCESS:

To change the current intercom access option to its opposite (toggle on or off), enter the Automatic Intercom Access On/Off feature code (361). You hear a confirmation tone. The display shows AUTO IC ACCESS ON (or OFF).

12. MUSIC-ON-HOLD AND BACKGROUND MUSIC

12.1 The Music-On-Hold feature not only makes waiting on hold as pleasant as possible, but it assures the holding party that the call is still connected.

12.2 Keypad users can choose to listen to background music by entering the Background Music feature code (313).

12.3 The system can be equipped with an optional external music source for the Music-On-Hold and Background Music features. An optional external music source can be a customer-provided radio, tape player, or other device connected to the KSU. When a music source is installed, music-on-hold is enabled or disabled in database programming. If music is not desired, the system can be programmed for tick-tones or silence on hold.

12.4 A programmable option determines what callers will hear while being transferred. The transfer audio can

be programmed to use the music-on-hold option (music, tick tones, or silence) or ringback.

NOTE: In some circumstances, there may be broadcast restrictions associated with the music heard by callers on hold. Check with the music's original distributor and/or the radio station for copyright and broadcast restrictions concerning music-on-hold.

12.5 Throughout the instructions in this section of the manual, the term "music" refers to the selected option: music, tick-tones, or silence, depending on what is enabled.

12.6 Background music is interrupted for calls, pages, keypad programming, and ringing.

12.7 *TO TURN KEYPAD BACKGROUND MUSIC ON OR OFF:*




While on or off hook, enter the Background Music On/Off feature code (313). *If off hook*, hang up. The display shows BACKGROUND MUSIC ON (or OFF).

13. SIGNALS AND TONES

13.1 There are several distinct signals and tones on the Inter-Tel Axxent System.

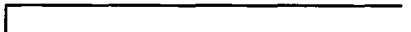
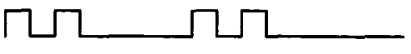
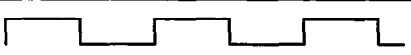
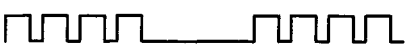
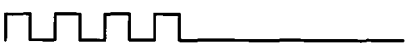
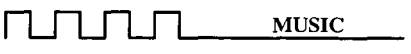

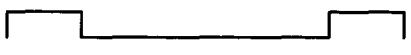
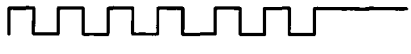
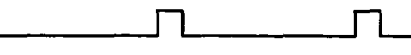
A. RING SIGNALS

13.2 The system signals and tones generated by the ringer or keyset speaker are as follows.

TYPE OF CALL	SIGNAL
Outside call or recall	Single long tone every six seconds 
Intercom call, off-hook voice announce call, or queue callback	Two short tones and a pause (repeats for private calls and callbacks). NOTE: If the station option for different IC/CO alerting tones is disabled, this will be the same as the outside call signal shown above. 
Reminder message	Eight short tones 

B. CALL PROCESSING SIGNALS

13.3 The following signals and tones are heard through the handset or keyset speaker.

SIGNAL	ACTION
Intercom dial tone 	Handset lifted or SPKR or IC key pressed.
Double tones (called station receives the same signal) 	Intercom call — repeats for private call or call to non-handfree station; one double tone for handsfree call.
Intercom busy signal — slow repeating tones 	Called station or selected trunk is busy.
A repeating signal of four fast tones and a pause 	Called station is in do-not-disturb.
Reorder tones — fast tones (may be four or continuous) 	Entry was not accepted, number is toll restricted, or dialing timer expired.
System busy signal — reorder tones followed by music 	All resources are busy, station is camped on.
Single progress tone 	Feature procedure completed, or something needs to be entered.
Camp-on tone — single tone every 15 seconds (programmable) 	Another station has camped on to this single-line station. (This tone is heard through the keyset speaker only.)
Single-line message waiting tone — six tones followed by intercom dial tone after lifting the handset or hookflashing 	A message is waiting at this single-line station.
Single-line call forwarding/ do-not-disturb tone — dial tone periodically interrupted by a single tone after lifting the handset or hookflashing 	This single-line station has call forwarding and/or do-not-disturb enabled.

NOTE FOR SINGLE-LINE SET USERS: When the procedures tell you to hookflash, quickly press and release the hookswitch. If you press the hookswitch to hang up, hold it down until the SL Hookflash Maximum timer expires (default value is 1.2 seconds); otherwise, the system recognizes it as a hookflash.

14. INTERCOM CALLS

14.1 The intercom can be used to place station-to-station calls that can be answered handsfree. Or, it can be used to place private (non-handsfree) calls. A station user that reaches a busy station can camp on, request a callback (queue), leave a message, or use the Off-Hook Voice Announce feature (if enabled). Other features that apply to both outside and intercom calls, as described later in this section of the manual, include placing calls on hold, call waiting, call transfer, reverse transfer, and call forwarding.

A. PROGRAMMING FOR PRIVATE INTERCOM CALLS

14.2 A station user can place private (non-handsfree) intercom calls by pressing the pound (#) key before dialing the extension number. Or, the station can be programmed to always send and/or receive private calls using the Ring Intercom Always or Handsfree Disable features.

Ring Intercom Always

14.3 A station user can always place private calls by programming the station with the Ring Intercom Always feature code. While this feature is enabled, the called party hears repeating double tones and must lift the handset (or press the SPKR key, ANSWER key, or IC key) to answer. (If the station does not have an IC key, the call will appear under a Call key.)

14.4 In the default database, all single-line stations have this feature enabled.

14.5 *TO TURN RING INTERCOM ALWAYS ON OR OFF:*

Keyset: While on hook, enter the Ring Intercom Always On/Off feature code (377). The display shows RING IC ALWAYS ON (or OFF).

Single-Line Set: Lift the handset. Enter the Ring Intercom Always On/Off feature code (377).

Keyset Handsfree Enable/Disable

14.6 A keyset user can always receive private calls by disabling the keyset Handsfree Answering feature using the Handsfree On/Off feature code, as described in the following paragraph. The keyset user hears repeating double tones when receiving an intercom call and must lift the handset (or press the SPKR, ANSWER, or IC key) to answer while Handsfree Mode is disabled.

14.7 *TO ENABLE OR DISABLE HANDSFREE MODE:*

While on hook, enter the Handsfree On/Off feature code (319). The display shows HANDSFREE MODE ON (or OFF).

B. STATION-TO-STATION CALLING

Receiving Intercom Calls

14.8 *TO RECEIVE AN INTERCOM CALL ON A KEYSSET:*

If you hear a double tone and a call announcement (handsfree call), and the SPKR key is lit, respond handsfree or lift the handset. (Display keysets show IC TO [username] to identify the source of the call.)

If you hear repeating double tones (private call), lift the handset, or press the SPKR or IC key to respond handsfree. (Display keysets show INTERCOM CALL FROM [username] to identify the source of the call.)

Executive Keysets: Instead of answering the call, you may press one of the following menu keys:

— **SEND TO V-MAIL:** This option appears only if you have an Axxent Talk mailbox. Pressing this key sends the call directly to your mailbox greeting.

— **IC CALL TO DND:** Pressing this key will send do-not-disturb tones to the caller and allow you to program a do-not-disturb message. If using a display keyset, the caller will see DO-NOT-DISTURB. (See page 4-91 for detailed instructions on using Do-Not-Disturb.)

14.9 *TO RECEIVE AN INTERCOM CALL ON A SINGLE-LINE SET:*

When you hear repeating double tones, lift the handset.

14.10 TO RECEIVE A TRANSFERRED-TO-HOLD INTERCOM CALL:

NOTE: If the station does not have an IC key, the call will appear under a Call key.

Keyset: When the IC key (or Call key) is fluttering and the display shows *[calling station] TFR FROM [transferring station]*, lift the handset and press the IC key (or Call key). Or, while on hook, press the IC key (or Call key) to speak handsfree. The call is connected. (Executive keyset users have the same menu key options as described for a ringing intercom call.)

Single-Line Set: When you hear a page announcing that a call is holding at your station, lift the handset (at your station) and enter the Individual Hold feature code (336). The call is connected.

Placing Intercom Calls

NOTE: When placing an intercom call, begin dialing before the Dial Initiation timer expires. If the timer expires, the system drops the connection and sends reorder tones.

14.11 TO PLACE AN INTERCOM CALL:

(1) **Keyset:**

To use the handset: Lift the handset. The display shows ENTER EXTENSION NUMBER.

To use the speakerphone: Skip to step 2 or 3 (begin dialing). The SPKR key lights. The display shows ENTER EXTENSION NUMBER.

Single-Line Set: Lift the handset. (If the DTMF decoders are busy, you hear silence. Hang up and try again.)

(2) *If you want to place a private (non-handsfree) call to a keyset, press the pound (#) key. The display shows RING EXTENSION NUMBER.*

Executive Keysets: You may press one of the following menu keys:

- **IC DIRECTORY:** Press this key to use the Intercom Directory feature. Refer to page 4-85 for instructions.
- **OUTSIDE CALL:** If you would rather make an outside call, press this key and refer to the instructions on page 4-60.

(3) Dial an extension number. The number can be 0 for the attendant, a station extension number, or a hunt group pilot number. (Display keysets show the number dialed.) If you dial too slowly, the Interdigit timer may expire and you will hear reorder tones. One of the following will occur:

- a. *If calling a handsfree keyset station, speak after you hear a double tone. The display shows IC TO [user name].*
- b. *If placing a private call or calling a single-line station, a hunt group, or a keyset with handsfree disabled, you hear repeating double tones until the call is answered. The display shows CALL RINGING FOR [user name]. When the call is answered, the display shows IC TO [user name]. Executive keyset users can press one of the following menu keys while the call is ringing:*
 - **LEAVE MESSAGE:** This key appears only if you have called a station. Press this key to leave a message waiting indication at the station. Refer to page 4-56 for details.
 - **LEAVE VOICE MAIL:** This key appears only if the called station has an Axxent Talk mailbox. Press this key to call the station's Axxent Talk mailbox.
- c. *If you dial an invalid number, you hear reorder tones. Display keysets show INVALID NUMBER. If you do not have an assigned attendant and you dialed 0, the display shows NO ATTENDANT PROGRAMMED. If you dialed a hunt group number with no assigned stations, the display shows NO MEMBERS IN HUNT GROUP.*
- d. *If the called station is busy, the display shows [username] IS BUSY. You have the following options (in addition to the Executive menu keys described above):*
 1. **Disconnect:** Hang up and try later. *If dialing handsfree (keysets only), press the SPKR key to disconnect.*
 2. **Camp on:** Do not hang up, your call camps on. When the called station is available, a private call is placed. Refer to paragraph 14.13 on the next page for details.
 3. **Request a callback (queue):** This is similar to camping on except that you hang up and wait for the busy station to be available. For more information, refer to

paragraph 14.16. Executive keyset users can press the QUEUE menu key.

- e. *If you hear a repeating signal of four fast tones and a pause, the station is in do-not-disturb. You can use the Queue Callback feature or, if enabled on your keyset, use the Do-Not-Disturb Override feature by pressing SPCL and entering the Do-Not-Disturb Override feature code (373) or pressing the Executive keyset OVERRIDE DND menu key.*
- f. *If the called station is busy, in do-not-disturb, or there is no answer, you can leave a message waiting indication with the station itself or with the station's message center. For details, refer to page 4-56. (Executive keyset users can press the LEAVE MESSAGE or LEAVE VOICE MAIL menu key.)*
- g. *If the called station is a busy keyset, and if all the necessary conditions for OHVA are enabled, you can complete the call using the Off-Hook Voice Announce feature. For a complete explanation of this feature, refer to page 4-59.*

C. INTERCOM CAMP ON AND QUEUE CALLBACK

14.12 Camp-on and queue requests allow the caller to wait for an available resource. A station user waiting for a specific resource (a trunk or a station) will be served before a station user waiting for a group that contains that specific resource (trunk group or hunt group). This includes camped on Emergency Call feature (911) calls — if the Emergency Call feature uses a trunk group, requests for specific trunks will be processed ahead of the emergency call.

Camp On

14.13 When a station user calls a busy station or hunt group, the system sends a busy signal. The caller can wait off hook to camp on (after the Camp-On timer expires) and hear music while waiting until the called station is available. The system periodically sends call waiting signals to the busy station(s).

14.14 If a station enables do-not-disturb while an intercom call is camped on, the camped-on caller is removed from the camped on state and that caller receives do-not-disturb indications (see page 4-68). Intercom callers cannot camp on to a station that is in do-not-disturb.

14.15 *TO CAMP ON TO AN EXTENSION NUMBER:*

If you hear a busy signal when calling an extension number and wish to camp on, do not hang up. You hear music (if enabled) while camped on. When the station is available, a private call is automatically placed and you hear repeating double tones until the call is answered. The display shows WAITING FOR [username].

Executive Keysets: You may press one of the following menu keys:

- LEAVE MESSAGE: This key appears only if you have called a station. Press this key to leave a message waiting indication at the station. Refer to page 4-56 for details.
- LEAVE VOICE MAIL: This key appears only if the called station has an Axxent Talk mailbox. Press this key to call the station's Axxent Talk mailbox.
- QUEUE: Press this key to request a callback when the resource is available, as described below.

Busy Station Queue Callback

14.16 When a called station is busy or in do-not-disturb, the caller can request a callback (queue) and hang up until the station is available. This can be done even if the call camps on. Each station can have only one active queue callback request at a time.

14.17 The Queue Callback feature can also be used when calling a hunt group if all stations are unavailable.

14.18 Queue callbacks must be answered before the Queue Callback timer expires. If a callback is not answered, the queue is cancelled. If the station is busy when called back, the queue request is placed behind any other waiting queue requests.

14.19 Queue callbacks do not follow forwarding and are not blocked by do-not-disturb mode.

14.20 *TO REQUEST A CALLBACK FROM A STATION:*

- (1) **Keyset:** When you hear a busy signal or do-not-disturb signal (a repeating signal of four fast tones and a pause) when calling an extension number, press the QUEUE menu key or press SPCL and enter the Queue Callback feature code (6) and hang up. The display shows QUEUE REGISTERED FOR [username].

Single-Line Set: When you hear a busy signal or do-not-disturb signal when calling an extension number, hookflash and enter the Queue Callback feature code (6). Then hang up.

- (2) When the queued station is available, your station will ring. (Display keysets show *[username]* IS NOW AVAILABLE.) Lift the handset or press the ANSWER key. A private call is automatically placed to the queued station.

Executive Keysets: You may press one of the following menu keys:

- CANCEL QUEUE: To cancel the queue request, press this key without lifting the handset.
- ANSWER: You may press this key instead of lifting the handset to answer the queue callback using the speakerphone.

14.21 TO CANCEL A QUEUE REQUEST (BEFORE THE QUEUED STATION BECOMES AVAILABLE):

Keyset: While on hook, press the SPCL key and enter the Queue Callback feature code (6). The display shows QUEUE REQUEST CANCELED.

Single-Line Set: Lift the handset, enter the Queue Callback feature code (6), and hang up.

15. INTER-STATION MESSAGES

15.1 Intercom callers may leave a message waiting indication if a called station is busy, if there is no answer, if the station is in do-not-disturb, or when they are connected to or placed on hold by another station. There are two messaging options:

- **Have the called party return your call.** (Display keysets show the source and time of the message.) When the called party responds to the message indication, a call is automatically placed to your station.
- **Leave a message with the called party's message center.** (Display keysets show that a message was left with the keyset user's assigned message center.) When the called party responds to the message indication, a call is automatically placed to his or her message center.

15.2 To signal that a message is waiting, a called keyset's MSG key flashes and the display shows the number of waiting messages. Each time the MSG key is pressed, the display shows the message source and time the message was left for each waiting message in the order they were received. For single-line sets, a system programming option can be enabled that sends six short message waiting tones when the user lifts the handset or presses the hookswitch.

15.3 Any station, Axxent Talk application, or hunt group can be designated as the message center for a station. However, a station cannot be programmed as its own message center.

15.4 If the designated message center is a voice mail hunt group, the voice mail hunt group is called after the Message Wait timer expires. When the voice mail unit answers the call, the called party's "mailbox" is automatically dialed. The caller can then leave a message in the mailbox. The called party's MSG key flashes and the message display will indicate that the message was left by the voice mail hunt group.

15.5 Each station user can leave message waiting indications at more than one station. If more than one message is received from one station, the message display will show only the first message and all other requests will be ignored.

15.6 When a station is forwarded or has system forwarding, and a caller leaves a message waiting indication after calling the forwarded station, the message indication appears at the original station instead of the station that received the forwarded call.

15.7 If a single station is the Message Notification station for more than one Voice Mail mailbox, responding to message indications will always select the mailbox associated with the extension number, even if the message that triggered the message indications is in an unassociated mailbox. If, when retrieving messages, the user finds that there are no waiting messages in the associated mailbox, he or she should exit from that mailbox and check any other unassociated mailboxes for messages.

A. LEAVING MESSAGES

15.8 *TO LEAVE A MESSAGE WAITING INDICATION:*

- (1) When calling a station, if you hear a busy signal, do-not-disturb signal (repeating signal of four fast tones and a pause), or the call is not answered:

Keyset: Press the MSG key or press SPCL and enter the Message feature code (365). The station will receive a message waiting indication. The display shows HANG UP OR WAIT FOR MESSAGE CENTER.

Single-Line Set: Hookflash and enter the Message feature code (365).

- (2) **To have the called party call you:** Hang up or press a trunk key or the IC key to disconnect before the Message Wait timer expires. The display shows MESSAGE LEFT FOR [username].

To leave the message with the called party's message center: Do not hang up. When the Message Wait timer expires, a private call is automatically placed to the called party's message center. (If the message center is a voice mail hunt group, the called party's mailbox is automatically dialed after the voice mail unit answers the call.) Leave your message with the message center and hang up. The called station receives message waiting indications. If the message center does not answer the call (that is placed after the timer expires), the display will show that the message was from your station and you will be called when the station user responds to the message indications. The display shows MESSAGE LEFT FOR [username].

NOTE: If the station you are calling does not have a designated message center, you will hear dial tone immediately after pressing the MSG key. The station will receive a message waiting indication.

Silent Messages

15.9 Silent messages can be placed while on or off hook without making an intercom call to the station. (This method should be used by analog voice mail units.)

15.10 TO LEAVE A SILENT MESSAGE:

Standard or Basic Keypad: While on hook, enter the Silent Message feature code (367). Then dial the extension number of the desired station.

Executive Keypad: While on hook, press the MSG key. Then press the LEAVE MESSAGE menu key. The display shows LEAVE MESSAGE ON EXTENSION. Enter the desired extension number. The number is shown on the display. (If desired, you can press the IC DIRECTORY menu key to use the intercom directory to look up a number. Refer to page 4-85 for instructions.)

Single-Line Set: Lift the handset and enter the Silent Message feature code (367). Then dial the extension number of the desired station and hang up.

Canceling A Message Waiting Indication That You Left

15.11 Occasionally, you may wish to cancel a message waiting indication that you left, before the station user responds to the message. If the message was left with the station's message center, you cannot cancel the message waiting indication; only the message center can cancel that message, using the procedure outlined below.

15.12 TO CANCEL A MESSAGE YOU LEFT:

- (1) **Standard or Basic Keypad:** While on or off hook at your station, enter the Cancel Message feature code (366). (Display shows CANCEL MESSAGE ON EXT #).

Executive Keypad: While on hook, press the MSG key. Then press the CANCEL MESSAGE menu key. The display shows CANCEL MESSAGE ON EXT#. (If desired, you can press the IC DIRECTORY menu key to use the intercom directory to look up a number. Refer to page 4-85 for instructions.)

Single-Line Set: Lift the handset and enter the Cancel Message feature code (366).

- (2) Enter the extension number of the station that has the message indication that you wish to cancel.

You hear intercom dial tone if off hook, or confirmation tone if on hook. The display shows MESSAGE CANCELED FOR [username]. (If a message was not present at the called station, you hear reorder tones and the display shows NO MESSAGES TO CANCEL.)

B. RESPONDING TO MESSAGES

Viewing Waiting Messages

15.13 TO VIEW RECEIVED MESSAGES AT A DISPLAY KEYPAD:

- (1) If your MSG key is flashing, one or more messages are waiting and the display shows YOU HAVE XX MESSAGES.

Standard or Basic Keypad: While on hook, press the MSG key repeatedly to view waiting messages.

Executive Keypad: While on hook, press the VIEW MESSAGES menu key. Then press PREVIOUS or NEXT to scroll to the desired message.

- (2) A displayed message will show MESSAGE RECEIVED FROM EXT XXX. *If desired*, you can answer or cancel a message while it is displayed, as described below.

Answering Messages

15.14 TO ANSWER MESSAGES AT A DISPLAY KEYPAD:

- (1) When the desired message is displayed (as described above), lift the handset and/or press the # key or the REPLY menu key. Depending on how the message was left, an intercom call is placed to either the station that left the message or your message center.

NOTE: If, when you respond to the message, the called station is unavailable (does not answer a private call, is busy, or is in do-not-disturb), your MSG key continues to flash (and the display indicates a waiting message) unless you immediately leave a message before hanging up or cancel the message after hanging up. The message waiting indications are cancelled automatically only when you have actually connected with the called station.

- (2) If the MSG key continues to flash, there is another message (display shows the next message). Repeat step 1.

15.15 TO ANSWER MESSAGES AT A NON-DISPLAY KEYSSET OR SINGLE-LINE SET:

- (1) **Keyset:** If you see a flashing keyset MSG key, press the MSG key. Depending on how the message was left, an intercom call is placed to either the station that left the message or your message center.

Single-Line Set: If you hear single-line message waiting tones (six tones) after lifting the handset or hookflashing when the station is idle, enter the Message feature code (365). Depending on how the message was left, an intercom call is placed to either the station that left the message or your message center.

NOTE: If the called station does not answer, is busy, or is in do-not-disturb, you may hang up or leave a message at that station before hanging up. You will continue to receive message waiting indications (MSG key flash or tones), unless you left a message while attempting to retrieve the message or canceled the message after hanging up. The message waiting indications are canceled when you are actually connected with the called station.

- (2) If message waiting indications continue, there is another message. Repeat this procedure.

Canceling A Waiting Message

15.16 TO CANCEL A DISPLAYED MESSAGE WITHOUT ANSWERING AT A KEYSSET:

- (1) When the message you wish to cancel is displayed (as described on the previous page), remain on hook and press the asterisk (*) key or the DELETE menu key. The message is cancelled.
- (2) If the MSG key continues to flash, there is another message (display shows the next message). Either respond to it or cancel it.

15.17 TO CANCEL A MESSAGE WITHOUT ANSWERING AT A SINGLE-LINE SET OR WITHOUT DISPLAYING MESSAGES AT A KEYSSET:

- (1) If you receive message waiting indications, enter the Cancel Current Message feature code (368). The message is cancelled.
- (2) If you continue to receive message waiting indications, there is another message. Either respond to it or cancel it.

Alternate Message Source

15.18 The Alternate Message Source feature was developed to enable a voice mail unit to leave messages through a station or hunt group that is designated as its alternate message source. When a message is left on the voice mail unit for a station user that has an assigned mailbox, the called station receives the message waiting indications. If it is a display keyset, the display shows MESSAGE RECEIVED FROM [alternate message source] rather than from the voice mail circuit. When the station user retrieves the message, an intercom call is placed to the alternate message source.

15.19 To make efficient use of multi-port *analog* voice mail units (not Axxent Talk voice mail applications), the ports are placed in a voice mail hunt group and the voice mail hunt group's pilot number is assigned as the alternate message source for each of the individual voice mail ports. When a user responds to a message left by one of the voice mail ports, the pilot number is automatically dialed and the call circulates through the hunt group until a voice mail port is available. Without the alternate message source hunt group, the call would return only to the port that left the message and would not circulate through the hunt group.

16. OFF-HOOK VOICE ANNOUNCE (OHVA)

16.1 When an Executive or Standard keyset that is equipped with a PC Data Port Module (PCDPM) is busy, the caller can use the Off-Hook Voice Announce (OHVA) feature (if enabled). This feature allows an intercom caller (either single-line or keyset) to establish voice contact with the called keyset user, even though the user already has a call in progress on the handset. The called keyset user can then talk freely on both connections, using the handset for the original call and the speakerphone for the OHVA intercom call. Note that the caller on the handset call *will* be able to hear the OHVA call.

16.2 To enable the OHVA, the following must be completed:

- The OHVA system flag must be enabled. (When the system is in the default state, the system flag is enabled.)
- Each data port-equipped keyset can be programmed for *placing* and/or *receiving* OHVA calls. (By default, OHVA is disabled at the station level.) The keyset can be equipped with a PCDPM or a special OHVA Module. (See page 2–13 in SPECIFICATIONS for more information.)
- Other keyset and single-line stations can be programmed for *placing* OHVA calls, as desired. Keysets without PC Data Port Modules and single-line sets cannot receive OHVA calls since they do not have secondary voice path circuitry. (By default, OHVA is disabled at the station level.)
- DSS/BLF-equipped keysets can be programmed to override the Camp-On and OHVA Screening timers and make “immediate” OHVA calls. This is a useful option for attendant stations.

16.3 Any combination of enabled and disabled OHVA stations is available through database programming. For example, all attendants may be programmed to make, but not receive, OHVA calls, while all other stations are allowed to receive, but not place, OHVA calls.

16.4 OHVA calls cannot be processed if the PCDPM voice path or the speakerphone of the called keyset is not available. This occurs when the keyset has a different OHVA call in progress, has an active data call in progress, is on an active handsfree intercom or outside call, has handsfree disabled, has a call being changed from handset to speakerphone, has a headset enabled, or is in do-not-disturb. Also, OHVA calls are not possible if the caller is placing a forced private intercom call or has the Ring Intercom Always feature enabled.

16.5 *TO PLACE AN OFF-HOOK VOICE ANNOUNCE CALL:*

- (1) When placing an intercom call to a busy OHVA-enabled keyset, do not hang up. You hear busy signals until the Camp-On and OHVA Screening timers expire. (If you hear music after the Camp-On timer expires, conditions for an OHVA call were not met and you are camped-on. See page 4–54.)
- (2) When the OHVA Screening timer expires (and if the keyset’s secondary voice path is available), you are automatically connected to the called party’s speakerphone.

16.6 *TO PLACE AN IMMEDIATE OFF-HOOK VOICE ANNOUNCE CALL (KEYSETS WITH DSS/BLF KEYS ONLY):*

NOTE: This method can only be used if the database has been programmed to allow keysets with DSS/BLF keys to bypass the Camp-On and OHVA Screening timers. See page 6–30 in PROGRAMMING.

- (1) When an intercom call is placed using the DSS/BLF key, to a busy OHVA-enabled keyset, do not hang up.
- (2) Press the DSS/BLF key for that keyset again. If the keyset’s secondary voice path is available, you are immediately connected and may speak.

16.7 *TO RECEIVE AN OFF-HOOK VOICE ANNOUNCE CALL (OHVA-ENABLED KEYSETS ONLY):*

- (1) While on a call using the handset, you hear a camp-on tone (display shows CALL ANNOUNCE FROM [username]). Do nothing. When the OHVA Screening timer expires, you hear a double tone. You are connected with the intercom caller via the speakerphone. Your original call remains connected on the handset.

NOTE: If you press the MUTE key while speaking to the caller on the speakerphone, the handset microphone will be muted and the caller on the handset will not hear you or the OHVA caller. Press MUTE again to enable the handset.

- (2) **To terminate the OHVA call:** Press the lit SPKR key or have the OHVA caller hang up. If you terminate the original call by hanging up the handset, you remain connected to the OHVA call in the handsfree intercom mode.

16.8 *TO BLOCK AN OFF-HOOK VOICE ANNOUNCE CALL (OHVA-ENABLED KEYSETS ONLY):*

- (1) While on a call using the handset, you hear a camp-on tone (displays CALL ANNOUNCE FROM [username]). To cause the intercom call to camp on, press the SPKR key. The IC key flashes.
- (2) *If you wish to send do-not-disturb signals to the camped-on call, press the DND key.*

17. OUTSIDE CALLS

17.1 When a trunk is selected for receiving or placing an outside call, the voice channel is seized and cannot be used by any other station (unless the Conference feature is used, see page 4-73). If the desired trunk is busy, the station user can camp on or request a callback (queue). Other features that apply to both outside and intercom calls are discussed later in this section of the manual. They include placing calls on hold, call waiting, call transfer, reverse transfer, conferencing, and call forwarding. Refer to page 4-22 for an explanation of outgoing-access, allowed-answer, and ring-in assignments. Refer also to page 4-22 for an explanation of trunk groups and the use of the automatic trunk answer and selection feature codes.

A. PLACING OUTSIDE CALLS

17.2 Keysets can be programmed to select a trunk, a trunk group, or ARS when a Call key is pressed. In the default state, all Call keys are programmed for ARS access. Refer to PROGRAMMING, page 6-33, for details.

17.3 On display keysets, the dialed number is displayed with hyphens separating the toll field, equal access field, area code, office code, hookflashes, pauses, asterisks, pounds, Centrex codes, and/or absorbed digits. When the system absorbs local trunk digits, the digits are displayed even when they are not dialed. (For example, if 423 is absorbed and 6767 is dialed, 423-6767 is displayed.)

NOTE: When placing a call, begin dialing before the Dial Initiation timer expires. If the timer expires, the system drops the trunk connection and sends repeating reorder tones. This prevents a trunk from being tied up accidentally.

17.4 TO PLACE AN OUTSIDE CALL:

- (1) Lift the handset. (Keyset users can dial on hook by skipping this step.)
- (2) Select an outgoing trunk, using one of the methods below. The associated individual trunk or Call key flashes slowly. (If on hook, the SPKR key is lit.) **NOTE:** You must have outgoing access to a trunk to seize it.

Executive Keyset: Press the OUTGOING menu key.

Any Keyset: Select a trunk using one of the following methods:

- a. Press an individual trunk key for direct access.

- b. Enter a trunk group access code (9201-9299, 93000-93003) or press a trunk group key. This selects a trunk in the chosen trunk group. (If the group has not been programmed, the display shows NO TRUNKS IN TRUNK GROUP.)
- c. If your station is programmed to select a trunk group when a Call key is pressed, press a Call key for outgoing access.
- d. Refer to the Automatic Route Selection (ARS) procedure on the next page.
- e. Enter the Outgoing Call feature code (8). This automatically selects an outgoing trunk according to the programmed outgoing access mode for your station.

Single-Line Set: Select a trunk using one of the following methods:

- a. Enter the Outgoing Call feature code (8). This automatically selects an outgoing trunk according to the programmed outgoing access mode for your station.
 - b. Enter a trunk group access code (9201-9299, 93000-93003).
 - c. Refer to the Automatic Route Selection (ARS) procedure on the next page.
- (3) You hear one of the following signals:
- a. **Outside dial tone:** Manually dial, speed dial, or redial the desired telephone number or use the outside directory. (Display keysets show the numbers dialed. When dialing is ended and the call is determined to be valid, the display shows the elapsed time and call cost.) *If you hear repeating reorder tones, you dialed a restricted number. Also, if you dial too slowly and the Interdigit timers expire, the call may be dropped, and you will hear repeating reorder tones. If using a keyset that is on hook, you may lift the handset to speak privately. Go to the next step. On keysets, an individual trunk or Call key flashes slowly and the display shows the call cost and elapsed time.*

Executive Keyset users may press one of the following menu keys:

- **OUTSIDE DIR:** This key appears only if you are using ARS. Press the key to use the outside directory as described on page 4-85.

- STN SPEED DIAL: Press this key to use a station speed-dial number as described on page 4-83.
 - SYS SPEED DIAL: Press this key to use a system speed-dial number as described on page 4-82.
 - REDIAL: Press this key to redial the last number dialed (or saved) as described on page 4-88.
- b. **Single progress tone:** Enter a forced account code using the keypad keys or a pre-programmed SD key (refer to page 4-64). The display shows ENTER ACCOUNT CODE and the digits as they are entered. You hear outside dial tone when the code is accepted. On keysets, an individual trunk or Call key flashes slowly.
- c. **Repeating reorder tones:** You are restricted from the trunk group chosen; choose another trunk group. Or, you are restricted to using ARS only; try again using ARS (see paragraph 17.5). The display shows OUTGOING ACCESS DENIED.
- (4) After dialing the call, you can place it on hold, transfer it, set up a conference, enter optional account codes, etc. as described in this manual. Executive keysets have menu keys for easy use of outside call features.
- If you dialed an invalid or restricted telephone number, you hear reorder tones and the display shows INVALID OUTSIDE NUMBER or RESTRICTED OUTSIDE NUMBER.*
- (5) **To use the speakerphone, if equipped:** *If off hook, speak handsfree when the party answers. If on hook, press SPKR and hang up.*
- To change from speakerphone to handset:** Lift the handset and speak. The SPKR key goes off. You may later transfer back to the speakerphone by pressing the SPKR key and hanging up.
- (6) **To terminate the call:** *If on hook, disconnect by pressing the SPKR key. If off hook, hang up.*

17.5 TO PLACE A CALL USING AUTOMATIC ROUTE SELECTION:

- (1) **Keyset:** While on or off hook, enter the Automatic Route Selection feature code (9200), or press the ARS key. You hear dial tone.

Single-Line Set: Lift the handset and enter the Automatic Route Selection feature code (9200). You hear a single progress tone followed by dial tone.

NOTE: If required, enter a forced account code using the keypad or a pre-programmed SD key (see page 4-64). Display keysets show ENTER ACCOUNT CODE and the digits as they are entered. You hear a progress tone when the code is accepted.

- (2) Dial the telephone number. Use the MUTE key to backspace if you make a mistake. Include the area code, if needed. You hear one of the following signals.

a. **Single progress tone:** Your call is being placed. The associated individual trunk or Call key flashes slowly. Executive keyset users have the same options as described for outgoing calls on the previous page.

b. **Busy signals, then music:** All of the trunks in the route group are busy.

1. **Camp-on and wait for the trunk.**
2. **To request a callback (queue):** The system places your station in a queue for the trunk. When you hear ringing and the display shows TG XXX [or group name] IS NOW AVAILABLE, lift the handset; keyset users may also need to press the fast flashing Call key or individual trunk key (or the ANSWER key). You hear dial tone and digits being dialed. The associated individual trunk or Call key flashes slowly.

c. **Repeating reorder tones:** You are restricted from the number dialed or from using the route selected. The display shows INVALID OUTSIDE NUMBER or RESTRICTED OUTSIDE NUMBER. IF the number that you dialed does not match any of the programmed ARS route group patterns, the display shows UNABLE TO ROUTE CALL.

B. RECEIVING OUTSIDE CALLS

17.6 TO RECEIVE AN OUTSIDE CALL:

Keypad:

You will hear one of the following signals when receiving an outside call.

Repeating long tones and a Call key or individual trunk key is flashing at the fast rate: A call is ringing in. Lift the handset and/or press the flashing individual trunk key, flashing Call key, or ANSWER key. (Executive keypad users with a programmed voice mail extension can press the SEND TO V-MAIL menu key to transfer the call to voice mail.) The individual trunk or Call key flashes slowly during the call. (Display keypads show *[trunk name]* RINGING IN.)

Intercom call or page announcing a call and a Call key or individual trunk key is flashing at the fast rate: A call has been transferred to your station. Lift the handset and/or press the flashing individual trunk key, flashing Call key, or ANSWER key. (Executive keypad users with a programmed voice mail extension can press the SEND TO V-MAIL menu key to transfer the call to voice mail.) The individual trunk or Call key flashes slowly during the call. Display keypads show TG XXX *[or group name]* TFER FROM EX XXX *[or user name]*.

An individual trunk key is flashing at the fast rate, there is no ring signal, and you have allowed answer for the trunk. You may hear ringing on another keypad: Press the fast-flashing individual trunk key as described above or enter the Automatic Trunk Answer feature code (350). (The ANSWER key cannot be used to answer these calls.)

Single-Line Set:

You hear repeating long tones: A call is ringing in. Lift the handset; you are connected to the caller.

You hear a call ringing in on another station and you have allowed answer: Lift the handset and enter the Automatic Trunk Answer feature code (350). You are connected to the lowest-numbered trunk ringing in for which you have allowed answer.

17.7 TO RECEIVE A CALL THAT WAS TRANSFERRED TO HOLD:

When you hear a page announcing that an outside call is holding at your station (a Call key or individual trunk key is fluttering):

Keypad: Lift the handset and/or press the fluttering Call key or individual trunk key, or press the ANSWER key. You are connected to the caller.

Single-Line Set: Lift the handset and press the HOLD key or enter the Individual Hold feature code (336). You are connected to the caller.

C. KEYPAD ON-HOOK MONITORING

17.8 A keypad user with a speakerphone can monitor the call (listen to a recorded message, wait for the call to be answered, or wait on hold), and then speak handsfree when answered.

17.9 TO USE ON-HOOK MONITOR:

- (1) While on a call, press the SPKR key and hang up. *If you do not want to be heard and if the MUTE key is not lit*, press the MUTE key or MUTE menu key, or press SPCL and enter the Microphone Mute On/Off feature code (314). You can hear the other party (if the microphone is muted, you cannot be heard). The SPKR key is lit (and the MUTE key is lit if the microphone was muted).
- (2) **To return to the conversation:** You may lift the handset or speak handsfree. (If the microphone was muted, press the lit MUTE key or the UN-MUTE menu key to speak. The MUTE key goes off.)

D. TRUNK CAMP ON AND BUSY TRUNK CALLBACK (QUEUE)

17.10 Camp-on and queue requests allow the caller to wait for an available resource. A station user waiting for a specific resource (a trunk or a station) will be served before a station user waiting for a group that contains that specific resource (trunk group or hunt group). This includes camped on Emergency Call feature (911) calls.

Camp On

17.11 When a station user attempts to select a busy outgoing trunk or trunk group, the system sends a busy signal. The station user can wait off hook to camp on until the trunk is available.

17.12 TO CAMP ON TO AN OUTGOING TRUNK GROUP:

- (1) When you hear a busy signal after selecting an outgoing trunk, do not hang up. You camp on and hear music until a trunk in the trunk group is available. The display shows WAITING FOR [trunk name].
- (2) When you hear a single progress tone and outside dial tone, dial the desired telephone number. The associated Call key or individual trunk key flashes slowly.

Busy Trunk Callback (Queue)

17.13 If you attempt to select a busy outgoing trunk group and hear a busy signal or if you camp on, you can request a callback (queue) and hang up until the system signals your station that a trunk in the trunk group is available. Each station can place only one queue request at a time. If a second request is made, the first request is cancelled and replaced by the second request.

17.14 Queue callbacks must be answered before the Queue Callback timer expires. If a callback is not answered, the queue is cancelled. If the station is busy when a trunk in the queued trunk group becomes available, the queue request is placed at the end of the queue list.

17.15 TO QUEUE A BUSY OUTGOING TRUNK:

- (1) **Keypad:** When you hear a busy signal while selecting a trunk or if you are camped on, press the QUEUE menu key or press the SPCL key and enter the Queue Callback feature code (6) and hang up. The display shows QUEUE REGISTERED FOR [trunk name].

Single-Line Set: When you hear a busy signal while selecting a trunk or if you are camped on, hookflash and enter the Queue Callback feature code (6). Hang up.

- (2) Your station rings when the queued trunk is available. (Display keysets show TG XXX [or group name] IS NOW AVAILABLE.)
- (3) **Keypad:** Lift the handset and/or press the fast-flashing Call key, individual trunk key, or the ANSWER key. Then dial the desired telephone number. The associated Call key or individual trunk key flashes slowly. If ARS was used when the call was placed originally, the number is dialed automatically.

Single-Line Set: Lift the handset and dial the desired number. If all DTMF decoders are busy when your station is called back, the system sends repeating reorder tones instead of dial tone and the queue is cancelled. If ARS was used when the call was placed originally, the number is dialed automatically.

17.16 TO CANCEL A QUEUE BEFORE THE CALLBACK:

Keypad: While on hook, press the CANCEL QUEUE key or press the SPCL key and enter the Queue Callback feature code (6). The display shows QUEUE REQUEST CANCELED.

Single-Line Set: Lift the handset and enter the cancel Queue Callback feature code (6). Hang up.

E. ACCOUNT CODES

17.17 Account codes are 3- to 12-digit codes that can be used in conjunction with the Station Message Detail Recording (SMDR) feature to aid record keeping. Account codes can be assigned to measure telephone use and/or to identify calls for customer billing. There are Standard, Forced, and Optional types of account codes. The account code, when used, is recorded in the SMDR report as soon as the call is completed. If more than one account code is entered during a call, the last account code that was entered is recorded.

Database-Programmed Account Codes

17.18 Any station can be assigned a standard account code or one of six types of forced account codes (four are ARS dependent). Or, if desired, the station can have no associated account code. There can be 100 standard account codes and 100 forced account codes in the database.

17.19 The account code types are:

- **Standard:** Standard account codes automatically appear in the SMDR printout to identify calls from this station. The station user is not required to enter any digits during the call.
- **Forced — All Calls Validated:** If this type of account code is enabled, the user must enter a forced account code before an outside call can be placed. If the code matches one of the pre-programmed forced account codes in the database, the call is allowed. If the code does not match, the call is blocked. *Stations with this account code type cannot forward calls to outside telephone numbers.*
- **Forced — All Calls Non-Validated:** With this account code type, the user must enter an account code before placing an outside call. The code is not checked against any lists and the call is allowed as soon as the code is entered. *Stations with this account code type cannot forward calls to outside telephone numbers.*
- **Forced — Local Toll Calls Validated:** This account code type requires the user to enter an account code after dialing a local toll call number (a toll call within the local area codes) or a long distance call when using ARS. If the code matches one of the pre-programmed forced account codes in the database, the call is allowed. If the code does not match, the call is blocked. *Stations with this account code type cannot forward calls to outside telephone numbers.*

- **Forced — Local Toll Calls Non-Validated:** This account code type requires the user to enter an account code after dialing a local toll call number (a toll call within the local area codes) or a long distance call when using ARS. The code is not checked against any lists and the call is allowed as soon as the code is entered. *Stations with this account code type cannot forward calls to outside telephone numbers.*
- **Forced — Long-Distance Toll Calls Validated:** When this account code type is enabled, the user only has to enter an account code if the system detects that a long distance call (a toll call outside of the local area codes) has been dialed when ARS is used. If the code matches one of the pre-programmed forced account codes in the database, the call is allowed. If the code does not match, the call is blocked. *Stations with this account code type cannot forward calls to outside telephone numbers.*
- **Forced — Long-Distance Toll Calls Non-Validated:** When this account code type is enabled, the user only has to enter an account code if the system detects that a long distance call (a toll call outside of the local area codes) has been dialed when the ARS is used. The code is not checked against any lists and the call is allowed as soon as the code is entered. *Stations with this account code type cannot forward calls to outside telephone numbers.*
- **None:** If the user will not be required to enter an account code, this option is selected. The user may still use optional account codes or enable the Account Code For All Calls Following feature, as desired.

17.20 Station account code programming is explained on page 6-27 in PROGRAMMING. The codes are programmed in the Account Code window on page 6-60.

Optional Account Codes

17.21 Optional account codes can be entered at any time during a call. These user-defined codes are not pre-programmed, but must be within the maximum length set in programming. If entered, optional account codes are printed in the SMDR report for that call in place of standard or forced account codes that may have been used.

17.22 TO ENTER AN OPTIONAL ACCOUNT CODE WHILE ON AN OUTSIDE CALL:

- (1) **Keyset:** Press SPCL and enter the Optional Account Code feature code (390). (Display keysets show ENTER ACCT CODE.) The outside party does not hear you enter the code.

Single-Line Set: Hookflash and enter the Optional Account Code feature code (390). The outside party hears music until step 2 is completed.

- (2) Enter the account code using the keypad; keyset users may press an SD key to enter an account code number that has been stored in that speed-dial number location. (Display keysets show numbers.) You hear a single progress tone when the code is accepted. Single-line users are reconnected when the system accepts the account code. (If an account code is entered that has fewer than the programmed maximum number of digits, press # to return to the call. Pressing * will cancel the account code entry.)

Enabling The Account Codes For All Calls Following Feature

17.23 A user may enable the Account Code For All Calls Following feature to enter an account code once and apply it to all calls placed from that phone until the feature is canceled. The account code is stored in system memory and is used for all calls made by that station. It affects other account code programming as follows:

- **Forced:** If forced account codes are enabled for the station, the “all calls following” account code is used for all calls and the station user will not be prompted to enter an account code until the “all calls following” code is canceled. **NOTE:** If account codes are validated, and the Account Code For All Calls Following is an invalid code, calls will not be allowed at the station until the code is removed or re-programmed.
- **Standard:** If standard account codes are enabled for the station, the “all calls following” account code overrides the standard code.
- **None:** If no forced or standard account codes are enabled for the station, the “all calls following” code will be used as an optional account code.
- **Optional:** In the event that this feature is in effect and an optional account code is also entered, the op-

tional account code will override the “all calls following” account code for that call only. All subsequent calls will be associated with the “all calls following” account code.

17.24 To cancel this feature, the feature code is entered without an account code (just press # to terminate programming).

17.25 *TO ENTER AN ACCOUNT CODE AND USE IT FOR ALL FOLLOWING CALLS:*

- (1) **Keyset:** Enter the Account Code For All Calls Following feature code (391). (Display keysets show ENTER ACCT CODE.)

Single-Line Set: Lift the handset and enter the Account Code For All Calls Following feature code (391).

- (2) Enter the account code using the keypad; keyset users may press an SD key to enter an account code number that has been stored in that speed-dial number location. *If an account code is entered that has fewer than the programmed maximum number of digits, press # to terminate the code.* (Display keysets show numbers.) You hear a single progress tone when the code is accepted.

17.26 *TO CANCEL THE ACCOUNT CODE FOR ALL CALLS FOLLOWING FEATURE:*

- (1) **Keyset:** Enter the Account Code For All Calls Following feature code (391). (Display keysets show ENTER ACCT CODE.)

Single-Line Set: Lift the handset and enter the Account Code For All Calls Following feature code (391).

- (2) *If on hook, lift and replace the handset or press # to exit. If off hook, hang up.*

18. PLACING CALLS ON HOLD

18.1 There are several ways to place intercom and outside calls on hold. While on hold, the caller hears music (if equipped). There are three hold applications in the Inter-Tel Axxent System:

- **Individual hold** places the call on hold at one station. It can then be picked up directly at that station or it can be picked up at another station using the Reverse Transfer feature.
- **System hold** places the call on hold so that it can then be picked up directly at any keyset station that has an individual trunk key and has allowed-answer and/or outgoing access for the associated trunk, or at the station that placed it on hold. Attempting to place a conference on system hold will place the conference on individual hold. Intercom calls cannot be placed on system hold. Single-line sets cannot place calls on system hold; attempting to do so at a single-line station will place the call on individual hold.
- **Consultation hold** allows a single-line set user to pause during a call, use other system features, and then return to the caller by hookflashing. If a single-line set user attempts to hang up after placing a call on consultation hold, the call recalls the station.

18.2 If a call remains on hold until the Hold timer expires, it recalls the station where it is on hold and the Recall timer is started. If it is still unanswered when the Recall timer expires, it recalls the station's attendant and the Abandoned Call timer is started. (If the station does not have an attendant, the call continues to recall at the station that placed it on hold.) If the call is not answered before the Abandoned Call timer expires, the call is disconnected by the system.

NOTE: Keyset users can avoid the Hold timer by muting the microphone during a call instead of placing the call on hold. If this is done, the caller will not hear music-on-hold and will not recall the station.

A. INDIVIDUAL HOLD

18.3 *TO PLACE AN INTERCOM OR OUTSIDE CALL ON INDIVIDUAL HOLD:*

- (1) While on the call:

Executive or Standard Keyset: Press the HOLD key or press the SPCL key and enter the Individual Hold feature code (336). You hear in-

tercom dial tone and the Call key, individual trunk key, or IC key flutters.

Basic Keyset: Press the SPCL key and enter the Individual Hold feature code (336). You hear intercom dial tone and the Call key or individual trunk key flutters.

Single-Line Sets: Hookflash and enter the Individual Hold feature code (336). You hear intercom dial tone.

- (2) Hang up or place another call.

18.4 *TO RETURN TO THE CALLER ON INDIVIDUAL HOLD:*

Keyset: Lift the handset and/or press the fluttering IC key for intercom calls, or the Call key or individual trunk key (or the ANSWER key) for outside calls.

Single-Line Set: Lift the handset and enter the Individual Hold feature code (336).

B. SYSTEM HOLD (KEYSETS ONLY)

NOTE: Intercom calls and conferences cannot be placed on system hold. If you attempt to do so, the call or conference will actually be placed on individual hold.

18.5 *TO PLACE AN OUTSIDE CALL ON SYSTEM HOLD (KEYSETS ONLY):*

- (1) **Executive or Standard Keyset:** While on a call, press the SPCL key and enter the System Hold feature code (335). You hear intercom dial tone and the associated Call key or individual trunk key flutters.

Basic Keyset: Press the HOLD key or press the SPCL key and enter the System Hold feature code (335). You hear intercom dial tone and the Call key, individual trunk key, or IC key flutters.

- (2) Hang up or place another call.

18.6 *TO RETURN TO A CALL ON SYSTEM HOLD (KEYSETS ONLY):*

At any keyset that shows a fluttering individual trunk key for the call and has allowed-answer and/or outgoing access for that trunk, lift the handset and/or press the fluttering key.

At the keyset that placed the call on hold, press the fluttering individual trunk or Call key

C. CONSULTATION HOLD

18.7 *TO USE CONSULTATION HOLD (SINGLE-LINE SETS ONLY):*

- (1) While on a call, hookflash to place the call on consultation hold. You hear three short tones followed by dial tone.
- (2) You can place a call or enter a feature code.

NOTE: If you hang up while the call is on consultation hold, the call will immediately recall your station. If you hang up after dialing an extension number, the call will transfer to that station.

- (3) Return to the caller on hold by hookflashing.

D. HOLD RECALL

18.8 *TO ANSWER A HOLD RECALL:*

When the recall rings at your station (display shows [station or trunk] RECALLING), lift the handset or press the ANSWER key. (Executive keyset users can press the ANSWER menu key.) Single-line sets are automatically connected; keyset users may need to press the flashing call or individual trunk key.

E. MICROPHONE MUTE

18.9 Whether handsfree or using the handset, you can temporarily turn off your microphone while on a call. The call is still connected; you can hear the other party, but they cannot hear you. Since the call is not placed on hold, no timer is activated. The MUTE key is lit when the microphone is muted; the light will go off when you press the MUTE key to re-enable the microphone.

18.10 If you activate the Mute feature while speaking to an off-hook voice announce caller on the speakerphone, the handset microphone will be muted and the caller on the handset will not hear you or the OHVA caller. When you turn off the Mute feature, the handset microphone is re-enabled.

18.11 You cannot mute the microphone on your keyset while your call is on hold at another station.

18.12 *MUTING THE KEYSER MICROPHONE:*

- (1) To temporarily turn off your microphone while on a call, press the MUTE key or MUTE menu key, or press SPCL and enter the Microphone Mute On/Off feature code (314). The MUTE key is lit and the display shows MICROPHONE MUTE ON. *If off hook*, do not hang up (unless you press the SPKR key first).
- (2) Press the lit MUTE key or UNMUTE menu key, or press SPCL and enter the feature code (314) to turn the microphone on. The MUTE key goes off and the display shows MICROPHONE MUTE OFF.

19. CALL WAITING

19.1 While a station is in use, incoming intercom and outside calls camp on until the busy station is available. The busy party hears a single camp-on tone every 15 seconds (unless the Camp-on Tone timer is changed or camp on tones are disabled at the station).

19.2 A station programming flag (Camp-On Indications) allows camp-on tones to be enabled or disabled for incoming intercom and outside calls. This flag is programmed on a station-by-station basis (see page 6-30 in PROGRAMMING).

19.3 The DID Receive Busy Instead Of Camp-On station flag determines whether DID callers will receive busy signal or receive ringback and camp on when calling a busy station. In the default state, busy tones are disabled and the callers will hear ringback while camped on to the called station. This flag is programmed on a station-by-station basis (see page 6-30 in PROGRAMMING).

19.4 TO RESPOND TO A WAITING CALL USING A KEYSSET:

If, while on a call, you hear a single camp-on tone and see the IC key, a Call key, or an individual trunk key flashing fast, you have a call waiting. The display indicates the type of call that is waiting (intercom, outside, recall, etc.). If you are a hunt group member, the display shows the number of calls camped on to the hunt group. Do one of the following:

- (1) *If you wish to end the current call*, hang up. A waiting outside call rings as an incoming call; an intercom call rings as a private call. Answer as usual.

If you wish to place the current call on hold, press the HOLD key or press the SPCL key and enter the Individual Hold feature code (336). The Call key, individual trunk key, or IC key flutters (unless an intercom call is camped on, in which case the IC key flashes fast until the camped on call is picked up, then the IC key flutters). Answer the waiting call by pressing the flashing Call key, individual trunk key, or IC key.

Executive Keysets: You may press one of the following menu keys:

- ANSWER: Press this key to end the current call and answer the ringing call.

- SEND TO V-MAIL: This key appears only if you have an Axxent Talk mailbox. Press this key to transfer the call to your mailbox.

- IC CALL TO DND: Pressing this key will send do-not-disturb tones to the caller. If using a display keyset, the caller will see DO-NOT-DISTURB.

- (2) **To return to the holding call:** Press the fluttering individual trunk key, Call key, or IC key.

19.5 TO RESPOND TO A CALL WAITING USING A SINGLE-LINE SET:

When you hear a single camp-on tone every 15 seconds while you are on a call, another call is waiting. Do one of the following.

- (1) *If you wish to end the current call*, hang up. The call rings at your station. Lift the handset to speak to the waiting caller.

If you wish to place the current call on hold, hookflash and then enter the Individual Hold feature code (336). You are connected with the waiting caller.

- (2) **To return to the first call on hold:**

If you wish to end the current call, hang up. Return to the holding call by lifting the handset and entering the Individual Hold feature code (336).

If you wish to place the current call on hold and connect with the original call: Hookflash and then enter the Individual Hold feature code (336) twice.

19.6 TO MOVE A CAMPED-ON INTERCOM CALL TO DO-NOT-DISTURB:

While on a call, you hear call waiting signals:

Standard or Basic Keyset: Press the DND key or enter a Do-Not-Disturb feature code (370 or 372). The DND key lights. The intercom caller is no longer camped on and receives do-not-disturb indications.

Executive Keyset: Press the DO-NOT-DISTURB or IC CALL TO DND menu key.

Single-Line Set: Hookflash and enter a Do-Not-Disturb feature code (370 or 372). The intercom caller is no longer camped on and receives do-not-disturb indications. Hookflash twice to return to the current call.

20. CALL TRANSFER

20.1 There are two feature codes for transferring intercom and outside calls to other stations, Axxent Talk applications, hunt groups, or outside telephone numbers. The call transfer options are as follows:

- **Transfer to ring:** You can transfer intercom or outside calls to another station, an Axxent Talk application, a hunt group, or an outside telephone number.
- **Transfer to hold:** Either intercom or outside calls can be transferred to another station and placed on hold using this feature.

20.2 In addition, transfer-to-park locations can be set up by the installer. A transfer-to-park location is a station circuit with an extension number that is not equipped with a station instrument. Calls can be transferred to these locations and then reverse transferred by any station user. If all station circuits are equipped, you cannot create a transfer-to-park location.

20.3 An established conference can be transferred to a station or to an Axxent Talk Voice Mail application. While the transfer is taking place, the parties in the conference remain connected to each other and may converse. The transfer will appear at the destination station in the same manner as any other transferred call along with a CONFERENCE TFR FROM (*username*) display and may be answered by the station user.

20.4 If a conference is transferred to a Voice Mail application, the system waits for you to enter the mailbox number. If you do not enter a mailbox number before you hang up, the conference will be connected to the voice mail unit and a conference party must enter the mailbox number after listening to the introductory voice prompts. A conference conversation could be recorded as a mailbox message using this technique. (**NOTE:** Federal and State law may prohibit the use of this feature to record in certain circumstances. Inter-Tel does not purport to give any legal advice on this subject, but recommends that you contact your attorney for guidance on the use of this feature.)

20.5 When a station user transfers a call to the principal station of a system forwarding path, the Handsfree Announce System Forward system-wide flag determines what the caller will hear. If enabled, the caller will place a handsfree call to the principal station and can announce the transfer (the call does not enter the forwarding path). If the option is disabled, the transferring station user will hear ringing and can announce the call only if it is answered by the principal station or one of the forwarding points. See page 6-93 for system flag programming information.

20.6 If a station user answers another call while a party is waiting on transfer hold, the waiting party will be moved to individual hold at that station. If the Hold timer expires while a call is on transfer hold, the call will recall the station. The station user must return to the call on hold and begin the transfer process again.

20.7 There may be some reduction in voice volume when an outside call is transferred to an outside telephone number depending on the quality of the trunks being used.

NOTE: While this system is designed to be reasonably secure against CO trunk misuse by outside callers, there is no implied warranty that it is invulnerable to unauthorized intrusions. If the central office does not provide supervision and disconnect the call when one party hangs up, it is possible for a caller to remain connected to a CO trunk circuit. If this happens, and the caller begins dialing, the call could be placed through the Inter-Tel Axxent System and would then be billed to the system's owner. The system cannot check this type of call for toll restriction and may not register the call in SMDR. This problem could arise when a call is connected to a station, when a call is in an unsupervised conference, or when a call is forwarded or transferred to the public network.

20.8 There are five timers that affect the Call Transfer feature. They are as follows:

- **Transfer Attendant:** When an attendant transfers a call, this timer limits the time a transferred call rings unanswered before it recalls the attendant. The default value of this timer is 30 seconds. It can be reprogrammed to any value between 10-255 seconds.
- **Transfer Available:** This timer limits the amount of time a call that is transferred by a station user will ring, unanswered, before it recalls the transferring station. (Does not apply to calls transferred by attendant stations or Axxent Talk.) The default value of this timer is 20 seconds. It can be reprogrammed to any value between 10-255 seconds.
- **Transfer Busy:** This timer limits the amount of time a call that is transferred by a station user will wait at a busy station before recalling the transferring station. (Does not apply to calls transferred by attendant stations or Axxent Talk.) The default value of this timer is 24 seconds. It can be reprogrammed to any value between 10-255 seconds.
- **Transfer Axxent Talk:** When an Axxent Talk port transfers a call, this timer limits the time a transferred call rings unanswered before it recalls the port. The default value of this timer is 20 seconds. It can be reprogrammed to any value between 10-255 seconds. (Outside calls will not recall to Axxent Talk ports if the Inter-Tel Axxent System is unable to

communicate with the Axxent Talk. The calls will ring at the destination stations until they are answered or the Abandoned Call timer expires.)

- **Unsupervised CO:** The duration of an outside call that is transferred to an outside telephone number is limited by this timer. When it expires, the unsupervised call recalls the primary attendant. If the attendant does not answer the recall before the Abandoned Call timer expires, the call is disconnected by the system. The default value of this timer is 5 minutes. It can be reprogrammed to any value between 1–255 minutes.

A. TRANSFER TO RING

20.9 TO TRANSFER A CALL OR CONFERENCE:

- (1) **Keyset:** While on a call, press the TRANSFER key or press SPCL and enter the Transfer to Ring feature code (345). You hear intercom dial tone. The display shows TRANSFER CALL TO EXTENSION.

Single-Line Set: While on a call, hookflash. You hear tones followed by intercom dial tone.

- (2) **EITHER,** Select an outgoing trunk group or press the OUTSIDE PHONE menu key, and dial the desired telephone number. *If all trunks in the trunk group are busy,* select another trunk group or camp on and wait for a trunk. *If you hear repeating reorder tones,* you dialed a restricted telephone number. To return to the caller on transfer hold, press the lit Call key, trunk key, or IC key (keyset) or hookflash twice (single-line set).

OR, Dial the desired extension number or press an SD key, the VOICE MAIL menu key, or the MESSAGE CENTER menu key. (Executive keyset users can use the Directory feature by pressing the IC DIRECTORY menu key.) The number can be a station extension number, 0 for the attendant, a hunt group pilot number, a voice mail extension number, or a transfer-to-park location number.

- a. **Transfer to a station that is forwarded to voice mail:** You hear repeating double tones

and the display shows DEST FORWARDED TO VOICE MAIL.

- b. **Transfer to voice mail:** The system waits for you to enter the mailbox number (display shows ENTER MAILBOX). Enter the desired mailbox number. (Executive keyset users can use the Directory feature by pressing the IC DIRECTORY menu key, if the system is validating mailbox numbers.) *If you do not enter a mailbox number before you hang up,* the caller will be connected to the voice mail unit and must enter the mailbox number after listening to the introductory voice prompts.
- c. **Transfer-to-park:** If transferring to a park location, complete the transfer. Then page the desired party and announce the call. The party must reverse transfer the call. Note that if the call is not answered, it will recall your station if transferred directly or will recall the called park location's attendant if transferred to hold.

- (3) *If desired,* wait for an answer and announce the call. If you are calling a device (such as an automated attendant) that does not accept call announcements, the display shows HANG UP TO FINISH TRANSFER.

- (4) You have the following options:

To complete the transfer: Hang up or press another Call key. The display shows CALL TRANSFERRED TO (*username*).

To return to the caller: Press the fluttering Call key, trunk key, or IC key (keyset) or hookflash twice (single-line set).

To try another station: Press the TRANSFER key or press SPCL and enter the Transfer to Ring feature code (345) and dial another extension number.

To transfer the call to hold when calling a station (KEYSETS ONLY): Press the HOLD key or the TRANSFER-TO-HOLD menu key. Or press SPCL and enter the Individual Hold feature code (336). The call will not ring or send call waiting signals until the Hold timer expires.

B. TRANSFER TO HOLD

20.10 A call transferred to hold at a station does not ring or send a display message while holding. After the Hold timer expires, the station rings or sends call waiting signals. Also, calls transferred to hold do not recall the transferring party; they recall the receiving party's attendant if unanswered after the Hold and Recall timers expire. Besides the procedure listed below, keyset users have an alternative method for transferring calls to hold; refer to step 4 in the previous procedure.

20.11 TO TRANSFER A CALL TO HOLD:

- (1) **Executive Keyset:** While on a call, press the TRANSFER-TO-HOLD menu key. The display shows TRANSFER CALL TO EXTENSION.

Standard or Basic Keyset: While on a call, press the SPCL key and enter the Transfer To Hold feature code (346). The display shows TRANSFER CALL TO EXTENSION.

Single-Line Set: While on a call, hookflash and enter the Transfer To Hold feature code (346).

- (2) Dial the desired extension number. (Executive keyset users can use the Directory feature by pressing the IC DIRECTORY menu key.)
- (3) Hang up to complete the transfer.

20.12 TO PICK UP A CALL THAT WAS TRANSFERRED TO HOLD:

If a call was transferred to hold at your station:

Keyset: When your IC key, a Call key, or individual trunk key is fluttering, lift the handset

and/or press the fluttering key (or the ANSWER key for an outside call). You are connected to the caller.

Single-Line Set: Lift the handset and enter the Individual Hold feature code (336). You are connected to the call.

C. TRANSFER RECALLS

20.13 If a call is transferred to another station and is not answered before the appropriate Transfer timer expires (and if it was not transferred to hold), the call recalls the transferring station's recall destination (defaults to the station) and the Recall timer is started. The call rings until the Recall timer expires. If unanswered, it recalls the transferring party's attendant and the Abandoned Call timer is started. (If the transferring station has no attendant, the call continues to recall at the transferring station.) If the call is not answered before the Abandoned Call timer expires, the call is disconnected by the system.

20.14 TO ANSWER A TRANSFER RECALL:

Keyset: When the recall rings at your station, the display shows (*username*) RECALLING FROM (*username*). Lift the handset and/or press the ANSWER key. Press the medium-flashing Call key or individual trunk key, or press the ANSWER key if the call is not automatically connected.

Single-Line Set: If you hear a repeating signal of four tones and a pause, lift the handset. You are immediately connected.

21. REVERSE TRANSFER

21.1 Calls ringing or recalling at a station, a hunt group, or a transfer-to-park location can be picked up at any other station, using this feature. Calls on hold can also be picked up from stations and from transfer-to-park locations.

21.2 If more than one call is ringing or holding at the station or hunt group, a priority list determines which call is reverse transferred. Calls are selected in the following order, and if more than one call of the same type is at the station, the calls are picked up in the order they were received:

1. Ringing calls
2. Camped-on calls
3. Holding outside calls
4. Holding intercom calls

21.3 If a call is reverse transferred from a hunt group announcement or overflow station, and a station in the hunt group becomes available, the call will be discon-

nected from your station immediately when answered by the hunt group station.

21.4 A call cannot be reverse transferred from a station within a hunt group, using the pilot number, if the call was not a hunt group call. To reverse transfer the call, use the station's extension number, not the pilot number of its hunt group.

21.5 *TO REVERSE TRANSFER A CALL:*

EITHER, Lift the handset (keysets can remain on hook) and enter the Reverse Transfer (Call Pick-Up) feature code (4), then dial the extension or pilot number where the call is ringing or holding. You are automatically connected to the caller.

OR, Lift the handset (keysets can remain on hook) and dial the extension or pilot number where the call is ringing or holding, then press SPCL or hookflash and enter the Reverse Transfer (Call Pick-Up) feature code (4). You are automatically connected to the caller.

22. CONFERENCE CALLS

22.1 Station users can establish multi-party conference calls without operator assistance. There can be up to four parties in a conference. In addition to the initiating station, the conference can include any combination of up to three intercom and/or outside calls. The CPU provides 12 conference channels. Additional channels can be added, via optional DSPs on the CPU card, to support conferencing.

NOTE: During a conference, some reduction in voice volume may be noticed, depending on CO trunk quality.

22.2 During a conference, if any station user presses a keypad key, the DTMF tones will be heard by all other parties in the conference. This allows conference callers access to DTMF-controlled devices.

22.3 An established conference can be transferred to another station, using the call transfer feature described on page 4–69. While the transfer is taking place, the parties in the conference remain connected to each other and may converse. The transfer will appear at the destination station in the same manner as any other transferred call along with a CONFERENCE TFR FROM (*username*) display and may be answered by the party.

NOTE: While this system is designed to be reasonably secure against CO trunk misuse by outside callers, there is no implied warranty that it is invulnerable to unauthorized intrusions. If the central office does not provide supervision and disconnect the call when one party hangs up, it is possible for a caller to remain connected to a CO trunk circuit. If this happens, and the caller begins dialing, the call could be placed through the Inter-Tel Axxent System and would then be billed to the system's owner. The system cannot check this type of call for toll restriction and may not register the call in SMDR. This problem could arise when a call is connected to a station, when a call is in an unsupervised conference, or when a call is forwarded or transferred to the public network.

22.4 A conference can be transferred (as described on page 4–69) to a Voice Mail application to allow the conference parties to use the Voice Mail features. When you transfer the conference to voice mail, the system waits for you to enter the mailbox number. If you do not enter a mailbox number before you hang up, the conference will be connected to the voice mail unit and a conference party must enter the mailbox number after listening to the introductory voice prompts. The conference parties can use their DTMF keypad keys to use the voice mail features. A conference conversation could be recorded as a mailbox message using this technique. (**NOTE:** Federal and State law may prohibit the use of this feature to record in certain circumstances. Inter-Tel does not purport to give any legal advice on this subject, but rec-

ommends that you contact your attorney for guidance on the use of this feature.)

A. PLACING A CONFERENCE CALL

22.5 TO PLACE A CONFERENCE CALL:

- (1) While on a call:

Keyset: Press the CNF key or press SPCL and enter the Conference feature code (5). The party is on conference wait hold (hears music) and the CNF key flutters. The display shows CALL NEXT PARTY TO CNF.

Single-Line Set: Hookflash and enter the Conference feature code (5). The party is on conference wait hold (hears music).

- (2) Place an intercom or outside call to another party (or return to a call on hold) to be included in the conference. Executive keysets users can press the IC DIRECTORY or OUTSIDE DIR menu key to look up numbers, if desired.

NOTE: An existing conference is not a valid "party" for another conference.

- (3) Place the party on conference wait hold:

Keyset: Press the CNF key again. Or press SPCL and enter 5 again.

Single-Line Set: Hookflash and enter the Conference feature code (5). The party is on conference wait hold (hears music).

- (4) Repeat steps 2 and 3 until all desired parties are on conference wait hold (or the maximum allowed number has been reached).
- (5) Connect all waiting parties in the conference:

Standard or Basic Keyset: Press the CNF key again. Or press SPCL and enter 5 again. All parties are connected. (Display keysets show CNF IN PROGRESS.) The CNF key and a Call key flash slowly.

Executive Keyset: Press the CONNECT TO CONFERENCE menu key. All parties are connected. (Display shows CNF IN PROGRESS.) The CNF key and a Call key flash slowly. You can use the following menu keys:

- HOLD: Press this key to place the conference on hold.
- DISCONNECT: Press this key to remove your station from the conference. If there are no other stations in the conference, all parties are disconnected. If there is still another sta-

tion in the conference, the parties remain connected.

- **ADD PARTY:** This key appears only if you have not reached the maximum number of allowed parties. Press this key to leave the conference parties connected while you place another call to be added to the conference.
- **MUTE:** Press this key to turn the keyset microphone on or off during the conference.
- **TRANSFER CNF:** Press this key and enter an extension number to transfer the conference to another station or the Voice Mail application.

Single-Line Set: When all parties are on conference wait hold, hookflash and enter the Conference feature code (5). All parties are connected.

NOTE: If the number of parties in your conference exceed the capacities of the system resources, you will hear reorder tone and see a display that tells you MAX NUMBER OF PARTIES EXCEEDED. To complete the conference setup, return to the parties on conference wait hold one by one (keyset users press the associated Call or IC key, single-line set users enter the Individual Hold feature code twice) and release parties until there are fewer than the maximum. Then repeat step 5 to connect the conference.

B. ADD PARTIES TO A CONFERENCE

22.6 TO ADD PARTIES TO AN EXISTING CONFERENCE (ANY INSIDE PARTY):

NOTE: This procedure cannot be performed if the maximum number of conference participants has been reached.

Keyset:

- (1) During the conference, press the CNF key. The other parties remain connected. The Call key and CNF key flutter.
- (2) Place an intercom or outside call to the other party (or return to a call on hold) to be included in the conference and press the CNF key.
- (3) **To connect all parties in a conference:** Press the CNF key again.
- (4) **To add another party:** Repeat steps 1–3 again.

Single-Line Set:

- (1) During the conference, hookflash. The other parties remain connected.

- (2) Place an intercom or outside call to the other party to be included in the conference (or return to a call on hold). Hookflash and enter the Conference feature code (5).
- (3) **To connect all parties in a conference:** Hookflash and enter the Conference feature code (5) again.
- (4) **To add another party:** Repeat steps 1–3 again.

C. EXITING A CONFERENCE

22.7 There are several options for leaving the conference:

- Exit the conference by hanging up. The other parties remain connected only if at least one is a station (inside party). You cannot return to the conference. If there are no stations remaining in the conference, it is disconnected.
- Leave the conference and allow the outside parties to remain connected by pressing the CNF key or entering the Conference feature code (refer to paragraph 22.8). You can return to the conference at any time.
- End the conference and place all of the parties on individual hold (refer to paragraph 22.9). You can return to the parties one at a time.
- Place the entire conference on hold (refer to paragraph 22.12). The conferenced parties remain connected.

NOTE: If a user attempts to place a conference call on system hold, the conference will be placed on individual hold.

Exiting And Re-Entering The Conference

22.8 TO EXIT THE CONFERENCE AND LEAVE THE OTHER PARTIES CONNECTED (ANY INSIDE PARTY):

Keyset:

- (1) During the conference, press the CNF key and hang up. The CNF key and a Call key flutters.

NOTE: If all remaining parties are outside parties and the Hold timer expires while you are out of the conference, the conference recalls your station. The recall rings at your station and the CNF key flashes at the medium rate (display shows CONFERENCE RECALLING). Press the CNF key to return to the conference. If the recall is not answered before the Recall timer expires, it will recall the attendant.

- (2) **To return to the conference:** Lift the handset and/or press the CNF key again.

Single-Line Set:

- (1) During the conference, hookflash and hang up.

NOTE: If the Hold timer expires while you are out of the conference, the parties recall your station. When the recall rings at your station, lift the handset to answer the recall. If the recall is not answered before the Recall timer expires, it will recall the attendant.

- (2) **To return to the conference:** Lift the handset and/or enter the Conference feature code (5).

Ending The Conference And Placing All Parties On Hold

22.9 TO END THE CONFERENCE AND PUT ALL PARTIES ON HOLD (ANY INSIDE PARTY):

Keyset:

- (1) During the conference, press the CNF key and hang up. The CNF key and a Call key flutters. The parties are still connected in a conference.
- (2) **To place the parties on individual hold:** Press the HOLD key or enter the Individual Hold feature code (336). You can then return to each party individually by pressing the associated Call or IC key.

Single-Line Set:

- (1) During the conference, hookflash and hang up. The parties are still connected in a conference.
- (2) **To place the parties on individual hold:** Lift the handset and enter the Individual Hold feature code (336). You can then return to each party individually by entering the Individual Hold feature code again.

Placing The Entire Conference On Hold

22.10 Any inside party involved in a conference can place the conference on hold at his or her station. The other conference parties remain connected and can converse. The station user that placed the conference on hold can then place calls or use system features while the conference is on hold. Then the user can return to the conference on hold. Note, however, that a conference may not be terminated while it is on hold.

22.11 Once a station user has moved a conference to hold, the user may, if desired, establish another conference. Because each conference is established under a separate Call key, it is possible for the user to have access to any individual conference for further call processing. If the user elects to use the CNF key for conference access, the CNF key will rotate through the conferences in priority order. The CNF key will always reflect the status of the top-priority conference. The priority order of the CNF key when multiple conferences are in effect is:

1. Conference or call on transfer hold
2. Ringing (ring in, recall, or camp on) conference
3. Conference on hold
4. Active conference

22.12 TO PLACE THE CONFERENCE ON HOLD (ANY INSIDE PARTY):

- (1) During a conference call:

Keyset: Press the HOLD key or press the SPCL key and enter the Individual Hold feature code (336). The conferenced parties remain connected. The call and CNF keys flutter.

Single-Line Set: Hookflash and then enter the Individual Hold feature code (336). The conferenced parties remain connected.

NOTE: If you do not return to the conference before the Hold timer expires, the conference will recall your station. If the recall is not answered, the conference will recall to your attendant's station. At the attendant, the call will be terminated automatically after the Abandoned Recall timer if no inside parties are still in the conference and if it is not answered by the attendant. (If the attendant answers the call, a conference is re-established with the attendant station as one of the conference parties.)

- (2) To return to the conference:

Keyset: Press the HOLD key, CNF key, or the fluttering Call key.

Single-Line Set: Lift the handset and enter the Conference feature code (5).

23. SYSTEM FORWARDING

NOTE: This feature must be enabled in Premium Feature Selection. See page 6-198 in PROGRAMMING.

23.1 System forwarding provides the ability to program the system so that calls ringing at a station will follow a database-programmed "forwarding path" that routes the call based on the type of call and the status of the intended station. (The Call Forwarding station feature can be used to override System Forwarding.) Several terms will be used to describe this feature, including:

- **Principal Station:** Original station being called.
- **Forwarding Point:** A destination (station or hunt group) to which the system-forwarded call is directed. Each forwarding path can contain up to four forwarding points.
- **Forwarding Path:** The sequence of forwarding points to which the call will be sent. Forwarding paths are programmed in the database. Up to 20 unique paths can be programmed. Each station can have up to three forwarding paths.

23.2 Two system timers are used with this feature:

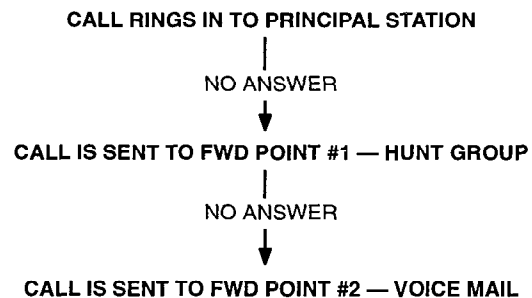
- **System Forwarding Initiate:** This timer determines how long a call will ring (unanswered) at the principal station before moving to the first forwarding point. The default value is 15 seconds and the range is 2-255 seconds.
- **System Forwarding Advance:** This timer determines how long the call will ring (unanswered) before moving to the next forwarding point. The default value is 15 seconds and the range is 2-255 seconds.

23.3 For each forwarding path assigned to the station, the system checks the following three criteria to determine if and when a call should be forwarded:

- **Type of incoming call:** Up to six different types of calls can be programmed to be sent to the forwarding path. They are:
 - Outside calls received through a call routing table (including DID calls, but not including DISA calls)
 - Ringing outside calls
 - Transferred outside calls (including automated attendant and voice mail transfers)
 - Recalling outside calls
 - DISA calls (including DISA calls received through a call routing table)
 - Intercom calls

- **Station status:** The system recognizes four different types of station status.
 - *No Answer:* If the call is not answered at the principal station before the System Forwarding Initiate timer expires, the system sends the call to the forwarding path.
 - *Busy:* If the principal station is busy, the system immediately sends the call to the forwarding path. Both "No Answer" and "Busy" can be selected together to form a "Not Available" status.
 - *Do Not Disturb:* If the principal station is in do-not-disturb, the system immediately sends the call to the forwarding path.
 - *Immediate:* The system immediately sends the call to the forwarding path. The principal station user cannot answer an immediately forwarded call, but can reverse transfer it from the forwarding point.
- **Day-mode/night-mode status:** The system day/night mode is used to determine if a forwarding path is taken. Either day mode, night mode, or both may be specified.

23.4 For an example, refer to the diagram below. In the example, the "principal" station user wants direct ring-in or transferred calls to ring at his or her station during day mode. The principal station has a forwarding path with two forwarding points: a hunt group and voice mail. If the principal does not answer the call, it follows the forwarding path to forwarding point #1, a hunt group. If the hunt group does not answer the call, it would continue on the forwarding path and go to the principal station's voice mailbox (forwarding point #2).



23.5 If the principal station is a keyset, the "ring principal once" option can be set that will signal the principal station when a call begins to follow the forwarding path. The signal to the principal station consists of a display (CALL SENT TO FORWARD PATH) and a single burst of ring tone. The call cannot be answered at the principal station, but can be reverse transferred from the system forward point.

23.6 If a call rings in to multiple stations, and one or more of those stations has system forwarding, the call will not follow any of the forwarding paths.

23.7 If a principal station or a station forwarding point is a member of a hunt group, calls placed to the hunt group's pilot number are unaffected by system forwarding. The hunt group calls will be received at the station as usual and will not enter the system forwarding path.

23.8 A call follows only the forwarding path of the principal, even if a forwarding point has a forwarding path of its own. The call that originated at the principal station will follow only the principal station's forwarding path.

Handsfree Announce System Forward Option

23.9 When a call is transferred to the principal station by another station user *and the principal station's system forward is set for the "no answer" station status*, a system-wide option determines what the caller hears. If the "handsfree announce on system forward transfer" option is enabled, the transferring station user will place a handsfree call to the principal station and can announce the transfer; the *System Forwarding Initiate* timer does not start until the transfer is completed.

23.10 An exception to this is if intercom calls are programmed to be sent to the forwarding path and an intercom call is transferred to the principal station. In this case the handsfree announce option is overridden and the intercom call from the transferring station enters the forwarding path after the System Forwarding Initiate timer expires. The transferring station user hears ringing and can announce the call only if it is answered.

23.11 If a transferred call follows the system forwarding path to a voice mail station, the transfer is completed when the transferring station hangs up. The principal station's mailbox number is automatically dialed.

Individual Station Forwarding Points

23.12 The ringing duration at each station forwarding point is determined by the System Forwarding Advance timer (defaults to 15 seconds). If the station forwarding point is busy, the call will camp-on until the System Forwarding Advance timer expires and then it moves to the next forwarding point.

23.13 If the station forwarding point is in do-not-disturb, the forwarding path will bypass that station and immediately send the call to the next forwarding point.

23.14 If a forwarding point is an Axxent Talk application, and the system is unable to communicate with the Axxent Talk, the call will bypass the forwarding point.

23.15 A station forwarding point can place calls or transfer calls to the principal.

Hunt Group Forwarding Points

23.16 If a forwarding point is a hunt group, a call following the forwarding path will be sent to the announcement station or overflow station as usual; it will advance to the next forwarding point if not answered before the System Forwarding Advance timer expires.

23.17 The call will ring at the hunt group until the System Forwarding Advance timer expires. It will then move to the next forwarding point. The No Answer Advance timer determines how long the call will ring at each hunt group station, as usual.

23.18 If all stations in a hunt group forwarding point have do-not-disturb or hunt group remove enabled, the call will camp on until the System Forwarding Advance timer expires. The call will then be sent to the next forwarding point.

Manual Call Forwarding And System Forwarding

23.19 If the principal station or a forwarding point has manual call forward enabled (using the FWD key or one of the Call Forwarding feature codes), the Call Forward feature overrides System Forwarding.

23.20 If a forwarding point has the Call Forward feature enabled, a system-forwarded call will ring at the forward destination until it is answered or the System Forward Advance timer expires; then the call moves on to the next forwarding point. However, system-forwarded calls will follow manual forwarding (at a station forwarding point) to an outside number only when the trunk has answer supervision. If the trunk does not have answer supervision, the call rings at the forwarded station.

23.21 If a station forwarding point is manually forwarded to voice mail, the call will not follow the manual forward to voice mail; it will ring at the station forwarding point.

23.22 If the principal station *receives* a manually forwarded call (not a system forward), that call will *not* follow the principal station's system forwarding path.

23.23 If an infinite forward loop results from the combination of manual forwards and system forwarding paths, the station that was originally intended to receive the call will ring, even if the station is in do-not-disturb.

System Forward Enable/Disable

23.24 The station user has the option of entering feature codes that will disable or enable the use of system forwarding at that station. Note that this flag does not affect the station's appearance on any other station's call forwarding path. The flag merely determines whether the station will have its own calls system forwarded.

23.25 TO ENABLE OR DISABLE SYSTEM FORWARDING:

Keyset: Enter the System Forward On (352), System Forward Off (353), or System Forward On/Off (354) feature code. The display shows SYSTEM FORWARD ON (or OFF). If disabled, the system will ignore any system forwarding

paths programmed for this phone until you re-enable system forwarding.

Single-Line Set: Lift the handset and enter the System Forward On (352), System Forward Off (353), or System Forward On/Off (354) feature code. If disabled, the system will ignore any system forwarding paths programmed for this phone until you re-enable system forwarding.

Unanswered Calls

23.26 If a call that is following a system forwarding path is not answered or all forwarding points are in do-not-disturb or busy, its final destination depends on the type of call as shown below.

TYPE OF CALL	ALL FWD POINTS ARE BUSY OR DO NOT ANSWER	ALL FWD POINTS ARE IN DO-NOT-DISTURB
Intercom	Rings at the last forwarding point until it is answered or the caller hangs up.	Call never leaves the principal station.
Call routing ring-in (except DISA)	Rings at last forwarding point until it is answered or caller hangs up.	Rings at the principal station until it is answered or the caller hangs up.
Direct ring-in	Rings at last forwarding point until it is answered or caller hangs up.	Rings at the principal station until it is answered or the caller hangs up.
Transfer from a station, automated attendant or voice mail	Recalls the transferring station's transfer recall destination when the System Forwarding Advance timer expires at the last forwarding point.	<i>If immediate forwarding is enabled</i> , rings the principal station until the applicable Transfer timer expires. Then it recalls the transferring station's transfer recall destination. <i>If a conditional forwarding is enabled</i> , rings principal station until the System Forward Initiate timer expires. Then it recalls the transferring station's transfer recall destination.
DISA (including Call Routing to DISA)	Rings at last forwarding point until the Abandoned Call timer expires.	Rings at the principal station until the Abandoned Call timer expires.
Recalls	Recalls the principal station's attendant when the System Forwarding Advance timer expires at the last forwarding point. If the principal station does not have an attendant, the call continues to ring at the last forwarding point until the Abandoned Call timer expires.	<i>If immediate forwarding is enabled</i> , rings principal station until the Recall timer expires. Then it recalls the principal station's attendant. <i>If a conditional forwarding is enabled</i> , rings principal station until the System Forward Initiate timer expires. Then it recalls the principal station's attendant. If the principal station does not have an attendant, the call continues to ring at the principal station until the Abandoned Call timer expires.

24. CALL FORWARDING

24.1 With call forwarding, a station user can route incoming intercom and outside calls (including direct ring-in calls) to another station, to a hunt group, or to an outside telephone number, if allowed by toll and trunk restrictions. The four forwarding options are:

- **Forward all calls:** All incoming calls are immediately forwarded.
- **Forward if no answer:** Incoming calls are forwarded if they are not answered before the Forward No Answer timer expires.
- **Forward if busy:** Incoming calls are immediately forwarded if the station is busy.
- **Forward if no answer or busy:** Incoming calls are forwarded immediately if the station is busy, or forwarded if calls are not answered before the Forward No Answer timer expires.

24.2 If forward all calls is enabled, display keysets show the call forwarding status and destination until the request is cancelled. If one of the conditional forwards is enabled (no answer, busy, or no answer/busy), display keysets show the forward status for five seconds and then return to normal. If the station receiving the forward is a display keyset, it shows EXT XXX FWD FROM EXT XXX for each forwarded call received.

24.3 Station users can chain forwards from station to station providing the forwards do not form a loop and the chain does not include more than 10 stations. The conditional forward features (if busy, if no answer, if busy/no answer) may form a loop that the system cannot detect until a call is placed to the forwarding station. For example, if two station users forward their calls to each other using the Forward If Busy feature, the system accepts the requests. However, if a call rings in while both stations are busy, the forwards create an illegal loop. In this case, the call camps on to the called station and that station's display shows INVALID FORWARD PATH.

24.4 If more than one station has ring in for a trunk group, direct ring-in calls on that trunk group will forward to extension numbers, but not outside numbers or voice mail ports. The display of the keyset receiving the forwarded call will show it as a forwarded call, and the Call key or individual trunk key flashes to show ring in. (The individual trunk key also flashes on the keyset that is being forwarded.)

24.5 Calls cannot be forwarded to restricted outside telephone numbers or stations in do-not-disturb. If the station that is programmed to receive your forwarded calls is later placed in do-not-disturb and you receive a call, you will momentarily see a display showing that

the destination station is in do-not-disturb; the call will remain at your station.

24.6 If your station is in do-not-disturb and you have call forwarding programmed the call is still forwarded, unless you enabled Forward No Answer. With Forward No Answer, intercom callers will see the do-not-disturb display that you programmed and the call will not be forwarded.

24.7 If calls are forwarded to an Axxent Talk application, and the system is unable to communicate with the Axxent Talk, the call will not be forwarded. It will remain at your station.

24.8 Call forwarding overrides system call forwarding at the principal station.

24.9 If a station is programmed for Forward No Answer or Forward No Answer/Busy and receives a transferred call, the Forward No Answer timer is started when the intercom call from the transferring station begins ringing. The Forward No Answer timer is restarted if the transferring station completes the transfer before the timer expires (the transferred call will then be forwarded when the timer expires).

24.10 Queue callbacks and recalls do not forward, except that a recall at an attendant's station will forward to another station.

FWD Key

24.11 All keysets have FWD keys in the default database. However, the Executive keyset FWD key does not operate the same as the Standard and Basic FWD key. When the default Executive keyset FWD key is pressed, the display shows a menu of call forwarding options. The user must then select the desired option by pressing the corresponding key next to the display. If the FWD key is programmed to use any other Forward feature code (355–358) the forwarding options will not be displayed when the FWD key is pressed; the Executive keyset will operate the same as a Standard or Basic Keyset.

24.12 Any keyset user can make any user-programmable key (including the Executive FWD key) a FWD key that uses one of the forwarding feature codes (355–358). Refer to the procedures on page 4–48 for programming user-programmable keys.

24.13 A user-programmed FWD key is lit only when the station is programmed for the call forwarding condition enabled by that key. For example, if a user-programmed FWD key is set to forward calls when the station is busy, the key will be lit when the Forward If Busy feature is enabled, but not if the Forward If No Answer feature is enabled.

24.14 If a keyset user has both a fixed FWD key and a user-programmable FWD key, the fixed key will always light when the station is forwarded. However, the user-programmable FWD key will be lit only when the forwarding option activated by that key has been selected. For example, if the user has the Forward All Calls feature programmed under a user-programmable key, that key will light if either the fixed or programmable FWD key is used to select that feature. However, if the fixed key or a feature code is used to set the Forward If Busy feature, only the fixed key will light.

Forward To An Outside Number

24.15 When programming a station for call forward to an outside telephone number, a trunk access code is programmed before the telephone number. If the station is called while the selected trunk group is busy, the call will not be forwarded. Calls will ring at the forwarded station until the call is answered or the caller hangs up. The forwarded station's display shows FORWARD TO BUSY TRUNK.

24.16 The forwarded station's (not the intercom caller's) trunk and toll restrictions are checked when an intercom call is forwarded to an outside number.

NOTE: While this system is designed to be reasonably secure against CO trunk misuse by outside callers, there is no implied warranty that it is invulnerable to unauthorized intrusions. If the central office does not provide supervision and disconnect the call when one party hangs up, it is possible for a caller to remain connected to a CO trunk circuit. If this happens, and the caller begins dialing, the call could be placed through the Inter-Tel Axxent System and would then be billed to the system's owner. The system cannot check this type of call for toll restriction and may not register the call in SMDR. This problem could arise when a call is connected to a station, when a call is in an unsupervised conference, or when a call is forwarded or transferred to the public network.

24.17 When an outside call is forwarded to an outside number, the Unsupervised CO timer is activated. When the timer expires, the call recalls the attendant. If the attendant does not answer the recall before the Abandoned Call timer expires, the call is disconnected.

24.18 Stations with Forced Local Toll Call and Forced Long-Distance Toll Call account codes cannot forward calls to outside numbers when ARS is used. However, forwarding to an outside number is allowed when any other trunk access method is used.

24.19 If a trunk group is assigned direct ring in to multiple stations, and one of those stations is forwarded to

an outside number, incoming calls on that trunk group are not forwarded to the outside number.

NOTE: There *may* be some reduction in voice volume when an outside call is forwarded to an outside telephone number, depending on central office trunk quality.

Forward To The Message Center

24.20 Station users can forward calls to their message centers. Keyset users can forward calls to their designated message center by pressing the FWD key and then the MSG key or MESSAGE CENTER menu key. Single-line users must use the call forwarding procedure and dial the extension number of the message center.

Forward To An Attendant

24.21 Station users can forward calls to their attendant by pressing the FWD key and then 0, or by entering a Call Forwarding feature code and dialing 0.

Forward To Voice Mail Hunt Groups

24.22 If a station is forwarded to a voice mail hunt group or if the message center is a voice mail hunt group, the user's mailbox number is automatically dialed when the voice mail unit answers the forwarded call.

24.23 If a chain of forwarded stations ends in voice mail, the mailbox number of the first station in the chain will be selected when the voice mail unit answers the call.

24.24 If a trunk group is assigned direct ring in to multiple stations, and one of those stations is forwarded to a voice mail unit, incoming calls on that trunk group are not forwarded to the voice mail unit.

How To Forward Calls To An Extension Or Outside Number

24.25 TO FORWARD CALLS:

- (1) **Standard or Basic Keyset:** While on or off hook, press the FWD key or enter one of the following feature codes. (Display keysets show ENTER FORWARD DEST.)
 - a. Call Forward All Calls (355)
 - b. Call Forward If No Answer (356)
 - c. Call Forward If Busy (357)
 - d. Call Forward If No Answer Or Busy (358)

Executive Keyset: Press the FWD key. The display shows SELECT TYPE OF FORWARD. Press the menu key for the desired forwarding option (ALL, NO ANSWER, BUSY, or NO

ANSWER/BUSY). The display shows ENTER FORWARD DEST.

Single-Line Set: Lift the handset and enter one of the feature codes listed above.

(2) *If forwarding to an extension number or pilot number, do one of the following:*

- a. Dial the extension number or pilot number to receive the calls.
- b. Press a DSS/BLF key.
- c. Dial 0 to forward to your attendant.
- d. (*Keyset users only*) Press the MSG key or MESSAGE CENTER menu key to forward calls to your message center.
- e. (*Executive keyset users only*) Press the VOICE MAIL key to forward to your mailbox.
- f. (*Executive keyset users only*) Press the IC DIRECTORY menu key to look up and select a number.

NOTE: If you dialed an invalid extension number, your display shows FORWARD TO INVALID NUMBER, you hear reorder tones, and must try again. If you dialed a station that is in do-not-disturb, the display shows DESTINATION IN DND, you hear reorder tones, and must enter a new destination.

If forwarding to an outside telephone number, do one of the following:

- a. Dial a trunk access code (8, 9200–9299, 93000–93003). The display shows ENTER PHONE #. Dial the desired telephone number.
- b. (*Keyset users only*) Press a trunk access key (OUTGOING, ARS, trunk group key, or trunk key). The display shows ENTER

PHONE #. Dial the desired telephone number.

- c. (*Executive keyset users only*) Press the OUTSIDE PHONE menu key. The display shows ENTER PHONE #. Dial, speed dial, or redial the desired telephone number or press the OUTSIDE DIR menu key to look up and select a number.

NOTE: If the forward destination is invalid because of toll restriction, ARS-Only restriction, no outgoing access for the trunk, no ARS or ARS route group for the dialed number, or an invalid dialed number, you hear reorder tones and must enter a new destination. (The display explains why the call was denied.)

- (3) **Keyset:** *If off hook*, hang up. You hear a progress tone and the FWD key is lit (display shows FWD [condition] TO XXXX). If you attempted to forward calls to a station that is unconditionally forwarded to your station or if the forwarding path already has 10 stations, your display shows INVALID FORWARD PATH and you hear reorder tones and must enter a new destination.

Single-Line Set: Hang up.

24.26 TO CANCEL ANY CALL FORWARD REQUEST:

Standard or Basic Keyset: Press the lit FWD key (the SPKR key lights) then press the SPKR key (both keys go off). You hear a progress tone. (Display keysets show ANY CALL FORWARD CANCELED.)

Executive Keyset: Press the FWD key and then press the FWD OFF menu key. You hear a progress tone and the FWD key is unlit. (Display shows ANY CALL FORWARD CANCELED.)

Single-Line Set: Lift the handset, enter any Call Forwarding feature code (355–358), and hang up.

25. SPEED DIALING

25.1 Three Inter-Tel Axxent System features provide speed-dialing. They are as follows:

- **System Speed Dialing:** Up to 100, 32-digit system speed-dial numbers can be stored in system memory.
- **Station Speed Dialing:** Each station user can program up to 10, 16-digit station speed-dial numbers.
- **System Directory (Intercom and Outside):** The intercom directory enables display keyset users to “look up” intercom extension numbers and user names. The outside directory enables display keyset users to “look up” system speed-dial numbers and associated names. (**NOTE:** This feature must be enabled in Premium Feature Selection. See page 6–198 in PROGRAMMING.)

A. SYSTEM SPEED DIALING

25.2 Speed dialing allows station users to dial stored telephone numbers quickly. Up to 100, 32-digit system speed-dial numbers can be stored in system memory. If desired, an identifying name can also be stored with each speed-dial number. (See also the System Directory feature on page 4–85 and Caller ID on page 4–21.)

25.3 To keep system speed-dial numbers confidential, some or all of them can be programmed as non-display numbers (see PROGRAMMING, page 6–99). Non-display numbers can be used by any station user, but can only be displayed on the programming station’s keyset. (Non-display numbers cannot be redialed or saved as station speed-dial numbers at a display keyset.) Non-display numbers *will* appear in the SMDR report when dialed.

25.4 System speed-dial numbers are subject to toll restriction unless a system-wide option has been enabled that allows any station to dial any system speed-dial number regardless of toll restriction.

25.5 The system speed-dial numbers are stored using location codes (000–099). When dialed, the numbers appear on a display keyset unless they have been programmed as non-display numbers. Display keyset users can also view system speed-dial numbers and names without dialing; however, with non-display numbers only the name is displayed.

25.6 System speed dial codes 000–099 can be stored in user-programmable keyset keys by following the directions given on page 4–48. These keys would allow the station user one-key dialing of system speed-dial numbers.

25.7 The system speed-dial numbers and names are stored in battery-backed RAM and will not be erased in the event of a power failure.

25.8 The system speed-dial numbers and names are programmed by the installer or at any Administrator station. (Refer to page 4–112 for Administrator programming instructions.)

Viewing System Speed-Dial Numbers

25.9 *TO VIEW SYSTEM SPEED-DIAL NUMBERS AND NAMES:*

NOTE: If you make a mistake, use the MUTE key to back space.

- (1) While on hook, press the SYS SPD key or enter the System-Speed Dial feature code (381). The display shows REVIEW SYS SPEED # (000–099).
- (2) Enter the desired location code (000–099) or press the SEARCH menu key. The display shows the programmed name and number.
- (3) *If desired*, scroll forward through the speed-dial locations in alphabetical order by pressing the VOLUME ▲ or NEXT key, or scroll backward by pressing the VOLUME ▼ or PREVIOUS key.
- (4) Repeat steps 2 and 3 for each speed-dial location to be viewed. Or, press * or CANCEL to terminate this feature.
- (5) **To automatically select a trunk and dial the displayed number**, press #.

Dialing System Speed-Dial Numbers

25.10 *TODIAL SYSTEM SPEED-DIAL NUMBERS AT A KEYSSET:*

- (1) *If desired*, lift the handset and select an outgoing trunk. (You may skip this step.)
- (2) Press the SYS SPD key or enter the System Speed-Dial feature code (381). The display shows REVIEW SYS SPEED # (000–099). Non-display keyset users hear a confirmation tone.
- (3) Enter the location code (000–099) for the desired number. *If you have not selected a trunk*, press # or the ACCEPT menu key to accept the number and automatically select a trunk. Or, press the ARS key, a trunk key, a trunk group key, or the OUTGOING key to select a trunk. The number is automatically dialed. (Display keysets show the number dialed unless it is a non-display number.) If you hear reorder tones, your station is restricted from dialing the selected number. If the display shows INVALID BIN NUMBER, you entered an invalid speed-dial location code.

25.11 *TO DIAL SYSTEM SPEED-DIAL NUMBERS AT A SINGLE-LINE SET:*

- (1) Lift the handset and select an outgoing trunk.
- (2) Hookflash and enter the System Speed-Dial feature code (381). You hear a confirmation tone.
- (3) Enter the location code (000–099) for the desired number. The number is automatically dialed. If you hear reorder tones, your station is restricted from dialing the selected number.

B. STATION SPEED DIALING

25.12 For convenience, each station user can program up to 10, 16-digit station speed-dial numbers. Single-line sets use speed-dial location codes (0–9). Keyset use speed-dial (SD) keys, if programmed in the keyset's keypad, or location codes 0–9. Together, the lamps in the keyset SD keys create a busy lamp field that indicates the status of the stations programmed under the keys (refer to the lamp status chart on page 4–42). Speed-dial keys can contain outside telephone numbers, feature codes, station extension numbers, or hunt group pilot numbers.

25.13 Station speed dial codes 0–9 can be stored in user-programmable keyset keys to create SD keys.

Programming Station Speed-Dial Numbers

25.14 When entering the outside telephone numbers, use one of the following methods:

- Use the keypad to manually dial the number.
- On a keyset, press the REDIAL key to enter the last number (up to the first 16 digits) dialed or saved at the station.
- On a keyset, press the SYS SPD key and enter the system speed-dial location code (000–099) to store one of the system speed-dial numbers in a station speed-dial location. (If the number is over 16 digits, only the first 16 digits are stored.) Non-display system speed-dial numbers cannot be stored in keyset station speed-dial locations.

25.15 If desired, outside telephone numbers can be preceded with a trunk access code to allow one-key dialing of outside telephone numbers. For example, a key programmed with "89619000" would select a trunk using the Outgoing Call feature code (8) then dial 961–9000.

25.16 A station extension number can be preceded with a pound (#) to always speed dial private intercom calls to the station. Or, a "4" may be entered before a sta-

tion extension number or hunt group pilot number to quickly reverse transfer (pick up) calls from that station or hunt group. If either of these options is used, normal handsfree intercom calls cannot be placed using that station speed-dial location or SD key and the SD key will not show the station's status.

25.17 An outside telephone number can be preceded by a trunk access code for easier trunk selection and number dialing. Station users can also program pauses and/or hookflashes into the stored outside telephone numbers. For example, the number can contain an SCC local number, a pause, and an access code. When programming speed-dial numbers, each hookflash and each pause is considered one digit. The durations of the hookflash and the pause are determined by the programmable CO Hookflash and Pause Digit timers.

25.18 *TO PROGRAM STATION SPEED-DIAL NUMBERS:*

NOTE: If you make a mistake, press * or CANCEL; then start over. The number in memory remains unchanged. Or, use the MUTE key to backspace.

- (1) **Keyset:** While on hook, enter the Program Station Speed Dial feature code (383). The display shows PROGRAM STN SPEED # (0–9).

Single-Line Set: Lift the handset and enter the Program Station Speed-Dial feature code (383). You hear a confirmation tone.

- (2) Press the SD key to be programmed or dial the desired speed-dial location code (0–9). The display shows the number that is programmed in that speed-dial location and ENTER NUMBER. If the display shows INVALID BIN NUMBER, you entered an invalid speed dial location code; try again.
- (3) **To enter or change a number:** Dial the extension number or telephone number (up to 16 digits, including pauses and hookflashes) to be stored. Refer to paragraph 25.14. (Display keysets show the number.)

*To include *, #, a hookflash, or a pause in the number, keysets press the SPCL key and single-line sets hookflash — once for an asterisk (*), twice for a pound (#), three times for a hookflash, or four times for a pause. A keyset user can enter more than one *, #, or hookflash in a row by pressing the FWD key to move to the next character (not necessary after pauses).*

*If you make a mistake, press MUTE to back up and erase, or press * or CANCEL to leave the number unchanged; then start over at step 1.*

To erase an existing number and leave it blank: Keyset users can press MUTE until the

number is erased. Single-line set users can overwrite the existing number by entering only a hookflash as the new number.

- (4) Keysets press # to exit; single-line sets hang up. The display shows STN SPD BIN #X UP-DATED. Repeat these steps for each additional number to be stored.

Viewing Station Speed-Dial Numbers

25.19 TO VIEW THE STORED NUMBERS (ON A DISPLAY KEYS-SET):

- (1) **EITHER**, While on hook, enter the Review Keys feature code (396). The display shows PRESS THE KEY TO REVIEW. Press the desired SD key. The display shows the currently stored number.
OR, While on hook, enter the Program Station Speed Dial feature code (383). The display shows PROGRAM STN SPD # (0-9). Enter the location code or press the desired SD key. The display shows the currently stored number.
- (2) After viewing the number, press SPKR, *, or # to exit, or wait for the display to return to date and time.

Dialing Station Speed-Dial Numbers

25.20 TO DIAL A STATION SPEED-DIAL NUMBER:

- (1) Lift the handset. (Keysets can remain on hook.)
- (2) *If placing an outside call, select an outgoing trunk or use ARS. If placing an intercom call or if the outside number contains a trunk access code, skip this step.*
- (3) **Keypad with an SD key:** Press the SD key of the desired number. The number is dialed. (Display keysets show the number.)

Keypad without an SD key: Enter the Station Speed-Dial feature code (382). If using a non-display keypad, you hear a confirmation tone. Then enter the location code (0-9). The number is dialed.

Single-Line Set: Hookflash and enter the Station Speed-Dial feature code (382). You hear a confirmation tone. Then dial the location code (0-9). The number is dialed.

26. INTERCOM, SPEED-DIAL, AND FEATURE CODE DIRECTORY (KEYSETS ONLY)

NOTE: The Directories feature must be enabled in Premium Feature Selection. See page 6–198 in PROGRAMMING.

26.1 The Directory feature enables display keyset users to “look up” intercom extension numbers and user names, system speed-dial numbers and names, or system feature codes. Once the desired information has been displayed, the user may automatically dial the number, store the number in a station speed-dial location, select a different number/name, terminate the directory routine, or switch to the other directory. A directory search can be performed when a call is waiting on conference or transfer hold at the station.

26.2 To use the directory, the user enters a letter, a string of letters, a valid extension number, or a valid feature code. If searching for a name, the full name need not be entered. The system will find the closest match and show the number and its associated name on the keyset display. Or, the user can scroll alphabetically through the stored list of names. (It is not possible to scroll through the extension numbers or feature codes numerically; extensions and features scroll alphabetically.)

26.3 Keypad keys are used to enter the desired letters, numbers, and punctuation. The station user can switch between numeric and alphanumeric modes. (Numeric mode = MSG key unlit; alphanumeric mode = MSG key lit.) In alphanumeric mode, the number of times a key is pressed determines which character is entered. For example, 77776444844 would enter “SMITH.” When adjoining characters are located under the same key, press the FWD key once to advance to the next character. For example, 5666 FWD 66337777 would enter “JONES.” Refer to the following chart. The letters correspond to the letters printed on the keypad keys.

KEY	NUMBER OF TIMES KEY IS PRESSED				
	1	2	3	4	5
1	-	&	()	1
2	A	B	C	'	2
3	D	E	F	!	3
4	G	H	I	*	4
5	J	K	L	/	5
6	M	N	O	#	6
7	P	Q	R	S	7
8	T	U	V	?	8
9	W	X	Y	Z	9
0	@	:	.	,	0

26.4 The intercom directory is automatically updated whenever user names and/or extension number information is reprogrammed. The outside directory is updated whenever a system speed-dial number or name is reprogrammed.

26.5 Only Administrator stations will be able to view Administrator feature codes using the directory. If the Diagnostics Mode feature is enabled, the Administrator will also be able to see the diagnostic feature codes.

26.6 TO PERFORM A DIRECTORY SEARCH:

- (1) While on or off hook, enter the Directory feature code (307). The MSG key lights (and the SPKR key lights if on hook) and the display shows DIR TYPE: (IC=1 OUT=2 FEAT=3).
- (2) Press one of the following:

For Intercom Directory: Press 1 or the IC DIRECTORY menu key to select the intercom directory. The display shows INTERCOM NAME.

For Outside Directory: Press 2 or the OUTSIDE DIR menu key to select the outside number directory. The display shows OUTSIDE NAME.

For Feature Directory: Press 3 or the FEATURE DIR menu key to select the feature code directory. The display shows FEATURE NAME.

- (3) Enter alpha and/or numeric characters for the number, code, or user/feature name (up to 10 characters for intercom directory, 16 for outside or feature directory). If searching for a name, the whole name does not have to be entered. You may switch between modes by pressing the MSG key or the USE NUMERIC MODE/USE ALPHANUMERIC MODE menu key. If necessary, press * to cancel the search.
 - a. *In numeric mode (MSG key unlit):* Press the keypad keys to enter a valid feature, extension, or speed-dial location number. Press MUTE to backspace, if necessary. Press the SEARCH menu key or press MSG to change to alphanumeric mode and then press # to begin the search.
 - b. *In alphanumeric mode (MSG key lit):* Press the keypad keys to enter the desired characters. Refer to the chart at left. Press FWD once to advance or twice to leave a space. Press MUTE to backspace. Press # or the SEARCH menu key to begin the search. The closest match will be displayed. Executive keyset users can return to the initial entry by pressing the START OVER menu key.

- (4) *If desired*, press the VOLUME ▲ (higher volume on the Basic Keypad) or NEXT key to scroll forward alphabetically through the directory or press the VOLUME ▼ (lower volume on the Basic Keypad) or PREVIOUS key to scroll backward.
- (5) **To store the selected number in a station speed-dial location:** Press the desired SD key. You hear confirmation tone when the number is accepted.

To automatically dial a displayed extension number: Press #, the IC key, or the ACCEPT

key. (If an intercom call is camped on and the IC key is lit, pressing the IC key answers the waiting call and terminates the Directory feature.)

To dial a displayed outside number: Press #, the CALL menu key, or a Call key. The system automatically dials the number using your programmed outgoing access code.

To dial a displayed feature code: Press # or the ACCEPT key. The system automatically dials the feature code.

To search for another name or number: Repeat the procedure beginning at step 3.

27. HOUSE PHONE

27.1 This feature provides users with the ability to place a pre-designated intercom or outside call simply by lifting the handset (or pressing the SPKR key, if using a keyset) on a designated house phone. There are several applications for this feature, such as:

- **Courtesy paging phone:** Visitors hear pages instructing them to pick up the house phone (such as the paging phones used in airport terminals). When they lift the handset, they are connected to a pre-programmed station user who can give them a message or connect them to a call.
- **Emergency phone:** The house phone can be programmed to automatically dial the Emergency Call feature code (default is 911). This could save time in an emergency.
- **Service phone:** Customers can use the house phone(s) to place orders or receive special services from the lobby. For example, the house phone would automatically dial the extension number of a service representative (or hunt group number of the service department).
- **Intercom network:** House phones could be placed in specific locations throughout a building (such as examination rooms in a doctor's office) and could be

programmed to call a specific station or group of stations (such as a nurses' station).

27.2 Any station may be designated as a house phone in database programming (see PROGRAMMING, page 6-37), however this feature is usually assigned to single-line sets. The primary attendant should not be a house phone.

27.3 The number dialed by the house phone is determined by the station's speed-dial programming. The number programmed through the database or in station speed-dial location 0 is automatically dialed during day mode, and the number in location 1 is dialed during night mode. This number can be either an extension number or an outside telephone number. If it is an outside number, it must be preceded with a trunk access code (and a pause if necessary).

27.4 Once the house phone status has been programmed, the speed-dial number can only be changed while on hook (if it is a keyset) or through individual station information (special purpose station) programming because lifting the handset will cause the station to dial the designated number.

27.5 Incoming calls take precedence over outgoing calls. If using a single-line set or a keyset that is programmed for automatic trunk access (see page 4-49), any ringing call is automatically answered when the handset is lifted or the SPKR key is pressed.

28. REDIALING

28.1 The Redial feature can store one telephone number in redial memory at the station (manually dialed or speed-dialed numbers up to 32 digits). If the station user reaches a busy number, is disconnected, or if there is no answer, the number can be redialed easily. The station user simply lifts the handset and presses the REDIAL key or enters the Redial feature code. A trunk access code is automatically entered and the telephone number is redialed. (If redialing while still connected to an outside call, the connection is dropped and the trunk is re-seized before the number is dialed.)

28.2 Only one telephone number can be stored in the station's redial memory at a time. This number can be stored in one of two ways, depending on station programming:

- **Last number saved:** The desired number is manually stored in redial memory by the station user. Dialing other numbers does not change the stored

number. It only changes when a new number is stored.

- **Last number dialed:** The last number manually dialed or speed dialed is automatically stored. It changes every time the user dials a telephone number. (This is the default value of the Redial feature.)

28.3 The Last Number Saved and Last Number Dialed features work differently depending on the station status when it is used, as shown in the table below.

28.4 Individual station programming determines the mode of the Redial feature (Last Number Dialed or Last Number Saved). Refer to page 6-30 in PROGRAMMING for more information. The Redial feature code (380) performs the redial function (programmed under the REDIAL key).

28.5 Non-display system speed-dial numbers cannot be redialed at a display keyset station.

28.6 If using a PBX trunk, the Redial feature remembers the other system's trunk access code and automatically inserts a pause after the code when it is redialed.

STATION STATUS WHEN REDIAL FEATURE IS USED	STATION HAS "LAST NUMBER SAVED"	STATION HAS "LAST NUMBER DIALED"
Idle station	Saves the last trunk access code and telephone number that was dialed.	Trunk is selected using the same trunk access code as used to place last outside call, last telephone number is dialed.
Intercom dial tone (on or off hook)	Saves the last trunk access code and telephone number that was dialed.	Trunk is selected using the same trunk access code as used to place last outside call, last telephone number is dialed.
On an intercom call	Releases the current call, seizes a trunk using the saved trunk access code and dials the saved telephone number.	Releases the current call, seizes a trunk using the access code used on the last outside call and dials the last telephone number dialed.
After selecting a trunk but <i>before</i> dialing	Redials the saved telephone number on the currently selected trunk. (Note that the current trunk is used instead of the saved trunk access.)	Redials the last telephone number dialed, using the currently selected trunk.
After selecting a trunk <i>and dialing</i> one or more digits	Releases the current call, seizes a trunk using the saved trunk access code and dials the saved telephone number.	Releases the current call, reseizes the trunk (using the access code used on that call) and redials the digits that were dialed.
On an incoming outside call	Releases the current call, seizes a trunk using the saved trunk access code and dials the saved telephone number.	Releases the current trunk, seizes a trunk using the same trunk access code used on the last outgoing call and dials the last telephone number dialed.

Using The Last Number Saved Feature

28.7 Use the following procedures to save and redial numbers at stations that are programmed to use the Last Number *Saved* feature.

28.8 *TO SAVE A NUMBER ON A STATION PROGRAMMED FOR LAST NUMBER SAVED:*

NOTE: The saved number is replaced each time you repeat this procedure.

Keypad: While the keypad is idle or while listening to intercom dial tone, press the REDIAL key or press SPCL and enter the Redial feature code (380). You hear a confirmation tone and the display shows LAST OUTSIDE NUMBER SAVED.

Single-Line Set: Lift the handset and enter the Redial feature code (380). When you hear the confirmation tone, hang up.

28.9 *TO REDIAL A NUMBER (LAST NUMBER SAVED):*

Keypad: While on a call or after selecting a trunk, press the REDIAL key or press SPCL and enter the Redial feature code (380). Refer to the chart

on the previous page to determine which trunk is selected. The saved telephone number is dialed.

Single-Line Set: While on a call or after selecting a trunk, hookflash and then enter the Redial feature code (380). Refer to the chart on the previous page to determine which trunk is selected. The saved telephone number is dialed.

Using The Last Number Dialed Feature

28.10 Use the following procedure to redial numbers at stations that are programmed to use the Last Number *Dialed* feature.

28.11 *TO REDIAL A NUMBER (LAST NUMBER DIALED):*

Keypad: While on or off hook, press the REDIAL key or press SPCL and enter the Redial feature code (380). Refer to the chart on the previous page to determine which trunk is selected and which digits are dialed.

Single-Line Set: Lift the handset or hookflash. Then enter the Redial feature code (380). Refer to the chart on the previous page to determine which trunk is selected and which digits are dialed.

29. PAGING

29.1 The Paging feature allows announcements to be made through keyset internal speakers. Optional paging equipment (amplifiers and paging speakers) may also be installed from internal speaker leads in the keyset or analog loop start trunk circuits to provide paging for an external area, such as a warehouse or loading dock (see INSTALLATION, page 3–68).

29.2 There can be up to 5 paging zones. When the system is in the default state, all keysets are assigned to paging zone 1 to provide an all-page zone. Keysets and trunks can be assigned to any, all, or none of the paging zones, as desired.

29.3 Pages are not heard on keysets that have been removed from paging (using the feature code as described in paragraph 30.2), are in do-not-disturb, are ringing, or are in use. Also, background music on keysets and on external speakers connected to keyset speaker leads is interrupted for pages. If a trunk in a paging zone is unplugged, the page cannot be completed.

29.4 If desired, keyset users can program feature keys to select the paging zones 0–4 using paging access codes 960–964 (respectively).

29.5 The Page timer limits the length of pages. If it is set to 0, pages are unlimited in length.

29.6 TO MAKE A PAGE:

- (1) Lift the handset.
- (2) **Keyset:** Press the PAGE key, or enter the Page feature code (7). The display shows SELECT PAGE ZONE # (0–9).

Single-Line Set: Enter the Page feature code (7).

- (3) Enter the zone code (0–9) for the desired zone.
- (4) After the single progress tone, make your page before the Page timer expires. If you hear reorder tones and the display shows PAGE ZONE NOT PROGRAMMED, there are no stations in the selected page zone. If the display shows PAGE ZONE BUSY TRY AGAIN LATER, the necessary system resources are busy or the paging zone is being used by another station. Users cannot camp on to or queue the paging system.
- (5) Hang up.

30. REMOVE FROM PAGING

30.1 A keyset user can prevent the keyset from receiving pages or allow it to receive pages again using these feature codes. If the keyset is assigned to more than one page zone, all zones are removed or replaced; the user cannot toggle individual zones.

30.2 TO HALT OR ENABLE ZONE PAGES:

- (1) While on or off hook, enter the Page Receive On/Off feature code (325) to prevent the keyset from receiving pages. You hear a confirmation tone and the display shows PAGE RECEIVE ON (or OFF).
- (2) *If off hook*, hang up.

31. DO-NOT-DISTURB

31.1 Placing a station in do-not-disturb halts all pages, incoming intercom calls, camped-on calls, and transferred calls to that station. Queue callbacks, recalls, and direct ring-in calls are not blocked. Another user calling the station while it is in do-not-disturb hears a repeating signal of four fast tones and a pause (display keysets show the do-not-disturb message); the user cannot camp on, but can queue or leave a message at the station.

31.2 If desired, individual stations can be prevented from using do-not-disturb by disabling the do-not-disturb option in the database (see PROGRAMMING, page 6–30.)

31.3 If a hunt group station is in do-not-disturb, calls to the user's hunt group do not cause the keyset to ring, but the individual trunk key will flash if all other stations in the hunt group are busy, forwarded, have hunt group remove enabled, or are in do-not-disturb. Hunt group announcement stations and overflow stations can use do-not-disturb to block hunt group calls by using do-not-disturb.

31.4 Keyset stations may be given do-not-disturb override permission. These stations, when reaching a station in do-not-disturb, can enter the Do-Not-Disturb Override feature code (373) to complete the intercom call. Single-line stations cannot be enabled to use the Do-Not-Disturb Override feature.

31.5 When a station is placed in do-not-disturb, the user may select one of 20 system-stored messages that will appear on the top line of the display (unless do-not-disturb is enabled while the user is on a call or off hook, in which case message 1 is automatically selected). When a station in do-not-disturb is called by a display keyset user, the caller sees the selected message.

31.6 Do-not-disturb messages can be programmed by the installer or by an Administrator station. (See page for 4–102 Administrator station programming instructions.) Default do-not-disturb messages are as follows:

- | | |
|---------------------|---------------------|
| 01 DO-NOT-DISTURB | 11 OUT OF TOWN 'TIL |
| 02 LEAVE A MESSAGE | 12 OUT OF OFFICE |
| 03 IN MEETING UNTIL | 13 OUT UNTIL |
| 04 IN MEETING | 14 WITH A CLIENT |
| 05 ON VACATION 'TIL | 15 WITH A GUEST |
| 06 ON VACATION | 16 UNAVAILABLE |
| 07 CALL ME AT | 17 IN CONFERENCE |
| 08 AT THE DOCTOR | 18 AWAY FROM DESK |
| 09 ON A TRIP | 19 GONE HOME |
| 10 ON BREAK | 20 OUT TO LUNCH |

31.7 The second line of the message can be customized with a numeric/alphanumeric message of up to 16 characters. The customized message is entered as described in the following paragraphs.

31.8 When programming a customized do-not-disturb message, the station is automatically in numeric mode. The keypad keys are used to enter numbers 0–9, the pound (#) key is used for entering a hyphen (-), and the asterisk (*) key is used for entering a colon (:). For example, 1*00 would enter "1:00" in numeric mode.

31.9 Keyset users can enter alphanumeric mode by pressing the MSG key (the key lights). Keypad keys are used to enter the desired letters, numbers, and punctuation. (The # is used to accept the text and * is used to cancel/erase the text.) The number of times a key is pressed determines which character is entered. For example, 33377744432999 would enter "FRIDAY." When adjoining characters are located under the same key, press the FWD key once to advance to the next character. For example, 6 FWD 666 FWD 6632999 would enter "MONDAY." Refer to the chart below to program messages in alphanumeric mode. (Note that letters correspond to the letters printed on keypad keys 1–9.)

KEY	NUMBER OF TIMES KEY IS PRESSED				
	1	2	3	4	5
1	-	&	()	1
2	A	B	C	'	2
3	D	E	F	!	3
4	G	H	I	*	4
5	J	K	L	/	5
6	M	N	O	#	6
7	P	Q	R	S	7
8	T	U	V	?	8
9	W	X	Y	Z	9
0	@	:	.	,	0

31.10 When using either mode, keyset users may use the SD keys and/or the REDIAL key to enter stored numbers or messages. Speed-dial numbers can be chained together when entering messages that require more than 16 keystrokes to create the desired message. When programming a message in speed-dial memory, you can use the SPCL key to enter a hookflash (F) in place of the FWD key to advance or insert spaces, or to enter a pause (P) to change numeric/alphanumeric modes within the message. The SPCL key can also be used to enter * or # in the speed-dial number.

31.11 TO ENABLE DO-NOT-DISTURB MODE:

- Keyset:** While on hook, press the DND key or enter the Do-Not-Disturb feature code (370) or Do-Not-Disturb On/Off feature code (372). Display keysets show SELECT DND MESSAGE # (01–20).

Single-Line Set: Lift the handset and enter the Do-Not-Disturb feature code (370) or the Do-Not-Disturb On/Off feature code (372). You hear a progress tone.

(2) **To select message 01 (DO-NOT-DISTURB):**

Keypad: Press SPKR or lift and replace the handset. The DND key lights.

Single-Line Set: Hang up.

To select any of the 20 pre-programmed messages: Enter the desired number (01–20) or press the SCROLL menu key to begin scrolling. Display keypad users may scroll through the messages by pressing the VOLUME ▲ or NEXT key or menu key to go forward or the VOLUME ▼ or PREVIOUS key to go backward (the display shows the selected message). If you enter an invalid message number, you will hear reorder tones and the display shows INVALID DND MESSAGE NUMBER; try again.

(3) **To terminate programming:**

Keypad: Press SPKR or ACCEPT. Or lift and replace the handset. The DND key lights.

Single-Line Set: Hang up.

To customize the second line of the message: Use any combination of the following methods.

- a. *Remain in numeric mode:* Press the keypad keys to enter the desired number. Use the pound key (#) for a hyphen (–) and the asterisk key (*) for a colon (:). Keypad users can press the FWD key once to leave a space, or press the MUTE key to backspace.
- b. *Change to alphanumeric mode (keysets only):* Press the MSG key (the key lights) or the USE ALPHA MODE menu key, then enter the desired characters. Refer to the chart on the previous page. Keypad users can press the FWD key once to advance or twice to leave a space, or press the MUTE key to backspace.
- c. *Use speed-dial and/or redial numbers (keysets only):* In either numeric or alphanumeric mode, you can speed dial a number (using the SD key or feature code). In numeric mode you can press the REDIAL key to enter the stored characters. You may chain speed-dial and/or redial numbers together.

(4) **Terminate programming:**

Keypad: Press SPKR or lift and replace the handset. The DND key lights. (Display keysets show selected message. Date and time appear on the second line if there is no customized message.)

Single-Line Set: Hang up.

31.12 TO CANCEL DO-NOT-DISTURB:

Standard or Basic Keypad: While on hook, press the lit DND key or enter the Cancel Do-Not-Disturb feature code (371) or Do-Not-Disturb On/Off feature code (372). The key goes off and the display shows DO NOT DISTURB OFF.

Executive Keypad: While on hook press the lit DND key. The key goes off and the display shows DO NOT DISTURB OFF.

Single-Line Set: Lift the handset, enter the Cancel Do-Not-Disturb feature code (371) or Do-Not-Disturb On/Off feature code (372), and hang up.

31.13 TO PLACE YOUR BUSY STATION IN DO-NOT-DISTURB WHILE A CALL IS CAMPED ON:

If, while on a call, you hear call waiting signals and you wish to let the caller know you do not want to be disturbed:

Keypad: Press the DND key or enter a Do-Not-Disturb feature code (370 or 372). The key lights. The display shows DO-NOT-DISTURB ON. The intercom caller is no longer camped on and receives do-not-disturb indications.

Single-Line Set: (*This procedure will interrupt your call in progress.*) Hookflash and enter the a Do-Not-Disturb feature code (370 or 372). The intercom caller is no longer camped on and receives do-not-disturb indications. Hookflash twice to return to the current call.

Do-Not-Disturb Override

31.14 If your keypad is enabled for do-not-disturb override and you hear do-not-disturb tones when placing an intercom call, you may use the following procedure to break through do-not-disturb and complete the call.

31.15 DO-NOT-DISTURB OVERRIDE (KEYSETS WITH THIS FEATURE ENABLED ONLY):

When you hear do-not-disturb tones while placing an intercom call, press the SPCL key and enter the Do-Not-Disturb Override feature code (373). If the called station is idle, the call rings as a private intercom call. If the called station is busy, your call camps on.

32. DEFAULT STATION

32.1 A station user can enter one feature code that will return the following features to their default states.

- Cancels the following features, if in effect:
 - Do-Not-Disturb
 - Manual Call Forwarding
 - Queue Request
 - Account Code For All Calls Following
 - Background Music
 - Ring Intercom Always
 - Headset Mode
- Restores the following features, if disabled:
 - Handsfree
 - Page Receive
 - Hunt Group Replace
 - System Forwarding
- Returns keyset volumes to default levels
- Returns keyset to standard keypad
- If the keyset is a member of one or more ACD hunt groups, logs into the hunt group(s)
- Does not affect PCDPM baud rate

32.2 This feature is especially useful for installers and troubleshooters who need to know exactly how a given station is programmed.

32.3 TO RETURN THE STATION TO DEFAULT:

Keyset: While on or off hook, enter the Default Station feature code (394). You hear a confirmation tone and the display shows STATION DEFAULTED. *If off hook*, hang up.

Single-Line Set: Lift the handset, enter the Default Station feature code (394). You hear a confirmation tone followed by dial tone. Hang up.

33. HOOKFLASH

33.1 A timed hookflash may be required for keyset and single-line users to use certain telephone company or PBX features. The CO Hookflash feature code sends a timed hookflash over the trunk when entered. A hookflash will restart the call cost display and toll restriction, plus it will start a new line in the SMDR printout. However, the call will remain under the same Call key.

33.2 The Hookflash feature can be enabled or disabled on a trunk group-by-trunk group basis.

33.3 The duration of the hookflash can be changed by reprogramming the Hookflash timer (default value is 0.6 seconds). If the system is not installed behind a PBX, the Hookflash timer must be programmed to be compatible with the system's trunks.

33.4 TO SEND A TIMED HOOKFLASH WHILE ON A TRUNK:

Keyset: Press the SPCL key and enter the Hookflash feature code (330).

Single-Line Set: Hookflash and then enter the Hookflash feature code (330).

34. REMINDER MESSAGES (KEYSETS ONLY)

34.1 Reminder messages are set, like an alarm clock, to signal a keyset station at a specified time. The user can select the message and time up to 24 hours in advance. Twenty different reminder messages are available. These messages can be reprogrammed by the installer. Up to 112 reminder messages can be requested per system.

34.2 At the programmed time, the reminder message signals the station with eight short tones. A display keyset shows the message until it is cancelled; a non-display keyset receives tones only. If the station is busy, the user still hears the tones and the message displays for 10 seconds during the call, then the display returns after the user hangs up. (Reminder displays interrupt, but do not affect, programming.)

34.3 Messages can be changed by the installer, if desired. They are limited to 16 characters. The default messages are:

01 MEETING	11 CALL ENGINEERING
02 STAFF MEETING	12 CALL MARKETING
03 SALES MEETING	13 CALL ACCOUNTING
04 CANCEL MEETING	14 CANCEL DND
05 APPOINTMENT	15 CANCEL CALL FWD
06 PLACE CALL	16 TAKE MEDICATION
07 CALL CLIENT	17 MAKE RESERVATION
08 CALL CUSTOMER	18 REVIEW SCHEDULE
09 CALL HOME	19 LUNCH
10 CALL CORPORATE	20 REMINDER

34.4 TO REQUEST REMINDER MESSAGES:

NOTE: Lift and replace the handset to stop the process without selecting a message.

- (1) While on hook, enter the Reminder Message feature code (305). Display keysets show SELECT REMINDER MSG # (01–20).
- (2) **To select a specific message:** Enter the two-digit message code (01–20). (Display keysets show selected message and SCROLL OR ACCEPT.)

To scroll through the messages: View the available messages by pressing the VOLUME ▲ or NEXT key to scroll forward or pressing the VOLUME ▼ or PREVIOUS key to scroll back-

ward. Each message displays for 0.5 seconds before another can be selected. When the desired message is displayed, press # or ACCEPT.

- (3) Enter the time that you wish to receive the message:
 - a. Enter the hour and minutes using four digits (e.g., 0900 for 9:00).
 - b. *If the system is set for 12-hour display format, the display shows SELECT AM OR PM. Press 1 or the AM key for AM or press 2 or the PM key for PM. You hear a progress tone when it is accepted and the display momentarily shows the select reminder message and time.*

NOTE: If an invalid time is entered, you hear reorder tones and must enter the time again. (Display keysets show INVALID TIME.)

34.5 TO RECEIVE A REMINDER MESSAGE:

- (1) At the selected time, you hear eight short tones and the message displays. Do one of the following:

If your station is idle, go to the next step.

If you are on a call, the message will display for 10 seconds. After you hang up, the reminder message returns and must be cleared.

If you are programming your keyset, the programming function is interrupted. The message will display, but will not interrupt programming; you can continue. After programming is completed, the reminder message will return and must be cleared.

- (2) **To clear the message:** Remain on hook and press the asterisk (*) key. The display shows EXPIRED REMINDER MESSAGE CLEARED.

34.6 TO CANCEL ALL OF YOUR REMINDER MESSAGE REQUESTS:

While on hook, enter the Cancel Reminder Message feature code (306). The display shows REMINDER MSGS CANCELED. You cannot view or cancel individual messages.

35. OPTIONAL DATA DEVICE ATTACHMENTS (EXECUTIVE AND STANDARD KEYSSETS ONLY)

35.1 A customer-provided, modem-equipped data device (such as a data terminal or a personal computer) may be attached to any Executive or Standard keyset that has an optional PC Data Port Module (PCDPM) and a Modem Data Port Module (MDPM) installed (see SPECIFICATIONS, page 2-13, INSTALLATION, page 3-48, for more information).

35.2 Special programming is required to enable a Executive or Standard keyset circuit to support the MDPM data device function. Refer to page 6-213 in PROGRAMMING for details.

35.3 Station users can adjust the baud rate of the PCDPM connected to the keyset. The baud rate can be set to 300, 600, 1200, 2400, or 4800 (1200, 2400, or 4800 if it is a system serial port). To adjust the baud rate of your PCDPM, refer to the instructions on page 4-44.

35.4 The circuit with the Modem Data Port Module can be programmed to be associated with one or more other keysets. (The associated Executive or Standard keyset does not need to have an attached MDPM to use the data device.) The associated keyset(s) should have a DATA key that will show the status of the data device and will allow easy transfers between the keyset and the data device.

35.5 The MDPM circuit has an individual extension number and complete station programming setup including its own trunk access and toll restriction information.

35.6 Data calls are transmitted over the MDPM's voice path. This leaves the attached keyset's voice path available for normal keyset operation. However, receiving off-hook voice announce (OHVA) calls at the keyset attached to the MDPM is not possible during a data call since the data call is using the secondary voice path.

35.7 Calls can be transferred back and forth between an associated keyset's primary voice path and data port as often as needed provided that the data port is on hook at the time of the transfer attempt. For example, a call can be placed using the data device, then transferred to the keyset's primary voice path to announce the call, and then transferred back to the data device so that it can communicate with the called device. (Note that transferring to the keyset's primary voice path disconnects the data device from the call. During that time, the call cost display for the data call is shown on the keyset.)

35.8 Operation of the data device begins with the initiation of a call in one of four ways:

- The user may initiate a call using the keyset, while on or off hook, and then transfer it to the data device.
- The user may lift the handset to answer a ringing call and then transfer it to the data device.
- The user may initiate a call using the data device, without touching the keyset.
- The data device may receive a call directly, without using the keyset.

Initiating Or Answering A Call Using The Keyset

35.9 The keyset user can place or receive a data call using the keyset and then transfer it to the data device. It can be an intercom or outside call and the keyset can be on or off hook. The call is placed to or received from another modem-equipped data device.

35.10 Once the connection is established, the keyset user presses the DATA key, or presses SPCL and enters the Data feature code (340) to transfer the call to the data device. If the data device does not answer before the Transfer Available timer expires, the call recalls the keyset station.

35.11 Transferring a call to the data device using the DATA key places the call without providing ring voltage to the data device. The user must manually cause the data device to answer the call. (Note that if the keyset user wishes to cause ring voltage to be applied to the data device, the Transfer feature must be used to send the call to the data device.)

35.12 While the user is establishing the call using the keyset, the DATA key is unlit. From the time that the user presses the DATA key, until the data device answers, the DATA key will flash. While the data device is on an active call, the DATA key flutters on the associated keyset(s) (indicating that the data call may be retrieved by the keyset). If the keyset is off hook, the user will hear dial tone.

35.13 TO PLACE A DATA CALL USING THE KEYSSET:

- (1) Place or receive an intercom or outside call.
- (2) When you hear modem tone, press the DATA key, or press SPCL and enter the Data feature code (340). The DATA key flashes slowly.
- (3) Hang up or press the SPKR key. The DATA key begins to flutter when the data device answers, and the display returns to date and time. The keyset can now be used as usual.
- (4) Operate the data device according to the manufacturer's instructions. The device must be

able to come off hook and answer the incoming call.

If you wish to return the active data call to your primary voice path, press the fluttering DATA key. The call cost and elapsed time of the data call are displayed.

Initiating A Call Using The Data Device

35.14 The data device can be used for initiating a data call, without the use of a keyset. The user causes the modem to select a trunk or intercom channel and dial the desired number.

35.15 The data device can dial an extension number or a trunk access code followed by a pause and then a telephone number. As soon as the data device comes off hook, the DATA key is lit at the associated keyset(s) to indicate that the data port is busy. The key remains lit until the data device finishes dialing (outside call) or the station user answers (intercom call). This protects the call during dialing to ensure that the dialing is not interrupted. A keyset user who attempts to transfer another data call to the data device or pick up the data call while the key is lit will hear a burst of reorder tone.

35.16 When a data device places an intercom call, the call is placed in the non-handsfree mode. (This can be changed in database programming, if desired. Refer to page 6-30 in PROGRAMMING.) The incoming intercom call to the destination station from the data device appears as a normal intercom call with the usual displays and tones.

35.17 If an extension number is dialed and that station is in do-not-disturb, the user will hear do-not-disturb tone through the data device's speaker (if it has one). Whenever continuous busy, reorder, or do-not-disturb tone is sent by the system, the Inactivity Alarm timer is registered. The DATA key is lit while the tones are present. If the timer expires before the data device hangs up, off-hook alarm tone is sent, and the DATA key flutters fast until the device hangs up. Note that once the DATA key begins fluttering, the voice path on the keyset attached to the MDPM is released and can be used for other call processing applications. (Note that the absence of a lamp, or of a DATA key, will not interfere with these timing parameters, but the user will not have a visual indication of them.)

35.18 If the data port places an outside call, the system performs toll restriction using the data port's class-of-service. If an illegal extension number or access code is dialed, the user will hear reorder tone through the data device's speaker. (Call cost information for a data call is

displayed on an associated keyset only when the data call is connected to a keyset's primary voice path.)

35.19 If an attempt is made to initiate a data call from the data device when the required voice path is not available (the secondary voice path of the attached keyset is busy), the MDPM will not receive dial tone. The activity on the keyset's secondary voice path continues uninterrupted.

35.20 TO PLACE A DATA CALL USING THE DATA DEVICE:

- (1) Following the procedures of your data device's communications software, instruct the device to come off hook and dial the extension number, or a trunk access code and the telephone number, of the data device to be called. The call will be processed and will be automatically connected when answered. The DATA key is lit until dialing is completed, then it flutters.
- (2) Operate the data device according to the manufacturer's instructions.

Answering A Call Using The Data Device

35.21 The data device can be called directly (intercom or outside calls) and receive transferred calls via its extension number.

35.22 When a call is placed directly or transferred to the device's intercom number, the data device will receive ring signal. If the data device does not have auto-answer capability, the user must manually answer the call using the data device. (Transferring a call to the data device using the DATA key places the call without providing ring voltage to the data device. The user must manually cause the data device to answer the call.)

35.23 While ring signal is being sent to the data device, the DATA key flashes. As soon as the data device answers, the DATA key flutters. The key continues to flutter for the duration of the call, indicating that the data path is in use but may be picked up by associated keysets.

35.24 TO ANSWER A DATA CALL USING THE DATA DEVICE:

- (1) When the data device receives a call, the DATA key flashes on the associated keyset(s). If the data device does not have an auto-answer modem, follow the procedures for the data device's communications software and instruct the device to answer the incoming call. The DATA key flutters while the call is in progress.
- (2) Operate the data device according to the manufacturer's instructions.

Terminating A Data Call

35.25 Termination of a data call may be accomplished in one of three ways:

- Your data device can hang up. This causes the trunk or intercom channel to be released, terminating the call to the other data device.
- The other data device may hang up. When the call is disconnected, the DATA key is unlit. Depending on the type of device used, the data device may detect the loss of carrier and automatically terminate the entire connection. If the data device does not have this capability, you must manually cause the data device to hang up.
- The data call can be transferred to an associated keyset's primary voice path (releasing the data device) and then disconnected by the keyset. Note however that the DATA key will flutter fast if the data device does not hang up before the Inactivity timer expires.

35.26 TO TERMINATE DATA DEVICE CONNECTION:

To have the data device disconnect the call: Use the appropriate commands for the data device to instruct it to hang up. When the call is disconnected, the DATA key is unlit.

To transfer the data call back to an associated keyset before disconnecting the call: While on or off hook:

- a. Press the fluttering DATA key. The DATA key goes off. *If desired*, speak to the party at the site of the remote data device. This can only be done if the modem at the site of the remote data device can be turned off without disconnecting the trunk.
- b. **To disconnect:** *If off hook*, hang up. *If on hook*, press the SPKR key. The DATA key will flutter fast until the data device hangs up.

36. ADMINISTRATOR FEATURES

36.1 Any display keyset station (attendant or non-attendant) can be assigned as a system Administrator. Administrator stations provide the following services:

- Place the entire system in night mode or day mode
- Set the system time of day, date, and day of week
- Make database changes using the keyset including:
 - Create or delete Administrator stations
 - Change station toll restrictions
 - Define do-not-disturb messages
 - Program new extension numbers for stations
 - Select a keyset database programming password
 - Program individual trunks (trunk group, supervision type, hybrid balance, signaling type, and Caller ID)
 - Program trunk groups (toll restrictions, lists of trunks, ring-in assignments, answer access assignments)
- Program specific station information
- Program system speed-dial numbers
- Receive and clear displayed system alarms
- Freeze and unfreeze system database history
- Print error logs
- Seize specific devices for troubleshooting purposes

36.2 Any keyset station can be programmed to be an Administrator station by the database programmer or by another Administrator station.

36.3 If a non-Administrator station user attempts to use the Administrator features, the user will hear reorder tones and the display will show CANNOT ACCESS RESERVED FEATURE.

A. PLACING THE SYSTEM IN NIGHT MODE

36.4 An Administrator station can place the system in day or night mode. The day/night mode determines which lists the system will use for trunk access, toll restriction, etc.

36.5 TO TURN NIGHT MODE ON OR OFF:

While on hook, enter the Night Ring On/Off feature code (9860). You hear a single confirmation tone. The display shows NIGHT MODE IS ON (or OFF). Then, if night mode was turned on, the display shows THE SYSTEM IS IN NIGHT MODE until day mode is turned on.

B. SETTING SYSTEM DATE AND TIME

36.6 Occasionally, the system time or date needs to be reset (for example, when the system is defaulted or for daylight-saving time). Any Administrator can change the date and time that appears on all display keysets and in the SMDR reports. The day of the week is automatically calculated and set by the system when the date is entered. When the system is in the default state, the date and time are January 1, 1993 and 12:34.

36.7 TO SET THE SYSTEM DATE AND TIME:

NOTE: You may backspace to correct entries by pressing the MUTE key or you may press * or CANCEL to leave it unchanged and start over.

- (1) While on hook, enter the Set Date/Time feature code (9800). Your display shows DATE (*current date*).

If you do not need to change the date, press # or ACCEPT to skip to the TIME XX:XX prompt.

- (2) Use the keypad keys to enter the month, day, and year. For example, press 010196 for January 1, 1996. When finished, the display shows TIME (*current time*). If you entered the date incorrectly, the display shows INVALID DATE and you are prompted to enter a new date.

If you do not need to change the time, press # or ACCEPT twice to exit. The display shows SYSTEM DATE AND TIME UPDATED.

- (3) Use the keypad keys to enter the time in hours and minutes. (For example, enter 0900 for 9:00.) If you entered the time incorrectly, the display shows INVALID TIME and you are prompted to enter a new time.

- (4) *If the system is set for 12-hour display format, the display shows SELECT AM OR PM (AM=1 PM=2). Press 1 for AM (or the AM menu key) or press 2 for PM (or the PM menu key). The display shows SYSTEM DATE AND TIME UPDATED. If you press any key other than 1 or 2, the display shows INVALID TIME and you are prompted to enter a new time.*

C. SYSTEM DATABASE PROGRAMMING

36.8 Any Administrator station can perform database programming using the keyset. However, it requires a *display* keyset and an Executive Keyset is strongly recommended.

36.9 The database areas that can be programmed by an Administrator station include the following:

Station Database Programming:

- Create or delete Administrator stations
- Change station toll restrictions

System Database Programming:

- Define do-not-disturb messages
- Program new extension numbers for stations
- Select an Administrator database programming password

Trunk Database Programming:

- Program individual trunks (trunk group, supervision type, hybrid balance, signaling type, and Caller ID)
- Program trunk groups (toll restrictions, lists of trunks, ring-in assignments, answer access assignments)

36.10 Entry to the database programming feature at the Administrator stations can be protected using a password. A password would prevent unauthorized users from altering the system database.

36.11 Depending on the database changes made by the Administrator, the system may require a reset after programming. If so, the system will prompt the Administrator for a reset and ask if it should be done immediately or delayed. Delaying the reset would prevent interruption in service. However, if a reset is required it should be done as soon as possible to permit proper system operation. *Note that a system reset will drop all calls in progress.*

Station Database Programming Using An Administrator's Station

36.12 The station information that can be programmed by an Administrator station includes the following:

- **Create or delete Administrator stations:** An Administrator can program any other station to be and additional Administrator station, or delete Administrators. (You cannot delete your own Administrator station.)

- **Change station toll restrictions:** The Administrator can program toll restriction classes of service for the stations. Station toll restrictions are described in detail on page 4-28.

36.13 The Station Database Programming process is summarized in the flowchart shown on page 4-101.

36.14 If necessary, you can press the asterisk (*) key or SPKR, to cancel programming and discard any unsaved changes, at any time during the following procedure.

36.15 *STATION DATABASE PROGRAMMING:*

- (1) While on hook, enter the Database Programming feature code (9932).
- (2) *If a password is required*, the display shows ENTER PASSWORD. Use the keypad to enter your 1-8 digit password and press #. (If you enter an incorrect password or do not press #, the display shows INVALID PASSWORD.)

If a password is not required, skip this step.
- (3) The display shows ENTER DATABASE OPTION. (Executive Keysets also show the options: STATION, SYSTEM, and TRUNK.) Press 1 or the STATION menu key.
- (4) Enter the extension number of the station to be programmed using one of the following methods. (If you enter an invalid extension number, you hear reorder tones and must try again.)

Complete number: Enter the extension number using your keypad followed by #. When the circuit information is displayed, press # again to continue.

Partial number: Enter a partial extension number then press the # key, VOLUME ▲ key, or the ACCEPT menu key. The display shows the extension number, user name and circuit number of the station that most closely matches the partial extension number. Press # or ACCEPT to program the displayed station, or scroll to another station as described below.

Scroll through numbers: To scroll through the extension number list, press the VOLUME ▲ key or NEXT menu key to scroll forward, or press the VOLUME ▼ key or PREVIOUS menu key to scroll backward. When the desired extension number is displayed, press # or ACCEPT to continue.

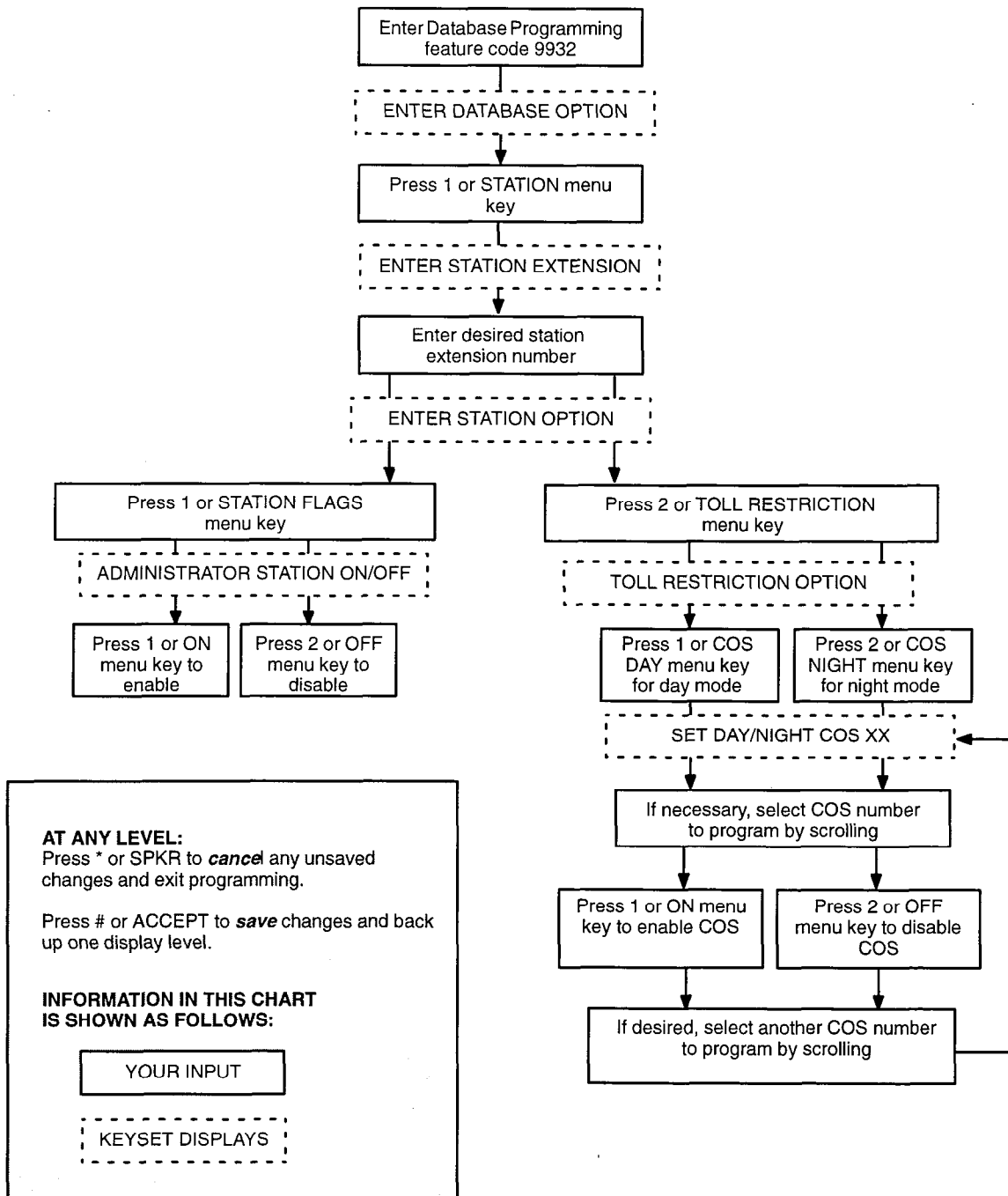
- (5) The display shows ENTER STATION OPTION. Select one of the following:
 - a. **Station Flags:** (This option is not available if you are programming your own extension number.) This option allows you to set the Administrator Station flag. To select it, press 1 or the STATION FLAGS menu key. Then do the following:
 1. The display shows ADMINISTRATOR. Press 1 or the ON menu key to make the station an Administrator. Or, press 2 or the OFF menu key to disable the Administrator flag for the station.
 2. Press # or ACCEPT to save the new Administrator flag setting. The display shows DATABASE UPDATED and then returns to the ENTER STATION OPTION prompt.
 - b. **Toll Restriction:** This option allows you to set the station class of service for day and or night modes. To select it, press 2 or the TOLL RESTRICTION menu key. Then do the following:
 1. The display shows TOLL RESTRICTION OPTION. Press 1 or the COS DAY menu key to program day mode toll restriction. Or, press 2 or the COS NIGHT menu key to program night mode toll restriction.
 2. The display shows SET DAY (or NIGHT) COS XX. If this is not the COS you wish to program, scroll to the correct COS by pressing VOLUME ▲ key or NEXT menu key to scroll forward, or press the VOLUME ▼ key or PREVIOUS menu key to scroll backward. The COS numbers are as follows. See page 4-28 for definitions.
3. When the correct COS is displayed, press 1 or the ON menu key to enable the toll restriction. Or, press 2 or the OFF menu key to disable it.
4. If desired, repeat steps b2 and b3 to program additional COS toll restrictions.
5. Press # or ACCEPT to save the COS programming. The display shows DATABASE UPDATED and then returns to the TOLL RESTRICTION OPTION prompt.
6. Press # again to exit to the ENTER STATION OPTION prompt.
- (6) When the display shows ENTER STATION OPTION, press # again to exit to the ENTER STATION EXTENSION prompt. You can then program another station by repeating these steps or press # or ACCEPT once more to exit to the ENTER DATABASE OPTION prompt.
- (7) When finished with all programming, press # while the ENTER DATABASE OPTION prompt is displayed. This ends the programming session.
- (8) *If a system reset is required*, the display shows ENTER SYS RESET OPTION. Do one of the following:

Delayed Reset: Press 1 or the DELAYED menu key to delay the reset. The display shows DELAYED RESET SCHEDULED. The system will be reset at the pre-programmed time (see page 6-193).

Immediate Reset: Press 2 or the IMMEDIATE menu key to reset the system now.

COS 01 — ARS Only
COS 02 — Deny Area/Office
COS 03 — Deny Operator
COS 04 — Deny Toll Access
COS 05 — Deny International
COS 06 — Deny Equal Access
COS 07 — Deny Local Calls
COS 08 — Denied Numbers
COS 09 — Allowed Numbers

FIGURE 4-3. STATION DATABASE PROGRAMMING FLOWCHART



System-Wide Database Programming Using An Administrator's Station

36.16 The system-wide information that can be programmed by an Administrator station includes the following:

- **Define do-not-disturb messages:** The system do-not-disturb messages can be changed from the Administrator's station. (See page 4-91 for information concerning their use.) When the system is in the default state, the 20 do-not-disturb messages listed below are programmed. Attendants can delete or change messages 02-20 to any value (up to 16 characters). Message number 01 (DO-NOT-DISTURB) cannot be changed. (See paragraph 36.19 below for more message programming information.)

01 DO-NOT-DISTURB	11 OUT OF OFFICE
02 IN MEETING UNTIL	12 OUT UNTIL
03 IN MEETING	13 WITH A CLIENT
04 ON VACATION 'TIL	14 WITH A GUEST
05 ON VACATION	15 WITH A PATIENT
06 CALL ME AT	16 UNAVAILABLE
07 CALL ME AFTER	17 IN CONFERENCE
08 AWAY AT	18 AWAY FROM DESK
09 ON BREAK	19 GONE HOME
10 OUT OF TOWN 'TIL	20 OUT TO LUNCH

- **Program new extension numbers for stations:** The extension number for any station can be changed by an Administrator. If the new extension number conflicts with an existing number, the Administrator can choose to override the old number or cancel the change.

- **Select an Administrator database programming password:** Entry to the database programming feature at the Administrator stations can be protected using a password. A password would prevent unauthorized users from altering the system database.

36.17 The System-Wide Database Programming process is summarized in the flowchart shown on page 4-105.

36.18 If necessary, you can press the asterisk (*) key or SPKR, to cancel programming and discard any unsaved changes, at any time during the following procedure.

36.19 When entering a Do-Not-Disturb message, the Administrator's keyset is automatically in alphanumeric mode. Press the MSG key or USE ALPHA MODE/

USE NUMERIC MODE menu key to switch back and forth between alphanumeric and numeric mode.

- In numeric mode, the keypad keys are used to enter numbers 0-9, the pound (#) key is used for entering a hyphen (-), and the asterisk (*) key is used for entering a colon (:). For example, 1*00 would enter "1:00" in numeric mode.
- In alphanumeric mode, keypad keys are used to enter the desired letters, numbers, and punctuation. The number of times a key is pressed determines which character is entered. For example, 533266 would enter "JEAN." When adjoining characters are located under the same key, press the FWD key to advance to the next character. For example, 66FWD6667776 would enter "NORM." Refer to the chart below to program information in alphanumeric mode. (Note that letters correspond to the letters printed on the keypad keys.)

KEY	NUMBER OF TIMES KEY IS PRESSED				
	1	2	3	4	5
1	-	&	()	1
2	A	B	C	'	2
3	D	E	F	!	3
4	G	H	I	*	4
5	J	K	L	/	5
6	M	N	O	#	6
7	P	Q	R	S	7
8	T	U	V	?	8
9	W	X	Y	Z	9
0	@	:	.	,	0

36.20 SYSTEM DATABASE PROGRAMMING:

- (1) While on hook, enter the Database Programming feature code (9932).
- (2) *If a password is required*, the display shows ENTER PASSWORD. Use the keypad to enter your 1-8 digit password and press #. (If you enter an incorrect password, the display shows INVALID PASSWORD.)

If a password is not required, skip this step.
- (3) The display shows ENTER DATABASE OPTION. (Executive Keysets also show the options: STATION, SYSTEM, and TRUNK.) Press 2 or the SYSTEM menu key.

(4) The display shows ENTER SYSTEM OPTION. Select one of the following:

a. **Do-Not-Disturb Messages:** This option allows you to program the do-not-disturb messages used by the stations. To select it, press 1 or the DND MESSAGES menu key. Then do the following:

1. The display shows SELECT DND MESSAGE #. Enter a message number or scroll to the desired message. (To locate to the correct message press the VOLUME ▲ key or NEXT menu key to scroll forward, or press the VOLUME ▼ key or PREVIOUS menu key to scroll backward.)
2. When the display shows the desired DND message, enter the new message using one of the following methods.

Alphanumeric mode (MSG key lit): Press the keypad keys to enter the desired characters. (Refer to the chart.) You may press the FWD key once to advance or twice to leave a space. Press the MUTE key to backspace.

Numeric mode (MSG key unlit): Press the keypad keys to enter the desired number. Use the pound key (#) for a hyphen (-) and the asterisk key (*) for a colon (:). Press the FWD key once to leave a space, or press the MUTE key to backspace.

3. Press # or ACCEPT to save the new messages. The display shows DATABASE UPDATED and then returns to the SELECT DND MESSAGE prompt. If desired, scroll to another message and repeat these steps to program another message.
4. Press # again to exit to the ENTER SYSTEM OPTION prompt.

b. **Password:** This option allows to set a password that limits access to the Administrator programming feature. To select it, press 2 or the PASSWORD menu key. Then do the following:

1. The display shows CHANGE PASSWORD TO. Enter a password of up to eight digits then press #. (Or, to erase the password and leave it blank, just press #.)
2. The display shows VERIFY PASSWORD. Enter the password exactly as

you did in the step above, followed by #. The display return to the ENTER SYSTEM OPTION prompt. (If you hear reorder tones, the passwords did not match and you must start over at the CHANGE PASSWORD prompt.)

c. **Station Extensions:** This option allows you to assign new extension numbers to stations. To select it, press 3 or the STN EXTENSION menu key. Then do the following:

1. The display shows ENTER STATION EXTENSION. Enter the extension number of the station to be programmed using one of the following methods. (If you enter an invalid extension number, you hear reorder tones and must try again.)

Complete number: Enter the extension number using your keypad followed by #. When the circuit information is displayed, press # again to continue.

Partial number: Enter a partial extension number then press the # key, VOLUME ▲ key, or the ACCEPT menu key. The display shows the extension number, user name and circuit number of the station that most closely matches the partial extension number. Press # or ACCEPT to program the displayed station, or scroll to another station as described below.

Scroll through numbers: To scroll through the extension number list, press the VOLUME ▲ key or NEXT menu key to scroll forward, or press the VOLUME ▼ key or PREVIOUS menu key to scroll backward. When the desired extension number is displayed, press # or ACCEPT to continue.

2. The display shows CHANGE X(number) TO EXTENSION. Enter the new extension number for the station. If you enter an invalid number, you hear reorder tones and must try again. *If you entered an extension number that is already assigned,* the display shows CONFLICTING EXTENSION and hear reorder tones. When the display returns to ENTER STATION EXTENSION, you must start over and select a new extension number.
3. Press # or ACCEPT to exit to the ENTER STATION EXTENSION prompt.
4. Press # or ACCEPT again to exit to the ENTER SYSTEM OPTION prompt. (If

an extension number is displayed, press * to exit, instead of # or ACCEPT.)

- (5) When the display shows ENTER SYSTEM OPTION, press # again to exit to the ENTER DATABASE OPTION prompt.
- (6) When finished with all programming, press # while the ENTER DATABASE OPTION prompt is displayed. This ends the programming session.
- (7) *If a system reset is required*, the display shows

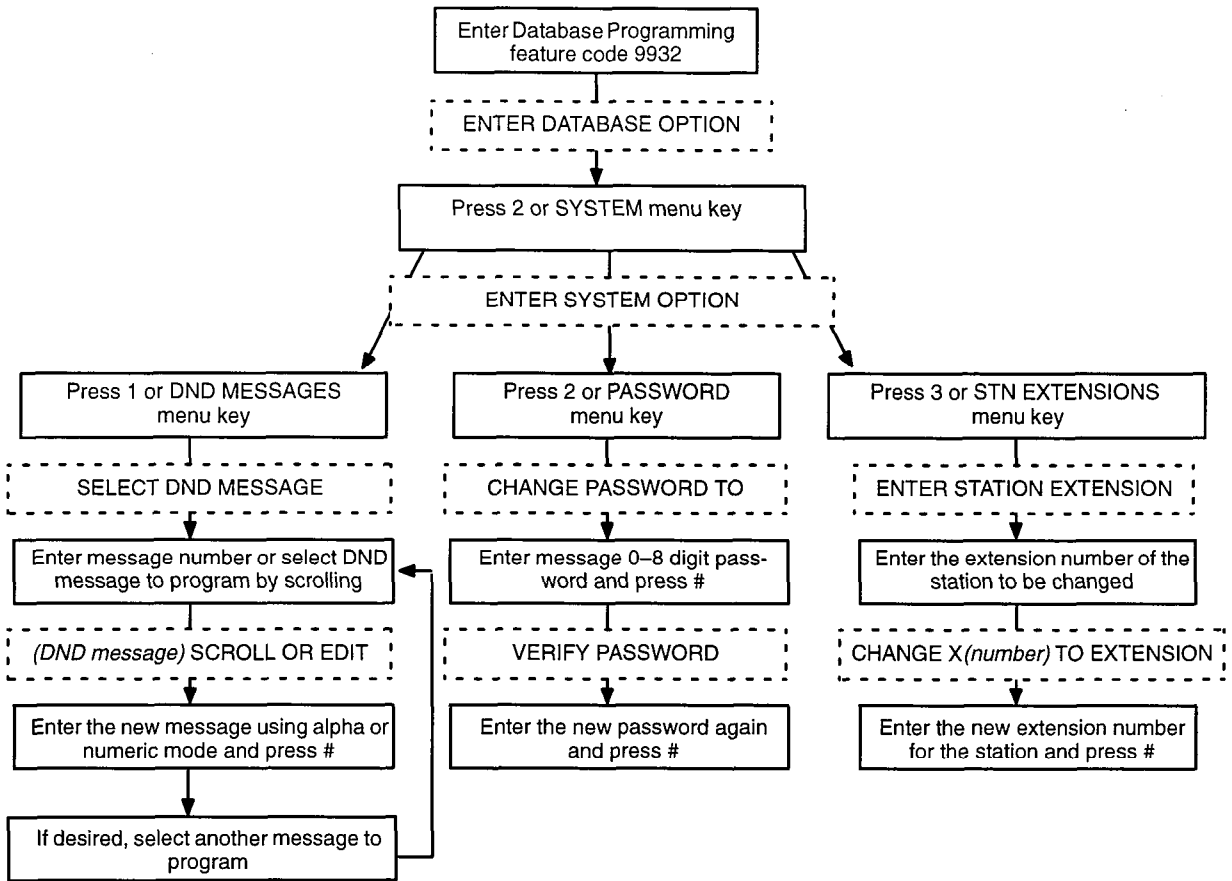
ENTER SYS RESET OPTION. Do one of the following:

Delayed Reset: Press 1 or the DELAYED menu key, followed by #, to delay the reset. The display shows DELAYED RESET SCHEDULED. The system will be reset at the pre-programmed time (see page 6-193).

Immediate Reset: Press 2 or the IMMEDIATE menu key, followed by #, to reset the system now.

NOTE: A system reset will drop all calls in progress.

FIGURE 4-4. SYSTEM DATABASE PROGRAMMING FLOWCHART



AT ANY LEVEL:
 Press * or SPKR to **cancel** any unsaved changes and exit programming.

Press # or ACCEPT to **save** changes and back up one display level.

INFORMATION IN THIS CHART IS SHOWN AS FOLLOWS:

YOUR INPUT

KEYSET DISPLAYS

Trunk Database Programming Using An Administrator's Station

36.21 The trunk information that can be programmed by an Administrator station includes the following:

Individual trunks:

- **Answer supervision type:** Answer supervision determines whether the system should consider a call valid when it receives polarity reversal from the central office or wait for the Valid Call timer to expire. Any outside call put on hold becomes valid immediately, regardless of Answer Supervision or Valid Call timer status.
- **Caller ID:** When selected, the Caller ID option indicates that the associated trunk will provide caller identification signals. This cannot be programmed unless the Advanced Trunk Interfaces premium feature is enabled. See page 6-198. Caller information features require DSP programming, described on page 6-217. Caller ID uses Caller ID receivers.
- **Hybrid balance:** Hybrid balance can be set to Normal or Short to allow the installer to adjust the hybrid impedance of the trunk based on local central office conditions.
 - *Short:* The short balance is used when trunks are supplied by other equipment located within the same building, using private, copper wire termination (e.g., an OPX supplied by another PBX that does not use the public network) or when the site is located close to the central office.
 - *Normal:* The normal balance can be used by most trunks.
- **DTMF or dial-pulse signaling:** Trunks can be set for DTMF or dial pulse signals.
- **Trunk group assignment:** Trunks can be assigned to trunk groups on an individual basis.

Trunk groups:

- **Day/Night Answer Access:** The Administrator can program separate lists for stations with allowed-answer access in day and night modes.
- **Day/Night Ring-In:** The Administrator can program separate lists for stations with ring-in in day and night modes.
- **Change station toll restrictions:** The Administrator can program toll restriction classes of service for the trunks groups. Classes of service are described in detail on page 4-28.
- **Trunk List:** Each trunk group has a programmed list of individual trunks.

36.22 The Trunk Database Programming process is summarized in the flowchart shown on page 4-109.

36.23 If necessary, you can press the asterisk (*) key or SPKR, to cancel programming and discard any unsaved changes, at any time during the following procedure.

36.24 When the procedure asks you to enter a station, trunk, or trunk group extension number, you can use any of the following methods (If you enter an invalid extension number, you hear reorder tones and must try again.)

- *Complete number:* Enter the extension number using your keypad followed by #. When the circuit information is displayed, press # again to continue.
- *Partial number:* Enter a partial extension number then press the # key, VOLUME ▲ key, or the ACCEPT menu key. The display shows the extension number, user name and circuit number of the station, trunk, or trunk group that most closely matches the partial extension number. Press # or ACCEPT to accept the displayed extension, or scroll to another station as described below.
- *Scroll through numbers:* To scroll through the extension number list, press the VOLUME ▲ key or NEXT menu key to scroll forward, or press the VOLUME ▼ key or PREVIOUS menu key to scroll backward. When the desired extension number is displayed, press # or ACCEPT to continue.

36.25 TRUNK DATABASE PROGRAMMING:

- (1) While on hook, enter the Database Programming feature code (9932).
- (2) *If a password is required,* the display shows ENTER PASSWORD. Use the keypad to enter your 1-8 digit password and press #. (If you enter an incorrect password, the display shows INVALID PASSWORD.)

If a password is not required, skip this step.

- (3) The display shows ENTER DATABASE OPTION. (Executive Keysets also show the options: STATION, SYSTEM, and TRUNK.) Press 3 or the TRUNK menu key. The display shows ENTER TRUNK OPTION.

(4) **To Program An Individual Trunk:** Press 1 or the INDIVIDUAL TRUNK menu key. Then program trunk options as follows:

- a. The display shows ENTER TRUNK EXTENSION. Enter the extension number of the trunk to be programmed using one of the methods described in paragraph 36.24.
- b. The display shows INDIVIDUAL TRUNK OPTION. Enter one of the following options. To view the last two options on an Executive Keypad, press the arrow (>>) menu key at the bottom of the display.

Answer Supervision: To program the answer supervision for the trunk, press 1 or the ANS SUPERVISION menu key. When the display shows ANS SUPERVISION OPTION, press 1 or the POLARITY REVERSE menu key for the polarity-reversal supervision type. Or, press 2 or VALID CALL menu key for Valid Call timer supervision. Then press # or ACCEPT to continue.

Caller ID: To enable or disable Caller ID, press 2 or the CALLER ID menu key. When the display shows SET CALLER ID, press 1 or ON to enable the feature, or press 2 or OFF to disable it. Then press # or ACCEPT to continue.

Hybrid Balance: To set the hybrid balance of the trunk to normal or short, press 3 or the HYBRID BALANCE menu key. When the display shows HYBRID BALANCE OPTION, press 1 or the NORMAL menu key, or press 2 or the SHORT menu key. Then press # or ACCEPT to continue.

DTMF/Dial-Pulse Signalling: To set the trunk for DTMF or dial-pulse signalling, press 4 or the SIGNALLING menu key. When the display shows ENTER SIGNALLING OPTION, press 1 or the DTMF menu key, or press 2 or the PULSE menu key. Then press # or ACCEPT to continue.

Trunk Group Number: To assign the trunk to a trunk group, press 5 or the TRUNK GROUP menu key. When the display shows ENTER TRUNK GRP EXTENSION, enter the desired trunk group number using one of the methods described in paragraph 36.24.

- c. To exit, press # or ACCEPT to move backward through the prompts until you reach the ENTER DATABASE OPTION prompt. Then see step 6.

(5) **To Program A Trunk Group:** Press 2 or the TRUNK GROUP menu key. Then program the trunk group, as follows:

- a. The display shows ENTER TRUNK GRP EXTENSION. Enter the extension number of the trunk group to be programmed using one of the methods described in paragraph 36.24.
- b. The display shows ENTER TRUNK GROUP OPTION. Select one of the following options. To view the last three options on an Executive Keypad, press the arrow (>>) menu key at the bottom of the display.

Answer Access For Day Or Night Mode: To program the station that will have answer access for this trunk group for day mode, press 1 or the ANS-ACCESS DAY menu key. To program for night mode, press 2 or the ANS-ACCESS NIGHT menu key. When the display shows ENTER STATION EXTENSION, do the following:

- Enter a station extension using one of the methods described in paragraph 36.24.
- The display shows the extension number and a Yes/No prompt. Press 1 or the YES menu key, followed by #, to include the station in the list. Or, press 2 or the NO menu key, followed by #, to exclude the station from the list.
- When the display returns to ENTER STATION EXTENSION, select another extension number. Or, if finished programming the station list, press # or ACCEPT to continue.

Ring-In For Day Or Night Mode: To program the station that will have ring in for this trunk group for day mode, press 3 or the RING-IN DAY menu key. To program for night mode, press 4 or the RING-IN NIGHT menu key. When the display shows ENTER STATION EXTENSION, enter stations into the list one at a time as described above for Answer Access.

Toll Restriction: To program the toll restrictions for the trunk group, press 5 or the TOLL RESTRICTION menu key. When the display shows TOLL RESTRICTION OPTION, press the numbers that correspond to the toll restrictions you wish to program, as follows:

- *COS for day or night mode:* To program the toll restriction class of service for day

mode, press 1 or the COS DAY menu key. To program class of service for night mode, press 2 or the COS NIGHT menu key. The display shows SET DAY (or NIGHT) COS XX. If this is not the COS you wish to program, scroll to the correct COS by pressing VOLUME ▲ key or NEXT menu key to scroll forward, or press the VOLUME ▼ key or PREVIOUS menu key to scroll backward. The COS numbers are listed below. (See page 4–28 for definitions.) When the correct COS is displayed, press 1 or the ON menu key to enable the toll restriction. Or, press 2 or the OFF menu key to disable it. If desired, repeat this step to program additional COS toll restrictions. Then press # or ACCEPT to continue.

COS 02 — Deny Area/Office
COS 03 — Deny Operator
COS 04 — Deny Toll Access
COS 05 — Deny International
COS 06 — Deny Equal Access
COS 07 — Deny Local Calls
COS 08 — Denied Numbers
COS 09 — Allowed Numbers

- *Exempt from ARS:* To program the Exempt from ARS option, press 3 or the EXEMPT FROM ARS menu key. When the display shows EXEMPT FROM ARS, press 1 or the YES menu key, followed by #, to enable the option. Or, press 2 or the NO menu key, followed by #, to disable it. Then press # or ACCEPT to continue.
- *Subject to toll restriction:* To program the trunk group Subject to Toll Restriction option, press 4 or the SUBJECT TO TOLL menu key. When the display shows SUBJECT TO TOLL, press 1 or the YES menu key, followed by #, to enable the option. Or, press 2 or the NO

menu key, followed by #, to disable it. Then press # or ACCEPT to continue.

Trunk List: To program the list of trunks for the trunk group, press 6 or the TRUNK LIST menu key. When the display shows ENTER TRUNK EXTENSION, enter trunks into the list as follows:

- Enter a trunk extension using one of the methods described in paragraph 36.24.
- The display shows the extension number and a Yes/No prompt. Press 1 or the YES menu key, followed by #, to include the trunk in the list. Or, press 2 or the NO menu key, followed by #, to exclude the trunk from the list.
- When the display returns to ENTER STATION EXTENSION, select another extension number. Or, if finished programming the trunk list, press # or ACCEPT to continue.

c. To exit, press # or ACCEPT to move backward through the prompts until you reach the ENTER DATABASE OPTION prompt.

- (6) When finished with all programming, press # while the ENTER DATABASE OPTION prompt is displayed. This ends the programming session.
- (7) *If a system reset is required*, the display shows ENTER SYS RESET OPTION. Do one of the following:

Delayed Reset: Press 1 or the DELAYED menu key, followed by #, to delay the reset. The display shows DELAYED RESET SCHEDULED. The system will be reset at the pre-programmed time (see page 6–193).

Immediate Reset: Press 2 or the IMMEDIATE menu key, followed by #, to reset the system now.

NOTE: A system reset will drop all calls in progress.

FIGURE 4-5. TRUNK DATABASE PROGRAMMING FLOWCHART

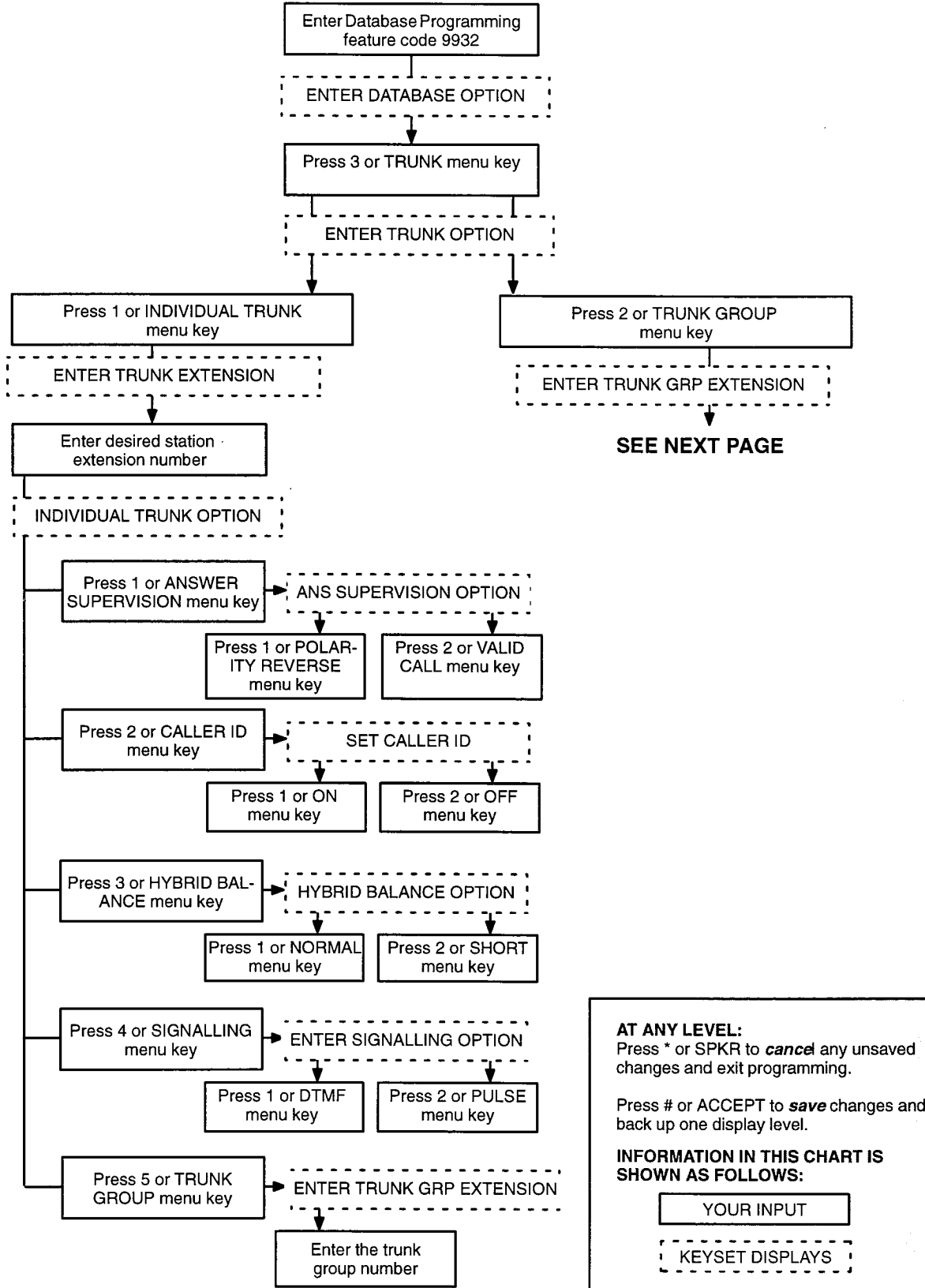
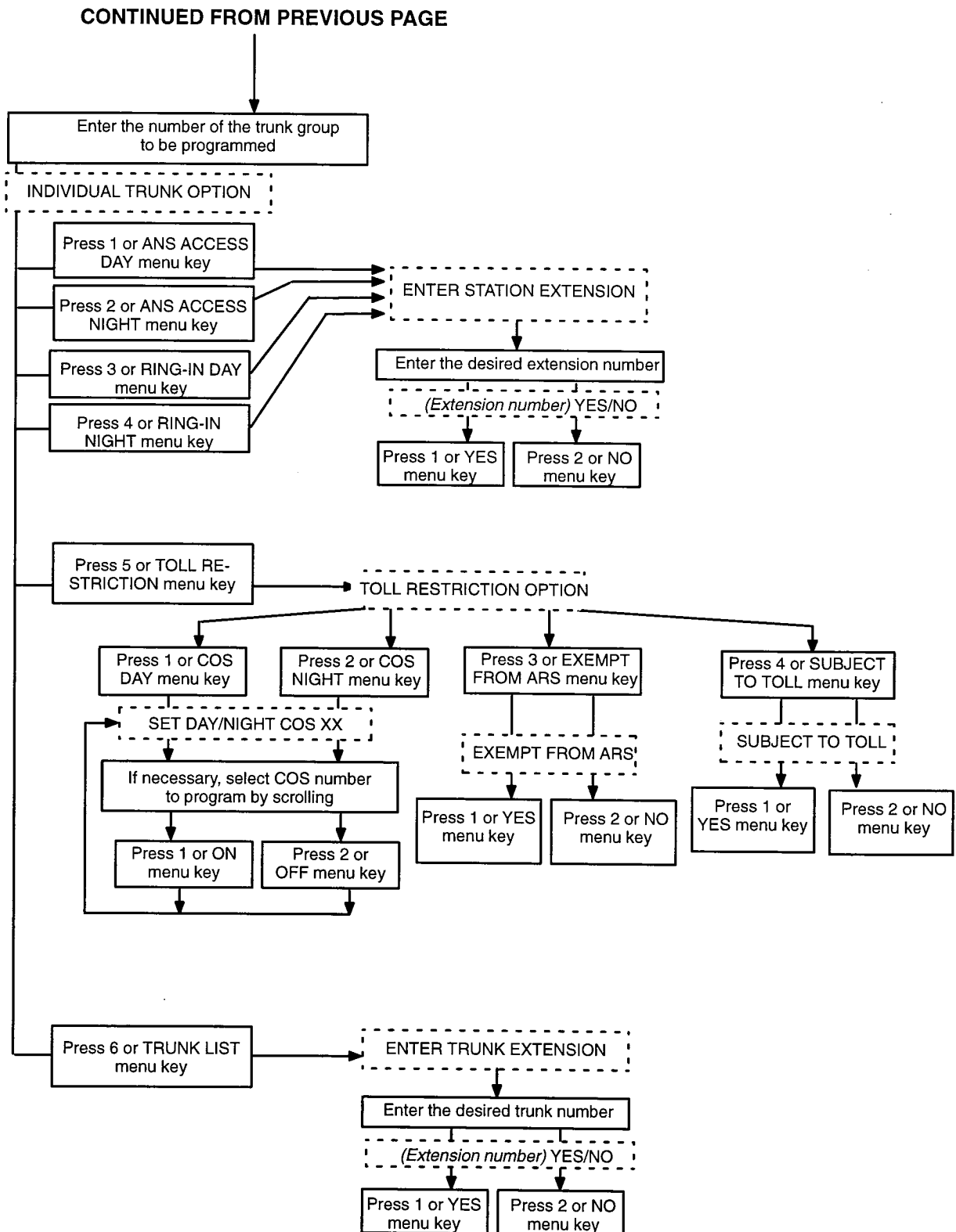


FIGURE 4-5. TRUNK DATABASE PROGRAMMING FLOWCHART (Continued)



D. PROGRAMMING SPECIFIC STATION INFORMATION

36.26 Due to employee movement, turnover, etc., station information (user name and serving attendant) may need to be changed. This can be done from any Administrator station.

36.27 Press the MSG key or USE ALPHA MODE/USE NUMERIC MODE menu key to switch back and forth between alphanumeric and numeric mode.

- In numeric mode, the keypad keys are used to enter numbers 0–9, the pound (#) key is used for entering a hyphen (–), and the asterisk (*) key is used for entering a colon (:). For example, 1*00 would enter “1:00” in numeric mode.
- In alphanumeric mode, keypad keys are used to enter the desired letters, numbers, and punctuation. The number of times a key is pressed determines which character is entered. For example, 533266 would enter “JEAN.” When adjoining characters are located under the same key, press the FWD key to advance to the next character. For example, 66FWD6667776 would enter “NORM.” Refer to the chart below to program information in alphanumeric mode. (Note that letters correspond to the letters printed on the keypad keys.)

KEY	NUMBER OF TIMES KEY IS PRESSED				
	1	2	3	4	5
1	–	&	()	1
2	A	B	C	,	2
3	D	E	F	!	3
4	G	H	I	*	4
5	J	K	L	/	5
6	M	N	O	#	6
7	P	Q	R	S	7
8	T	U	V	?	8
9	W	X	Y	Z	9
0	@	:	.	,	0

36.28 TO PROGRAM SPECIFIC STATION INFORMATION:

NOTE: If you make a mistake, use the MUTE key to backspace. Or, press * or CANCEL at any time to cancel the operation (the name and number in memory remains unchanged and the display shows NO UPDATE PERFORMED); then start over.

- (1) While on hook, enter the Program Station Data feature code (9802). (Display keysets show ENTER EXT TO PROGRAM.)

- (2) Enter the extension number (or use the DSS/BLF key) of the station that is to be reprogrammed. (Executive keyset users can press the IC DIRECTORY menu key to look up the number.) The display shows USERNAME: (current user name).

- (3) **To enter a new user name:** Use one of the following methods.

- a. *Alphanumeric mode (MSG key lit):* Press the keypad keys to enter the desired characters. (Refer to the chart.) You may press the FWD key once to advance or twice to leave a space. Press the MUTE key to backspace.
- b. *Numeric mode (MSG key unlit):* Press the keypad keys to enter the desired number. Use the pound key (#) for a hyphen (–) and the asterisk key (*) for a colon (:). Press the FWD key once to leave a space, or press the MUTE key to backspace.

To erase the current name and leave it blank: Press CLEAR or press MUTE repeatedly until the name is erased.

To leave the information the same: Proceed to the next step.

- (4) Press the # or ACCEPT key to update the database and advance to the next prompt. You will hear a confirmation tone and the display shows ATTENDANT EXTENSION.

- (5) **To enter a new serving attendant number:** Press MSG to change to numeric mode and then enter the number using the keypad.

To erase the current attendant and leave it blank: Press CLEAR or press MUTE repeatedly until the number is erased.

To leave the information the same: Press # or ACCEPT and proceed to the next step.

- (6) Press the # or ACCEPT key to update the database and advance to the next prompt. You will hear a confirmation tone and the display shows EXT (number) UPDATED.

- (7) **To program another station:** Repeat the process with another extension number.

To terminate the programming sequence: Lift and replace the handset or press SPKR. The display will return to date and time.

E. PROGRAMMING SYSTEM SPEED DIAL NUMBERS

36.29 System speed-dial numbers and names can be programmed by the installer or at any Administrator station.

36.30 The system speed-dial numbers can contain up to 32 digits each and can include hookflashes and/or pauses for dialing a series of numbers. For example, the speed-dial number can contain an SCC local number, a pause, an access code, and the telephone number. For using PBX trunks, the other system's trunk access codes, followed by a pause, may be included in speed-dial numbers. The lengths of the hookflash and the pause are determined by the programmable CO Hookflash and Pause Digit timers.

36.31 To program system speed-dial numbers, use one of the following methods:

- Use the keypad to manually dial the number. If you make a mistake, press the MUTE key to backspace.
- Press the REDIAL key to enter the last number dialed or saved at the station (up to 32 digits).
- Press one of the SD keys on the keyset to enter the outside telephone number (up to 16 digits) programmed under that key.

36.32 To program speed-dial names, keypad keys are used to enter the desired letters, numbers, and punctuation. The number of times a key is pressed determines which character is entered. For example, 77776444844 would enter "SMITH." When adjoining characters are located under the same key, press the FWD key once to advance to the next character. For example, 5666 FWD 66337777 would enter "JONES." Refer to the chart below to program speed-dial names. (Note that letters correspond to the letters printed on the keypad keys.)

KEY	NUMBER OF TIMES KEY IS PRESSED				
	1	2	3	4	5
1	-	&	()	1
2	A	B	C	'	2
3	D	E	F	!	3
4	G	H	I	*	4
5	J	K	L	/	5
6	M	N	O	#	6
7	P	Q	R	S	7
8	T	U	V	?	8
9	W	X	Y	Z	9
0	@	:	.	,	0

36.33 TO PROGRAM OR CHANGE SYSTEM SPEED-DIAL NUMBERS AND NAMES:

NOTE: If you make a mistake, use the MUTE key to backspace. Or, press * or CANCEL at any time to cancel the operation (the name and number in memory remains unchanged and the display shows FEATURE CANCELED); then start over.

- (1) While on hook, enter the Program System Speed-Dial feature code (9801). Display keysets show PROGRAM SYS SPD # (000-099).
- (2) Enter the speed-dial location code (000-099). The display shows ENTER NAME: (*current name*). If you do not continue to the next step, the display times out after the Long Interdigit timer expires and you must start over.
- (3) **To change or program the name:** Enter the desired name for the speed-dial number using your keypad then press # or ACCEPT. Refer to the chart on this page. *If you make a mistake*, use the MUTE key to back up and erase existing characters or the CLEAR key to erase the whole entry.

To erase the current name and leave it blank: Press CLEAR or press MUTE repeatedly until the name is erased. Then press # or ACCEPT.

To leave the name the same: Press # or ACCEPT.

- (4) When the display shows ENTER NUMBER, enter the number (up to 32 digits) to be stored using the keypad, one of the SD keys, or the REDIAL key. *If necessary*, use the MUTE key to back up and erase existing numbers. (Display keysets show the number as it is entered.) *To include *, #, pause, or hookflash in the number*, press the SPCL key once for an asterisk (*), twice for a pound (#), three time for a hookflash (F), or four times for a pause (P). Executive keyset users can press the *, #, FLASH, or PAUSE menu keys to enter special characters. You cannot exceed 32 digits.
- (5) Press # or ACCEPT to save the number. You hear a single progress tone when the number is accepted. Your display shows SYS SPD BIN #XXX UPDATED.

36.34 TO ERASE SYSTEM SPEED-DIAL NAMES OR NUMBERS:

- (1) While on hook, enter the Program System Speed-Dial feature code (9801). Display keysets show PROGRAM SYS SPD # (000-099).
- (2) Enter the speed-dial location code (000-099). The display shows ENTER NAME: (*current name*).

- (3) You may erase the name and/or number:

To erase the name: Press the MUTE key repeatedly until the name is erased or press CLEAR.

To erase the number: Press # or ACCEPT to display the ENTER NUMBER prompt, then press the MUTE key repeatedly until the number is erased or press CLEAR.

- (4) Press # or ACCEPT to exit. You hear a single progress tone when accepted. Your display shows SYS SPD BIN #XXX UPDATED.

F. SYSTEM ALARM REPORTING

36.35 The system's Alarm Reporting feature detects equipment failures. If there is a system failure that affects service, a major alarm is displayed at all affected keysets. If all keysets in the system are inoperative, any alarm messages are sent to the system's primary serial port.

36.36 When a minor equipment failure occurs, a minor alarm is generated and appears on the primary attendant's display and, if enabled, at Administrators' stations. If enabled in the Message Print programming, the also appear in the error/message report.

36.37 Alarms 1-99 indicate problems that can be corrected without calling service personnel. Alarms 100-199 (System) and 200-299 (Axxent Talk) require attention from service personnel. Note that when an Axxent Talk alarm is in effect, the system may be functioning properly, but the Axxent Talk may be inoperative. Refer to page 7-5 in TROUBLESHOOTING for a listing of the possible alarms and their meanings.

36.38 *TO RESPOND TO A MINOR SYSTEM ALARM FROM ANY ALARM DISPLAY STATION:*

- (1) When a minor alarm indication appears (ALARM #XXX and description), write down the alarm information.
- (2) While on hook, clear the alarm by entering the Clear System Alarm feature code (9850) or pressing the CLEAR ALARM menu key. The display shows SYSTEM ALARM CLEARED. (Executive keyset users can display the default menu by pressing the IDLE MENU key.)
- (3) Take action on the alarm as follows:
 - a. **#10 XXXXX OFF-HOOK:** A station remained off hook and inactive until the Inac-

tivity Alarm timer expired. The display and the SMDR indicate which station is off hook. The station's key on DSS/BLF Units and on other stations' SD keypads flutters continuously. Locate the station and replace the handset in the cradle. The station's display shows STATION OFF HOOK.

NOTE: Calls being transmitted over the secondary voice path are not affected or interrupted by an off-hook alarm condition.

- b. **#11 XXXXX EMERGENCY:** A user has dialed the Emergency Call feature code (911) and the system has selected a trunk and dialed the programmed emergency number.
- c. **#12-13 & 20 CHECK PRINTER:** The printer is not functioning properly. Check that the cable and the power cord are connected and that it has paper and ribbon.
- d. **#14 SET DATE/TIME:** The system real-time clock has not been initialized or has been corrupted. Set the system time and date as described in paragraph 36.7 on page 4-98.
- e. **#21 V-MAIL 80% FULL/#22 V-MAIL 100% FULL:** The Voice Mail disk space is either 80% or completely full. If it reaches 100%, Voice Mail cannot accept any messages until disk space is made available.
- f. **#23 SMDR 80% FULL/#24 SMDR 100% FULL:** The SMDR disk space is either 80% or completely full. If it reaches 100% before the buffered SMDR information is cleared, no further SMDR recording will be possible.
- g. **#100-199 & 200-299 CALL TECHNICIAN:** These alarms indicate that an equipment failure has occurred that requires the attention of service personnel. When calling for service be prepared to provide them with the alarm information as well as what was taking place when the alarm occurred, if anything.

36.39 A major alarm message, MAJOR ALARM, appears on all display keysets in the event of a system-wide failure. If the major alarm appears on a group of keysets, the associated Keyset Card may have failed. The warning might also appear on a single keyset if the keyset or its cabling may be defective. Because they indicate that all or part of the system is inoperative, major alarms require immediate attention from service personnel.

G. FREEZING/UNFREEZING THE SYSTEM HISTORY

36.40 When certain system failures occur, service personnel might request a "system history freeze." This allows them access to the system database so that they can analyze system activity for the time period preceding the alarm.

36.41 TO FREEZE OR UNFREEZE SYSTEM HISTORY:

NOTE: Do not perform this procedure unless directed to do so by service personnel.

- (1) While on hook, enter the Diagnostics Mode feature code (9900) to turn on diagnostics mode. The display shows DIAGNOSTICS ON.
- (2) Enter the Freeze System History feature code (9993) or Unfreeze System History feature code (9998). The display shows HISTORY FROZEN (or UNFROZEN). *If you attempt change the state of the system history to its current status, the display shows HISTORY ALREADY FROZEN (or UNFROZEN).*
- (3) Enter the Diagnostics Mode feature code (9900) to turn off diagnostics mode. The display shows DIAGNOSTICS OFF.

H. PRINTING SYSTEM ERROR MESSAGE AND RESET INFORMATION

36.42 System troubleshooting information can be printed on demand by entering feature codes at an Administrator station. Service personnel can use the information to determine what has been happening at a site and if any warnings or critical errors were detected by the system. This feature is particularly useful when a site does not have a printer connected to the message print port on a continuous basis. (Automatic error message printing to an attached output device is explained on page 4-119.)

36.43 When a technician arrives at a site, he or she can do one of the following before entering the codes:

- Connect a printer to the designated message print port.
- Connect a PC to the message print port and run a communications program. This allows the technician to store the information in a file for later examination.

36.44 The information generated using these feature codes can also be obtained using the Get CP Error Information option from the Database Save/Restore screen (see page 6-193 in PROGRAMMING). The error message log information is in the err*.log file and the auxiliary and reset information is in the err*.dmp file.

36.45 The contents of the message log can be determined using the Message Print Programming screen shown on page 6-195 in PROGRAMMING.

36.46 TO PRINT THE TROUBLESHOOTING INFORMATION:

NOTE: Do not perform this procedure unless directed to do so by service personnel.

- (1) While on hook, enter the Diagnostics Mode feature code (9900) to turn on diagnostics mode. The display shows DIAGNOSTICS ON.
- (2) **To print the message log:** Enter the Print Message Log feature code (9975). The number of lines printed will vary, but reports are generally more than 10 pages in length.

To print the auxiliary information/reset history: Enter the Print Reset Log feature code (9972). The system prints auxiliary information for approximately eight resets and the causes of the last 37 resets. This is useful to determine if resets are due to power outages or system failures.

- (3) Enter the Diagnostics Mode feature code (9900) to turn off diagnostics mode. The display shows DIAGNOSTICS OFF.

I. SEIZING A DEVICE

36.47 For troubleshooting purposes, the Seize Device feature code allows an Administrator to enable diagnostics mode and then seize a specific trunk or extension by entering the board, circuit, and device number.

36.48 The Seize Device is affected by trunk restriction. The Administrator's station must have outgoing access permission for the trunk to seize it. Toll restriction is applied to any calls placed after the seizure of the trunk.

36.49 TO SEIZE A DEVICE:

- (1) While on hook, enter the Diagnostics Mode feature code (9900) to turn on diagnostics mode. The display shows DIAGNOSTICS ON.
- (2) Press SPCL and enter the Seize Device feature code (9973). The display shows ENTER BOARD.
- (3) Enter the board number on which the device to be seized is located (if you enter a single digit, press # after the digit to continue). (If you enter an invalid board number, the display shows INVALID BOARD NUMBER.) Do not enter the CPU board number (0). The display shows ENTER PORT.
- (4) Enter the port (circuit) number of the device to be seized (if you enter a single digit, press # after the digit to continue). Valid numbers depend on the type of board. (If you enter an invalid board num-

ber, the display shows INVALID BOARD NUMBER.)

If there is only one device on the selected port, the selected device is seized as if the user had directly entered the extension or trunk number.

If there is more than one device on the selected port, the display shows ENTER DEVICE. Enter the number of the device to be seized. Valid numbers depend on the type of devices installed. (If you enter an invalid board number, the display shows INVALID BOARD NUMBER.) When the device has been selected, it is seized as if the user had directly entered the extension or trunk access number.

- (5) Enter the Diagnostics Mode feature code (9900) to turn off diagnostics mode. The display shows DIAGNOSTICS OFF.

36.50 For example, if the Administrator wanted to seize the trunk on the third circuit of the LSC in cardslot 4 (circuit 4.3.0), the entries would be as follows:

ENTER BOARD: 3
ENTER PORT: 4
(Device number not required.)

However, to select the first single-line device connected to the second circuit of the KSC in cardslot 1 (circuit 1.2.1), the entries would be as follows:

ENTER BOARD: 1
ENTER PORT: 2
ENTER DEVICE: 1

37. RECORD KEEPING AND MAINTENANCE FEATURES

A. CALL COST ACCOUNTING

37.1 The Call Cost Accounting feature estimates the cost of outgoing and incoming calls, displays it on the keysets, and prints it in the SMDR reports. The cost is based on the type of call, telephone number dialed, the elapsed time of the call, the day of the week, and the time of day. A table in the database supplies the rates for all types of calls, including multiplicative factors for evening and weekend rate changes on outgoing calls. The equation for calculating call cost is:

Daytime Rate X Multiplicative Factor X Connect Time.

37.2 The multiplicative factor adjusts the daytime per-minute call cost for evening and weekend rates of outgoing calls. For example, the evening call cost multiplier is 0.65 if calls are 35% less expensive after 5:00PM. The daytime rate (D), evening (E) multiplicative factor, and night/weekend (N/W) multiplicative factors are used on the following schedule:

	SUN	MON	TUE	WED	THU	FRI	SAT
8 AM TO 5 PM	N/W	D	D	D	D	D	N/W
5 PM TO 11 PM	E	E	E	E	E	E	N/W
11 PM TO 8 AM	N/W	N/W	N/W	N/W	N/W	N/W	N/W

NOTE: The Inter-Tel Axxent System's Call Cost Accounting feature is intended to provide a *cost estimate* that is applied to the various classes of calls. Due to the wide variation in charges among network carriers, the system's call cost calculation cannot be used as a prediction of actual charges. This feature can only be used as a management tool to *estimate* call cost.

37.3 If call cost is set to zero, call cost will not display during the call and the SMDR printout will show \$00.00.

37.4 All outgoing calls using a trunk that is not subject to toll restriction are classified as one of the following

call types for call cost calculation (call cost type is programmed in the database).

- Free
- Local
- Toll Local
- Toll Long Distance
- Operator/International

37.5 When a trunk that is subject to toll restriction is used, call cost type is determined according to the digits dialed, as follows:

- *Free:* Any call within a PBX (a trunk access code is not dialed) is a free call.
- *Local:* The following calls are classified as local calls:
 - Calls to N11 or 1N11 (where N is 2-9), except 411 or 1411
 - Any call to area code 800
 - All 7-digit or 10-digit calls within a home area code to office codes that are allowed in User Group 1
 - Any call that does not begin with 1, and does not fall into any of the other call cost categories
- *Toll Local:* The following calls are classified as toll local calls:
 - Any calls to 411 or 1411
 - All 7-digit or 10-digit calls within a home area code to office codes that are restricted in User Group 1
 - Any call that begins with 1, that does not fall into any of the other call cost categories
- *Toll Long Distance:* Any call to an area code other than a home area code is classified as a toll long distance call.
- *Operator/International:* Any call starting with 0 or containing only 0 is classified as operator/international (0, 0+, 01+, 011+).

**B. STATION MESSAGE DETAIL
RECORDING (SMDR)**

37.6 Station Message Detail Recording (SMDR) is a system feature that provides a detailed record of outgoing and incoming calls. The system records only valid calls. Outgoing calls become valid when the Valid Call timer expires or polarity reversal is detected (depending on system programming). Outgoing calls become valid immediately if placed on hold or transferred. Incoming calls are always valid immediately.

37.7 Station call data can be recorded on a customer-provided printer or an alternate device, such as a magnetic tape or floppy disk. This output device is connected to the CPU, MEM or Options card. Refer to SPECIFICATIONS, page 2-20, for details. Only one output port for SMDR can be active at any time.

37.8 The Axxent Talk can be used to capture Station Message Detail Recording (SMDR) information via its RS-232-C connection with the Inter-Tel Axxent System. The SMDR information is stored in a file on the Axxent Talk hard disk for later retrieval.

37.9 Selectable SMDR options include any combination of the following. (See page 4-116 for a definition of call cost types. See page 6-141 in PROGRAMMING for programming information.)

- **Record All Incoming Calls:** Records all incoming calls that are answered.
- **Record All Local Calls:** Records all calls that use the "local" call cost.
- **Record All Free Calls:** Records all calls that use the "free" call cost.
- **Record All Ring-in Diagnostics:** A ring-in message is recorded for every incoming call (whether answered or unanswered) to indicate how long it rang.
- **Record All Toll Local Calls:** Records all calls that use the "toll local" call cost.
- **Record All Toll Long Distance Calls:** Records all calls that use the "toll long distance" call cost.
- **Record All Operator/International Calls:** Records all calls that use the "operator/international" call cost.
- **Record All DISA Calls:** Records all DISA calls.
- **Record All Conference Calls:** Records all conference calls. If all conference parties exit except one station and one outside party, the call is no longer considered a conference and when completed it will be recorded using the appropriate call cost for that outside call.

- **Record All DID/DNIS Calls:** Records all calls received through DID and DNIS.

37.10 The programmer can determine whether absorbed digits, equal access digits, and/or toll field digits appear in the SMDR printout. As an example, assume the following number was dialed: 89 (other system's trunk access code) – 10288 (equal access code) – 1 (toll field) – 602 (area code) – 961-9000 (seven-digit number). The following programming options can be used:

- The absorbed digits (the other system's trunk access code) can be suppressed so that only 10288-1-602-961-9000 appears.
- The equal access code field can be suppressed to print only 89-1-602-961-9000.
- The toll field can be suppressed so that only 89-10288-602-961-9000 is printed.
- Any combination of the above can be used. If all three fields are suppressed, only 602-961-9000 will print.

37.11 The programmer can also suppress or allow caller information (Caller ID and ANI digits) in the SMDR report "Dialed Digits" field. (Note that DID and DNIS are always included in the reports and cannot be suppressed.)

37.12 The programmer can determine which equipped station(s) will be included in the report. However, for incoming calls, DISA calls, conference calls, and/or ring-in diagnostics, all calls are recorded even when they involve stations not in the programmed station list.

37.13 SMDR can be programmed to record the elapsed time of calls in seconds (S=XXXXXX) or hours and minutes (HH:MM). If programmed to record elapsed time in seconds, the ELAPSED TIME field will show "S=XXXXXX" (XXXXXX represents the number of seconds) for calls up to 999999 seconds long. For calls lasting longer than 999999 seconds, ELAPSED TIME will show "HH:MM" (hours and minutes rounded up to the nearest minute).

37.14 The SMDR output report is printed as shown in Figure 4-6 on the following page. A page heading (with the day of the week, date, month, year and column headings) is generated just after midnight to show the change in date. A header is also printed after output from another system source (alarm, informative message, etc.), using the same output device, interrupted the SMDR output.

FIGURE 4-6. SMDR REPORT FORMAT

TYP **EXT#** **TRUNK** **DIALED DIGITS** **START** **ELAPSED** **COST** **ACCOUNT CODE**
 XXX XXXXX XXXXX <28 characters> HH:MM HH:MM:SS \$XX.XX XXXXXXXXXXXXX*

TYP Call type abbreviations for:

Free	000
Local	LOC
Toll Local	TLC
Toll Long Distance	TLD
Operator/International	O/I
DISA	DSA
Conference	CNF
DID/DNIS (non-DISA)	DID
Incoming Caller ID, ANI, or None	IN

EXT The extension number (XXXXX) of the last station to handle the call is shown. For a CO-to-CO call, this field shows the extension number of the second trunk involved. For a conference call, it shows the station that initiated or answered the call. For an unanswered ring-in, it shows *****.

TRUNK The extension number of the trunk used during the call is shown.

DIALED DIGITS **For an outgoing call:** The first 28 digits of the telephone number dialed are shown. A ">" at the end of the number indicates that more than 28 digits were dialed. Some digits may be suppressed (see the previous page for an explanation). For a conference call, this field shows the station that brought the trunk into the conference unless the conference ends as a call with only one station and one trunk or if all conference parties are put on individual hold (in which case the field shows the last party to handle the call). **For an incoming call:** This field is determined by the service type of the trunk that was used for the call, as follows:

SERVICE TYPE	CALL RECORD SHOWS:	RING-IN RECORD* SHOWS:
DID/DNIS (not DISA ring-in)	Blank	Ring.....<DID digits>
DID/DNIS with DISA ring-in	Blank if answered; DISA digits if unanswered	DISA calls do not generate a ring-in record
Caller ID or ANI	Blank	Ring.....<Caller ID or ANI digits>
None	Blank	Blank

*Ring-in records appear only if ring-in diagnostic records are enabled as described on page 4-117.

START This shows the time that the call became valid (see paragraph 37.6 on the previous page for an explanation). For an unanswered ring-in, it shows the time the call began ringing. It is shown in 24-hour time (00:00 – 23:59).

ELAPSED This shows the call length from the START time (above) until disconnect or the length of time an unanswered call was ringing. If the option is enabled that shows call duration in seconds, calls up to 999999 seconds long appears as S=XXXXXX (XXXXXX represents the number of seconds) and calls lasting longer than 999999 seconds appear as HH:MM (hours and minutes).

COST This is the approximate cost of the call (\$XX.XX), based on the database information. If cost exceeds \$99.99, it is printed without the decimal point (\$XXXXX). If it exceeds \$99999, \$\$\$\$\$\$ is shown instead. If there is no cost, the field is blank.

ACCOUNT CODE This is a standard, forced, or optional account code (up to 12 digits). An optional account code overrides standard or forced account codes. The field is blank if no account code was used.

NOTE: If an asterisk (*) appears at the end of the record, as shown above, it indicates that the call was terminated because the system detected a disconnect signal from the trunk (that is, the caller hung up before the station user on the call).

C. SYSTEM ERROR/MESSAGE PRINTING

37.15 The system has a self-diagnostic feature that monitors the system. When a system fault or other noteworthy condition is detected, the software determines the impact of the condition and classifies it as an alarm (major or minor) or other message type. If the Message Print option is enabled, as described on page 6–195 in PROGRAMMING, the messages are sent to the designated output port.

37.16 The programmer may enable any combination of the error message types. The available message types are:

- **Information Messages:** These messages give information concerning system operation.
- **Warning Messages:** The warnings in these messages indicate that a condition exists which may affect system performance.
- **Alarm Messages:** Alarm messages indicate that a minor alarm has occurred, but that general system operation was not affected.
- **Severe Messages:** These messages indicate that a severe error has occurred in the system.

37.17 The messages can be programmed to be sent to any output device attached to the system. Messages can be printed through only one system port at a time. The print width is adjustable (64, 80, or 132 characters) to accommodate different output devices. When a line of information is longer than the programmed width, the information is printed on subsequent lines and preceded with “+” to indicate the continuation.

37.18 The system database also has a reserved area for recording the history of messages to allow service personnel to request a report at any time (see page 6–195 in PROGRAMMING). The message history area has enough memory to maintain a record of at least 50 of the most recently generated messages. When the reserved area is full, the more recent messages begin to replace the older ones so that the most recent messages are available.

37.19 In addition to the messages, the following error indications will occur in the event of a system alarm:

- If a major system alarm occurs, MAJOR ALARM appears on all display keysets. If the major alarm appears on a group of keysets, the associated Keyset Card has failed. The warning might also appear on a single keyset if the keyset is defective. If all keysets on the system are inoperative, the alarm message is sent to the system’s primary serial port on the CPU.

- A minor alarm sends a message to the primary attendant and to system Administrators, if programmed to receive alarms.

37.20 Each message record includes the following fields:

- **Sequence Number:** This field shows the order in which the faults occurred. If there is a skip in a series of sequence numbers, it indicates that a message was logged that is not programmed to be printed.
- **Time:** The Time field shows the time that the fault occurred. This field shows the hours and minutes in 24-hour format as HH:MM.
- **Date:** The Date field shows the date that the indicated fault occurred. The date shows the month and date as MM-DD.
- **Fault Code:** The Code field holds the associated number of the indicated fault. This field is four characters in length and the first character is an “M” for messages or “A” for minor alarms. Each of the different system faults that the system is capable of detecting is assigned a unique number (M001–M999 or A001–A299) in the system database. Fault codes are listed on page 7–4 in TROUBLESHOOTING.
- **Type:** This field indicates the following:
 - *Alarms:* The field shows “ALARM” for system faults that have not stopped system operation.
 - *Information Messages:* The field shows “INF.” The condition requires no attention.
 - *Warning Messages:* The field shows “WRN.” The condition requires attention because it may affect system performance.
 - *Severe Messages:* The field shows “SVR.” The condition requires attention because it has affected or will affect system performance.
- **Realm:** *This field does not appear for Alarm messages.* This two-character field indicates the realm responsible for the message. The field will contain one of the following abbreviations:
 - *DB* indicates that the message applies to the system database. These problems can often be fixed with appropriate database programming.
 - *HW* indicates the messages concerns the system hardware. Typically these problems are corrected by adjusting or replacing the affected hardware.
 - *EG* is indicative of a software error which will, most likely, require the intervention or attention of an Inter-Tel software engineer.

- **Source:** *This field does not appear for Alarm messages.* This two-character field indicates the software source responsible for the message.
 - *CP* indicates that Call Processing is the source.
 - *OS* refers to the Operating System.
 - *SS* refers to the System Software
 - *AL* refers to Axxent Talk link.
- **Text:** The Text field holds a text message that identifies the particular fault indicated by the record. This field is at least 40 characters in length and may extend onto subsequent lines if necessary to present adequate information about the fault. The information printed on an additional line is preceded with the character "+" to indicate the continuation.
- **Auxiliary:** When necessary, additional information may be printed as part of a message on separate lines. This additional information is referred to as "auxiliary text." To identify this text as pertaining to the previous message, each line is preceded with the "<" character.

D. POWER FAILURE CAPABILITIES

37.21 The KSU contains relay contacts that can be used for power failure transfer which allows one or more single-line sets to select predetermined trunks in the event of a processor board failure or a power failure. Additional equipment is required. Refer to SPECIFICATIONS, page 2-8, for more information.

E. CUSTOMIZED SYSTEM PROGRAMMING REPORTS

37.22 Customized system programming reports can be created through the database (see page 6-199 in PROGRAMMING). The programmer can select the programming area to be reported and then select the information that will be included. When extension numbers are listed in a report, they can be sorted by name, extension number or circuit number. Reports can also be titled. The report types and their options include the following. Sample reports (with all options enabled) begin on page 4-121. Reports can be sent to files on the PC or to a printer port.

- **ARS Route Group Report:** This route group list can include dial patterns, dial rules, and/or trunk groups.
- **Call Routing Report:** This report shows each of the call routing tables and their patterns.
- **CO Trunk Groups Report:** This trunk group list can include day/night answer access, day/night outgoing access, day/night ring in, toll restriction, and/or trunk lists.
- **Detailed Station Report:** Selected station are listed with account codes, mailboxes, miscellaneous flags, miscellaneous information, programmable keys, keymaps, special purpose station status, system forwarding, and/or toll restriction.
- **General Station Report:** Selected stations can be listed by attendant, class of service, equipment, and/or special purpose station status.
- **Hunt Group Report:** Selected hunt groups are listed with their station lists, flags, and/or timers.
- **Individual Trunk Reports:** Selected trunks are listed with their type, circuit number, trunk group, and flags.
- **Keymap Report:** Selected keyset and DSS map groups and map diagrams are listed with their key assignments and/or station list.
- **Phone List:** Selected stations, hunt groups and page zones are listed.
- **Station Flags:** Stations are listed for selected station flags.
- **System Speed Dial Report:** Selected system speed-dial numbers are listed.
- **System Timers Report:** Selected system timers are listed.
- **Toll Restriction Report:** Selected classes of service and/or user groups are listed with day/night lists of stations, dialing patterns, allowed area and office codes, restricted area and office codes, and extended area codes.

FIGURE 4-7. CUSTOMIZED PROGRAMMING REPORT SAMPLES

ARS ROUTE GROUP REPORT

PROGRAMMING REPORTS - ARS ROUTE GROUP X

Page 1

Route Group X (Name)

Trunk Groups

<u>DESCRIPTION</u>	<u>EXT#</u>	<u>CIRCUIT</u>	<u>USERNAME</u>
Trunk Group 001	9201	T001	

Dial Rules

- 02. ECHO Toll Field
- 03. ECHO 3 Digits After Toll Field
- 04. ECHO Local Address

Dial Patterns

1NXXXXXXXXX

CALL ROUTING REPORT

PROGRAMMING REPORTS - CALL ROUTING

Page 1

Call Routing Table X (Name)

<u>PATTERN</u>	<u>NAME</u>	<u>DESTINATION</u>
602+	ARIZONA	DISA

FIGURE 4-7. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)

CO TRUNK GROUP REPORT:

PROGRAMMING REPORTS - CO TRUNK GROUP X

Page 1

Extension: 9201

```

Description:                Trunk Group 001
Circuit:                    T001
Username:

Search Algorithm:           Linear
Music-On-Hold:              Music
Audio On Transfer:          Ringback
One-Way Incoming Only:     False
Enable Hookflash:          True

Day Ring-In:                Single Ring-In
  Single Ring-In:          100      01.01.01 Description

Day Answer Access
  None

Night Ring-In:              Single Ring-In
  Single Ring-In:          100      01.01.01 Description

Night Answer Access
  None
  
```

Day Outgoing Access

EXT#	CIRCUIT #	DESCRIPTION	USERNAME
P001		Def DB: All Stations	

Night Outgoing Access

EXT#	CIRCUIT #	DESCRIPTION	USERNAME
P001		Def DB: All Stations	

Toll Restriction

Class of Service	Day	Night
2. Deny Area/Office		
3. Deny Operator		
4. Deny Toll Access		
5. Deny International		
6. Deny Equal Access		
7. Deny Local Calls		
8. Denied Numbers		
9. Allowed Numbers		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

```

Subject to Toll Restrict:   True
Exempt from ARS Only:      False
Absorbed Digits:           False
  
```

Trunk List

EXT#	CIRCUIT #	DESCRIPTION	USERNAME
XXXXX XX.XX.XX		Loop Start	XXXXXXXX

FIGURE 4-7. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)

DETAILED STATION REPORT:

PROGRAMMING REPORTS - DETAILED STATION REPORT

Page 1

Extension: XXX

Description: Last, First
Circuit: XX.XX.XX
Username: XXXXXXXX

Account Codes

Account Code Type: Standard
Account Code:

Miscellaneous Flags:

All Transient Displays:	Enabled
Alternate Hold Timer:	Disabled
Alternate Keypad:	Disabled
Alternate Transient Display Timer:	Disabled
Automatic Answer CO:	Enabled
Automatic Answer IC:	Enabled
Camp-On Indications:	Enabled
Camp-On to ARS:	Enabled
CO/IC Reseize:	Enabled
DID Receive Busy Instead Of Camp-On:	Disabled
Different Alerting Cadence - IC/CO:	Enabled
Different Ringback Cadence - IC/CO:	Enabled
Do-Not-Disturb Allowed:	Enabled
Do-Not-Disturb Override:	Disabled
Extended Ring Cadence:	Disabled
Handsfree:	Enabled
Headset:	Disabled
Hunt Group:	Replace
Hunt Group Camp-On Audio Indications:	Enabled
Immediate OHVA Transmit:	Disabled
OHVA Receive:	Disabled
OHVA Transmit:	Disabled
OPX Gain Levels:	Disabled
Page Mode:	Enabled
Receive Busy Instead of DND:	Disabled
Redial Mode:	Dialed
Ring Intercom Always:	Disabled
Standard Tone Frequencies:	Enabled
System Forwarding:	Disabled
Transient Call Indication On Call Answer:	Enabled

(Continued on the next page)

FIGURE 4-7. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)

DETAILED STATION REPORT (Continued):

Miscellaneous Information

Attendant: None
Message Center: None
Outgoing: 9201 T001 Trunk Group 1
Transfer Recall Dest: 100 01.01.01 Station Undefined
Alternate Message Source: None
Voice Mail Extension: None
Data Port Extension: None
Speakerphone Type: Standard
Attached Devices: DSS
Baud Rate: 2400

Programmable Keys

1. Feature Key 372 (Do-Not-Disturb On/Off)
2. Undefined Key
...
10. Feature Key 381 (System Speed Dial)
11. Feature Key 380 (Redial)

Standard Keyset Keymap: 1 (Keyset Keymap 1)
Alternate Keyset Keymap: 2 (Keyset Keymap 2)
DSS Keymap: 1 (DSS Keymap 1)

Special Purpose Station

Attendant Stations

EXT# CIRCUIT# DESCRIPTION USERNAME
(List of stations served by this attendant)

Message Center Stations

EXT# CIRCUIT# DESCRIPTION USERNAME
(List of stations served by this attendant)

Administrator: True

House Phone: False

Toll Restriction

Class of Service	Day	Night	
1. ARS Only		x	x
2. Deny Area/Office			
3. Deny Operator			
4. Deny Toll Access			
5. Deny International			
6. Deny Equal Access			
7. Deny Local Calls			
8. Denied Numbers			
9. Allowed Numbers			
...			
16.			

FIGURE 4-7. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)

GENERAL STATION REPORT:

PROGRAMMING REPORTS - GENERAL STATION REPORT Page 1

EXT#	CIRCUIT#	DESCRIPTION	USERNAME	EOP	ATT	TMAH	1234567890123456
XXX	XX.XX.XX	Description	Name	KEY	XXX	TMA	B

- EQP - Equipment Type
- KEY - Keypad
- S/L - Single-Line
- OPX - Off-Premises Extension
- + - Headset
- ATT - Station's Attendant
- T - Attendant
- M - Message Center
- H - House Phone
- 1 - ARS Only
- 2 - Deny Area/Office
- 3 - Deny Operator
- 4 - Deny Toll Access
- 5 - Deny International
- 6 - Deny Equal Access
- 7 - Deny Local Calls
- 8 - Denied Numbers
- 9 - Allowed Numbers
- 0 -
- 1 -
- 2 -
- 3 -
- 4 -
- 5 -
- 6 -
- D - Day
- N - Night
- B - Both Day and Night

FIGURE 4-7. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)

HUNT GROUP REPORT:

PROGRAMMING REPORTS - HUNT GROUP REPORT Page 1

Extension: XXX

Description:	Hunt Group XX		
Circuit:	HXX		
Username:	HG1		
Analog Voice Mail:	False		
ACD:	True		
Priority Level:	10		
Search Type:	Longest-Idle		
Announcement:	None		
Overflow:	None		
Recall:	XX.XX.XX XXX	Description	Name
No Answer Timer:	18 Second(s)	Range = 1 - 255	
Announcement Timer:	18 Second(s)	Range = 1 - 255	
Overflow Timer:	72 Second(s)	Range = 1 - 255	
Recall Timer:	3 Second(s)	Range = 1 - 65535	
Wrap-Up Duration:	15 Second(s)	Range = 0 - 65535	

List of Hunt Groups

<u>EXT#</u>	<u>CIRCUIT#</u>	<u>DESCRIPTION</u>	<u>USERNAME</u>
100	01.01.01	~Station Undefined	

INDIVIDUAL TRUNK REPORT:

PROGRAMMING REPORTS - INDIVIDUAL TRUNK REPORT Page 1

Extension: XXX

Type:	Loop Start
Circuit:	XX.XX.XX
Trunk Group:	9201 T001 Trunk Group 1
DTMF Signaling:	True
Service Type:	Caller ID
Answer Supervision Type:	Valid Call Timer
Hybrid Balance:	Normal

FIGURE 4-7. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)

KEY MAP REPORT:

PROGRAMMING REPORTS - KEYMAPS REPORT Page 1

Keypad Key Map Group: 1 (Keypad Keypad 1)

Station List

<u>EXT#</u>	<u>CIRCUIT#</u>	<u>DESCRIPTION</u>	<u>USERNAME</u>
100	01.01.01	~Station Undefined	

Key Assignments

- 1.
- ...
- 51.
- 52.

DSS Key Map Group: 1 (DSS Keypad 1)

Station List

<u>EXT#</u>	<u>CIRCUIT#</u>	<u>DESCRIPTION</u>	<u>USERNAME</u>
100	01.01.01	~Station Undefined	

Key Assignments

- 1. DSS/BLF Key 100 01.01.01 ~Station Undefined
- 2. DSS/BLF Key 101 01.02.01 ~Station Undefined
- ...
- 119. Undefined Key
- 120. Undefined Key

PHONE LIST REPORT:

PROGRAMMING REPORTS - PHONE LIST REPORT Page 1

<u>EXT#</u>	<u>CIRCUIT#</u>	<u>DESCRIPTION</u>	<u>USERNAME</u>
100	01.01.01	~Station Undefined	

(List of selected stations)

FIGURE 4-7. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)

STATION FLAGS REPORTS:

PROGRAMMING REPORTS - STATION FLAGS REPORT Page 1

All Transient Displays - Enabled

<u>EXT#</u>	<u>CIRCUIT#</u>	<u>DESCRIPTION</u>	<u>USERNAME</u>
100	01.01.01	~Station Undefined	

Alternate Hold Timer - Disabled

<u>EXT#</u>	<u>CIRCUIT#</u>	<u>DESCRIPTION</u>	<u>USERNAME</u>
100	01.01.01	~Station Undefined	

. . .

System Forwarding - Enabled

<u>EXT#</u>	<u>CIRCUIT#</u>	<u>DESCRIPTION</u>	<u>USERNAME</u>
100	01.01.01	~Station Undefined	

Transient Call Indication Display On Call Answer - Enabled

<u>EXT#</u>	<u>CIRCUIT#</u>	<u>DESCRIPTION</u>	<u>USERNAME</u>
100	01.01.01	~Station Undefined	

FIGURE 4-7. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)

SYSTEM SPEED DIAL REPORT:

PROGRAMMING REPORTS - SYSTEM SPEED DIAL REPORT Page 1

#	NAME	NUMBER	DISPLAY
0	Bin Name	XXXXXXXXXXXXXXXXXX	False
1			False
2			False
3			False
4			False
5			False
6			False
7			False
8			False
9			False
10			False
11			False
. . .			
99			False

SYSTEM TIMERS REPORT:

PROGRAMMING REPORTS - TIMER REPORT Page 1

DESCRIPTION	VALUE UNITS	RANGE
Abandoned Call	10 Minutes	1- 255
Camp-On	3 Minutes	1- 255
. . .		
Valid-Call	15 Seconds	0- 60
Voice Mail Dial Delay	5 Tenths	1- 250

FIGURE 4-7. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)

TOLL RESTRICTION REPORT:

PROGRAMMING REPORTS - TOLL RESTRICTION REPORT

Page 1

Class Of Service: 1(ARS)

Day List

<u>EXT#</u>	<u>CIRCUIT#</u>	<u>DESCRIPTION</u>	<u>USERNAME</u>
100	01.01.01	~Station Undefined	

Night List

<u>EXT#</u>	<u>CIRCUIT#</u>	<u>DESCRIPTION</u>	<u>USERNAME</u>
100	01.01.01	~Station Undefined	

...

Class Of Service: 16()

Dialing Patterns

None

Day List

<u>EXT#</u>	<u>CIRCUIT#</u>	<u>DESCRIPTION</u>	<u>USERNAME</u>
100	01.01.01	~Station Undefined	

Night List

<u>EXT#</u>	<u>CIRCUIT#</u>	<u>DESCRIPTION</u>	<u>USERNAME</u>
100	01.01.01	~Station Undefined	

User Group 1()

Allowed Area Codes

2xx:None
3xx:None
4xx:None
5xx:None
6xx:None
7xx:None
8xx:None
9xx:None

Restricted Area Codes

2xx:200-299
3xx:300-399
4xx:400-499
5xx:500-599
6xx:600-699
7xx:700-799
8xx:800-899
9xx:900-999

Extended Area Codes: None

Day List

<u>EXT#</u>	<u>CIRCUIT#</u>	<u>DESCRIPTION</u>	<u>USERNAME</u>
100	01.01.01	~Station Undefined	

Night List

<u>EXT#</u>	<u>CIRCUIT#</u>	<u>DESCRIPTION</u>	<u>USERNAME</u>
100	01.01.01	~Station Undefined	

AXXENT TALK FEATURES

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1. INTRODUCTION

A. AXXENT TALK APPLICATIONS

1.1 Axxent Talk can be used for any of the following applications. Each application is described in detail in this chapter.

- **Automated Attendant:** The automated attendant provides automated call answering service. Calls can transfer, forward, or directly ring in to an automated attendant. When an automated attendant answers a call, it plays a recording that gives dialing instructions. After hearing the recording (or at any time while it is playing), the caller may then dial an extension or mailbox number.
- **Automated Attendant Recall Destination:** If a call that is transferred by the automated attendant is not answered before the Transfer Axxent Talk timer expires, the call recalls the Automated Attendant Recall Destination. The Recall Destination recording announces that the station is unavailable and allows the caller to leave a message (if the station has an associated mailbox) or dial another extension number.
- **Call Routing Announcements:** A Call Routing application can be used as a playback device. This is useful for programming hunt group announcement and overflow stations. When accessed, the Call Routing Announcement application will play a recording and then hang up. Or, the Call Routing Announcement can be programmed to use Digit Translation, a feature that allows one-key access to extensions, mailboxes, applications, etc. (like a customized automated attendant).
- **Message Notification/Retrieval:** Only one Message Notification/Retrieval application may be created and it *must* be created in order to allow voice mail message notification and quick mailbox access.
- **Voice Mail:** This application handles all calls that are directed to voice mail (other than through the Message Notification/Retrieval application) by subscribers and non-subscribers. Outside callers will hear the main company greeting, followed by a menu of available options. Internal callers will hear only the Voice Mail menu of options. Stations can

forward or transfer calls directly to their mailbox using this application's extension number.

- **Directory Services:** Directory services provide callers with a list of mailboxes and extension IDs.
- **Station Message Detail Recording (SMDR) Information Storage:** SMDR information can be stored on the Axxent Talk hard disk and then processed using call record sorting software (such as the Inter-Tel Inside Track).

1.2 Up to 25 applications can be assigned per Axxent Talk system. The applications are given extension numbers in database programming (refer to page 6-144 in PROGRAMMING). Axxent Talk application extension numbers range from 275 to 299 at default, but may be reprogrammed.

B. DEFAULT DATABASE

1.3 To make the Inter-Tel Axxent System easy to install, a default database has been created for the Axxent Talk that provides the following features:

- **Voice Mail and Message Notification/Retrieval applications:** These application provide access to 16 mailboxes, numbered 100-115, which are associated with the stations. The Voice Mail extension number is 299, the Message Notification/Retrieval extension number is 296. Extension number 100 is a System Administrator station and the Voice Mail System Administrator.
- **Automated Attendant and Automated Attendant Recall applications:** Extension number 298 provides the Automated Attendant feature and extension 297 is its recall destination.
- **Automatic mailbox number changes:** When a station's extension number is changed, either by the installer or the Administrator station, its associated mailbox number is automatically changed to match. For example, if station extension 101 is changed to 105, mailbox 101 will automatically change to 105.

1.4 With the default database, only user names, station toll restriction, trunk toll restriction, and trunk access and ring-in assignments need to be programmed to complete the installation.

C. TIME SLOT GROUPS

1.5 Each application is assigned to a "Time Slot Group" which determines the maximum number of voice channels that will be used by the applications in that group. Voice channels are used for processing calls between the Inter-Tel Axxent System and the Axxent Talk applications.

1.6 The voice channel limit for the time slot group may exceed the number of voice channels actually provided by the hardware, due to programmed limits set higher than the hardware limits and/or heavy system traffic. For example, if an Automated Attendant application is assigned to a time slot group that has a programmed limit of five voice channels, it can normally support five simultaneous transfers of outside calls to extensions. However, if only four voice channels are available (because all other channels are in use by other applications or the hardware only supports four channels), a fifth call cannot be completed to that (or any other) application. When all voice channels are busy, intercom callers will hear reorder tone and see a CALL CANNOT BE COMPLETED display and outside callers will hear ringing but their calls will not be answered.

1.7 Because multiple voice channels can be made available to the applications, callers are unlikely to encounter busy resources. In addition, the use of applications as recall destinations and attendants make it even less likely that a caller will not reach an available resource. For example, an Automated Attendant application can have one Automated Attendant Recall Destination (with several voice channels) as its recall destination, and another Automated Attendant Recall Destination application (with several voice channels) as its attendant. Recalls from that Automated Attendant application would be very likely to reach an available voice channel at one of the Recall Destination applications.

D. COMMUNICATION BETWEEN INTER-TEL AXXENT SYSTEM AND AXXENT TALK

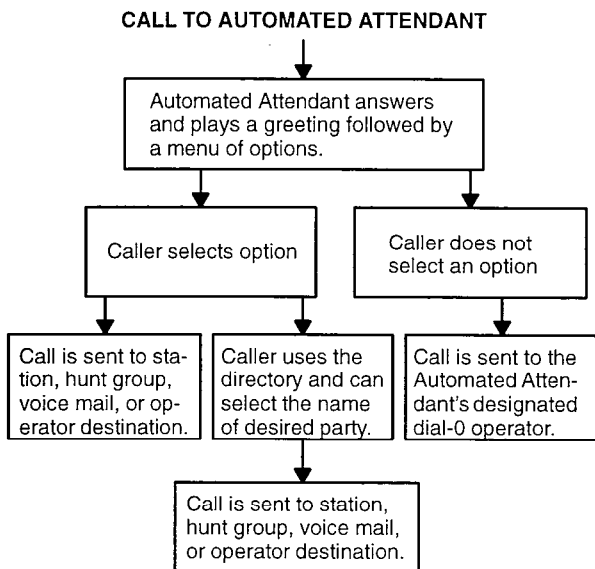
1.8 The software and hardware that controls the Axxent Talk applications is provided by the Integrated Voice Processing cards in the KSU. The Inter-Tel Axxent System communicates with the Axxent Talk through connections on the CPU motherboard in the KSU.

1.9 If the Inter-Tel Axxent System is unable to communicate with the Axxent Talk, the applications cannot be used and the following will occur:

- Direct ring-in calls to an application will be sent to the primary attendant.
- Intercom callers to applications will receive reorder tone. Display keysets show (*Application name*) IS UNPLUGGED.
- Calls will not recall to an application. Instead a recalling call will remain at the station or hunt group and ring until it is answered or the Abandoned Call timer expires.
- If an application is used as a hunt group overflow or announcement station, calls will not be sent to the application, but will remain camped on to the hunt group.
- A transfer to an application will camp on until the Recall timer expires. Then it will follow the usual recall path.
- Calls cannot be forwarded or system forwarded to an application.
- SMDR information will not be recorded in the buffer on the Axxent Talk hard drive.
- Database programming for the Axxent Talk features is not allowed.

2. AUTOMATED ATTENDANT

2.1 The automated attendant provides automated call answering service. Calls can transfer, forward, or directly ring in to an automated attendant. The Axxent Talk is required for the Automated Attendant feature on the Inter-Tel Axxent System. Calls to the automated attendant application are processed as follows.



2.2 When an automated attendant answers a call, it plays a recording that gives dialing instructions. During or after the recording, the caller may then directly dial a station extension number, voice mail access number (if there is no associated mailbox), or hunt group pilot number. Or, the caller may use the directory to look up the desired extension.

2.3 When the automated attendant answers an outside call, the caller will hear the company greeting, followed by instructions and a the list of available options. Intercom callers hear only the operating instructions and menu of options. The caller then has the following options:

- **Dial a station extension number:** If an extension number is dialed, the call is transferred to the selected station. If ringback tones are enabled, the caller hears ringing while the call is being transferred. If ringback is not enabled, the caller hears music (refer to PROGRAMMING, page 6–130). If the called station is forwarded, the call follows the programmed forward.
- **Dial a hunt group pilot number:** When a pilot number is dialed, the call is transferred to the selected hunt group. The call rings or circulates according to how the hunt group is programmed (linear or distributed). If ringback tones are enabled,

the caller hears ringing while the call is being transferred.

- **Dial the Voice Mail application's extension number:** The caller can reach the Voice Mail main greeting by dialing the application's extension number assigned to the Voice Mail feature (defaults to 299). Outside callers will hear the Voice Mail company greeting and instructions. Intercom callers will hear only instructions. The caller can then leave a message as a non-subscriber or access any of the voice mail subscriber features. (See page 5–8 for Voice Mail information.)
- **Use the directory:** If the caller does not know the extension or mailbox number of the desired party, he or she can spell the name using the keypad keys and "look up" the number in the directory. (This option can be disabled in the database. Or, if there are no names recorded for the individual mailboxes or for the system's extension IDs, this option will not be provided.) Refer to page 5–21 for directory information.
- **Dial the operator access destination:** If the caller needs further assistance, dialing 0 will access the Axxent Talk's programmed operator destination. Or, if the caller is on a rotary telephone and cannot enter a digit, the call will be automatically transferred to the operator destination. (The operator access destination is programmed as described on page 6–189. There can be separate destinations for day and night modes.)

NOTE: Due to the natural characteristics of the trunk, the volume level of DTMF tones transmitted over the trunk may be substantially reduced before reaching the Inter-Tel Axxent System and Axxent Talk. This natural degradation in tone volume may adversely affect the reliability of the Automated Attendant feature. Other factors which can affect automated attendant performance are trunk noise and the quality and strength of the DTMF tones generated by the off-premises phone itself.

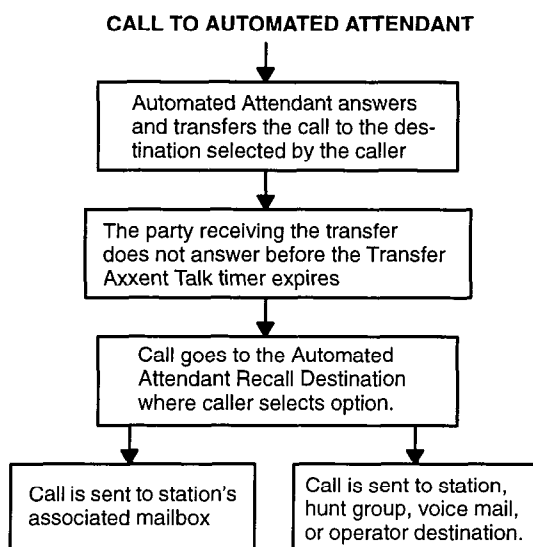
A. AUTOMATED ATTENDANT APPLICATIONS

2.4 There are a number of different uses for this feature. Here are two examples:

- Direct ring-in calls to a busy attendant could be forwarded to an automated attendant (using the Call Forward If Busy feature or system forwarding).
- Calls could ring in directly to an automated attendant application's extension number when the system is in day and/or night mode.

B. AUTOMATED ATTENDANT RECALL DESTINATION

2.5 When a station receives a call that has been routed through the automated attendant, the call is handled as a transferred call and the display shows TFR FROM (*description*). If the call is not answered before the Transfer Axxent Talk timer expires, the call recalls the automated attendant's recall destination, as shown below. The recall destination is usually the Automated Attendant Recall Destination application which announces that the called station is unavailable and allows the caller to choose to leave a message (if the station has an associated mailbox) or dial another extension number.



2.6 If the Recall Destination fails to answer a call, it is automatically sent to the recall destination's programmed attendant. If the call is not answered there, it is disconnected after the Abandoned Call timer expires.

2.7 If an invalid number is dialed, the caller is prompted to enter another number. If a caller fails to make an entry before the Inactivity timer expires, the caller is prompted again to make an entry.

2.8 The caller cannot access trunks or enter feature codes through the Automated Attendant application. Trunk access codes and feature codes are considered invalid numbers.

C. AUTOMATED ATTENDANT CUSTOM RECORDINGS

2.9 Custom recordings are made using the System Administrator's mailbox as described on page 5-19. Each recording is associated with a recording number and assigned to the application(s) in database programming or using the System Administrator's mailbox. (Refer to page 5-20 in this section and pages 6-148 and 6-174 in PROGRAMMING.)

D. EXTENSION ID

2.10 Extension IDs are used in conjunction with transferring calls through the Automated Attendant or using the Extension Directory. The extension ID allows callers to be transferred to stations and applications that do not have mailboxes. It also allows the station or application to have a recorded name in the directory. This feature is set up and initialized using database programming and Voice Mail features.

2.11 If an Extension ID has been created in database programming for a station extension number, either the principal owner of the extension or the System Administrator must set up (initialize) the ID with a new password and record a name for use in the Extension Directory. At default, the extension ID password is the same as the extension number. (If the Extension ID has not been "initialized" calls can still be transferred to the associated extension number, however, they cannot be accessed from the directory. If the Extension ID's user name has not been recorded it cannot be heard when callers access Extension Directory. The name must be recorded in order to fully initialize the Extension ID.) See page 5-12 for more information on initializing Extension IDs.

2.12 Once a password has been set up and the name recorded, the extension owner may access Extension ID Options which allows the associated directory name and password to be modified.

2.13 If an Extension ID has not been created for a station, callers using the automated attendant cannot be transferred to that destination. Instead, these callers will receive a system recording notifying them of an invalid entry and are routed back to the automated attendant's main menu.

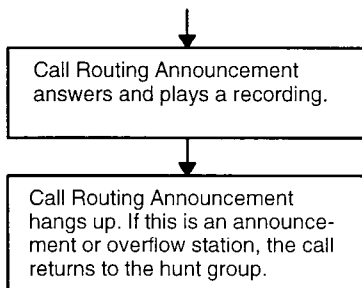
2.14 Individual extension IDs can be programmed as "Private" in database programming. A Private number is included in the directory and can be dialed if the caller knows the number, but the extension number information is not available to the caller; only the name is played.

2.15 Extension IDs can also be programmed as "Unlisted." That means that the number will not be included in the directory, but can be dialed if the caller knows the extension number.

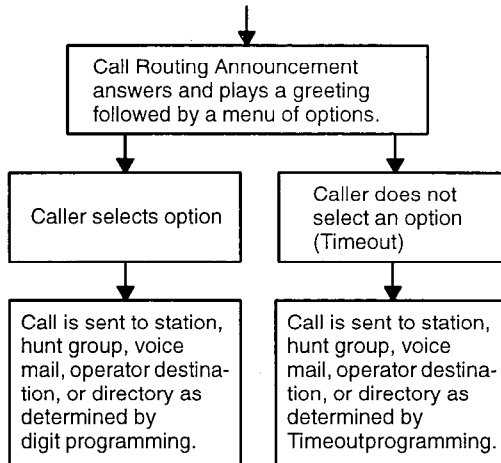
3. CALL ROUTING ANNOUNCEMENT

3.1 The Call Routing Announcement application can be used as a playback device that plays a message and then hangs up to disconnect the call. This is especially useful for programming hunt group announcement and overflow stations. As an option, the Call Routing Announcement application can use digit translation which allows the caller to press a single digit for access to a station, hunt group, or mailbox.

CALL TO CALL ROUTING ANNOUNCEMENT WITHOUT DIGIT TRANSLATION



CALL TO CALL ROUTING ANNOUNCEMENT WITH DIGIT TRANSLATION



3.2 When a caller reaches a Call Routing Announcement application that is programmed as a hunt group announcement or overflow, if the call is sent to a destination *outside of the Axxent Talk* (a station), it will stop circulating through the hunt group. If the caller does not dial a digit or if the call is sent to an Axxent Talk application (such as voice mail), the call will be “pulled back” to the hunt group when a hunt group station becomes available.

A. CALL ROUTING CUSTOM RECORDINGS

3.3 When accessed, the Call Routing Announcement application will play a custom recording and then hang up.

3.4 Call routing announcements are recorded using the System Administrator’s mailbox as described on page 5–19. Each announcement is assigned to use a “custom greeting” number in database programming. (Refer to page 6–174 in PROGRAMMING.)

B. DIGIT TRANSLATION

3.5 Digit translation allows callers to dial a single digit to access a designated extension number, mailbox, or hunt group pilot number. Up to 12 digit translation storage locations (#, *, 0–9) are available for each Call Routing Announcement application (refer to PROGRAMMING, page 6–148).

3.6 To use digit translation, the Call Routing Announcement application must have special programming. Digit translation is programmed by assigning specific “Actions” for each digit and determining what will happen if the caller does not enter a digit (Timeout). The length of time the application will wait for input from the caller (0–60 seconds) is also programmable. The Actions that can be selected are as follows:

- *Transfer To Operator*: This action transfers the call to the Dial-0 Destination that is programmed in the System Maintenance window, shown on page 6–189.
- *Company Directory – First Name*: This sends the caller to the directory prompt that asks the caller to enter the first name of the desired party.
- *Company Directory – Last Name*: This sends the caller to the directory prompt that asks the caller to enter the last name of the desired party.
- *Subscriber Access*: This sends the caller to the mailbox prompt that requests a mailbox number.
- *Invalid*: The digit will not be used. Callers who press this digit will hear a recording that tells them that it is invalid.
- *Transfer To Extension*: This Action will send the call to the designated extension (station, hunt group, trunk, trunk group, or application).
- *Transfer To Mailbox*: This will send the call to the designated mailbox. (This will not appear if there are no programmed mailboxes.)
- *Transfer To Collected Extension*: (Cannot be used for #, *, or 0) This allows callers to dial extension numbers of stations and hunt groups that have a

mailbox or extension ID. Assign this Action to digits that correspond to the first digits of extension numbers. For example, if digit 1 is "Transfer To Collected Extension," callers can dial extension numbers that begin with 1. However, if digit 1 is "Transfer To Extension 2000," a caller attempting to dial a station extension number that begins with 1 will instead be transferred to 2000.

- *Transfer To Mailbox:* Same as described above for digits 1–9.
- *Hang Up:* (This action is used for Timeout only.) This disconnects from the call if the user does not enter a digit.

3.7 After the application is created and programmed, the System Administrator's mailbox is used to make a custom recording that explains the options to callers, as described on page 5–19. The custom recording is assigned to the Call Routing Announcement application as described on page 6–148. A caller who listens to the Call Routing Announcement recording can then dial the single-digit location number to reach the designated destination. For example, if the hunt group extension for a customer support group is programmed for digit 3, the recording should say something like, "Dial 3 for customer support."

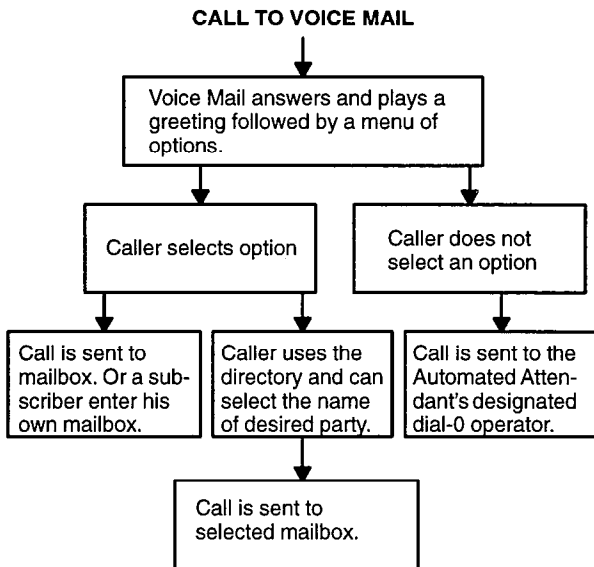
4. VOICE MAIL

4.1 The Voice Mail feature allows callers to send and receive recorded messages from any station or DTMF telephone. (Dial-pulse signaling is not recognized by Axxent Talk. Callers using dial-pulse phones will be routed to the Axxent Talk Operator Access Destination for assistance.)

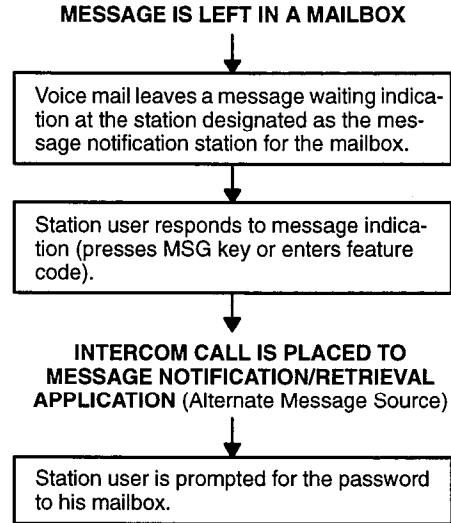
A. VOICE MAIL AND MESSAGE NOTIFICATION/RETRIEVAL APPLICATIONS

4.2 Two types of applications are combined to provide the Voice Mail feature: Voice Mail and Message Notification/Retrieval.

- **Voice Mail:** This application handles all calls that are directed to voice mail (other than the Message Notification/Retrieval application) placed by subscribers and non-subscribers. Callers will hear the main company greeting, followed by a menu of available options. Internal callers will hear only the menu of options, and not the company greeting. Stations can forward or transfer calls directly to their mailbox using this application's extension number (defaults to 299). This application can also be the message center for the subscribers' stations.



- **Message Notification/Retrieval:** Only one Message Notification/Retrieval application is created for the system. When station users respond to message indications left by voice mail, they are prompted only for their password.



4.3 Station users and outside callers gain access to the Voice Mail application in the following ways:

- By dialing the telephone number or extension number assigned to the Voice Mail application
- By being transferred to the Voice Mail by the automated attendant
- By being forwarded to the Voice Mail when a called station is unavailable (via the Call Forwarding or System Forwarding features)
- By responding to message waiting indications
- By transferring a conference call to a mailbox in order to record the call (**NOTE:** Federal and State law may prohibit the use of this feature to record in certain circumstances. Inter-Tel does not purport to give any legal advice on this subject, but recommends that you contact your attorney for guidance on the use of this feature.)

4.4 Outside callers will hear the Voice Mail company greeting. All Voice Mail users hear recorded instructions that tell them what to do next. Users simply listen to the prompts and press the keypad key that corresponds to the desired choice. If the user does not respond immediately, a second set of prompts is played.

4.5 Most prompts are interruptible, and users can press the desired key at any time during the prompt. The prompt will then stop and the system will act on the requested choice.

B. MAILBOXES

4.6 A mailbox is a storage location on the Axxent Talk hard disk which stores all messages that have been directed to it. (The hard disk also stores prompts, greetings, and special programming.) Each "Subscriber" (member of the voice message system) is assigned a unique mailbox number. At system default, the passwords are the same as the mailbox numbers. (For example, the default password for mailbox 101 is "101.")

4.7 There are three types of mailboxes on the voice mail system: Standard, Receive-Only and System Administrator. There can also be Extension IDs which are stations that do not have mailboxes, but that are included in the recorded directory.

- The Standard mailbox owner receives all of the available subscriber options as authorized through database programming. Standard mailbox features include:
 - Listening to new messages
 - Recording and sending messages
 - Deleting messages
 - Saving messages
 - Personal options (greeting, password, etc.)
 - Remote messaging (if authorized through database programming)
- A Receive-Only mailbox type may only listen to new messages, save or delete them and access personal options. This type of mailbox is restricted from recording and sending messages and has no access to remote messaging.
- The System Administrator has all of the options a Standard mailbox subscriber has, plus these features:
 - Record and send broadcast messages to all subscribers of the voice mail system
 - Provide mailbox and group list maintenance
 - Record and select Custom Recordings

- Extension IDs are used in conjunction with transferring calls through the Automated Attendant or using the Extension Directory. The extension ID allows callers to be transferred to station extensions which do not have mailboxes and allows the station user to record a directory name and set up a password.

4.8 Multiple mailboxes and extension IDs may be created. However, there can be only one System Administrator. There can be up to 500 total mailboxes (any type) and/or extension IDs in the voice mail system. (If a mailbox is created for an extension with an extension ID number, the extension ID number is replaced with the mailbox.)

C. GROUP LISTS

4.9 Group lists are programmed in the database (see page 6-157). They are lists of mailboxes that can be used by any Subscriber for sending messages to several mailboxes simultaneously. The information that is programmed for group lists include the following:

- Group list description
- Group list number
- Mailboxes included in the list

4.10 Group Lists are not included in the Automated Attendant or Voice Mail of directories.

4.11 The System Administrator can record the name for a group list.

4.12 Instructions for using group lists are given on page 5-14.

D. MESSAGE NOTIFICATION TO STATIONS

4.13 Each mailbox has a programmed Message Notification Station. This is usually the extension number that matches the mailbox number (associated mailbox). However, a different number can be used for the mailbox's message notification station (non-associated mailbox).

- **Associated:** When the extension number, message notification number, and mailbox number for a station all match, that station user can forward calls to voice mail and have the call go directly to the associated mailbox's personal greeting. (Even if other mailboxes use that extension number as their message notification extension.) In the default database, station 100–115 have associated mailboxes. If the station number is changed, its associated mailbox number is automatically changed to match.
- **Non-Associated:** Non-associated mailboxes have a Message Notification Station assignment that is an extension number that does not match the mailbox number. (For example, a hunt group pilot number can have a mailbox, but the message notification must be sent to a specific station so that a message lamp can be lit or message notification signal can be sent.) If a station user's extension number does not match a mailbox number, and the station user forwards calls to voice mail, the caller will hear the main voice mail greeting and must enter a mailbox number.

NOTE: If there are non-associated mailboxes in Axxent Talk, the system must have the Validate Voice Mailbox feature disabled. When enabled, this feature prevents users from dialing mailbox numbers that do not match valid extension numbers.

4.14 When a mailbox receives a message, the message notification station is signaled. If it is a keyset, the MSG key is lit and the display shows that a message has been received. A single-line set will receive message waiting signals, if enabled system-wide.

4.15 If a message notification station has more than one associated mailbox, the message indications (MSG key lamp, display, and/or message waiting tones) will continue until all messages from all associated and unassociated mailboxes have been heard. However, the display does not show which mailbox(es) received the message(s), only that the message waiting indications were received from voice mail. When the Message Notification station user responds to the message (using the feature code or key), he or she will automatically enter the associated mailbox for the extension being used and hear the password prompt. To retrieve a message from an unassociated mailbox, the user must bypass the associated mailbox (press) and enter the correct unassociated mailbox number and password. Or, the user may dial the Voice Mail access number directly, instead of responding to the message using a feature code or key, to bypass the associated mailbox.

E. REMOTE MESSAGE NOTIFICATION

4.16 Remote Messaging is a subscriber feature that is enabled through database programming. Subscribers may program specific telephone numbers for the voice mail system to call when new messages are received by their mailboxes.

4.17 Each mailbox has a Primary and/or an Alternate notification number. The notification numbers are programmed to be accessed during specific days and times.

4.18 The voice mail system monitors subscriber mailboxes continuously. During monitoring, if new messages have been received (and/or if the Pager Retry timer expired), the system will check to see if the Primary notification number is turned on. If it is, the system will check the day and time programming. If the current time is within the programmed notification day and time, the voice mail system will make the notification call. If the Primary Number is turned off or if the day or time does not match, the voice mail system will immediately make the same check for the Alternate notification number.

4.19 When the mailbox is being programmed for remote notification, message notification can be set to place the notification call when a new message is waiting or only when priority messages are received. (This defaults to "each new message.") **NOTE:** If the mailbox is set for "each new message," the Axxent Talk will attempt *immediate* notification only when a new message has been received since the last Subscriber mailbox login. Until the Subscriber logs in to the mailbox again, any additional new messages will not generate a remote notification attempt. (However, notification will be attempted if the applicable retry timer expires, as described below.)

4.20 Remote Message Notification can also be programmed to retry the call periodically when it encounters a busy trunk or trunk group. If the system is not able to place the call within the parameters of the programmed notification day and time (due to busy facilities or invalid programming), the mailbox will receive a message stating that notification could not be completed (the mailbox owner will hear the message next time he or she accesses the mailbox.)

4.21 If the mailbox user accesses the mailbox between the time the message is received and when remote notification is successful, the remote notification will be canceled. It is assumed that the mailbox user listened to the message when the mailbox was accessed. However, the MSG key at the station will remain lit if there are any messages that have not been heard. Also, when the Pager Retry timer expires, the remote notification call

will be placed again if the user did not take action on the message and/or another message was received.

4.22 The programmed notification number can be an extension number or an outside telephone number. When an outside telephone number is used, the system will access an outgoing trunk using a remote notification table that contains a pre-programmed trunk access code and will be followed by a programmed access termination feature code, if needed. If the notification number is associated with a pager, a pager dial string, LCD number, and termination code will be sent. There can be up to 10 remote notification tables. Each can have a unique set of pager and outgoing access dialing strings.

4.23 If the pager or personal number called is busy or does not answer, the voice mail system will again verify the time of day and day of week parameters. If the Primary Number was just called, the voice mail system will call the subscriber's Alternate number if it is enabled for the current time and day. If neither station can be reached, the system will stop attempting the notification until the Number Called Busy timer expires and notification is attempted again (starting with the Primary Number).

4.24 Notification calls to outside telephone numbers can be sent to a pager or to a number where a person will answer (personal number).

- If the call has gone to a pager, the voice mail system will dial the programmed Pager Answer dial string, the Pager LCD Number Display number and the Pager Termination dial string. Then voice mail system will disconnect the call.
- If the call has gone to a personal number, the voice mail system will play a prompt which announces that the call is from voice mail, play the directory name or mailbox number which originated the call and user instructions. The listener can then enter the mailbox number's password to gain access to the mailbox and hear the message. The listener has three chances to enter a correct password. If the system receives an incorrect password three times, the voice mail system will disconnect the call immediately and the attempt is considered unsuccessful. It will retry the personal number after verifying that the times and days are valid when checking the mailbox number.

4.25 Axxent Talk can process up to two remote message notification calls outside of the system simultaneously.

4.26 Refer to page 5-16 for subscriber instructions on setting up remote messaging.

F. SUBSCRIBER USE OF VOICE MAIL

4.27 Voice Mail subscriber features include the following:

- Listen to new messages, if any
- Send a message
- Listen to saved messages, if any
- Set personal options
- Set up remote messaging, if enabled

4.28 When a subscriber enters the mailbox, the Voice Mail application may play one of the following messages:

- **Mailbox almost full or full:** If a mailbox is full, no new messages can be received at that mailbox until the subscriber deletes waiting or saved messages.
- **Message count:** A prompt tells the subscriber how many messages are waiting to be heard, if any, and how many are priority messages.
- **Remote messaging:** A prompt will indicate whether primary or alternate remote messaging is selected when remote messaging is enabled. It will also alert the subscriber if a programming error has been detected and/or whether the system encountered busy resources when attempting to place a remote messaging call.

Access To A Mailbox

4.29 A subscriber can access his or her mailbox by following these steps:

- (1) Dial the Voice Mail application access number (defaults to 299). You hear the main menu.
- (2) During or after the greeting, press * to identify yourself as a subscriber.
- (3) Enter your mailbox number and personal password.

Initializing A Subscriber Mailbox or Extension ID

4.30 The first time a subscriber uses Voice Mail, he or she must customize the mailbox. System prompts will instruct the subscriber to:

- Change the default password number (same as the mailbox number) to a personal password.
- Record a name to identify the mailbox owner in the company directory. (Directory names can be up to 1 minute in length.)
- Listen to the Voice Mail application introduction. (You cannot skip this introduction. If you exit without listening to it, the introduction will play again the next time you access your mailbox.)

4.31 TO INITIALIZE A MAILBOX OR EXTENSION ID:

- (1) Dial the Voice Mail application access number (defaults to 299). You hear the main menu.
- (2) Press * to identify yourself as a subscriber.
- (3) Enter your mailbox number and default password. (Your default password is your mailbox number.)
- (4) Choose and enter a new password using digits 0-9 (up to 12 digits). Then press #. Your password is played back.
If you do not want to use a password, press #.
- (5) Press the # key to accept the entry. (Or press 3 if you wish to re-enter your password, and go back to step 4.) The system prompts you to record your directory name.
- (6) After the tone, record your first and last name. When finished, press #.
- (7) Press # again to accept the name. (Or, press 1 to replay the name you just recorded, 2 to add to your message, or 3 to erase and re-record it.)
- (8) A prompt plays that introduces you to basic Voice Mail features.

4.32 Once your mailbox is initialized, you may use any of the mailbox features provided. To record a personal greeting, or to change your password or directory name, refer to paragraph 4.36 on page 5-15.

Listening To Messages

4.33 There are two types of voice mail messages:

- **New Messages** are messages that you have not yet heard, including Broadcast Messages from the System Administrator and system-sent messages. They are played in the order they were received, except that messages marked "priority" are played first. Some special messages that may be played include the following:

— *Message receipt:* If you send a certified message, a system message will be played when the recipient has listened to the message.

— *Caller Information:* If a call was placed to your mailbox on a trunk that supports the Caller ID feature, and the caller hung up without leaving a message, a system message will be played informing you that the calling party did not leave a message. It will also include, within the corresponding message envelope, the number of the calling party as the message source.

— *Security violation:* The voice mail system has an extra security measure built in which informs you, after you have logged into your mailbox, whenever three invalid attempts have been made to access your mailbox within a single call. This announcement message will be sent to your mailbox each time this situation occurs. It is received as a new message and is accompanied by a message envelope.

- **Saved Messages** are messages that you previously listened to and saved. You can play them back, as necessary, in the order they were saved.

4.34 Whenever you access Voice Mail as a subscriber, you are told how many new and saved messages you have. From the Main Menu:

- (1) Press **[1]** to listen to your new messages.

OR, Press **[3]** to listen to your saved messages.

- (2) The system plays each message in the queue selected, preceded by an "envelope" that tells you the information you have enabled in Personal Options. While you are listening to a message, you can use the following options:

Press **[1]** to back up while listening to a message. (The amount of time is determined

by the Replay/Forward/Rewind Increment timer.)

Press **[2]** to pause (for the length of the database-programmed Pause Voice Mail timer). To continue listening, press any key. To exit without completing the message, press **[*]**.

Press **[3]** to skip ahead while listening to a message, or skip to the next message if a message is not playing. (The amount of time is determined by the Replay/Forward/Rewind Increment timer.)

Press **[5]** to play the message envelope again.

Press **[6]** to raise the volume.

Press **[4]** to lower the volume.

Press **#** to skip to the end of the recording.

- (3) When the message has finished playing, you have the following options:

- a. Press **[1]** to replay the message from the beginning.

- b. Press **[2]** to reply to the message (unless it was a system-sent message or from an outside telephone number). *This option is not provided for receive-only mailboxes.*

- c. Press **[3]** to forward a copy of the message to another subscriber, along with your introductory comments. (If the message was marked "private" when it was sent, you cannot forward it.) *Receive-only mailboxes cannot use this option.*

- d. Press **[4]** to listen to the previous message.

- e. Press **[5]** to play the message envelope again.

- f. Press **[6]** to listen to the next message.

- g. Press **[7]** to save the new message in your mailbox for future action.

- h. Press **[9]** to delete the message from your mailbox. (If you want to reply to or forward a message, do this before you delete it. Deleting a message completely removes it from your mailbox.)

Sending A Message

4.35 As a subscriber, you can record and send voice messages to other users from the subscriber Main Menu. Follow these steps:

- (1) Dial the Voice Mail application access number. You hear the main menu.
- (2) During or after the greeting, press ***** to identify yourself as a subscriber.
- (3) Enter your mailbox number and personal password.
- (4) When you hear the Subscriber Menu, press **2** to send a message.
- (5) Dial the desired mailbox number or group list number. *If you do not know the mailbox number, you can press pound (#) to access the company directory to locate and select the mailbox. See page 5-21 for directory instructions. Group lists are not included in the directory.*

If the mailbox is full, a prompt will notify you that the mailbox cannot receive messages. However, it will allow you to leave a message at another mailbox. Leave your message with another subscriber or try again later.

- (6) After hearing the subscriber's name, press **#** to accept it.
- (7) When you hear the tone, record your message.

NOTE: If the system detects silence for longer than 5 seconds, it will prompt you to speak up. The recording, if any, will remain unchanged.

*To pause while recording, press **2**. To continue, press any key. (The pause length is determined by the Pause Voice Mail timer.)*

*To erase your message, press **3**.*

If you exceed the maximum allotted time for message length, a prompt will notify you and allow you to re-record the message or send the message as it is.

If Voice Mail is full, a message will notify you that it cannot accept your message. Hang up and try again later.

- (8) **To send the message**, hang up. Or, press **#** and go to the next step.

To use the special delivery options, press **1**. You can perform *one or more* of the following steps:

Press **1** to mark the message "private." (This prevents the recipient from forwarding it to other subscribers.)

Press **2** to mark the message "certified." (When a certified message is heard by the recipient, you will receive a receipt notice.)

Press **3** to mark the message "priority." (This will place your message ahead of all other waiting messages in the receiving mailbox.)

Press ***** to cancel delivery options.

Press **#** to deliver the message. (If you wish to mark the message certified, private, and/or priority, do so before completing this step.)

- (9) After the message has been sent, you may choose either of the following options:

Press **1** and enter another mailbox number to send the message to another destination.

Press **#** to return to the Main Menu.

Personal Options

4.36 Personal Options allow you to customize your mailbox. Each subscriber's mailbox has the following personal options:

- **Greetings:** Your primary or alternate greeting is played to callers when they reach your mailbox. You can change your primary greeting at any time to reflect a change in status and/or record and enable an alternate greeting. If you elect not to record a personal greeting, the default system greeting will be used.

NOTE: There is a database option called "Play Recording Instructions" that affects mailbox greetings. If this option is enabled, the system prompt that tells the caller to leave a message after the beep will play after the primary or alternate greeting. If disabled, the beep will occur as soon as the primary or alternate greeting ends. In the default state, this option is enabled. For programming information, refer to page 6-166 in PROGRAMMING.

- **Directory Name:** Your recorded name is used to identify you in the directory and to verify your mailbox number when messages are addressed to you by non-subscribers and other subscribers. Although your name is recorded when you first set up your mailbox, you can change it at any time.
- **Password:** Your password is used to prevent unauthorized access to your mailbox. Although you create a personal password when you first set up your mailbox, you can change it at any time.
- **Message Envelope Contents:** Each message is preceded by an "envelope" message that can include the time and date the message was left, the source of the message, and the length of the message. You can choose the contents of the envelope or disable the envelope completely. (Even if the envelope is disabled, the subscriber can still enter the code to play the envelope when listening to the message.)

4.37 TO PROGRAM PERSONAL OPTIONS:

- (1) Dial the Voice Mail application access number. You hear the main menu.
- (2) During or after the greeting, press ***** to identify yourself as a subscriber.
- (3) Enter your mailbox number and password.
- (4) When you hear the Main Menu list of options, press **4** to select the Personal Options Menu. You may then do any or all of the following steps.

- (5) **To change your personal greeting, press **1**.** You have the following options:

- a. Press **1** to record and/or enable your primary personal greeting or **2** to record and/or enable your alternate greeting. The system plays your current greeting. To replay the greeting, you can press **1**. Press **3** to erase and re-record your greeting as follows:
 1. Record your greeting after the tone, then press **#**.
 2. Press **#** again to accept your greeting. (Or, you can press **1** to replay your greeting, **2** to add to your greeting, or **3** to erase and re-record your greeting.)
- b. Press **3** to enable the system default mailbox greeting. The system greeting is automatically enabled.
- c. Press ***** to exit without changing your greeting.

- (6) **To change your recorded directory name, press **2**.**

- a. After the tone, record your first and last name, then press **#**.
- b. Press **#** again to accept your recorded name. (Or, press **1** to replay your recorded name, **2** to add to your name, or press **3** to erase and re-record your name.)

- (7) **To change your password, press **3**.**

- a. Choose and enter a new password using digits 0-9 (up to 12 digits). *If you do not want to use a password, skip this step.*
- b. Press **#**. Your password is played back.
- c. Press **#** to accept the password as entered. (Or, press **3** if you wish to re-enter your password.)

- (8) **To change your envelope contents, press **4**.** A prompt plays to tell you the current status of your envelope contents.

- a. To enable or disable the time/date option, press **1**. A prompt plays to tell you the current status of the time/date option.
- b. To enable or disable the message source option, press **2**. A prompt plays to tell you the current status of the message source option.

- c. To enable or disable the message length option, press **[3]**. A prompt plays to tell you the current status of the message length option.
- d. To enable all options, press **[4]**. A prompt tells you that all options are enabled.
- e. To disable all options, press **[5]**. A prompt tells you that all options are disabled.
- f. To return to the Personal Options menu, press **[*]**.
- g. Press **[#]** to accept the personal options as entered.

Setting Up Remote Messaging

4.38 Remote messaging is described in detail on page 5–11. To set up the remote messaging parameters, follow the procedure given below.

4.39 TO SET UP REMOTE MESSAGING:

- (1) Dial the Voice Mail application access number. You hear the main menu.
 - (2) During or after the greeting, press **[*]** to identify yourself as a subscriber.
 - (3) Enter your mailbox number and personal password. (If message forwarding is enabled, the prompt will remind you.)
 - (4) When you hear the Main Menu list of options, press **[5]** to select the Remote Messaging Menu.
 - (5) Press **[1]** to set up a Primary destination, or press **[2]** to set up an Alternate destination. A prompt tells you what your current remote messaging status is. (If desired, press **[*]** to return to the Personal Options Menu.)
- (6) You have the following options:
- a. Press **[1]** to turn remote messaging on or off. If turning it on, press **[1]** to enable pager notification or press **[2]** to enable personal number notification. Then, press **[1]** to have it notify you for any new message or press **[2]** to have it notify you on priority messages only. **NOTE:** You cannot enable remote messaging until a telephone number has been programmed.
 - b. Press **[2]** to set up or change the telephone number. Then enter the telephone number followed by **[#]**. It will play back for your verification.
 - c. Press **[3]** to set up the time of day. Then, when prompted, enter the time at which you wish to have the message notification start and stop. Enter the times with two digits for the hour and two digits for the minutes. If entering the time in 12-hour format, you will be prompted to press **[1]** for AM or press **[2]** for PM. **NOTE:** If you wish to have 24-hour notification, program the starting and ending times to be the same.
 - d. Press **[4]** to set up the days of week for remote messaging. Then press **[1]** for messaging Monday–Friday, **[2]** for all days, or **[3]** to select individual days. If you selected individual days, you will be prompted to press digits 1–7 which correspond to the days Sunday through Saturday. Your selection will be played back.
- (7) The options prompt returns. Either select another option, as described above, or press **[#]** to save the settings and exit.

G. NON-SUBSCRIBER USE OF VOICE MAIL

4.40 Callers who do not have a subscriber mailbox can leave messages for subscribers. Also, Subscribers can use this method for leaving messages without accessing their mailboxes. If a non-subscriber message is left using a station with an associated mailbox, the receiving mailbox Subscriber can reply to the message, if desired, and the reply will be sent to the caller's associated mailbox.

4.41 Non-subscribers can gain access to the voice mail system through the automated attendant (by dialing the Voice Mail application extension number), through a call transfer, by placing an intercom call to the Voice Mail application extension number, or by being forward to voice mail.

Leaving A Message

4.42 TO LEAVE A MESSAGE AS A NON-SUBSCRIBER:

- (1) *If you hear the voice mail greeting or menu, dial the desired mailbox number. (If you do not know the number, you can press pound (#) to access the mailbox directory to locate and select the mailbox. See page 5-21 for directory instructions.)*

If you hear a subscriber's personal mailbox greeting, skip this step.

- (2) *If the mailbox is full, a prompt will notify you that it cannot receive messages. However, it will allow you to leave a message at another mailbox. Leave your message with another subscriber or try again later.*

- (3) After hearing the subscriber's greeting and a tone, record your message. You have the following options:

To call the attendant, press [0].

To pause while recording, press [2]. A prompt will tell you that the recording has been stopped. To continue, press any key except [0].

To erase and re-record your message, press [3].

To cancel the recording and return to the main menu, press [].*

If you exceed the maximum allotted time for message length, a prompt will notify you and allow you to re-record the message or send it.

If Voice Mail is full, a message will notify you that it cannot accept your message. Hang up and try again later.

- (4) When you have completed your message, you have the following options:

If you are satisfied with your message, hang up. OR press [#] for additional options and return to step 1.

If you wish to hear your message, press [1].

If you wish to add to your message, press [2] and continue your message as described in step 3.

To erase and re-record your message, press [3].

H. SYSTEM ADMINISTRATOR FEATURES

4.43 The voice mail System Administrator can use special features that are not provided to Subscribers. The System Administrator mailbox has all standard subscriber features plus the ability to do the following:

- Record a broadcast message
- Perform mailbox and group list maintenance
- Create and select custom recordings (voice mail company greetings, auto attendant recordings, call routing announcements, and hunt group overflow and announcement station recordings)

4.44 To enter the System Administrator's mailbox, the System Administrator dials the Voice Mail access number, presses [*] to access the main menu, enters the System Administrator's mailbox number, then presses [9] to reach the System Administrator Menu. (There is not a prompt for entering the [9].)

Broadcast Messages

4.45 The System Administrator has the ability to make a single recorded message and send it to all Standard and Receive-Only subscriber mailboxes. (Extension IDs do not receive Broadcast Messages.)

4.46 TO RECORD A BROADCAST MESSAGE:

- (1) Dial the Voice Mail application access number. You hear the main menu.
- (2) During or after the greeting, press [*] to identify yourself as a subscriber.
- (3) Enter the System Administrator mailbox number and password.
- (4) Press [9] to access the System Administrator's Menu.
- (5) When you hear the System Administrator Menu list of options, press [1] to send a broadcast message.
- (6) Record your message.

To pause while recording, press [2]. To continue, press any key except [0].

To erase and re-record your message, press [3].

If you exceed the maximum allotted time for message length, a prompt will notify you and allow you to re-record the message or send it.

If Voice Mail is full, a message will notify you that it cannot accept your message. Hang up and try again later.

- (7) When you have completed your message, you have the following options:

If you are satisfied with your message, hang up. OR press [#] for more options.

If you wish to hear your message, press [1].

If you wish to add to your message, press [2] and continue your message as described in step 6.

To erase and re-record your message, press [3].

Mailbox/Group List Maintenance

4.47 Using the System Administrator's mailbox, the administrator may provide basic voice mail mailbox and group list system maintenance. This maintenance includes the following:

- Record the name of a standard subscriber mailbox, extension ID, or a group list
- Record the mailbox greeting and set personal options for a subscriber mailbox
- Set the password for a subscriber mailbox or extension ID

4.48 The System Administrator does not need to know the Subscriber's password to perform maintenance on a subscriber mailbox.

4.49 TO PERFORM MAILBOX/GROUP LIST MAINTENANCE:

- (1) Dial the Voice Mail application access number. You hear the main menu.
- (2) During or after the greeting, press [*] to identify yourself as a subscriber.
- (3) Enter the System Administrator mailbox number and password.
- (4) Press [9] to access the System Administrator's Menu.
- (5) When you hear the System Administrator Menu list of options, press [2] to access the Mailbox/Group List Maintenance option.
- (6) Dial the mailbox, extension ID, or group list number to be accessed.

If programming a mailbox or extension ID, you hear the Personal Options menu. Follow the instructions on page 5–15 to program the personal options (name, password, message envelope, or greeting) for the selected mailbox.

If programming a group list, the current name is played. You are prompted to enter a name. After the tone, record the name for the selected list. When you are finished, press [#]. Then press [#] again to accept the name. (Or, press [1] to replay the name you just recorded, [3] to erase and re-record it.)

Custom Recordings

4.50 The System Administrator can create and select up to 50 custom recordings (voice mail company greetings, auto attendant greetings, call routing announcements, and hunt group announcement/overflow recordings). Each recording has an assigned number. Numbers are then assigned to specific applications using the System Administrator's mailbox or through database programming.

4.51 Any recording number (01–50) can be assigned to any Axxent Talk application. In the default state, Recording 01 is automatically defaulted to play the system-provided Voice Mail main greeting and Recording 02 is reserved for the Automated Attendant main greeting. The default recordings can be changed, but will be returned to system-provided values if the Axxent Talk system is defaulted. A single recording may be used for multiple applications.

4.52 After making the required recordings, the System Administrator must determine which ones play during the telephone system's day and night modes of operation. This can be done from either the System Administrator's mailbox or through database programming.

4.53 The System Administrator must enter a valid two digit recording number (or a single digit followed by # for recordings 1–9) before a custom recording can be made. If a valid number has been entered and a previous recording exists, Axxent Talk will play it. (This includes the two standard default greetings.) When no recording is associated with recording number, the System Administrator will be prompted to create a recording.

4.54 Once the recording is installed it replaces any previous recording. The only recordings that can be retrieved are system default recordings 01 and 02. They can be retrieved by defaulting the Axxent Talk database. If a recording has been previously made but the System Administrator chooses to make a change to it, Axxent Talk will play the current recording before offering the option of accepting it as is, replaying it or erasing and re-recording it.

4.55 The maximum recording time for each custom recording is determined in database programming when the maximum greeting lengths are established for all subscribers.

4.56 TO RECORD CUSTOM RECORDINGS:

- (1) Dial the Voice Mail application access number. You hear the main menu.
- (2) During or after the greeting, press * to identify yourself as a subscriber.
- (3) Enter the System Administrator mailbox number and password.
- (4) Press 9 to access the System Administrator's Menu.
- (5) When you hear the System Administrator Menu, press 3 to select the Record Custom Recordings option.
- (6) When prompted, enter the desired recording number (01–50). If a recording exists, it is played. If not, go to the next step.

To hear the recording again, press 1.

If you wish to leave the recording unchanged, press #

If you wish to re-record the recording, press 3 and continue to the next step.

- (7) When prompted, record the greeting or message.
To pause while recording, press 2. To continue, press any key.

If you exceed the maximum allotted time for recording length, a prompt will notify you and allow you to re-record or save it.

If the Axxent Talk disk is full, a prompt will notify you that it cannot accept your recording. Hang up and try again later.

- (8) When you have completed your recording, you have the following options:

If you are satisfied with your recording, hang up. OR press # for more options.

If you wish to hear your recording, press 1.

If you wish to add to your recording, press 2 and continue your recording as described in step 3.

To erase and re-record your recording, press 3.

4.57 TO ASSIGN CUSTOM RECORDINGS TO SPECIFIC APPLICATION EXTENSION NUMBERS:

- (1) Dial the Voice Mail application access number. You hear the main menu.
- (2) During or after the greeting, press **[*]** to identify yourself as a subscriber.
- (3) Enter the System Administrator mailbox number and password.
- (4) Press **[9]** to access the System Administrator's Menu.
- (5) When you hear the System Administrator Menu list of options, press **[4]** to select the Select Custom Recordings option.
- (6) When prompted, enter the extension number of the application to be programmed. (For example, enter 299 to program the Voice Mail greeting.) Or, press **[*]** to exit to the System Administrator menu.
- (7) When prompted, select whether the recording will be played during day mode (by pressing **[1]**) or during night mode (by pressing **[2]**).
- (8) When prompted, enter the desired recording number (01-50). If a recording exists, it is played. (If not, you hear a warning that the recording has not yet been made.)
- (9) If it is the correct recording, press **[#]**. Return to step 6.

5. DIRECTORIES (AUTOMATED ATTENDANT, CALL ROUTING ANNOUNCEMENT, AND VOICE MAIL)

5.1 There are two types of Axxent Talk directories that can be enabled (or disabled) in the system: Mailbox and Extension.

- **The Voice Mailbox Directory** is a list of mailbox subscribers, their recorded names, and mailbox numbers.
- **The Automated Attendant Directory**, provided to all Auto Attendant callers, is a list of all mailbox subscribers and extension ID owners and their recorded names.

5.2 The directories can be selected in the following ways:

- **From the Voice Mail or Automated Attendant main menu:** Press the **[#]** key.
- **Using a Call Routing Announcement application:** Press the Digit Translation digit designated for directory access. (See page 5-6 for a detailed explanation of digit translation.)
- **As a Voice Mail Subscriber:** Subscribers can access the directory by pressing **[#]** whenever they are prompted to enter a mailbox number.

5.3 If a directory is disabled or empty because no names are recorded for any of the system's mailboxes and extension IDs, callers will not hear the prompt that allows access to the directory. However, if the caller does press **[#]** or a Directory menu key the user will be instructed that the selection is invalid and returned to the initial instructions.

5.4 Recorded names are added to the directories when the owner of the mailbox or extension ID has initialized the name. If the mailbox or ID is not initialized, the directory will include only the mailbox number or extension ID number. (Group Lists are not included in either type of directory.)

5.5 The caller uses the keypad keys to enter the name. The application then plays the closest matching directory name that corresponds to the digits entered by a caller. Once the name has been played the system will return a menu of options, including the following:

- Listening to the previous or next name in the directory
- Listening to additional information (This option is not available if the mailbox or extension ID number

has been classified in the database as a "Private" number.)

- Spelling a new name
- Toggling from a last to first name search mode
- Accepting the name

A. LOCATING A NAME

Entering A Name

5.6 There are two methods used for entering a name: Quick Spell and Exact Spell. Outside callers and station users with non-display keysets and single-line sets use Quick Spell. Display keyset stations use the Exact Spell method.

- Quick Spell callers press a single digit (or key) from their digital telephone dial pad for each letter or character entered. For example, keypad key **[2]** shows ABC, key **[3]** shows DEF, etc. To enter JONES, you would press **[5][6][6][3][7]**. Some characters are not shown on the keys: for "Q" press **[7]**, for "Z" press **[9]**, for punctuation marks press the **[1]** key.
- Exact Spell callers press the keypad keys to enter the name. The number of times a key is pressed determines which character is entered, as shown on the chart below. When adjoining characters are located under the same key, press **[FWD]** once to advance to the next character. For example, 5666 FWD 66337777 would enter JONES.

KEY	NUMBER OF TIMES KEY IS PRESSED				
	1	2	3	4	5
1	-	&	()	1
2	A	B	C	'	2
3	D	E	F	!	3
4	G	H	I	*	4
5	J	K	L	/	5
6	M	N	O	#	6
7	P	Q	R	S	7
8	T	U	V	?	8
9	W	X	Y	Z	9

5.7 After the digits have been entered, the caller presses **[#]** to begin the search. The Automated Attendant application plays the name that most closely matches the digit(s) that were entered. If **[#]** is pressed without entering any digits, the caller will hear the first name in the directory.

5.8 If a user presses **[0]** at any time while spelling a name, the system will play a helpful prompt instructing the caller how to enter a name. (Display keyset users will receive Exact Spell instructions; all other users will hear Quick Spell instructions.)

Changing The First/Last Name Search

5.9 Each directory can be programmed to be organized by last name or by first name. Callers accessing a directory receive system voice prompts that ask them to enter the first or last name of the person for whom they wish to leave a message.

5.10 If an Executive keyset is used to access a directory, the caller may switch back and forth from looking up a last name, to a first name simply by pressing the corresponding menu key. Callers using Standard keysets or single-line sets can press **[5]** to toggle between last and first name.

Listening To The Next/Previous Name

5.11 After a name has been played, the caller can listen to the previous name in the directory by pressing **[1]**. To listen to the next name, the caller can press **[3]**.

5.12 The directory lists are circular. That is, when the end of the list is reached, the next name played will be the first name in the directory. Or, if the caller scrolls to the beginning of the list, the "previous" name played will be the last name in the directory.

B. ACCEPTING A NAME

5.13 When the caller is using the Voice Mail feature, and accepts a name, the caller is transferred to the corresponding mailbox. There the caller will hear either the subscriber's recorded greeting, recorded directory name, or, if no recording has been made, the "mailbox number XXX is not available" prompt. The caller can then record a message.

5.14 If the caller is using the Automated Attendant feature, and accepts the name, the caller is transferred to the selected destination (station or mailbox) if it is available. If a station extension is dialed and the destination is not available, the caller is sent to the associated mailbox, if one exists.

C. REQUESTING ADDITIONAL INFORMATION

5.15 After a name is selected from the directory, the caller has the option of requesting additional information. When requested, the mailbox number, extension number, and name are played (if they have not been disallowed).

5.16 Individual mailboxes and extension IDs can be programmed as "Private" in database programming. A Private number is included in the directory and can be dialed by a caller who knows the number, but the associated mailbox and extension number information are not available to the caller; only the name is played.

5.17 Mailboxes and extension IDs can also be programmed as "Unlisted." That means that the number will not be included in the directory, but can be dialed if the caller knows the extension number.

D. USING THE DIRECTORIES

5.18 *TO USE A DIRECTORY:*

- (1) Dial the Voice Mail access number. You hear the recorded system greeting or main menu.
- (2) Press **[#]** to access the Directory Services application.
- (3) The keys on your telephone are labeled with letters. Use Quick Spell (non-display keyset or single-line) or Exact Spell (display keyset) to enter the desired name, as described on page 5-21, then press **[#]**. (If you wish to exit from the directory without selecting a name, press **[*]** or hang up.)
- (4) The Voice Mail application will play the selected name. Do one of the following:

*To accept the name, press **[#]**.*

*To hear the previous name in the directory, press **[1]**.*

*To hear additional information for the selected name (if allowed), press **[2]**.*

*To hear the next name in the directory, press **[3]**.*

*To spell a different name, press **[4]** and repeat step 3.*

*To switch the first/last name sort order, press **[5]**.*

6. SMDR INFORMATION STORAGE AND RETRIEVAL

6.1 The Axxent Talk can be used to capture Station Message Detail Recording (SMDR) information from the Inter-Tel Axxent System. The SMDR information is stored in a file on the Axxent Talk's hard disk for later retrieval.

6.2 Every time a call is completed, the SMDR feature records the call, formats it according to SMDR programming (see pages 4-117 and page 6-141), and sends the record to the SMDR output device, if enabled. The formatted record is also sent to the Axxent Talk if SMDR buffering is enabled.

6.3 The Axxent Talk adds each call record to the SMDR buffer file as it is received. The amount of disk space allocated for SMDR storage is determined in database programming. The default value is zero megabytes of memory. If the call records use disk space exceeding

80% of the allotment, the system generates an alarm and displays it at the primary attendant station and all administrator stations. Another alarm message is generated if the allotted space is 100% filled. If the maximum buffer capacity is exceeded, the oldest call record(s) are discarded as new ones arrive.

NOTE: Since each SMDR call record takes up approximately 81 bytes on the Axxent Talk, nearly 13,000 calls can be stored in each megabyte of hard disk space.

6.4 The SMDR records, which are stored in ASCII/binary format, are buffered until they are cleared by the programmer. If desired, the programmer may save and/or restore SMDR data (along with the system database) to floppy disks using the Axxent Talk Save and Restore feature.

6.5 If desired, the SMDR records can be retrieved and processed using a separate call accounting software package (such as the Inter-Tel Inside Track) to create customized reports.

PROGRAMMING

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1. INTRODUCTION

1.1 This section of the Inter-Tel Axxent manual explains how to program the system. The Inter-Tel Axxent System is functional when defaulted and only requires programming to enable premium features and make changes to meet the customer's special needs. Programming functions are divided among several "windows" so that specific features can be programmed easily.

NOTE: Programmers must be properly certified on the Inter-Tel Axxent System to receive technical support.

A. SYSTEM SOFTWARE PACKAGES AND PREMIUM FEATURE SELECTION

1.2 The Inter-Tel Axxent System is available in MF-rated and KF-rated software configurations. The software packages are available in several variations, depending on the PAL that is installed. The PAL ordered with the software determines whether the software is MF or KF rated and how many "premium features" can be enabled on the system. The premium features are assigned "unit" values (shown in the following chart). The PALs provide either 15, 25, 50, or 75 units that may be used for enabling the premium features.

FEATURE	UNITS REQUIRED
Advanced CO Interfaces	7
Analog Voice Mail Hunt Groups	5
Automatic Call Distribution Hunt Groups	5
Automatic Route Selection	3
Desktop Interface	10
Directories	2
Open Architecture Interface	30
System Forwarding	3
Uniform Call Distribution Hunt Groups	5

1.3 Through Premium Feature Selection (see page 6-198), the installer/programmer selects features up to the total number of units allowed by the PAL. (A 75-unit system could have all premium features enabled.) The premium features are as follows:

- **Advanced CO Interfaces:** The advanced trunk features in this software package include: DID trunks; Caller ID, ANI, and DNIS; and call routing tables.
- **Analog Voice Mail Hunt Groups:** A hunt group can be designated as an analog voice mail hunt group to enable it to contain the multiple ports of an analog voice mail unit (not Axxent Talk).
- **Automatic Call Distribution (ACD) Hunt Groups:** Automatic Call Distribution (ACD) can be programmed to distribute hunt group calls to equalize call time or call count among the available members. ACD can also provide call information records that can be processed by an external device connected to a system serial port.
- **Automatic Route Selection (ARS):** ARS is a money-saving feature that allows the system to be programmed to select the least expensive route for placing outgoing calls.
- **Desktop Interface:** Desktop Interface is a station-level communications protocol that allows a PC, attached to a PCDPM on an Executive or Standard keyset, to emulate a keyset for call handling. This protocol will allow devices such as PC phones, operators' consoles, ACD supervisors, and integrated contact management tools to be developed for the Inter-Tel Axxent system.
- **Directories:** The Directory feature enables display keyset users to "look up" intercom extension numbers and user names, system speed-dial numbers and names, or system feature codes.

- **Open Architecture Interface (OAI):** OAI is a system-level communications protocol that allows call management tools to be developed for the Inter-Tel Axxent system. Contact Inter-Tel for more information regarding these products.
- **System Forwarding:** System forwarding provides the ability to program the system so that calls ringing at a station will follow a database-programmed "forwarding path" that routes the call based on the type of call and the status of the intended station.
- **Uniform Call Distribution (UCD) Hunt Groups:** Uniform Call Distribution (UCD) hunt groups provide additional features to improve hunt group efficiency. The features added when UCD is enabled are: announcement and overflow stations, hunt group priority ranking, and hunt group supervisors.

1.4 In all default databases, all premium features are disabled.

1.5 The part numbers for the software packages are as follows:

SOFTWARE	PART NO.
Inter-Tel Axxent Database Programming Software	827.8367
Inter-Tel Axxent Talk Applications Software	827.8340

1.6 The following PALs can be used for changing the system MF/KF rating and/or the unit value, from one Premium package to another.

PAL	PART NO.
MF-Rated 15-Unit PAL	827.8298
MF-Rated 25-Unit PAL	827.8299
MF-Rated 50-Unit PAL	827.8300
MF-Rated 75-Unit PAL	827.8301
KF-Rated 15-Unit PAL	827.8302
KF-Rated 25-Unit PAL	827.8303
KF-Rated 50-Unit PAL	827.8304
KF-Rated 75-Unit PAL	827.8305

1.7 Stand-alone software is always configured to allow all features (75 units). However, when attempting to upload the database into a system with fewer allowed units, an error message will be generated and the system will be inoperative.

1.8 Lower-unit PALs can be replaced with higher-unit PALs to increase the feature level. (For example, replacing a 15-unit PAL with a 50-unit PAL.). However, if a higher-unit PAL is replaced with a lower-unit PAL, an error message will be generated and the system will be inoperative.

B. PLAN THE PROGRAMMING SESSION

1.9 Determine the features that need to be programmed to meet the customer's needs. Then refer to the specific programs and program planning sheets. For example, if the customer wants to use the hunt group feature, refer to the programming information on page 6-80 and the program planning sheet on page 6-238.

2. DEFAULT VALUES

2.1 The default values of the features are specified throughout this section of the manual. They are also specified on the program planning sheets that begin on page 6–220. A summary of the default system values is as follows:

A. DEFAULT “PLUG AND PLAY” DATABASE

2.2 The Inter-Tel Axxent System is pre-programmed with a default database that allows an almost “plug and play” installation. With the default database, only customized programming such as user names, station toll restriction, trunk toll restriction, answer access, and ring-in assignments need to be programmed to complete a basic installation. Those features can be programmed by the installer, as described in this chapter, or by an Administrator station, as described on page 4–99.

2.3 The basic default database provides the following features:

- **Station and Trunk programming:** There are 16 keyset stations and 8 trunks. Intercom numbers 100–115 are assigned in order beginning with circuit 01.01.01.
- **Attendant/Administrator:** Circuit 01.01.01 serves as the primary attendant and Administrator. The circuit is equipped and configured for a keyset. It receives all system alarm messages.
- **Voice Mail and Message Notification/Retrieval applications:** These application provide access to the Voice Mail features. The system database defaults with 16 mailboxes, numbered 100–115, which are associated with the Inter-Tel Axxent stations. The Voice Mail application’s extension number is 299, the Message Notification/Retrieval application’s extension number is 296. Extension number 100 is an Inter-Tel Axxent Administrator station and the Voice Mail System Administrator. The voice mail extension for each station defaults to 299 and the Executive Keyset displays will include voice mail options. If there is no Inter-Tel Axxent Talk, or if an analog voice mail unit is installed, you must disable the Axxent Talk communications port before attempting a save or restore of the system database.
- **Automated Attendant and Automated Attendant Recall applications:** Extension number 298 provides the Automated Attendant feature and extension 297 is its recall destination.
- **Automatic mailbox number changes:** When a station’s extension number is changed, either by the in-

staller or the Administrator station, its associated mailbox number is automatically changed to match. For example, if station extension 101 is changed to 105, mailbox 101 will automatically change to 105.

- **Key maps:** When the system is in the default state there are two pre-programmed keymaps. Key map #1 is for Standard and Executive Keysets. Key map #10 is for Basic Keysets. When a keyset is plugged in, the system determines which type of keyset it is and assigns the appropriate key map (#1 for Standard/Executive or #10 for Basic). If the keyset type is changed, for example a Basic keyset is removed and a Standard is plugged in, the system automatically changes the default key map to match the new keyset type (in the example, it changes from #1 to #10). However, if the station has a key map other than its default map (maps 2–9), the key map will not be changed automatically if the keyset type is changed; you must manually change the key map.

2.4 Other system defaults are shown in the following lists.

B. CONFIGURATION

- There are no single-line stations.
- Passwords are not required to gain access to the database programs or the on-line monitor.
- All premium features are disabled.

C. STATION FEATURES

- Account Code Type is “none” for all stations.
- The following station features are enabled for all stations:
 - All transient displays
 - Automatic Answer for intercom and outside calls
 - Camp-on indications
 - Camp on to ARS
 - Different alerting and ringback cadences for intercom and outside calls
 - Do-not-disturb
 - Handsfree mode
 - Hunt group replace
 - IC/CO reseize
 - Paging receive
 - Standard tone frequencies
 - System forwarding

- Off-hook voice announce receive, transmit, and immediate transmit are disabled at all stations.
- No keysets have do-not-disturb override enabled.
- All stations receive do-not-disturb tones, instead of busy signal.
- Redial mode is “last number dialed” at all stations.
- The outgoing access number for all stations is trunk group 1.
- The transfer recall destination for each station is the station’s extension number.
- All Standard and Basic keysets are programmed for “standard” speakerphone use.
- There is not a message center, alternate message source, or data port extension programmed for any station.
- No stations are assigned to hunt groups.
- The Alternate Transient Display timer is disabled.
- There are no DSS/BLF Units or other devices attached to keysets.

D. SYSTEM FEATURES

- The following system-wide features are enabled:
 - Broadcast alarms to all administrators
 - Broadcast station off-hook alarms
 - Caller ID on keyset displays (if the premium feature is enabled)
 - Drop incomplete outgoing calls
 - Music-on-hold for intercom calls
 - Off-hook voice announce
 - Ring flash on DSS/BLF keys
 - Station monitoring tones
 - Validate voice mailbox numbers
- The following system-wide features are disabled:
 - Audible message indications for single-line sets
 - Handsfree announce on system forward transfer
 - System speed-dial override of toll restriction
- DISA and automated attendant callers, as well as intercom callers, hear ringback while being transferred.
- System time is displayed in 12-hour format

- The system is in day mode.
- All keysets are in paging zone 1. No trunks are assigned to page zones.
- No system forwarding paths are programmed.
- No system or station speed-dial numbers are programmed.
- None of the system speed-dial locations are identified as non-display numbers.
- Stations and trunks have “Unrestricted” class of service.
- All area and office codes are unrestricted.
- No home/local area codes are programmed.
- Account code default length is four digits.
- SMDR output is enabled.
- The Emergency Call feature is programmed to select trunk group 1 and dial 911.

E. TRUNKS

- All trunks use the Valid Call timer answer supervision and normal hybrid balance.
- All trunks are programmed for DTMF signaling.
- Caller information display is disabled on all trunks.
- All trunks are assigned to trunk group 1.
- All trunk groups search in linear order.
- Circuit 01.01.01 receives ring-in and can answer all trunks during day mode and night mode. There are no call routing tables programmed.
- All stations have ring-in assignment and can answer all trunks when the system is in night mode. All stations have outgoing access on all trunks.
- All trunk groups are subject to toll restriction. None absorb digits.
- Automatic Route Selection (ARS) is enabled.

F. AXXENT TALK

- All time slot groups are programmed for 8 channels. All applications are assigned to time slot group 1.
- The attendant for all applications is circuit 01.01.01.
- Custom recording 01 is the default voice mail greeting. Custom greeting 02 is the default automated attendant greeting.

3. MICROSOFT WINDOWS

NOTE: The following information is provided by Microsoft, regarding their licensing policies.

3.1 Inter-Tel Axxent Database Programming operates in a graphics environment called *Microsoft Windows*, created by Microsoft Corporation. An extension of the MS-DOS operating system, *Microsoft Windows* gives a standard look and feel to Inter-Tel Axxent Database Programming and all other *Windows* applications.

3.2 The Inter-Tel Axxent Database Programming package contains all the software necessary to run Database Programming. You must run Database Programming under *Microsoft Windows* version 3.1 or higher.

3.3 With *Microsoft Windows*, you can take advantage of these additional features of the *Windows* environment:

- **Running multiple applications:** You can run several applications under *Windows* at one time and easily switch between them, creating an integrated work environment.
- **Data exchange between applications:** You can transfer data between Inter-Tel Axxent Database Programming and other standard DOS applications as well as other *Windows* applications.
- **Windows control of the DOS environment:** From the *Windows* environment you have easy access to all *Windows* and non-*Windows* applications, files, directories, and disks, and control all DOS-related tasks such as directory or file management and formatting disks.

3.4 To run Inter-Tel Axxent Database Programming with other applications under *Microsoft Windows*, you need to license and install *Microsoft Windows* version 3.1 or higher.

4. HOW TO USE THE PROGRAMMING WINDOWS

4.1 The database is divided up into “windows” that permit the programmer to view and change the system programming one section at a time. Each of the programming windows contains boxes and/or buttons for selecting and entering specific information. These include: Text Boxes, List Boxes, Drop-Down List Boxes, Command Buttons, Option Buttons, and Check Boxes. Samples of each are shown in the following paragraphs.

4.2 To move among items in a window, you may use the TAB key, ALT key, or mouse, as follows:

- **Using the TAB key:** Press the TAB key repeatedly until the desired area is highlighted by a gray box and a dark outline or filler. To move in reverse, press the SHIFT and TAB keys at the same time.
- **Using the ALT key:** Pressing a combination of the ALT key and the underlined character allows you to move directly to the desired area. (For example, in the following sample Text Box, you would use ALT-D because the “D” in Description is underlined).
- **Using a mouse:** To select an item, simply place the mouse cursor on the desired item and click the left button.

A. TEXT BOX

EXAMPLE:

Description:

4.3 A text box is used when the requested information requires typing. The vertical line is the cursor that indicates where text will be inserted. As you type, the line moves to the right, pushing any existing text to the right. The line can be moved right or left using the arrow keys on the keyboard or by pointing the mouse cursor at the desired place and clicking the left button once.

4.4 If the contents of the box are highlighted (in reverse video) when you begin typing, the contents are replaced with the new information. You can erase the entire contents of a text box by highlighting the text and then pressing the backspace or delete key. To overwrite the current information, start entering new information.

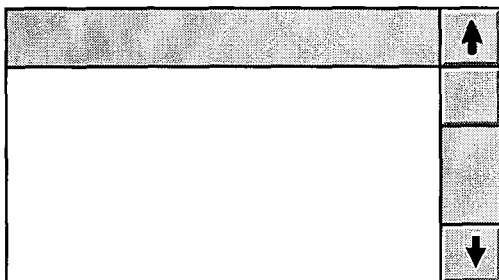
4.5 To correct mistakes made while entering information or to erase existing information, use the backspace or delete key and retype the entry.

4.6 To select a text box, follow the instructions in paragraph 4.2. When the cursor appears in the box, you can begin typing.

4.7 The system recognizes both upper- and lower-case characters. When typing, you may use either case or a combination. In some cases, such as username entries, the entry will appear in upper-case letters, even when lower-case letters are typed.

B. LIST BOX

EXAMPLE:



4.8 The list box is used for several purposes, as follows:

- **Typed information:** When programming items such as do-not-disturb and reminder messages, the list box shows the current values. Whenever an item in the list is (re)programmed, the list box shows the new information.
- **Enable/Disable and Yes/No lists:** Items such as system features have only two states (enabled/disabled, on/off, etc.). When these appear in a list box, toggling the feature changes the display in the list box.
- **Include/Exclude lists:** Some programs require you to list the stations or trunks that are on "include" or "exclude" lists. To move an item from one list to the other, highlight the desired item and select the appropriate command button. It is automatically moved or copied to the other list.

4.9 There are several methods for highlighting a line in a list box. They are as follows:

- **Arrow keys:** Use the up or down arrow key to move the highlight bar.
- **HOME, END, PAGE UP and PAGE DOWN keys:** You can use the HOME key to move directly to the top of the list, or the END key to move directly to the bottom. The PAGE UP and PAGE DOWN keys move up or down the list one screen at a time.
- **First letter or digit of desired item:** When a list is presented in alphabetical or numerical order, you can quickly move to the first item beginning with a specific letter or number by entering that character. For example, for a list of stations by name, you can move to names that begin with "C" by pressing the C key. You can then scroll through those entries by pressing the selected letter repeatedly. That is, each time you press the C key, the highlight bar scrolls to the next entry that begins with "C."

- **Scroll bar:** When the list contains more items than can be shown in the list box, there will be a scroll bar along the right edge of the list box. It is made up of a band with an arrow at each end and a small box (as shown in the List Box example). The box shows the current position in the list. The band is a scroll bar and it is used, with the mouse cursor, to move through the list. Point the cursor at either of the arrows and click the left button to move one line at a time, or point the cursor at the box and hold down the left button. Moving the mouse "drags" the box up or down and scrolls through the list.

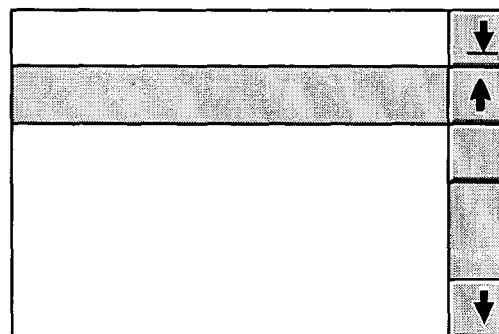
4.10 To program a highlighted item in the list box, select an appropriate command button in the window. Or, if using a mouse, double-click on the list box item to gain access to the programming window.

C. DROP-DOWN LIST BOX

EXAMPLE:



4.11 When selected, a drop-down list box becomes a list box as shown below. To select an item, use the up or down arrow key to move the highlight bar. When deselected (closed) the list box will show the chosen option.



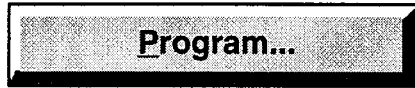
4.12 To open a drop-down list box with a mouse, point the cursor at the arrow and click the left mouse button. To close the box, point to the arrow and click again.

4.13 To open a drop-down list box without a mouse, highlight it and press ALT-▼. To close the box, press ALT-▲. To scroll through the list without opening the drop-down box, highlight the box and press ▼ and ▲.

4.14 When scrolling through the list, you cannot "wrap" to the beginning of the list after reaching the end (or wrap to the end from the beginning). The list is linear and will stop when you reach the beginning or ending entry.

D. COMMAND BUTTON

EXAMPLE:



4.15 Selecting a command button executes a single command or allows access to another window. If the command is followed by an ellipsis (...), it will call up a window. To select a command button, do one of the following:

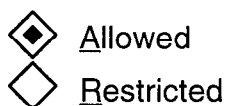
- **TAB key:** Use the TAB key to advance to the command button and to *highlight* it. Then press the SPACE BAR or RETURN to *select* it.
- **ALT key:** Press the ALT key plus the underlined character. (In the sample above, you would use ALT-P to execute the Program command).

NOTE: The OK and Cancel command buttons do not have underlined letters. To quickly select Cancel, you may press ESC. For OK, you may press ALT-ENTER.

4.16 Frequently, a command button is highlighted by a dark border while you are programming in a window. If so, pressing the RETURN key will execute that command automatically. You do not need to TAB to the button first.

E. OPTION BUTTON

EXAMPLE:



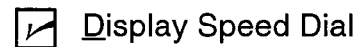
4.17 Option buttons are used when there are two or more options for a feature and you can choose only one. The options are shown in a list and the buttons are located along the left. Selecting the desired button places a dot in it to show which option was chosen.

4.18 Option buttons can be selected using one of the following methods:

- **TAB key:** Use the TAB key to advance to the list of options. Then use the up or down arrow key to move the dot to the desired button.
- **ALT key:** Press the ALT key plus the underlined character to move the dot to the desired option. (In the sample above, you would use ALT-A or ALT-R.)

F. CHECK BOX

EXAMPLE:



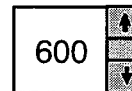
4.19 Check boxes are used when an option is available that has only two states (on/off, enabled/disabled, or yes/no). When the box is selected, a check mark is placed inside it to indicate an affirmative state (on, enabled, or yes). Selecting a box that already contains a check mark, removes the check mark (off, disabled, or no).

4.20 Check boxes can be selected using one of the following methods:

- **TAB key:** Use the TAB key to advance to the check box to *highlight* it. Then press the SPACE BAR to *select* it.
- **ALT key:** Press the ALT key plus the underlined character to place the check mark in the box or remove it. (In the sample above, you would use ALT-D.)

G. SCROLLING EDIT BOX

EXAMPLE:



4.21 Scrolling edit boxes are used when a list of entries can be selected or edited. To use one, select it and enter a new value in the edit box (a warning will tell you if the entry is invalid). Or, scroll up or down through the values using the arrow keys or by selecting the arrows on the box with a mouse.

H. ITEMS THAT CANNOT BE SELECTED — DIMMED ITEMS

4.22 If an item in a window appears in a dimmed color, it cannot be selected unless an associated item is selected. For example, in the account code programming window shown on page 6-27, the Standard Account Code drop-down list box is dimmed and cannot be selected unless the Standard option is selected.

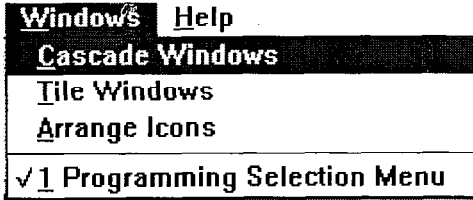
I. HOURGLASS SYMBOL CURSOR

4.23 Occasionally, the system will change the cursor to an "hourglass" shape. This indicates that the system is performing an internal operation and cannot respond to input. Wait for the cursor to return to normal before entering more information.

J. MANAGING MULTIPLE WINDOWS

4.24 One of the most useful Windows features is the ability to have several windows open simultaneously. Refer to your Windows user manual for detailed information on running multiple applications, minimizing windows, arranging icons, and arranging windows.

4.25 The window shown on page 6-22 has a drop-down list box, labeled "Windows," that includes the following options:



- **Cascade Windows:** This option is used when you have several windows open. Selecting this option reduces the size of the windows and arranges them in

layers so that each title bar is visible. The active window is in front and fully visible.

- **Tile Windows:** This option is also used for multiple windows. Selecting it reduces the size of the windows and arranges them side by side. The mouse cursor indicates the active window.
- **Arrange Icons:** If you have one or more windows reduced to icons, selecting this option will arrange them in a row along the bottom of the screen.
- **List of Open Windows:** (Shown here as "Programming Selection Menu") At the bottom of the drop-down menu, any open database windows are listed. A check mark next to a window name indicates the currently active window. To change windows, scroll to the desired name. Note that you cannot select a window that contains information that is affected by a window already in use; you will receive an error message if you attempt to open two windows that affect the same programming information.

5. SYSTEM SET-UP FOR PROGRAMMING

5.1 There are three methods that can be used for programming the Inter-Tel Axxent System.

- On-site programming with an attached PC
- Programming using a stand-alone PC
- Remote programming using a modem connection

5.2 Each is described separately in the following pages. Only one programming session should be in operation at a time.

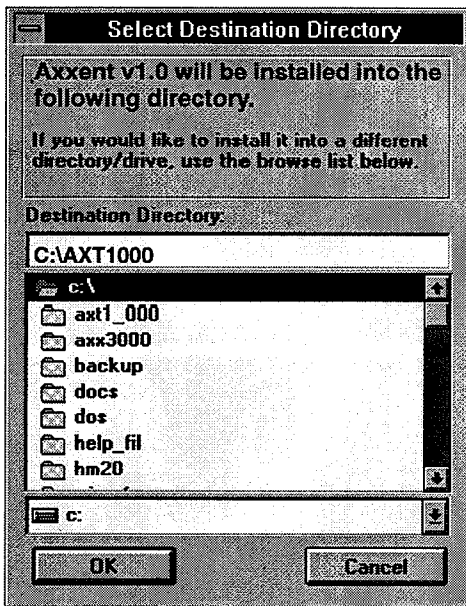
5.3 For on-site, remote, or stand-alone programming, the computer must be an IBM AT-compatible personal computer (PC) with a minimum of:

- 80286 or higher microprocessor (80386 recommended)
- Windows 3.1
- MS-DOS 3.3 or higher (MS-DOS 5.0 recommended)
- 13 megabytes memory available on the hard disk drive (17 megabytes recommended)
- 1 megabyte RAM (2 megabytes recommended)
- 1.2-megabyte, 5¼-inch or 1.44-megabyte, 3.5-inch floppy disk drive (double sided/high density)
- EGA or better graphics monitor (VGA recommended)
- A mouse is optional but recommended (if a serial mouse is used, install on an unassigned COM port)

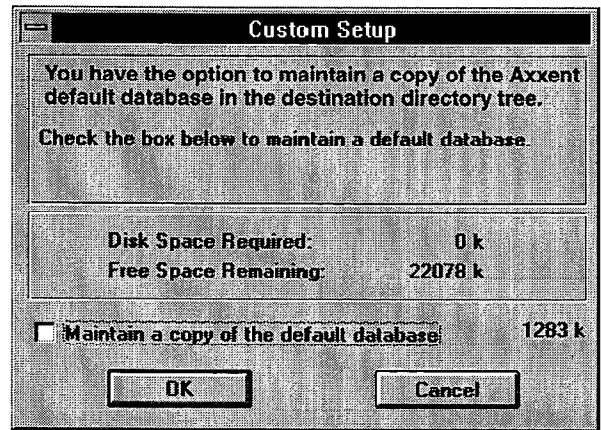
A. INSTALLING THE PROGRAMMING SOFTWARE

5.4 The following instructions assume that Windows 3.1 software is installed on the PC and the user is familiar with Windows procedures. To install the programming software, follow these steps:

- (1) Ensure that Windows is running.
- (2) Insert Database Programming Disk 1 into the PC floppy disk drive (A or B).
- (3) Open the Program Manager. Ensure that the Program Manager Option for "Minimize on use" is not enabled.
- (4) Select the "File" drop-down menu in Program Manager. Then select "Run..." from that menu. A window with a text box appears. In the Command Line text box, enter A:SETUP (or B:SETUP if the B drive is used). Then select the OK command button.
- (5) A "Welcome" screen appears. After reading the information in the screen, press RETURN to select the OK command button. The following window appears.

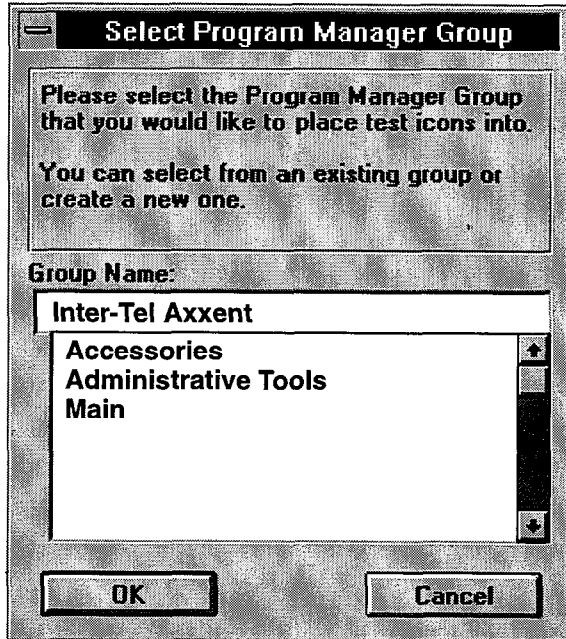


- (6) Select the OK command button to accept the C:\AXT1000 directory. Or, to select another directory enter a name in the text box or select a name from the list box. If the directory you selected already exists, another window will verify that you want to use that directory. Select Yes to use the directory and continue or No to select another directory.
- (7) The next window, shown below, asks if you want back-up copies of any files the installation may replace. Select the desired Yes or No response to continue, or select Cancel to end the installation. The following window appears next.



- (8) If you want to maintain a default copy of the database, which would be used if you selected the Default Database option in the Database Save/Restore programming area during a stand-alone session, place a check mark in the box. Select the OK command button to continue or the Cancel command button to stop the installation.
- (9) If you have an existing AXXENT database in the selected directory, a window will appear that warns you that the database will be overwritten. If you want to make a back-up copy of that database before completing the installation, select Cancel.
- (10) During the installation, a window displays the percentage of the files that have been copied. When prompted, insert Disk 2 and select OK to continue.

- (11) When the Select Program Manager Group window appears, as shown below, select the OK command button to place the AXXENT icon in the Inter-Tel AXXENT programming group. Or, if you want to place the icon in an existing group, select a name from the list box. To create a new programming group, enter the desired name in the text box. The installation software creates and/or places AXXENT in the selected programming group. The AXXENT software is loaded on your PC and ready to use.



- (12) The last installation window gives you the opportunity to view a "read me" file that explains the enhancements that have been made to the AXXENT System. If you would like to view it now, select Yes. If not, select No (you can still view it later by selecting the Readme icon in the programming group).
- (13) To use the application, you must have Program Manager running. Select the Inter-Tel AXXENT programming group and then select the AXXENT Database Programming application. The Inter-Tel logo screen displays and you may begin programming. Also included in the programming group is an "Uninstall" program. If you ever wish to remove AXXENT from the PC, select this icon. The Uninstall program will step you through the process. You can allow it to automatically remove all of the files, or you can control the uninstall process by selecting the files to delete.

B. ON-SITE PROGRAMMING

5.5 For on-site programming, the PC is connected directly to the Inter-Tel Axxent System. An RS-232-C cable from COM 1 or COM 2 on the PC is connected to an RS-232-C connector on the KSU.

NOTE: *Do not* connect the programming terminal to an RS-232-C port that has been programmed for output (SMDR or error reports). In the default state, the RS-232-C ports are *not* programmed for output.

5.6 To begin a direct-connection programming session, press F5 (or press ALT-S and then select "Connect to Remote System" from the pull-down menu) while the Inter-Tel logo is displayed. The window shown on the page 6-16 is displayed. You can then set the correct session information.

5.7 If you attempt to establish a direct-connect programming session using a PC COM port that is connected to a modem, the connection will not be allowed and a warning will appear.

C. STAND-ALONE PROGRAMMING

5.8 To use a PC for stand-alone programming, the system software must be loaded on the hard drive. The system database information can then be stored on double-sided/high density floppy disks for later transfer to the Inter-Tel Axxent and Axxent Talk using Save/Restore.

5.9 When the Inter-Tel logo screen is displayed, press the F3 key. Or, press ALT-P to view the System Programming pull-down menu and then select Database Programming by highlighting it (use the up or down arrow key, if necessary) and pressing RETURN. The Inter-Tel Axxent Database Programming Menu appears, as shown on page 6-22. All programming can then be completed as described in this chapter.

5.10 The Inter-Tel Axxent System may prompt you for a password; enter the password, if one is required. When the Database Programming Menu displays on the PC monitor screen, programming can then be completed as described in this chapter.

D. REMOTE PROGRAMMING VIA MODEM

5.11 A programmer can use modem access to the system database for the purpose of customer programming or maintenance/diagnostics from a location other than the customer site. This allows the service personnel flexibility in making database changes without visiting the site and, in system trouble situations, the service personnel may perform preliminary investigations before going on site.

5.12 The Inter-Tel Axxent System at the remote location must be equipped with an auto-answer modem connected to a system RS-232 port.

5.13 To use the remote programming feature, the user dials the telephone number that directly rings in to the modem, is transferred to the modem, or dials the modem extension number using DISA or a station. When the modem circuit rings, the auto-answer modem will automatically answer the call and generate modem tone. The calling party may then connect the programming computer's modem and proceed with the programming session. When the session is completed, the calling party hangs up or disconnects the call from the modem. When this happens the system modem will no longer hear modem tone and will disconnect.

5.14 Executive or Standard Keysets with PC Data Port Modules that are enabled for RS-232 communication (see page 6-213) may dial up the modem directly and, using the attached PC, can generate programming reports or monitor SMDR (they cannot perform database programming). However, the MDPM circuit should be programmed with camp-on tones disabled, extended ring cadence enabled, different alerting cadence disabled, and different ringback cadence disabled (see page 6-30).

5.15 To set up or check the modem parameters, run the Inter-Tel Axxent System application and display the logo screen. Then select the "System Programming" drop-down menu (shown on page 6-18) and choose the Modem Programming option from the menu. A window appears as shown on the next page.

5.16 To connect a remote programming session while the Inter-Tel logo screen is displayed, press F5 (or press ALT-S and then select "Connect to Remote System" from the pull-down menu). The window shown on page 6-16 is displayed. You can then set the correct session information.

5.17 If a remote programming session is active on a system with an Inter-Tel Axxent Talk, and the communications connection fails, the remote programming session will be terminated.

Programming Modem Parameters

5.18 The window shown below is used for setting up the modem parameters. It can be chosen by selecting Modem Programming from the System Programming drop-down menu in the Inter-Tel logo screen header (shown on page 6-18). Enter the necessary information as follows. The default values are shown in the screen below. Refer to the user manual for your modem to determine the necessary parameters.

5.19 INITIALIZATION: Enter the desired command strings in the text boxes for initializing the modem for incoming and outgoing calls.

5.20 DIALING: To determine the signals that will be sent before dialing, enter the desired information in the Prefix text box. To determine the after-dialing signals, enter the information in the Suffix text box.

5.21 RESPONSES: To determine the messages that will appear when the modem makes a connection or reaches a busy number, enter the desired text in the appropriate boxes.

5.22 PERFORM AUTOMATIC BAUD RATE DETECTION: This option is used for high-speed mo-

dem only. The DTE baud rate controls the communication between the CO line and the modem. Allowing automatic baud rate detection keeps the CO-to-modem rate stable while adjusting the PC-to-modem baud rate. To automatically adjust the baud rate, select the check box to place a check mark in it. To remove the check mark, select the box again.

5.23 USE DTR TO HANG UP MODEM: If this option is enabled, the DTR signal is dropped for 0.5 seconds when the programmer disconnects the remote modem connection (by pressing F6 or pressing ALT-S and then selecting "Disconnect From Remote System" from the pull-down menu). This disconnects the modem on the programming PC, not the system modem. It should be used only if the modem is having trouble disconnecting from the call and only on modems that are designed to disconnect in this manner.

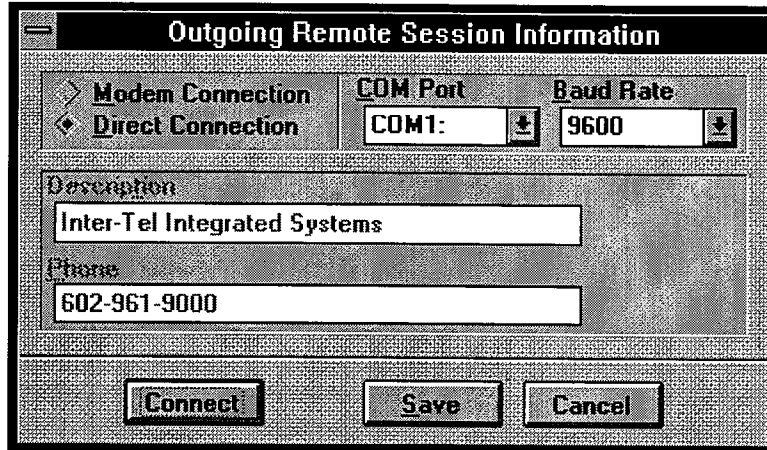
5.24 DEFAULT: To return all values to default (as shown below), select the Default command button.

5.25 OK/CANCEL: When modem programming is complete, select the OK command button to save the changes. Or, to exit without saving changes, select the Cancel command button.

The screenshot shows a window titled "Modem Usage Programming" with the following sections:

- INITIALIZATION**
 - Incoming: ATQ0H0X1E0S0=0
 - Outgoing: ATQ0H0X1E0S0=0
- DIALING**
 - Prefix: ATDT
 - Suffix: ^M
- RESPONSES**
 - Perform Automatic Baud Rate Detection
 - 300 Baud: CONNECT 300
 - 1200 Baud: CONNECT 1200
 - 2400 Baud: CONNECT 2400
 - 4800 Baud: CONNECT 4800
 - 9600 Baud: CONNECT 9600
 - 19.2k Baud: CONNECT 19200
 - Use DTR to Hang-up Modem

At the bottom are three buttons: Default, OK, and Cancel.



Connecting A Modem Session

5.26 This window is used for making the modem connection. It can be reached by selecting Connect To Remote System from the System Services drop-down menu in the Inter-Tel logo screen header (shown on page 6-18).

5.27 MODEM/DIRECT CONNECTION: Indicate whether this is a modem connection or a direct connection by selecting the appropriate option button. The black dot appears in the selected option.

5.28 COM PORT: Indicate which COM port your PC is using by scrolling the highlight bar in the drop-down list box to the correct COM port.

5.29 BAUD RATE: Indicate the baud rate at which your PC will be operating by selecting the Baud Rate drop-down list box and scrolling the highlight bar to the desired baud rate.

- *If using a modem*, select the rate that matches the baud rate of the modem extension that will be used.
- *If using a direct connection*, select the rate that matches the RS232 port.

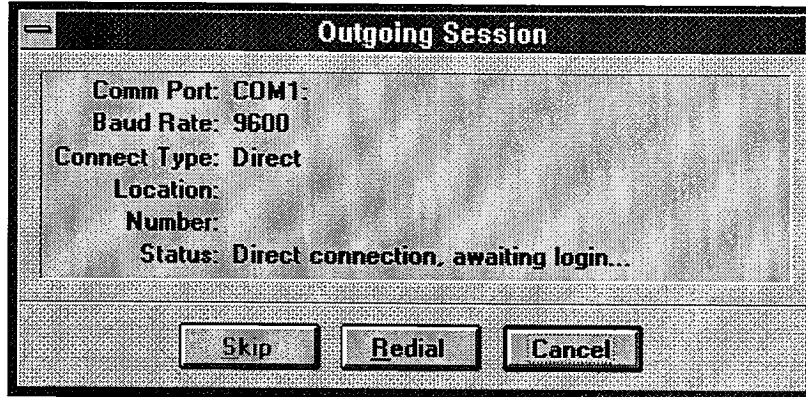
5.30 DESCRIPTION: For a modem connection, enter a name for the remote modem site in the Description text box.

5.31 PHONE: For a modem connection, enter the telephone number of the remote modem site in the Phone text box. Special characters can be included in the number if they are accepted by the modem. Refer to the user manual for your modem to determine the necessary characters.

5.32 SAVE: When the information appears as desired, select the Save command button. This replaces the default values with the new information so that you do not have to repeat this procedure each time you call this customer.

5.33 CANCEL: To exit without connecting a programming session, select the Cancel command button.

5.34 CONNECT: When the session information is correct, begin the programming session by selecting the Connect command button. A window appears as shown on the next page. The session information is automatically saved when you select Connect.



5.35 This window shows the information as it was programmed in the window on the previous page, including the COM port, baud rate, modem/direct connection type, site description, and telephone number. The "Status" line changes to indicate that the PC is configuring the modem, dialing, waiting for a connection, and setting up a connection.

5.36 The command buttons allow the options of canceling the connection or redialing the number if problems arise (the Skip button is used for Inter-Tel engineering purposes only). If the software is unable to communicate with the modem, select the Cancel command button and check the connection between the modem and the PC. Also verify that the modem is connected to the proper port. To try again, select the Redial command button.

5.37 When the connection is completed, the Inter-Tel logo screen appears. To begin the programming session, press the F3 key. Or, press ALT-P to view the System Programming pull-down menu and then select Database Programming by highlighting it (use the up or down ar-

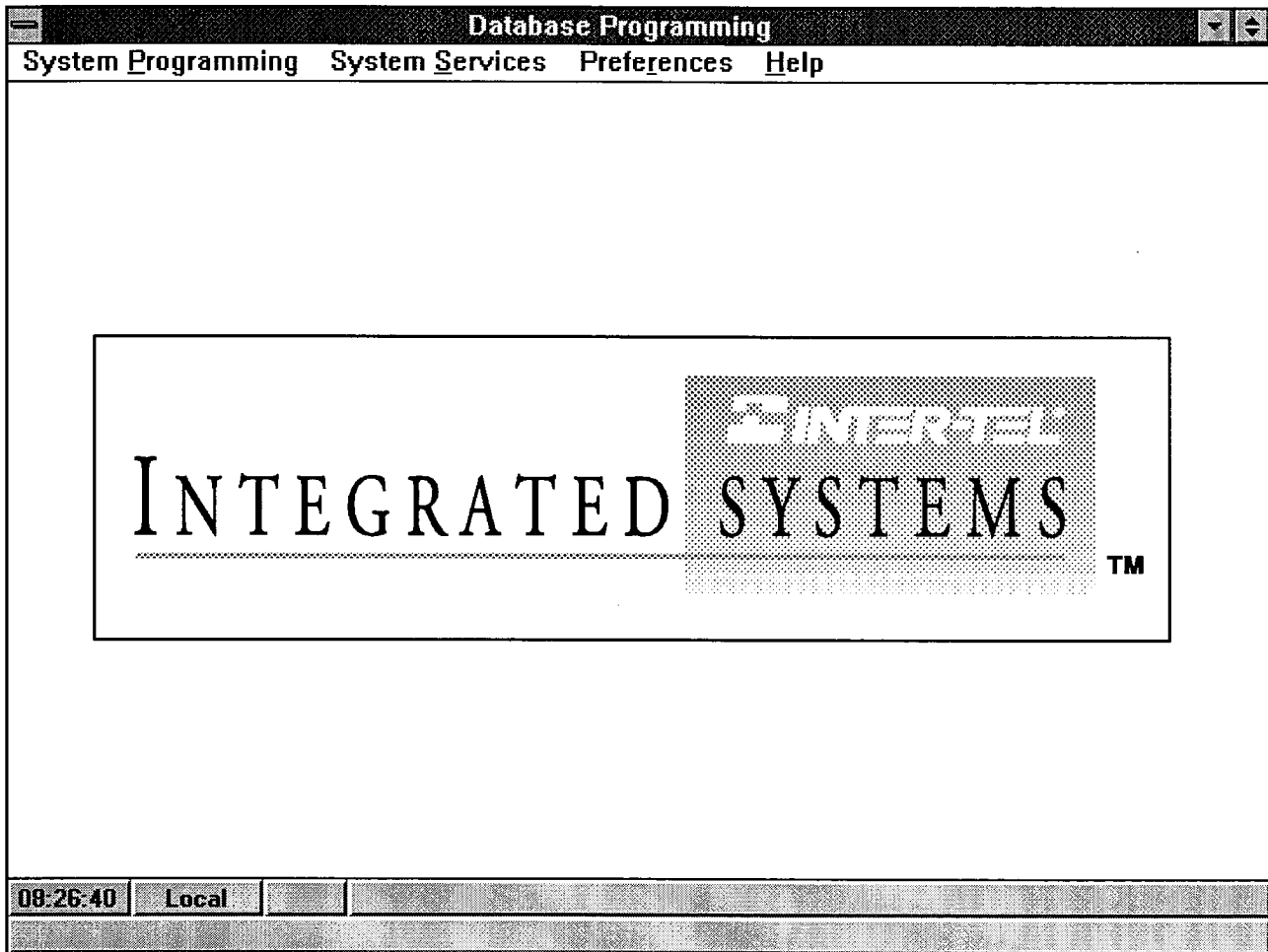
row key, if necessary) and pressing RETURN. The Database Programming Menu appears.

5.38 The Inter-Tel Axxent System may prompt you for a password; enter the password, if one is required. When the Database Programming Menu displays on the PC monitor screen, programming can then be completed as described in the following pages.

NOTE: If used, Save/Restore will take longer to perform via modem than with a direct connection due to the slower baud rate. If the Restore function is used, the associated system reset, when completed, will disconnect all calls including the modem connection.

5.39 If the modem connection is lost during the programming session, allow a minute for the system modem to reset, then re-establish the call using the procedure given on page 6-16. All changes that were saved by a system update before the connection was lost will be retained in system memory.

5.40 To disconnect from the remote programming session when the Inter-Tel logo screen is displayed, press F6 or press ALT-S and then select "Disconnect From Remote System" from the pull-down menu.



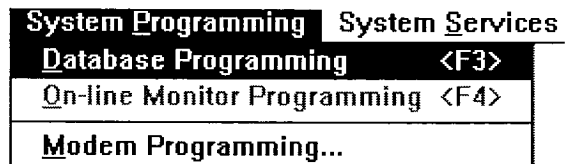
6. INTER-TEL LOGO WINDOW

6.1 The logo window is the first window that is displayed in any programming session.

6.2 The information at the bottom of the screen shows the following:

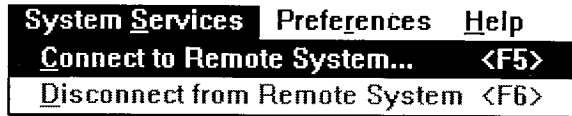
- Current time
- Type of programming session (Local or Remote). When on a direct-connection or remote session, be sure that this shows "Remote." When "Local" is shown, only the database on the PC hard disk is updated, and nothing is communicated through the modem.
- The "%" box shows the percentage complete when a selected programming area is being loaded. When it reaches 100%, the programming screen is displayed.
- The box in the lower left corner will show "LOG" if any Database Programming errors have been logged during the programming session. If so, the messages are logged in the SYSHIST subdirectory in the file apperrXX.txt (XX = 01-20).

6.3 The window header contains four options: System Programming, System Service, Preferences, and Help. These options allow access to drop-down menus and can be selected by pressing ALT and the underlined letter (P, S, R, or H). The drop-down menus and their uses are described in the following paragraphs.



6.4 **System Programming:** This drop-down menu includes:

- Database Programming for beginning a programming session (described on page 6-14)
- On-Line Monitor Programming (used by Inter-Tel Engineering personnel)
- Modem Programming (described on page 6-15).

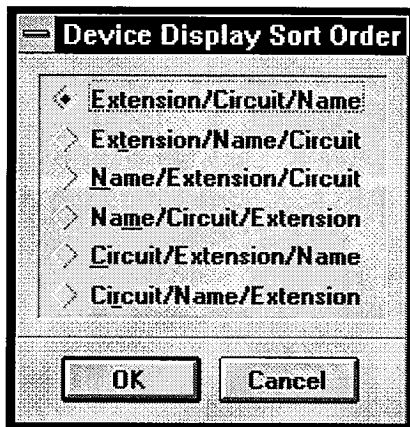


6.5 System Services: This drop-down menu includes Connect To Remote System and Disconnect From Remote System which are used for remote programming, as described on page 6–14.

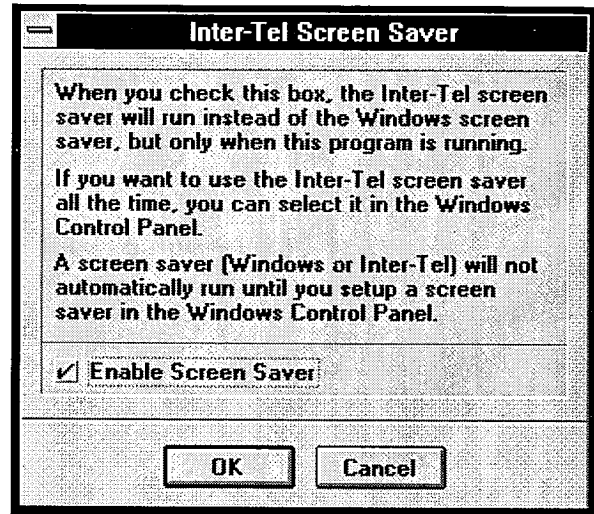


6.6 Preferences: This drop-down menu includes the following options:

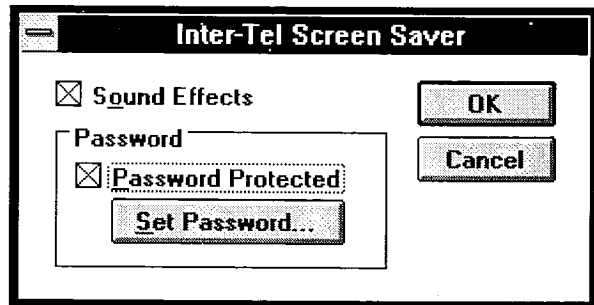
- **Device Display Sort Order (Ctrl+D):** This allows you to change the order in which devices (stations, trunk groups, etc.) are sorted. The following window appears when this option is selected. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



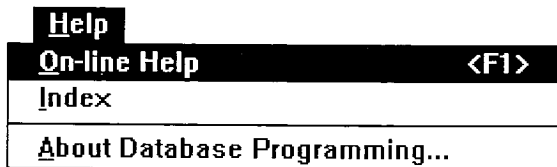
- **Enable Screen Saver:** When this option is selected, the following window appears. It explains that the Inter-Tel screen saver will run instead of the Windows screen saver when the option is enabled.



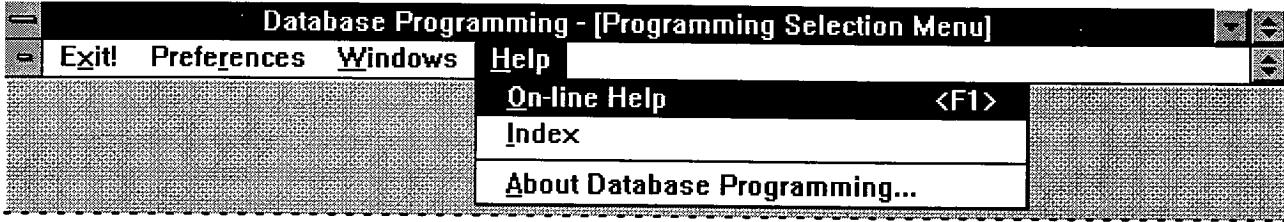
- **Setup Screen Saver:** When you select this option, a window appears as shown below. It allows you to enable sound effects (the “blip” when the logo changes direction) and set a password for clearing the screen saver.



- **Run Screen Saver (Ctrl+S):** This option immediately enables the screen saver.



6.7 Help: The Help drop-down menu allows access to the on-line Help files, as described on page 6–20. This drop-down menu also includes an entry titled “About Database Programming” that, when selected, displays the software part number and generation date. If viewed after a remote programming session is started, it will also show the software version numbers.



7. USING THE HELP UTILITY

7.1 The Inter-Tel Axxent System has an on-line Help feature that provides general and context-related information. You can easily find information on features, programming entries, and parameters. And, you can move among the topics to read information on related subjects.

7.2 Help is available from any programming window. To read the Help files, use one of the following methods:

- Select the Help drop-down menu from a window header (like the one shown above) by pressing ALT-H or selecting it with a mouse. When the menu is displayed, press O or F1, or use the mouse, to select On-Line Help to enter the Help utility. To see an index of Help files, press I or select Index.
- Press the F1 key on your keyboard. This gives you access to the Help file that is related to the active window in your programming session. (The programming area where your cursor is located is the active window.)

7.3 The Help Utility is used as you would any Windows application help utility. (You may wish to refer to your Windows manual if you are unfamiliar with Help.)

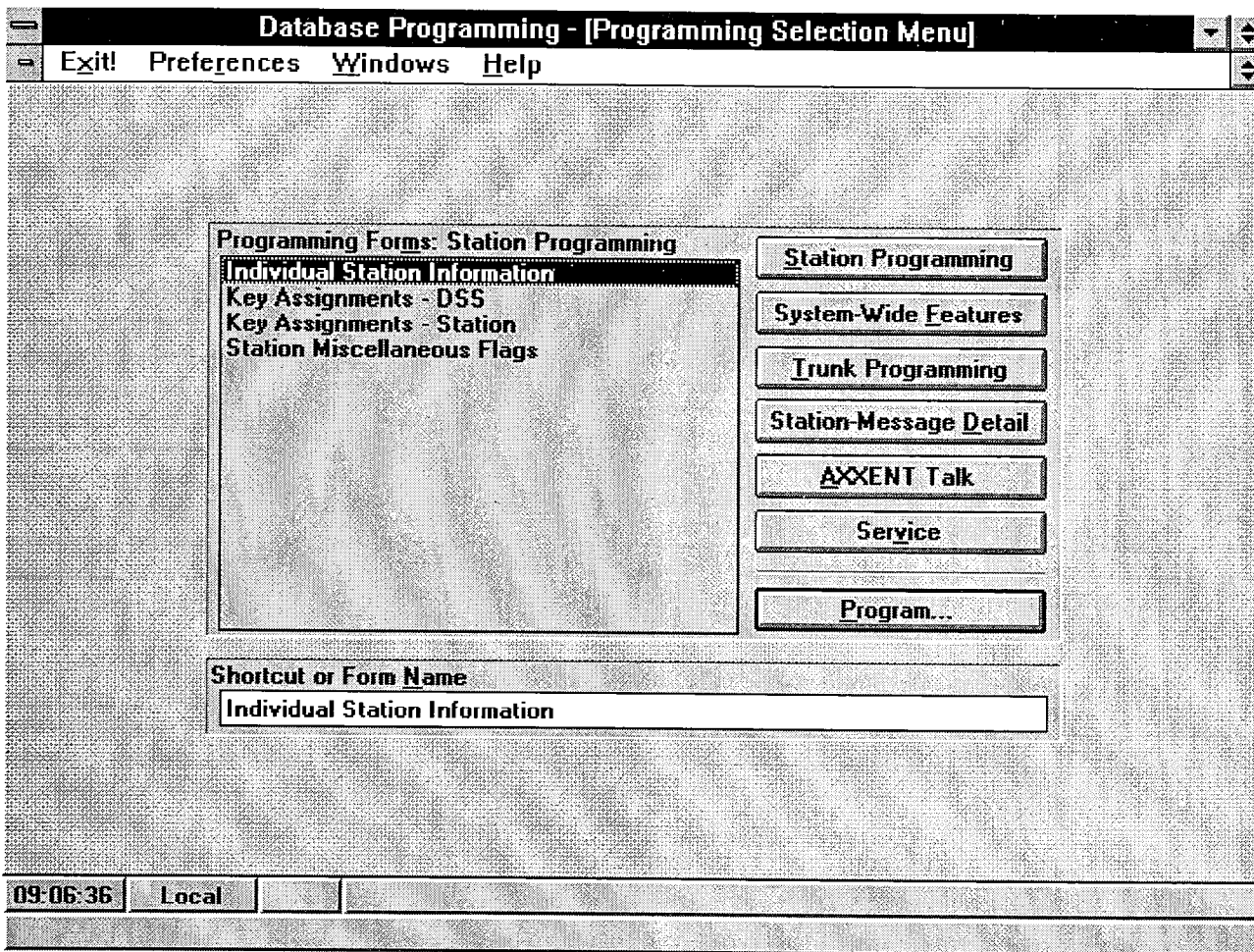
7.4 The Help Utility window has a top banner as shown below and the selected text is shown in the lower portion of the screen. The four commands along the top of the Help screen are used for access to the drop-down menu topics, as shown in the following table:

COMMAND	DROP-DOWN MENU OPTIONS
File	<p><i>Open:</i> This allows you to open other files.</p> <p><i>Print Topic:</i> This option prints the displayed topic.</p> <p><i>Print Setup:</i> This allows you to set your printer parameters.</p> <p><i>Exit:</i> Select this option to exit from the Help Utility.</p>
Edit	<p><i>Copy:</i> Use this option to copy the displayed topic to your Windows clipboard.</p> <p><i>Annotate:</i> This allows you to make notes about the Help topic and store them in the Help utility for later reference.</p>
Bookmark	<p><i>Define:</i> This allows you to place a "bookmark" on a Help topic so that you can return to it quickly. You can also delete bookmarks from this menu.</p> <p><i>List of Marks:</i> Existing bookmarks are listed and can be selected.</p>
Help	<p><i>How to Use Help:</i> Select this option for complete instructions on using Help.</p> <p><i>Always on Top:</i> Select this option to keep the Help window positioned in front of all others.</p> <p><i>About Help:</i> This option displays licensing information.</p>



7.5 There are also six command buttons along the top edge of the Help Utility window. The functions of these buttons are as follows:

COMMAND	FUNCTION
Contents	This displays the Table of Contents for the On-Line Help topics.
Search	This button displays a text box window that allows you to type in a key word or phrase that you would like to locate.
Back	After you have moved from topic to topic, this allows you to back up one topic at a time each time it is selected.
History	This displays a window that shows a sequential list of the topics you have looked at. You can scroll through the list and select the topic that you would like to view.
<<	Selecting this button displays the previous topic in a series. If there is no previous topic, the button is dimmed and cannot be selected.
>>	Selecting this button displays the next topic in a series. If you are in the last topic of the series, the button is dimmed and cannot be selected.



8. DATABASE PROGRAMMING MENU WINDOW

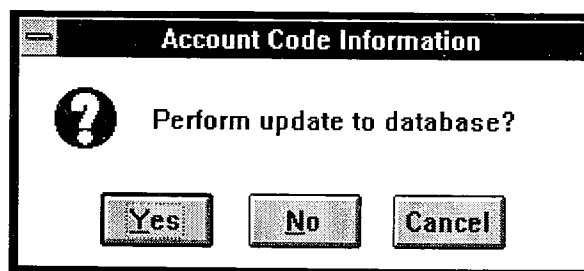
8.1 The Database Programming Menu window shown above contains window header command that provide access to drop-down menus and it allows access to all other programming areas.

A. WINDOW HEADER COMMANDS

8.2 The window header contains four options: Windows, Preferences, Exit, and Help. The options can be selected by pressing ALT and the underlined letter (X, R, W, or H). The processes performed by these options are as follows.

8.3 **Exit:** If any programming changes have been made, the following screen appears when Exit is selected from an application window header. It offers the options of saving the changes that were made in the associated window and exiting to the Database Programming Menu (select Yes), exiting to the Database Programming Menu without saving the changes (select

No), or returning to the programming window to continue making changes (select Cancel).



NOTE: If, during the programming session, any cards or devices were equipped or unequipped, or an extension list, trunk group, or extension number was changed, the system will tell you that a system reset is required. The window shown on page 6-193 is displayed. If desired, you can delay the reset to occur during a low-use time period or reset the system immediately. (Follow the instructions given on page 6-193.) That window will also appear if a delayed reset is still pending from a previous programming session. You can leave the scheduled reset unchanged or reprogram it as desired.

8.4 Preferences: This drop-down window is identical to the one shown on page 6-19.

8.5 Windows: This drop-down menu is used for managing multiple windows and icons (refer to page 6-10).

8.6 Help: This drop-down menu is identical to the one shown on page 6-19

B. ACCESS TO PROGRAMMING AREAS

8.7 This window also provides access to all of the programming areas. The areas are divided into six sections: Station Programming, System-wide Features, Trunk Programming, Station Message Detail, Inter-Tel Axxent Talk, and Service.

8.8 The programming areas can be selected in two ways:

- **Command buttons:** There are six command buttons (one for each programming area). Selecting one of these buttons causes the Programming Form list box to reflect the windows that can be selected in that programming area. When a line in the list box is highlighted, that programming window can be viewed by selecting the Program command button or by selecting the highlighted line using the mouse.
- **Form Name:** Each of the programming windows can be selected directly by entering an abbreviated command in the Form Name text box. To select a programming window, enter the appropriate command (listed on the next page), or enter any portion of the words in the window name. For example, to reach the "Key Assignments — DSS" window, you can enter "DSS," "k a d," "key a d," etc.

C. COMMUNICATION WITH THE AXSENT TALK

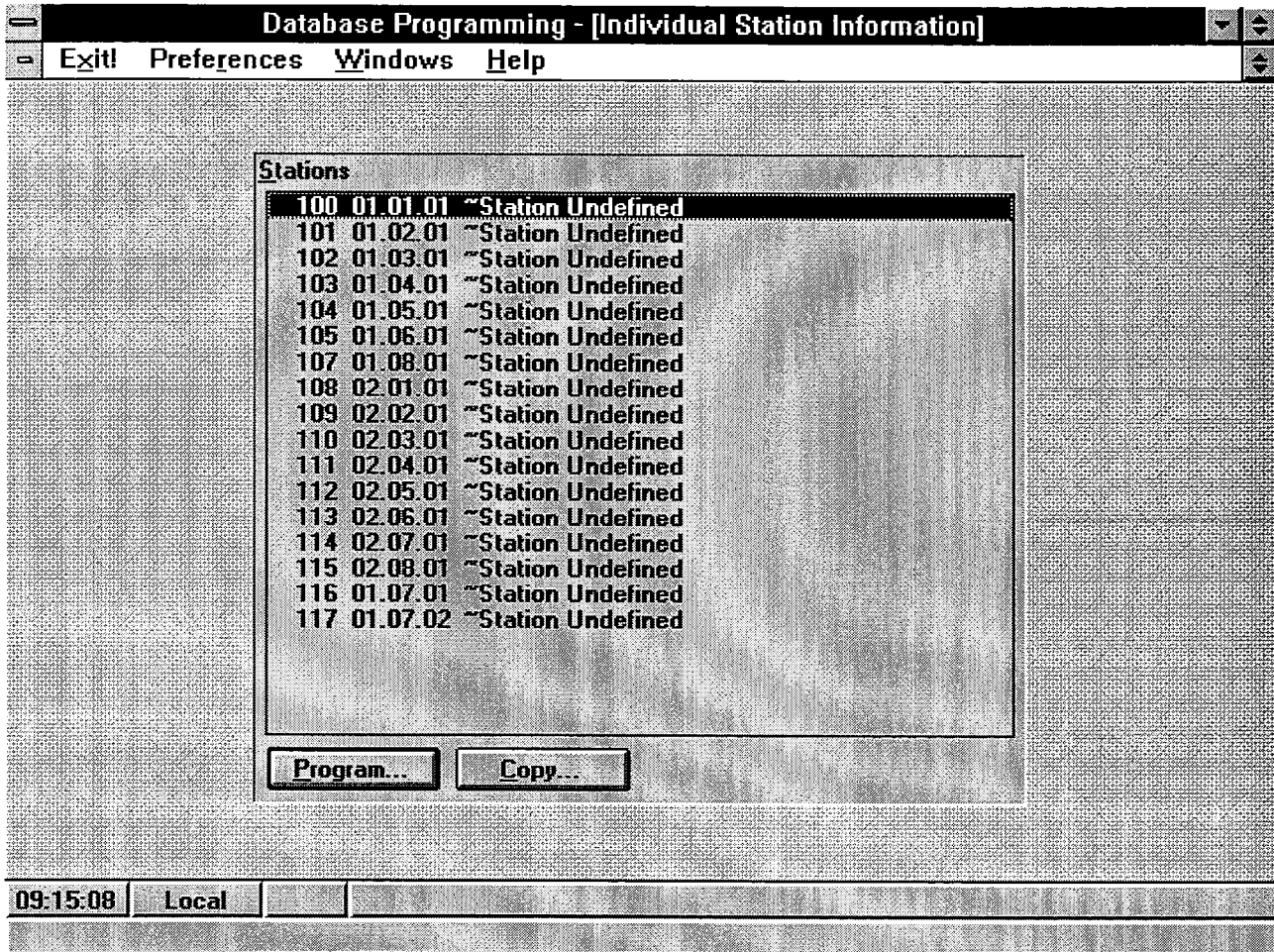
8.9 Inter-Tel Axxent Talk programming cannot be performed until the optional Voice Processing kit has been installed.

8.10 If you select the Service command button at a time when the Inter-Tel Axxent System is unable to communicate with the Axxent Talk or if the system and voice processing software versions do not match, a warning appears that tells you that changes cannot be made or programming areas cannot be selected because Database Programming is unable to communicate with the Axxent Talk. The system will not allow you to update the database through the Service options until the system and Axxent Talk are communicating again and have the same software version.

8.11 If the Inter-Tel Axxent and Axxent Talk database contain conflicting information, a warning window will appear that states, "Database Programming has detected some inconsistencies between the Inter-Tel Axxent Talk and the system databases. These inconsistencies could result in unpredictable system operation. Do you want Database Programming to correct these inconsistencies?" If you select Yes, the Inter-Tel Axxent Talk database will be updated to match the Inter-Tel Axxent database. If you select No, the information will not be changed, but you will have access to the programming screens so that you may change the conflicting usernames and/or descriptions. The following programming areas are affected by this warning message:

- Extensions, Usernames, and Feature Codes
- Database Save and Restore
- System Configuration
- All Inter-Tel Axxent Talk programming areas *except* Report Programming and SMDR Buffer Programming

PROGRAMMING AREA	ABBREVIATED CODE(S)
Station Programming:	
Individual Station Information	STN
Key Assignments — DSS	DSS
Key Assignments — Stations	KEY
Station Miscellaneous Flags	SFEA
System-Wide Features:	
Account Code Information	ACCT
ARS Programming	ARS
DND and Reminder Messages	DND or REM or MESSG
Extension List Programming	EXTL or LIST
Extensions, Usernames, And Feature Codes	EXT or FEAT or NAME
Hunt Groups	HUNT
Miscellaneous System-Wide Information	MISC or SYS
Page Zones	PAGE
System Forwarding	SFWD
System Speed Dial	SSPD
System Timers	TIMR
Toll Restriction	TOLL
Trunk Programming:	
Call Routing	CALL
Individual Trunk	INDT
Trunk Groups	TRNK
Station Message Detail:	
Call Cost	COST
SMDR	SMDR
Axxent Talk:	
Axxent Talk Application Programming	APPL or AAPP
Axxent Talk Extension ID Programming	EXID or EXTID or AEX
Axxent Talk Group List Programming	GROUP or AGL
Axxent Talk Mailbox Programming	MAIL or AMAIL or AMB
Axxent Talk Miscellaneous Information	AMSC or AMISC
Axxent Talk Report Programming	AREP
Axxent Talk SMDR Report Buffer Programming	ASMDR
Axxent Talk System-Wide Information	ASYS
Service:	
Database Save And Restore	REST or SAVE
Message Print Programming	MPP
Passwords	PASS
Premium Feature Selection	PREM
Report Programming [Customized]	CREP
System Configuration	CNFG or CONF
System Serial Port Configuration	SPP or PORT



9. STATION PROGRAMMING — INDIVIDUAL STATION INFORMATION

9.1 When the Station Programming command button is selected from the Database Programming Menu window, the list box shows the following options:

- Individual Station Information
- Key Assignments — DSS
- Key Assignments — Station
- Station Miscellaneous Flags

9.2 Individual Station Information programming is described in the following pages. The remaining three menu options apply to batch programming and are described beginning on page 6-47.

9.3 The first window in the Individual Station programming area is shown above. It can be reached by se-

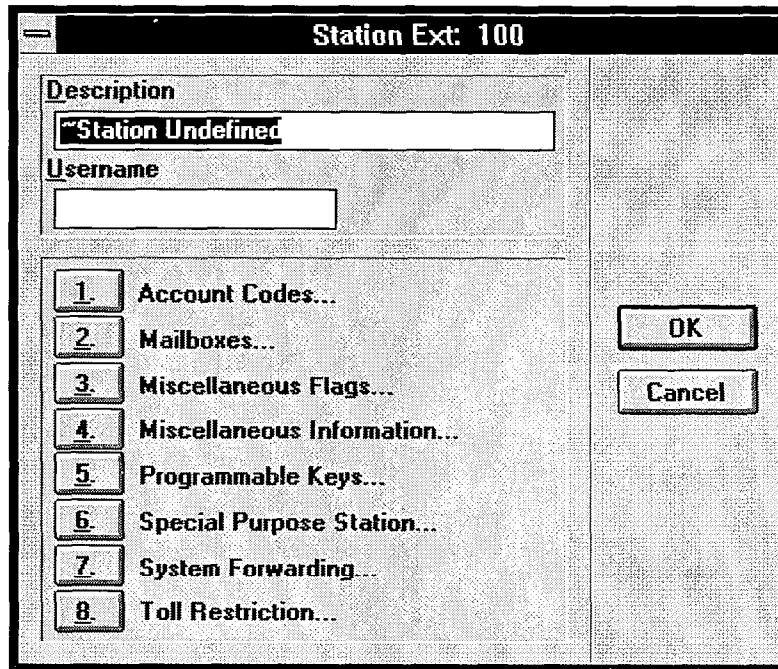
lecting Individual Station from the Database Programming Menu list box or entering STN in the Form Name text box.

9.4 The program planning sheet for station programming in Figure 6-4, on page 6-220, may be helpful.

9.5 **STATIONS:** To select a station for programming or as the source station for copying information, scroll through the list box shown in the window above until the desired station is highlighted. Then select the desired command button and refer to the appropriate page for programming or copying instructions.

9.6 **PROGRAM:** When you select this command button, a window appears as shown on the next page.

9.7 **COPY:** Information that has been programmed for one station can be copied to one or more additional stations. The areas to be copied can be selected as needed. See page 6-45 for further details.



9.8 The window shown above is displayed when the PROGRAM command button is selected from the window shown on page 6-25.

9.9 **DESCRIPTION/USERNAME:** The description of the station user that appears in all station lists in the database can be up to 20 characters long. The username, that will appear on display keysets in the "idle" display and in several call processing displays, can have up to 10 characters. To program the names, select the desired text box and type the entry. **NOTE:** To insure proper operation of Axxent Talk directories, the full name should be entered in the form: *Last name, First name*. Do not use backslash (\), vertical bar (|), or tilde (~) characters in usernames. Do not use Control characters in descriptions or usernames. The Axxent Connect displays the *description* and not the username for stations when placing and receiving calls.

9.10 **ACCOUNT CODES:** This option can be selected for programming account codes for the station. The associated window is explained on page 6-27.

9.11 **MAILBOXES:** To assign a mailbox to this station, select the Mailboxes option. The window shown on page 6-29 appears.

9.12 **MISCELLANEOUS FLAGS:** The window that appears when this option is selected is shown on page 6-30. It is used for programming several station-specific features. A complete list of the flags is also given on page 6-30.

9.13 **MISCELLANEOUS INFORMATION:** Selecting this option causes another programming window

to appear (as shown on page 6-33). That window is used for programming the station's attendant, message center, outgoing access number, transfer recall destination, voice mail extension, alternate message source, data port extension, speakerphone type, attached devices, and PCDPM baud rate.

9.14 **PROGRAMMABLE KEYS:** Select this option to choose the key maps that will be used by the station and to assign the values for the station programmable keys. The window appears as shown on page 6-35.

9.15 **SPECIAL PURPOSE STATION:** This option is selected to program the station as a message center, attendant, administrator, or house phone. The window for this option is shown on page 6-37.

9.16 **SYSTEM FORWARDING:** If this feature has been enabled (see page 6-198), you can select this option to assign the system forwarding path(s) and forwarding conditions for the station. The window for this option appears on page 6-39.

9.17 **TOLL RESTRICTION:** This line is selected to program the station's toll restriction class of service for day and night modes. A window appears as shown on page 6-42.

9.18 **OK/CANCEL:** When all programming is completed, select the OK command button to save your changes and exit to the Individual Station Information window. Or, to exit without saving any information, select the Cancel command button.

A. ACCOUNT CODES

9.19 The station can be assigned a standard account code or one of six types of forced account codes (four are ARS dependent). Or, if desired, the station can have no associated account code. When a standard account code is assigned, a specific code must be designated (001–100). (The codes are programmed in the Account Code window on page 6–60.)

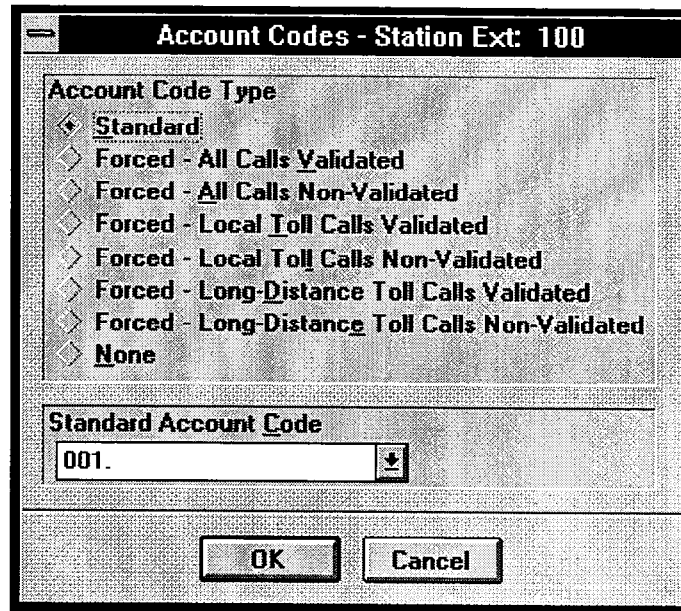
9.20 The account code types are:

- **Standard:** Standard account codes automatically appear in the SMDR printout to identify calls from this station. The station user is not required to enter any digits during the call.
- **Forced — All Calls Validated:** If this type of account code is enabled, the user must enter a forced account code before an outside call can be placed. If the code matches one of the pre-programmed forced account codes in the database, the call is allowed. If the code does not match, the call is blocked.
- **Forced — All Calls Non-Validated:** With this account code type, the user must enter an account code before placing any outside call. The code is not checked against any lists and the call is allowed as soon as the code is entered.
- **Forced — Local Toll Calls Validated:** This account code type requires the user to enter an account code after dialing a local toll call number when using ARS. If the code matches one of the pre-programmed forced account codes in the database, the

call is allowed. If the code does not match, the call is blocked.

- **Forced — Local Toll Calls Non-Validated:** This account code type requires the user to enter an account code after dialing a local toll call or long distance number when ARS is used. The code is not checked against any lists and the call is allowed as soon as the code is entered.
- **Forced — Long-Distance Toll Calls Validated:** When this account code type is enabled, the user only has to enter an account code if the system detects that a long distance call has been dialed when ARS is used. If the code matches one of the pre-programmed forced account codes in the database, the call is allowed. If the code does not match, the call is blocked.
- **Forced — Long-Distance Toll Calls Non-Validated:** When this account code type is enabled, the user only has to enter an account code if the system detects that a long distance call has been dialed when ARS is used. The code is not checked against any lists and the call is allowed as soon as the code is entered.
- **None:** If the user will not be required to enter an account code, select None. The user may still use optional account codes or enable the Account Code For All Calls Following feature, as desired.

9.21 The window shown on the next page appears when the Account Code is selected from the window shown on page 6–26.

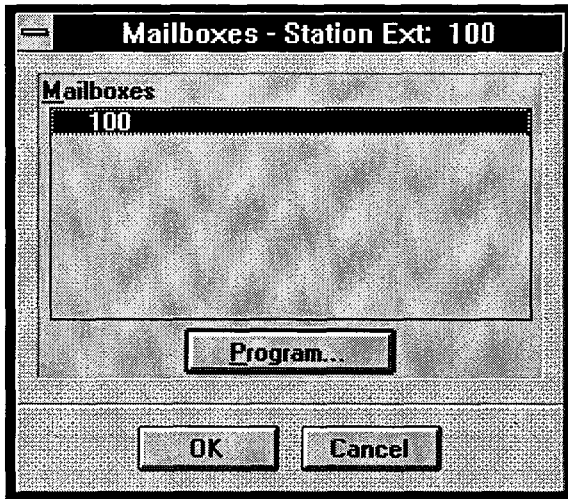


9.22 ACCOUNT CODE TYPE: To assign an account code type for the station, place a dot in the desired option button. If Standard is selected, the Standard Account Code drop-down list box changes from dimmed to dark.

9.23 STANDARD ACCOUNT CODE: (*This box is dimmed unless the Standard account code type is selected.*) To assign the standard account code that will be associated with the station, select the Standard Account

Code drop-down list box. Then scroll the highlight bar to the desired account code and select it. The selected account code will appear in the closed drop-down box.

9.24 OK/CANCEL: When account code programming is completed, select the OK command button to exit to the window shown on page 6-26. Or, to exit without saving any information, select the Cancel command button.



B. MAILBOXES

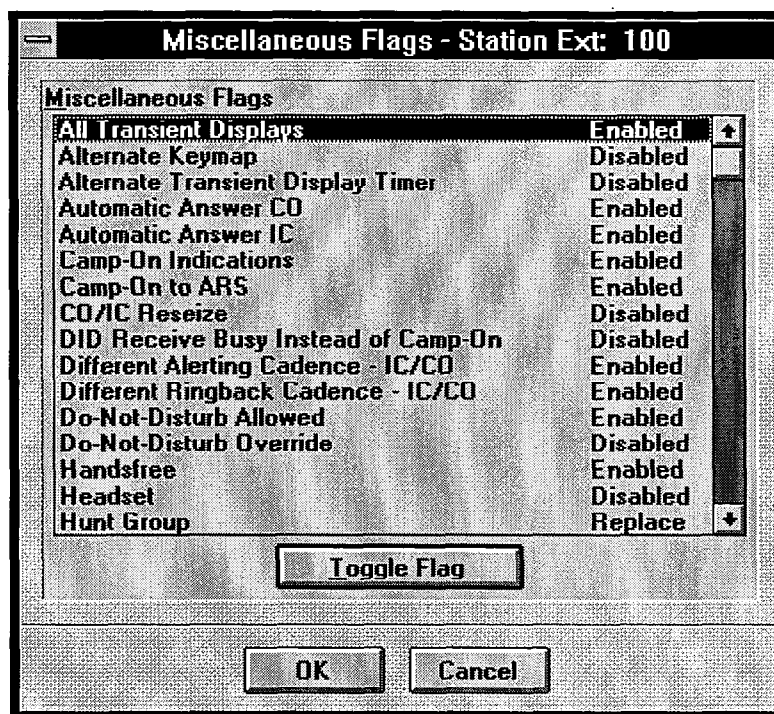
9.25 The window shown above appears when Mailboxes is selected in the window shown on page 6-26.

9.26 If the station being programmed serves as the message notification station for one or more mailboxes (programmed using the programming procedure shown on page 6-168), the mailbox(es) will appear in the Mailboxes list box.

9.27 The mailbox programming procedure is identical to the procedure shown on page 6-166, but is performed on a station-by-station basis rather than mailbox-by-mailbox.

9.28 MAILBOXES/PROGRAM: To program the parameters of this station's mailbox(es), highlight the desired mailbox in the list box and then select the Program command button. The window that appears is the same as the one shown on page 6-168 except that the Description, Username, and Message Notification Station cannot be changed. Refer to that page for programming instructions.

9.29 OK/CANCEL: When mailbox programming is completed, select the OK command button to exit to the window shown on page 6-26. Or, to exit without saving any information, select the Cancel command button.



C. MISCELLANEOUS FLAGS

9.30 The window shown above appears when Miscellaneous Flags is selected in the window shown on page 6-26. Determine the desired status for each of the station flags. (Refer to FEATURES for more information on each of these options.)

9.31 MISC. FLAGS/TOGGLE FLAG: Each of the items in the list box has only two states (enabled/disabled, on/off, etc.). Scroll through the list to verify that they are programmed as desired. To change the status of a flag, highlight it and then select the Toggle Flag command button.

9.32 OK/CANCEL: When the Miscellaneous Flags list appears as desired, select the OK command button. Or, to exit without changing the status of the flags, select the Cancel command button.

9.33 The station flags that can be programmed in this window include the following:

- **All Transient Displays:** When this flag is enabled, it will allow all transient call handling displays to appear on the keyset display. If it is disabled, the CALL TRANSFERRED TO XXX and MESSAGE LEFT FOR XXX displays will not appear. In the default state it is *enabled*.
- **Alternate Keymap:** (*Keyset only*) If an alternate keymap will be used on the keyset, it can be enabled through programming or by the keyset user. This

flag shows the current state of the alternate keymap (enabled or disabled). In the default state, the alternate keymap is *disabled* and the standard keymap is used. (The keyset user can switch keymaps at any time by entering a feature code.)

- **Alternate Transient Display Timer:** (*Keyset only*) This flag, if enabled, allows the length of time that transient displays will remain visible to be controlled by the new "DKTS Alternate Transient Display" timer. If this flag is disabled, transient displays will remain visible for 5 seconds. In the default state, it is *disabled*.
- **Automatic Answer CO or Intercom:** (*Keyset only*) The Automatic Answer features can be enabled so that ringing outside and/or intercom calls are answered by simply lifting the handset. If automatic answer is disabled, the user must press a key to answer the call. (This can also be programmed by the station user.) In the default state, automatic access for both IC and CO are *enabled*.
- **Camp-On Indications:** The tone and display that signal a user when a call has camped on can be enabled or disabled. (However, the lamp in the Call or trunk keys cannot be disabled.) In the default state, the tones are *enabled*. **NOTE:** Hunt group camp-on tones can be disabled without disabling station camp-on tones. See the Hunt Group Camp-On Audio Indications flag on the next page.

- **Camp-On to ARS:** The station can be permitted to camp on to a trunk when using Automatic Route Selection (ARS), or camp-on to ARS can be disabled. In the default state, camp on to ARS is *enabled*.
- **CO/IC Reseize:** (*Keyset only*) The ability to immediately reseize a trunk or intercom channel, after disconnecting from a call, can be enabled. In the default state, it is *disabled*.
- **DID Receive Busy Instead Of Camp-On:** DID callers can receive busy signal, or receive ringback and camp on, when calling a busy station. If this feature is enabled, the caller will hear busy signals when the called station is busy, and will not camp on. In the default state, busy tones are *disabled* and the callers will hear ringback while camped on to the called station.
- **Different Alerting Cadence Intercom/CO Call:** To allow users to easily differentiate between ringing intercom and outside calls, separate cadences can be enabled. In the default state, the different cadences are *enabled*.
- **Different Ringback Cadence Intercom/CO Call:** The ringback heard when a user places a call can be different for intercom and outside calls, or both types of calls can use the CO ringback cadence. In the default state, the different cadences are *enabled*.
- **Do-Not-Disturb Allowed:** This option designates whether the station can be placed in do-not-disturb. In the default state, it is *enabled*.
- **Do-Not-Disturb Override:** (*Keyset only*) The station can be given do-not-disturb override privilege that allows the user to place an intercom call to a station in do-not-disturb. In the default state, it is *disabled*.
- **Extended Ring Cadence:** (*Single-line station only*) Extended ring cadence can be enabled or disabled. The extended setting lengthens the duration of the ring signal to meet the requirements of OPX and/or repeater applications. The default setting is *disabled*.
- **Handsfree:** (*Keyset only*) The station can be programmed to receive intercom calls handsfree, or handsfree answering can be disabled. (This can also be programmed at the keyset.) In the default state, handsfree answering is *enabled*.
- **Headset:** (*Keyset only*) If a headset will be used on the keyset, it can be enabled through programming or by the keyset user. In the default state, it is *disabled*.
- **Hunt Group:** The station Hunt Group Remove/Replace feature can be programmed using this window or using the feature code at the station. In the default state, this feature is set for *replace* which allows the station to receive hunt group calls.
- **Hunt Group Camp-On Audio Indications:** The tone that signals a hunt group member when a call has camped on to the hunt group can be enabled or disabled. (However, the camp-on display and lamp in the Call or trunk keys cannot be disabled.) In the default state, the tones are *enabled*. **NOTE:** If all station camp-on tones are disabled using the Camp-On Indications flag, described on the previous page, hunt group camp-on tone will be disabled regardless of the Hunt Group Camp-On Audio Indications flag setting.
- **Immediate OHVA Transmit:** (*This prompt appears only if OHVA is enabled and only for keysets.*) Determine if the station will have immediate off-hook voice announce capability enabled. If it is not enabled, the OHVA call does not go through until the Off-Hook Voice Announce Screening timer expires. In the default state, this option is *disabled*.
- **OHVA Receive/Transmit:** (*These prompts appear only if OHVA is enabled. The OHVA Receive prompt appears for keysets only.*) Any station can be programmed to place off-hook voice announcements. Keysets can also be programmed to receive off-hook voice announce calls. In the default state, receive and transmit are *disabled*. Note that the system-wide flag must also be enabled to allow the feature to be used.
- **OPX Gain Levels:** (*Single-line station only*) When a single-line circuit is used as an off-premises extension, this option can be enabled to set receive and transmit gain levels to better suit the OPX application. In the default state, OPX gain levels are *disabled* (the gain levels are set for on-premises use).
- **Page Mode:** (*Keyset only*) If desired, pages to the station can be enabled or disabled through programming or by the keyset user (page remove/replace). In the default state, pages are *enabled*.
- **Receive Busy Instead Of Do-Not-Disturb:** The tone that a caller hears when a station is in do-not-disturb can be a busy signal or a do-not-disturb signal. If this feature is enabled, the caller will hear

busy signals when the station is in do-not-disturb, but the caller cannot camp on. In the default state, busy tones are *disabled*.

- **Redial Mode:** Station users can use *last number dialed* or *last number saved* redial modes. This option can be programmed using this window only, it cannot be changed by the station user. In the default state, the stations are set for *dialed* mode.
- **Ring Intercom Always:** When this feature is enabled, all calls placed to keysets from this station are received as private calls. The feature can be enabled or disabled through programming or by the keyset user. In the default state, this feature is *disabled*.
- **Standard Tone Frequencies:** The busy tones and dial tones can be pure system tones (as described in FEATURES, page 4–51) or they can be changed to more closely match the telephone company's standard tones. In the default state, standard tones are *enabled* (allowing standard telephone company type tones).
- **System Forwarding:** When this option is enabled, calls to the station follow the system forwarding path that is programmed for the station (if any). This option can be enabled in the database or at the station. In the default state, it is *enabled*.

D. MISCELLANEOUS INFORMATION

9.34 The Miscellaneous Information window is shown on the next page. It appears when you select Miscellaneous Information from the window shown on page 6–26. To prepare to program this information, determine the following for each station. (Refer to FEATURES for more information on each of these features.)

- **Attendant:** Determine which station, Axxent Talk application, or hunt group (if any) will serve as the attendant for this station. (If a hunt group is selected, the hunt group stations are not required to be programmed individually as attendant stations. Also, the database will not reflect that the individual stations serve as attendants for any other stations.)
- **Message Center:** Determine which station, Axxent Talk application, or hunt group (if any) will be assigned as message center for the station. The message center will receive messages after the Message Wait timer expires.
- **Outgoing:** Determine which trunk access (trunk, trunk group, or ARS) this station will use when an idle Call key or the OUTGOING key is pressed or when a system speed-dial number is selected for dialing before a trunk is selected. Defaults to Trunk Group 1 (9201).
- **Transfer Recall Destination:** Determine which station, hunt group, or Axxent Talk application (if any) will be the transfer recall destination that will receive this station's transfer recalls.
- **Voice Mail Extension:** Determine the station, Axxent Talk application, or hunt group that will be the voice mail destination for this station (through direct dialing or forwarding). This defaults to 299 when the Axxent Talk is installed. If there is no Axxent Talk, or if an analog voice mail unit is installed, this field is set to "None."
- **Alternate Message Source:** Determine which extension number (if any) will be assigned as the alternate message source for this station. If a station or Axxent Talk application has an alternate message source and leaves a message at another station, the alternate message source will be called (instead of the station or application) when the message recipient

responds to the message waiting indications. The alternate message source can be a hunt group, station, or Axxent Talk application.

- **Data Port Extension:** The data port extension determines which data port the keyset will use. This is the extension number of the data port itself, not the keyset to which it is attached. The data port may be attached to one station and used by several other stations. If the station has a DATA key, it shows the status of its associated data port. (Note that the keyset does not have a DATA key by default. DATA keys must be programmed in the database or by the user.) Refer to page 4–95 in FEATURES for details.
- **Speakerphone Type:** This flag affects Basic, Standard, and Executive keysets differently:
 - *Basic or Standard Keyset:* If the station will have access to shared *standard* speakerphone resources, select Standard. For access to *enhanced and standard* speakerphone resources, select Enhanced. To prevent a Basic or Standard keyset station from using shared speakerphone resources, select Disabled.
 - *Executive Keyset:* To enable the keyset's integrated speakerphone, to be used in standard and/or enhanced mode, select either of the speakerphone options (Enhanced or Standard). (Selecting Standard does not prevent the Executive Keyset user from using the enhanced speakerphone). To disable the Executive Keyset's speakerphone, select None.
- **Attached Device:** Indicate the type of attached device if a DSS or Desktop Interface is connected to the keyset. If nothing is connected, select None.
- **Baud Rate:** Select the baud rate of the PCDDPM of the Executive or Standard keyset. (If connected to a DSS/BLF Unit, this cannot be changed.) Valid rates are 300, 600, 1200, 2400, and 4800 (1200, 2400, and 4800 for a system serial port). This can be re-programmed by the keyset user.
- **Language:** This field is not used in this software version. It is used in international versions to select the language used on the keyset displays.

Miscellaneous Information - Station Ext: 100

Attendant
<None>

Message Center
<None>

Outgoing
9201 T001 Trunk Group 001

Transfer Recall Destination
100 01.01.01 ~Station Undefined

Voice Mail Extension
299 A299 VOICE MAIL

Alternate Message Source
<None>

Data Port Extension
<None>

Language
Speakerphone Type
Standard

Attached Devices
DSS

Baud Rate
2400

OK
Cancel

9.35 ATTENDANT: Select the Attendant drop-down list box and scroll to the desired attendant station, Axxent Talk application, or hunt group.

9.36 MESSAGE CENTER: Select the Message Center drop-down list box and scroll to the station, Axxent Talk application, or hunt group that will serve as this station's message center.

9.37 OUTGOING: To select the trunk access code that will be used for Outgoing Call feature code and automatic outgoing trunk access, select the Outgoing Extension drop-down list box and scroll to the desired trunk group, trunk, or ARS.

9.38 TRANSFER RECALL DESTINATION: Select the Transfer Recall Destination drop-down list box and scroll to the station, Axxent Talk application, or hunt group that will serve as this station's recall destination.

9.39 VOICE MAIL EXTENSION: Select the Voice Mail Extension drop-down list box and scroll to the extension number that this station will dial to reach voice mail.

9.40 ALTERNATE MESSAGE SOURCE: Select the Alternate Message Source drop-down list box and scroll to the station, Axxent Talk application, or hunt group that will serve as this station's alternate message source.

9.41 DATA PORT EXTENSION: (*Keysets only*) Select the Data Port Extension drop-down list box and scroll to the desired extension number.

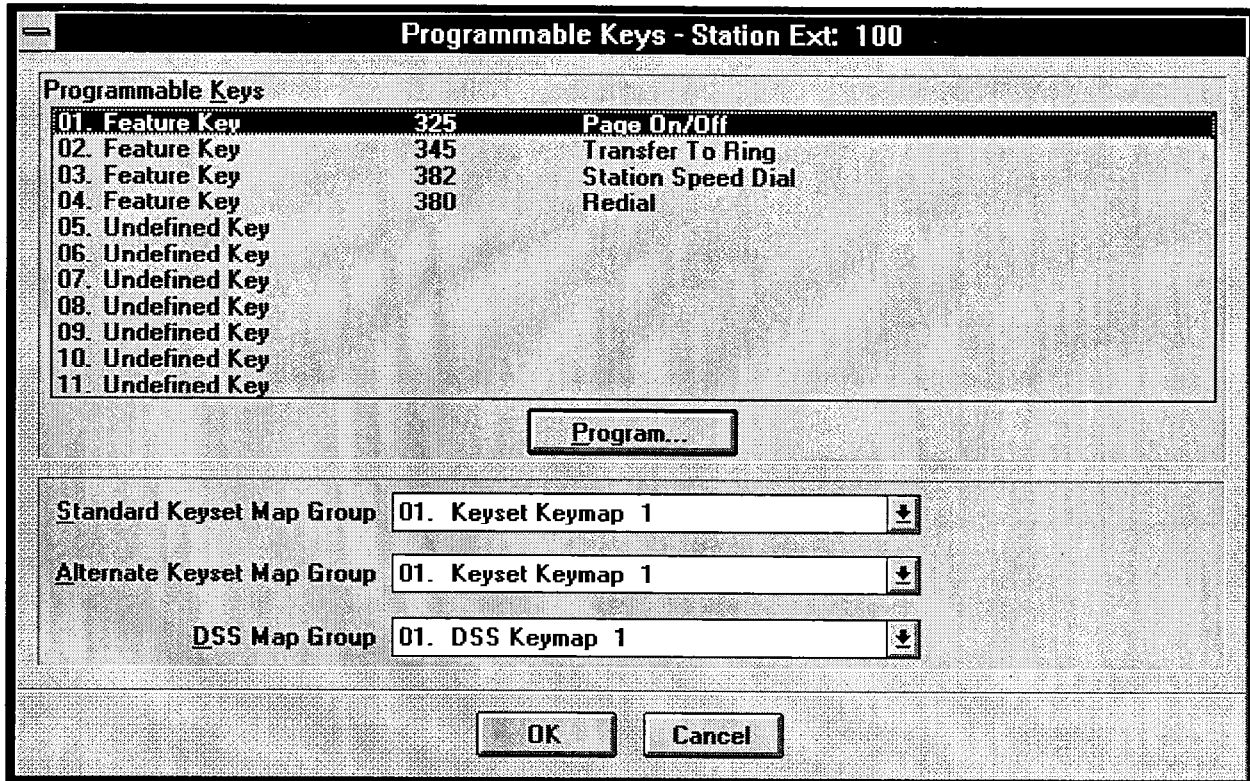
9.42 SPEAKERPHONE TYPE: (*Keysets only*) Select the Speakerphone Type drop-down list box and select the speakerphone option (disabled, enhanced, or standard) that is appropriate for this station.

9.43 ATTACHED DEVICE: (*Keysets only*) Select the type of device (DSS or Desktop Interface) attached to the keyset, or None, by selecting the drop-down list box and scrolling to the correct entry.

9.44 BAUD RATE: (*Keysets only*) This is not available if the attached device is set to DSS. Select the baud rate for the PCDDPM attached to the Executive or Standard keyset by selecting the drop-down list box and scrolling to the desired entry.

9.45 LANGUAGE: This field is not used in this software version. It is used in international versions to select the language used on the keyset displays.

9.46 OK/CANCEL: When the Miscellaneous Information window appears as desired, select the OK command button. Or, to exit without changing the information for the station, select the Cancel command button.



E. PROGRAMMABLE KEY PROGRAMMING

9.47 The database contains maps of default values for key layouts. (These maps are programmed on page 6–52.) Determine the preferred key map for each keyset (maps 1–10) and each DSS/BLF-equipped station (maps 1–3). Also determine the default values of the user-programmable keys for each station. To reach this window, select Programmable Keys in the window shown on page 6–26.

9.48 The default values for the programmable keys are shown in the window above.

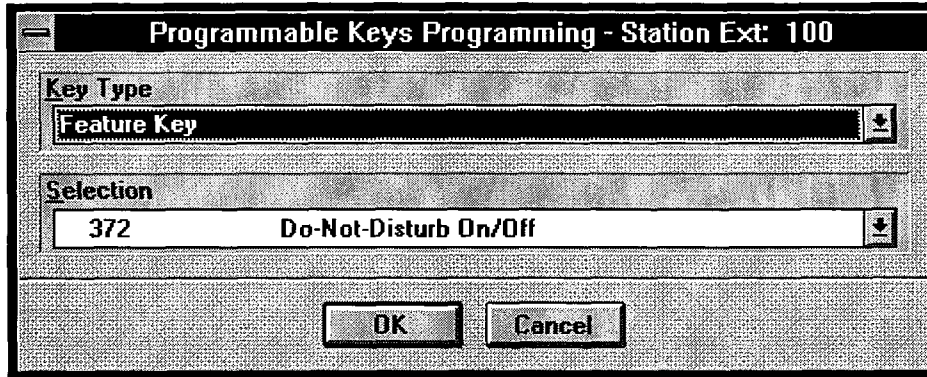
9.49 PROGRAMMABLE KEYS: To determine the function of a programmable key at this station, scroll to the desired key (01–11) and then select the Program command button. A window appears as shown on the next page.

NOTE: These keys will have the same value in both the Standard and Alternate keymaps for the keyset, regard-

less of the user-programmable key’s location in the maps. That is, if user-programmable key #1 is located in the upper left on one map and the upper right on the other map, the *value* remains the same in both maps even though the *location* changes.

9.50 MAP GROUPS: (*The DSS Map Group box cannot be selected if the keyset does not have an attached DSS/BLF Unit or Desktop Interface.*) To determine the Standard, Alternate, and DSS keymaps that will be used by this station, select the appropriate drop-down list box, and scroll to the desired map number (1–10 for keyset maps, 1–3 for DSS maps). The selected map is shown in the closed drop-down list box.

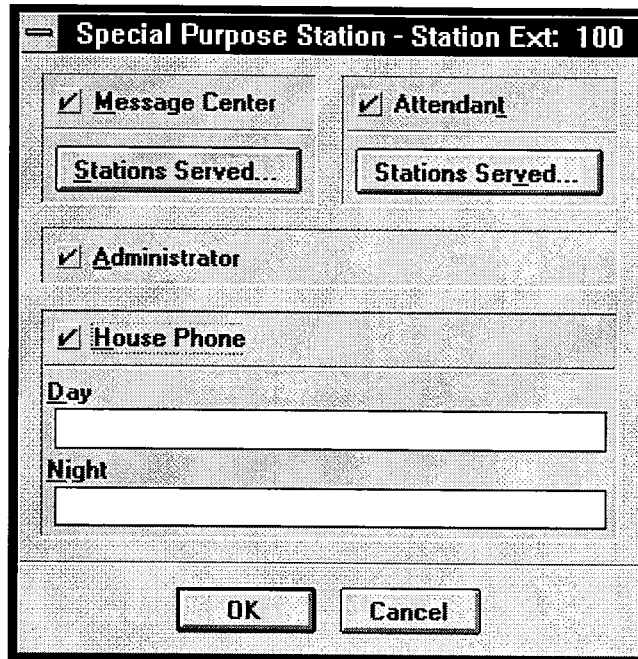
9.51 OK/CANCEL: When finished with station programmable key programming, select the OK command button to save your changes and exit. Or, to exit without changing the key programming, select the Cancel command button.



9.52 KEY TYPE/SELECTION: Each station programmable key can be assigned one of the following Key Types by scrolling through the drop-down list box until the desired key type is highlighted. When the Key Type is selected, the Selection drop-down list box is then used to indicate any necessary additional information:

- **DSS/BLF Key:** Select the circuit or extension number of the station that will appear under the selected DSS/BLF key.
- **Feature Key:** Select the feature code that will be entered when this key is pressed.
- **Hunt Group Key:** Select the pilot number of the desired hunt group.
- **Individual Trunk Key:** Select the individual trunk that will be selected when this key is pressed.
- **Intercom (IC) Key:** No further programming is necessary. This key will be used for seizing an intercom channel or answering a waiting intercom call.
- **Page Zone Key:** Select the page zone 0–4 that will be used by selecting the page zone access code 960–964 (respectively).
- **Station Speed Dial Key:** Select the station speed-dial key (0–9) that will be assigned.
- **System Speed Dial Key:** Select the system speed-dial key (000–099) that will be assigned.
- **Trunk Group Key:** Select the trunk group (1–8) that will be selected when this key is pressed.
- **Undefined Key:** No further programming is necessary. This key can be programmed by the user.

9.53 OK/CANCEL: When finished with programmable key programming, select the OK command button to return to the Programmable Key window. Or select the Cancel command button to exit without changing the key assignments.



F. SPECIAL PURPOSE STATION

9.54 To reach this window, select Special Purpose Station in the window shown on page 6–26. Stations can be programmed to serve the following functions. Refer to FEATURES for more details on these special purpose stations.

- **Message center:** A station can be designated as a message center and assigned a list of stations that it will serve.
- **Attendant:** A station can be designated as an attendant and assigned a list of stations that it will serve.
- **Administrator:** (*Keysets only*) A keyset station can be assigned as an administrator to permit use of the administrator feature codes at that station. (This option can also be programmed by Administrator stations. See page 4–99.)
- **House phone:** The station can be designated as a house phone that automatically dials a predetermined number when the handset is lifted. The assigned day number is dialed when the system is in day mode and the assigned night number is dialed when the system is in night mode. The day/night house phone numbers can also be programmed using the house phone station speed-dial locations.

9.55 MESSAGE CENTER/STATIONS SERVED:

To assign the station as a message center, select the check box to place a check in it. You can then select the upper Stations Served command button to assign the stations that will be served by this message center. A station list window appears as shown on the next page.

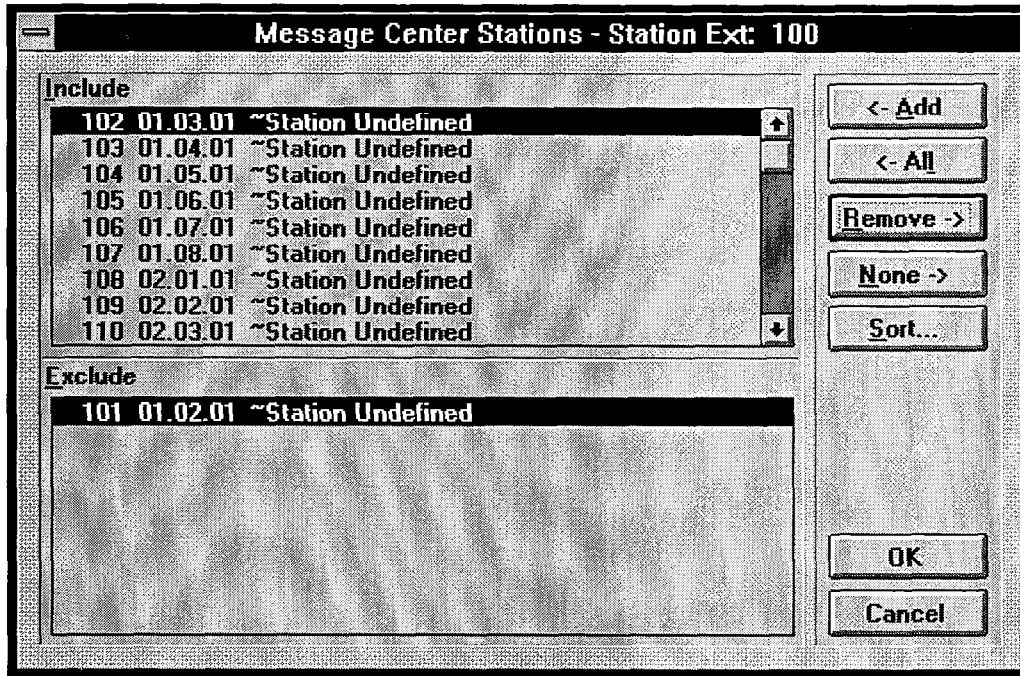
9.56 ATTENDANT/STATIONS SERVED:

To assign the station as an attendant, select the check box to place a check in it. You can then select the lower Stations Served command button to assign the stations that will be served by this attendant. A station list window appears as shown on the next page. *If you attempt to remove attendant status from the primary attendant, you will see a warning message. (The primary attendant can only be changed using the Miscellaneous System-Wide Information programming screen shown on page 6–89.)*

9.57 ADMINISTRATOR: To assign the station as an administrator, select the check box to place a check in it.

9.58 HOUSE PHONE/DAY/NIGHT: To assign the station as a house phone, select the check box to place a check in it. You can then select the Day and/or Night text box and enter the extension or outside number (up to 16 digits, including pauses and hookflashes) that will be dialed when the house phone is used during the day and/or night mode. These numbers are also station speed-dial locations codes 0 (day) and 1 (night).

9.59 OK/CANCEL: When finished with Special Purpose Station programming, select the OK command. Or select the Cancel command button to exit without changing the station programming.



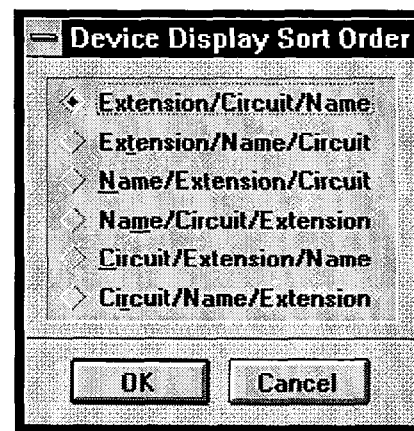
9.60 The window shown above appears when a Station Served command button is selected. If the Attendant Stations Served button is selected, the header is “Attendant Stations” instead of “Message Center Stations.”

9.61 If an attendant station does not have any stations to serve, it will retain its attendant status. However, if a message center does not have any stations to serve, its message center status will be removed automatically.

9.62 To determine the stations that are served by the attendant or message center, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Exclude list to the Include List, or use the All command button to place all stations in the Include list.
- **REMOVE/NONE:** To remove the highlighted station from the Include list, select the Remove command button. Or, to remove all stations, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window

appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

G. SYSTEM FORWARDING

NOTE: The System Forwarding window cannot be used unless the feature has been enabled as described on page 6-198.

9.63 The forwarding path assignment is made on a station-by-station basis. Refer to FEATURES, page 4-76 for more details on system forwarding.

9.64 Each station can have up to three forwarding paths and there can be 20 different programmed paths in the system, numbered 001-020. Path 000 (No Forwarding Path) can be assigned to disable system forwarding for the station. (Forwarding paths are defined using the programming procedure on page 6-97.)

NOTE: When a station user transfers a call to the principal station of a forwarding path, the Handsfree Announce System Forward system-wide flag determines what the caller will hear. If enabled, the caller will place a handsfree call to the principal station and can announce the transfer (the call does not enter the forwarding path). If the option is disabled, the transferring station user will hear ringing and can announce the call only if it is answered by the principal station or one of the forwarding points. See page 6-93 for system flag programming information.

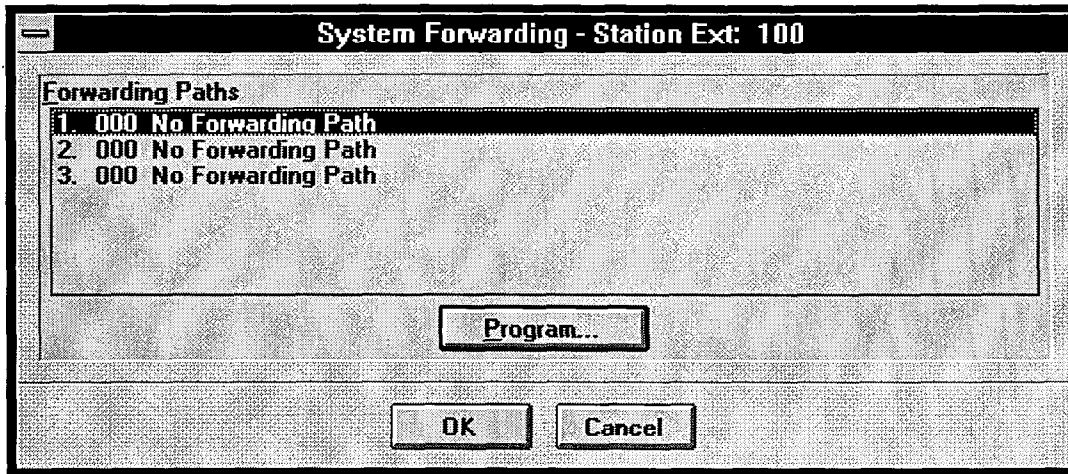
9.65 The following information can be programmed for each forwarding path:

- **Station Conditions:** The station can be programmed to use the path to forward calls when the station condition is busy, in do-not-disturb, and/or no answer. Or, calls can be forwarded immediately after they are received at the station. (In the default state, all but Immediate are selected.)
- **System Conditions:** The station can be programmed to use the forwarding path when the sys-

tem is in day mode and/or night mode. (In the default state, both day and night mode are selected.)

- **Ring Principal Once:** If the system-forwarded station is a keyset and the user wishes to be notified each time a call is sent to the system forwarding path, this option can be enabled. The station user will hear a single ring tone each time a call is system forwarded and display keyset will show CALL SENT TO FORWARD PATH. (In the default state, this is disabled.)
- **Forwarding Call Types:** The types of calls that can be forwarded include the following. The forwarding station can be programmed to forward any or all of these call types. (In the default state, call routing, ring-in, DISA, and transferred calls are enabled.)
 - Outside calls received through a call routing table (including DID calls, but not including DISA calls)
 - Ringing outside calls
 - Transferred outside calls (including automated attendant and voice mail transfers)
 - Recalling outside calls
 - DISA calls (including DISA calls received through a call routing table)
 - Intercom calls

NOTE: Call forwarding paths are checked in numerical order when they apply to the same call type (for example, multiple outside call forwarding paths). If one forwarding path is for the "No Answer" call condition, it should be last on the list of forwarding paths for the station. If No Answer is the condition in the first path, the system will always wait for the System Forward Initiate timer to expire before forwarding, even if the station is in do-not-disturb mode or busy.



9.66 To reach this window, select System Forwarding in the window shown on page 6-26.

9.67 FORWARDING PATHS/PROGRAM: To select the forwarding path to be programmed for the station, move the highlight bar in the list box to the desired

path number. Then select the Program command button. The window shown on the next page appears.

9.68 OK/CANCEL: When all forwarding paths are programmed, select the OK command button to exit. Or, to exit without changing the forwarding paths, select the Cancel command button.

9.69 This window appears when the Program command button, shown on the preceding page, is selected.

9.70 FORWARDING PATHS: To begin programming, select the forwarding path number (000–020) that will be used for this path by scrolling through the Forwarding Paths drop-down list box and selecting the desired number. The rest of the options in this window are then used to program that path number. (The options are dimmed unless a forwarding path is selected.)

9.71 RING PRINCIPAL ONCE: If the principal station is a keyset and the user wishes to hear a single ring signal and receive a display each time a call enters the forwarding path, select the Ring Principal Once check box to place a check mark in it. In the default state, this is not selected.

9.72 STATION CONDITIONS: Determine which station conditions will cause the calls to follow the forwarding path and select them to place a check mark in the desired check box(es). In the default state, all but Immediate are selected. Note that if any condition other than Immediate is selected, Immediate will appear dimmed and cannot be selected.

9.73 SYSTEM CONDITIONS: Indicate whether calls will follow the forwarding path in day and/or night mode by selecting the desired system condition(s) to place a check mark in the desired check box(es). In the default state, both day and night mode are selected.

9.74 FORWARD CALL TYPES: Determine the types of calls that will follow the forwarding path by selecting each desired call type to place a check mark in the check box. In the default state, all but Recall and IC Calls are selected.

NOTE: Call forwarding paths are checked in numerical order when they apply to the same call type (for example, multiple outside call forwarding paths). If one forwarding path is for the “No Answer” call condition, it should be last on the list of forwarding paths for the station. If No Answer is the condition in the first path, the system will always wait for the System Forward Initiate timer to expire before forwarding, even if the station is in do-not-disturb mode or busy.

9.75 OK/CANCEL: When the forwarding path is programmed, select the OK command button to exit to the System Forwarding window. Or, to exit without changing the forwarding path, select the Cancel command button.

H. TOLL RESTRICTION INFORMATION

9.76 Determine the following toll restriction information for each station. Refer to FEATURES, page 4–28, for a full explanation of toll restrictions. The window shown on the next page appears when Toll Restriction is selected in the window shown on page 6–26. Class of service information can also be programmed using an Administrator's station, as described on page 4–99.

- **Day/night class of service (COS):** Determine which COS designation(s) the station will have during day and night modes. (Stations that do not have any of the COS designations are unrestricted and will be included in COS 0, as shown on page 6–109.) The default values of the pre-programmed COS designations (01–09) are as follows. (COS 10–16 have no default values.) COS designations 1–16 are programmable. (Refer to page 6–107 for station COS programming information. The toll string wild cards and non-programmable wildcards are described and listed on page 6–108.)

- *COS 01 — ARS Only:* Calls can only be placed using the Automatic Route Selection (ARS) feature when this restriction is assigned. The user will hear reorder tones when attempting to place a call using any other method. A restricted user can still select individual trunks for placing calls if the trunks are designated as “exempt from ARS Only” (as described on pages 4–27 and 6–129). Trunk restriction determines which trunks in the ARS route group can be selected by the station.
- *COS 02 — Deny Area/Office:* This restriction is divided into three user groups to allow the use of varying area/office code restriction tables. This is useful for reducing restrictions for some of the stations or trunk groups while increasing restrictions for others. Each station and trunk group is assigned a day mode and a night mode user group in database programming. Within each user group, area codes can be designated as restricted, allowed, or extended. See page 6–110 for details.
- *COS 03 — Deny Operator:* Calls to numbers that match the dial patterns for this class of service (defaults to [Q]RN+, [Q]RO, and [Q]RE) are restricted, unless the number also matches a dial

pattern in an “allowed” class of service that is assigned to the station or trunk group being used.

- *COS 04 — Deny Toll Access:* Calls to numbers that match the dial patterns for this class of service (defaults to [Q]TN+ and [Q]TE) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station or trunk group being used.
 - *COS 05 — Deny International:* Calls to numbers that match the dial patterns for this class of service (defaults to [Q]I+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station or trunk group being used.
 - *COS 06 — Deny Equal Access:* Calls to numbers that match the dial patterns for this class of service (defaults to Q+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station or trunk group being used.
 - *COS 07 — Deny Local Calls:* Calls to numbers that match the dial patterns for this class of service (defaults to N+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station or trunk group being used.
 - *COS 08 — Denied Numbers:* Calls to numbers that match the dial patterns for this class of service (defaults to 1900NXXXXXX+ and 976XXXX+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station or trunk group being used.
 - *COS 09 — Allowed Numbers:* Calls to numbers that match with the dial patterns for this class of service (defaults to 1800NXXXXXX+) are allowed, even if the number also matches a dial pattern in a restricted class of service that is assigned to the station or trunk group being used.
- **Day/night user group:** If the station has Area/Office Code restriction, determine which toll restriction user group (1–3) the station is assigned to in day and night modes. The user groups are programmed in Toll Restriction as shown on page 6–110.

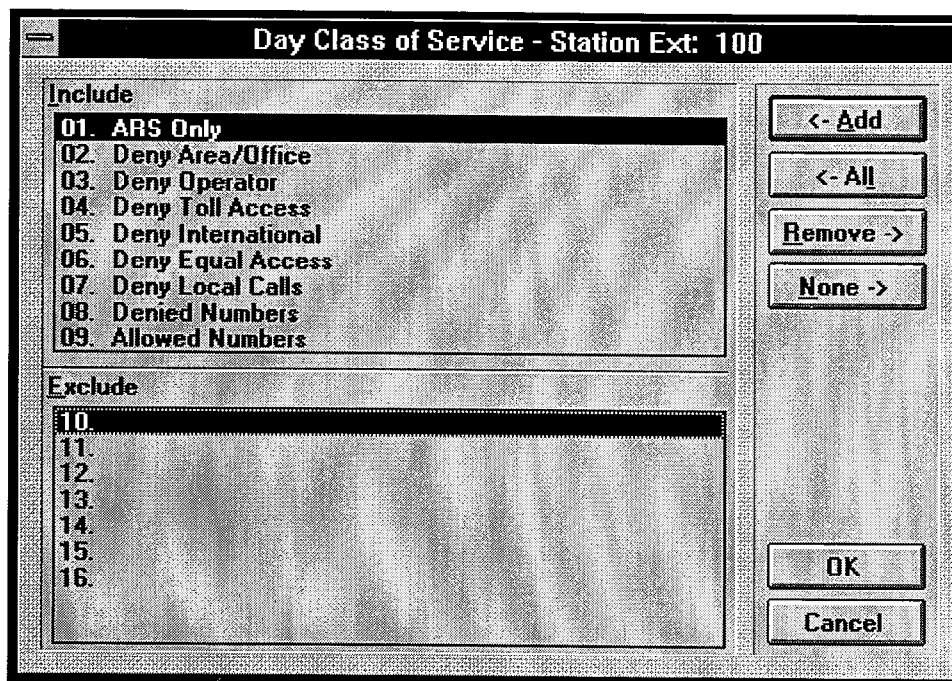
The screenshot shows a programming window titled "Toll Restriction - Station Ext: 100". It contains two main sections: "Day Class Of Service" and "Night Class Of Service". Each section has a "Select..." button and a "User Group" drop-down menu. The "User Group" menu in both sections is currently set to "01.". At the bottom of the window are "OK" and "Cancel" buttons.

9.77 DAY/NIGHT CLASS OF SERVICE SELECT: Use the appropriate Select command button to program class of service for day or night mode. (In the default state, all stations are Unrestricted.) A programming window appears as shown on the next page.

9.78 DAY/NIGHT USER GROUP: *(This drop-down list box is dimmed unless the Deny Area/Office code COS has been assigned.)* To determine the toll restriction user group (1-3) for the station being programmed,

select the appropriate drop-down list box for day or night mode. Then scroll to the desired user group. The selected user group will appear in the closed drop-down list box.

9.79 OK/CANCEL: When finished, select the OK command button to save the changes and exit. Or, to exit without saving the changes, select the Cancel command button.

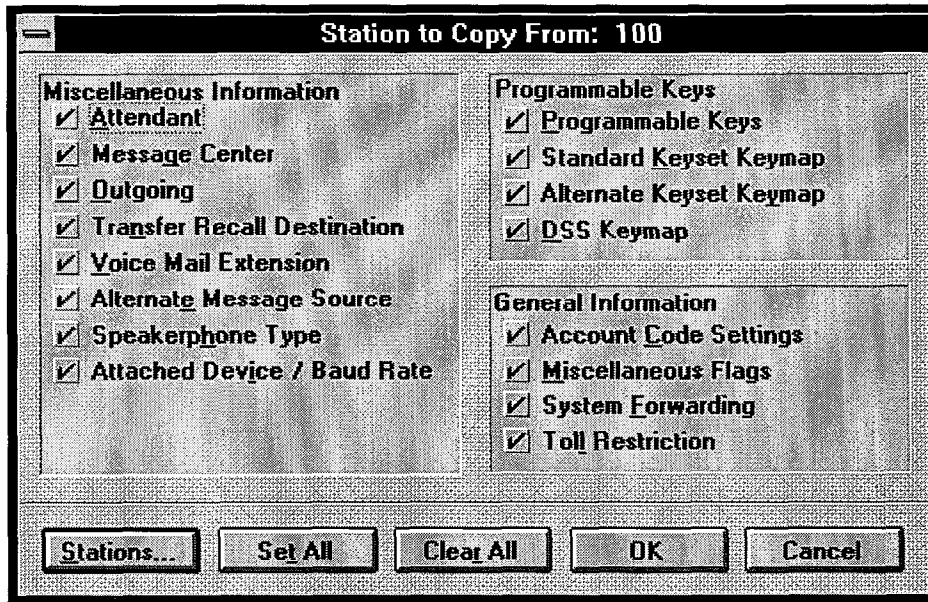


9.80 To determine the classes of service for the station, use the following procedures.

9.81 ADD/ALL: Use the Add command button to move classes of service from the Exclude list to the Include List, or use the All command button to place all classes in the list.

9.82 REMOVE/NONE: To remove a class of service from the Include list, highlight it and select the Remove command button. Or, to remove all classes, use the None command button.

9.83 OK/CANCEL: When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



I. COPYING STATION INFORMATION

9.84 To copy programmed attributes from the station highlighted in the Stations list box (shown on page 6-25) to one or more other stations, select the Copy command button. The window shown above appears. Note that not all information is valid for each station location or type. Information that cannot be copied from the source station will be dimmed (unavailable).

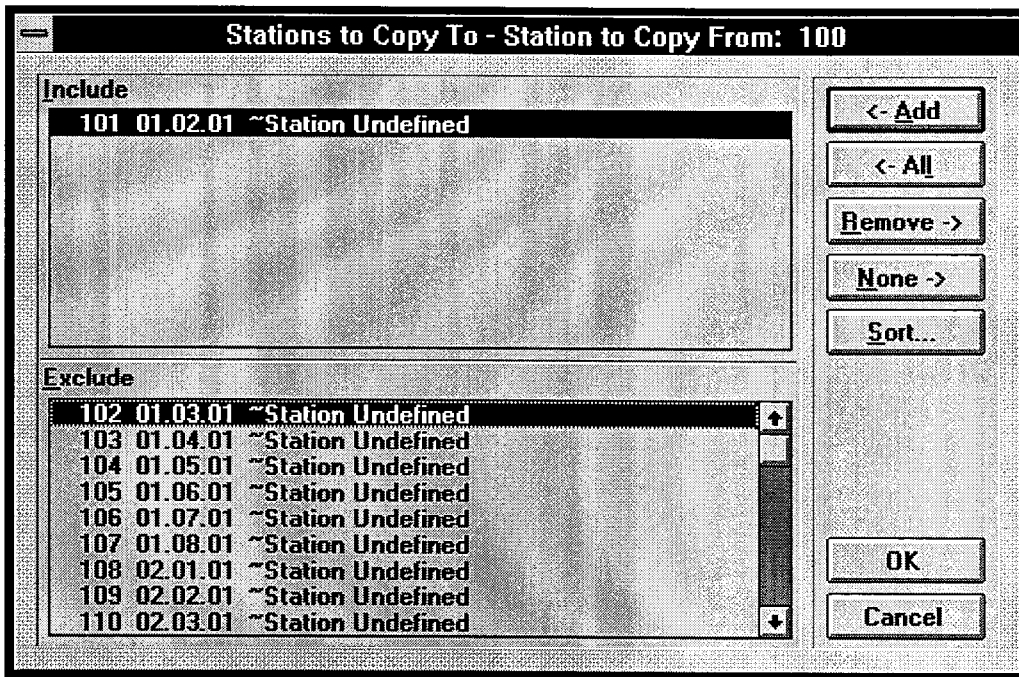
- **CHECK BOXES:** To determine which attributes will be copied, place a check mark in the box for each desired attribute. To place a check mark in a box, select it. To remove the check mark, select it again. Or, use the following command buttons.

- **SET ALL:** Select this command button to place a check mark in every box.

- **CLEAR ALL:** Select this command button to remove all check marks from the boxes.

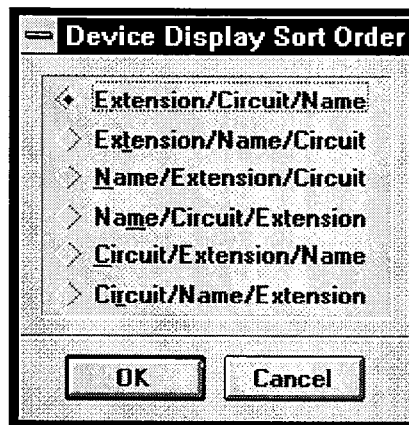
- **STATIONS:** To determine which stations will receive the copied information, select the Stations command button. The window shown on the next page appears.

- **OK/CANCEL:** When finished, select the OK command button to and exit. Or, to exit without saving the changes, select the Cancel command button.



9.85 The window shown above appears when the Stations command button is selected. To determine the stations that will receive the copied information, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a station from the Include list, highlight it and select the Remove command button. Or, to remove all stations, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

10. STATION PROGRAMMING — BATCH PROGRAMMING OPTIONS

10.1 When the Station Programming command button is selected from the Database Programming Menu window, the list box shows the following options:

Individual Station Information
Key Assignments — DSS
Key Assignments — Station
Station Miscellaneous Flags

10.2 The Individual Station Information option is described beginning on page 6-25. The remaining options apply to batch programming of key assignments and station features. They are described in the following pages.

10.3 The Key Assignments windows are used for performing the following programming tasks for up to 10 keyset map groups and three DSS/BLF map groups:

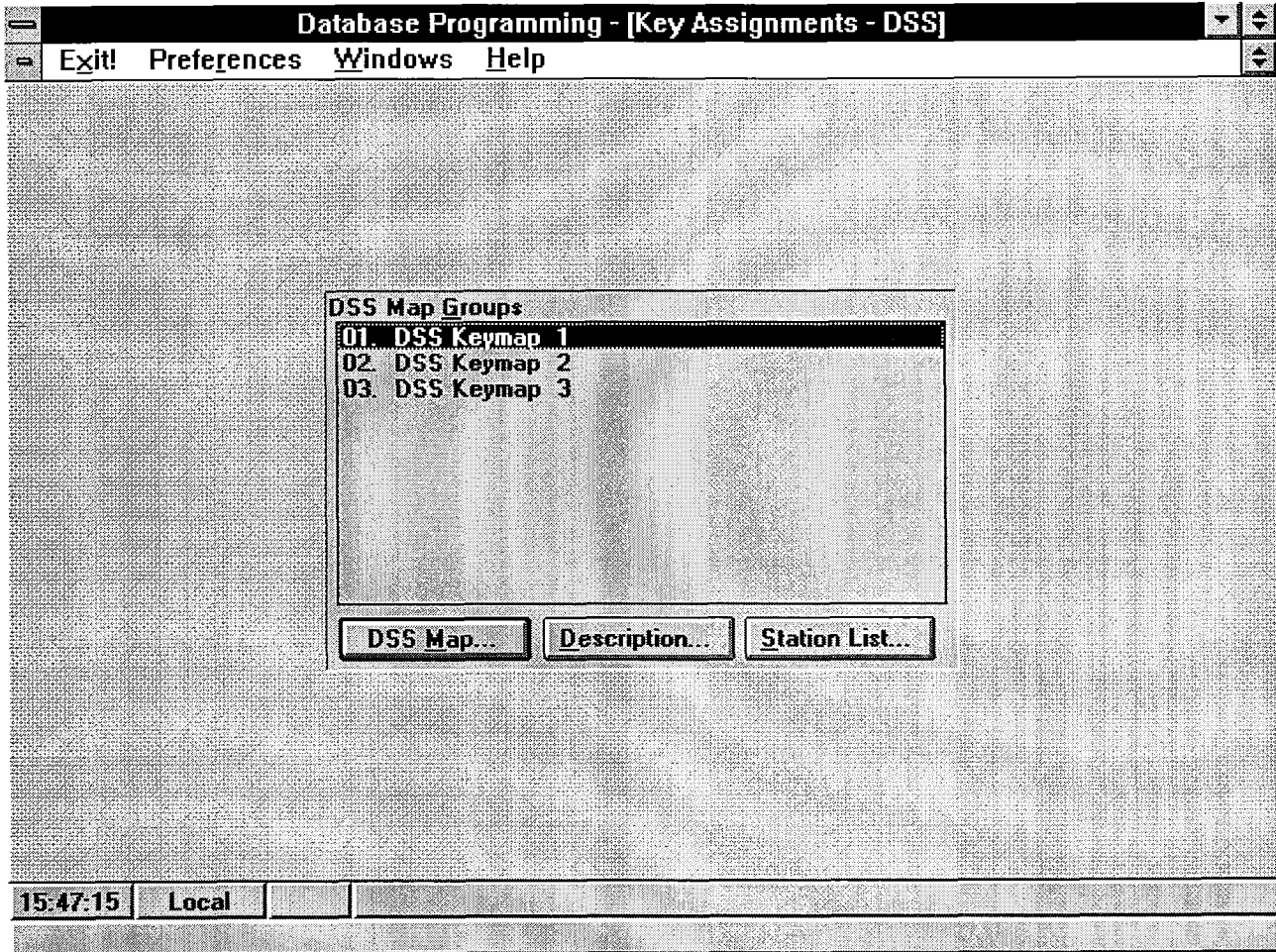
- Naming the key maps.
- Determining the layout of the keys for the station instrument(s) that will use each key map. Note that

when a key is designated on one type of keyset, it will appear on the corresponding key on all stations in that key map.

- Assigning the stations that will use each map as their standard and alternate keymaps.
- Determining the default values for the user-programmable keys and, if desired, updating selected stations.

10.4 The Key Assignments window for DSS/BLF Unit map programming is shown on the next page. The window for keyset map programming is shown on page 6-52. A program planning sheet appears in Figure 6-5, on page 6-223.

10.5 The Station Miscellaneous Flags window is used for batch programming of station features. The features that can be programmed are listed on page 6-30. The Station Features window appears on page 6-58. A program planning sheet appears in Figure 6-6, on page 6-224.



A. KEY ASSIGNMENTS — DSS

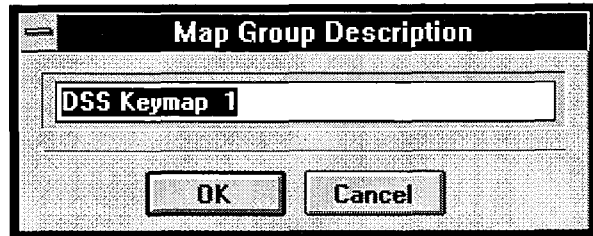
10.6 The DSS/BLF programming window is shown above. To view it, select "Key Assignments — DSS" from the Database Programming Menu window. (A program planning sheet appears in Figure 6-5, on page 6-223.) The programming procedures are as follows.

10.7 DSS MAP GROUPS: While a DSS map group is highlighted in the DSS Map Groups list box, all other programming pertains to that map group.

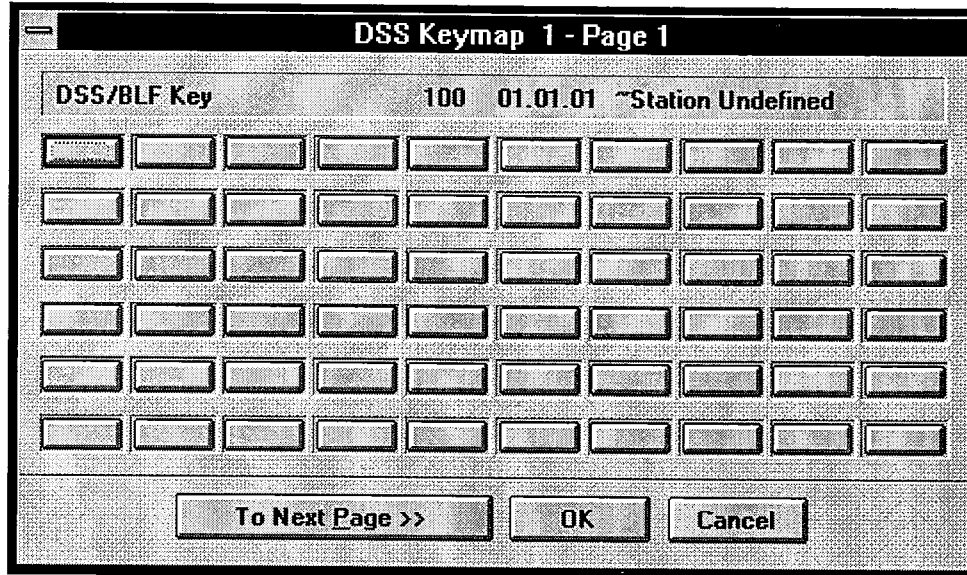
10.8 DSS MAP: When the DSS Map command button is selected, an illustration of the DSS/BLF Unit key layout appears as shown on the next page.

10.9 DESCRIPTION: To give a name to the map group, select the Description command button. The fol-

lowing window appears. Enter the desired name (up to 20 characters) in the text box. When finished, select the OK command button to save the name or select the Cancel command button to exit without saving any changes.



10.10 STATION LIST: To select the DSS stations that will use this key map, select the Station List command button. A window appears as shown on page 6-51.



DSS/BLF Map

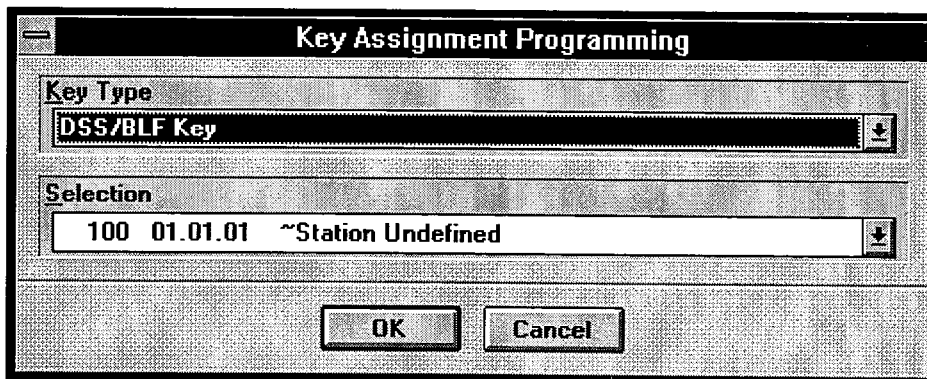
10.11 KEYS: Select the key for which you wish to assign a new value. A window appears as shown below. Use the following procedures to determine the key types:

- **KEY TYPE/SELECTION:** Key type options and the selections that are required are described on the next page. Select the Key Type drop-down list box and scroll to the desired key type. Then select the Selection drop-down list box, if necessary, and select the additional information required for the selected key type (feature code, extension number, etc.).

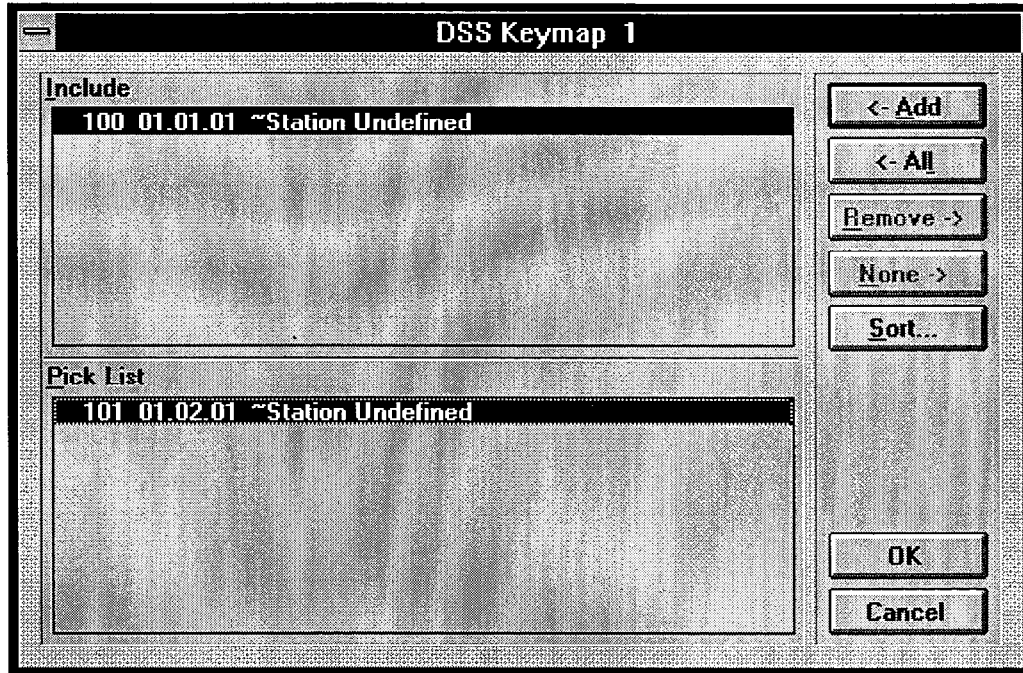
- **OK/CANCEL:** When finished assigning key types, select the OK command button to save your changes, or select the Cancel command button to exit without saving any changes.

10.12 TO NEXT/PREVIOUS PAGE: Because DSS/BLF Units can be used in tandem, each key map has two “pages” of keys. To see the keys on the second unit, select the To Next Page command button. To go back to the first unit, select the To Previous Page command button.

10.13 OK/CANCEL: When the DSS Map is programmed as desired, select the OK command button to save the changes. Or, select the Cancel command button to exit without saving changes.



KEY TYPE	PURPOSE	SELECTION
Call Key	Answers ringing and holding outside calls. Also used for intercom calls if there is no IC key.	The next Call key number is automatically selected.
DSS/BLF Key	Used for one-key dialing of extension or pilot numbers. The lamp shows the status of the associated station or hunt group.	Select the desired extension number or pilot number.
Feature Key	Used for one-key dialing of feature codes. Cannot be re-programmed by the user.	Select the desired feature code.
Forward Key	Used for the Call Forwarding feature.	Select the desired Call Forward feature code.
Hunt Group Key	Used for one-key dialing of hunt group pilot numbers. The lamp shows the status of the hunt group.	Select the desired hunt group.
Individual Trunk Key	Directly selects an individual trunk.	Select the desired trunk.
Intercom Key	Seizes an intercom channel.	None required
Page Zone Key	Selects a page zone (0-4).	Select the desired page zone code (960-964).
Programmable Key	Used for feature code dialing. Can be re-programmed at the station.	Select the desired programmable key number (1-11).
SPCL Key	Signals the system when a feature code is going to be entered.	None required
Station Speed Dial Key	Used for one-key dialing of one extension number or one outside number. The lamp shows the status of the extension number programmed for the key.	Select the desired Station Speed-Dial (SD) key number (0-9).
System Speed Dial Key	Used for one-key dialing of a system speed-dial number.	Select the desired System Speed-Dial key number (000-099).
Trunk Group Key	Allows access to a trunk group.	Select the desired trunk group
Undefined Key	Key can be programmed at the station.	None required

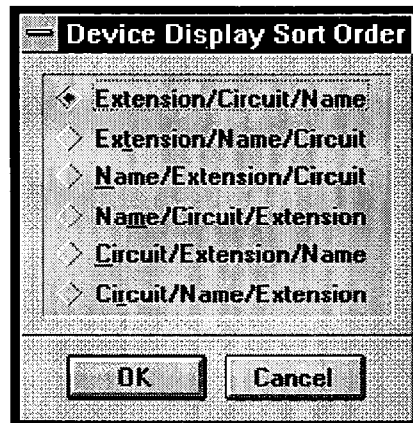


Keymap Station List

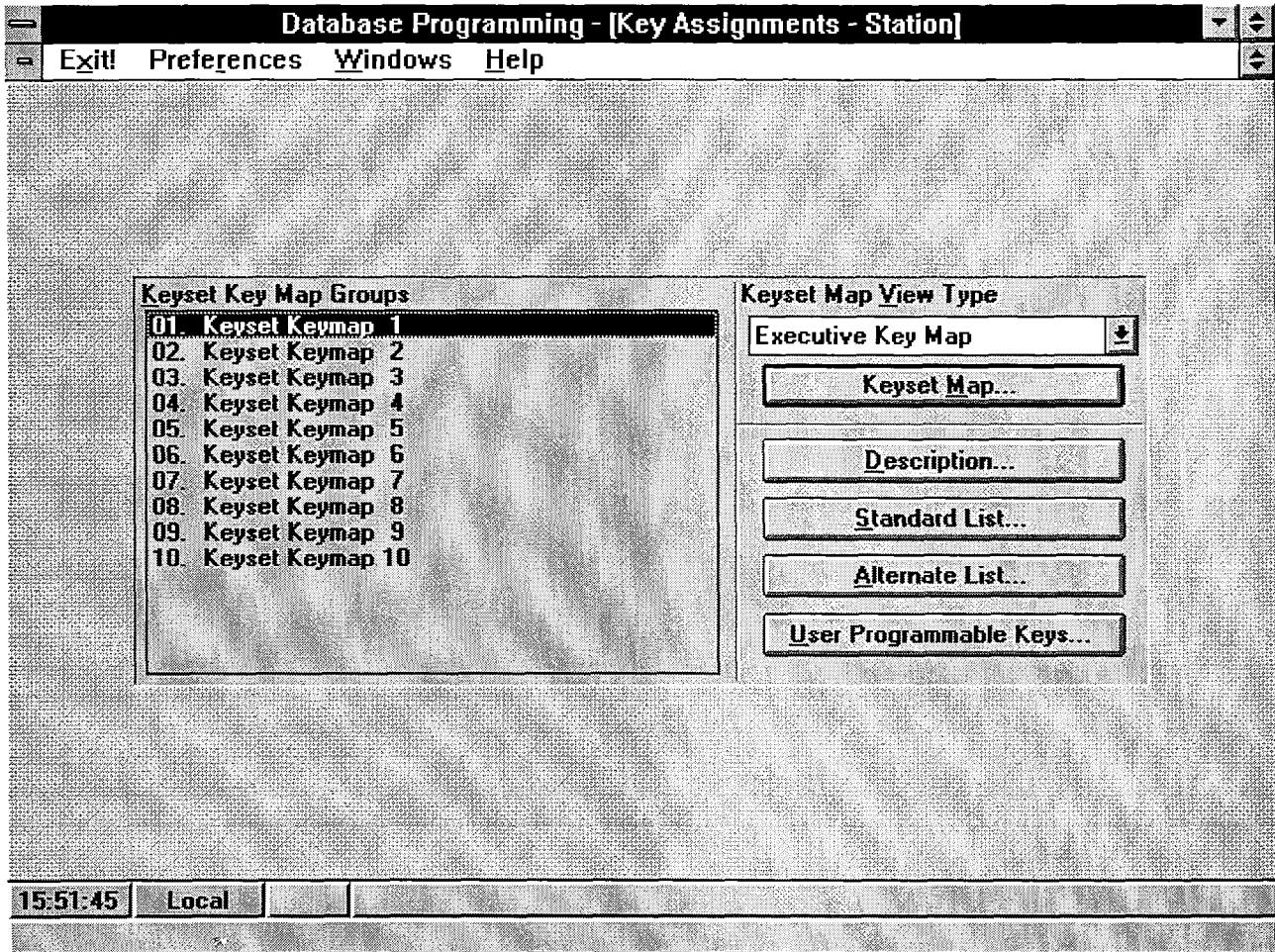
10.14 The window shown above appears when the Station List command button is selected. To determine the DSS/BLF Units that will use the selected key map, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted DSS/BLF from the Pick List to the Include List, or use the All command button to place all DSS/BLF Units in the list.
- **REMOVE/NONE:** These command buttons cannot be used in this screen. To remove a DSS/BLF from this key map, exit, select another key map, and include the DSS/BLF in that map. Each DSS/BLF must be included in a DSS key map.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command

button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



B. KEY ASSIGNMENTS — STATIONS

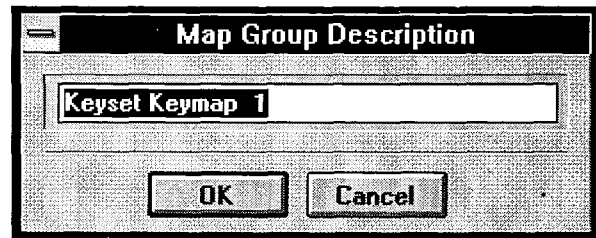
10.15 The window shown above can be reached by selecting “Key Assignments — Stations” from the Application Programming Menu. A program planning sheet appears in Figure 6-6, on page 6-224.

10.16 KEYSET KEY MAP GROUPS: While a keyset map group is highlighted in the Keyset Key Map Groups list box, all other programming pertains to that map group.

10.17 KEYSET MAP VIEW TYPE/KEYSET MAP: The Keyset Map View Type drop-down list box is used for selecting the Basic, Executive, or Standard keyset layout. Select the drop-down list box and scroll the highlight bar to the desired map type. Then, when the Keyset Map command button is selected, an illustration of the selected keyset layout appears as shown on the next page.

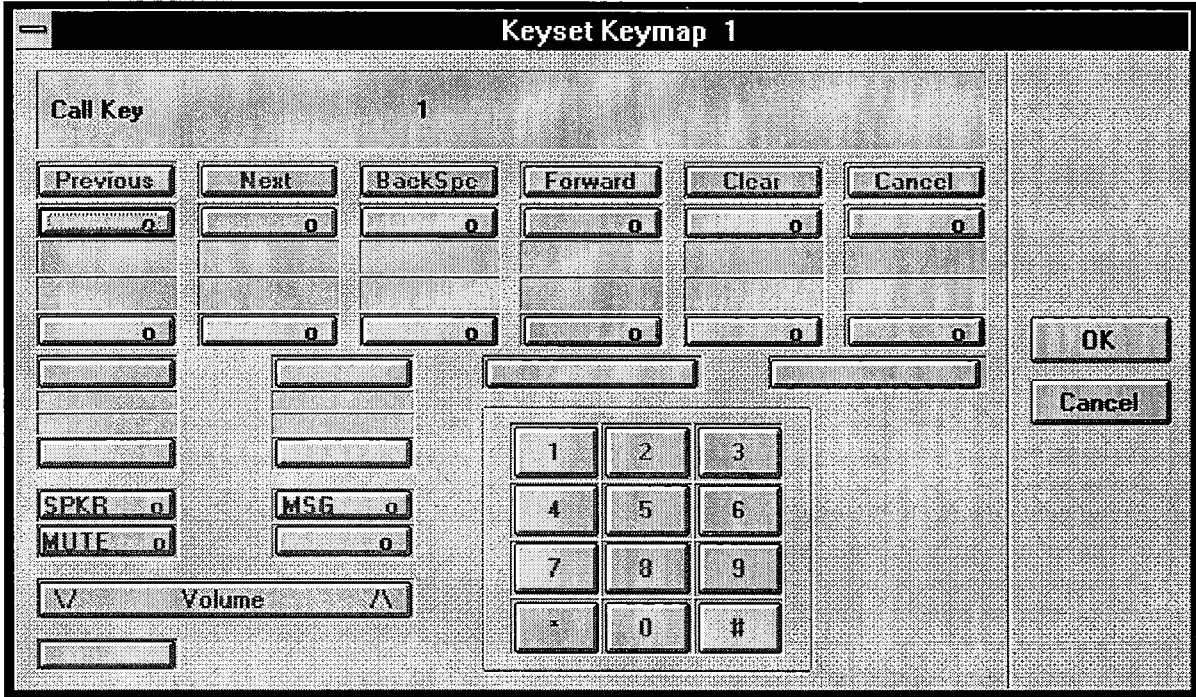
10.18 DESCRIPTION: To give a name to the map group, select the Description command button. Then enter the desired name (up to 20 characters) in the text

box. When finished, select the OK command button to save the name or select the Cancel command button to exit without saving any changes.



10.19 STANDARD LIST/ALTERNATE LIST: To select the keyset stations that will use this keymap as a standard or alternate map, select the appropriate List command button. A window appears as shown on page 6-55.

10.20 USER PROGRAMMABLE KEYS: Select this command button to assign the default value of the user-programmable keys in each keyset map. A window appears as shown on page 6-56.



Keyset Map

10.21 The Executive keyset keymap is shown above. The Standard and Basic keysets have different key layouts.

10.22 When the system is in the default state there are two pre-programmed keymaps. Key map #1 is for Standard and Executive Keysets. Key map #10 is for Basic Keysets. When a keyset is plugged in, the system determines which type of keyset it is and assigns the appropriate key map (#1 for Standard/Executive or #10 for Basic). If the keyset type is changed, for example from a Basic to a Standard, the system automatically changes the default key map to match the new keyset type (in the example, it changes from #1 to #10). However, if the station has a key map other than its default map (maps 2-9), the key map will not be changed automatically if the keyset type is changes; you must manually change the key map.

10.23 Two things you should keep in mind when programming keymaps are:

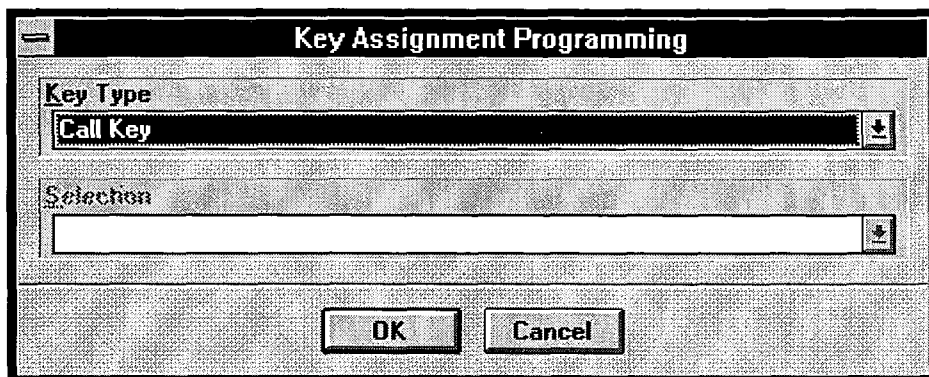
- Key assignments within a key map are common to all keyset types in that map. Modifying a key

changes that key assignment for ALL keysets assigned to that map, regardless of keyset type. For example, if the top left key is changed to a user-programmable key for Executive keysets in Keyset Map Group 1, the corresponding key will also be user-programmable on Standard and Basic keysets in Keyset Map Group 1.

- Users who have Standard and Alternate keymaps will want to have their user-programmable keys in the same positions in both keymaps. That way their user-programmable key locations do not change when they switch keymaps. Also, if a fixed feature key is created for the Switch Keymap feature code, it should be in the same position in both keymaps.

10.24 KEYS: Select the key for which you wish to assign a new value. A window appears as shown on the next page.

10.25 OK/ CANCEL: When the Keyset Map is programmed as desired, select the OK command button to save the changes. Or, select the Cancel command button to exit without saving changes.

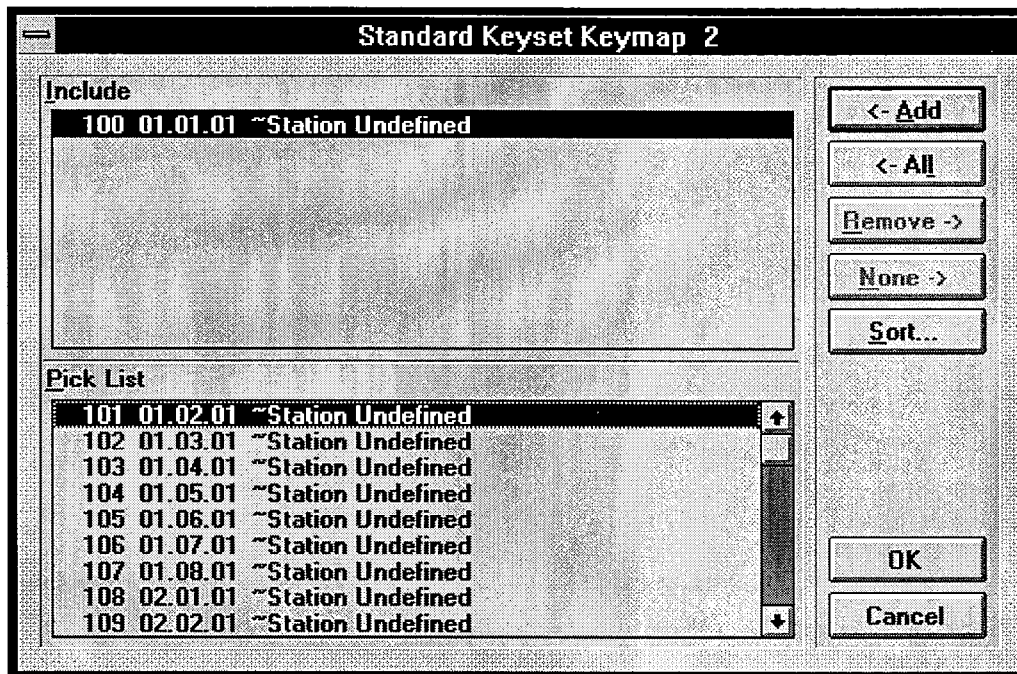


Key Assignment Programming

10.26 KEY TYPE/SELECTION: Key type options and the selections that are required are described below.

10.27 OK/CANCEL: When finished, select the OK command button to save your changes, or select the Cancel command button to exit without saving any changes.

KEY TYPE	PURPOSE	SELECTION
Call Key	Answers ringing and holding outside calls. Also used for intercom calls if there is no IC key.	The next Call key number is automatically selected.
DSS/BLF Key	Used for one-key dialing of extension or pilot numbers. If the key has a lamp, it shows the status of the associated station or hunt group.	Select the desired extension number or pilot number.
Feature Key	Used for one-key dialing of feature codes. Cannot be re-programmed by the user.	Select the desired feature code.
Forward Key	Used for the Call Forwarding feature.	Select the desired Call Forward feature code.
Hunt Group Key	Used for one-key dialing of hunt group pilot numbers. If the key has a lamp, it shows the status of the hunt group.	Select the desired hunt group.
Individual Trunk Key	Directly selects an individual trunk.	Select the desired trunk.
Intercom Key	Seizes an intercom channel.	None required.
Page Zone Key	Selects a page zone (0-4).	Select the desired page zone code (960-964).
Programmable Key	Used for feature code dialing. Can be re-programmed at the station.	Select the desired programmable key number (1-11).
SPCL Key	Signals the system when a feature code is going to be entered.	None required.
Station Speed Dial Key	Used for one-key dialing of one extension number or one outside number. If the key has a lamp, shows the status of the extension programmed in the intercom portion of the key.	Select the desired Station Speed-Dial (SD) key number (0-9).
System Speed Dial Key	Used for one-key dialing of a system speed-dial number.	Select the desired System Speed-Dial key number (000-099).
Trunk Group Key	Allows access to a trunk group.	Select the desired trunk group.
Undefined Key	Key is not used.	None required.

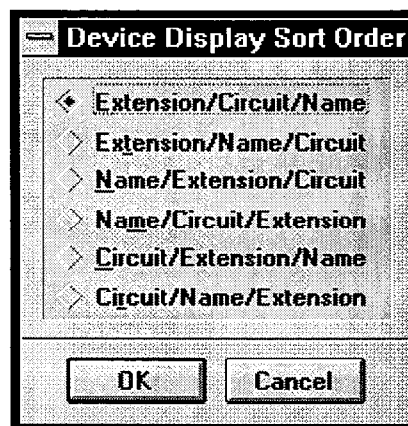


Keymap Station List

10.28 The window shown above appears when the Station List command button is selected. To determine the stations that will use the selected key map, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Pick List to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** These command buttons cannot be used in this screen. To remove a station from this key map, exit, select another key map, and include the station in that map. A station must always be included in a key map.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command

button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



User Programmable Keys

10.29 PROGRAMMABLE KEYS/PROGRAM:

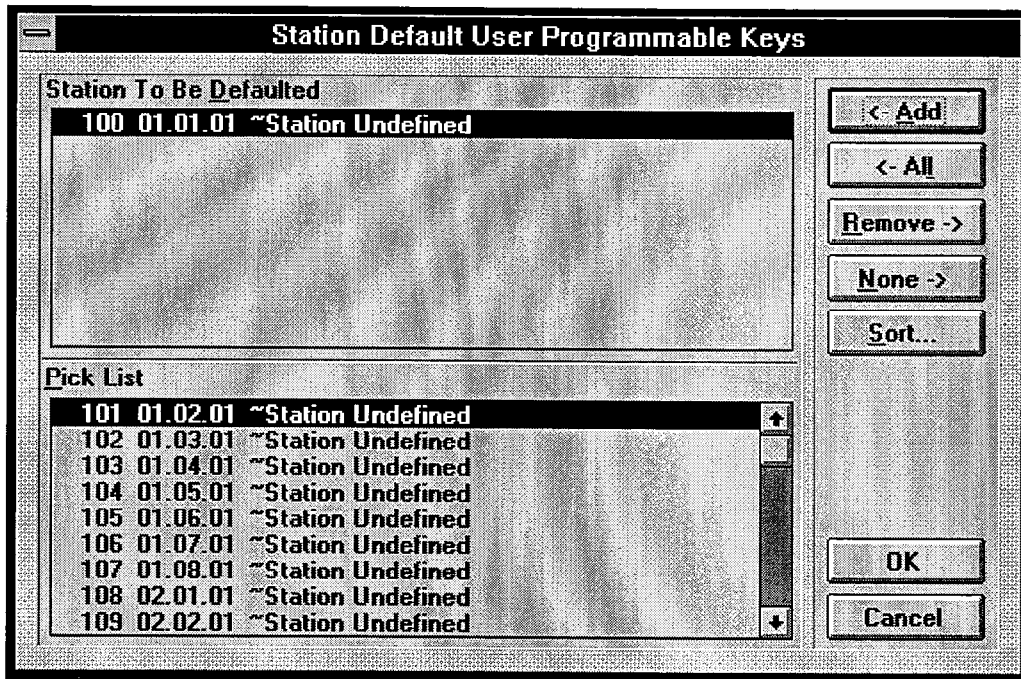
The list box shows all of the available user-programmable keys for the keymap being programmed. Scroll the highlight bar to the key to be programmed and select the Program command button. A window appears as shown on page 6-54. Follow the instructions given on that page.

10.30 The default values for the programmable keys are as follows:

KEY #	KEY TYPE	CODE	FEATURE
01	Feature Key	372	Do-not-disturb
02-06	Undefined	None	None
07	Feature Key	5	Conference
08	Feature Key	336	Individual Hold
09	Feature Key	345	Transfer To Ring
10	Feature Key	381	System Speed Dial
11	Feature Key	380	Redial

10.31 APPLY DEFAULTS: When user-programmable key values have been changed, you can allow the users to update their own stations (they use the Feature Key Default feature code — 395), or you can use the Apply Defaults command button to update stations in the selected key map. When the Apply Defaults command button is selected, the window shown on page 6-57 appears. *If you choose not to default any keysets, you will see a warning message reminding you that the new values for the user-programmable keys will not take effect until the keysets are defaulted.*

10.32 OK/CANCEL: When finished, select the OK command button to save your changes (and apply the defaults, if that option was selected), or select the Cancel command button to exit without saving any changes or defaulting stations.

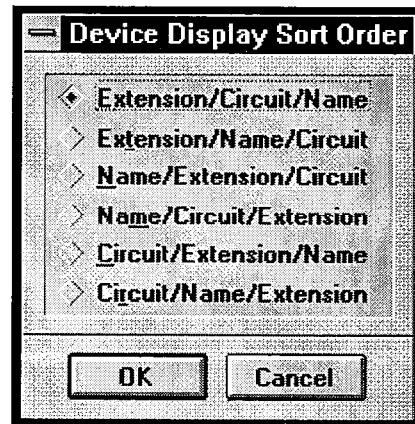


Default Station List

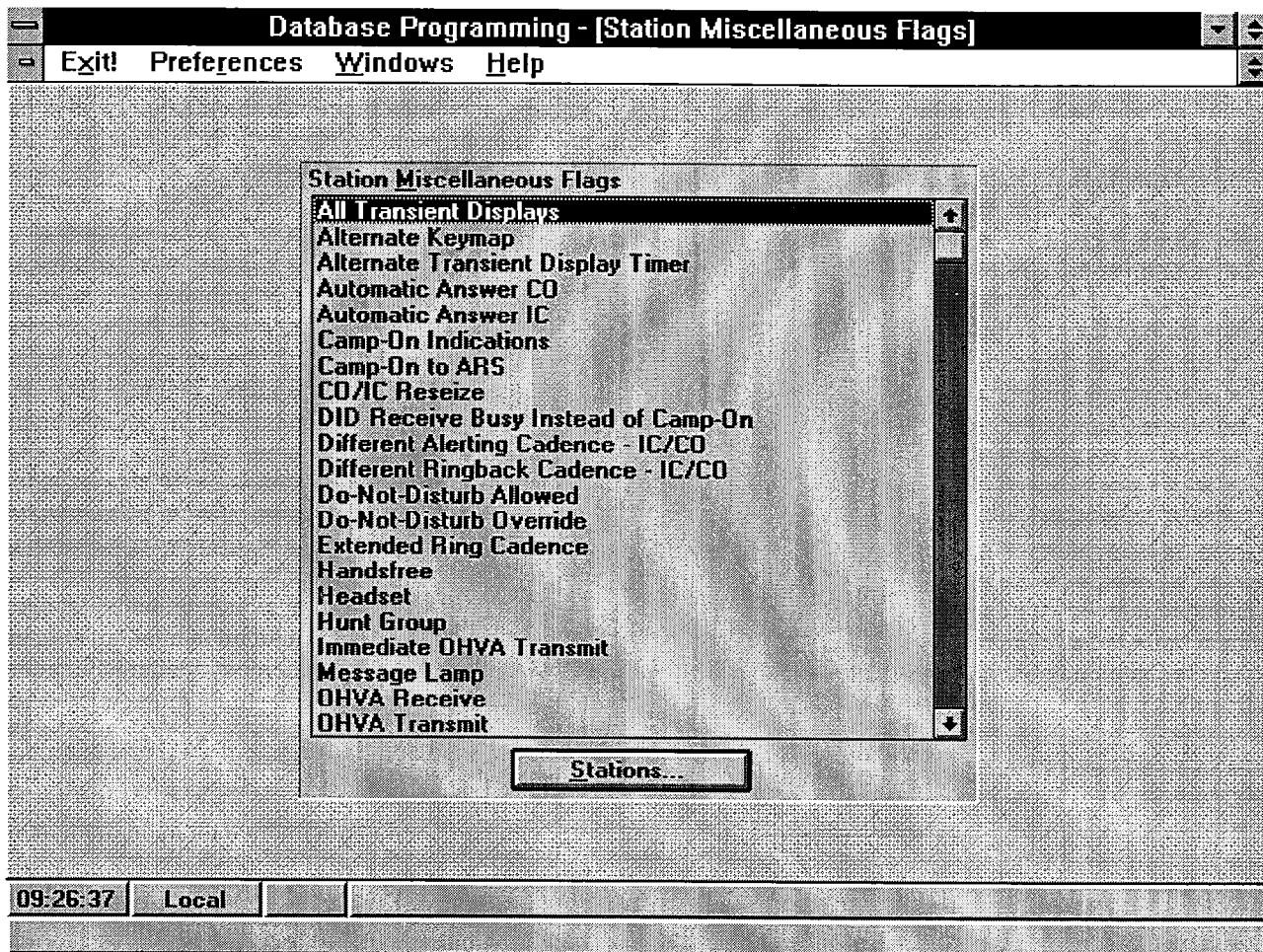
10.33 The window shown above appears when the Apply Defaults command button is selected. The Pick List includes all stations in the selected key map. To determine the stations that will have their user-programmable keys updated, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Pick List to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a station from the Include list, highlight it and select the Remove command button. Or, to remove all stations, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command

button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button to return to the screen shown on the preceding page. Or, to exit without changing the lists or defaulting any stations, select the Cancel command button.

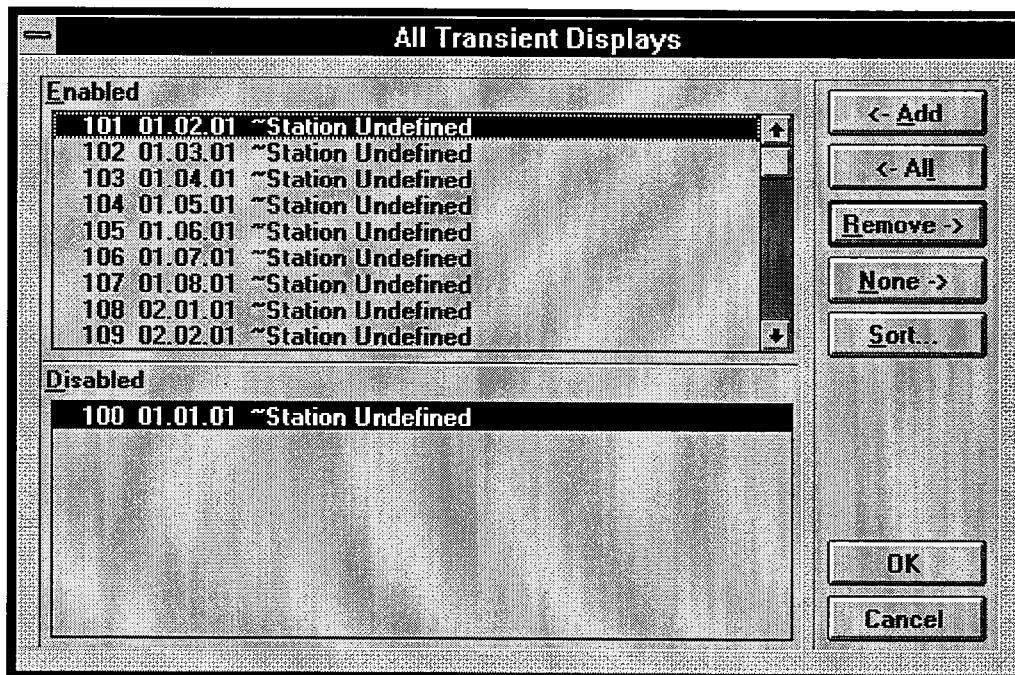


C. STATION MISCELLANEOUS FLAGS

10.34 The window shown above is used to assign a station feature to a group of stations. It is viewed by selecting Station Miscellaneous Flags from the Station Programming menu or entering the SFEA command. Station features included in this program are the same as those in the Miscellaneous Flags window of Individual Station programming as described on page 6-30. Determine which station will use each of the features. Note

that some are only for keysets or single-line sets features. A program planning sheet is located in Figure 6-7, on page 6-226.

10.35 STATIONS: To enable a feature for a group of stations, highlight that feature in the list box and select the Stations command button. The window shown on the following page appears.



10.36 The window shown above appears when the Stations command button is selected. The feature being programmed is identified in the window header. To determine the stations that will have the selected feature enabled, use the following procedure. In some cases, the feature has two possible states (such as Redial Mode Dialed/Saved or Hunt Group Remove/Replace) and the list box headers show the states instead of Enabled and Disabled.

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove the highlighted sta-

tion from the Include list, select the Remove command button. Or, to remove all stations, use the None command button.

- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.
- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

11. SYSTEM-WIDE FEATURES

11.1 When the System-Wide Features command button is selected from the Database Programming Menu window, the list box shows the following options:

- Account Code Information
- ARS Programming
- DND and Reminder Messages
- Extension List Programming
- Extensions, Usernames, and Feature Codes
- Hunt Groups
- Miscellaneous System-Wide Information
- Page Zones
- System Forwarding
- System Speed Dial
- System Timers
- Toll Restriction

11.2 Each of these programs is explained in detail on the following pages.

A. ACCOUNT CODE INFORMATION

11.3 There can be up to 100 of each type of account code. Maximum account code length can be up to 12 digits. Account codes can be of varying lengths as long as they do not exceed the maximum. For example, if maximum length is four digits, 1, 11, 111, and 1111 can be entered as separate account codes.

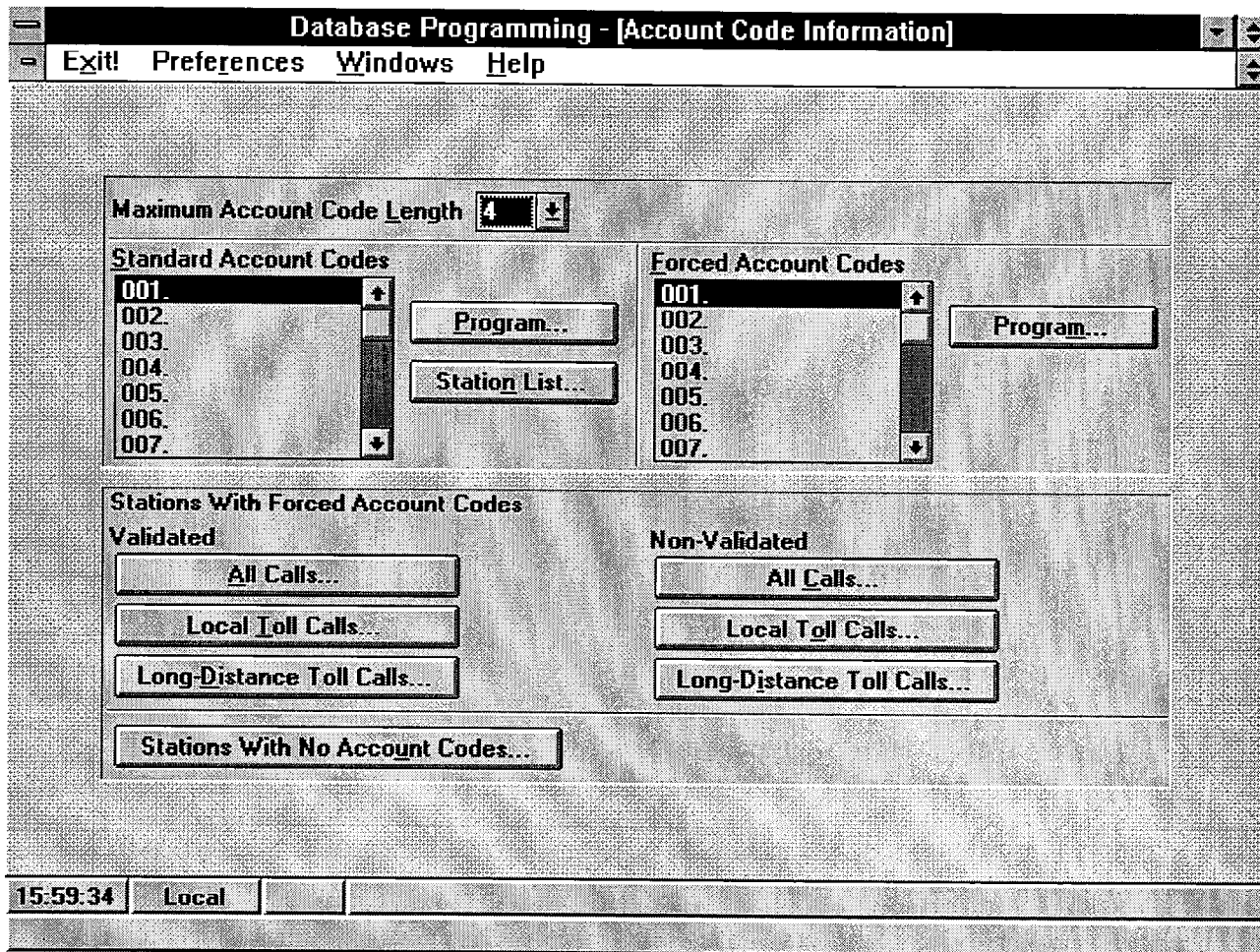
11.4 To program account codes, select Account Code Information from the Database Programming Programming list box. The programming window appears as shown on the next page. A program planning sheet appears in Figure 6-8, on page 6-227.

11.5 The account code types that can be programmed include the following:

- **Standard:** Standard account codes automatically appear in the SMDR printout to identify calls from this station. The station user is not required to enter any digits during the call.
- **Forced — All Calls Validated:** If this type of account code is enabled, the user must enter a forced account code before an outside call can be placed. If the code matches one of the pre-programmed forced

account codes in the database, the call is allowed. If the code does not match, the call is blocked.

- **Forced — All Calls Non-Validated:** With this account code type, the user must enter an account code before placing an outside call. The code is not checked against any lists and the call is allowed as soon as the code is entered.
- **Forced — Local Toll Calls Validated:** This account code type requires the user to enter an account code after dialing a local toll call number (a toll call within the local area codes) or a long distance call when using ARS. If the code matches one of the pre-programmed forced account codes in the database, the call is allowed. If the code does not match, the call is blocked.
- **Forced — Local Toll Calls Non-Validated:** This account code type requires the user to enter an account code after dialing a local toll call number (a toll call within the local area codes) or a long distance call when using ARS. The code is not checked against any lists and the call is allowed as soon as the code is entered.
- **Forced — Long-Distance Toll Calls Validated:** When this account code type is enabled, the user only has to enter an account code if the system detects that a long distance call (a toll call outside of the local area codes) has been dialed when ARS is used. If the code matches one of the pre-programmed forced account codes in the database, the call is allowed. If the code does not match, the call is blocked.
- **Forced — Long-Distance Toll Calls Non-Validated:** When this account code type is enabled, the user only has to enter an account code if the system detects that a long distance call (a toll call outside of the local area codes) has been dialed when ARS is used. The code is not checked against any lists and the call is allowed as soon as the code is entered.
- **No Account Code:** If the user will not be required to enter an account code, this option is selected. The user may still use optional account codes or enable the Account Code For All Calls Following feature, as desired.



11.6 MAXIMUM ACCOUNT CODE LENGTH:

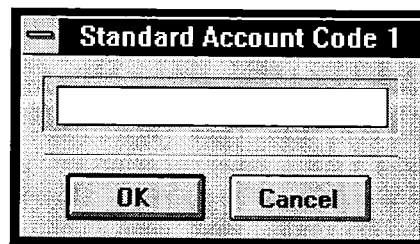
To select the maximum length (number of digits) for all account codes, select the Account Code Length drop-down list box. Then scroll to the desired account code length (3–12). The selected length is shown in the box when it is closed.

NOTE: If the maximum length is shortened, an error message will display that tells you that all account codes will be erased. If this message appears, select Yes to erase the codes. Or, select No so that you can go back and change the maximum length.

11.7 STANDARD ACCOUNT CODES: The Standard Account Code list box is used for programming the individual account codes (001–100). When the desired account code is highlighted in the list box, you can use the following command buttons to program the account code and to assign the station(s) that will use that code.

- **PROGRAM:** When the Program command button is selected, the following window appears. Enter the desired account code (up to the programmed maximum number of digits, using digits 0–9) and then se-

lect the OK command button. Or, to leave the code unchanged, select the Cancel command button.



- **STATION LIST:** To determine which stations will use the selected standard account code, select the Station List command button. A Station List window appears as shown on page 6–63.

11.8 FORCED ACCOUNT CODES/PROGRAM: The Forced Account Code list box is used for programming the individual forced account codes (001–100). When the desired account code is highlighted in the list box, you can use the associated Program command button to program the account code. When the Program command button is selected, a window appears as shown above. Enter the desired account code (up to the

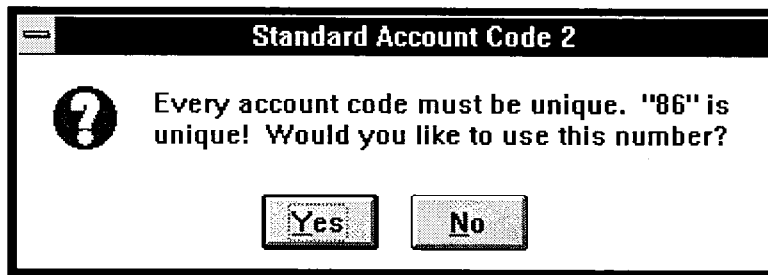
programmed maximum number of digits) and then select the OK command button. Or, to leave the code unchanged, select the Cancel command button.

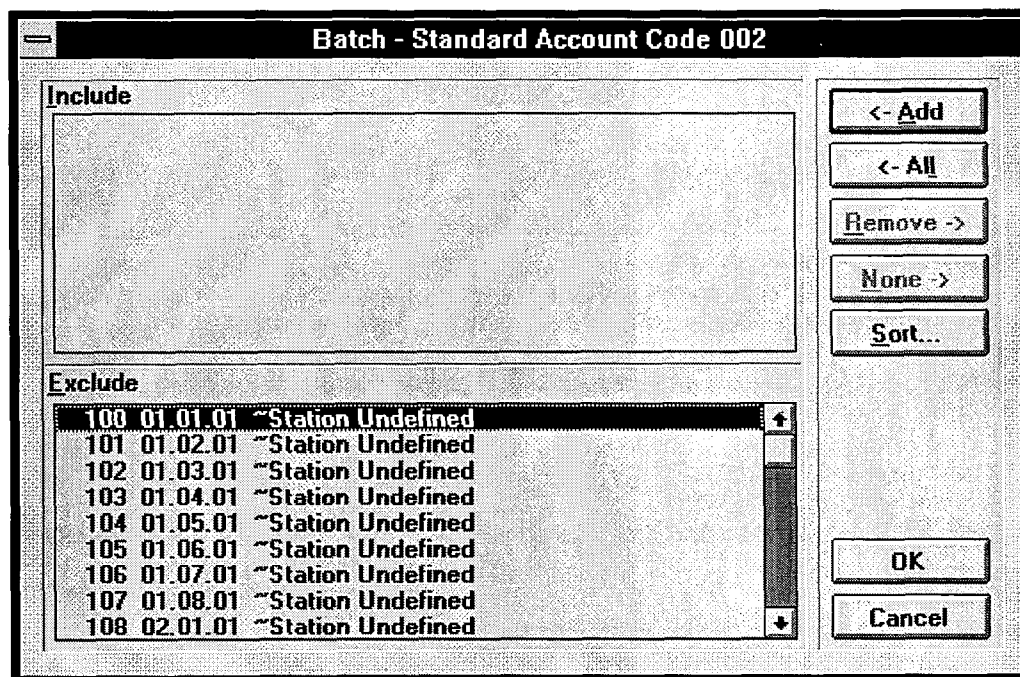
11.9 STATIONS WITH FORCED ACCOUNT CODES: To determine which stations will use each type of forced account codes, select the desired command button. A Station List window appears as shown on the next page.

11.10 STATIONS WITH NO ACCOUNT CODES: To determine which stations will use no account codes, select the Stations With No Account Codes command button. A Station List window appears as shown on the next page.

NOTE: Each station can be assigned *either* a forced or standard account code (or no account code). If you select a station for standard or forced account code that was previously programmed to require an account code, the previous account code type is replaced by the new code type.

11.11 If you attempt to add an account code that has already been assigned, the following error message appears. The system has selected a unique number. If you wish to use that number, select the Yes command button. If you wish to enter a different number, select the No command button to return to the Account Code window.

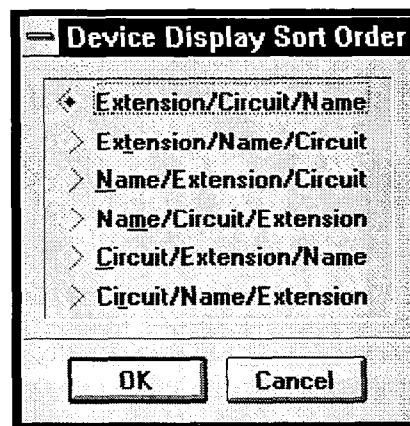




11.12 The window shown below appears when the Stations With... or Station List command button is selected. To determine the stations that will have the selected account code type, use the following procedures.

- **ADD/ALL:** Use the Add command button to move stations from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** These command buttons cannot be used in this screen. To remove a station from an account code list, exit and select another account code list. Then include the station in that list. A station must always be included in a list.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command

button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

B. AUTOMATIC ROUTE SELECTION

11.13 The automatic route selection (ARS) window, shown on page 6-66, is used to enter data for the ARS route groups and dial rules. To reach it, select ARS Programming from the System-Wide Features Menu.

NOTE: This window cannot be used unless the ARS premium feature has been enabled as described on page 6-198. When programming a KF-rated system or a system without ARS, the option will still appear in the System-Wide Features menu. However, when it is selected an error message is presented to remind the programmer that it is not available.

11.14 To prepare to program ARS, refer to page 4-25 in the FEATURES section. The parameters that are programmed for ARS are as follows. A program planning sheet is located in Figure 6-9, on page 6-229.

11.15 Route groups: ARS can have up to 16 groups of trunks that are used for routing calls according to the type of call being placed. The default values of the pre-programmed route groups are as follows. All route groups are programmable.

- **Route Group 1 — Local:** This route group is used for all calls that do not begin with a toll digit (1) or operator digit (0) and for calls to 911. **NOTE:** Calls to 911 will go through this route group even if it re-programmed.
- **Route Group 4 — Toll Local:** This route group is used for calls with a toll digit (1) and a seven-digit number, and for calls to 1N11 (N=Any digit 2-9).
- **Route Group 11 — Toll Long Distance:** This route group processes calls with a toll digit (1) and a 10-digit number. The numbers may also include equal access digits.
- **Route Group 13 — Operator:** This route group processes calls that begin with an operator digit (0) but *do not* begin with an international access code (01 or 011). The numbers may also include equal access digits.
- **Route Group 14 — International Station-to-Station:** This route group is for calls that begin with an international station-to-station access code (011) but *do not* begin with the international operator access code (01). The numbers may also include equal access digits.

- **Route Group 15 — International Operator:** This route group is for calls that begin with an international operator access code (01). The numbers may also include equal access digits.

11.16 Dial rules: Each route group has a programmed set of dial rules that tell the system what to dial. (The system can have up to 16 dial rules, 12 of which are programmable. Each route group can use up to 10 dial rules.) For example, if the selected route group requires that the number contain "1" but no area code, the dial rules include the 1, but would not echo the area code. The modified telephone number can contain up to 32 digits. When programming ARS, you can use preset dial rules or create new dial rules. Pre-programmed dial rules include the following:

- **Dial Rule #1 — ECHO Equal Access:** This dial rule includes the equal access digits (wildcard Q, which defaults to 10XXX and 101XXX) in the number, if dialed.
- **Dial Rule #2 — ECHO Toll Field:** The toll field is included in the number, if dialed.
- **Dial Rule #3 — ECHO 3 Digits After Toll Field:** With this dial rule, the three digits after the toll field are included in the number. (These digits are usually the area code.)
- **Dial Rule #4 — ECHO Local Address:** This dial rule allows ARS to dial the rest of the digits that were dialed by the station user.
- **Dial Rule #5 — ADD #:** This dial rule adds a pound (#) to the dialed number. This pre-programmed dial rule is programmable.

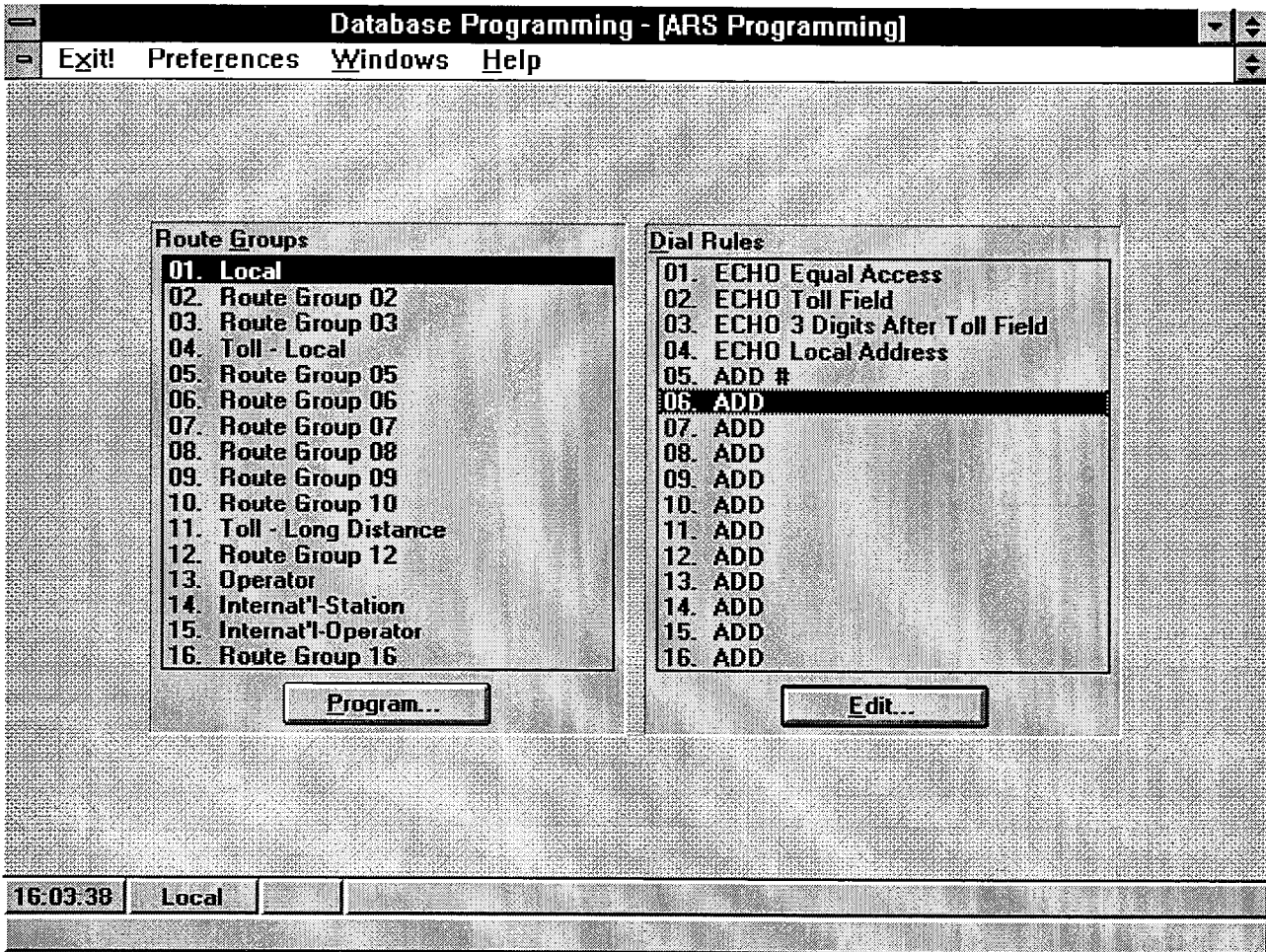
NOTE: Dial rules and dial patterns can contain any digit (0-9, *, #), pauses, and/or hookflashes.

11.17 Dial Patterns: The route groups are programmed to process specific dial patterns. For example, the Operator route group is programmed to process [Q]RN+, [Q]RR+, and [Q]R calls (Q=Equal Access, R=Operator Access, N=Any digit 2-9, []=Optional dial string). A complete list of special characters and toll strings is shown on page 6-108.

11.18 Trunk Groups: Each route group is assigned a list of trunk groups that will be used for placing the calls that match the programmed dialing patterns. For example, the Local route group would contain trunk groups that include local trunks, but the Toll Local route group might have trunk groups with FX trunks.

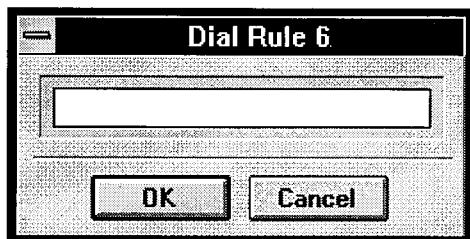
11.19 Programming ARS follows this general outline:

- (1) Determine whether any special dial strings will be required. If so, program the necessary dial rules.
- (2) Determine what types of calls will be processed by each route group and program names for those route groups.
- (3) For each route group, determine which trunk groups will be used and program them. Make sure that the trunk groups being used in the route group contain the proper type of trunks (local, FX, WATS, etc.) for the calls that will be routed. Trunk group toll restrictions will not apply when ARS is used; only station toll restrictions are checked. Also ensure the stations that will be using the ARS route group have outgoing access for the trunk groups.
- (4) For each route group, determine what dialing patterns it will process and program those dialing patterns. Dial patterns are assigned to the route group in the order they will be used. When checking the route group, the system will look at the first dial pattern. If it does not match, the system will continue checking the other patterns in the route group's list. If a match is found, the route group is selected. If not, the next route group is checked.
- (5) For each route group, program the dial rules so that the outgoing numbers include all of the necessary digits.

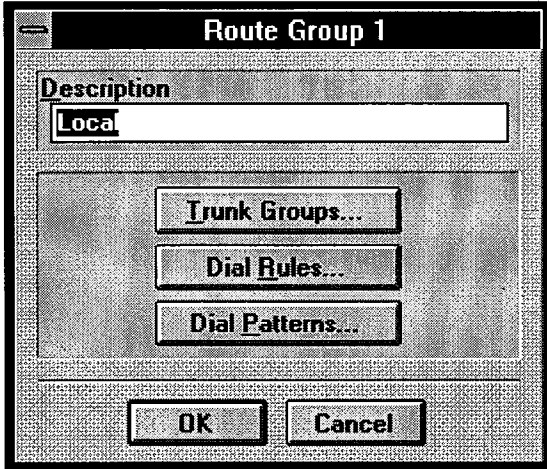


11.20 ARS ROUTE GROUPS/PROGRAM: To program one of the route groups, select the ARS Route Groups list box and scroll the highlight bar to the desired route group in the list box. Then select the Program command button. The window on the next page appears.

11.21 ARS DIAL RULES/EDIT: To program or edit one of the programmable dial rules, select the ARS Dial Rules list box and scroll the highlight bar to the dial rule to be programmed. Then select the Edit command button. The following window appears.



- **DIAL RULE:** Enter the digit string that will be added to dialed number in the text box. Each dial rule can contain up to 16 digits including 0–9, #, *, timed pauses, and/or hookflashes. To program pauses, enter P for a pause. For a hookflash, enter F. The length of a pause (P) is determined by the programmable Pause timer. The length of the hookflash is determined by the programmable Hookflash timer. Each pause or hookflash (P or F) is considered one digit.
- **OK/CANCEL:** To leave the window without saving any changes, select the Cancel command button. When all programming appears as desired, select the OK command button.



- **DESCRIPTION:** To give a name to the route group, select the Description text box and enter a name of up to 20 characters.
- **TRUNK GROUPS:** To determine the trunk groups that will be used by the route group, select the Trunk Groups command button. A window appears as shown on the next page.
- **DIAL RULES:** To determine the dial rules that will be used by the route group, select the Dial Rules command button. A window appears as shown on page 6-69.
- **DIAL PATTERNS:** The route group can be programmed to process specific dial patterns, such as X11. The dial patterns are programmed as described on page 6-70.

Trunk Groups - Route Group 10

Ordered List

9201	T001	Trunk Group 001
[End of List]		

Pick List

9202	T002	Trunk Group 002
9203	T003	Trunk Group 003
9204	T004	Trunk Group 004
9205	T005	Trunk Group 005
9206	T006	Trunk Group 006
9207	T007	Trunk Group 007
9208	T008	Trunk Group 008
PP011	T009	Unused CO Trunks

Buttons: <- Add, Remove ->, None ->, OK, Cancel

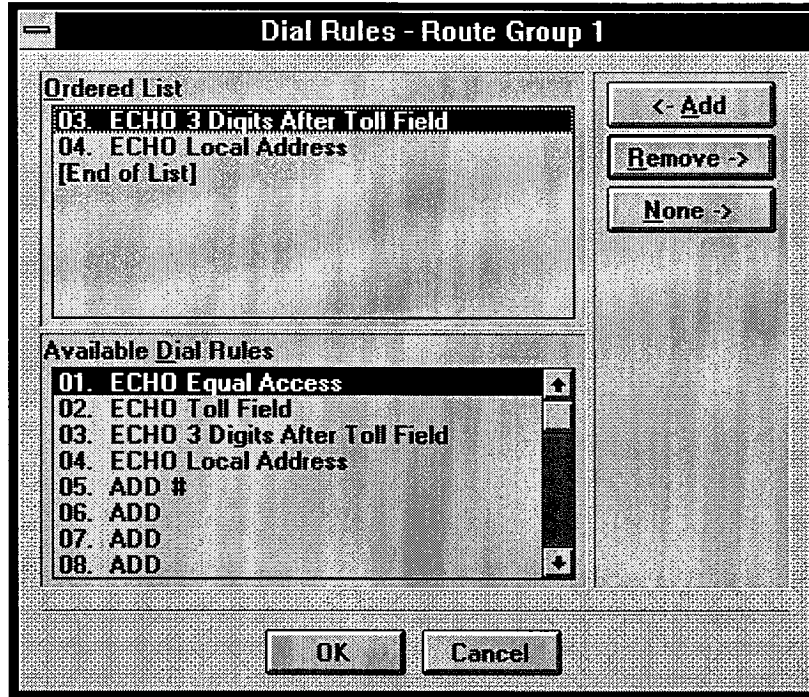
ARS Trunk Groups

11.22 Trunk groups must be placed in the Ordered List Box in the order that they should be selected. Make sure that the trunk groups being used in the route group contain the proper type of trunks (local, FX, WATS, etc.) for the calls that will be routed. Trunk group toll restrictions will not apply when ARS is used; only station toll restrictions are checked. Also ensure the stations that will be using the ARS route group have outgoing access for the trunk groups.

- **ADD:** Place trunk groups in the Ordered List box in the order in which you want them to be selected. To add a trunk group to the Ordered List box, move the highlight bar below the location in the Ordered List

box where you want the trunk group to appear. Then highlight the desired trunk group in the Pick List box. Select the Add command button to move the highlighted trunk group from the Pick List to the Ordered List.

- **REMOVE/NONE:** To remove a trunk group from the Ordered list, highlight the trunk group and select the Remove command button. Or, to remove all trunk groups, use the None command button.
- **OK/CANCEL:** When the Ordered List appears as desired, select the OK command button. Or, to exit without changing the route group, select the Cancel command button.



ARS Dial Rules

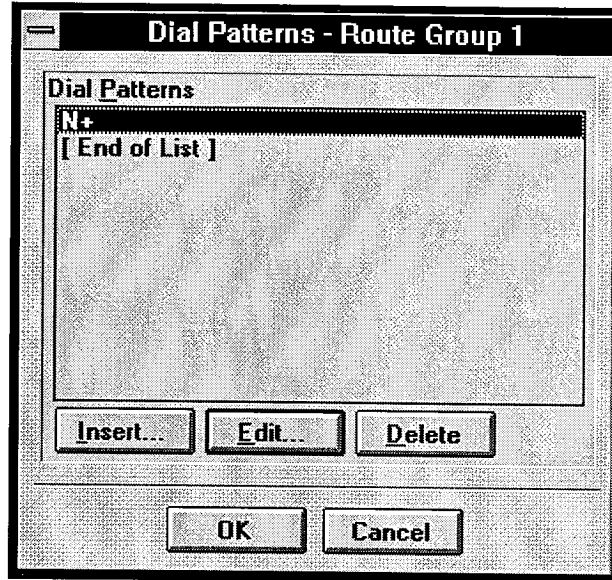
11.23 Dial rules must be placed in the Ordered List Box in the order that they should be used. For example, list dial rule 2 (Echo Toll Field), then dial rule 3 (Echo 3 Digits After Toll Field), then dial rule 4 (Echo Local Address).

NOTE: When dialing an ARS number, the system only sends out a total of 32 digits. For this reason, the complete ARS number (including the dialed number and any assigned dial rules) should be kept under 32 digits.

- **ADD:** Place the scroll bar below the position in the Ordered List box where you wish the rule to appear.

Then select the Add command button to copy the highlighted dial rule from the Pick List to the Ordered List.

- **NONE/REMOVE:** To remove a dial rule from the Ordered list, highlight the dial rule and select the Remove command button. Or, to remove all dial rules, use the None command button.
- **OK/CANCEL:** When the Ordered List appears as desired, select the OK command button. Or, to exit without changing the dial rules for the route group, select the Cancel command button.



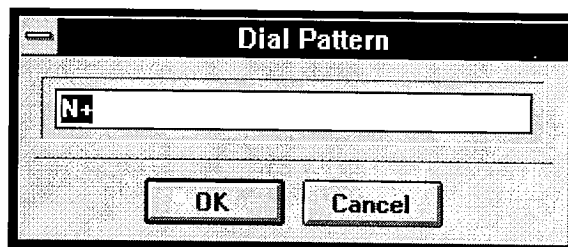
ARS Dial Patterns

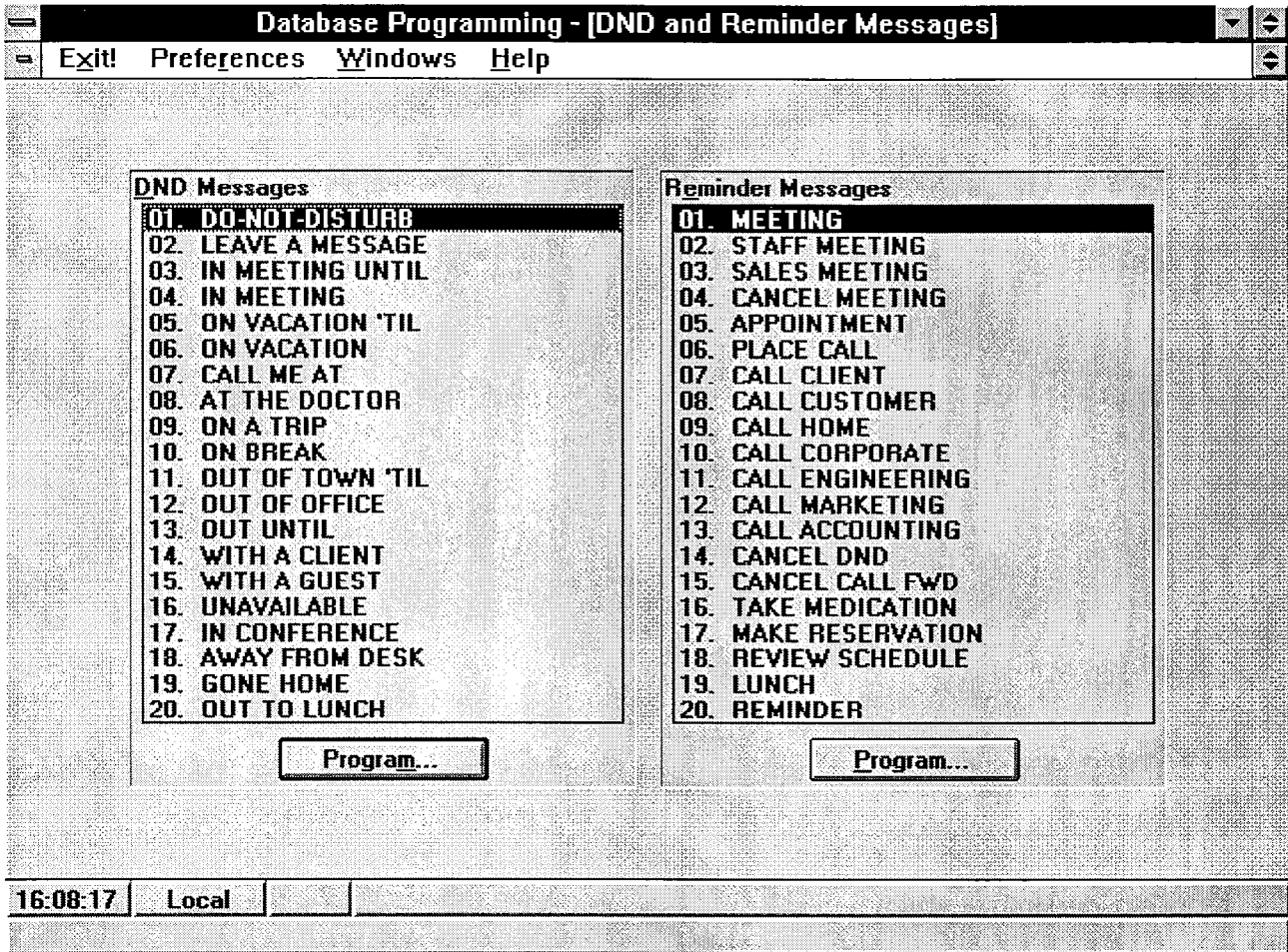
11.24 Dial patterns are assigned to the route group in the order they will be used. When checking the route group, the system will look at the first dial pattern. If it does not match, the system will continue checking the other patterns in the route group's list. If a match is found, the route group is selected. If not, the next route group is checked.

11.25 Only route groups 1, 4, 11, 13, 14, and 15 have default dial patterns. Their defaults are as follows.

ROUTE GROUP #	DIAL PATTERN(S)
1	N+
4	TN1, TXXXXXXX
11	[Q]TNXXXXXX+
13	[Q]RN+, [Q]RR, [Q]R
14	[Q]011+
15	[Q]01+

- **INSERT:** To add a dial pattern to the route group, place the highlight bar below the location where you wish to add the pattern. Then select the Insert command button. A text box window appears as shown below. Enter the digit string in the text box and select OK. Or, if you decide not to enter a new dial pattern, select Cancel.
- **EDIT:** To edit a dial pattern, place the highlight on the pattern to be changed and select the Edit command button. A text box window appears as shown below. Edit the digit string in the text box and select OK. Or, if you decide not to change the existing dial pattern, select Cancel. Note that the text in the box is automatically highlighted when the window appears.
- **DELETE:** To remove a dial pattern from the list box, highlight the pattern and then select the Delete command button.
- **OK/CANCEL:** When the Dial Patterns list appears as desired, select OK. Or, to exit without changing the dial patterns for the route group, select Cancel.

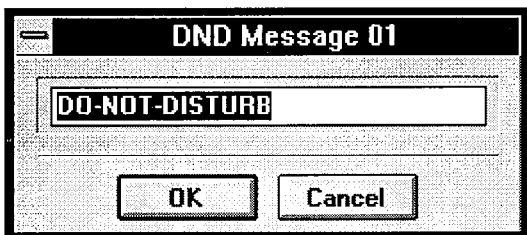




C. DND AND REMINDER MESSAGES

11.26 When you select DND and Reminder Messages from the System-Wide Features Programming menu, the programming window appears as shown above. You can reprogram any or all of the reminder messages and/or do-not-disturb messages with messages of up to 16 characters each. A program planning sheet is located in Figure 6-10, on page 6-230.

11.27 REMINDER/DND MESSAGES: Select and scroll through the desired list box until the message to be re-programmed is highlighted. Then select the appropriate Program command button. The following window appears. Type any 16-character message in the text box and select the OK command button. Or select the Cancel command button to leave the message unchanged.



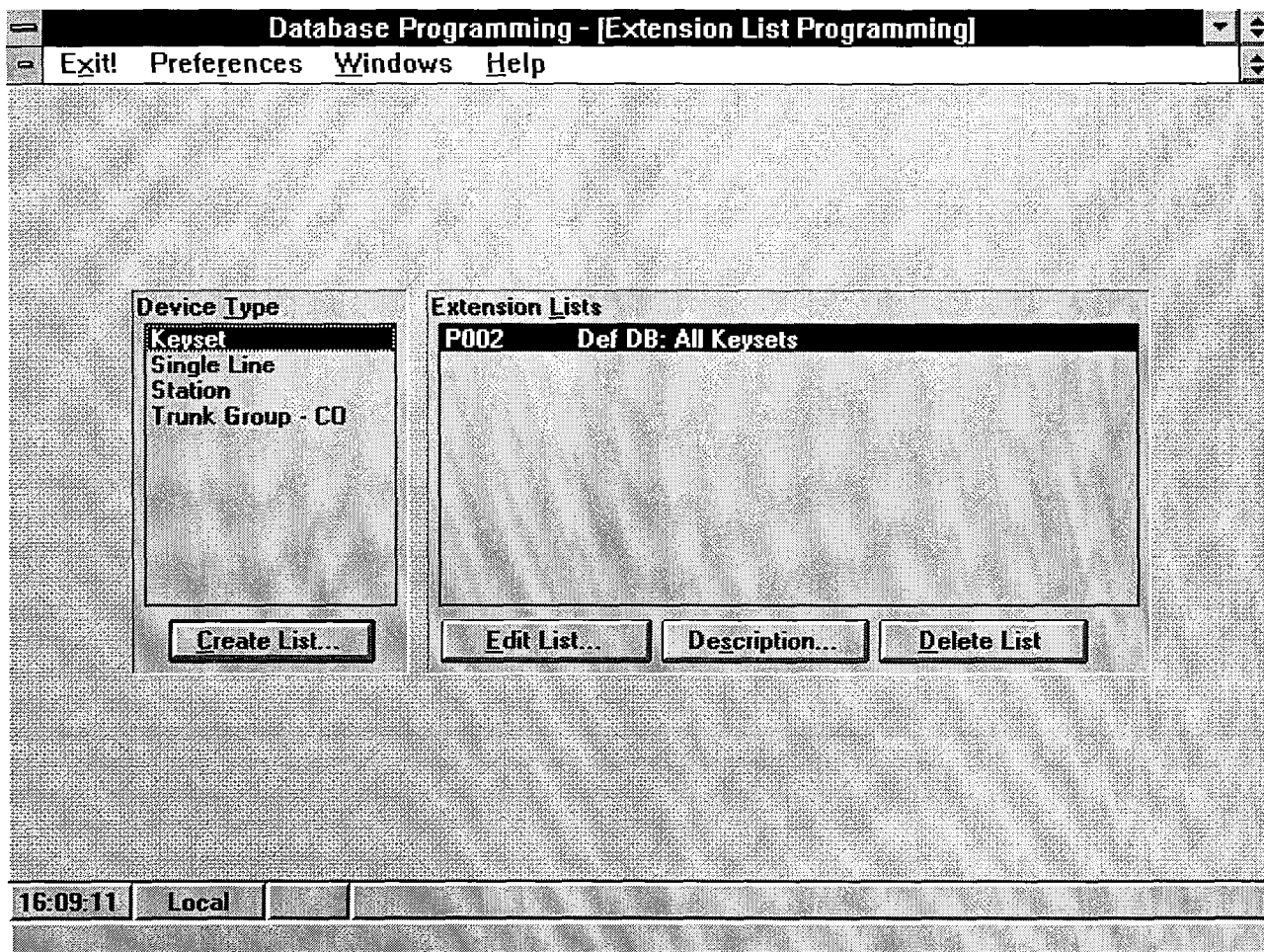
11.28 The default messages are as follows:

DO-NOT-DISTURB MESSAGES:

- | | |
|---------------------|---------------------|
| 01 DO-NOT-DISTURB | 11 OUT OF TOWN 'TIL |
| 02 LEAVE A MESSAGE | 12 OUT OF OFFICE |
| 03 IN MEETING UNTIL | 13 OUT UNTIL |
| 04 IN MEETING | 14 WITH A CLIENT |
| 05 ON VACATION 'TIL | 15 WITH A GUEST |
| 06 ON VACATION | 16 UNAVAILABLE |
| 07 CALL ME AT | 17 IN CONFERENCE |
| 08 AT THE DOCTOR | 18 AWAY FROM DESK |
| 09 ON A TRIP | 19 GONE HOME |
| 10 ON BREAK | 20 OUT TO LUNCH |

REMINDER MESSAGES:

- | | |
|-------------------|---------------------|
| 01 MEETING | 11 CALL ENGINEERING |
| 02 STAFF MEETING | 12 CALL MARKETING |
| 03 SALES MEETING | 13 CALL ACCOUNTING |
| 04 CANCEL MEETING | 14 CANCEL DND |
| 05 APPOINTMENT | 15 CANCEL CALL FWD |
| 06 PLACE CALL | 16 TAKE MEDICATION |
| 07 CALL CLIENT | 17 MAKE RESERVATION |
| 08 CALL CUSTOMER | 18 REVIEW SCHEDULE |
| 09 CALL HOME | 19 LUNCH |
| 10 CALL CORPORATE | 20 REMINDER |



D. EXTENSION LIST PROGRAMMING

11.29 An extension list is a group of intercom extensions or trunk group extensions. These lists are used when programming features that use common lists. For example, a group of keypad stations could be assigned to the same paging zone and have ring-in for the same trunk groups. With an extension list, the programmer would have to enter only one list number instead of entering all of the extensions. Extension lists of stations can also be included in hunt groups. There can be up to 10 extension lists in the system, with a combined total of up to 500 entries.

11.30 There are four types of possible extension lists:

- **Keypad:** This type of extension list includes only keypad extension numbers.
- **Single-Line:** This type of extension list includes only single-line set and MDPM extension numbers.
- **Station:** A station extension list can include keypads, MDPMs, and/or single-line extension numbers.
- **Trunk Group:** A trunk group extension list includes only trunk group access numbers.

11.31 The window shown above can be viewed by selecting Extension List Programming from the System-Wide Features menu. A program planning sheet is located in Figure 6-11, on page 6-232.

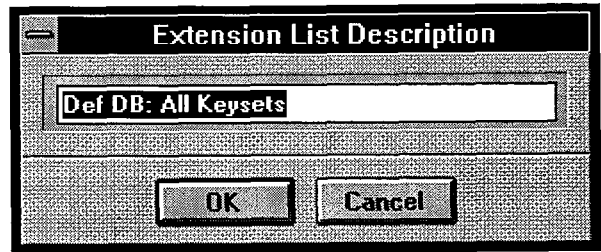
11.32 DEVICE TYPE: When a selection in this list box is highlighted, the Extension Lists list box shows all of the lists that exist for that device type.

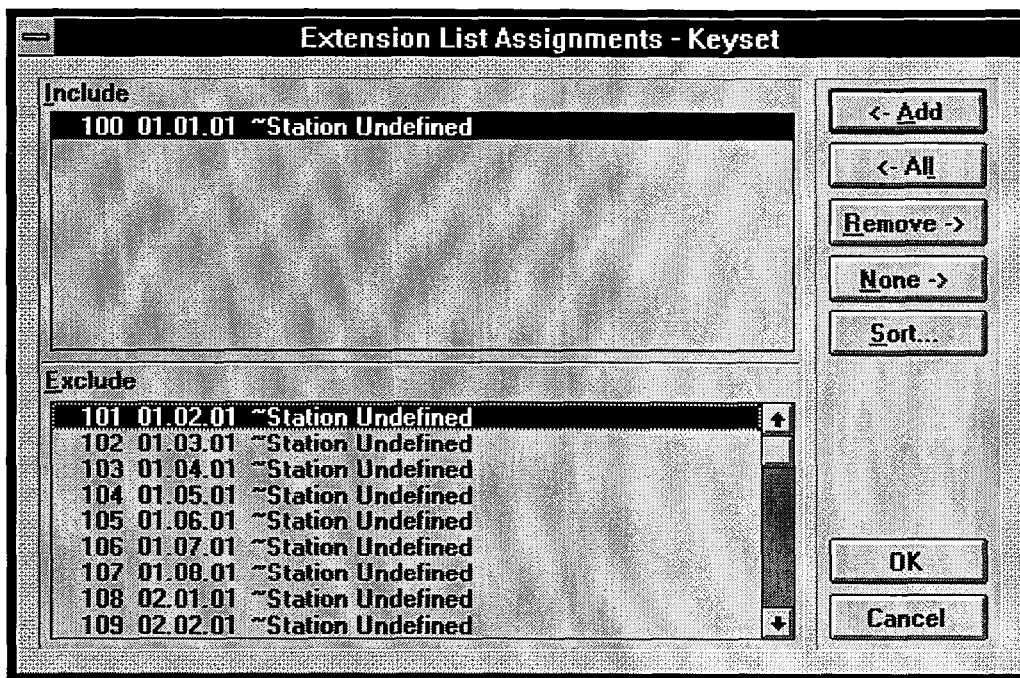
11.33 CREATE LIST: To create a new extension list, highlight the desired selection in the Device Type list box and select the Create List command button. A window appears as shown on page 6-74.

11.34 EDIT LIST: To edit an existing extension list, highlight the desired selection in the Extension Lists list box and select the Edit List command button. A window appears as shown on page 6-74.

11.35 DELETE LIST: To delete a list, highlight it in the Extension Lists list box and select the Delete List command button. A warning window will appear, asking you to verify that the list should be deleted. To delete the list, select Yes. To cancel the deletion, select No.

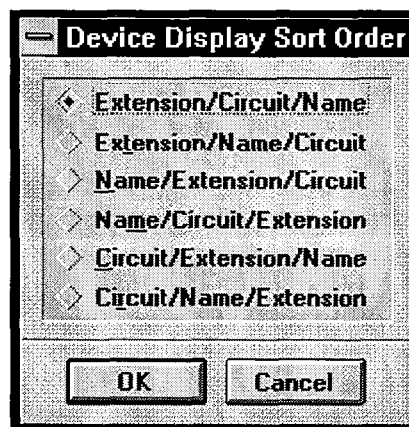
11.36 DESCRIPTION: To program or change a name for an extension list, highlight the desired list in the Extension Lists list box. The following window appears. Enter the name, up to 20 characters in the text box. When finished, select the OK command button. Or, to exit without changing the description, select the Cancel command button.

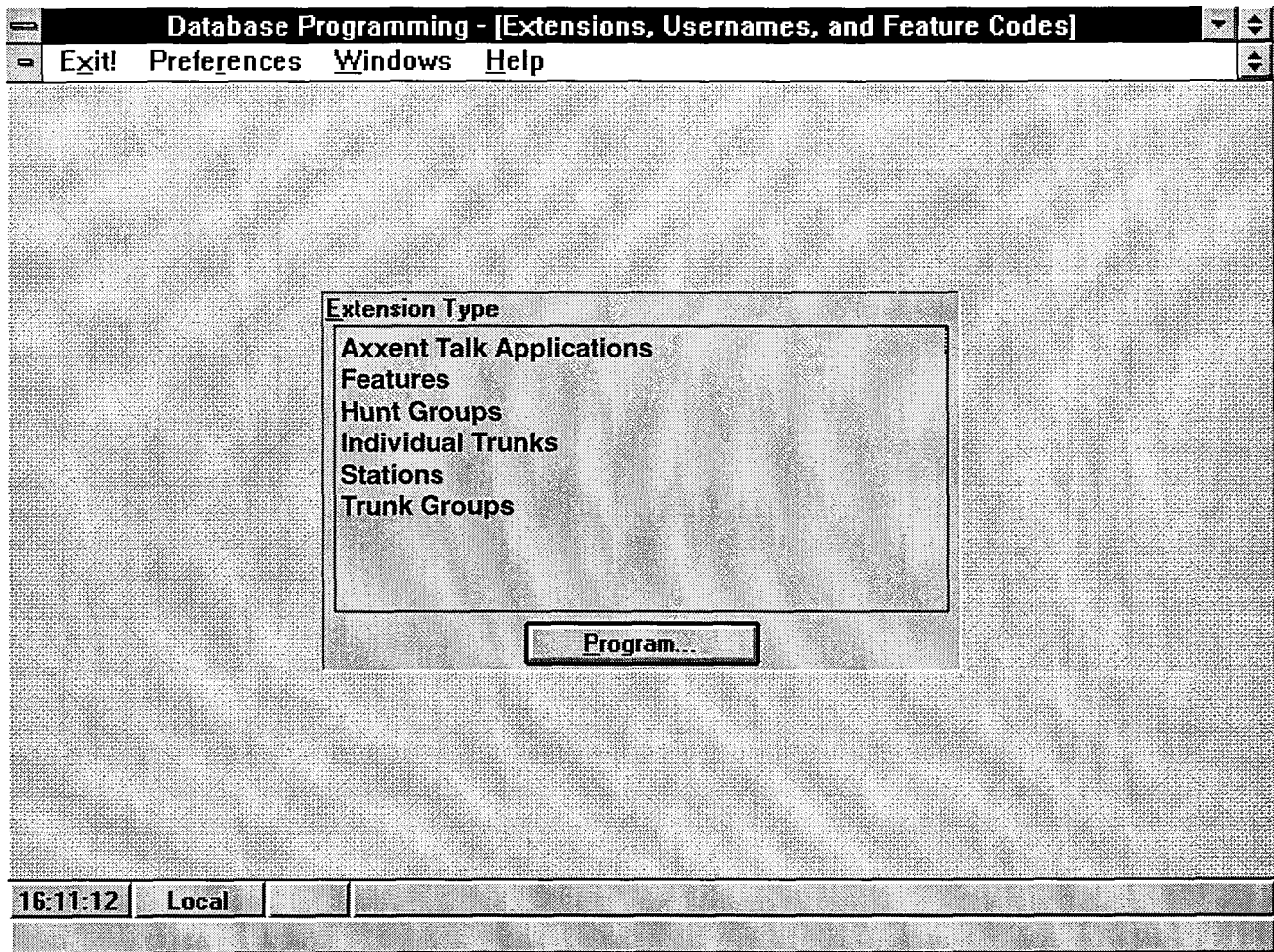




11.37 The window shown above appears when the Create List or Edit List command button is selected. To determine the stations or trunk groups that will be included in the list, use the following procedure. (A device can be included in more than one extension list.)

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a station from the Include list, highlight it and then select the Remove command button. Or, to remove all stations, use the None command button.
- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.





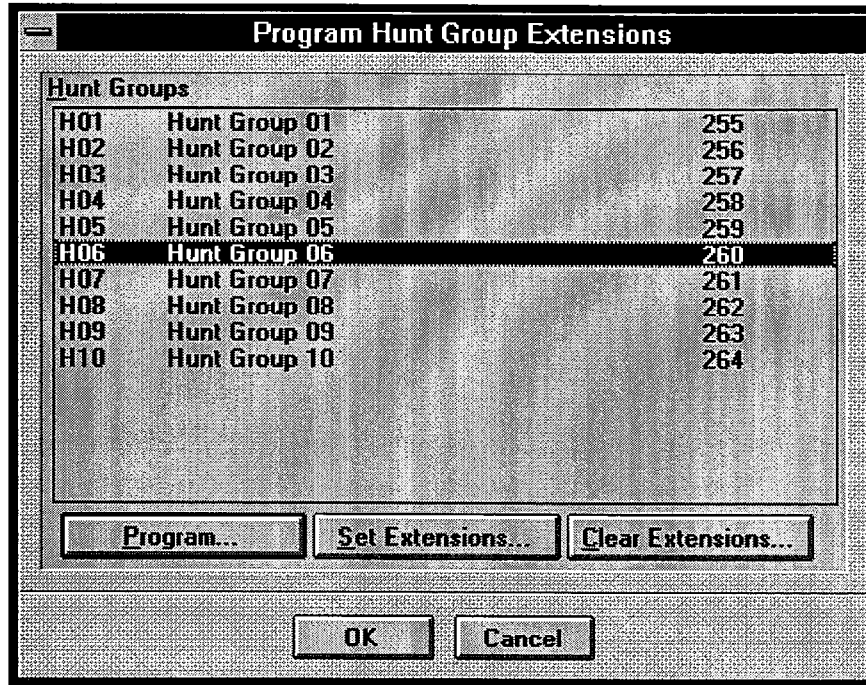
E. EXTENSIONS, USERNAMES, AND FEATURE CODES

11.38 To reprogram station extension numbers, hunt group pilot numbers, trunk group access codes, feature codes, or Axxent Talk applications, select Extensions, Usernames, and Feature Codes from the System-wide Features menu or enter the EXT command. The programming window appears as shown above.

11.39 Make a list of feature codes, extension numbers, hunt group pilot numbers, and trunk group access codes, as well as names and descriptions for the users, hunt groups, and trunks. A program planning sheet is located in Figure 6-12, on page 6-233.

NOTE: If you change feature codes, they will not be updated in the feature code directory used by Desktop Interface devices (such as AXCESSORY Connect) that are installed on the system. Those directories will have to be updated manually. However, any devices installed after the change will have the new feature code information. Unlike feature codes, extension numbers are updated in the intercom directories when the devices are activated and when updates are requested.

11.40 EXTENSION TYPE/PROGRAM: This list box allows you to choose the type of extension you wish to program. Highlight the desired option and then select the Program command button. A window appears as shown on the next page.



11.41 STATIONS/PROGRAM: The list box shown in the sample above is for stations. If another extension type had been chosen (as shown on the previous page), the list box would reflect that type of extension. To program an entry shown in the list box, highlight it and select the Program command button. A window appears as shown on the next page.

11.42 SET EXTENSIONS: *(This option is not available when programming Feature Codes.)* To batch load extension numbers, select the Set Extensions command button. A window appears as shown on page 6-78.

11.43 CLEAR EXTENSIONS: *(This option is not available when programming Feature Codes.)* To erase

several numbers, select the Clear Extensions command button. A window appears as shown on page 6-79. Clearing an extension number erases only the extension number. All other programming programming for that station, hunt group, page zone, trunk group, or Axxent Talk application is unchanged. If the number is later assigned to another resource, the previous programming (description, username, etc.) will be used by the new extension number.

11.44 OK/CANCEL: When you are finished programming this extension type, select the OK command button. Or, to exit without making changes, select the Cancel command button.

The screenshot shows a window titled "Hunt Group 1". Inside the window, there are three text input fields. The first is labeled "Description" and contains the text "Hunt Group 01". The second is labeled "Username" and is empty. The third is labeled "Extension" and contains the text "25E". To the right of the "Extension" field is a button labeled "Available Extensions...". At the bottom of the window are two buttons: "OK" and "Cancel".

Programming Extensions

11.45 DESCRIPTION: Enter the following information in the Description text box. (Not used for features.) You may enter up to 20 characters. Do not use Control characters.

- **Axxent Talk Application:** Enter a description for the application.
- **Hunt Group:** Enter a description for the hunt group.
- **Individual Trunk:** This field is not programmable for individual trunks.
- **Page Zone:** Enter a description for the page zone.
- **Station:** Enter the full name of the station user. (For correct Axxent Talk directory operation, enter the last name, followed by a comma and the first name.)
- **Trunk Group:** Enter a description for the type of trunks in the group or the lead telephone number.

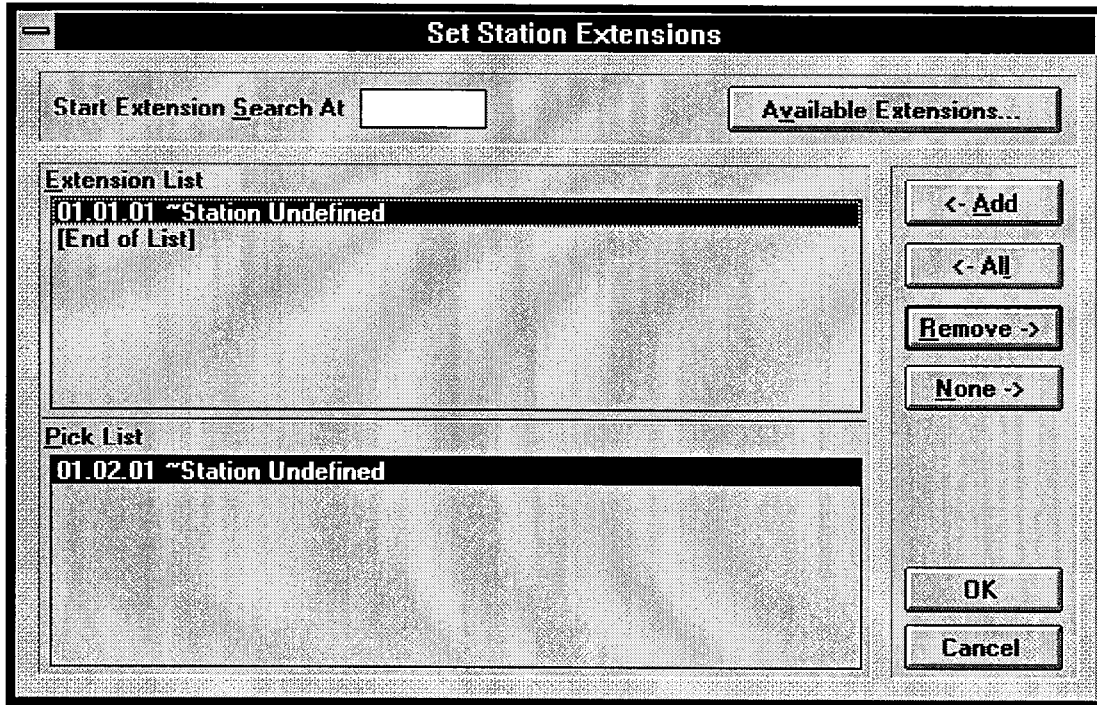
11.46 USERNAME: Enter a name, up to 10 characters, in the Username text box. (Not used for features, individual trunks, or page zones.) Do not use backslash (\), tilde (~), vertical slash (|), or Control characters in usernames.

11.47 EXTENSION: Enter the desired feature code, access code, or extension number in the Extension text box, up to four digits.

11.48 AVAILABLE EXTENSIONS: To see a list of available extensions, select the Available Extensions command button. A window with a list of numbers appears. The list shows available five-digit extension numbers with Xs in place of blank digits. For example, if 170xx is selected from the list, the Xs will be dropped and 170 will be the first extension number assigned. To select from the list, move the highlight bar to the desired number and select OK. Or, to return to the window shown above and enter your own number, select Cancel.

11.49 The extension numbers are preset to carefully selected default values. Changing the codes or numbers can cause existing assignments to be erased. For example, if 300, 305, and 306 are assigned as feature codes and you attempt to assign 30 as another feature code, you would receive a warning message, because 30 makes up part of existing codes. The warning message allows you to clear all of the existing extensions (300, 305, and 306) and use the new one (30) by selecting OK, or to leave the existing extensions unchanged by selecting Cancel.

11.50 If you have created a station extension that matches a previously existing unassociated mailbox, a warning window will appear that tells you that the new extension is the same as an unassociated voice mailbox. Choosing OK will associate the mailbox with the current device. Choosing Cancel will leave the mailbox unassociated.



Setting Extensions

11.51 START EXTENSION SEARCH AT: Begin programming by entering an extension number in the text box. This number, or the first available extension number after this number, will be assigned to the first feature, station, hunt group, or trunk group in the Extension list.

11.52 AVAILABLE EXTENSIONS: To see a list of available extensions, select the Available Extensions command button. A window with a list of numbers appears. The list shows available five-digit extension numbers with Xs in place of blank digits. For example, if 170xx is selected from the list, the Xs will be dropped and 170 will be the first extension number assigned. To select from the list, move the highlight bar to the desired number and select OK. Or, to return to the window shown above and enter your own number, select Cancel.

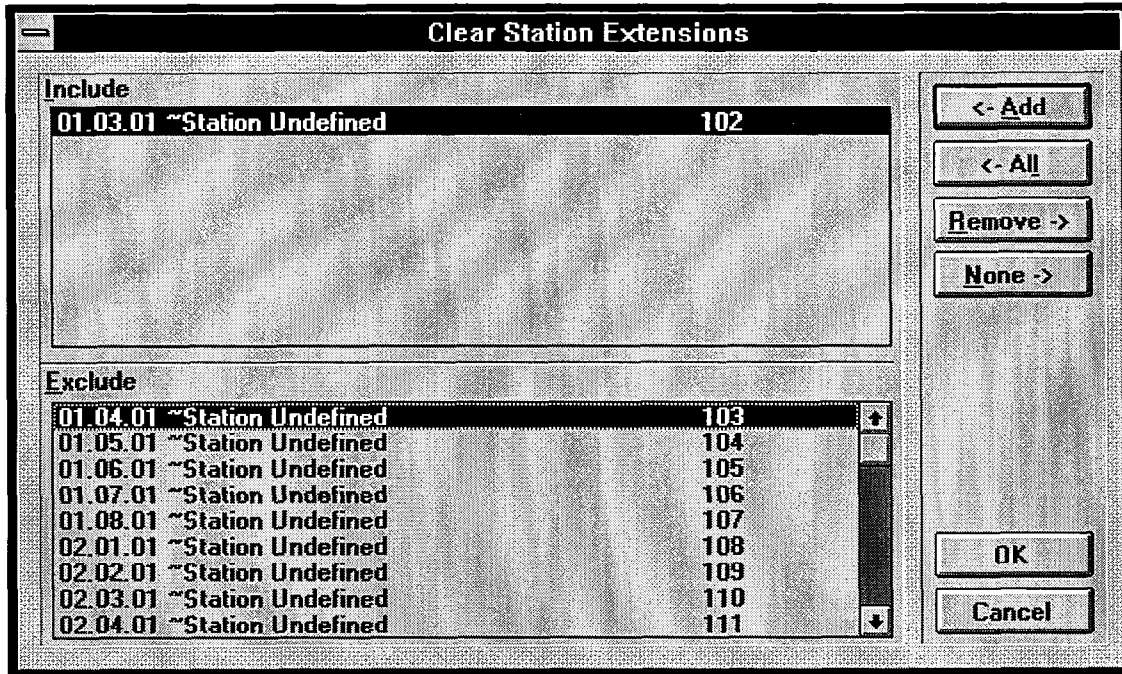
11.53 EXTENSION LIST/PICK LIST: The Pick List box contains a list of stations, hunt groups, trunks, trunk groups, or Axxent Talk applications that do not

have assigned numbers. Scroll through the Pick List box to find the entries for which you wish to assign numbers. Locate and select the entries *in the desired order* to move them to the Extension List box. The first entry will be assigned the beginning extension number shown in the text box (or the first available number after the number entered). All others will be assigned numbers in consecutive order as they appear in the Extension list box.

11.54 ADD/ALL: Use the Add command button to move entries from the Pick list to the Extension List, or use the All command button to place all entries in the list.

11.55 REMOVE/NONE: To remove an entry from the Extension list, select the Remove command button. Or, to remove all entries, use the None command button.

11.56 OK/CANCEL: When the Extension List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



Clearing Extension Numbers

11.57 Clearing an extension number erases only the extension number. All other programming for that station, hunt group, page zone, trunk group, or Axxent Talk application is unchanged. If the number is later assigned to another resource, the previous programming (description, username, etc.) will be used by the new extension number.

11.58 INCLUDE/EXCLUDE: The Exclude list box contains the stations, hunt groups, trunks, trunk groups, and Axxent Talk applications that have assigned numbers. Scroll through the Exclude list box to find the entries for which you wish to clear the extension numbers. Select the entries to move them to the Include list box.

11.59 ADD/ALL: Use the Add command button to move the highlighted entry from the Exclude list to the Include list, or use the All command button to place all entries in the Include list.

11.60 REMOVE/NONE: To remove an entry from the Include list, highlight it and then select the Remove command button. Or, to remove all entries, use the None command button.

11.61 OK/CANCEL: When the Include list contains all entries to be cleared, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

F. HUNT GROUPS

11.62 Several items must be determined before programming hunt groups, as follows. Refer to page 4-12 in FEATURES for more details. A program planning sheet is located in Figure 6-13, on page 6-238.

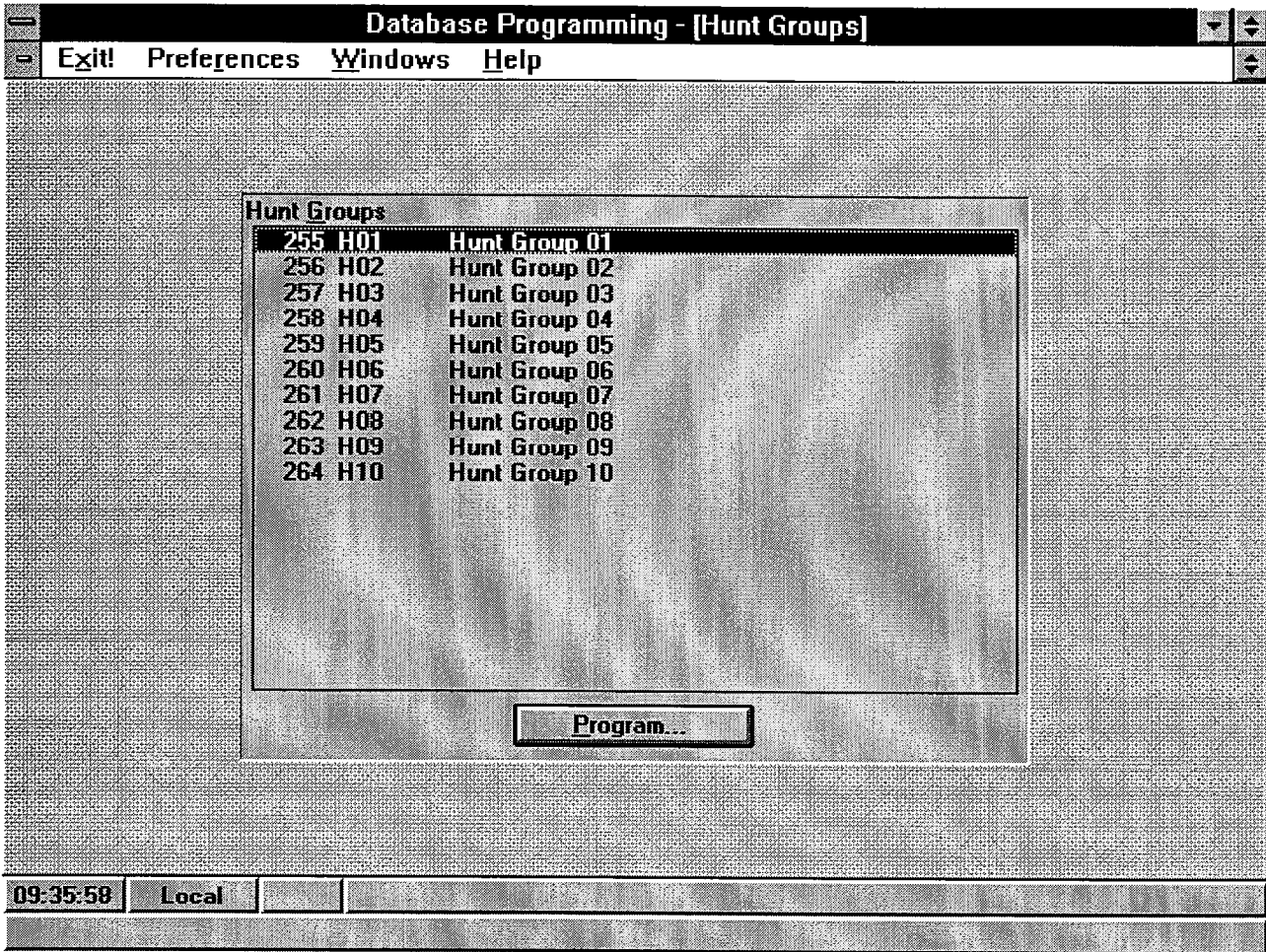
- **Hunt group descriptions and names:** Descriptions can contain up to 20 characters and hunt group names can contain up to 10 characters.
- **Analog voice mail hunt group:** If the Analog Voice Mail premium feature is enabled (see page 6-198), the hunt group can be composed of station ports which are connected to an analog voice mail device. Enabling this option has the effect of passing along station identification when a call reaches the hunt group as a result of forwards and transfers. The purpose of this flag is to provide compatibility between the system and analog voice mail units. (The Inter-tel Axxent Talk is a digital system and does not require this flag.) **NOTE:** When an analog voice mail unit is connected to the Inter-Tel Axxent System, the voice mail unit should use the Silent Message feature code (367) instead of the Message feature code (365). (This option is not recommended for ACD hunt groups.)
- **ACD Hunt Group:** The ACD Hunt Group feature must be enabled in Premium Feature Selection. See page 6-198. Automatic Call Distribution (ACD) hunt groups can be programmed to distribute calls to equalize call time or call count among the available members. If the System Open Architecture Interface (OAI) premium feature is enabled, ACD can also provide call information records that can be processed by an external device connected to a system serial port. ACD hunt groups can use all of the standard and UCD hunt group features (if enabled). (This option is not recommended for Analog Voice Mail hunt groups.)
- **Priority Level:** If the UCD premium feature is enabled (see page 6-198), hunt groups can have assigned priority levels (0-20). Some stations may be members of more than one UCD hunt group. For this reason, hunt groups are assigned a "priority level." The priority level determines which hunt group's calls should be received first when calls ring in and/or camp on to several hunt groups at once.
- **Search Type:** Available Search Types depend on the type of hunt group being programmed:
 - *For Standard and UCD Hunt Groups:* Determine whether the calls are sent to the stations in linear or distributed order. Linear order means that the

call is sent to the first station or extension list on the list and moves down the list until it reaches an available station. With distributed order, the call is sent to the station that appears on the list after the last station or extension list to receive a call (even if the call was not answered). **NOTE:** To create an "all ring" type of hunt group, you can program the hunt group as either linear or distributed and then assign an extension list at the only hunt group member. When the hunt group receives a call, all stations on the extension list will ring at once.

— *For ACD Hunt Groups:* ACD Hunt Group calls can circulate in linear or distributed order (as described above) or using one of the ACD distribution methods: Longest Idle or Balance Call Count order. Longest idle means that an incoming call is sent to the station that has not been involved in a call to this hunt group for the longest period of time. Balance Call Count means that, to balance the call load, each incoming call is sent to the station that has received the fewest calls through this hunt group. (It does not count calls that were received through other hunt groups, direct ring-in, or transfer.)

- **Announcement and overflow stations:** If the UCD premium feature is enabled (see page 6-198), hunt groups can have an announcement station and/or an overflow station. If a call to the hunt group is not answered before the Announcement timer expires, the call is picked up by the announcement station. If the call remains unanswered when the hunt group Overflow timer expires, the call is picked up by the overflow station. Announcement and overflow stations should be playback device stations (these can be Axxent Talk Auto Attendant, Voice Mail, or Call Routing Announcement applications). Do not include these stations in the hunt group distribution list.
- **Recall destination station:** Any hunt group can have a recall destination station, regardless of whether UCD is enabled. If a call remains unanswered when the Recall timer expires, it will be sent to the recall destination station. The recall destination station should be a keyset or single-line station. Do not include this station in the hunt group distribution list.
- **Members:** Prepare a list of up to 20 hunt groups and the stations/extension lists to be included in them. If desired, a station or extension list can appear more than once in a hunt group list or can be in more than one hunt group. If a station extension lists is included in a hunt group, it will ring all stations on the extension list.

- **Supervisors:** If the UCD premium feature is enabled (see page 6-198), hunt groups can have one or more keysets assigned as the hunt group supervisor(s). (An extension list can be included in the list of supervisors.) If desired, a keyset can be assigned as the supervisor for more than one hunt group.
- **Serial Ports:** If the System Open Architecture Interface (OAI) premium feature is enabled (see page 6-198), ACD can provide call information records that can be processed by an external PC connected to a system serial port. Each ACD hunt group can be assigned a list of system serial ports. These serial ports are used to provide ACD-related call information to an external PC. The information can then be processed by the PC to generate reports on call traffic, answer times, and other management issues. (Do not use the RS-232 port on the CPU for OAI purposes.)
- **Timers:** Five timers are programmed on a hunt group-by-hunt group basis: No Answer Advance timer, Announcement timer, Overflow timer, and Recall timer.
 - *No Answer Advance:* Determines the amount of time a call will ring at a hunt group station (unanswered) before advancing to the next station on the list. It is started when the call is received at the hunt group. The default value is 18 seconds. It can be programmed for 1-255 seconds.
 - *Announcement:* This determines the amount of time a call will remain unanswered before it is picked up by the hunt group's announcement station. It is started when the call is received at the hunt group. The default value is 18 seconds. It can be programmed for 1-255 seconds.
 - *Overflow:* This determines the amount of time a call will circulate through the hunt group (unanswered) before being picked up by the hunt group's overflow station. This timer is started when the Announcement timer expires (or, if there is no announcement station, when the call is received by the hunt group) and it is restarted each time the call leaves the overflow station. The default value is 72 seconds. It can be programmed for 1-255 seconds.
 - *Recall:* This determines the amount of time a call will circulate through the hunt group (unanswered) before being sent to the hunt group's recall destination station. The timer is started when the call is received by the hunt group. The default value is 180 seconds (3 minutes). It can be programmed for 1-65535 seconds.
 - *ACD Wrap-Up Duration: (ACD Hunt Groups Only)* Each time an agent ends an ACD hunt group call, an ACD Wrap-Up Duration timer is started. Until that timer expires, the agent will not receive another call through any ACD hunt group. (However, the agent can receive other non-ACD hunt group calls, direct ring-in calls, and transfers.) The default value is 15 seconds. The range is 1 to 65535 seconds.



11.63 Select Hunt Groups in the System-Wide Features menu or enter the HUNT command to program up to 10 hunt groups. The window appears as shown above.

11.64 HUNT GROUPS/PROGRAM: Begin programming by highlighting the desired hunt group number in the Hunt Groups list box, and then selecting the Program command button. A window appears as shown on the next page.

11.65 DESCRIPTION and USERNAME: Type a description of up to 20 characters and/or a username of up to 10 characters in the text boxes. Do not use backslash (\), vertical slash (/), or tilde (~) characters in usernames. Do not use Control characters in descriptions or usernames.

11.66 ANALOG VOICE MAIL HUNT GROUP: If the hunt group is composed of station ports which are connected to an analog (non-Axxent Talk) voice mail device, select the check box to place a check in it. (To remove the check, select the check box again.)

11.67 ACD HUNT GROUP: If the ACD hunt group Premium Feature is enabled, and you want the hunt group to use the ACD features, select this check box to place a check in it. (To remove the check, select the check box again.)

11.68 PRIORITY LEVEL: Select the scrolling edit box and enter the correct level or scroll to the desired priority level for this hunt group. Higher numbers have higher priority. The range is 0–20.

11.69 SEARCH TYPE: Select the Search Type drop-down list box and scroll the highlight bar to the appropriate hunt group search type for the hunt group.

11.70 ANNOUNCEMENT: Select the Announcement drop-down list box and scroll to the extension

number of the playback device or Axxent Talk application (Auto Attendant, Voice Mail, or Call Routing Announcement application) that will serve as the announcement station.

11.71 OVERFLOW: Select the Overflow drop-down list box and scroll to the extension number of the playback device or Axxent Talk application (Auto Attendant, Voice Mail, or Call Routing Announcement application) that will serve as the overflow station.

11.72 RECALL: Select the Recall drop-down list box and scroll to the extension number that will serve as the recall destination station.

11.73 MEMBERS: When you select the Members command button, a window appears as shown on page 6–85.

11.74 SUPERVISORS: When you select the Supervisors command button, a window appears as shown on page 6–86.

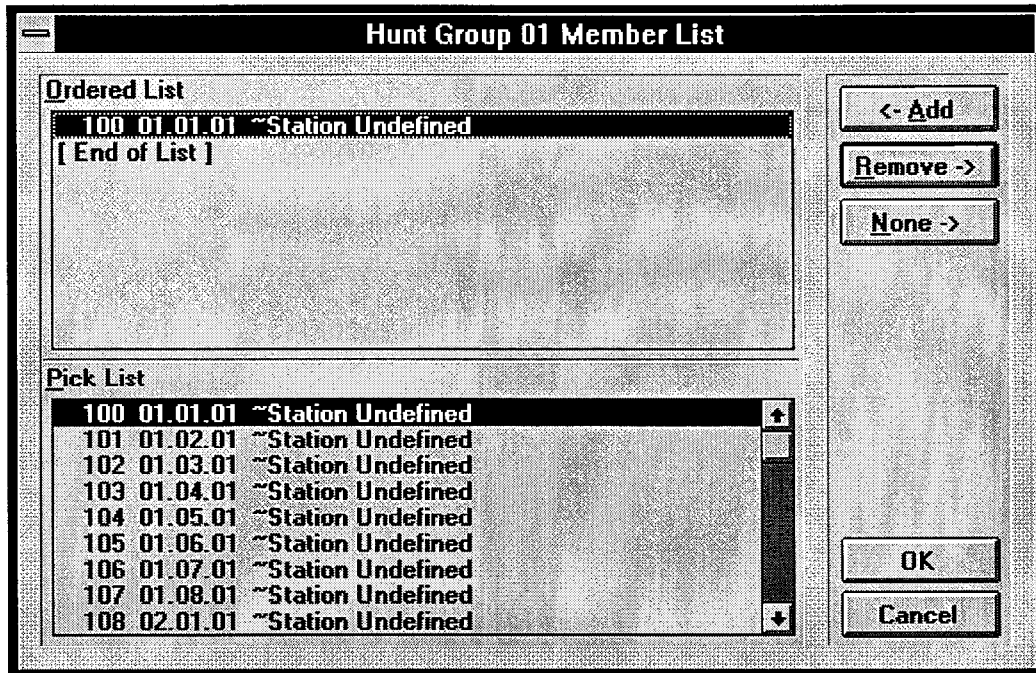
11.75 SERIAL PORTS: When you select the Serial Ports command button, a window appears as shown on page 6–87

11.76 TIMERS: When you select the Timers command button, a timer programming window appears as shown on page 6–88.

11.77 OK: When Hunt Group programming is complete, select the OK command button. If any information was changed, a window will ask you to verify that you wish to update the information. Also, if the hunt group station list was changed, it tells you that the change will require a reset of the hunt group. Select Yes

to update the information (note that the associated reset *will drop calls*). Or, select No to leave the information unchanged.

11.78 CANCEL: To exit without changing the hunt group programming, select the Cancel command button.



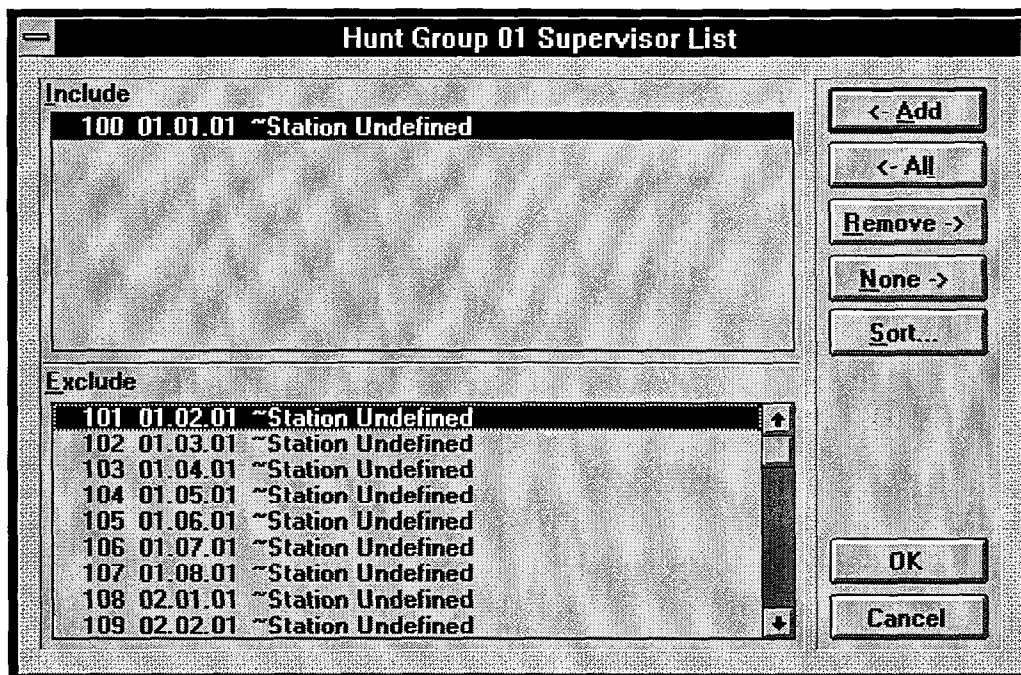
Hunt Group Members

11.79 The window shown above appears when the Members command button is selected. To determine the ordered list in which the stations and/or extension lists will appear in the hunt group, use the following procedure:

- **ADD:** Place stations or extension lists in the Ordered List box in the order in which you want the calls to circulate. To add a station or extension list to the Ordered List box, move the highlight bar to the location where you want the station or extension list to appear. Then highlight the desired station or extension

list in the Pick List box. Select the Add command button to move the highlighted station or extension list from the Pick List to the Ordered List.

- **REMOVE/NONE:** To remove a station or extension list from the Ordered List box, highlight it and select the Remove command button. Or, to remove all stations and extension lists, use the None command button.
- **OK/CANCEL:** When the Ordered List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



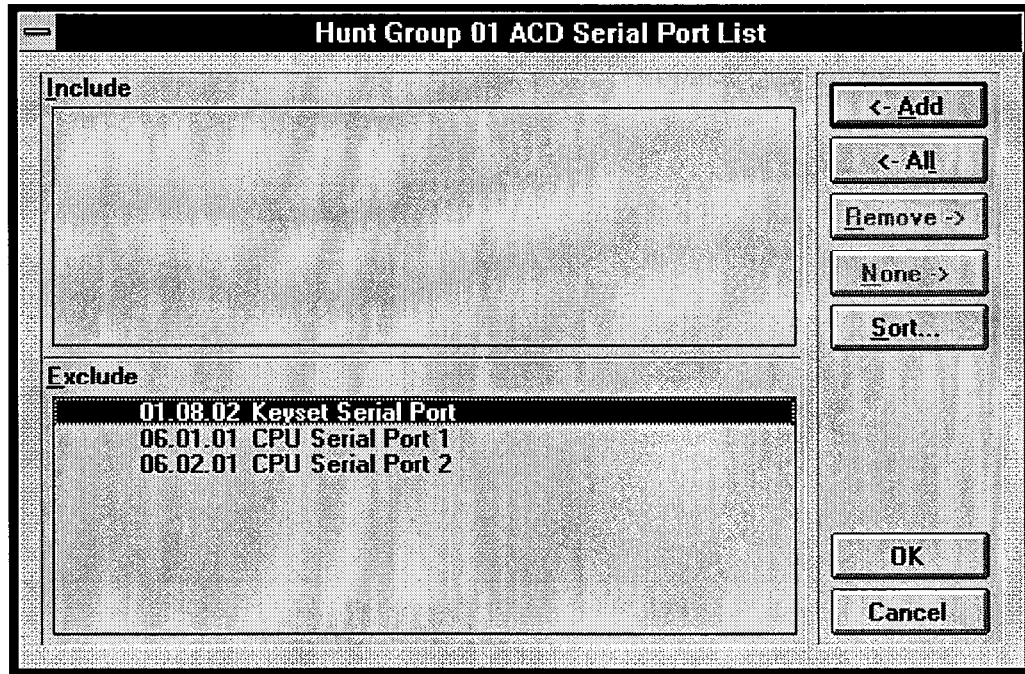
UCD Hunt Group Supervisors

11.80 The window shown above appears when the Supervisors command button is selected. To determine the stations that will be supervisors for the hunt group, use the following procedure:

- **ADD:** To add a station or extension list to the Ordered List box, move the highlight bar to the location where you want the station or extension list to appear. Then highlight the desired station or extension list in the Pick List box. Select the Add command

button to move the highlighted station or extension list from the Pick List to the Ordered List.

- **REMOVE/NONE:** To remove a station or extension list from the Ordered List box, highlight it and select the Remove command button. Or, to remove all stations and extension lists, use the None command button.
- **OK/CANCEL:** When the Ordered List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



ACD Hunt Group Serial Ports

11.81 The window shown above appears when the Serial Ports command button is selected. To determine the list of ports for ACD reporting, use the following procedure. **NOTE:** These ports cannot be used as system programming serial ports if assigned for ACD reporting. **DO NOT** assign all available ports to ACD. Leave at least one port for system programming. Do not use the RS-232 port on the CPU for ACD reporting.

- **ADD:** To add a serial port to the Include box, move the highlight bar to the location where you want the serial port to appear. Then highlight the desired seri-

al port in the Exclude list. Select the Add command button to move the highlighted serial port from the Exclude list to the Include list.

- **REMOVE/NONE:** To remove a serial port from the Include box, highlight it and select the Remove command button. Or, to remove all serial ports, use the None command button.
- **OK/CANCEL:** When the Include appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

Hunt Group 01 Timers

No Answer Advance
18 sec. (Default 18) (Range 1-255)

Announcement
18 sec. (Default 18) (Range 1-255)

Overflow
72 sec. (Default 72) (Range 1-255)

Recall
180 sec. (Default 180) (Range 1-65535)

Wrap-up Duration
15 sec. (Default 15) (Range 1-65535)

Default OK Cancel

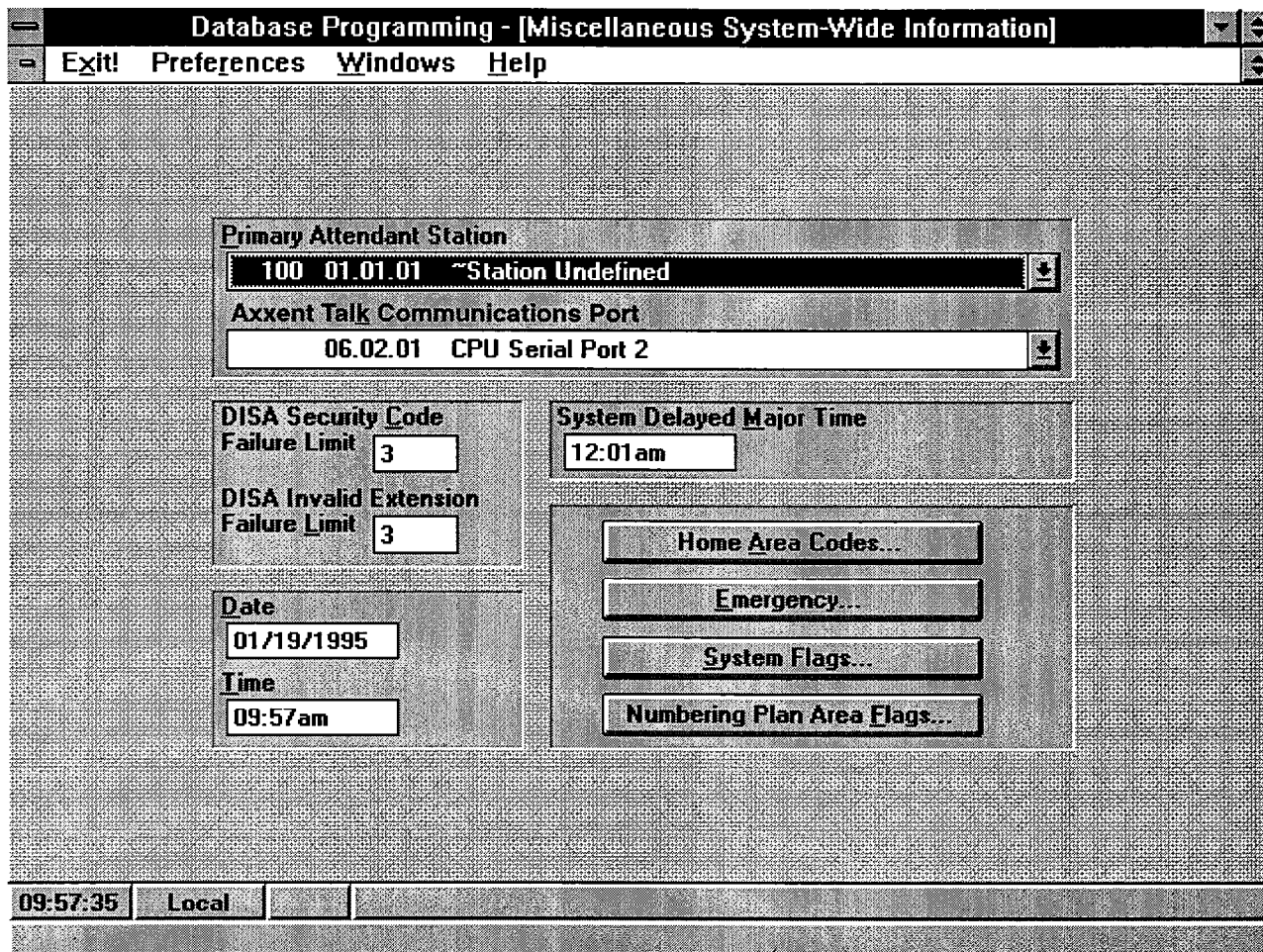
11.82 When you select the Timers command button shown on page 6-83, this window is displayed. To change the timer values, select the desired text boxes and type the new value. The timer functions are as follows:

- **No Answer Advance:** Determines the amount of time a call will ring at a hunt group station (unanswered) before advancing to the next station on the list. It is started when the call is received at the hunt group. The default value is 18 seconds. It can be programmed for 1-255 seconds.
- **Announcement:** This determines the amount of time a call will remain unanswered before it is picked up by the hunt group's announcement station. It is started when the call is received at the hunt group. The default value is 18 seconds. It can be programmed for 1-255 seconds.
- **Overflow:** This determines the amount of time a call will circulate through the hunt group (unanswered) before being picked up by the hunt group's overflow station. This timer is started when the Announcement timer expires (or, if there is no announcement station, when the call is received by the hunt group) and it is restarted each time the call leaves the overflow station. The default value is 72 seconds. It can be programmed for 1-255 seconds.

- **Recall:** This determines the amount of time a call will circulate through the hunt group (unanswered) before being sent to the hunt group's recall destination station. This timer is started when the call is received by the hunt group. The default value is 3 minutes. It can be programmed for 1-255 minutes.
- **ACD Wrap-Up Duration:** (*ACD Hunt Groups Only*) Each time an agent ends an ACD hunt group call, an ACD Wrap-Up Duration timer is started. Until that timer expires, the agent will not receive another call through any ACD hunt group. (However, the agent can receive other non-ACD hunt group calls, direct ring-in calls, and transfers.) The default value is 15 seconds. The range is 1 to 65535 seconds.

11.83 DEFAULT: To set all five timers to default values, select the Default command button.

11.84 OK/CANCEL: When the timers have been programmed as desired, select the OK command button. Or, to exit without changing the timers, select the Cancel command button. *If you have programmed a timer with an invalid value, you will see a warning message that shows you the allowed range for the timer. Select OK in the warning window and set the timer to a valid value before selecting the timer window OK command button again.*



G. MISCELLANEOUS SYSTEM-WIDE INFORMATION

11.85 Select Miscellaneous System-wide Information from the Database Programming Menu or enter the MISC command to display the window shown above. A program planning sheet appears in Figure 6-14, on page 6-239.

11.86 PRIMARY ATTENDANT STATION: Select the Primary Attendant Station drop-down box and scroll the highlight bar to select the station that will serve as the primary attendant for the system.

11.87 AXCENT TALK COMMUNICATIONS PORT: Select this drop-down list box to select the communications port that will be used as the communications link to the Axxent Talk. One of the following may occur:

- *If the communications port was previously programmed and you attempt to change it back to "None," a warning window will appear that states:*

"You have programmed the Axxent Talk Communications Port to <None>. This action informs Database Programming that the system no longer includes Axxent Talk. If you are not removing Axxent Talk from the system, further database programming may result in IRREPARABLE CONFLICTS between the System and Axxent Talk databases. Are you sure you want to set the Axxent Talk Communications Port to <None>?" Select Yes if you actually want to disable the Axxent Talk. Select No to leave the Axxent Talk enabled.

- *If you have selected a port that is already enabled for another function (such as SMDR), you will see a warning message; select a different port or disable the conflicting function.*

11.88 DISA SECURITY CODE FAILURE LIMIT: This determines how many times a caller will be allowed to enter an incorrect DISA security code without being dropped. To program the failure limit, enter the desired number in the text box. Entering 0 will allow unlimited attempts.

11.89 DISA INVALID EXTENSION FAILURE LIMIT: This determines how many times a DISA caller will be allowed to dial an invalid extension number before being sent to the primary attendant. To program the limit, enter the desired number in the text box. Entering 0 will allow unlimited attempts.

11.90 DATE/TIME: Enter the current date and time in these text boxes.

11.91 SYSTEM DELAYED MAJOR TIME: A system reset is required to ensure proper system operation after any cards or devices are equipped or unequipped, an extension list is changed, a trunk group list is changed, or an extension number is changed. A delayed or immediate reset can be requested as you are exiting from the programming session (see page 6-22) or using the Reset System command button (described on page 6-193). This text box sets the *default* time for delayed system resets. To program the default time for delayed resets of the system, enter the time in the text box.

11.92 HOME AREA CODES: The database requires a "home" area code for the system site. It also allows up to three additional "local" area codes. The system refers to these area codes for toll restriction and call cost. To program the home and local area code(s) for the system site, select the Home Area Codes command button. A window appears as shown on page 6-91.

NOTE: *If you attempt to exit from this window without programming a home area code, you will see a warning window that tell you, "Toll Restrict and Call Cost require a Home Area Code. Do you want to continue?" Answer Yes to exit without entering an area code (however, you should enter one as soon as possible), or select No to return to the window shown above.*

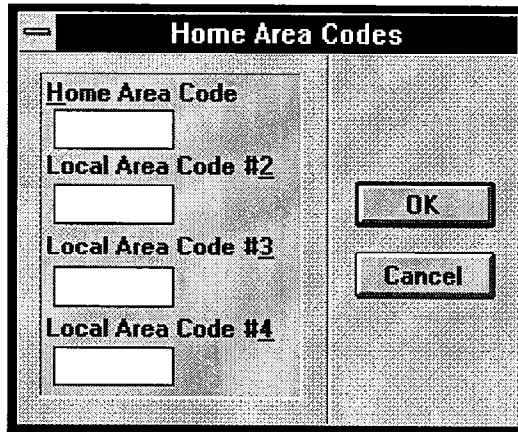
11.93 EMERGENCY: Select this command button to program the Emergency Call feature (feature code 911). A window appears as shown on page 6-92.

11.94 SYSTEM FLAGS: To program the system-wide features, select the System Flags command button. A window appears as shown on page 6-93.

11.95 NUMBERING PLAN AREA FLAGS: If the system is installed in an area where office and area codes overlap and/or where toll digits are allowed on toll calls or required on long distance calls, select the Numbering Plan Area Flags command button. A window appears as shown on the next page. The following numbering plan area flags can be programmed. The first two flags determine in what way area and office codes overlap. The following chart illustrates the difference between the standard North American Numbering Plan (NANP) and each of the overlap flags. In the chart, N=2-9, Z=0 or 1, and X=0-9.

	AREA CODES CAN BE:	OFFICE CODES CAN BE:
NANP	NZX	NXX
Office Codes as Area Codes	NZX or NXX	NXX
Area Codes as Office Codes	NZX	NXX or NZX

- **Office Codes Used as Area Codes:** An area code in another location uses an NXX pattern that matches an office code within the system site's area code. Because the system cannot differentiate between an office code and an area code when the second digit dialed is 0-9, it will wait for the Interdigit timer to expire or another digit to be dialed before assuming that dialing is completed.
- **Area Codes Used as Office Codes:** One or more office codes within the system site's area code use an NZX pattern that is the same as an area code in another area. Because area codes do not resemble office codes (NXX), end-of-dialing detection is not affected by this flag.
- **Toll Digit Allowed On Toll Local Calls:** This option applies only if the area and office codes overlap. Callers in the site's area code usually dial a 1 when placing a call within the local area code(s).
- **Toll Digit Required On Toll Long Distance Calls:** This option applies only if the area and office codes overlap. Callers in the site's area code must dial a 1 when placing a call outside of the local area code(s).



Home Area Codes

11.96 The window shown above appears when the Home Area Codes command button is selected. Program the area codes as follows:

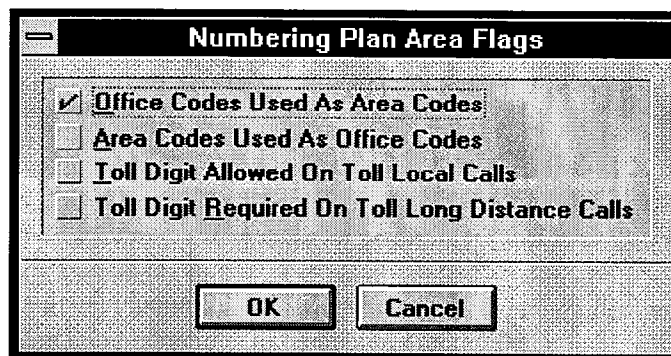
11.97 HOME/LOCAL AREA CODE: To program the area code(s) for the system location, select the desired text box(es) and enter the code(s).

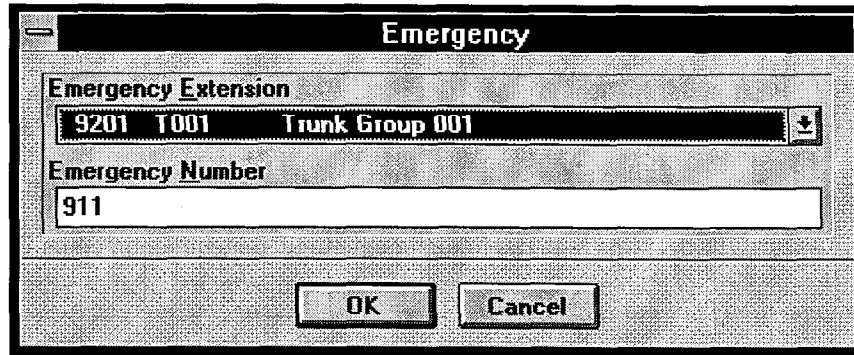
11.98 OK/CANCEL: When finished, select OK to save your changes. Or to leave the codes unchanged, select the Cancel command button.

Numbering Plan Area Flags

11.99 The window shown below appears when the Numbering Plan Area Flags command button is selected. Program the flags as follows:

- **FLAGS:** If any of the numbering plan flags apply to the system location, select the flag to place a check mark in the check box. To remove a check mark, select the check box again. Depending on the combination of flags that are selected, some flags may be dimmed and cannot be selected.
- **OK/CANCEL:** When finished, select OK to save your changes. Or to leave the flags unchanged, select the Cancel command button.





Emergency Call Feature Programming

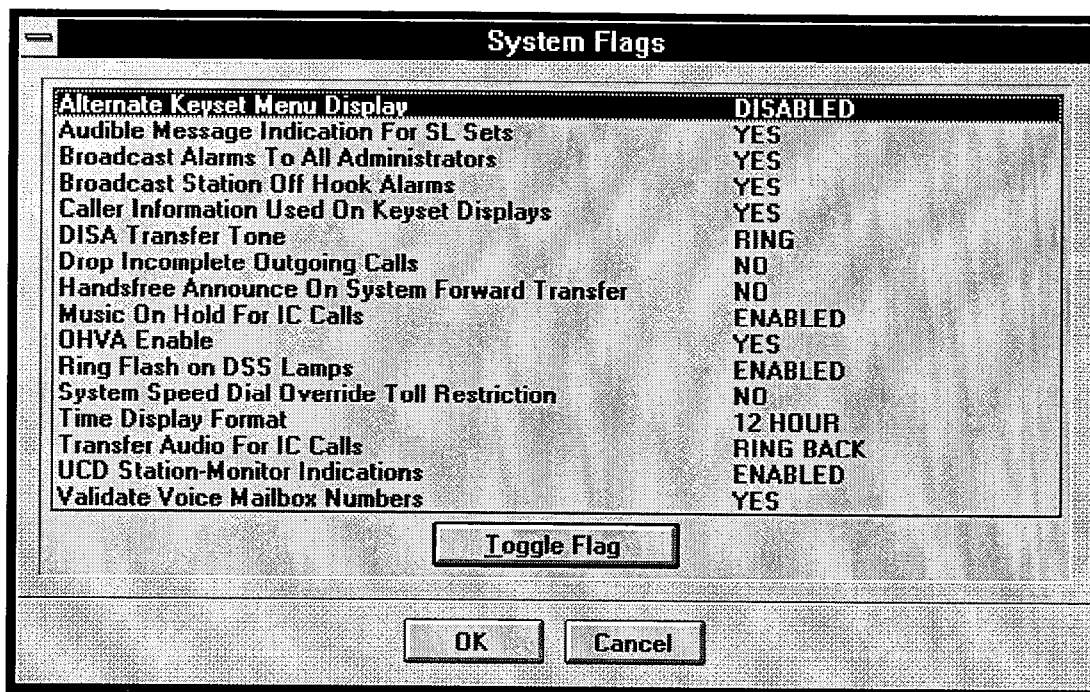
11.100 This window appears when the Emergency command button is selected. It is used for programming the trunk access code and emergency number that will be used when the Emergency Call feature code is entered by a station user.

11.101 EMERGENCY EXTENSION: Select the drop-down list box and scroll to the desired trunk access code. This determines the trunk access that will be selected when the Emergency Call feature is used. It defaults to Trunk Group 1 (9201). You will see a warning

message if you exit without assigning an emergency extension.

11.102 EMERGENCY NUMBER: This is the number that will be dialed when the Emergency Call feature is used. Enter the desired number in the text box. This defaults to 911. You will see a warning message if you exit without assigning an emergency number.

11.103 OK/CANCEL: When the Emergency Call feature programming is correct, select the OK command button. Or, to exit without changing the programming, select the Cancel command button.



11.104 SYSTEM FLAGS/TOGGLE FLAG: To program a feature system-wide, scroll to the desired feature and select the Toggle Flag command button. The status will change each time the command button is selected.

11.105 OK/CANCEL: When the system flags are programmed as desired, select the OK command button. Or to exit without saving your changes, select the Cancel command button.

NOTE: If you have not programmed a home area code yet, a warning window appears as you exit this window. It asks if you wish to continue. Answer Yes to return to the Database Programming Menu or No to stay in this window. Refer to the window shown on page 6-91 to program the home area code(s).

11.106 The system flags include the following:

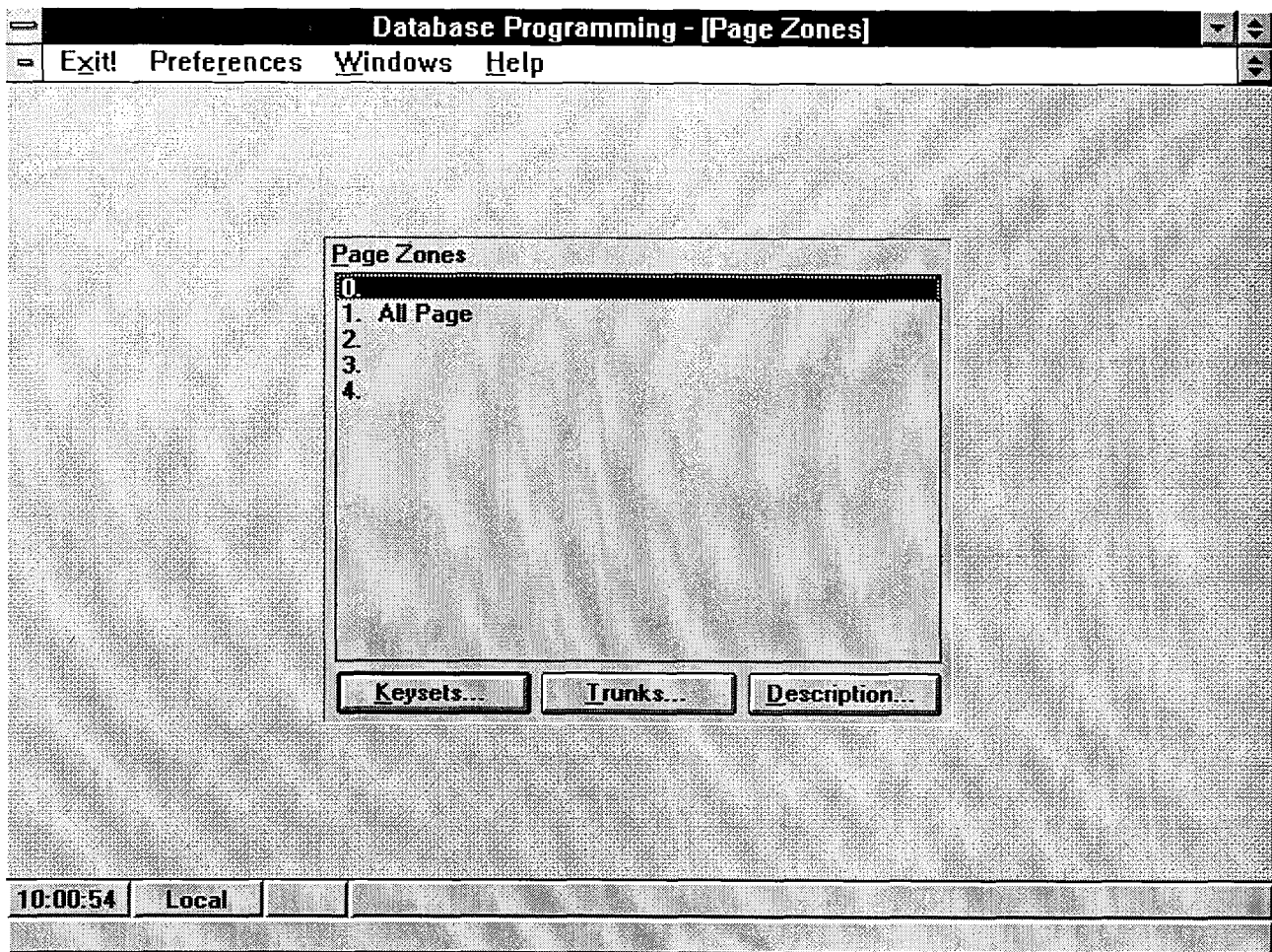
- **Alternate keypad menu display:** This flag determines the display that Executive Keypad users will see during an outside call. In the default state, the main menu display includes the TRANSFER-TO-HOLD option. If alternate displays are enabled, the FLASH option appears in its place. In the default state, this flag is set to *disabled*.
- **Audible message indication for SL sets:** If enabled, single-line sets will receive message waiting indications (six tones before dial tone) when a message is waiting. In the default state, this is *yes*.

- **Broadcast alarms to all administrators:** Determine whether system alarms will display on all administrator stations (set to “yes”). If not, they will display only at the primary attendant’s station (set to “no”). In the default state, this is set to *yes*.
- **Broadcast station off-hook alarms:** Determine whether off-hook alarms will be displayed on all administrator stations and the primary attendant’s station (set to “yes”). In the default state, this is set to *yes*.
- **Caller information used on keypad display:** If enabled, any call that is received on a trunk that supports the Caller ID and ANI feature will be identified on the keysets display with the caller information. If disabled, the display will show the programmed trunk name for the call. In the default state, this is set to *yes*.
- **DISA transfer tone:** Select the ring or music option. If ring tones are enabled, callers will hear ringing instead of music when using DISA to call a station. In the default state, this is set to *ring*.
- **Drop incomplete outgoing calls:** Occasionally, a station user will seize a trunk at the exact time a call is coming in on that trunk and the user will be connected to the incoming call instead of dial tone. (This is called “glare.”) If the Drop Incomplete Outgoing Calls option is enabled (set to *yes*), the resulting call on that trunk will be dropped, as it would be if the user did not dial a valid telephone number. If

the option is disabled (set to *no*), the call will remain connected regardless of the number of digits dialed, if any. In the default state, this is set to *no*.

- **Handsfree announce on system forward transfer:** When a station user transfers a call to the principal station of a forwarding path, this option determines what the caller will hear. If enabled (*yes*), the caller will place a handsfree call to the principal station and can announce the transfer (the call does not enter the forwarding path). If the option is disabled, the transferring station user will hear ringing and can announce the call only if it is answered by the principal station or one of the forwarding points. This defaults to *no*.
- **Music-on-hold for IC calls:** This option determines whether a user hears music when placed on hold by another station or camps on to a resource. In the default state, this is *enabled*.
- **OHVA enable:** Determine whether the Off-Hook Voice Announce (OHVA) feature will be enabled system-wide. In the default state, this is *yes*.
- **Ring flash on DSS lamps:** When enabled, this option allows DSS/BLF keys to indicate a ringing call to a station by showing the ring flash on the associated key. If disabled, the key will show that the station is busy (solid lamp). In the default state, this is set to *enabled*.

- **System speed-dial override toll restriction:** If this option is enabled, the system speed-dial numbers can be speed dialed at any station regardless of toll restrictions. If disabled, all system speed-dial numbers are subject to toll restriction. In the default state, this is *no*.
- **Time display format:** This determines whether keyset displays will show the time in 24-hour or 12-hour (AM/PM) format. In the default state, it is set to *12 hour*.
- **Transfer audio for IC calls:** You can choose to have ringing or music-on-hold heard by intercom callers who are being transferred. In the default state, this is set for *ring back*.
- **UCD station monitor indications:** This flag determines whether station monitoring tones are sent to a UCD hunt group member when the hunt group supervisor is monitoring the call. In the default state, this flag is *enabled*. (Note that call monitoring may be illegal in some locations. It is up to the end user to ensure that use of this feature is in compliance with local laws.) The frequency of the tone is determined by the UCD Station Monitor Indication Frequency timer.
- **Validate voice mailbox numbers:** When enabled, the system will check that a dialed mailbox number matches a programmed extension number. In the default state, this is set to *yes*.



H. PAGE ZONES

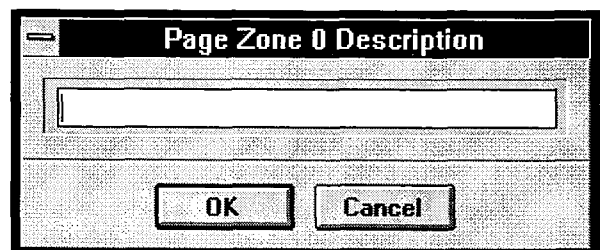
11.107 To prepare for page zone programming, make a list of the keysets and trunks that are included in up to 5 paging zones. Keysets can be in more than one page zone. In the default state, all keysets are assigned to page zone 1. A program planning sheet is located in Figure 6-15, on page 6-240.

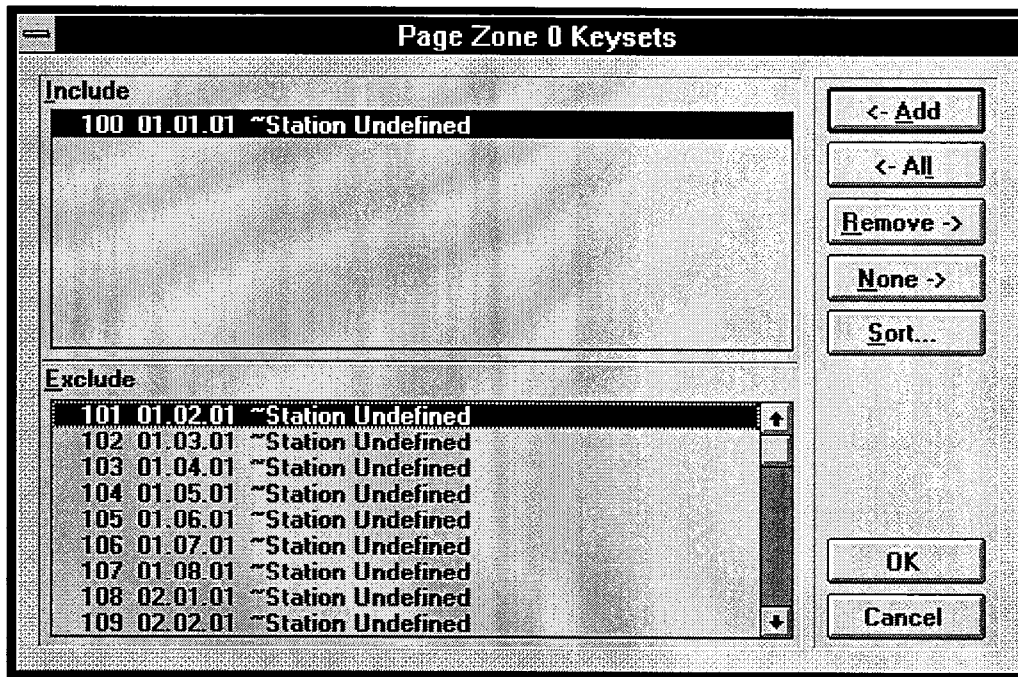
11.108 To define the page zones, select from the System-wide Features menu, or enter the PAGE command to display the window shown above. Programming is described below.

11.109 PAGE ZONES: Begin programming by highlighting the desired page zone in the Page Zones list box. When the highlight bar is on a specific page zone, all programming applies to that zone.

11.110 KEYSSETS or TRUNKS: To assign the keysets or trunks to a page zone, select the Keysets or Trunks command button. A list window appears as shown on the next page.

11.111 DESCRIPTION: When the Description command button is selected, the following window appears. Enter a description of the page zone in the text box and select the OK command button (or select the Cancel command button to leave the description unchanged).



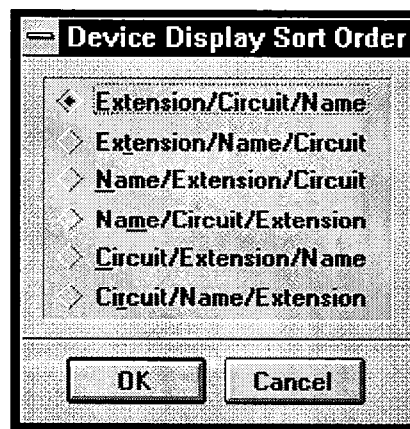


Placing Stations Or Trunks In Page Zones

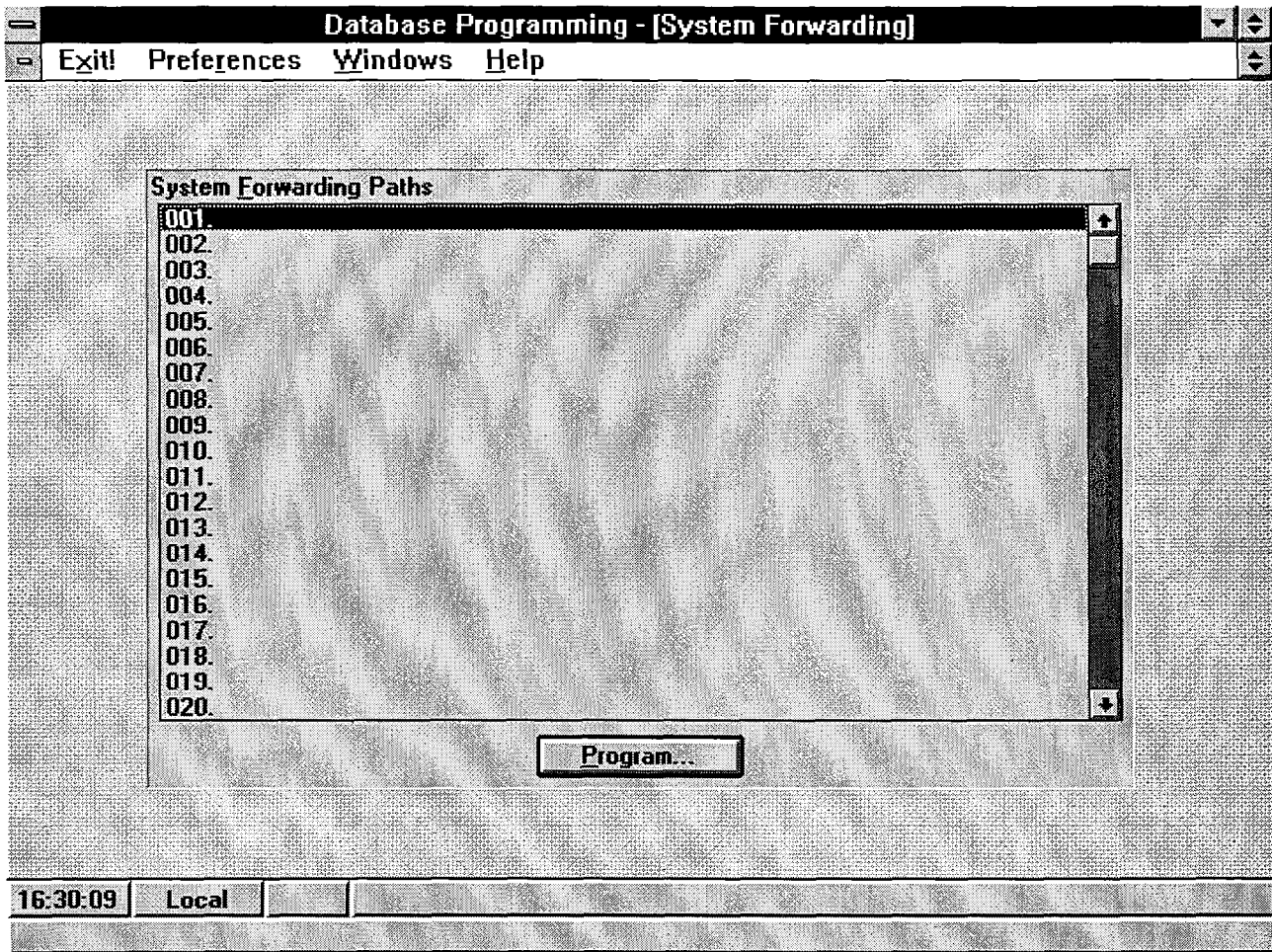
11.112 The window shown above appears when the Stations or Trunks command button is selected. To determine the content of the lists, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted device from the Exclude list to the Include List, or use the All command button to place all devices in the list.
- **REMOVE/NONE:** To remove a device from the Include list, highlight it and select the Remove command button. Or, to remove all devices, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command

button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



I. SYSTEM FORWARDING

NOTE: This window cannot be used unless the feature has been enabled as described on page 6-198.

11.113 When System Forwarding is selected from the System Wide Features menu (or the SFWD command is entered), the programming window shown above appears. It is used for assigning forwarding points to the system forwarding paths. Stations can then be pro-

grammed to use the forwarding paths in the window shown on page 6-39. A program planning sheet is located in Figure 6-16, on page 6-241.

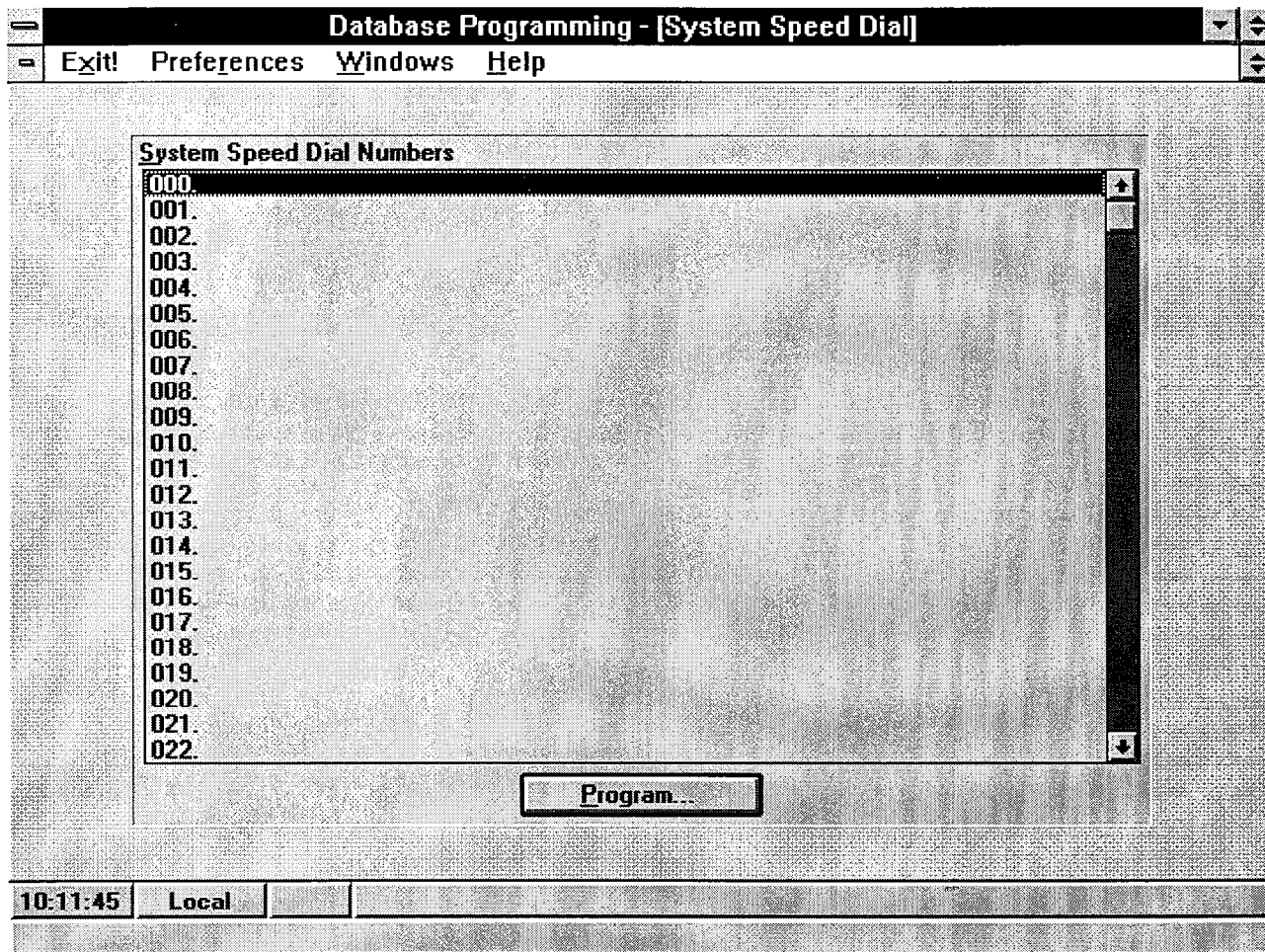
11.114 SYSTEM FORWARDING PATHS/PROGRAM: Up to 20 unique forwarding paths (001-020) can be programmed. To program a forwarding path, highlight the desired path number in the list box and select the Program command button. The following window appears.

The screenshot shows a window titled "Forwarding Path 001". Inside the window, there is a text input field labeled "Path Description". Below this are four sections, each labeled "Forwarding Point 1" through "Forwarding Point 4". Each section contains a drop-down menu with the text "<None>" and a small downward arrow icon. At the bottom of the window, there are two buttons: "OK" and "Cancel".

11.115 Each forwarding path can have a distinctive description (of up to 20 characters) and four forwarding points. The forwarding points can be stations, voice mail ports, or hunt groups.

- **PATH DESCRIPTION:** Select this text box to enter the name of this forwarding path.
- **FORWARDING POINT(S):** Up to four forwarding points can be programmed. To enter a forwarding point, select the appropriate drop-down list box and scroll the highlight bar to an extension number or hunt group number.

- **OK/CANCEL:** When finished programming the forwarding paths, select the OK command button or press RETURN. To exit to the System Forwarding window without selecting a station, select the Cancel command button.



J. SYSTEM SPEED DIAL

11.116 To program system speed-dial parameters, determine the following information. There can be up to 100 system speed-dial numbers (000–099). A program planning sheet is located in Figure 6–17, on page 6–242.

11.117 For each speed-dial location, you will program the following information:

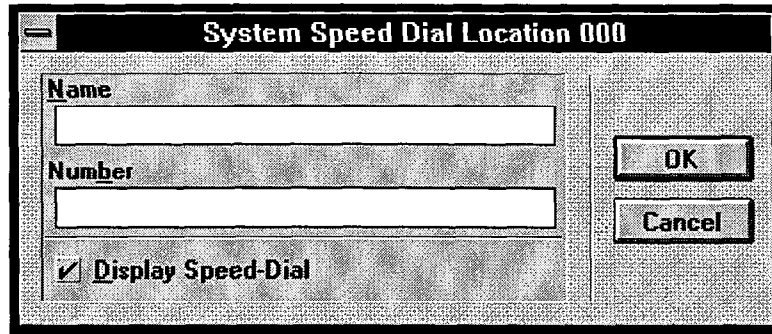
- **Name:** If desired, you can program a name for the speed-dial number. Each name can have up to 16 characters.
- **Number:** Numbers can include up to 32 digits and can include digits (0–9, *, and #), timed pauses, or hookflashes. Timed pauses and/or hookflashes are used when entering a series of numbers, such as access codes, security codes, and telephone numbers for specialized common carrier (SCC) dialing. To include a pause in the number, enter the letter P for a pause. To include a hookflash, enter F. The pause

length represented by the P is determined by the Pause timer. Each pause or hookflash is considered one of the 32 digits.

- **Display speed-dial:** Determine which system speed-dial number locations may be viewed on display keysets. Non-display numbers do not appear on display keysets when dialed and cannot be redialed at display keysets. Non-display numbers will appear in the SMDR when dialed. Display/non-display status is programmed on a location-by-location basis.

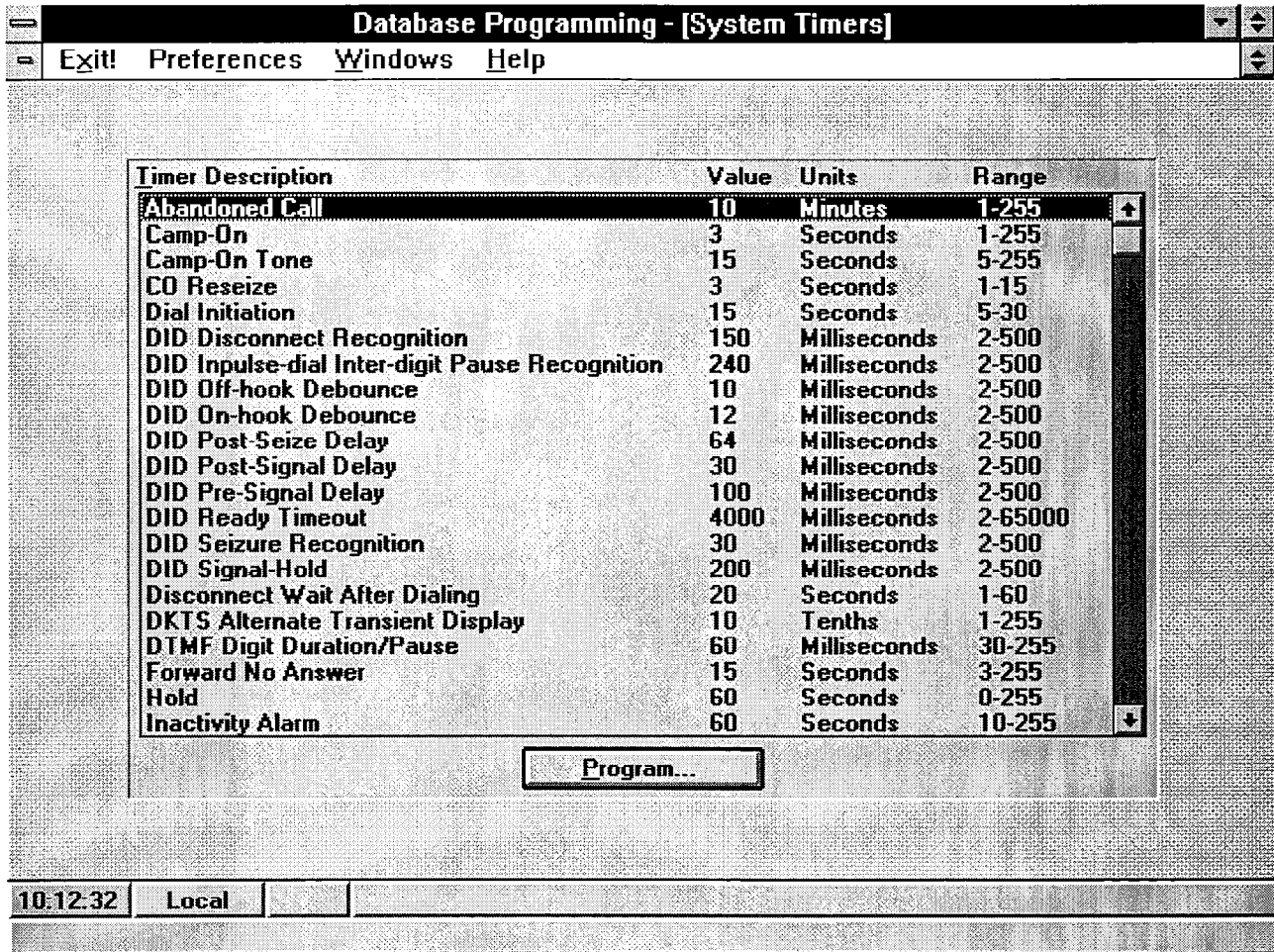
11.118 The System Speed Dial programming window is selected from the System-Wide Features menu or the SSPD command is entered. The window appears as shown above.

11.119 SYSTEM SPEED-DIAL NUMBERS/PROGRAM: To program a number, highlight the desired number in the list box and then select the PROGRAM command button. The window shown on the next page appears.



The image shows a graphical user interface window titled "System Speed Dial Location 000". The window contains two text input fields, one labeled "Name" and one labeled "Number". Below the "Number" field is a checkbox with a checkmark and the text "Display Speed-Dial". To the right of the input fields are two buttons: "OK" and "Cancel".

- **NAME:** If desired, select the Name text box and type the desired name up to 16 characters.
- **NUMBER:** Select the Number text box to enter a number of up to 32 digits as described on the previous page.
- **DISPLAY SPEED-DIAL:** To allow the speed-dial number to be displayed when dialed, place a check mark in the check box by selecting the empty check box. To make it a non-display number, remove the check by selecting it again.
- **OK or CANCEL:** When the name and speed-dial number are correct, select the OK command button. To exit without saving the changes, select the Cancel button. The System Speed Dial window returns.



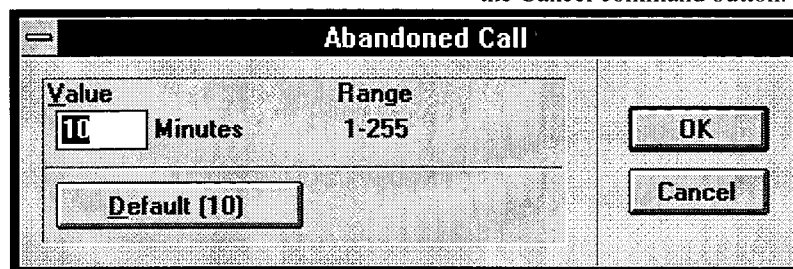
K. TIMERS

11.120 There are programmable timers that control various system functions. In the System Timers programming window, the programmer can change any or all of them. The timers and their default values, programmable ranges, and purposes are described on the following pages. The default values have been carefully selected to ensure proper system operation under most circumstances. Occasionally, one or more of the timers may need to be adjusted. A program planning sheet is located in Figure 6-18, on page 6-243.

11.121 To reach this window, select System Timers from the System-wide Features menu or enter the TIMR command.

11.122 SYSTEM TIMER LIST: To change the value of a system timer, scroll through the list box until it is highlighted. When the timer is selected, a window appears that is similar to the one shown below.

- **VALUE:** Select the Value text box and enter the new value for the timer.
- **DEFAULT:** To return the selected timer to its default value, select the Default command button. The default value is shown in the command button.
- **OK or CANCEL:** To save the change and return to the System Timers list box, select the OK command button. To exit without saving any changes, select the Cancel command button.



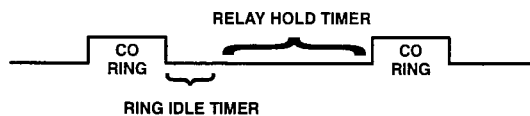
Timer Definitions

11.123 The timer definitions are shown below and on the following pages. A "DID" in the timer names indicates that the timer applies to DID trunks only. "DKTS" refers to keysets only and "SL" applies to single-line sets only. "LS" indicates a loop-start trunk timer. The "UCD" timer applies only to UCD hunt groups.

<u>TIMER</u>	<u>DEFAULT VALUE</u>	<u>RANGE</u>	<u>PURPOSE</u>
Abandoned Call	10	1-255 minutes	After a call has recalled to the last possible station, it will recall until this timer expires. If it remains unanswered, the system will disconnect the call. (This timer is started when the call begins recalling the first recall station.)
Camp-On	3	1-255 seconds	Length of time a caller hears busy tone before camping on.
Camp-On Tone	15	5-255 seconds	Length of time between camp-on tones.
CO Reseize	3	1-15 seconds	When a user reseizes a trunk, this timer determines the length of time the system will hold the trunk open.
Dial Initiation	15	5-30 seconds	Limits time a station can remain off hook without dialing before the system sends reorder tones.
DID Disconnect Recognition	150	2-500 milliseconds (.002-.5 sec.)	This is the minimum amount of time the circuit must be on hook for the system to recognize that the call has been disconnected.
DID Inpulse-dial Inter-digit Pause Recognition	240	2-500 milliseconds (.002-.5 sec.)	This is the minimum pause allowed between incoming pulse-dial signals sent from the remote circuit. It allows the system to recognize the separation between digits.
DID Off-hook Debounce	10	2-500 milliseconds (.002-.5 sec.)	This is the minimum amount of time the circuit must be off hook before the system will recognize another on-hook/off-hook transition.
DID On-hook Debounce	12	2-500 milliseconds (.002-.5 sec.)	This is the minimum amount of time the circuit must be on hook before the system will recognize another on-hook/off-hook transition.
DID Post-Seize Delay	64	2-500 milliseconds (.002-.5 sec.)	This is the minimum time allowed between the recognition of a seizure and the beginning of digit validation. Used only for Immediate-Dial circuits.
DID Post-Signal Delay	30	2-500 milliseconds (.002-.5 sec.)	This is the minimum time allowed between the end of a handshake and the beginning of digit validation. Used only for Wink-Start and Dial-Delay circuits.
DID Pre-Signal Delay	100	2-500 milliseconds (.002-.5 sec.)	This is the amount of time that must elapse between the recognition of a trunk seizure and the handshake. Used only for Wink-Start and Dial-Delay circuits.
DID Ready Timeout	4000	2-65000 millisecond (.002-65 sec.)	This is the maximum time the SLA will wait for the "Digit Register Ready" command. If the timer expires, the SLA will automatically initiate a handshake. Used only for Wink-Start and Dial-Delay circuits.

TIMER	DEFAULT VALUE	RANGE	PURPOSE
DID Seizure Recognition	30	2–500 milliseconds (.002–.5 sec.)	This is the minimum amount of time the circuit must be on hook for the system to recognize that the trunk has been seized.
DID Signal Hold	200	2–500 milliseconds (.002–.5 sec.)	This is the maximum duration of a wink-start handshake or the minimum duration of a dial-delay handshake. Used only for Wink-Start and Dial-Delay circuits.
Disconnect Wait After Dialing	20	1–60 seconds	Length of time the system waits after dialing an outside telephone number before checking the trunk for disconnect.
DKTS Alternate Transient Display	10	1–255 tenths (.1–25.5 sec.)	This is the amount of time transient displays will appear on keyset stations with the “Alternate Transient Display Timer” station flag enabled.
DTMF Digit Duration/Pause	60	30–255 milliseconds (.03–.255 sec.)	Adjusts the duration of and pause between digits of DTMF tones sent by the system. Both the tone and the pause will use the assigned duration (for example, a 6/100 second tone has a 6/100 second pause between digits).
Forward No Answer	15	3–255 seconds	Length of time a call waits at an unavailable station before being forwarded. (Applies to manual call forwarding only, not system forwarding.)
Hold	60	0–255 seconds	Limits time a call remains on hold before recalling the station. If set to 0, the call will not recall.
Inactivity Alarm	60	10–255 seconds	Limits the time a station can remain off hook and inactive (after first receiving reorder tones) before registering a system alarm.
Interdigit — Long	15	2–255 seconds	Used in determining end of dialing. Short timer is used after a valid number has been dialed. Long timer is used until digits form a valid number.
Interdigit — Short	4	2–30 seconds	
LS Caller ID Relay Hold	2500	2–4000 milliseconds (.002–4.0 sec.)	Amount of time the system will look for Caller ID information when a call is received.
LS Caller ID Ring Idle	500	2–4000 milliseconds (.002–4.0 sec.)	This sets the time between the end of first ring and the time at which the system begins to check for Caller ID information.

NOTE: The Caller ID timer values combined must be shorter than the period of silence between CO rings. The following illustration shows the relationship between CO ringing and the Caller ID relay action:



TIMER	DEFAULT VALUE	RANGE	PURPOSE
LS CO Hookflash	60	2-1000 hundredths (.02-10.0 sec.)	Adjusts the duration of the timed hookflash that is sent over the trunk by the system when the Hookflash feature code is used.
LS CO-CO Disconnect	35	2-1000 hundredths (.02-10.0 sec.)	A call is disconnected by the system if it detects loss of loop current lasting longer than this timer during trunk-to-trunk calls.
LS Dialing Disconnect	120	2-1000 hundredths (.02-10.0 sec.)	The connection is dropped if the system detects loss of loop current lasting longer than this timer during dialing.
LS Dialing Wait After Connect	15	1-50 tenths (.1-5.0 sec.)	The length of time the system waits for outside dial tone before dialing or checking the trunk for a disconnect.
LS Dialing Wait After Hookflash	30	2-199 tenths (.2-19.9 sec.)	Delays dialing after a hookflash to allow the system and central office hardware to recover.
LS IC-CO Disconnect	60	2-1000 hundredths (.02-10.0 sec.)	A call is disconnected by the system if it detects loss of loop current (lasting longer than this timer) during station-to-trunk calls.
LS Inter-ring Silence	60	1-250 tenths (.1-25.0 sec.)	Indicates the duration of the silence between rings on an incoming call to determine if the trunk has stopped ringing prior to being seized. In most areas, trunk ring pattern is 2 seconds on/ 4 seconds off. Check with the local telephone company for the ring pattern in your area. NOTE: This timer must always be set higher than the central office's ring off time.
LS Loop Current Debounce	100	2-500 milliseconds (.002-.5 sec.)	This is the minimum amount of time the system must detect loop current for it to recognize that a trunk is present when it is seized.
LS Outpulse-dial Inter-digit Pause	700	2-1500 milliseconds (.002-1.5 sec.)	This is the idle time between pulse-dial digits sent by the system.
LS Outpulse-dial Inter-pulse Pause	40	2-500 milliseconds (.002-.5 sec.)	This is the amount of time between pulses when pulse-dial digits are sent by the system.
LS Outpulse-dial Pulse Hold Duration	60	2-500 milliseconds (.002-.5 sec.)	This is the duration of a single pulse-dial digit sent by the system.
LS Ring Frequency — High Boundary	100	max. 1000 Hertz	These parameters determine the valid range of ring frequencies that will be recognized by the system. Any ring signal outside of this range is ignored. The ranges for these timers are interdependent. The minimum value for the high boundary is the current value of the low boundary. The maximum for the low boundary is the current value for the high boundary.
LS Ring Frequency — Low Boundary	15	min. 4 Hertz	
LS Trunk Ring Detection	5	1-250 tenths (.1-2.5 sec.)	This is a low-level timer that specifies the duration that continuous ring voltage must be detected on a trunk for the system to recognize a new incoming call. If this timer is too low, then false rings could be detected. If the timer is too high, then new incoming calls may not be detected at all. Common ring durations sent by central offices are 1-second and 2-second.

<u>TIMER</u>	<u>DEFAULT VALUE</u>	<u>RANGE</u>	<u>PURPOSE</u>
Message Wait	5	1–255 seconds	Length of time a caller waits after pressing the MSG key before being connected to the called party's message center.
Off-Hook Voice Announce Screening	5	1–255 seconds	After the Camp-On timer expires, length of time before an OHVA call can be completed.
Page	15	0–255 seconds	Limits duration of page. If set to 0, pages are unlimited in length.
Pause Dialing Digit Length	3	1–15 seconds	Length of timed pauses used in system and station speed-dial telephone numbers and in ARS dial rules.
Queue Callback	15	10–255 seconds	Time allowed for a station to respond to a queue callback before the queue is cancelled.
Recall	60	10–255 seconds	Length of time a hold or transfer recall rings at a station before recalling that station's recall destination. If the station receiving the recall has no recall destination, the call remains at the station until the Abandoned Call timer expires.
SL Disconnect Flash Duration	15	1–250 tenths (.1–25.0 sec.)	When a single-line station is involved in a call that is dropped by the other party, and the single-line station remains off hook, the system turns off tip and ring battery for the duration of this timer. If there is peripheral equipment on the single-line circuit (such as a voice mail unit, page amplifier, or other phone system) then this loss of battery will signal a call disconnect and will usually cause the equipment to disconnect.
SL Hookflash Maximum	12	2–20 tenths (.2–2.0 sec.)	The maximum amount of time a single-line set user can press the hookswitch before the system disconnects calls.
SL Hookflash Minimum	2	1–10 tenths (.1–1.0 sec.)	The minimum length of time a single-line set user must press the hookswitch for the system to recognize a hookflash.
SL Impulse-dial Inter-digit Pause	300	2–1500 milliseconds (.002–1.5 sec.)	The minimum pause allowed between incoming pulse-dial signals sent from the remote circuit. It allows the single-line device to recognize the separation between digits.
SL Wait For Disconnect	2	1–60 seconds	When a single-line station is involved in a call that is disconnected by the other party, and the single-line station remains off hook, this timer specifies the length of time between the disconnection and when the disconnect flash (which is set by the Disconnect Flash Duration timer) is transmitted to the single-line circuit. During this time, the station receives no audible signal.
System Forward Advance	15	2–255 seconds	Determines how long a call will ring (unanswered) at each forwarding point in a system forwarding path.
System Forward Initiate	15	2–255 seconds	Determines how long a call will ring (unanswered) at the principal station before advancing to the first forwarding point in a system forwarding path.

<u>TIMER</u>	<u>DEFAULT VALUE</u>	<u>RANGE</u>	<u>PURPOSE</u>
Transfer — Attendant	30	10–255 seconds	When an attendant transfers a call, this timer limits the time a transferred call rings unanswered before it recalls the attendant.
Transfer — Available	20	10–255 seconds	Limits time a transferred call rings unanswered before it recalls the transferring station. (Does not apply to calls transferred by attendant stations or Axxent Talk or calls transferred to a busy station.)
Transfer — Axxent Talk	20	10–255 seconds	Limits time a transferred call waits at an Axxent Talk destination before recalling the programmed recall destination.
Transfer — Busy	24	10–255 seconds	Limits time a transferred call waits at a busy station before recalling the transferring station. (Does not apply to calls transferred by attendant stations or Axxent Talk or to calls transferred to an idle station.)
Trunk Key Debounce	3	1–30 seconds	The length of time the system will ignore subsequent attempts to press a trunk key once it has been pressed. This prevents a keyset user from accidentally disconnecting a call by re-selecting the trunk key if the key is pressed twice while answering a call. NOTE: The database contains a CO/IC Reseize station flag that can be set to prevent users from reseizing a trunk. If selected, the station user cannot reseize a trunk until it is disconnected by replacing the handset, pressing the SPKR key, or pressing another trunk key.
UCD Station Monitor Indication Frequency	15	1–255 seconds	This is the length of the pause between hunt group station monitoring tones.
Unsupervised CO	5	1–255 minutes	Limits duration of outside calls transferred or forwarded to outside telephone numbers before recalling the primary attendant.
Valid Call	15	1–60 seconds	Minimum duration of an outgoing call before it is recorded in SMDR. Calls placed on hold or transferred are not subject to this timer.
Voice Mail Dial Delay	5	1–250 tenths (.1–2.5 sec.)	When a call is answered by the voice mail unit, this indicates the amount of time the system waits before sending digits to the voice mail unit after it answers the call.

12. TOLL RESTRICTION

12.1 The Toll Restriction programming window is shown on page 6-109. To prepare for programming Toll Restriction information, list all unrestricted stations, Axxent Talk applications, and trunk groups and those that are affected by each of the following restrictions. Also, determine the dialing patterns that will be used for the toll restriction classes of service. (Refer to FEATURES page 4-28 for COS details. A program planning sheet is located in Figure 6-20, on page 6-246.)

12.2 Class of Service: The COS designations 00-09 have default values. COS designations (10-16) are blank. Classes of service 02-16 are programmable. Each may be specified to be an allowed or denied class of service, dialing patterns can be programmed for each, and each can be assigned to station and trunk groups as needed. The default values of COS 00-09 are as follows. (The toll string wild cards and non-programmable wild-cards are shown on page 6-108.)

- **COS 00 — Unrestricted:** This COS can be assigned to disable all toll restriction for that station.
- **COS 01 — ARS Only:** Calls can only be placed using the Automatic Route Selection (ARS) feature when this restriction is assigned. The user will hear reorder tones when attempting to place a call using any other method. A restricted user can still select individual trunks if the trunks are designated as “exempt from ARS Only” (as described on pages 4-27 and 6-129), or were transferred, were placed on hold, or are recalling or ringing. Trunk restriction determines which trunks in the ARS route group can be selected by the station.
- **COS 02 — Deny Area/Office:** This restriction is divided into three user groups to allow the use of varying area/office code restriction tables. This is useful for reducing restrictions for some of the stations or trunk groups while increasing restrictions for others. Each station, Axxent Talk application, and trunk group is assigned a day mode and a night mode user group in database programming. Within each user group, area codes can be designated as restricted, allowed, or extended. Restricting an area code prevents users from placing calls to that area code. Allowing an area code allows all office codes within that area code. Designating an area code as extended allows the programmer to determine which office codes (up to 800) are allowed or restricted within that area code. For each user group, 800 area codes can be marked as allowed or restricted in the database list, and up to four area codes can be marked as extended.
- **COS 03 — Deny Operator:** Calls to numbers that match the dial patterns for this class of service (defaults to [Q]RN+, [Q]R0, and [Q]RE) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station, Axxent Talk application, or trunk group used.
- **COS 04 — Deny Toll Access:** Calls to numbers that match the dial patterns for this class of service (defaults to [Q]TN+ and [Q]TE) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station, Axxent Talk application, or trunk group used.
- **COS 05 — Deny International:** Calls to numbers that match the dial patterns for this class of service (defaults to [Q]I+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station, Axxent Talk application, or trunk group being used.
- **COS 06 — Deny Equal Access:** Calls to numbers that match the dial patterns for this class of service (defaults to Q+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station, Axxent Talk application, or trunk group being used.
- **COS 07 — Deny Local Calls:** Calls to numbers that match the dial patterns for this class of service (defaults to N+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station, Axxent Talk application, or trunk group being used.
- **COS 08 — Denied Numbers:** Calls to numbers that match the dial patterns for this class of service (defaults to 1900NXXXXXX+ and 976XXXX+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station, Axxent Talk application, or trunk group being used.
- **COS 09 — Allowed Numbers:** Calls to numbers that match with the dial patterns for this class of service (defaults to 1800NXXXXXX+) are allowed, even if number also matches a dial pattern in a restricted class of service that is assigned to the station, Axxent Talk application, or trunk group being used.

12.3 Exact (complete) pattern matches with classes of service marked as “allowed” always override exact (complete) pattern matches with classes of service marked as “denied.” Also, partial (incomplete) pattern matches with classes of service marked as “allowed” always override partial (incomplete) pattern matches with classes of service marked as “denied.” The only time a pattern in a denied class of service overrides a pattern in

an allowed class of service is when the match with the denied pattern is exact (complete) and the match with the allowed pattern is partial (incomplete).

12.4 Toll Strings: Toll strings are dialing patterns which are abbreviated to single character "wildcards." These wildcards are used in COS and Automatic Route Selection programming. Toll strings can contain any digit 0-9 including the keypad special characters # and *. In addition, a variety of special characters may be en-

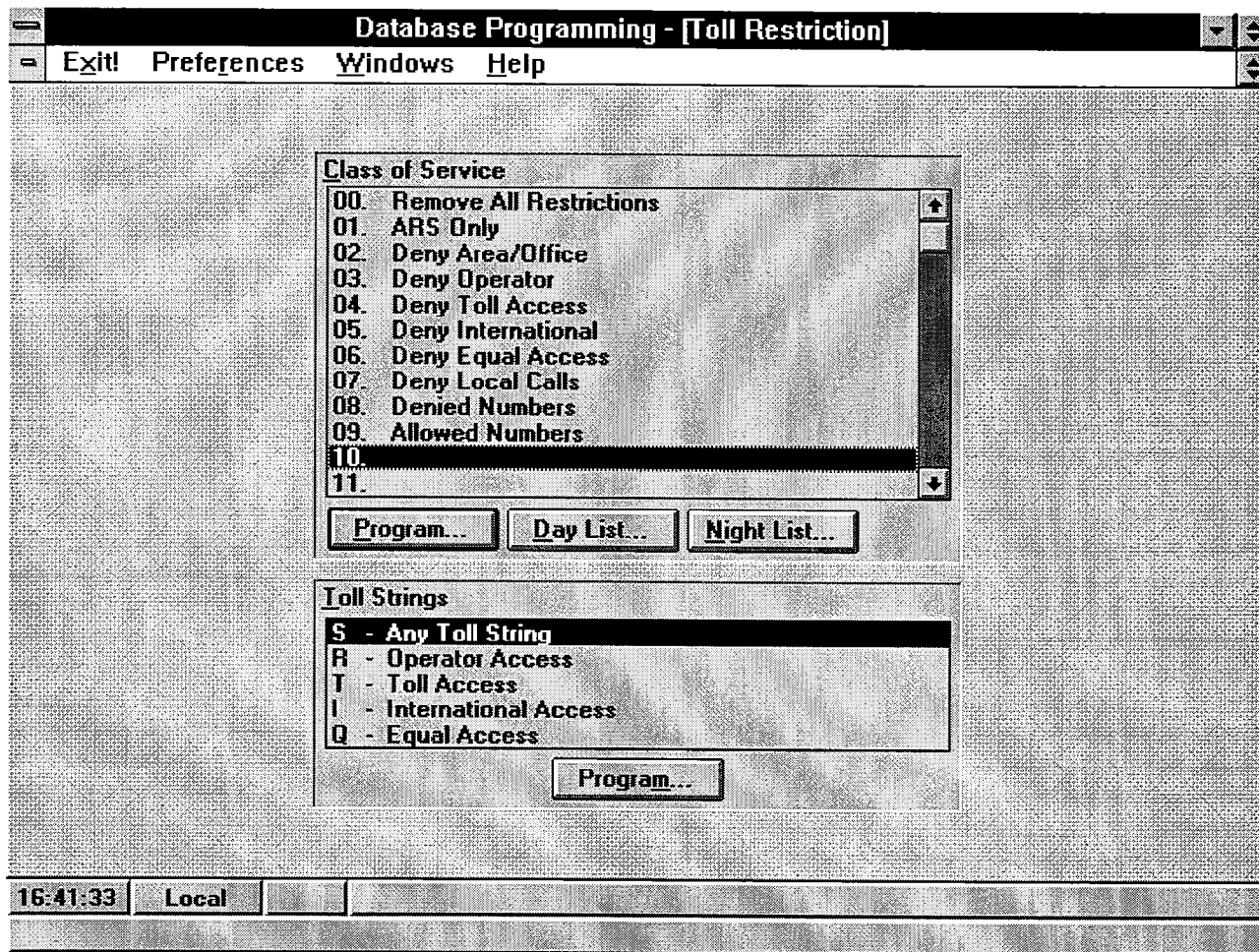
tered into the database to reflect particular digit strings, hookflashes, or special digit strings. Each of the following toll string wildcards can be reprogrammed and/or renamed to meet the customer's requirements. *However, note that changing these dialing patterns will affect all of the other parts of the system where they are used.* The first list below shows the programmable toll string wildcards. The second list shows the special characters that may be used when specifying dialing patterns; these characters are not programmable.

Toll String Wild Cards

CHARACTER	MEANING
S	<i>Any Toll String:</i> Any of the designated patterns can be dialed at that point in the telephone number. (In the default state, the dialing patterns for this toll string are "I," "R," and "T.")
R	<i>Operator Access:</i> This represents the digit string that is required to call the telephone company's operator. (In the default state, this dialing pattern is 0)
T	<i>Toll Access:</i> Represents the digit(s) required for using long distance service. (In the default state, this dialing string is 1.)
I	<i>International:</i> Represents the digits required for international dialing. (In the default state, the dialing patterns for this toll string are 011 and 01.)
Q	<i>Equal Access:</i> Represents the digits required to select secondary carriers for equal access dialing. (In the default state, the dialing patterns for this toll string are 101XXXX, 10NXXXX, and 100XX.)

Special Characters For Dialing Patterns

CHARACTER	MEANING
X	Any digit 0-9
A	Any keypad entry (0-9, #, *)
N	Any digit 2-9
Z	Any digit 0 or 1
B	# or *
H	A hookflash
E	End of dialing; the pattern will not match if any other digits are dialed beyond this point
+	Any additional dialing will be accepted, from that point in the string, with no further checking for a match. This also means that no further dialing is required beyond this point.
[x]	Indicates an optional pattern within another pattern. For example, the International Access character (I) could be defined as 01[1]. (The 01 is followed by an optional 1.)
(x-x)	Indicates a range of digit strings within a pattern. The strings on either side of the hyphen and all strings that fall within the numerical range are included in the match. The strings on either side of the hyphen must be the same length, and the only digits that may appear in the range are 0-9 (#, *, pauses, and flashes are not allowed).
<x>	Indicates repeatable patterns within patterns. In other words, no matter how many times the digit string within the brackets is dialed, the system will consider the dialed digits to match the pattern. Note that a repeatable pattern is an entire pattern; no other characters are allowed before or after a repeatable pattern. In other words, a repeatable pattern cannot be included within any other pattern.



12.5 To reach this window, select Toll Restriction from the System-Wide Features menu or enter the TOLL command.

12.6 CLASS OF SERVICE: To program a COS or assign the COS to stations, Axxent Talk applications, and trunk groups for day or night mode, highlight the desired COS in this list box. All programming will apply to that COS until the highlight bar is moved.

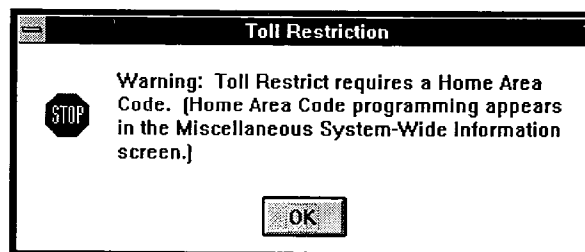
12.7 PROGRAM: To program a COS, highlight the desired COS in the list box and select the Program COS command button. A programming window appears. The Deny Area/Office Code programming window is shown on the next page. The programming window for all other classes of service is shown on page 6-113. (Remove All Restrictions and ARS Only are not programmable classes of service. When they are highlighted, the Program COS command button is dimmed and cannot be selected.)

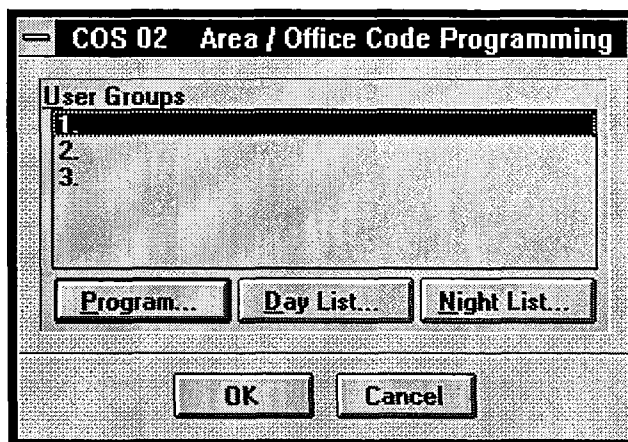
12.8 DAY/NIGHT LIST: To program the list of stations, Axxent Talk applications, and trunk groups that will have a specific COS in day or night mode, highlight

the desired COS in the list box and then select the Day List or Night List command button. A window appears as shown on page 6-114.

12.9 TOLL STRINGS/PROGRAM: To program a toll string, scroll through the Toll Strings list box until the desired string is highlighted. Then select the Program String command button to reach the programming window shown on page 6-116.

NOTE: If you have not programmed a home area code yet, a warning window appears as you exit this window. It asks if you wish to continue; select OK. To program a home area code, refer to the window shown on page 6-91.





A. AREA/OFFICE CODE PROGRAMMING

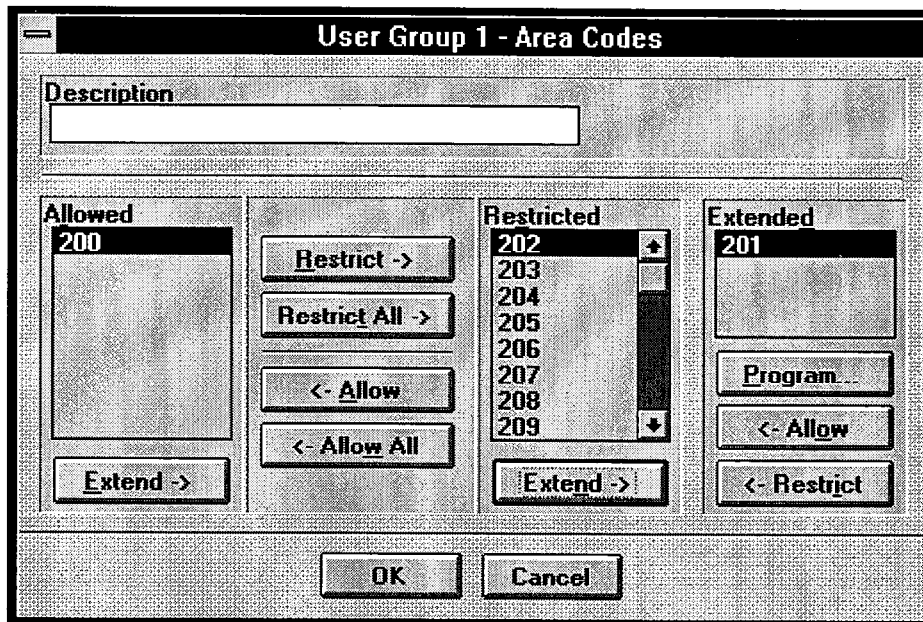
12.10 The window shown above is used for programming the various aspects of area and office code restriction used for the Deny Area/Office class of service.

12.11 Set up area and office code tables for up to three user groups to allow different area/office code restriction to be used. This is useful for reducing restrictions for some users while increasing restrictions for others. Each station, Axxent Talk application, and trunk group is assigned to a user group. Within each user group, area codes can be restricted, allowed, or extended. Restricting an area code prevents users from placing calls to that area code and all of its office codes. Allowing an area code allows all office codes within that area code. Designating an area code as extended allows the programmer to determine which office codes within that area code are allowed or restricted. There can be up to four extended area codes per user group. To prepare for pro-

gramming, list the area codes that are allowed, restricted, and extended. Also, list the office codes within the extended area code(s) that are allowed and restricted.

12.12 USER GROUPS/PROGRAM: The list box shows the user groups and their descriptions (if programmed). To program a user group, highlight the desired user group and then select the Program User Group command button. The window shown on the following page appears.

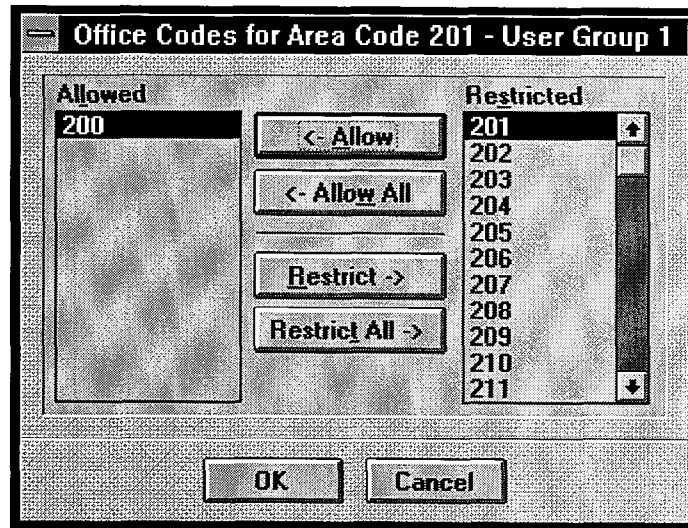
12.13 DAY/NIGHT LIST: To program the list of stations, Axxent Talk applications, and trunk groups that are included in a specific user group in day or night mode, highlight the desired user group in the list box and select the Day List or Night List command button. The window shown on page 6-115 appears. *Note that only extensions with COS 02 can be placed in a user group day or night list.*



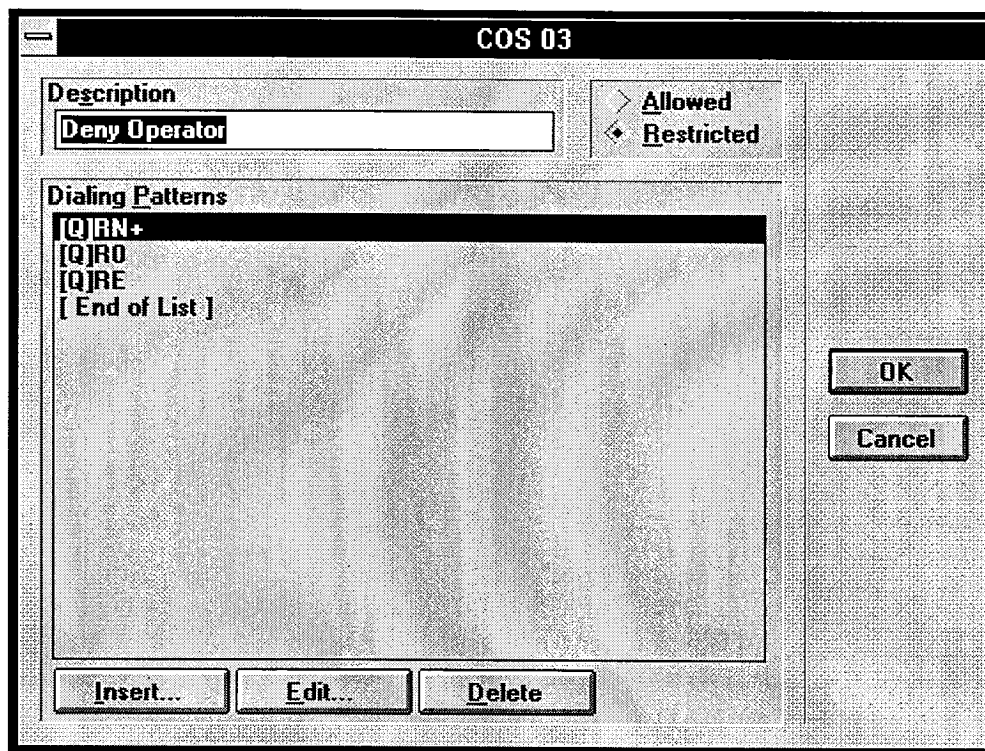
12.14 To program the area codes for a specific user group, highlight the desired line in the User Groups list box then select the Program command button (as shown on the preceding page). An Area Code programming window will appear as shown above.

- **DESCRIPTION:** Enter a name for the user group, up to 20 characters, in the Description text box.
- **ALLOW/RESTRICT:** To allow users in the user group access to area codes, the codes must be placed in the Allowed list. To place an area code in the Allowed list box, locate that area code on the Restricted list and highlight it. Then select the Allow command button. The area code will automatically move to the Allowed list. To remove an area code from the list, highlight the code in the Allowed list and select the Restrict command button to move it to the Restricted list.
- **ALLOW ALL/RESTRICT ALL:** To include all area codes in the Allowed list, select the Allow All command button. To move all codes to the Restricted list, select the Restrict All command button.

- **EXTEND/ALLOW/RESTRICT:** There can be up to four extended area codes per user group, each with an individual list of allowed and restricted office codes. To create an extended area code, highlight the desired code in the Allowed or Restricted list box. Then select the associated Extend command button. The area code moves to the Extended list box. Office codes can then be programmed as allowed or restricted for that area code as described below and on the next page. To remove an extended area code from the list, highlight the code in the Extended list box and select the Allow command button to move it to the Allowed list box or select Restrict to move it to the Restricted list box.
- **PROGRAM:** To program the lists of allowed and restricted office codes for an extended area code, highlight the desired area code in the Extended list box and select the Program command button. A window appears as shown on the next page.
- **OK/CANCEL:** When area code programming is complete for the user group, select the OK command button. To exit from the window without saving changes, select the Cancel command button.



- **ALLOW/RESTRICT:** To allow users in the user group access to office codes within the extended area code, the office codes must be placed in the Allowed list. To place an office code in the Allowed list box, locate that office code on the Restricted list and highlight it. Then select the Allow command button. The office code will automatically move to the Allowed list. To remove an office code from the list, highlight the office code in the Allowed list and select the Restrict command button to move it to the Restricted list.
- **ALLOW ALL/RESTRICT ALL:** To include all office codes in the Allowed list, select the Allow All command button. To move all office codes to the Restricted list, select the Restrict All command button.
- **OK/CANCEL:** When office code programming is complete for the extended area code, select the OK command button. To exit from the window without saving changes, select the Cancel command button.



B. CLASS OF SERVICE PROGRAMMING

12.15 When Classes of Service 03–16 are highlighted in the list box shown on page 6–109 and the Program command button is selected, a window appears as shown above. (The Deny Area/Office Code window is shown on page 6–110. COS 00 and 01 are not programmable.) Use the following procedures to program the individual classes of service.

12.16 DESCRIPTION: The class of service can be given a descriptive name of up to 20 characters. Select the Description text box and type the desired name.

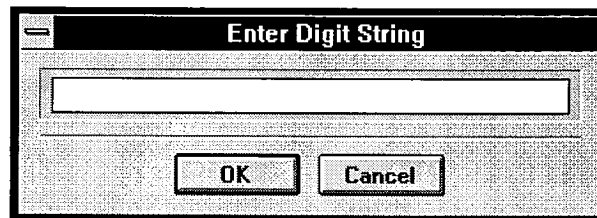
12.17 ALLOWED/RESTRICTED: Decide whether the dialing patterns for this class of service will be allowed or restricted. Then select either the Allowed or Restricted option button to place a dot in it.

12.18 DIALING PATTERNS: This list box shows the dialing patterns that will be allowed or denied by this class of service. You can add to this list, remove patterns from the list, or change entries as described below.

12.19 INSERT: Use this command button to add a dialing pattern to the list. Place the scroll bar below the location where you want the string to appear in the Dialing Patterns list box, then select the Insert command button. The editing window shown at right appears. Type up to 32 characters in the text box (including wildcards). Then select the OK command button to return to the COS programming window. (Or select the Cancel com-

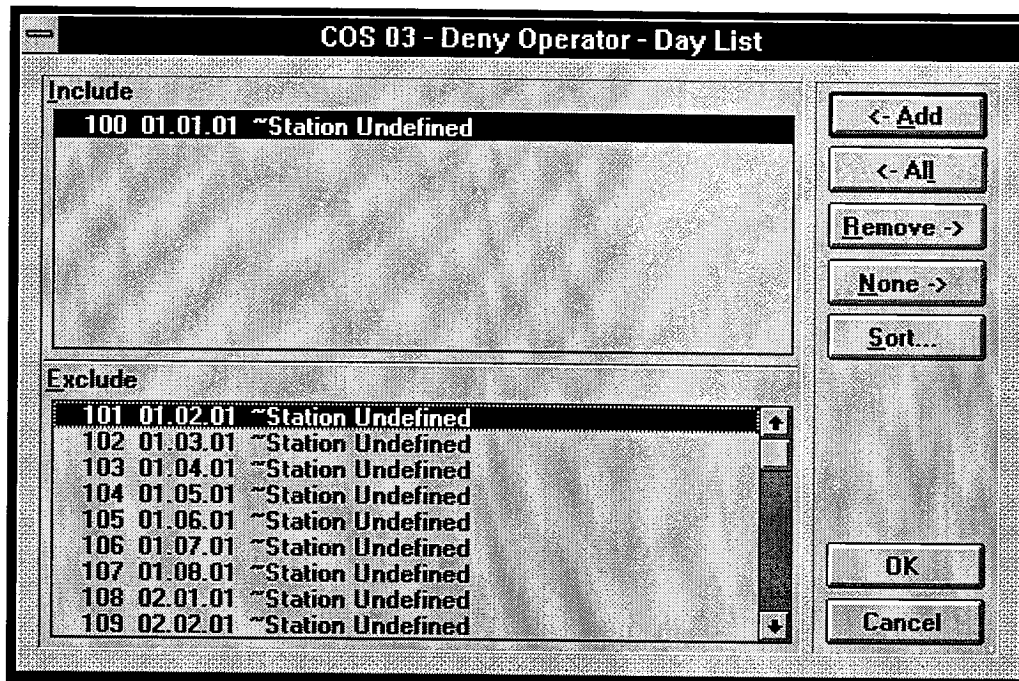
mand button to exit without adding the dialing pattern to the list.)

12.20 EDIT: Use this command button to change an existing dialing pattern. Highlight the pattern to be changed in the Dialing Patterns list box, then select the Edit command button. The window shown below appears. Type up to 32 characters in the text box (including wildcards). Then select the OK command button to return to the COS programming window. (Or select the Cancel command button to exit without changing the dialing pattern.)



12.21 DELETE: Use this command button to remove an existing dialing pattern. Highlight the pattern to be deleted in the Dialing Patterns list box. Then select the Delete command button.

12.22 OK/CANCEL: When programming is complete for this COS, select the OK command button. To exit from the window without saving changes, select the Cancel command button.



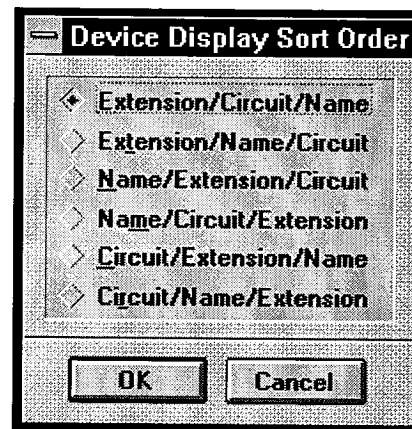
C. COS DAY AND NIGHT LIST PROGRAMMING

12.23 The window shown above appears when a Class of Service is highlighted in the list box and the Day List or Night List command button is selected (as shown on page 6-109).

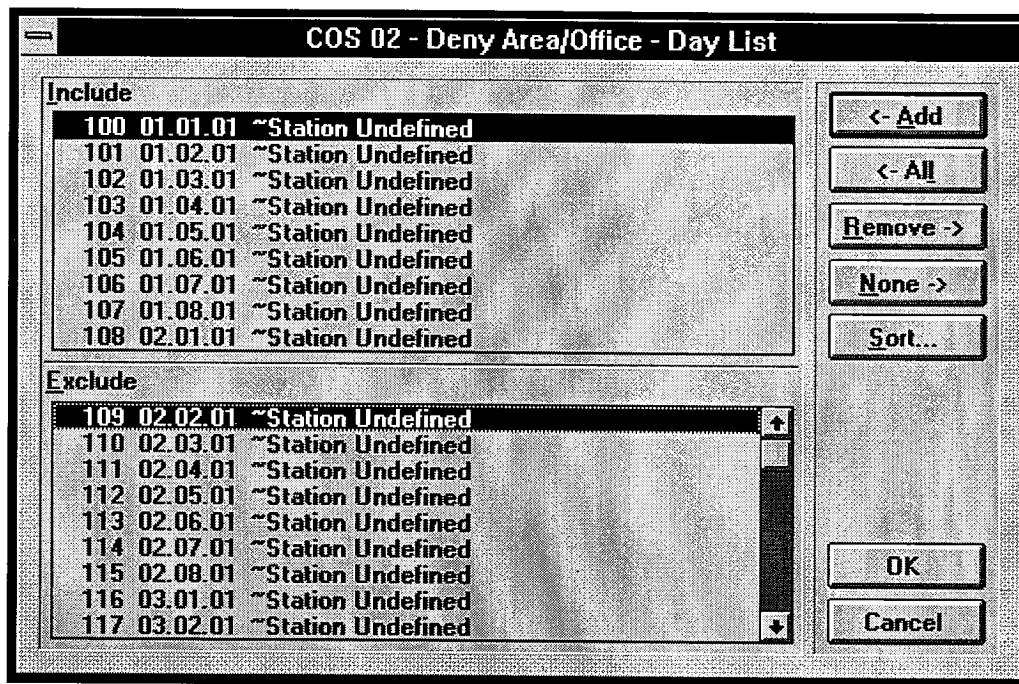
12.24 To program the day and night lists, use the following procedures:

- **ADD/ALL:** Use the Add command button to move the highlighted extension from the Exclude list to the Include List, or use the All command button to place all extensions in the list.
- **REMOVE/NONE:** To remove an extension from the Include list, highlight it and select the Remove command button. Or, to remove all extensions, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the de-

sired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



D. USER GROUP DAY AND NIGHT LIST PROGRAMMING

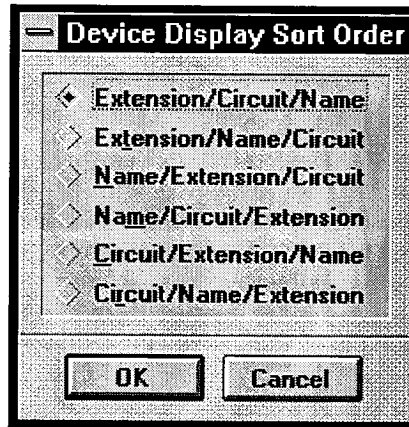
12.25 The window shown above appears when the Day List or Night List command button is selected in the User Group programming window (as shown on page 6-110).

12.26 The Pick List box and shows all extensions with COS 02, regardless of the assigned user group. A *station or trunk group must be programmed for COS 2 before it can be assigned to a user group.*

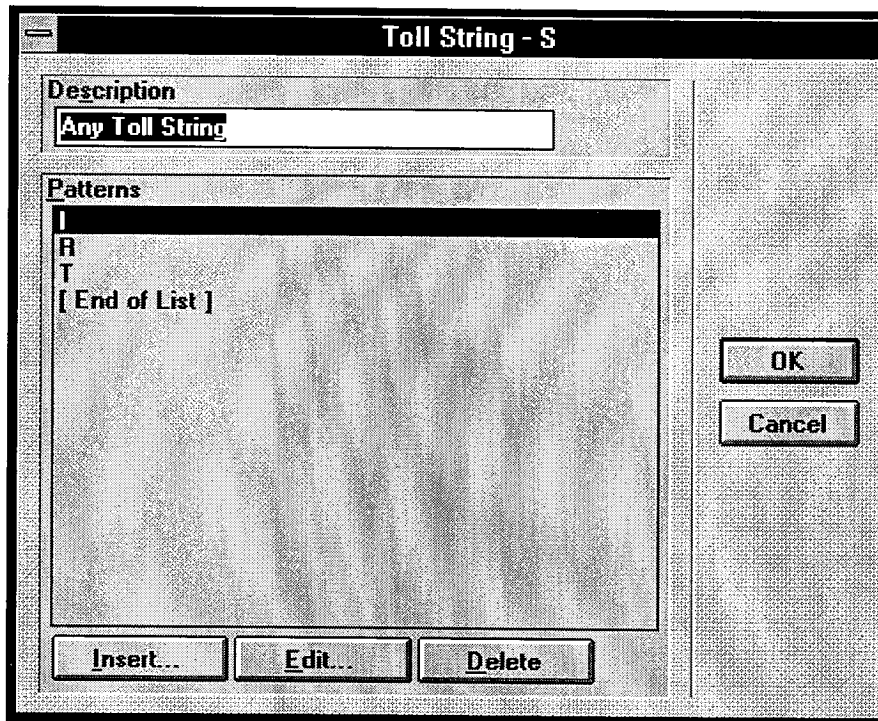
12.27 To program the day and night lists, use the following procedures:

- **ADD/ALL:** Use the Add command button to move the highlighted extension from the Pick List to the Include List, or use the All command button to place all extensions in the list.
- **REMOVE/NONE:** These command buttons are not available in this window. To remove an extension from the user group you must go to another user group and include it there. This ensures that each station with COS 2 has an assigned user group at all times.

- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



12.28 Toll strings can consist of the non-programmable wildcards, digits (0–9, *, and #), hookflashes, and/or other toll strings. This programming window allows you to designate dialing patterns which are abbreviated to single character “wildcards.” Refer to page 6–108 for lists of default toll strings and special characters.

12.29 DESCRIPTION: The toll string can be given a descriptive name of up to 20 characters. Select the Description text box and type the desired name.

12.30 PATTERNS: This list box shows the dialing patterns that are represented by this toll string. You can add to this list, remove patterns from the list, or change entries as described below.

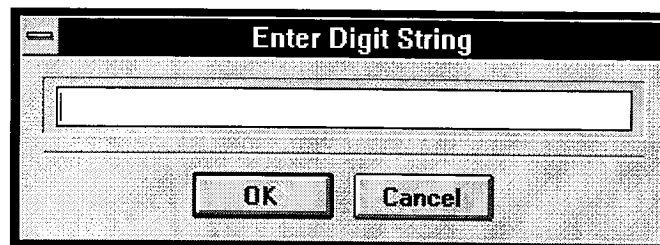
12.31 INSERT: Use this command button to add a pattern to the list. Place the scroll bar below the location where you want the string to appear in the Patterns list box, then select the Insert command button. The following window appears. Type up to 32 characters in the text box (including wildcards). Then select the OK com-

mand button to return to the Toll Restriction programming window. (Or select the Cancel command button to exit without adding the pattern to the list.)

12.32 EDIT: Use this command button to change an existing pattern. Highlight the string to be changed in the Patterns list box, then select the Edit command button. The window shown below appears. Type or edit up to 32 characters in the text box (including wildcards). Then select the OK command button to return to the Toll Restriction programming window. (Or select the Cancel command button to exit without changing the pattern.)

12.33 DELETE: Use this command button to remove an existing pattern. Highlight the string to be deleted in the Patterns list box, then select the Delete command button.

12.34 OK/CANCEL: When programming is complete for this toll string, select the OK command button. To exit from the window without saving changes, select the Cancel command button.



13. CALL ROUTING TABLES

NOTE: The Advanced CO Interfaces feature must be enabled in Premium Feature Selection to use Call Routing Tables. See page 6–198.

13.1 A trunk group can be programmed to ring in to a call routing table to utilize the digits received from DID, ANI, or DNIS number strings, and Caller ID Information. This added information will allow the station user to receive helpful information about the callers (such as location, name, or which advertisement they saw) by looking at the keyset display. For a full description of call routing tables and sample applications, refer to page 4–23 in FEATURES.

13.2 A call routing table consists of fields for dialing patterns, ring-in types/destinations, and names. The fields are used for analyzing the source or destination of the call and directing it to the proper destination.

13.3 The call routing table fields are as follows:

- **Pattern strings:** The pattern strings in the table are compared against the digits received from the trunk interface for the incoming call. If the digits match one of the pattern strings, the call is routed according to the other fields in the table. Pattern entries can include up to 32 digits. Valid characters are shown in the table below.
- **Name:** The name field determines how the call will be identified at display keyset stations when received. It can contain up to 12 characters. The name can be any word or number that identifies the call source. (You can use any combination of letters and numbers.)

- **Ring-in type/destination:** The call can ring in to a single extension number (station, hunt group, or Axcent Talk application), an extension list, or as a DISA call (which allows the caller to select a destination).

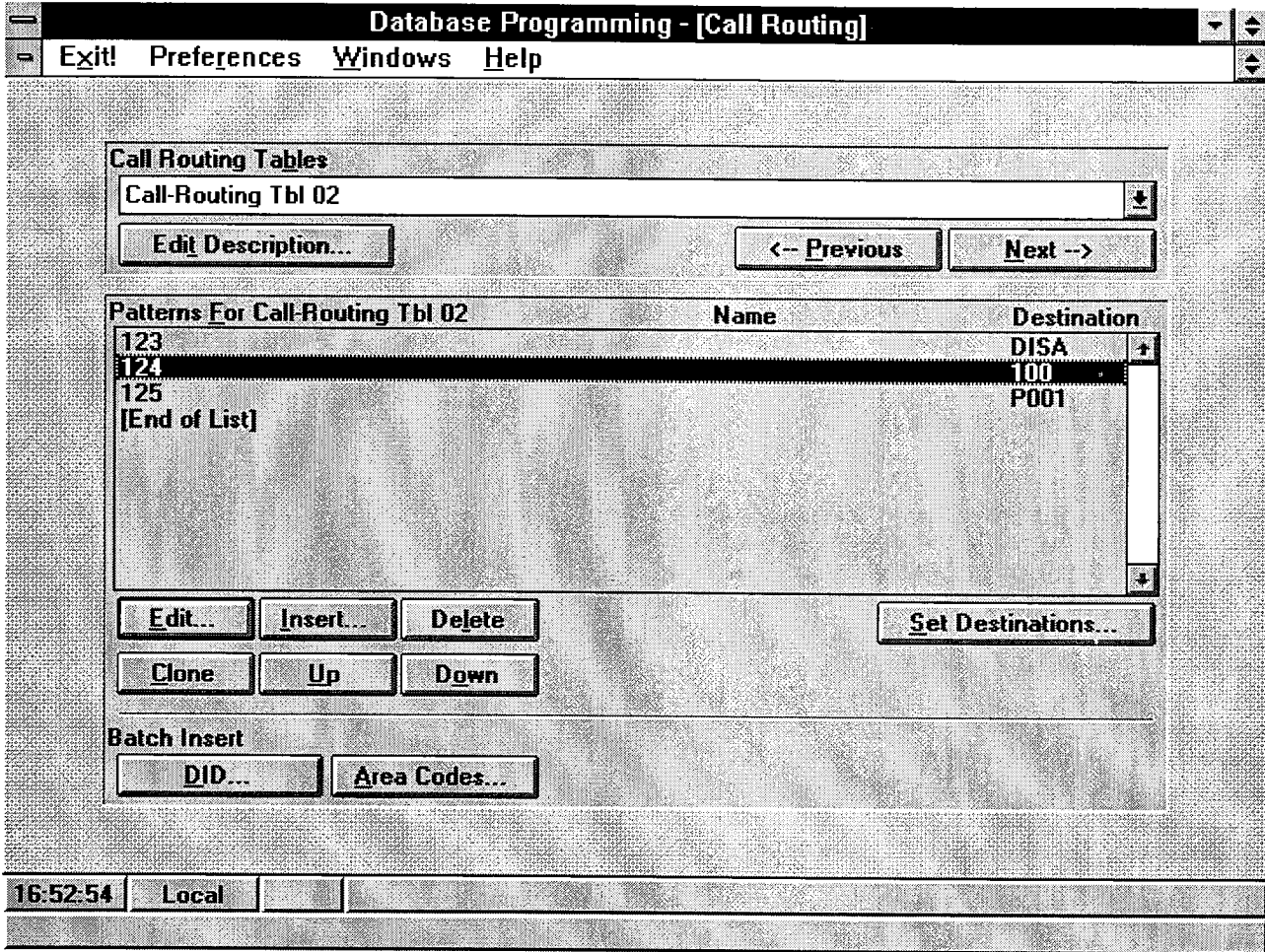
13.4 The patterns are listed in the call routing table in the order they will be checked against the incoming digits. When the system finds a match with a pattern, it will stop searching through the list and route the call according to the programming for that pattern. If the call reaches the end of the list without matching any patterns, the call is automatically sent to the primary attendant.

NOTE: If you have numbers (such as unused DID numbers) that you do not want callers to access, you can program them to ring in to an extension number that returns busy signal. To do this, locate a keyset that does not have an attached MDPM. Then program that keyset's circuit as a keyset with an MDPM to create a "phantom" MDPM extension (see System Configuration on page 6–213). In Individual Station programming (page), program the MDPM circuit with the "DID Return Busy Instead of Camp-on" flag to cause it to always send busy signal (the system will consider it permanently off hook because no equipment is installed on the circuit). When creating the Call Routing Table for the trunk group, program the selected numbers to ring in to the MDPM station that returns busy signal.

13.5 The system can have up to 10 call routing tables. The call routing tables share a total data space of 5K of memory. This allows at least 100 patterns per system.

13.6 The window shown on the next page can be reached by selecting Call Routing from the Trunk Programming menu or entering the CALL abbreviated command.

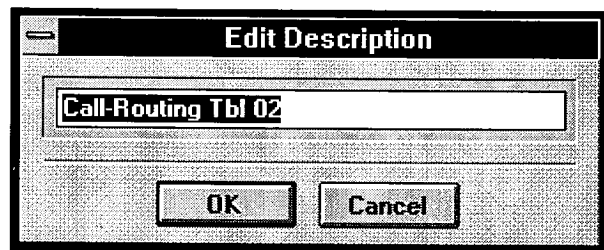
CHARACTER	MATCHES
Digits 0–9, *, #	Specific digits
X	Any digit 0–9
A	Any digit 0–9, #, or *
N	Any digit 2–9
Z	Digits 0 or 1
[x]	Optional digits; for example, 2[13]2 matches 22 or 2132.
(x – x)	Range of digits; for example, (320–360)XXXX matches any 7–digit number with an office code between 320 and 360, inclusive.
E	End of dialing; the pattern will not match if any digits are dialed beyond this point. An "E" by itself in a pattern will match when no digits are received (for example, anonymous Caller ID calls).
+	Matches 0 or more digits of any value. A "+" by itself will match any incoming information, including anonymous calls that send no digits.



13.7 CALL ROUTING TABLES: This drop-down list box contains a list of call routing table descriptions. When a call routing table is displayed in the list box, all other programming in this window applies to that table. The Patterns list box below it shows the patterns that have been programmed for that table. To select a table, open the drop-down list box and scroll the highlight bar to the desired entry. That table description will be displayed when the box is closed. You can also use the following command buttons:

- **PREVIOUS/NEXT:** To move up or down in the Call Routing Table list, you can select the Previous command button (to move up) or the Next command button (to move down). The Call Routing Table drop-down list box does not have to be opened to use these command buttons.
- **EDIT DESCRIPTION:** To change the description of the displayed call routing table, select the Edit Description command button. The following window appears. Enter the new description in the text box and select the OK command button to save it.

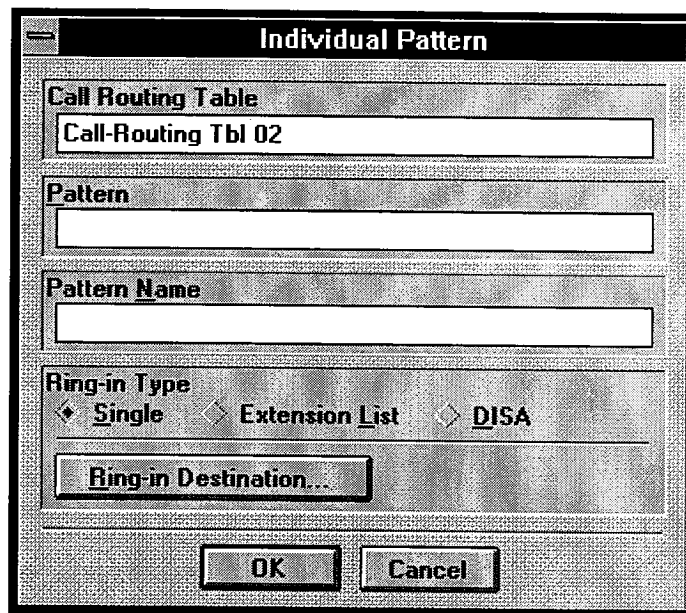
Or, select the Cancel command button to leave it unchanged.



13.8 PATTERNS, NAMES, AND DESTINATIONS: This list box contains the ordered list of patterns for the table displayed in the Call Routing Table drop-down list box above it. The following command buttons are used for modifying the contents of this list box.

- **EDIT:** To edit an existing pattern, name, or destination place the highlight bar in the Patterns list box on the pattern to be changed. Then select the Edit command button. The window shown on page 6-120 appears.

- **INSERT:** To add a pattern to the list box, place the highlight bar on the line *below* the position where you want the new pattern to appear. Then select the Insert command button. The window shown on page 6-120 appears.
 - **DELETE:** To remove a pattern from the list, place the highlight bar on the pattern to be removed and then select the Delete command button. The pattern is automatically removed.
 - **CLONE:** To duplicate a pattern in the list, place the highlight bar on the pattern to be copied and select the Clone command button. The copy is inserted into the list directly *above* the existing pattern. Creating duplicate patterns can help speed up the programming process when several similar patterns are used. Each copy can then be edited to create the different patterns.
 - **UP:** To move a pattern up one position in the list, place the highlight bar on that pattern in the list box and select the Up command button.
 - **DOWN:** To move a pattern down one position in the list, place the highlight bar on that pattern in the list box and select the Down command button.
 - **SET DESTINATIONS:** The Set Destinations command button can be used for programming the destinations for all of the patterns in the list box, using a batch-programming window. When you select this command button, the window shown on page 6-121 appears.
- 13.9 BATCH INSERT:** To place several patterns in the list box at once, you can use the following batch-programming command buttons.
- **DID:** Select this command button to insert several DID numbers into the pattern list. When you select this command button, the window shown on page 6-122 appears.
 - **AREA CODES:** Select this command button to insert several area codes into the pattern list. When you select this command button, the window shown on page 6-123 appears.



A. INSERTING AND EDITING PATTERNS

13.10 The window shown above appears when the Edit or Insert command buttons in the Call Routing Tables programming window (shown on page 6-117) are selected. The pattern is programmed as follows:

13.11 CALL ROUTING TABLE: This text box shows the name of the call routing table that is being programmed. You cannot change the name using this window; it is displayed for reference only.

13.12 PATTERN: Enter the desired pattern in the Pattern text box. The pattern can have up to 32 characters. Valid entries are shown on page 6-117.

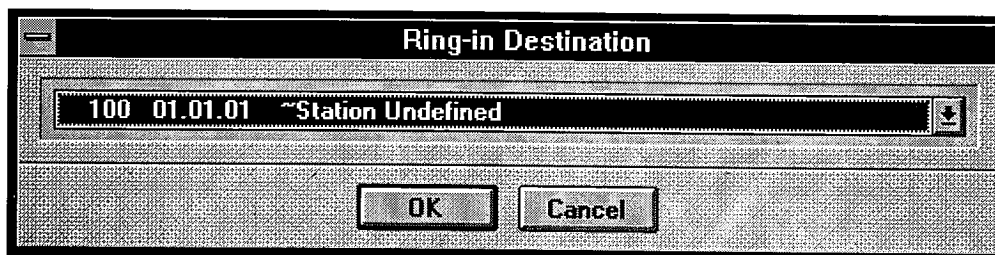
13.13 PATTERN NAME: Enter the desired name in the Pattern Name text box. The name field determines how the call will be identified at display keyset stations when received. The name can be a word or number that identifies the call source. (You can use any combination of letters and numbers.)

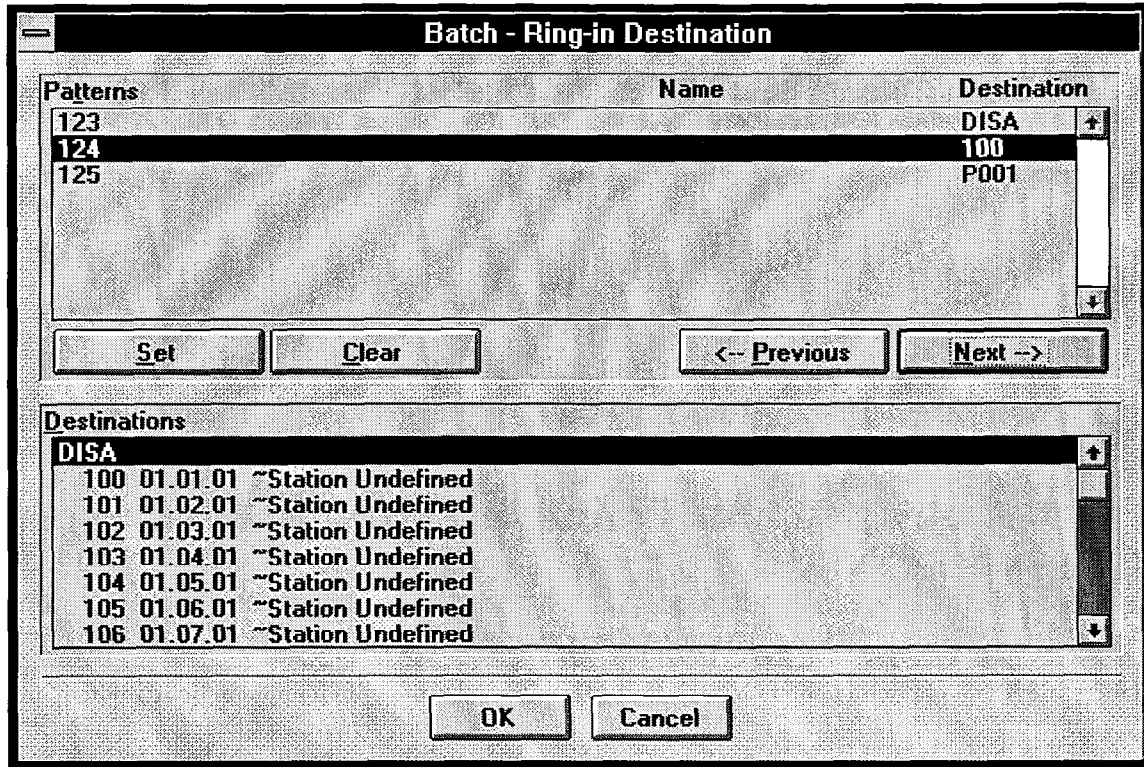
13.14 RING-IN TYPE: Select the desired ring-in type by selecting the desired option button. The call can

ring in to a single extension number (station, hunt group, or Axxent Talk application), an extension list, or as a DISA call (which allows the caller to select a destination). If Single or Extension List is selected, you must also program the destination as described below. DISA ring-in requires no additional programming. Any DISA security codes programmed for the trunk group will apply to callers.

13.15 RING-IN DESTINATION: To select the specific destination for the pattern, select the Ring-In Destination command button. A window appears as shown below. Scroll the highlight bar in the drop-down list box to the desired ring-in destination and select the OK command button to save it. Or, to leave it unchanged, select the Cancel command button. If the Ring-In Destination is set to "None" the call will be sent to the primary attendant.

13.16 OK/CANCEL: When the pattern is programmed as desired, select the OK command button to exit from this window. Or, to exit without saving any changes, select the Cancel command button.





B. BATCH PROGRAMMING DESTINATIONS

13.17 The window shown above appears when the Set Destinations command button is selected (shown on page 6-118). It is used for programming the destinations for all of the patterns in the selected Pattern List. It is especially useful when you have made batch creations of DID or area code patterns. To program each pattern in the list, use the following commands.

13.18 PATTERNS: This list box contains all of the patterns that have been programmed for the selected call routing table. Select the pattern you wish to program by placing the highlight bar on it in the Patterns list box. Use can use the following command buttons to move within the list.

- **PREVIOUS:** This moves the highlight bar up one position in the Patterns list box.
- **NEXT:** This moves the highlight bar down one position in the Patterns list box.

13.19 DESTINATIONS: This list box shows all of the potential destinations for calls. Select the desired ring-in destination for the selected pattern by highlighting it in the Destinations list box.

13.20 SET: To assign the highlighted destination to the highlighted pattern select the Set command button. The highlight bar then automatically moves down to the next entry.

13.21 CLEAR: To remove the existing ring-in destination assignment from the highlighted pattern, select the Clear command button. (If the ring-in destination is left blank, the call associated with this pattern will be sent to the primary attendant.) The highlight bar then automatically moves down to the next entry.

13.22 OK/CANCEL: When all of the patterns have been assigned ring-in destinations, select the OK command button to save the changes and exit. Or, to exit without saving the changes, select the Cancel command button.

The screenshot shows a dialog box titled "DID - Batch Pattern Insert". It contains the following fields and controls:

- Call Routing Table:** A text box containing "Call-Routing Tbl 02".
- Name Prefix:** An empty text box.
- First DID Pattern:** An empty text box.
- Pattern Count:** A text box containing "0" with up and down arrow buttons to its right.
- Buttons:** "OK" and "Cancel" buttons at the bottom.

C. BATCH PROGRAMMING DID PATTERNS

13.23 The window shown above appears when you select the DID command button shown in the window on page 6-118. It is used for quickly programming a series of DID number patterns. After creating the patterns with this batch process, assign the ring-in destination as described on page 6-121.

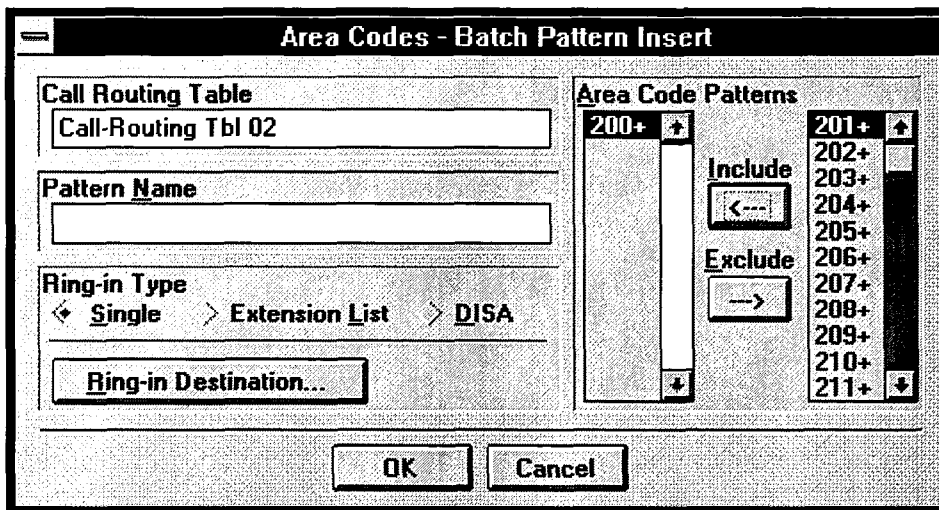
13.24 CALL ROUTING TABLE: This text box shows the name of the call routing table that is being programmed. You cannot change the name using this window; it is displayed for reference only.

13.25 NAME PREFIX: Each DID number will be identified in the list by the digits that are sent after the handshake. The base number of the DID numbers is the name prefix. The prefix and the collected digits are combined to form a complete number for display (for example, a base number 9619 would combine with digits 000 to display 9619000). Enter the base number of the DID number block in the Name Prefix text box.

13.26 FIRST DID PATTERN: This is the first number in the series of DID numbers being programmed (without the base number). For example, if you were programming for DID numbers 9619000 through 9619019 (9619 is the base number), you would enter 000. Enter the first DID number in the First DID Pattern text box.

13.27 PATTERN COUNT: This is the number of DID numbers that will be included in the pattern list. In the example above (9619000 through 9619019) you would enter 20 because the range includes 20 DID numbers. Enter the appropriate number for your DID list in the Pattern Count text box.

13.28 OK/CANCEL: When the DID pattern information has been entered correctly, select the OK command button to create the patterns. They will appear in the Patterns list box when the Call Routing Patterns window returns. To exit without saving the DID patterns, select the Cancel command button.



D. BATCH PROGRAMMING AREA CODE PATTERNS

13.29 The window shown above appears when you select the Area Codes command button shown in the window on page 6-118. It is used for quickly programming a series of area code patterns for use with ANI trunks.

13.30 CALL ROUTING TABLE: This text box shows the name of the call routing table that is being programmed. You cannot change the name using this window; it is displayed for reference only.

13.31 PATTERN NAME: Enter the desired name in the Pattern Name text box. This name will be used for all area code patterns created using this batch command. The name field determines how calls will be identified at display keyset stations. The name can be a word or number that identifies the call source. You can use any combination of letters and numbers.

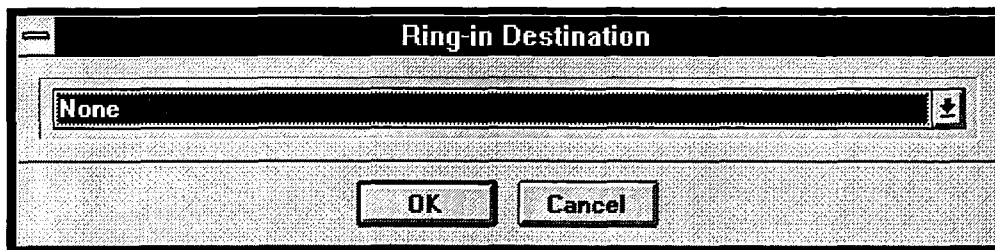
13.32 RING-IN TYPE: Select the desired ring-in type by selecting the desired option button. This ring-in type will be used for all area code patterns created using this batch command. The call can ring in to a single extension number (station, hunt group, or Axxent Talk application), an extension list, or as a DISA call (which allows the caller to select a destination). If Single or Extension List is selected, you must also program the destination as described below. DISA ring-in requires no additional programming. Any DISA codes programmed for the trunk group will apply to callers.

13.33 RING-IN DESTINATION: To select the specific destination for the area codes, select the Ring-In Destination command button. A window appears as shown below. Scroll the highlight bar in the drop-down list box to the desired ring-in destination and select the OK command button to save it. Or, to leave it unchanged, select the Cancel command button. If the Ring-In Destination is set to "None" the call will be sent to the primary attendant.

13.34 AREA CODE PATTERNS: To select the area codes that will be included in the batch of patterns, use the following command buttons to place area codes in the Include and Exclude lists:

- **INCLUDE:** Scroll through the Exclude list (on the right) to select the area code you want to place in the Include list (on the left). When the area code is highlighted, select the Include command button.
- **EXCLUDE:** To remove an area code from the Include list, highlight it and select the Exclude command button. It will automatically move to the Exclude list.

13.35 OK/CANCEL: When the area code pattern information has been entered correctly, select the OK command button to create the patterns. They will appear in the Patterns list box when the Call Routing Patterns window returns. To exit without saving the patterns, select the Cancel command button.



14. INDIVIDUAL TRUNK PROGRAMMING

14.1 When you select Individual Trunk from the Trunk Programming menu or enter the INDT command, the window shown on the next page appears.

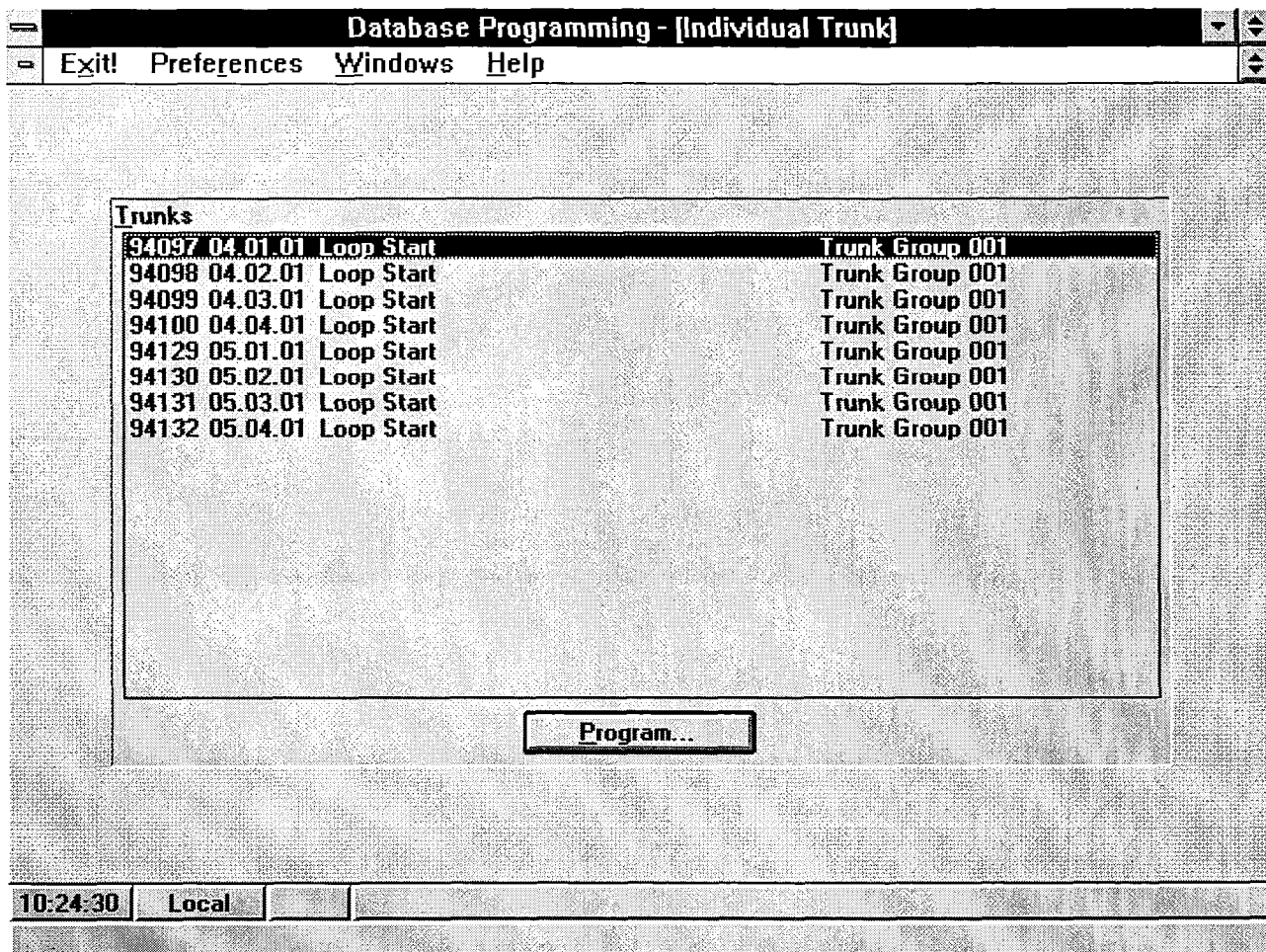
14.2 The following information can be programmed for each trunk. A program planning sheet is located in Figure 6-21, on page 6-249.

- **Trunk Group Assignment:** Trunks can be assigned to trunk groups on an individual basis.
- **Answer Supervision:** (*Loop Start only*) Available answer supervision types depend on whether a loop-start trunk is being programmed, as follows:
 - *Loop Start:* Answer supervision determines whether the system should consider a call valid when it receives polarity reversal from the central office (select “Polarity Reversal”) or wait for the Valid Call timer to expire (select “Valid Call Timer”). Any outside call put on hold becomes valid immediately, regardless of Answer Supervision or Valid Call timer status.
- **Hybrid Balance:** (*Loop Start only*) Hybrid balance can be set to Normal or Short to allow the installer to adjust the hybrid impedance of the trunk based on local central office conditions.
 - *Short:* The short balance is used when trunks are supplied by other equipment located within the same building, using private, copper wire termination (e.g., an OPX supplied by another PBX that does not use the public network) or when the site is located close to the central office.
 - *Normal:* The normal balance can be used by most trunks.
- **Start Type:** (*DID only*) DID trunks perform “handshaking” between the system and the central office to transfer call information. The three start types are:
 - *Immediate:* If programmed for “Immediate” start type, the calling system will immediately

begin sending the dialed digits to the receiving system.

- *Wink:* If programmed for “Wink” start type, the systems perform a “handshake” to allow the receiving system to signal that it is ready to receive the digits dialed by the other system. (This is the default start type.)
- *Delay Dial:* If programmed for “Delay Dial” start type, the calling system will wait until its Dial Delay timer expires before sending any digits to the receiving system.
- **DTMF Signaling:** Trunks can be set for DTMF or dial pulse signals.
- **Service Type:** (This cannot be programmed unless the Advanced Trunk Interfaces premium feature is enabled. See page 6-198.) Caller information features require OPC programming, described on page 6-217. Caller ID uses Caller ID receivers. Because DTMF receivers are required to receive DID and ANI information, you should enable additional receivers.) Available service types are determined by the type of trunk being programmed:
 - *Loop Start:* Loop start trunks can use Caller ID.
 - *DID:* DID trunks can use ANI and DID/DNIS.
- **Language:** This field is not used in this software version. It is used in international versions to select the language used on the keyset displays.

14.3 When selected, the Caller ID service type option indicates that the associated trunk will provide caller identification signals. Because the central office sends the information after the first cycle of ring voltage is applied, selecting this box will also prevent the system from signalling an incoming call to the station users until the system has had an opportunity to collect the caller information. (Note that the system will provide ring signaling on the second ring signal if no caller information has been collected.)



14.4 TRUNKS/PROGRAM: To program an individual trunk, highlight it in the Trunks list box and then select the Program command button. Refer to the following windows, depending on the type of trunk be-

ing programmed:

- For loop start trunks, see page 6-126.
- For DID trunks, see page 6-127.

Loop Start Trunk Extension: 94097

CO Trunk Group
9201 T001 Trunk Group 001

DTMF Signaling

Answer Supervision Type
Valid Call Timer

Service Type
None
Caller ID

Hybrid Balance
Normal

Language

OK Cancel

A. LOOP START TRUNKS

14.5 The loop start trunk programming window is shown above.

14.6 CO TRUNK GROUP: Select the trunk group to which this trunk will be assigned by selecting the Trunk Group drop-down list box and scrolling to the desired trunk group.

14.7 ANSWER SUPERVISION TYPE: Select the desired option (Polarity Reversal or Valid Call Timer) in the Answer Supervision Type drop-down list box.

14.8 HYBRID BALANCE: Balance can be set to Normal or Short by selecting the desired option in the Hybrid Balance drop-down list box.

14.9 DTMF SIGNALING: If the trunk uses DTMF signaling, select the DTMF Signaling check box to place a check mark in it. If the trunk uses dial pulse signaling, and the check box contains a check mark, remove it by selecting the check box.

14.10 SERVICE TYPE: If the trunk uses Caller ID, select the Caller ID option button to place a mark in it. To disable Caller ID, select None.

14.11 LANGUAGE: This field is not used in this software version. It is used in international versions to select the language used on the keyset displays.

14.12 OK/CANCEL: When programming is correct for the trunk, select the OK command button. Or, to exit without changing the programming, select the Cancel command button.

DID Trunk Extension: 94047

CO Trunk Group
PP011 T009 Unused CO Trunks

Start Type
◀ Wink
▶ Delay Dial
▶ Immediate

Service Type
◀ DID/DNIS
▶ ANI

Service Base Number
[]

Number of Digits to Receive
2

DTMF Signaling

Language
[]

OK Cancel

B. DID TRUNKS

14.13 CO TRUNK GROUP: Select the trunk group to which this trunk will be assigned by selecting the Trunk Group drop-down list box and scrolling to the desired trunk group.

14.14 START TYPE: Indicate the type of “handshaking” the DID trunk utilizes (Wink, Delay Dial, or Immediate). Place a dot in the desired option button by selecting it. (Defaults to Wink.)

14.15 SERVICE TYPE: To indicate whether the trunk uses DID/DNIS or ANI, select the appropriate option button to place a mark in it. If the service type is DID/DNIS, program the following:

- **SERVICE BASE NUMBER:** This is the DID base number for the trunk. Enter the digits in the text box (up to 32 digits).

- **NUMBER OF DIGITS TO RECEIVE:** This is the number of digits the AXXESS will use for directing the call. Select this scrolling edit box and scroll to or enter the correct amount (1–32).

14.16 DTMF SIGNALING: If the trunk uses DTMF signaling, select the DTMF Signaling check box to place a check mark in it. If the trunk uses dial pulse signaling, and the check box contains a check mark, remove it by selecting the check box.

14.17 LANGUAGE: This field is not used in this software version. It is used in international versions to select the language used on the keyset displays.

14.18 OK/CANCEL: When programming is correct for the trunk, select the OK command button. Or, to exit without changing the programming, select the Cancel command button.

15. TRUNK GROUPS

15.1 The following information can be programmed for each trunk group. A program planning sheet is located in Figure 6-22, on page 6-250.

- **Description and Username:** Trunk group description (up to 20 characters) and “username” display identification (up to 10 characters). Do not use backslash (\), vertical slash (/), or tilde (~) characters in usernames. Do not use Control characters in descriptions or usernames.
- **Trunk List:** Each trunk group has a programmed list of individual trunks.
- **Day/Night Ring-In:** Ring-in type is determined separately for day and night modes. Ring in can be the same for both modes, or any combination of the following can be used:
 - *Single:* The trunk group can ring at a single extension number or a hunt group.
 - *Multiple:* The trunk group can ring in to a list of stations, extension lists, and/or Axxent Talk applications (but not hunt groups). (**NOTE:** When using an extension list for ring-in or hunt groups, do not exceed 30 stations per list. The system can send ring signal to up to 30 stations.)
 - *DISA:* If the trunk group is to be used for DISA, a security code can be assigned.
 - *Call Routing Table:* If the trunk is used for Caller ID, DID/DNIS, or ANI, the calls can be routed according to the information sent by the central office. See page 4-23 in FEATURES for complete information on Call Routing Tables.

NOTE: Loop start trunks that are connected to paging equipment should not have any ring-in designations. They should be reserved for internal use only.

- **Day/Night Answer Access:** There are separate lists for stations with allowed-answer access in day and night modes.
- **One-Way Incoming Only:** Certain types of trunks, such as incoming WATS, need to be marked as “incoming-only” so that the system will recognize the lines during power-up and/or testing. (This is because, on these types of lines, battery is not returned when the line is seized and the system cannot power up the trunk unless this option is enabled.)
- **Hookflash:** The Hookflash feature can be enabled or disabled for each trunk group. If disabled, users cannot use the Hookflash feature code (330) while

using the trunks in the trunk group. Hookflashes dialed through ARS are ignored by the trunk groups with hookflash disabled.

- **Linear or Distributed Searching:** The trunk group can be programmed for linear or distributed trunk searching:
 - *Linear trunk group:* Requests for an outgoing trunk are always processed beginning with the highest numbered trunk on the list and moving down the list until an available line is found.
 - *Distributed trunk group:* The first request will be processed beginning with the highest numbered trunk on the list. The next request will begin with the second trunk, and each subsequent request will begin one trunk lower on the list. When the end of the list is reached, requests begin again with the highest numbered trunk on the list.
- **Music-On-Hold:** The music-on-hold option that will be heard by outside callers on the trunks in the trunk group can be set for music, tick tones, or silence.
- **Audio On Transfer:** To select what callers (except those using DISA) will hear while their call is being transferred, the Audio on Transfer option can be set for the music-on-hold selection (as described above) or ringing. (The feedback that DISA callers hear is determined by the DISA Transfer tone system flag that is programmed on page 6-93.)
- **Day/Night Outgoing Access:** There are separate lists for stations with outgoing access in day and night modes. (On loop start trunks that are connected to paging equipment, the outgoing access designation does not affect stations’ ability to seize the trunk for paging. Trunks used for paging should not allow any station to have outgoing access for placing outside calls.)
- **Toll Restriction:** Each trunk group can have the following toll restriction parameters programmed:
 - *Class of service:* Each trunk group has Classes of Service (COS) which restrict or allow certain dialing patterns from being dialed on an outside call.
 - *Subject to toll restriction:* If the trunk group is not subject to toll restriction, the station and trunk classes of service (except ARS-Only restriction) are not checked when a trunk in the group is used.
 - *Exempt from ARS only:* The trunk group can be exempt from, or subject to, the ARS-only restriction. If exempt from ARS-only, stations with that

restriction can directly select the trunks. If subject to ARS-only, ARS-restricted stations can use the trunk group only if it is part of an ARS route group.

— *Call cost:* For trunk groups that are not subject to toll restriction, the call cost rate to be used for calls placed on the trunks can be: free, local, toll local, toll long distance, or operator-assisted/international rate.

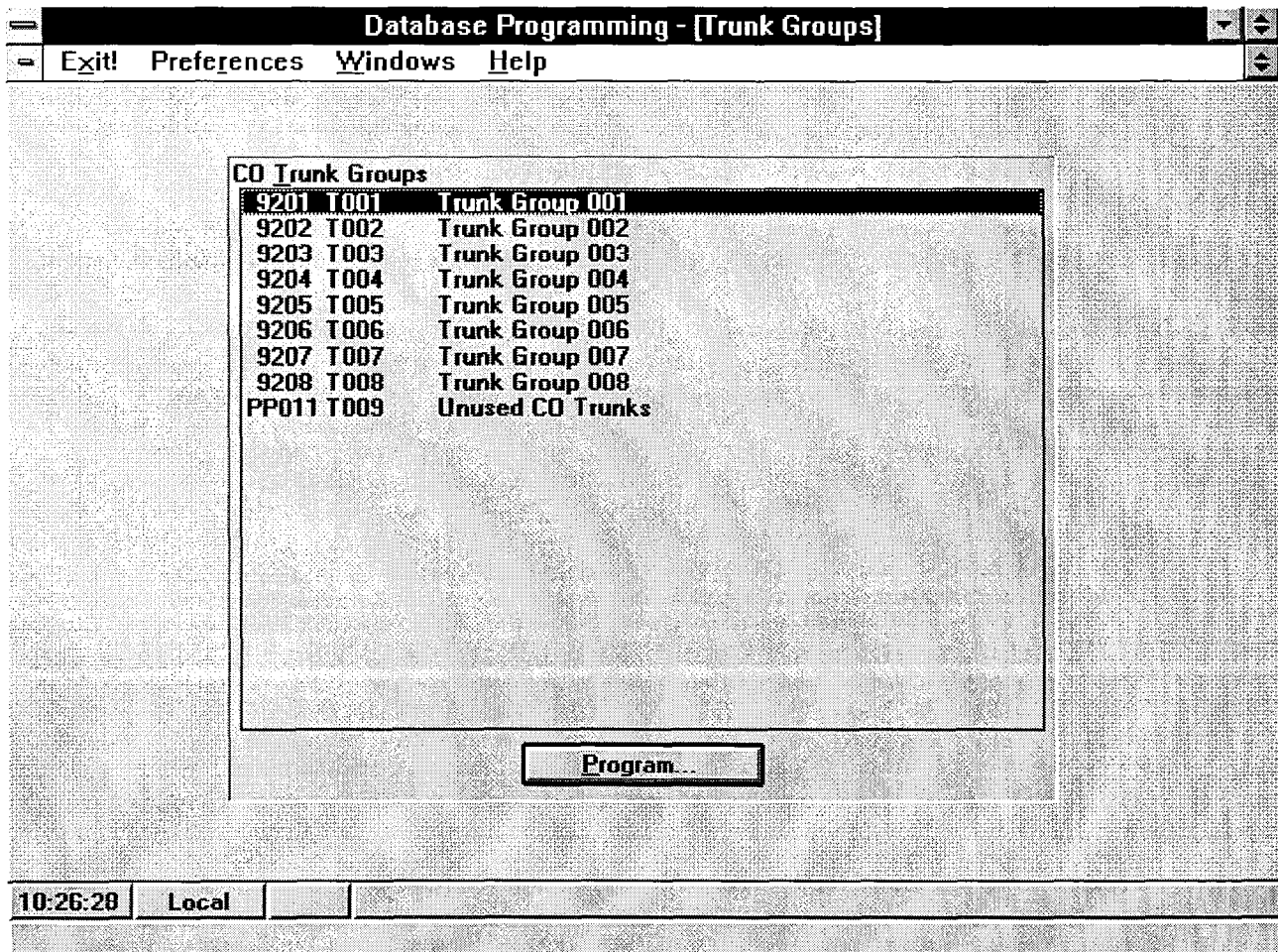
— *Absorbed digits:* Trunk groups can be programmed to absorb digits for PBX installations

and installations in areas where the first digit(s) of the office code are absorbed.

NOTE: On loop start trunks that are connected to paging equipment, toll restriction does not affect stations' ability to seize the trunk for paging.

15.2 When Trunk Groups is selected from the Trunk Group Programming menu, the programming window appears as shown below.

15.3 TRUNK GROUPS/PROGRAM: To program a trunk group, highlight it in the Trunk Groups list box and then select the Program command button. Another window appears as shown on the next page.



15.4 DESCRIPTION: If desired, program a description for the trunk group by selecting the Description text box and entering a description of up to 20 characters. Do not use Control characters.

15.5 USERNAME: If desired, select the Trunk Name text box and enter a name of up to 10 characters. Giving a trunk group a name allows it to appear in the system directory. If no entry is made, TG (*number*) appears on keyset displays. Do not use backslash (\), vertical slash (/), tilde (~) or Control characters in usernames.

15.6 SEARCH ALGORITHM: Select a Linear or Distributed search algorithm by selecting the drop-down list box and scrolling the highlight bar to the desired option.

15.7 MUSIC-ON-HOLD: To select the music-on-hold option that will be heard by outside callers when these trunks are used, select the Music-On-Hold drop-down list box and scroll the highlight bar to the desired option (music, silence, or tick tone).

15.8 AUDIO ON TRANSFER: To select what callers (except DISA callers) will hear while their call is being transferred, select the Audio on Transfer drop-down list box and scroll the highlight bar to the desired option (Music-on-hold, as programmed above, or Ringback).

15.9 ONE-WAY INCOMING ONLY: If the trunk group contains incoming-only lines, place a check mark

in the One-Way Incoming Only check box by selecting it. To remove the check mark, select it again. When you place the check mark in the check box, the system checks whether any stations have outgoing access for that trunk group. *If there are stations with outgoing access*, a window appears that asks if you wish to delete the outgoing-access assignments for those stations. Select the Yes command button to remove the outgoing-access assignments, or select the No command button to allow outgoing access.

15.10 ENABLE HOOKFLASH: The Hookflash feature, in which the user enters a feature code (330) to generate a timed hookflash, can be enabled or disabled on a trunk group basis. To allow the Hookflash feature to be used, place a check mark in the Enable Hookflash check box by selecting it. If the box already contains a check mark, and you wish to disable the feature, select it again.

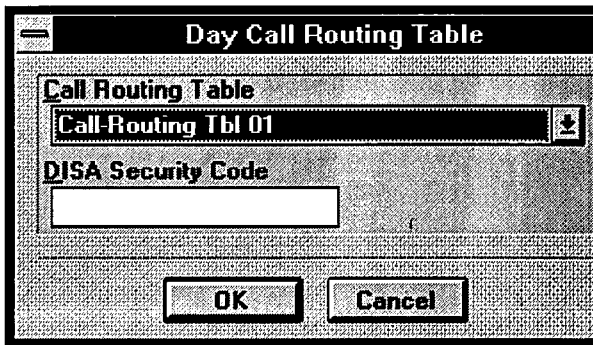
15.11 DAY/NIGHT OUTGOING ACCESS: To program the stations that will have outgoing access for the trunk group, select the Day Outgoing Access or Night Outgoing Access command button. The window on page 6-134 appears. *If all trunks in the group are incoming-only (such as DID trunks), but the One-Way incoming Only flag is not enabled*, a window appears that reminds you that the stations will not have outgoing access for the trunks.

15.12 TOLL RESTRICTION: To program the toll restriction parameters for this trunk group, select the Toll Restriction command button. The window shown on page 6-135 appears.

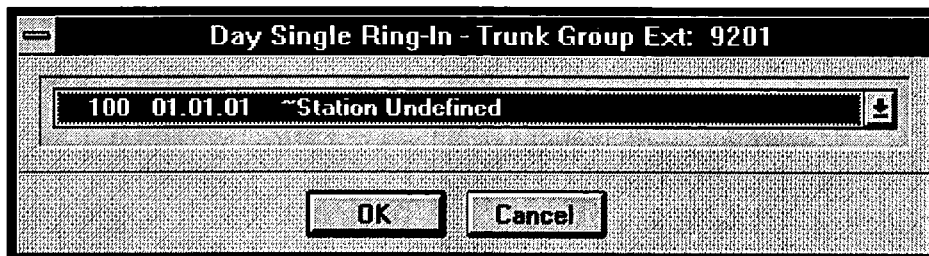
15.13 TRUNK LIST: To determine the trunks that will be included in this trunk group, select the Trunk List command button. The window shown on page 6-138 appears.

15.14 DAY/NIGHT RING-IN/PROGRAM: To program the ring-in type for the trunk group, select the Day Ring-In or Night Ring-In drop-down list box and scroll to the desired option (Call Routing Table, Single, Multiple, or DISA ring-in). Then select the Program command button to program the resources that will receive ring in, or the DISA security code. One of the following windows appears.

- **CALL ROUTING TABLE:** If the trunk group is set to ring in to a Call Routing Table, the following window appears. Select the drop-down list box and scroll the highlight bar to the desired call routing table. Also enter a DISA security code if any destinations in the call routing table are set for DISA (see DISA RING-IN). When finished, select the OK command button. Or select the Cancel command button to exit without saving any changes.

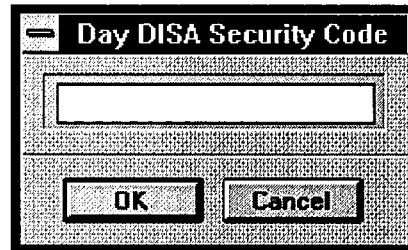


- **SINGLE RING-IN:** If the trunk group has Single Ring-In, a window appears as shown below when the Program command button is selected. Select the drop-down list box and scroll the highlight bar to the desired extension number or hunt group. (NOTE:



When using an extension list for ring-in or hunt groups, do not exceed 30 stations per list. The system can send ring signal to up to 30 stations simultaneously.)

- **DISA RING-IN:** If DISA Ring-In is selected for the trunk group, a security code can be assigned by selecting the Program command button. The following window appears. Enter the desired code, up to eight digits (0-9, but not * or #), in the text box. Then select the OK command button to save the code or the Cancel button to exit without saving the code.

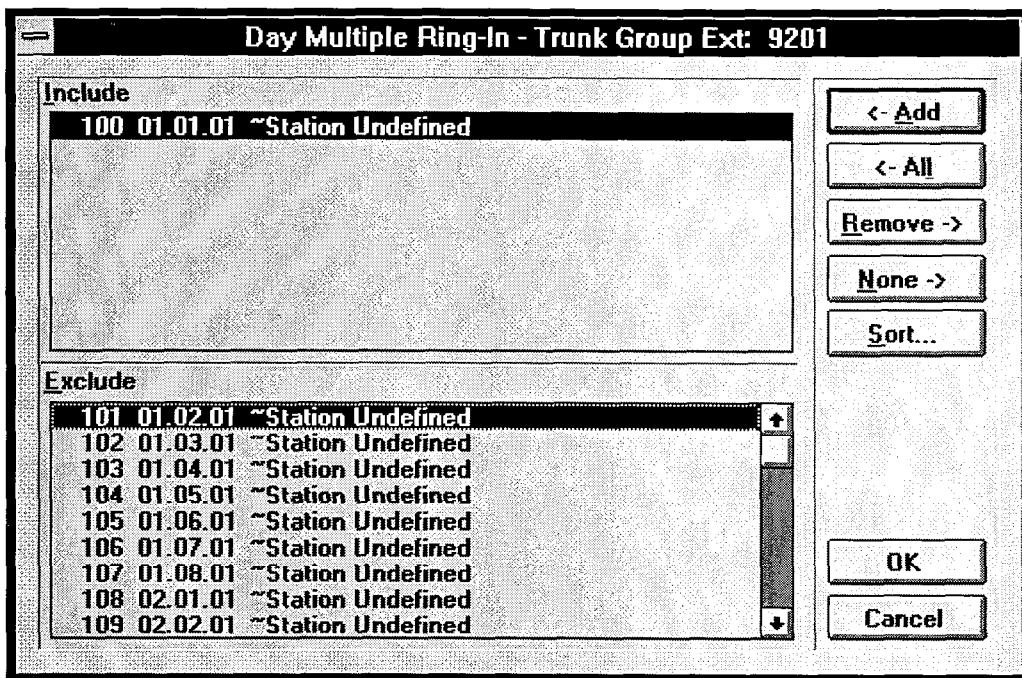


- **MULTIPLE RING-IN:** If the trunk group will ring in to several stations a window appears as shown on the next page when the Program command button is selected. (NOTE: When using an extension list for ring-in, do not exceed 30 stations per list. The system can send ring signal to up to 30 stations.)

15.15 DAY/NIGHT ANSWER ACCESS: (Not available for DISA trunks) To determine which stations will have allowed answer for the trunk group in day or night mode, select the appropriate Answer Access command button. The window shown on page 6-133 appears.

15.16 OK: When trunk group programming is complete, select the OK command button. If the trunk group list was changed, a window appears that tells you that the change will require a reset of the trunk group. Select Yes to update the information (note that the associated reset *will drop calls on the trunks in the affected trunk group*). Or, select No to leave the information unchanged.

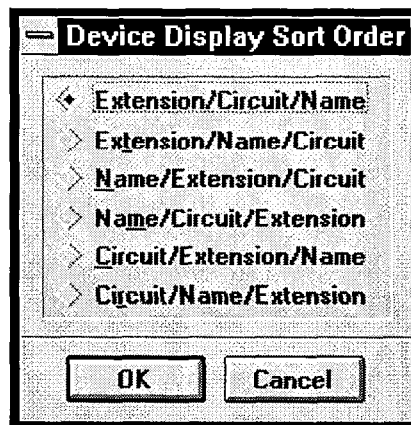
15.17 CANCEL: To exit without changing any trunk group information, select the Cancel command button.



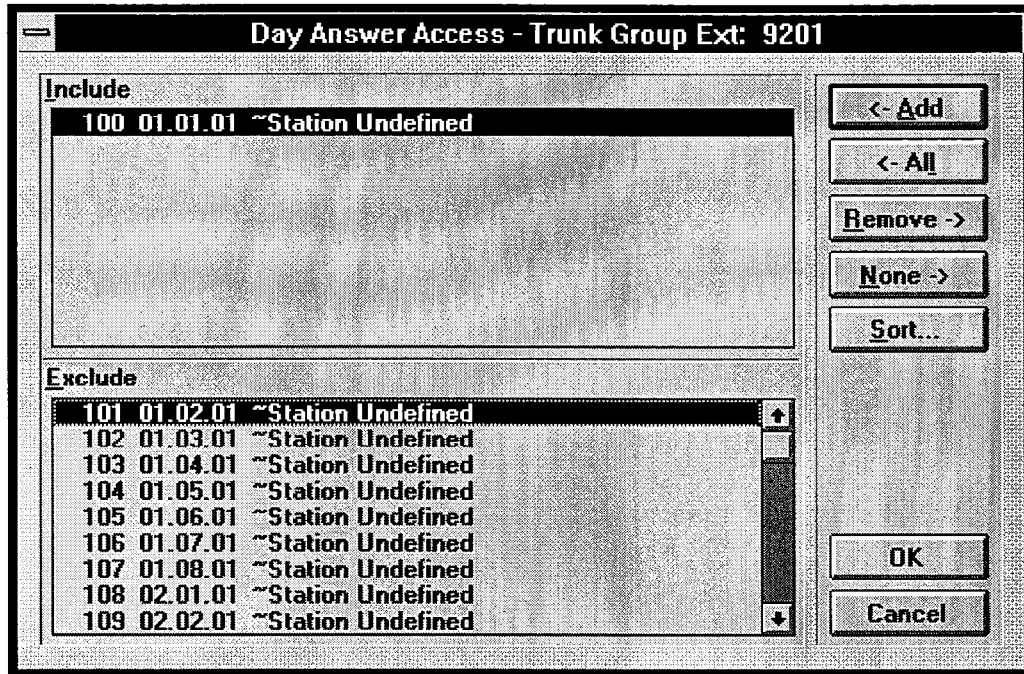
Multiple Ring-In

15.18 To determine the (multiple) stations that will have ring-in for this trunk group, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a station from the Include list, highlight it and select the Remove command button. Or, to remove all stations, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

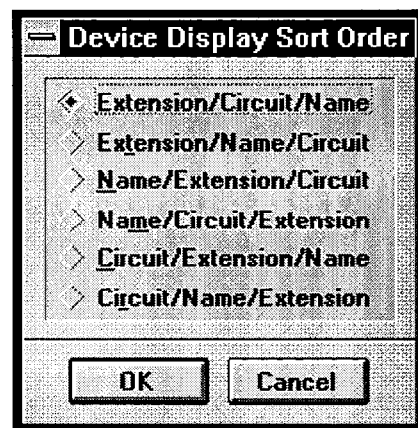


Answer Access — Day Or Night Mode

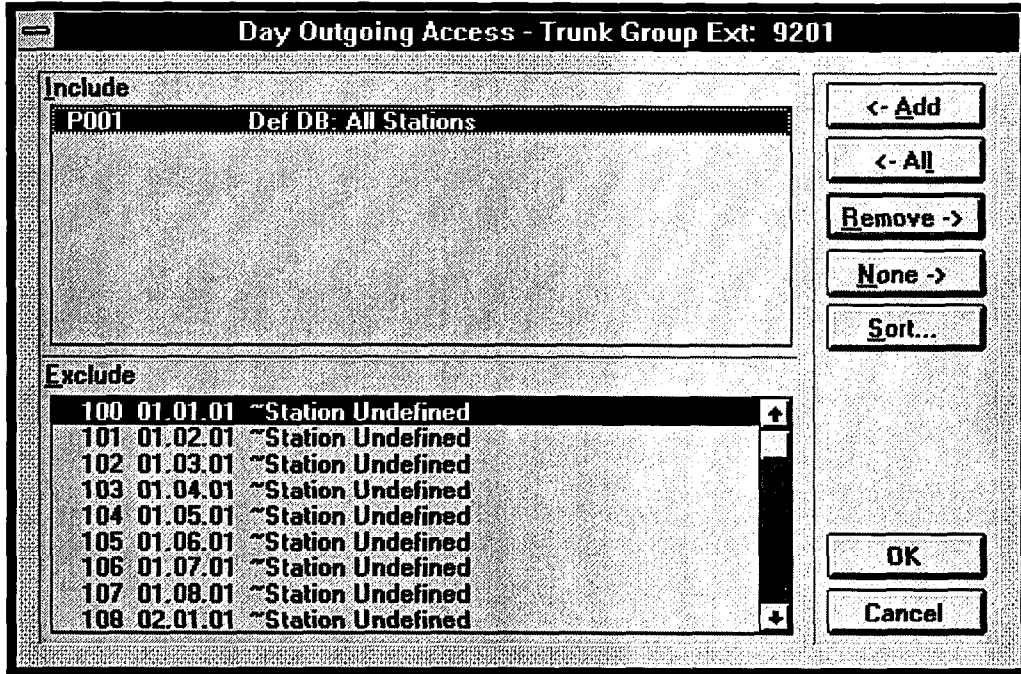
15.19 The window shown above appears when an Answer Access command button is selected. To determine the stations that will have Allowed Answer permission for the trunk group, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a station from the Include list, highlight it and select the Remove command button. Or, to remove all stations, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command

button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



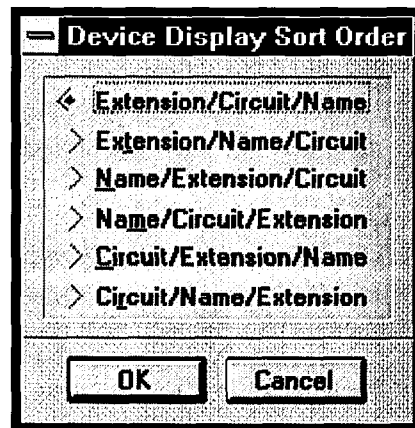
Outgoing Access — Day Or Night Mode

15.20 Outgoing-access assignments can be made on a station-by-station basis for day and night modes. (On loop start trunks that are connected to paging equipment, the outgoing access designation does not affect stations' ability to seize the trunk for paging. Trunks used for paging should not allow any station to have outgoing access for placing outside calls.)

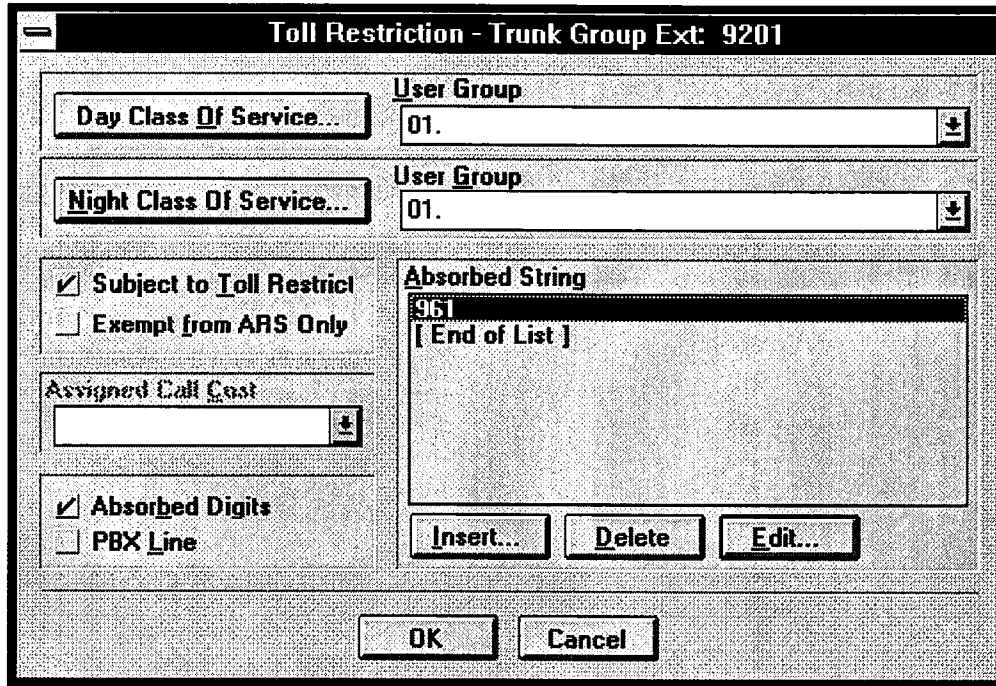
15.21 The window shown above appears when an Outgoing Access command button is selected. To determine the stations that will have outgoing access for this trunk group, use the following procedures:

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a station from the Include list, highlight it and select the Remove command button. Or, to remove all stations, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window

appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



Toll Restriction

15.22 To program the toll restriction parameters for the trunk group (i.e., equal access, absorbed digits, etc.), select the Toll Restriction command button (shown on page 6-130) and refer to the window shown above.

15.23 DAY/NIGHT CLASS OF SERVICE: To select the class(es) of service for the trunk group, for day or night mode, select the appropriate Class of Service command button. A window appears as shown on page 6-137.

15.24 USER GROUP: If the trunk group has Area/Office code restriction in day or night mode, the associated User Group drop-down list box changes from dimmed to dark. Select the user group by selecting the appropriate User Group drop-down list box and scroll the highlight bar to the desired user group (01-03).

15.25 SUBJECT TO TOLL RESTRICT: If desired, select the Subject to Toll Restrict check box to place a check mark in it (selecting the check box again will remove the check mark).

15.26 EXEMPT FROM ARS ONLY: To disable ARS Only restriction, select the Exempt from ARS

Only check box to place a check mark in it. (Selecting the check box again will remove the check mark.)

15.27 ASSIGNED CALL COST: For trunk groups that are not subject to toll restriction, determine the call cost rate to be used when calls are placed using this trunk group. Select the Assigned Call Cost drop-down list box and scroll the highlight bar to the desired call cost option (free, local, toll local, toll long distance, or operator/international).

15.28 ABSORBED DIGITS/PBX LINE: (Available only on trunks that are subject to toll restriction) To program the trunk group to absorb digits, select the Absorbed Digits check box to place a check mark in it. (Selecting the check box again will remove the check mark.) If the digits will be absorbed because the system is connected to a PBX, select the PBX Line check box to place a check mark in it.

15.29 ABSORBED STRING/PATTERNS: If digits are absorbed because of the local central office, only one digit string is programmed. To program digit strings/patterns, use one of the command buttons (Insert, Edit, or Delete) as described on the next page.

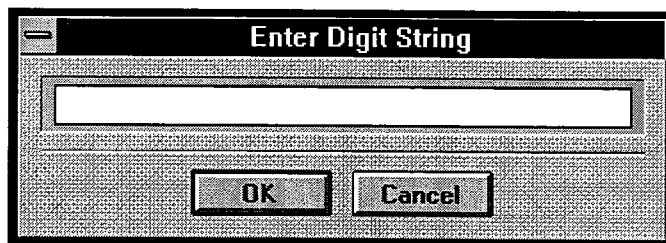
15.30 DELETE: To remove the highlighted line, select the Delete command button.

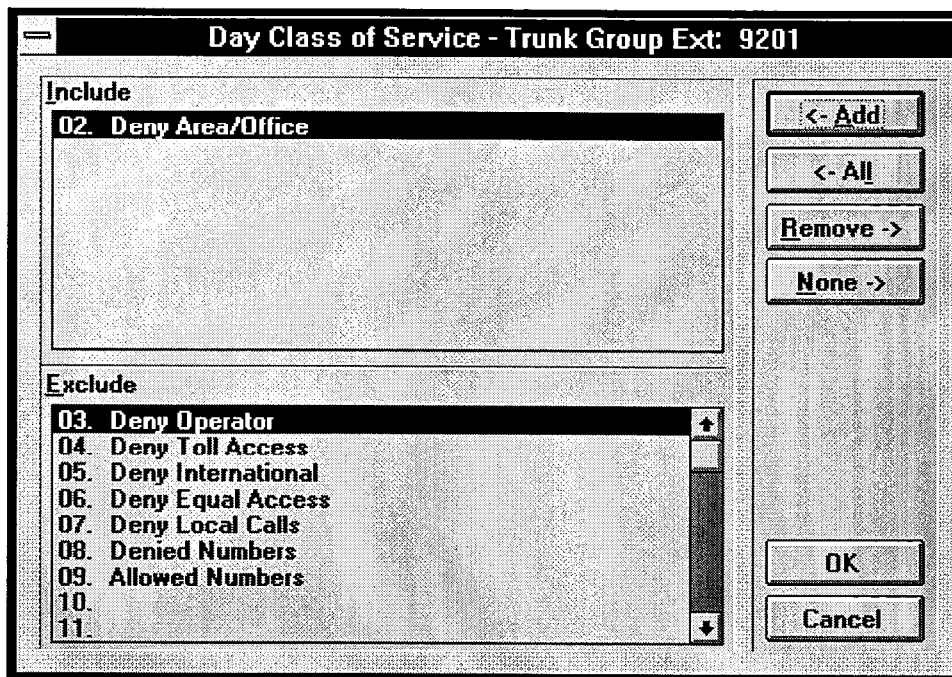
15.31 INSERT: To add a digit string or pattern, scroll the highlight bar to the desired position in the list box. Then select the Insert command button. The following window appears. Enter the desired digit string (up to 32 characters), then select OK (or select Cancel to leave it unchanged).

15.32 EDIT: To change an existing digit string or pattern, scroll the highlight bar to the desired digit string/pattern in the list box. Then select the Edit command

button. The Enter Digit String window appears (as shown below). Edit the digit string, then select Ok (or select Cancel to leave it unchanged).

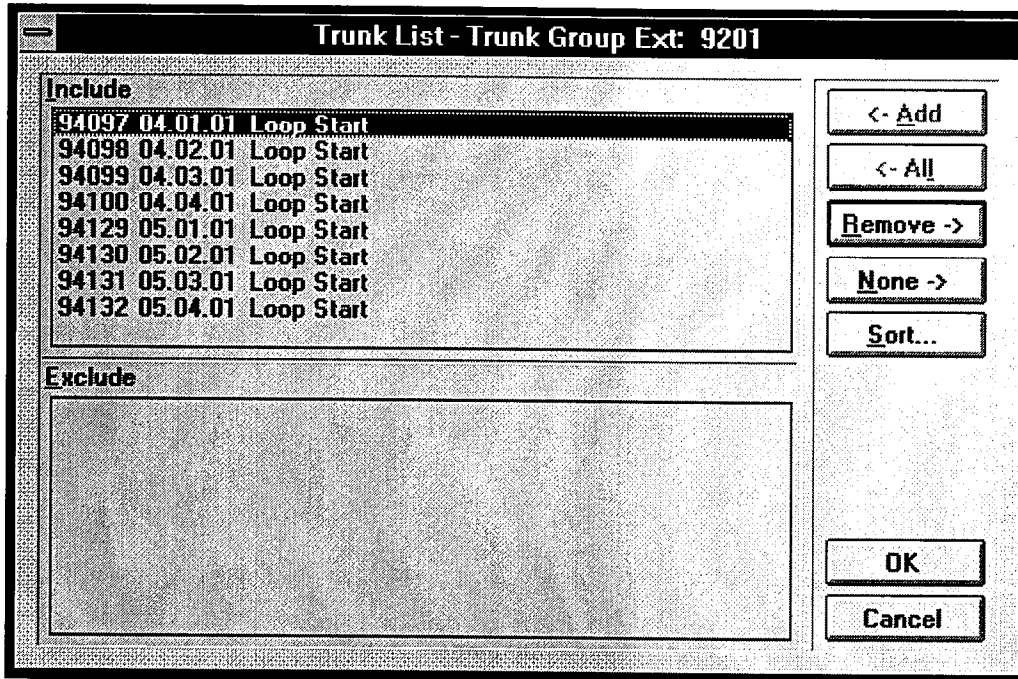
15.33 OK/CANCEL: When toll restriction programming is completed for the trunk group, select the OK command button to return to the Trunk Group programming window. Or, to exit without saving any changes, select the Cancel command button.





15.34 The window shown above appears when the Day Class of Service or Night Class of Service command button is selected. To determine the class(es) of service that will be assigned to this trunk group, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted COS from the Exclude list to the Include List, or use the All command button to place all classes of service in the list.
- **REMOVE/NONE:** To remove a COS from the Include list, highlight it and select the Remove command button. Or, to remove all classes of service, use the None command button.
- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

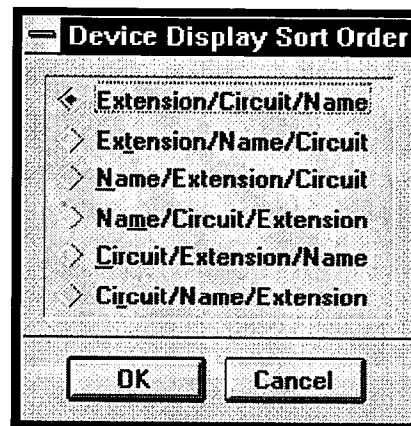


Trunk List

15.35 The window shown above appears when the Trunk List command button is selected. To determine the trunks that will be included in the trunk group, follow these procedures:

- **ADD/ALL:** Use the Add command button to move the highlighted trunk from the Exclude list to the Include List, or use the All command button to place all trunks in the list.
- **REMOVE/NONE:** To remove a trunk from the Include list, highlight it and select the Remove command button. Or, to remove all trunks, use the None command button.
- **SORT:** To change the way the Exclude list is sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK

command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

16. STATION MESSAGE DETAIL

16.1 When the Station Message Detail command button is selected, the Database Programming Menu shows two options: Call Cost and SMDR. Each of the options and their programming windows are described in detail in the following pages.

A. CALL COST FACTORS

16.2 When Call Cost is selected from the Database Programming Menu, the window shown on the next page appears. To prepare to program call cost, determine the following. (A program planning sheet is in Figure 6-23, on page 6-251.)

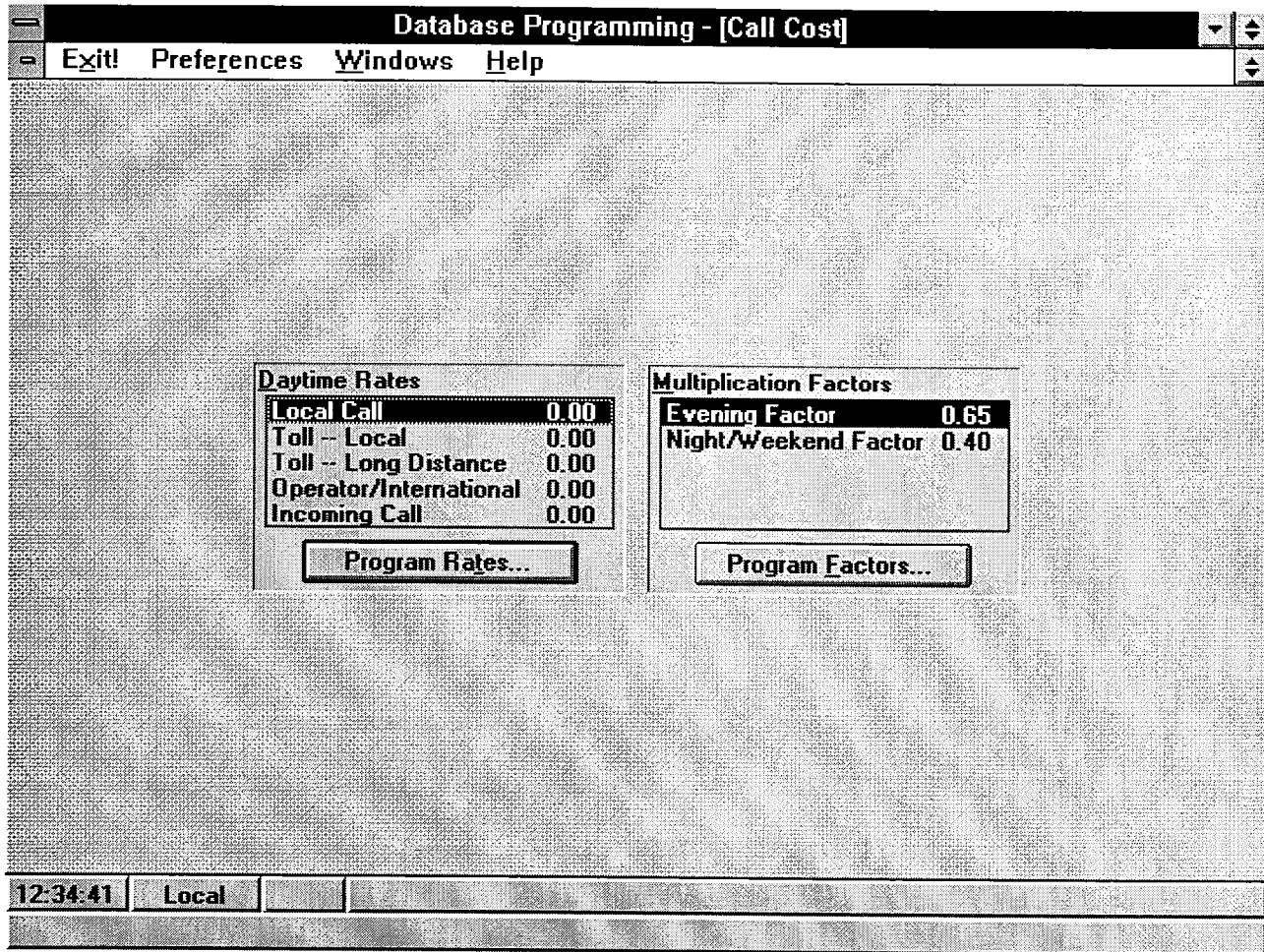
- Determine the daytime rates (in dollars per minute) for the following types of calls (all default values are 0.00). Use several telephone bills from months with typical usage to calculate the average cost per minute of each type of call. Record the charges in dollars and cents from 00.00 to 99.99. You may need to adjust the calculations later to more accurately estimate actual call costs. (This program is to be used as an estimate only; refer to page 4-116 in FEATURES for details.)

— Local calls

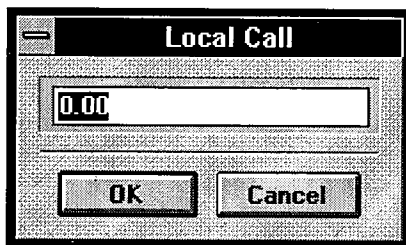
- Toll local calls
- Toll long distance calls
- Operator-assisted and international calls
- Incoming calls

- Then, determine the multiplicative factors that adjust the daytime per-minute call cost for evening and weekend rates. Record these as decimal factors. For example, if the evening discount rate is 35%, the rate is 65% of the regular rate. So it would have a factor of 0.65 times the day rate. The allowed range is between 0.00 and 1.99. The defaults are .65 for evening and .40 for night/weekend. The daytime rate (D), evening (E) multiplicative factor, and night/weekend (N/W) multiplicative factors are used on the following schedule:

	SUN	MON	TUE	WED	THU	FRI	SAT
8 AM TO 5 PM	N/W	D	D	D	D	D	N/W
5 PM TO 11 PM	E	E	E	E	E	E	N/W
11 PM TO 8 AM	N/W	N/W	N/W	N/W	N/W	N/W	N/W



16.3 DAYTIME RATES/PROGRAM RATES: To program a rate, highlight it in the Daytime Rates list box and then select the Program Rates command button. A window appears as follows. Enter the desired rate in the text box and select the OK command button. Or select the Cancel button to leave it unchanged.



16.4 MULTIPLICATIVE FACTORS/PROGRAM FACTORS: To program a multiplicative factor, highlight it in the Multiplicative Factors list box and then select the Program Factors command button. A window similar to the one shown at left appears. Enter the desired rate in the text box (up to five digits) and select the OK command button. Or select the Cancel command button to leave it unchanged.

NOTE: If you have not programmed a home area code yet, a warning window appears as you exit this window. It asks if you wish to continue. Answer Yes to return to the Database Programming Menu or No to stay in this window. Refer to the window shown on page 6-91 to program the home area code(s).

B. SMDR

16.5 The station message detail reporting (SMDR) produces a record of calls and their costs. Report format is discussed in the FEATURES section, starting on page 4-117. A program planning sheet is located in Figure 6-24, on page 6-252.

16.6 Determine the following SMDR information:

- **SMDR Output Port:** Determine which system serial port will receive the report.
- **SMDR Output Active:** SMDR output to the serial port can be enabled or disabled using this option.
- **Stations:** You can determine which stations will be included in the report.

16.7 Determine if any digits will be suppressed:

- **Suppress Absorbed Digits:** Absorbed digits (on local or PBX lines) will not appear in the report if this option is selected.

NOTE: If absorbed digits are repeatable on a local line, the absorbed digits will not appear in the SMDR report even when repeated.

- **Suppress Equal Access Digits:** Equal access digits will not appear in the report if this option is selected.
- **Suppress Toll Digits:** When this option is selected, toll digits will not appear in the report.
- **Suppress All Caller Numbers:** When this option is selected, any Caller ID or ANI information provided for the trunk will not be included in the SMDR report. However, all DID and DNIS numbers will appear; they cannot be suppressed.

16.8 Determine how elapsed time will be shown in the report:

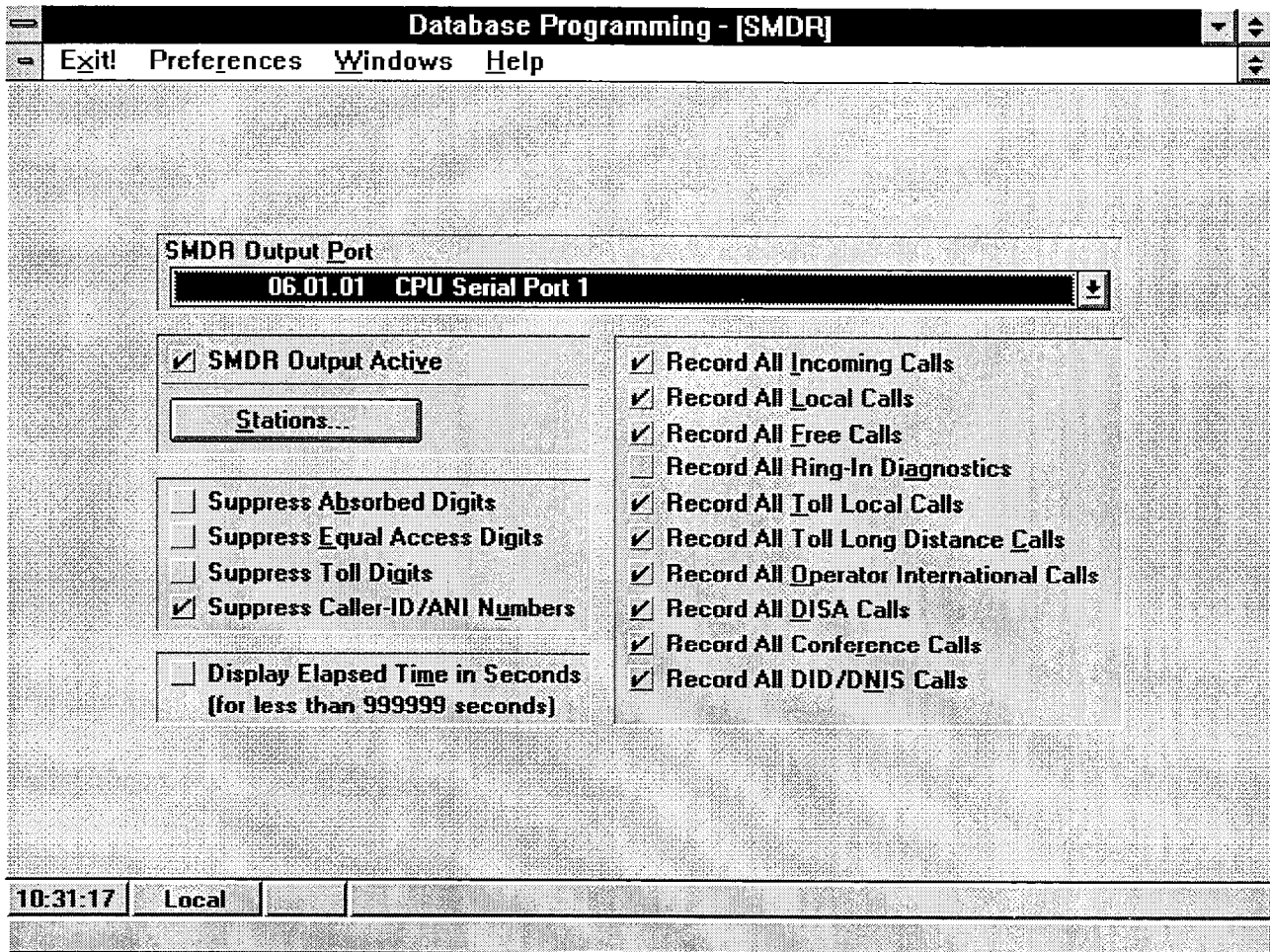
- **Display Elapsed Time in Seconds:** To allow SMDR to give a more accurate representation of elapsed time, an option can be enabled that records the

elapsed time of calls in seconds instead of minutes. For calls up to 999999 seconds long, the ELAPSED TIME field will show "S=XXXXXX" (XXXXXX represents the number of seconds). For calls lasting longer than 999999 seconds, ELAPSED TIME will show "HH:MM" (hours and minutes rounded up to the nearest minute).

16.9 Determine what types of records will be included:

- **Record All Incoming Calls:** Selecting this check box includes all incoming calls in the SMDR report.
- **Record All Local Calls:** Records all local, non-toll, valid calls.
- **Record All Free Calls:** Records all "free" calls.
- **Record All Ring-in Diagnostics:** A ring-in message is recorded for every incoming call (whether answered or unanswered) to indicate how long it rang. All incoming calls are recorded, even those involving stations not listed in the station list.
- **Record All Toll Local Calls:** Records all valid local toll calls.
- **Record All Toll Long Distance Calls:** Records all valid long distance toll calls.
- **Record All Operator International Calls:** Records all operator assisted and international calls.
- **Record All DISA Calls:** This includes all DISA calls in the SMDR report.
- **Record All Conference Calls:** This includes all conference calls in the SMDR report.
- **Record All DID/DNIS Calls:** Records all calls received through DID and DNIS.

16.10 The SMDR programming window appears as shown on the next page when you select SMDR from the Station Message Detail menu or enter the SMDR command.



16.11 SMDR OUTPUT PORT: Select the desired output port for the SMDR by selecting the SMDR Output Port drop-down list box and scrolling to the desired port. The list box contains all enabled serial ports on the system. You will see a warning message if you assign a port that is already designated for another function (such as Axxent Talk communication) or if you do not select a port when the SMDR output is activated.

16.12 STATIONS: To assign the stations that will be included in the SMDR output, select the Stations command button. The window shown on the next page appears.

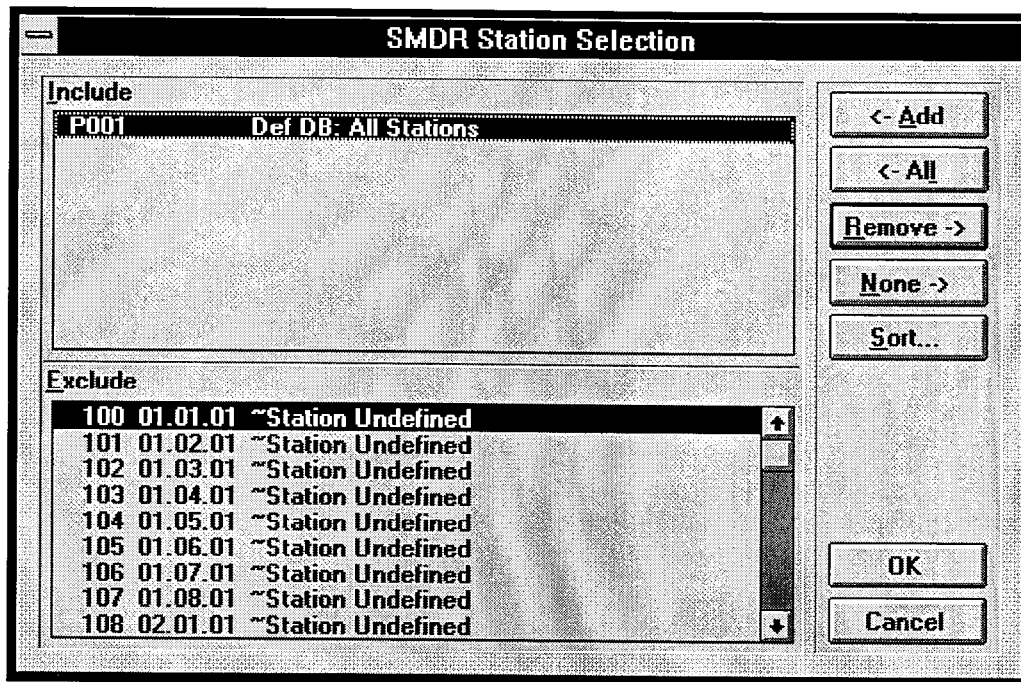
16.13 SMDR OUTPUT ACTIVE: To activate the SMDR reporting feature, place a check mark in the SMDR Output Active check box by selecting it. To disable the reports, remove the check mark by selecting the check box again.

16.14 SUPPRESS OPTIONS: The check boxes on the left side of the window determine which digits, if

any, will be suppressed when the dialed digits are reported. To choose the desired options, select the appropriate check boxes to place a check mark in them. To remove an option, select the check box again to remove the check mark from the check box. (Options are described on page 6-141.)

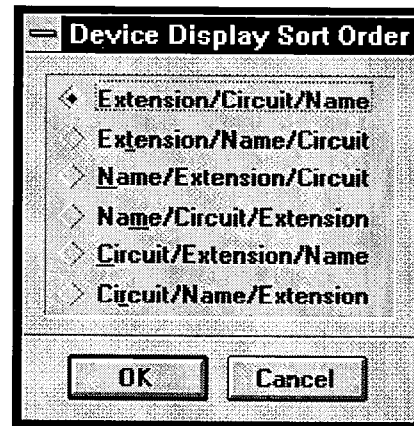
16.15 DISPLAY ELAPSED TIME IN SECONDS: If you wish to have call durations of fewer than 999999 seconds displayed in seconds, select this check box to place an X in it. To remove the X, select the check box again.

16.16 RECORD OPTIONS: The check boxes on the right side of the window determine the content of the output. To choose the desired options, select the appropriate check boxes to place a check mark in them. To remove an option, select the check box again to remove the check mark from the check box. (Options are described on page 6-141.)



16.17 The window shown above appears when the Stations command button is selected. To determine the stations that will be included in the SMDR reports, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a station from the Include list, highlight it and select the Remove command button. Or, to remove all stations, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

17. AXXENT TALK PROGRAMMING

17.1 When the Axxent Talk command button is selected, the Database Programming menu shows the following Axxent Talk options:

Axxent Talk Application Programming
Axxent Talk Extension ID Programming
Axxent Talk Group List Programming
Axxent Talk Mailbox Programming
Axxent Talk Miscellaneous Information
Axxent Talk Report Programming
Axxent Talk SMDR Buffer Programming
Axxent Talk System-Wide Information

17.2 Each of the options is described in detail in this section. For information regarding Axxent Talk applications and features, refer to AXXENT TALK FEATURES.

17.3 Axxent Talk programming cannot be performed until an Axxent Talk communications port has been established in the Miscellaneous System-Wide Information programming window (shown on page 6-89).

A. APPLICATIONS PROGRAMMING

17.4 Applications Programming is used for assigning extension numbers and other parameters to applications. Once the applications are programmed, they may be used as system forwarding paths, hunt group announcement/overflow stations, direct ring-in destinations, message centers, attendants, and alternate message source destinations. A program planning sheet is located in Figure 6-25, on page 6-253.

17.5 Applications Programming is also used for assigning time slot groups and voice channel capacity. Setting up time slot groups allows the programmer to specify the total number of voice channels available per group of applications for processing calls between the Inter-Tel Axxent System and the applications.

NOTE: Time slot group and voice channel programming should be completed before applications are created and programmed.

17.6 Applications can include the following (refer to AXXENT TALK FEATURES for more information regarding each application type):

- **Automated Attendant:** The automated attendant is a programmable feature that can be used to provide automated call answering service. Calls can be

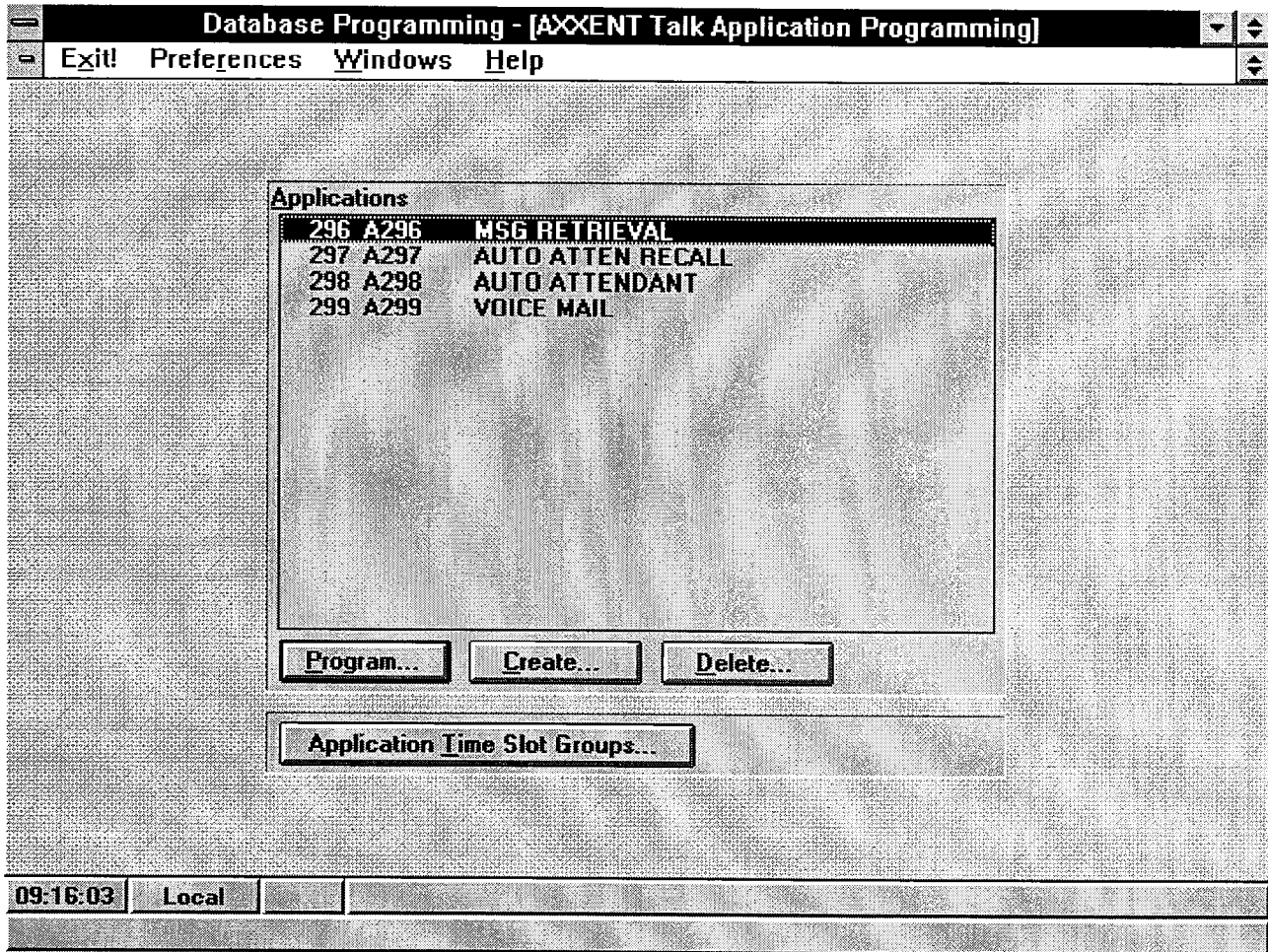
transferred, forwarded, or can directly ring in to an Automated Attendant application. When an automated attendant answers a call, it plays a recording that gives dialing instructions. After hearing the recording, the caller may then directly dial a station extension number, voice mail application number, or hunt group pilot number.

- **Automated Attendant Recall Destination:** If a call that was transferred by the Automated Attendant application is not answered before the Transfer Axxent Talk timer expires, the call recalls the Automated Attendant Recall Destination application. The recall destination announces that the station is unavailable and allows the caller to choose to leave a message (if a mailbox is programmed for that station) or dial another extension number.
- **Call Routing Announcement:** A Call Routing Announcement application can be used in place of a playback device and/or for one-digit call routing. The playback device function is especially useful for programming hunt group announcement and overflow stations. When called, the Call Routing Announcement application will play a recording and then hang up. As an option, the Call Routing Announcement application can use Digit Translation which allows the caller to press a single digit for access to a mailbox or to a station or hunt group that has an associated mailbox or extension ID.
- **Message Notification/Retrieval:** Only one Message Notification/Retrieval application may be created for the system and it *must* be created in order to allow voice mail message notification and quick mailbox access.
- **Subscriber Voice Mail:** This application handles all calls that are directed to voice mail (other than to the Message Notification/Retrieval application) by subscribers and non-subscribers. Outside callers will hear the main company greeting, followed by a menu of available options. Internal callers will hear only the menu of options. Stations can forward or transfer calls directly to their mailbox using this application's extension number.

17.7 Up to 25 applications can be programmed (however, there can be only one Message Notification/Retrieval application). In the default database, extension numbers 275-299 are reserved for Axxent Talk applications, but any available extension number can be used.

17.8 Programmable application parameters include the following:

- *Description:* The description for an application appears wherever the application is listed, as well as in the system directory.
- *Username:* The username for the application will appear on keyset displays when the application is called.
- *Day/night greetings:* (Not used for automated attendant recall and message notification/retrieval applications.) When the application is called, a Custom Recording (made using the System Administrator's mailbox, as described in Axxent Talk FEATURES, page 5-19.) will play. You can select any Custom Greeting Number for the Day and/or Night Greeting. The Day message is played when the Axxent is in day mode and the night message is played during night mode. (Recording 01, by default, contains the Voice Mail standard company greeting. Recording 02, by default, contains the system-provided Auto Attendant company greeting.)
- *Attendant extension:* A station, hunt group, or other application can serve as the attendant station for an application. This attendant will receive recalls when the Transfer Recall Destination does not answer or is unavailable.
- *Time slot group:* Each application is assigned to a "Time Slot Group" which determines the maximum number of voice channels that will be used by the applications in that group. Voice channels are used for processing calls between the Axxent and the applications. The voice channel limit for the time slot group may exceed the number of voice channels actually provided by the hardware, due to programmed limits set higher than the hardware limits and/or heavy system traffic. For example, if an Automated Attendant application is assigned to a time slot group that has a programmed limit of five voice channels, it can normally support five simultaneous transfers of outside calls to extensions. However, if only four voice channels are available (because all other channels are in use by other applications or the hardware only supports four channels), a fifth call cannot be completed to that (or any other) application. When all voice channels are busy, intercom callers will hear reorder tone and see a CALL CANNOT BE COMPLETED display and outside callers will hear ringing but their calls will not be answered.
- *Transfer recall destination extension:* This is the station, hunt group, or application that will receive any calls that recall after being transferred by the application. (The Automated Attendant Recall Destination application is usually used by Automated Attendant applications. See page 6-144.)
- *Digit translation:* (Call Routing Announcement applications only) Digit translation allows callers to dial a single digit to select a designated extension number, mailbox, or hunt group pilot number. Up to 12 digit translation storage locations (*, #, 0-9) are available for each Call Routing Announcement application.



17.9 The window shown above appears when Axxent Talk Application Programming is selected from the Axxent Talk programming options or the APPL or AAPP abbreviated command is entered. It is used for creating, programming, and deleting Axxent Talk applications and for programming application time slot groups.

NOTE: Time slot group and voice channel programming should be completed before applications are created and programmed.

17.10 APPLICATIONS: The Applications list box shows the currently programmed applications, if any. When an application is highlighted, you can use the Program Application command button to program it.

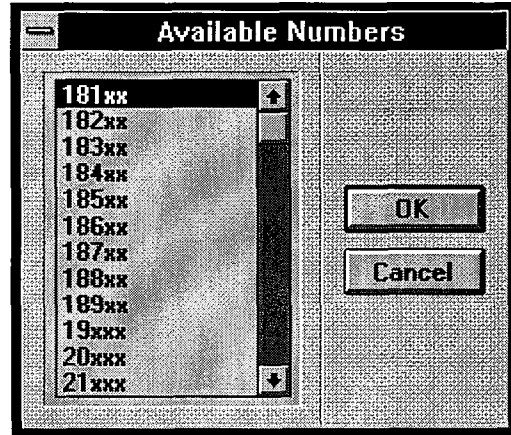
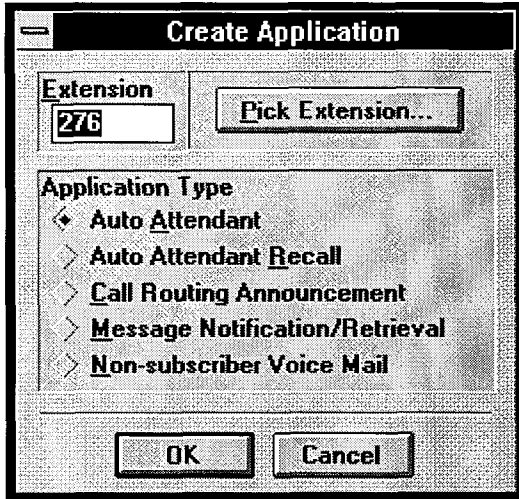
17.11 PROGRAM APPLICATION: To program an existing application, highlight it in the Applications list

box and select the Program Application command button. A window appears as shown on the next page.

17.12 CREATE APPLICATION: To create a new application, select the Create Application command button. A window appears as shown on page 6-147. This command button cannot be selected if 25 Axxent Talk applications have already been programmed.

17.13 DELETE APPLICATIONS: To remove one or more applications from the Applications list box, select the Delete Application command button. A window appears as shown on page 6-151.

17.14 APPLICATION TIME SLOT GROUPS: To program the time slot groups, select the Application Time Slot Groups command button. A window appears as shown on page 6-152.



Creating Applications

17.15 The window shown above appears when the Create Application command button is selected. To create a new application, follow these procedures:

17.16 EXTENSION/PICK EXTENSION: The default extensions for Axxent Talk applications are 275–299. An available Axxent Talk extension number is displayed in the Extension text box. To change the extension number for the application, either type the desired extension in the text box or select the Pick Extension command button. If you select the command button, the following window appears. (*If you attempt to enter an invalid extension number or a number that is already assigned, you will see a warning window. Select OK to continue and then select a valid extension number.*)

NOTE: The application extension number may also be changed using the Extensions, Usernames and Feature Codes window (page 6–75). If this is done, all references to the old number, that included the old name, will be updated with the new name.

- **AVAILABLE NUMBERS:** This list box contains the available extension numbers. A number with Xs in it, such as 116XX or 12XXX, indicates that a series of numbers with that prefix are available. When selected, the prefix of the series (e.g., 116 or 12) is assigned to the application. To select an extension number, scroll the highlight bar in the list box to the desired number.
- **OK/CANCEL:** When the desired extension number is highlighted, select the OK command button. Or, to exit without changing the extension number, select the Cancel command button.

17.17 APPLICATION TYPE: Select the type of application by selecting the desired option button. A dot in the center of the option button indicates the selected application. (Only one Message Notification/Retrieval application can be programmed per system. Once it has been assigned, that option button is dimmed and cannot be selected.)

17.18 OK: When the application has an extension number and an application type, select the OK command button. The programming window shown on page 6–148 automatically appears. Enter the information for the new application as described on that page.

17.19 CANCEL: To exit without creating the new application, select the Cancel command button.

Call Routing Announcement Ext: 276

Description

Digit Translation
Program...

Username

Day Greeting
Recording 01 - Voice Mail Greeting

Night Greeting
Recording 01 - Voice Mail Greeting

Attendant
100 01.01.01 ~Station Undefined

Time Slot Group
01. ~Timeslot Undefined (4 channels)

Transfer Recall Destination
276 A276

OK Cancel

Programming An Application

17.20 The window shown above appears when the Program Application Command button is selected. Program the application parameters as follows.

17.21 DESCRIPTION: Enter a name, of up to 20 characters, in the Description text box. Do not use Control characters.

17.22 USERNAME: The username will appear on keyset displays when the application is called. To program a username, enter up to 10 characters in the Username text box. Do not use backslash (\), vertical slash (|), tilde (~), or Control characters in usernames.

NOTE: The application description and username may also be changed using the Extensions, Usernames and Feature Codes window (page 6-75). If this is done, all references to the old number, that included the old name, will be updated with the new name.

17.23 DAY/NIGHT GREETING: (Not used for automated attendant recall and message notification/retrieval applications.) Determine the number of the Custom Recording that will be played when this application is called. To program the recording number select the Day Greeting or Night Greeting drop-down list

box and scroll the highlight bar to the desired recording number.

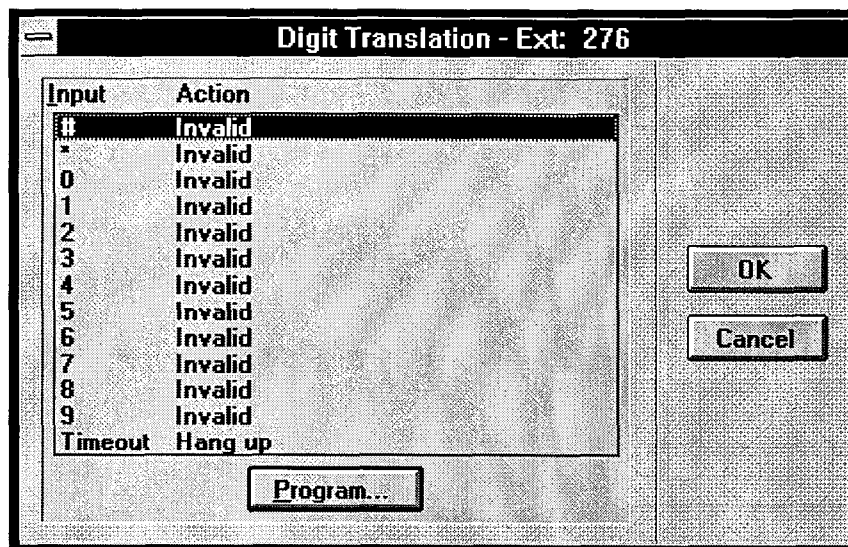
17.24 ATTENDANT: Determine which station, hunt group, or other application will serve as the attendant for this application. Then select the Attendant drop-down list box and scroll the highlight bar to the desired station.

17.25 TIME SLOT GROUP: Determine which time slot group this application will use. Then select the Time Slot Group drop-down list box and scroll the highlight bar to the desired group.

17.26 TRANSFER RECALL DESTINATION: Determine which station, hunt group, or other application will receive transfer recalls for this application. Then select the Transfer Recall Destination drop-down list box and scroll to the desired extension number.

17.27 DIGIT TRANSLATION: (This is available in Call Routing Announcement applications only.) To program Digit Translation, select this command button. A window appears as shown on the next page.

17.28 OK/CANCEL: When all programming is completed for the application, select the OK command button. Or, to exit without changing any application parameters, select the Cancel command button.

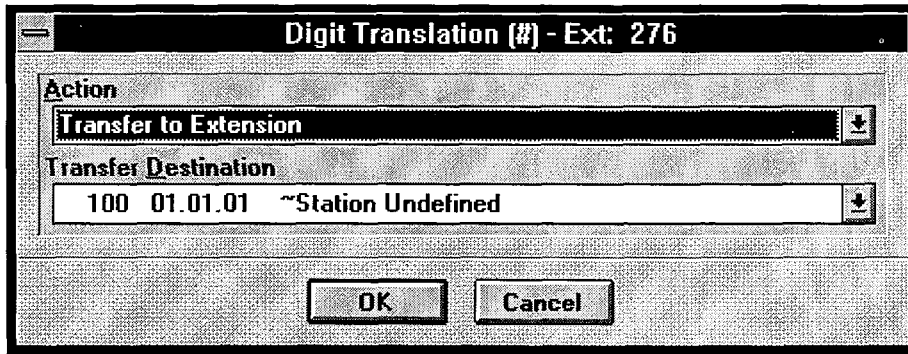


17.29 INPUT/ACTION: The list box shows the digit translation table for the Call Routing Announcement application being programmed. The Input is the digit that the caller presses. The Action is what occurs when that digit is pressed. Timeout is the input that represents no digits being entered. The Actions that can be selected for the digits (*, #, 0-9) and for the Timeout option are:

- *Transfer To Operator:* This action transfers the call to the Dial-0 Destination that is programmed in the System Maintenance window, shown on page 6-189.
- *Company Directory – First Name:* This sends the caller to the directory prompt that asks the caller to enter the first name of the desired party.
- *Company Directory – Last Name:* This sends the caller to the directory prompt that asks the caller to enter the last name of the desired party.
- *Subscriber Access:* This sends the caller to the Voice Mail application that prompts the caller to enter a mailbox number.
- *Invalid:* The digit will not be used. Callers who press this digit hear a recording that tells them that it is invalid.
- *Transfer To Extension:* This action sends the call to the designated extension (station, hunt group, or application).
- *Transfer To Mailbox:* This sends the call to the designated mailbox. (This will not appear if there are no programmed mailboxes.)
- *Transfer To Collected Extension:* (Cannot be used for *, #, or 0) To allow callers to dial extension numbers of stations and hunt groups that have a mailbox or extension ID, use this Action for digits that correspond to the first digits of extension numbers. For example, if digit 1 is “Transfer To Collected Extension,” callers can dial extension numbers that begin with 1. However, if digit 1 is “Transfer to extension 2000,” a caller attempting to dial a station extension number that begins with 1 will instead be transferred to 2000.
- *Hang Up:* (This action is used for Timeout only.) This disconnects from the call if the user does not enter a digit.

17.30 PROGRAM: To program a digit or Timeout, highlight it in the list box and then select the Program command button. The window shown on the next page appears.

17.31 OK/CANCEL: When the digit translation table is complete, select OK to return to the window shown on the previous page, or select Cancel to exit without saving any changes.



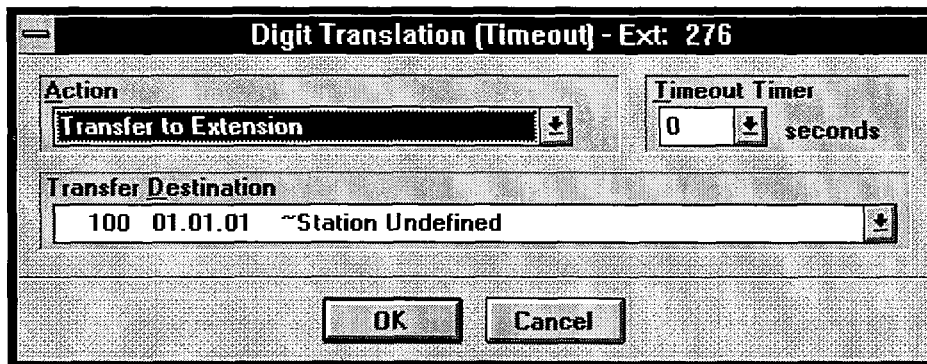
17.32 For Digits: The window shown above appears when you select the Program command button while a digit is highlighted.

- **ACTION:** Scroll through the drop-down list box to the desired Action for the digit being programmed.

NOTE: If you select Transfer To Operator and there is not a programmed Operator Access Dial-0 Destination in System Maintenance window (see page 6-189), you will see a warning message. Go to that

window and program the Operator Access Destinations.

- **TRANSFER DESTINATION:** If the Action is "Transfer To Extension" or "Transfer To Mailbox," scroll through the Transfer Destination drop-down list box to select the desired destination.
- **OK/CANCEL:** When finished, select OK to return to the window shown on the previous page. Or select Cancel to exit without saving changes.



17.33 For Timeout: The window shown above appears when you select the Program command button while Timeout is highlighted.

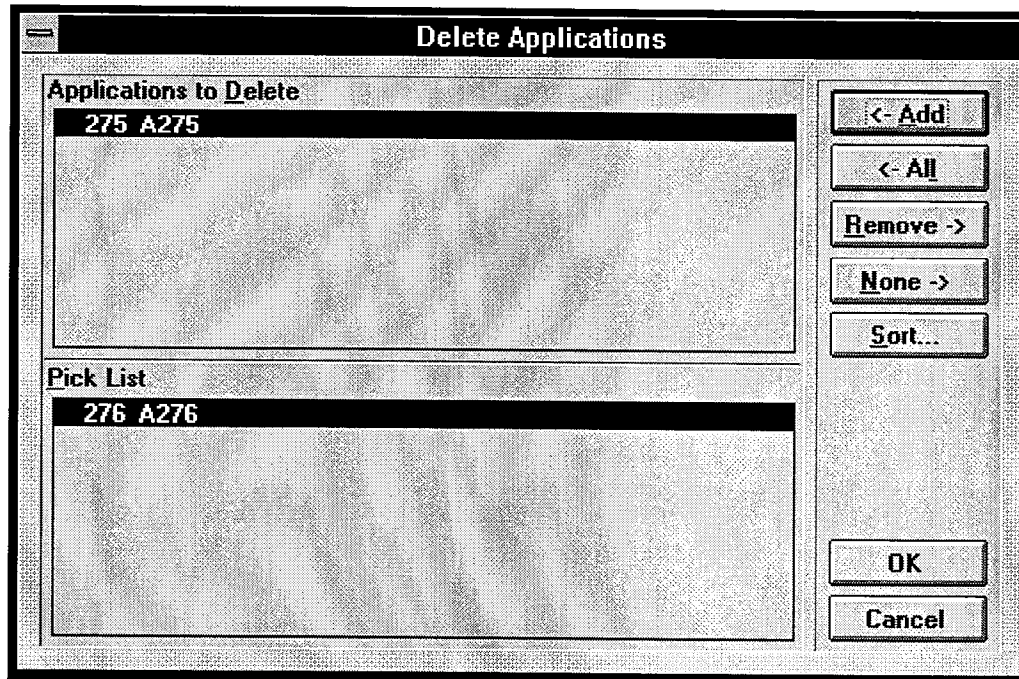
- **ACTION:** Scroll through the drop-down list box to the desired Action for the digit being programmed.

NOTE: If you select Transfer To Operator and there is not a programmed Operator Access Dial-0 Destination in System Maintenance window (see page 6-189), you will see a warning message. Go to that window and program the Operator Access Destinations.

- **TRANSFER DESTINATION:** If the Action is "Transfer To Extension" or "Transfer To Mailbox,"

scroll through the Transfer Destination drop-down list box to select the desired destination.

- **TIMEOUT TIMER:** Scroll through the Timeout Timer drop-down list box to the desired timer value (0-60). This determines how long the application will wait, after the recording has played, for input from the caller before the Timeout Action is taken. (Because there are no default digit translations, this timer defaults to zero to prevent the delay in call processing that would occur while the system waited for a digit to be entered.)
- **OK/CANCEL:** When finished, select OK to return to the window shown on the previous page. Or select Cancel to exit without saving changes.



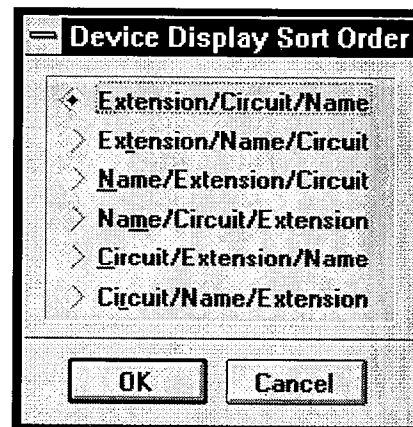
Deleting Applications

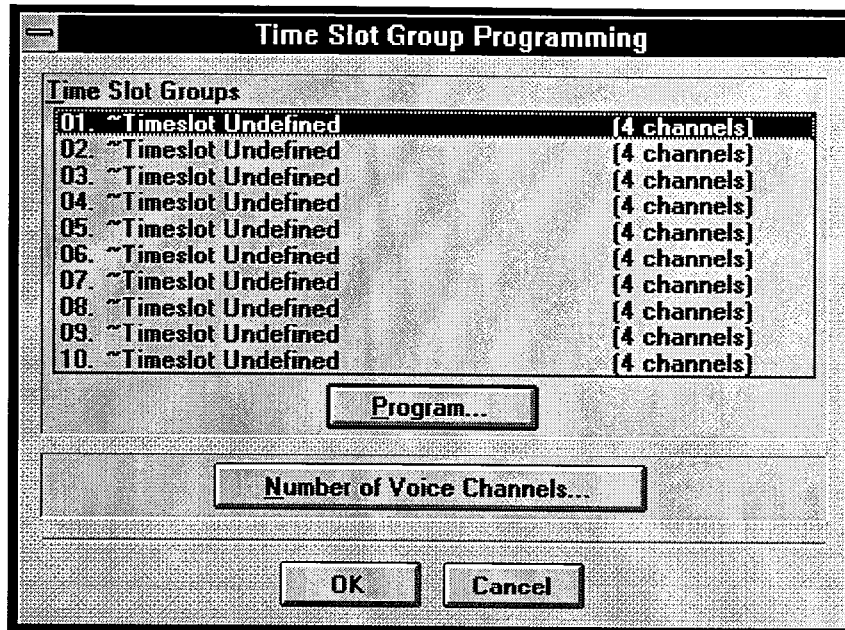
17.34 The window shown above appears when the Delete Applications command button is selected. To determine the applications that will be deleted, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted application from the Pick List to the Applications To Delete list, or use the All command button to place all applications in the list.
- **REMOVE/NONE:** To remove an application from the Applications To Delete list, highlight it and select the Remove command button. Or, to remove all applications, use the None command button.
- **OK:** When the Include List appears as desired, select the OK command button. A window appears that asks you to verify that you want the applications deleted. To delete them, select Yes. To leave them unchanged, select No. *If any application was serving as a Transfer Recall Destination for another application, another warning will appear telling you that the recall destination for the other application will be returned to default value (its own extension). Select Yes to continue, or No to cancel the deletion. If a Custom Recording had been assigned to the de-*

leted application, the recording is not erased and any assignment of the recording to another application is unaffected.

- **CANCEL:** To exit without deleting any applications, select the Cancel command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.





Time Slot Group Programming

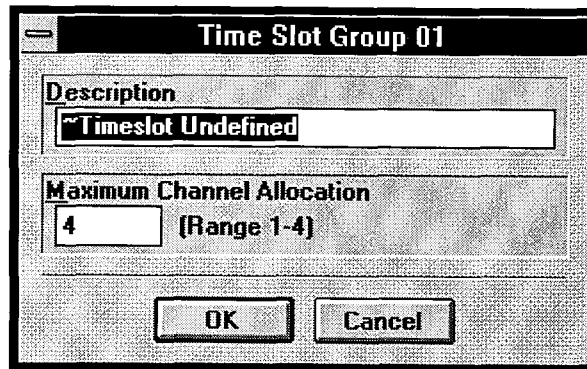
17.35 Time Slot Groups allow the programmer to assign a maximum number of Axcent Talk voice channels to groups of applications. Voice channels are used for processing calls between the system and the applications. (See page 5-3 for details.)

17.36 TIME SLOT GROUPS/PROGRAM: The list box in this window shows the time slot groups and the number of channels currently assigned to the groups. To program a time slot group, highlight it in the list box and select the Program command button. A window appears as shown on the next page.

17.37 NUMBER OF VOICE CHANNELS: Voice channels allow communication between the system and the applications. If a voice channel is not available in an application's time slot group, callers to that application will receive busy signals and the call will be sent to the

application's attendant. At default there are four available voice channels. The actual number of voice channels may be higher or lower depending on the number of voice processor cards used (there are four per card). The number of available voice channels determines the maximum number of channels that can be assigned to any single Time Slot Group. The combined total of channels assigned to Time Slot Groups may exceed the actual number of voice channels, because it is unlikely that all time slot groups will use their maximum allotment at once. To set the number of available voice channels, select the Number of Voice Channels command button to enter the correct number. A window appears as shown on the next page.

17.38 OK/CANCEL: When time slot group programming is complete, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.



Programming A Time Slot Group

17.39 This window appears when the Program command button is selected. It is used for entering a description of the group and establish the total number of available voice channels for the time slot group.

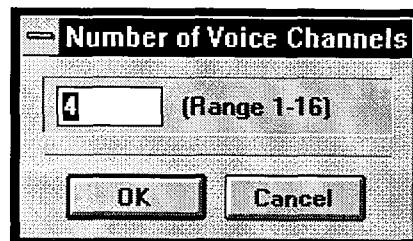
17.40 DESCRIPTION: Enter a name, with up to 20 characters, for this time slot group.

17.41 MAXIMUM CHANNEL ALLOCATION: This determines the maximum number of voice channels that will be used by the application(s) that will be assigned to this time slot group. By default, this text box will show the maximum available voice channels, as determined by the hardware configuration. Enter the maximum number of voice channels that will be used by the

application(s) that will be assigned to this time slot group. By default, this text box will show the maximum available voice channels.

NOTE: The combined total of voice channels assigned to all time slot groups *may* exceed the number of voice channels provided by the hardware. This is allowed because it is not likely that all time slot groups will be busy at once. However, an individual time slot group is limited to the Maximum Channel Allocation. This parameter is used for setting the *limit* of voice channels that will be used by the associated application.

17.42 OK/CANCEL: When the time slot group has been programmed as desired, select the OK command button. Or, to exit without changing the time slot group, select the Cancel command button.



Number Of Voice Channels

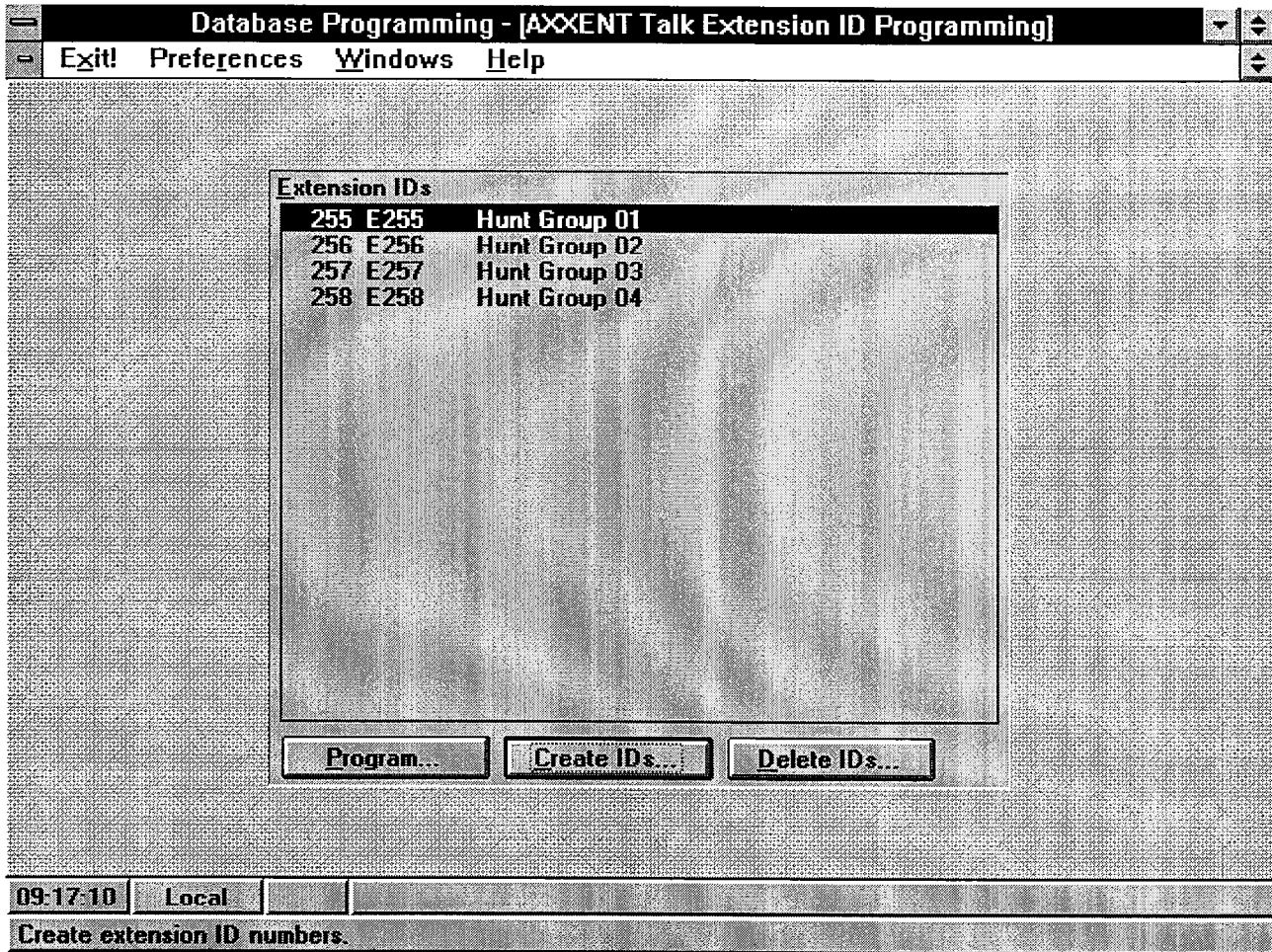
17.43 This window appears when the Number of Voice Channels command button is selected. It is used for entering the number of available voice channels for use by the Time Slot Groups.

17.44 NUMBER OF VOICE CHANNELS: Enter the correct number in the text box and then select the OK command button. Or, select the Cancel command button to exit without changing the number.

NOTE: If the number of channels entered is less than the time slot count for any one of the time slot groups, a

window appears that tells you, "One or more time slot groups currently specify the maximum channel usage greater than 'xx'. Do you wish to change all of these values to 'xx'?". If you wish to change those time slot counts, select Yes. If you wish to exit and change the number of channels to a higher value, select No.

17.45 OK/CANCEL: When the number of voice channels is correct, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.



B. EXTENSION ID PROGRAMMING

17.46 Extension IDs provide the Auto Attendant application a means for transferring calls to extensions which do not have mailboxes. An extension ID allows the owner to record a name for the directory and establish a password. Extension IDs can be created for stations, hunt groups, and applications. (**NOTE:** If a mailbox is created for a station with an extension number, the system converts the extension ID into a mailbox and eliminates the extension ID.) A program planning sheet for this window appears in Figure 6-26, on page 6-255.

17.47 EXTENSION IDS: This list box shows the existing extension IDs. When an ID is highlighted in this list box, you can program directory information and a password for it.

17.48 CREATE IDS/DELETE IDS: To add or delete extension IDs, select the Create IDs or Delete IDs command button. A window appears as shown on page 6-156.

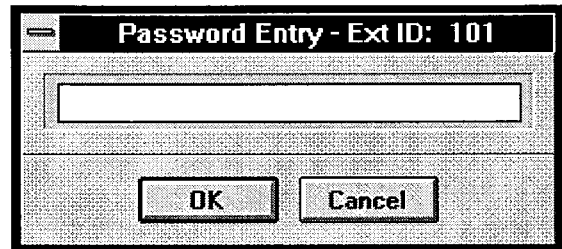
17.49 PROGRAM: To program a password and the directory information for an extension ID, select the Program command button. The window shown on the next page appears.

Programming An Extension ID

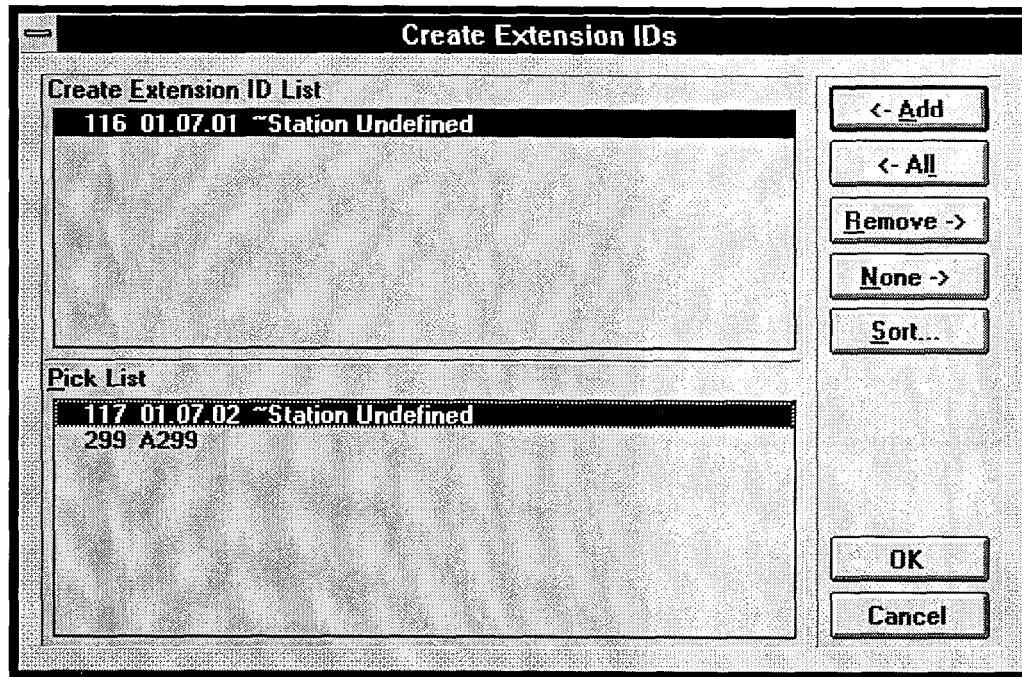


- **DIRECTORY INFORMATION:** Select the desired options to place check marks in the check boxes. Unlisted numbers are not included in the directory, but can be dialed if the caller knows the extension number. Private numbers can be dialed, but only the name is played in the directory.

- **PASSWORD:** To program a password for the Extension ID, select this command button. A window appears as shown below. Enter a password (up to 12 digits, using digits 0–9). The digits will not appear on the screen when typed; they will appear as asterisks (***) . Then select the OK command button. The window heading will change to “Password Validation” and you must retype the password exactly as before. If the entered passwords match, you will return to the Password window, if not, you must re-enter the new password and verify it again. If you make a mistake while entering the password or wish to leave it unchanged, select Cancel.



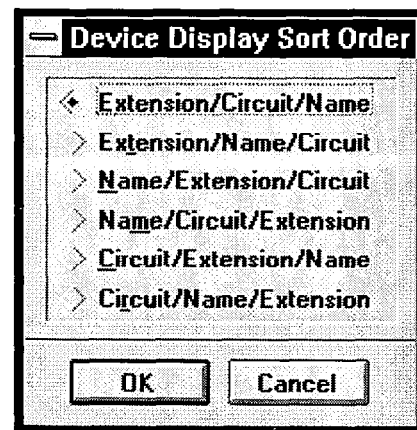
- **OK/CANCEL:** When finished select OK. Or to exit without changing the information, select Cancel.

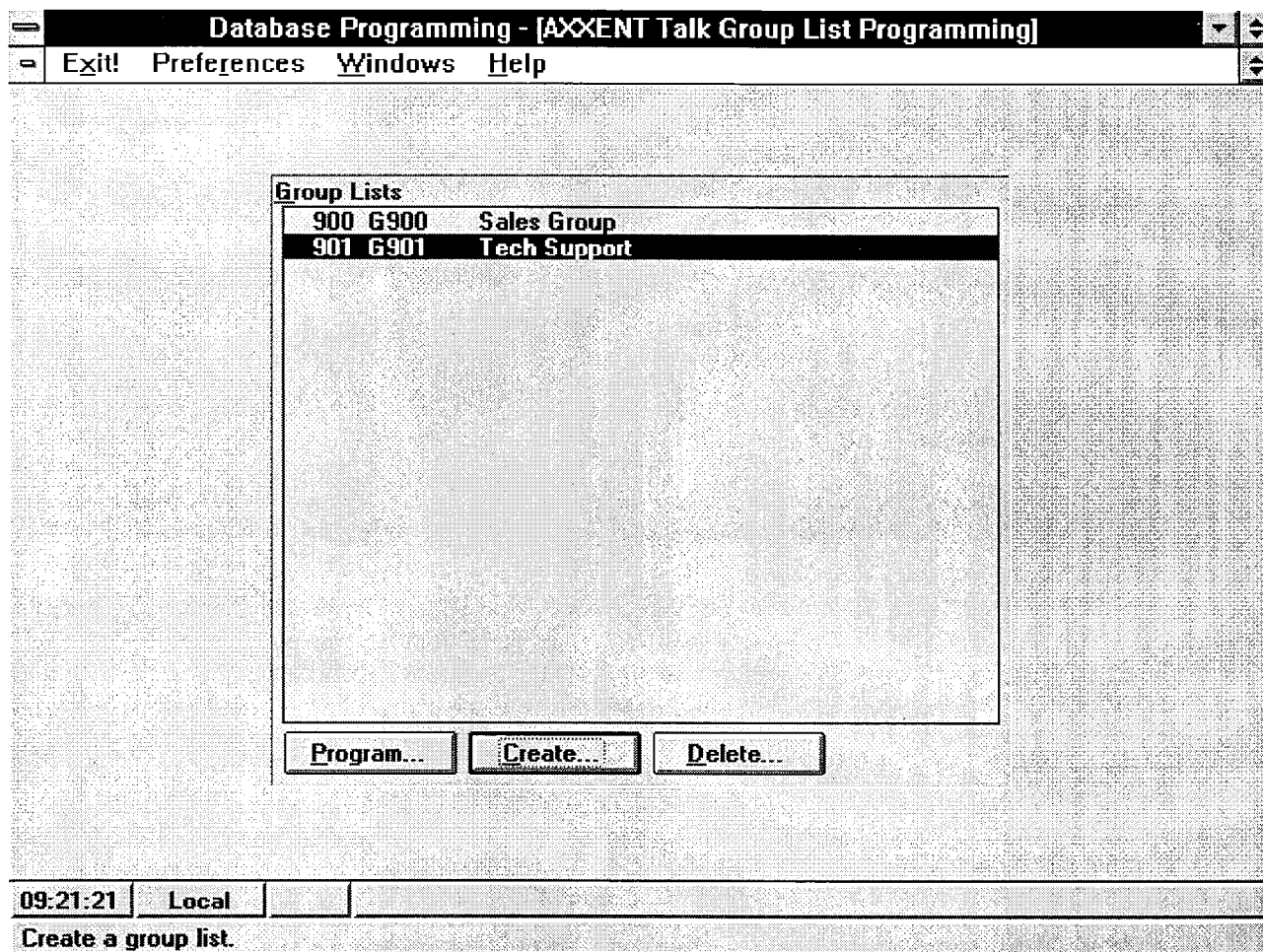


17.50 A window like the one shown above appears when the Create IDs or Delete IDs command button is selected. To determine the stations that will have assigned extension IDs or the extension IDs to be deleted, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted extension ID from the Pick List to the Extension ID list, or use the All command button to place all IDs in the list.
- **REMOVE/NONE:** To remove an ID from the Extension ID List, highlight it and select the Remove command button. Or, to remove all IDs, use the None command button.
- **OK:** When the Include List appears as desired, select the OK command button. A window appears that tells you that you are about to create (or delete) extension IDs for the selected devices, and asks if you wish to continue. Select Yes to continue, or No to leave the IDs unchanged.

- **CANCEL:** To exit without changing the lists, select the Cancel command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.





C. GROUP LISTS

17.51 This window is used for programming Voice Mail group lists. Group lists can be used by any Subscriber for sending messages to several mailboxes simultaneously. The parameters for programming group lists include the following:

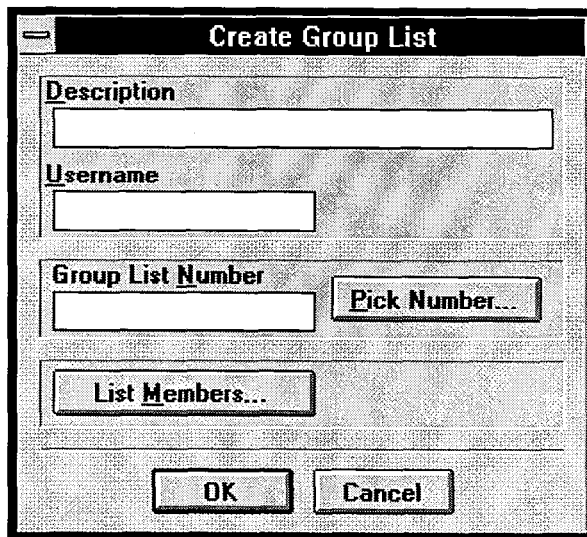
- Group list description
- Group list number
- Mailboxes included in the list

17.52 A program planning sheet is located in Figure 6-27, on page 6-256.

17.53 PROGRAM: To program the parameters for a group list, highlight it in the Group Lists box and select the Program command button. A window appears as shown on the next page.

17.54 CREATE: When the Create command button is selected, a window appears as shown on the next page. *If the maximum number of group lists have already been programmed, a warning shows you that "You have already programmed the maximum number of group lists allowed."* Select the OK command button to return to the window shown above.

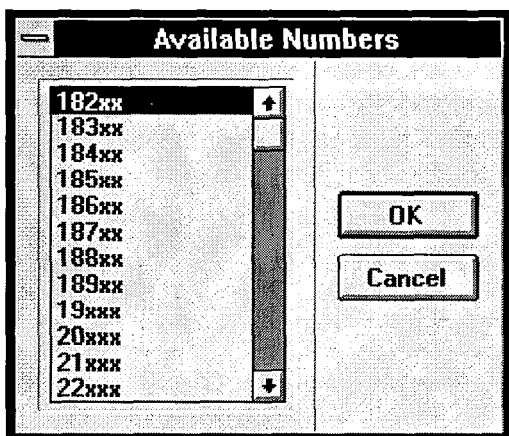
17.55 DELETE: To delete a group list, select the Delete command button. A window appears as shown on page 6-160.



17.56 DESCRIPTION: Enter a name for the group list, up to 20 characters, in the Description text box. Do not use Control characters.

17.57 USERNAME: To program a username, enter up to 10 characters in the Username text box. Do not use backslash (\), vertical slash (/), tilde (~), or Control characters in usernames.

17.58 GROUP LIST NUMBER/AVAILABLE GROUP LIST NUMBERS: To enter the group list number, either type the desired number in the text box or select the Available Group List Numbers command button. If you select the command button, the following window appears. (If you attempt to enter an invalid number, a number that begins with 0, or a number that is already assigned, you will see a warning window. Select OK to continue and then select a valid number.)



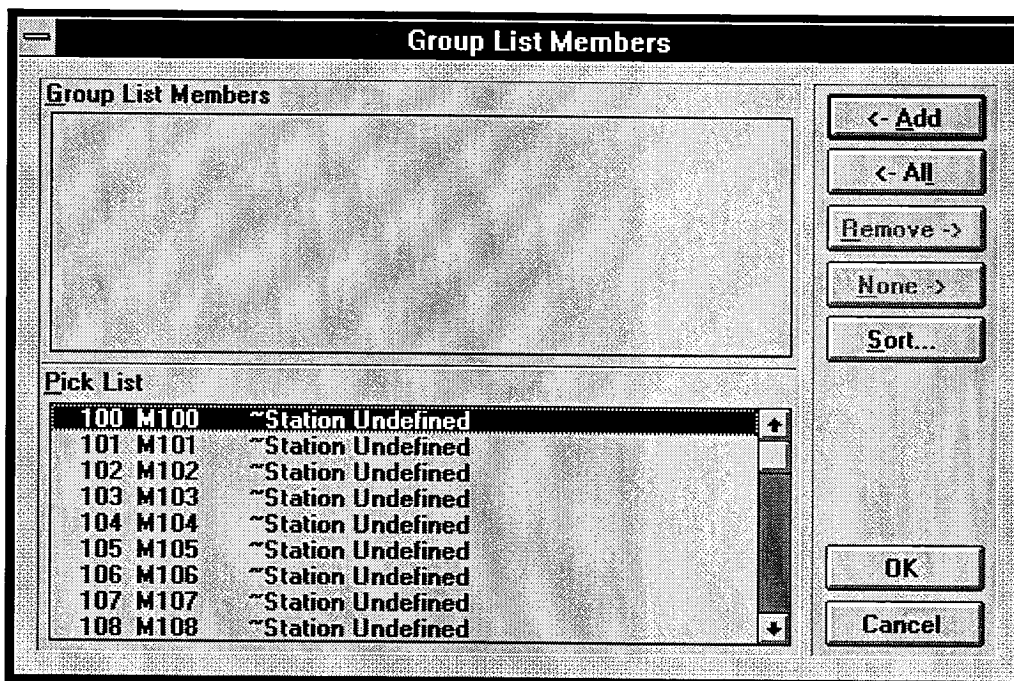
- **AVAILABLE NUMBERS:** This list box contains the available numbers. A number with Xs in it, such as 116XX or 12XXX, indicates that a series of numbers with that prefix are available. When selected, the prefix of the series (e.g., 116 or 12) is assigned to the application. To select a number, scroll the highlight bar in the list box to the desired number.

- **OK/CANCEL:** When the desired number is highlighted, select the OK command button. Or, to exit without changing the group list number, select the Cancel command button.

17.59 LIST MEMBERS: To determine the mailboxes that will be included in the group list, select the List Members command button. The window shown on the next page appears.

17.60 OK: When finished programming the group list, select the OK command button. If you did not assign mailboxes to this group list, you will receive a warning that says, "This group list does not contain any mailboxes. Is this correct? Select Yes to continue, or select No to return to the window shown above.

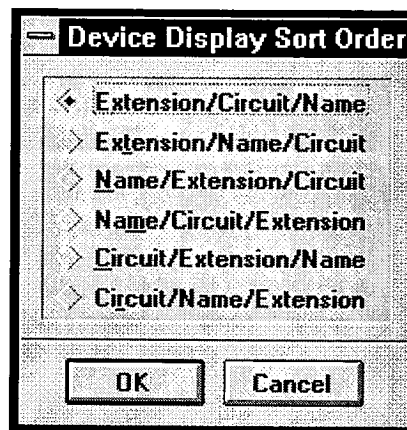
17.61 CANCEL: To exit without changing the group list, select the Cancel command button.

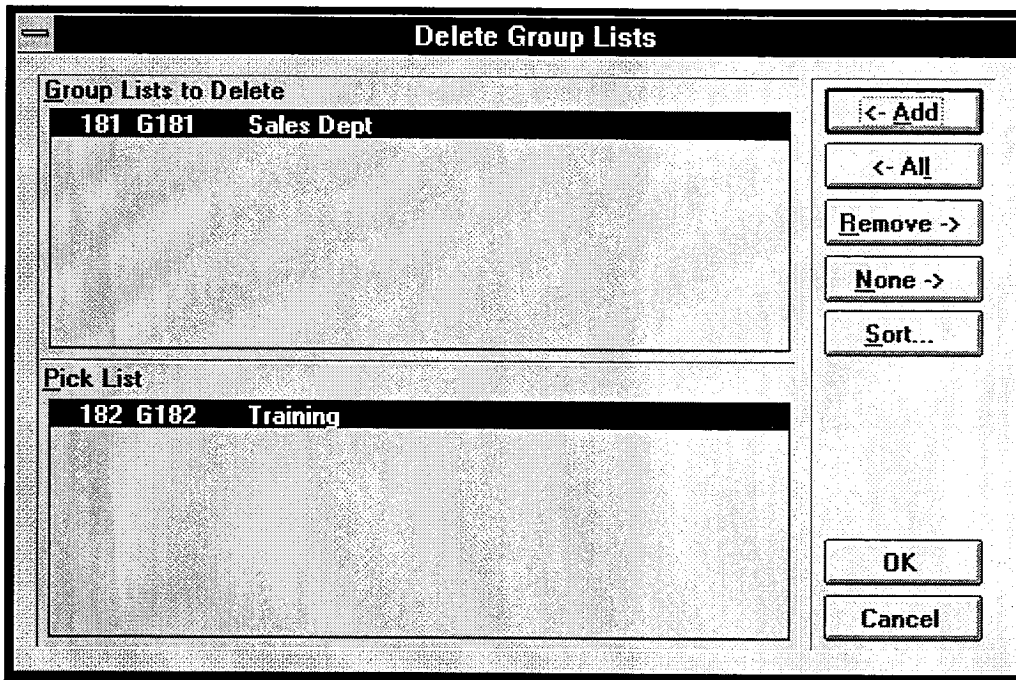


17.62 The window shown above appears when the List Members command button is selected. To determine the mailboxes that will be included in the list, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted mailbox from the Pick List to the Group List Members list, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a mailbox from the Group List Members list, highlight it and select the Remove command button. Or, to remove all mailboxes, use the None command button.
- **OK:** When the Group List Members list appears as desired, select the OK command button. If you attempt to add more mailboxes to a group list than the system allows, a warning appears, telling you that "The system allows only xxx mailboxes per group list. You currently have yyy mailboxes selected. Please remove zzz mailboxes from the group list." Select OK to return to the window shown above and reprogram the group list.

- **CANCEL:** To exit without changing the lists, select the Cancel command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.

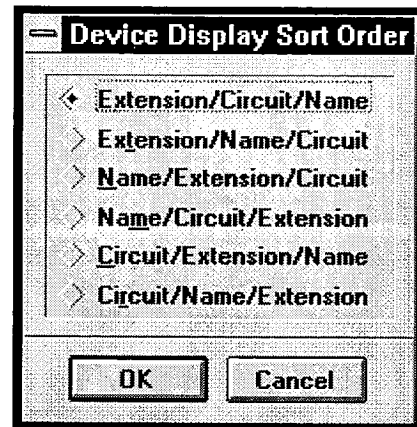


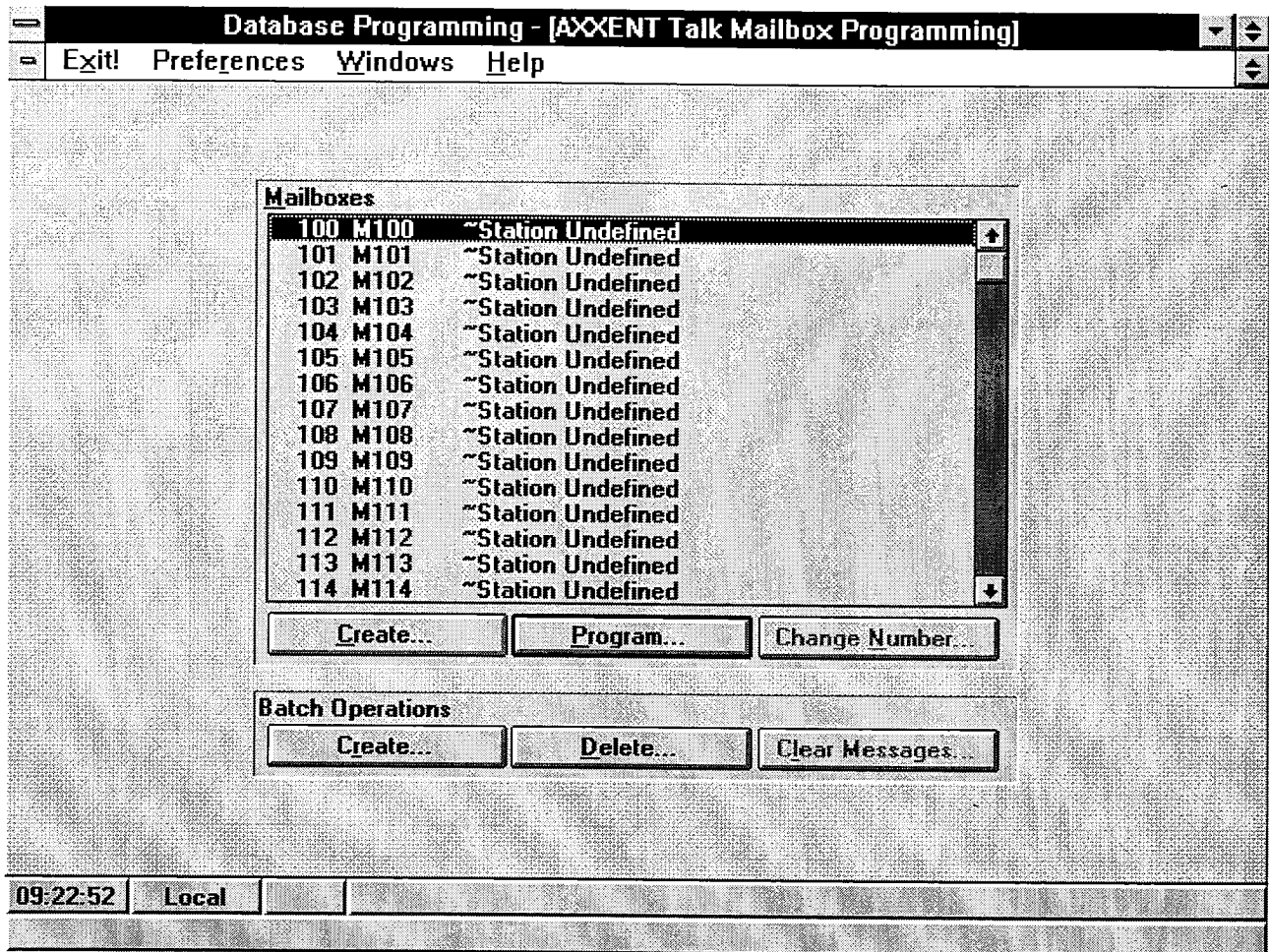


17.63 The window shown above appears when the Delete command button is selected. To determine the group lists that will be deleted, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted group list from the Pick List to the Groups Lists To Delete list, or use the All command button to place all group lists in the list.
- **REMOVE/NONE:** To remove a group list from the Groups To Delete List, highlight it and select the Remove command button. Or, to remove all group lists, use the None command button.
- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. (A window appears that tells you that, "You are about to create delete group lists. Do you wish to continue?" Select Yes to continue, or No to leave the group lists unchanged.) To exit without changing the lists, select the Cancel command button.

- **SORT:** To change the way the list boxes are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.





D. MAILBOX PROGRAMMING

17.64 A mailbox is a storage location on the Axxent Talk hard disk which stores all messages that have been directed to it. A program planning sheet for this window is located in Figure 6-28, on page 6-257.

17.65 MAILBOXES/PROGRAM: The list box shows all existing mailboxes. The default system database includes a mailbox for each station extension number. To program a mailbox, highlight it and then select the Program command button. A window appears as on page 6-166.

17.66 CREATE or CHANGE NUMBER: (*Change Number applies to non-associated mailboxes only.*) To create a mailbox, select the Create command button below the Mailboxes list box. To change an existing mailbox number, highlight it and select Change Mailbox Number. The window shown on the next page appears.

NOTE: If you create a mailbox for an extension that currently has an extension ID, the system converts the

ID into a mailbox and eliminates the ID. If already initialized, the password and recorded name for the extension ID are retained and transferred over to the mailbox and the subscriber does not need to re-initialize.

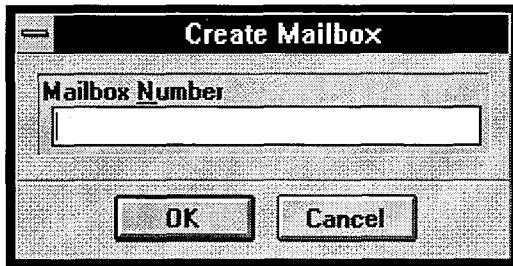
17.67 The following command buttons are used for performing batch programming operations:

17.68 CREATE: To create several mailboxes simultaneously, select the Create command button in the Batch Operations area of the window. A window appears, as shown on page 6-163.

17.69 DELETE: To delete several mailboxes simultaneously, select the Delete command button in the Batch Operations area of the window. A window appears, as shown on page 6-164.

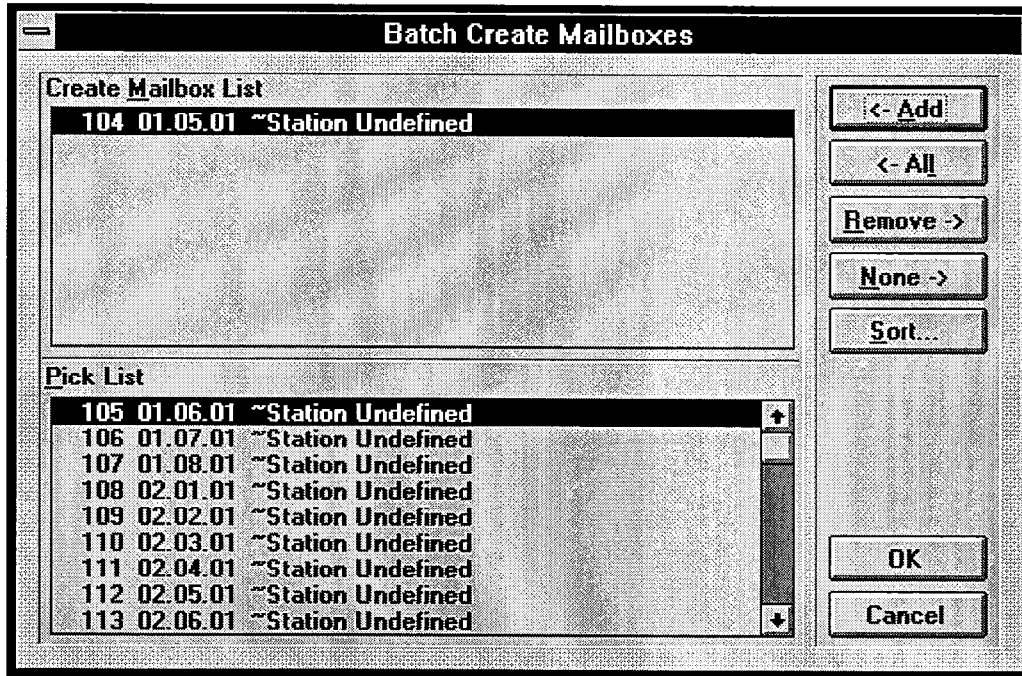
17.70 CLEAR MESSAGES: (*Cannot be used in stand-alone programming.*) To erase existing mailbox messages, select the Clear Messages command button. The window on page 6-165 appears.

Creating Or Changing A Mailbox Number



- **MAILBOX NUMBER:** Enter the desired mailbox number in the text box.

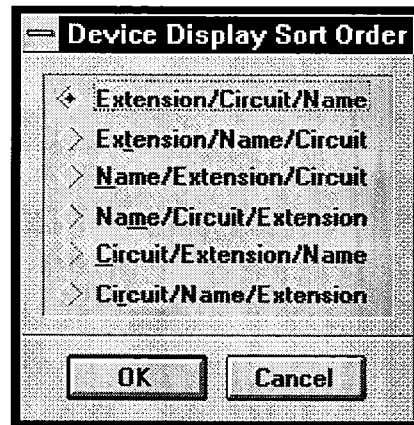
- **OK:** When finished, select OK. Selecting OK after creating a mailbox automatically displays the window shown on page 6–168. *If you entered an invalid number or a number that is already assigned, you will see a warning window. Select OK to continue and then select a valid number. If you change a mailbox number to a hunt group number that did not have a mailbox, a window appears that says, “The specified mailbox number corresponds to a system hunt group extension. Changing the mailbox will associate the mailbox with the hunt group. Do you wish to continue?” Select OK to continue or Cancel to return to the window.*
- **CANCEL:** To exit without creating a mailbox, select the Cancel command button.



Batch Creation Of Mailboxes

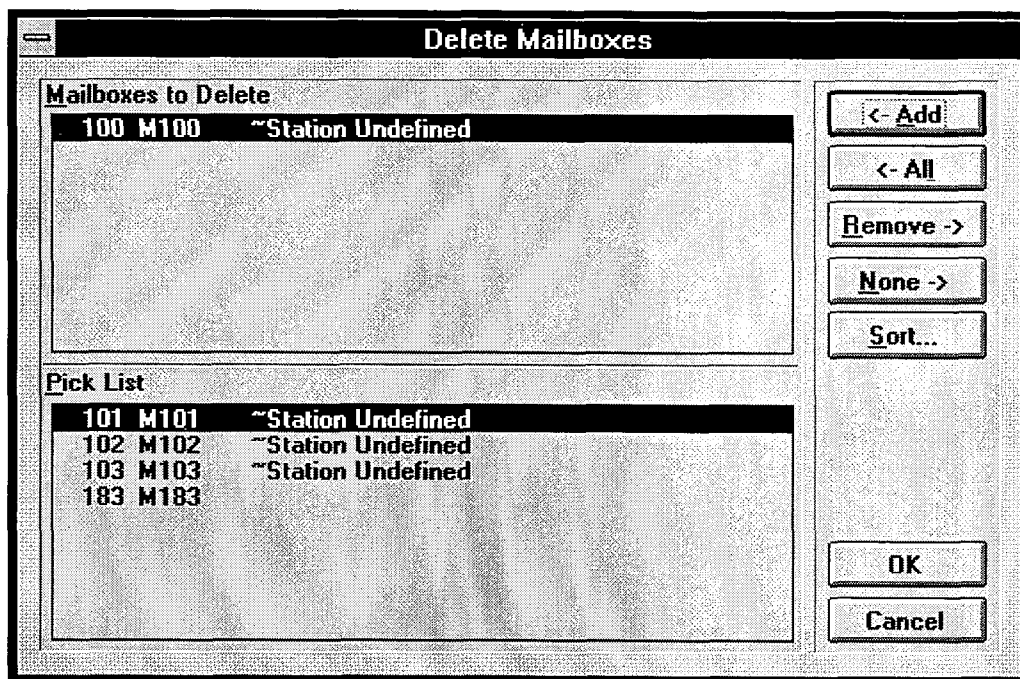
17.71 The window shown above appears when the Create command button in the Batch Operations section is selected. To determine the stations and hunt groups that will have mailboxes created for them, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted station or hunt group from the Pick List to the Create Mailbox List, or use the All command button to place all stations and hunt groups in the list.
- **REMOVE/NONE:** To remove a station or hunt group from the Create Mailbox List, highlight it and select the Remove command button. Or, to remove all stations and hunt groups, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Create Mailbox List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

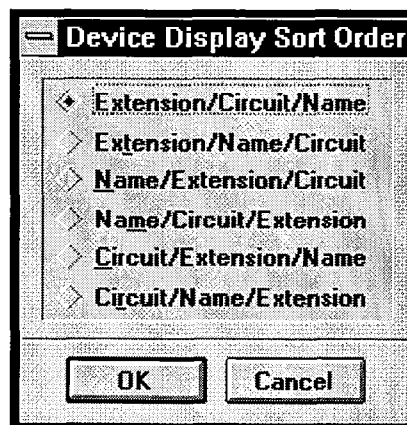
NOTE: When a large number of mailboxes have been created, it will take several minutes for the system to update the database and return to the Mailboxes programming window after you select the OK command button.



Deleting Mailboxes

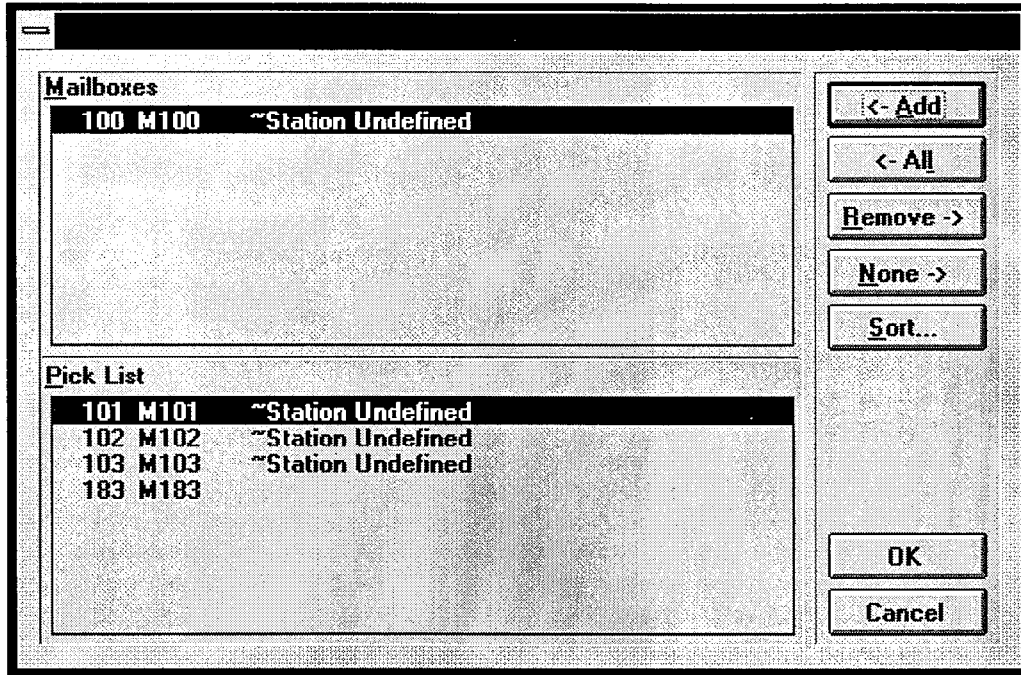
17.72 To delete one or more mailboxes, select the Delete command button. A window appears as shown above. To determine the mailboxes that will be deleted, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted mailbox from the Pick List to the Mailboxes To Delete list, or use the All command button to place all mailboxes in the list.
- **REMOVE/NONE:** To remove a mailbox from the Mailboxes To Delete list, highlight it and select the Remove command button. Or, to remove all mailboxes, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Mailboxes to Delete list box appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

NOTE: When a large number of mailboxes have been deleted, it will take several minutes for the system to update the database and return to the Mailboxes programming window after you select the OK command button.

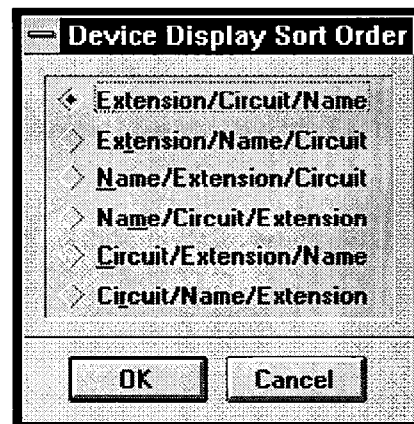


Clearing Mailbox Messages

17.73 The window shown above appears when the Clear Mailbox Messages command button is selected. To determine the mailboxes that will have their messages erased, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted mailbox from the Pick List to the Mailboxes To Clear list, or use the All command button to place all mailboxes in the list.
- **REMOVE/NONE:** To remove a mailbox from the Mailboxes To Clear list, highlight it and select the Remove command button. Or, to remove all mailboxes, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command

button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Mailboxes to Clear list box appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

Programming A Mailbox

17.74 The window shown on page 6-168 appears when the Program command button is selected. To program the parameters for a mailbox, use the following procedures. (This information can also be programmed through Individual Station Information, as described on page 6-29.)

17.75 The programming window can be used for programming the following parameters for each mailbox.

- **Description and Username:** Each mailbox can have a description of up to 20 characters and a username of up to 10 characters. The description is used for providing first and last names for the mailbox directory. (For correct Axxent Talk directory operation, enter the last name, followed by a comma and the first name.) Do not use backslash (\), vertical slash (/), or tilde (~) characters in usernames. Do not use Control characters in descriptions or usernames.
- **Message Notification Station:** Each mailbox has a station that will receive message notification whenever the mailbox receives a message. This is usually the same number as the mailbox. However, when a mailbox is shared by several stations, or belongs to a hunt group pilot number, a specific station must be designated to receive the message notification. If non-associated mailboxes are programmed, you must disable the Validate Mailbox feature (see the System Flags window on page 6-93) to allow station users to dial the non-associated mailbox numbers.

NOTE: If the mailbox is associated with a station, the Description, Username, and Message Notification Station fields are not accessible. If associated with a hunt group, the Description and Username fields are dimmed. These fields are automatically updated when modifications are made in Station Programming and System-Wide Features.

- **Remote Messaging:** Each station can have primary and/or alternate message notification that includes the following options.
 - *Enable Notification:* Message notification to an intercom number or to an outside telephone number can be turned on or off without changing any of the programmed parameters. (In the default state, notification is disabled.)
 - *Notification Number:* If the message notification number is an outside telephone number, it can have up to 16 digits and can contain pauses, if necessary. (It does not need to contain a trunk access code; it will use the outgoing access code

programmed for the Message Notification application. See page 6-175.) Any valid intercom number can be used as the notification number. The default number for an associated mailbox is the associated station's or hunt group's extension number. For non-associated mailboxes, the field is blank.

- *Notification Type:* The message notification number can be identified as a personal number (a person will answer the call) or a pager. (This defaults to "personal number.")
- *Notification Category:* Message notification can be set to place the notification call for each new message or only when priority messages are received. (This defaults to "each new message.")
- *Notification Start/Stop Time:* Message notification can be enabled for any time period, up to 24 hours per day. (Default is 8:00am to 5:00pm.) If start and stop times are the same, notification will be enabled 24 hours per day.
- *Remote Notification Tables:* The system can have up to 10 Remote Notification Tables (see page 6-175 for programming information). These tables determine what digits are sent when the system places a call to a pager.
- *Days Of Week:* Message notification can be set to place notification calls only on certain days. (This defaults to Monday through Friday.)
- **Password:** A password of up to 12 digits can be programmed for use by the subscriber when retrieving messages.
- **Miscellaneous Information:** The miscellaneous parameters that can be programmed for each mailbox include the following. The information also include the length, in seconds, of the recorded name, primary greeting, and alternate greeting.
 - *Mailbox Message Capacity:* The mailbox can be programmed to hold 1-120 minutes of messages. Default capacity is 30 minutes.
 - *Maximum Non-Subscriber Message Length:* Maximum non-subscriber messages can be set to a value between one minute and the Maximum Mailbox Message Capacity setting. Default length is 5 minutes.
 - *Maximum Outgoing Message Length:* The length of outgoing messages by this subscriber can be 1-120 minutes. Default length is 5 minutes.

- *Greeting Selection:* The system greeting, the mailbox primary greeting, or the mailbox alternate greeting can be enabled. The greeting selection defaults to the system greeting.
 - *Play Recording Instructions:* If this option is enabled, the system prompt that tells the caller to leave a message after the beep will play after the primary or alternate greeting. If disabled, the beep will occur as soon as the primary or alternate greeting ends. In the default state, this option is enabled.
 - *Envelope Settings:* The “envelope” announcement that is played before each message can be programmed to announce date and time, message source, and/or message length. The default envelope contains all information.
 - *Directory Information:* The mailbox can have an unlisted number (not included in the mailbox directory but can be dialed if the caller knows the mailbox number) and/or it can be a private extension and mailbox number (extension and mailbox number are not announced in directory, but the number can be dialed). There are no private or unlisted numbers in the default state.
 - **Subscriber Statistics:** You can check the following information.
 - Date and time of last log on
 - Number of new and saved messages
 - Mailbox percent full
 - Number of times mailbox was 80% full or full
 - Number of messages sent and received
 - Total length of new and saved messages
 - Number of times three bad passwords were entered
 - **Mailbox Type:** The mailbox can be programmed as a “standard” mailbox that can send and receive messages or it can be a “receive only” mailbox. (In the default state, it is a standard mailbox.)
 - **Mailbox Initialized:** The mailbox programming window has an indicator that shows whether the subscriber (mailbox owner) has initialized the mailbox and recorded a name in the company directory.
- 17.76** This window also shows, for reference purposes, the length of the recorded name, primary greeting, and alternate greeting.

Mailbox Number: 183

Description
[Text Field]

Username
[Text Field]

Message Notification Station
<None> [Dropdown]

Enable Remote Messaging

[Primary Message Notification...]

[Alternate Message Notification...]

Password...

Miscellaneous...

Subscriber Statistics...

Mailbox Type
Standard [Dropdown]

Mailbox Initialized: No

[OK] [Cancel]

17.77 DESCRIPTION/USERNAME: (Not programmable for associated mailboxes.) Enter a description of up to 20 characters in the Description text box. This description is used in the mailbox directory and should be entered in the form "last name, first name" (with a comma and space separating the names). Enter a name of up to 10 characters in the Username text box. This is the name that will appear on keyset displays. Do not use backslash (\), vertical slash (/) or tilde (~) characters in usernames. Do not use Control characters in descriptions or usernames.

17.78 MESSAGE NOTIFICATION STATION: (Not programmable for associated mailboxes.) To select the station that will receive message notifications, select the Message Notification Station drop-down list box and scroll the highlight bar to the desired extension.

17.79 ENABLE REMOTE MESSAGING: To enable remote messaging, select this check box to place a check mark in it. To disable remote messaging, select it again to remove the check mark.

17.80 PRIMARY/ALTERNATE MESSAGE NOTIFICATION: If remote messaging is enabled, select either the Primary or Alternate Message Notification command button to program the remote messaging parameters. A window appears as shown on page 6-169.

17.81 MAILBOX TYPE: To determine whether the mailbox type is Standard or Receive Only, select the Mailbox Type drop-down list box and scroll the highlight bar to the desired type.

17.82 MISCELLANEOUS: To program additional mailbox information, select the Miscellaneous command button. A window appears as shown on page 6-170.

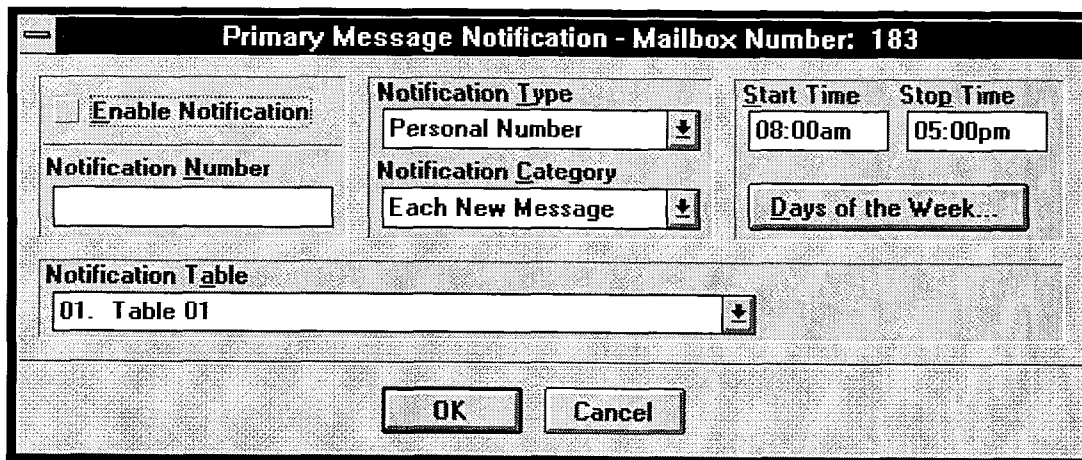
17.83 SUBSCRIBER STATISTICS: To view mailbox's statistics, select the Subscriber Statistics command button. A window appears as shown on page 6-171.

17.84 PASSWORD: To program a password for the mailbox, select this command button. A window appears as shown below. Enter a password (up to 12 digits). Asterisks appear in place of the digits as the password is typed. Then select the OK command button. The window heading will change to "Password Validation" and you must retype the password exactly as before. If the entered passwords match, you will return to the Mailbox window, if not, you must re-enter the new password and verify it again. If you make a mistake while entering the password or wish to leave it unchanged, select the Cancel command button.

Password Entry

[Text Field]

[OK] [Cancel]



Remote Message Notification Programming

17.85 This window appears when the Primary Message Notification or Alternate Message Notification command button is selected.

17.86 ENABLE NOTIFICATION: To enable remote message notification, select the Enable notification check box to place a check mark in it. To disable remote message notification, select the check box again to remove the check mark.

17.87 NOTIFICATION NUMBER: In the Notification Number text box, enter the number (outside number or extension number) to be notified when the mailbox receives a message. If the notification number has fewer than six digits, it must match a station or hunt group extension. If it does not, or if the field is blank or contains invalid characters, you will see a warning message as you attempt to exit from the window and you will have to enter a valid number. (Special pager and outgoing access dial strings are programmed on page 6-175.)

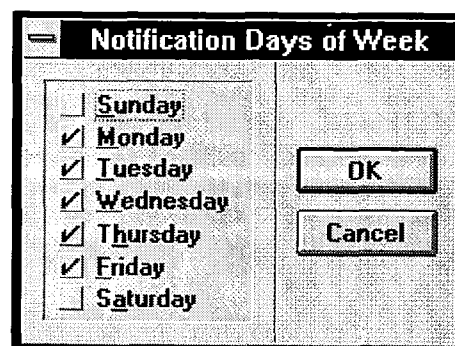
17.88 NOTIFICATION TYPE: Determine whether the notification is a Personal Number (that will be answered by a person) or Pager by selecting the Notification Type drop-down list box and scrolling the highlight bar to the desired option.

17.89 NOTIFICATION CATEGORY: Determine whether the notification number will be called whenever a new message is received or only when priority messages are received. Select the Notification Category drop-down list box and scroll the highlight bar to the desired option.

17.90 NOTIFICATION START/STOP TIME: Enter the time of day that notifications will begin in the Notification Start Time text box. Enter the time of day that

notifications will end in the Notification Stop Time text box. Use 12-hour format followed by "am" or "pm," or use 24-hour format. For round-the-clock notification, set the start and stop times to the same value.

17.91 DAYS OF THE WEEK: To determine for which days of the week notifications will be enabled, select the Days of the Week command button. The following window appears. Select the check box(es) for the desired day(s). The check marks show the selected days. To remove a check mark, select the check box again. When finished select OK. Or, select Cancel to leave the days of the week unchanged.



17.92 NOTIFICATION TABLE: The system can have up to 10 Remote Notification Tables (see page 6-175 for programming information). Select the drop-down list box and scroll the highlight bar to the desired Remote Notification Table.

17.93 OK/CANCEL: When message notification programming is complete, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.

Miscellaneous Mailbox Information - Mailbox Number: 183

Maximum Mailbox Message Capacity
30 min. (Default 30) (Range 1-120)

Maximum Non-subscriber Message Length
5 min. (Default 5) (Range 1-Capacity)

Maximum Outgoing Message Length
5 min. (Default 5) (Range 1-120)

Recorded Name Length
0 seconds

Primary Greeting Length
0 seconds

Alternate Greeting Length
0 seconds

Greeting
System Greeting

Play Recording Instructions

Envelope Settings
 Announce Date and Time
 Announce Message Source
 Announce Message Length

Directory Information
 Unlisted Number
 Private Extension and Mailbox Number

OK Cancel

Miscellaneous Mailbox Information Programming

17.94 This window appears when the Miscellaneous command button is selected.

17.95 MAXIMUM MAILBOX CAPACITY: This is the amount of mailbox message storage available, in minutes. The default is 30 minutes. The range is 1–120 minutes. Enter the desired number in the text box. *If you enter an invalid number, you will see a warning message.* Select OK to continue.

17.96 MAXIMUM NON-SUBSCRIBER MESSAGE LENGTH: This is the maximum length of time (in minutes) for non-subscriber mailbox messages. Default is 5 minutes. The range is 1 minute to the Maximum Mailbox Message Capacity value. Enter the new value in the text box. *If you enter an invalid number, you will see a warning message.* Select OK to continue.

17.97 MAXIMUM OUTGOING MESSAGE LENGTH: This is the maximum length for messages sent by the subscriber to another subscriber. The default is 5 minutes. The range is 1–120 minutes. Enter the new value in the text box. *If you enter an invalid number, you will see a warning message.* Select OK to continue.

17.98 GREETING: To determine the greeting callers will hear when they reach the mailbox, select the Greeting drop-down list box and scroll the highlight bar to the desired selection (Primary, Alternate, or System Greeting). **NOTE:** Even if re-programmed, the system greet-

ing will continue to play until the greeting selected here has been recorded.

17.99 PLAY RECORDING INSTRUCTIONS: To disable the instructions that play after the primary or alternate greeting, select the check box to remove the check mark. To enable the option, select the box again.

17.100 ENVELOPE SETTINGS: To determine which elements will be included in the “envelope” that is played before each message, select the desired elements to place a check mark in their check boxes. To disable any element, select the check box again to remove the check mark.

17.101 DIRECTORY INFORMATION: If the mailbox will have an unlisted or private extension, select the desired check box to place a check mark in it. Or, to disable the option and remove the check mark, select the box again.

17.102 RECORDED NAME LENGTH, PRIMARY GREETING LENGTH, and ALTERNATE GREETING LENGTH: This section of the window displays the number of seconds used by the mailbox’s directory name recording and the length of the primary and alternate greetings. The information is shown for reference only. It is not programmable.

17.103 OK/CANCEL: When mailbox information programming is complete, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.

Subscriber Statistics - Mailbox Number: 183	
Date and Time of Last Logon:	None
Number of New Messages:	0
Number of Saved Messages:	0
Mailbox Percent Full:	0%
Number of Times Mailbox Was 80% Full:	0
Number of Times Mailbox Was Full:	0
Number of Messages Sent:	0
Number of Messages Received:	0
Total Length of New and Saved Messages:	0 hours, 0 minutes
Number of Times 3 Bad Passwords Were Entered:	0

OK

Subscriber Statistics Report

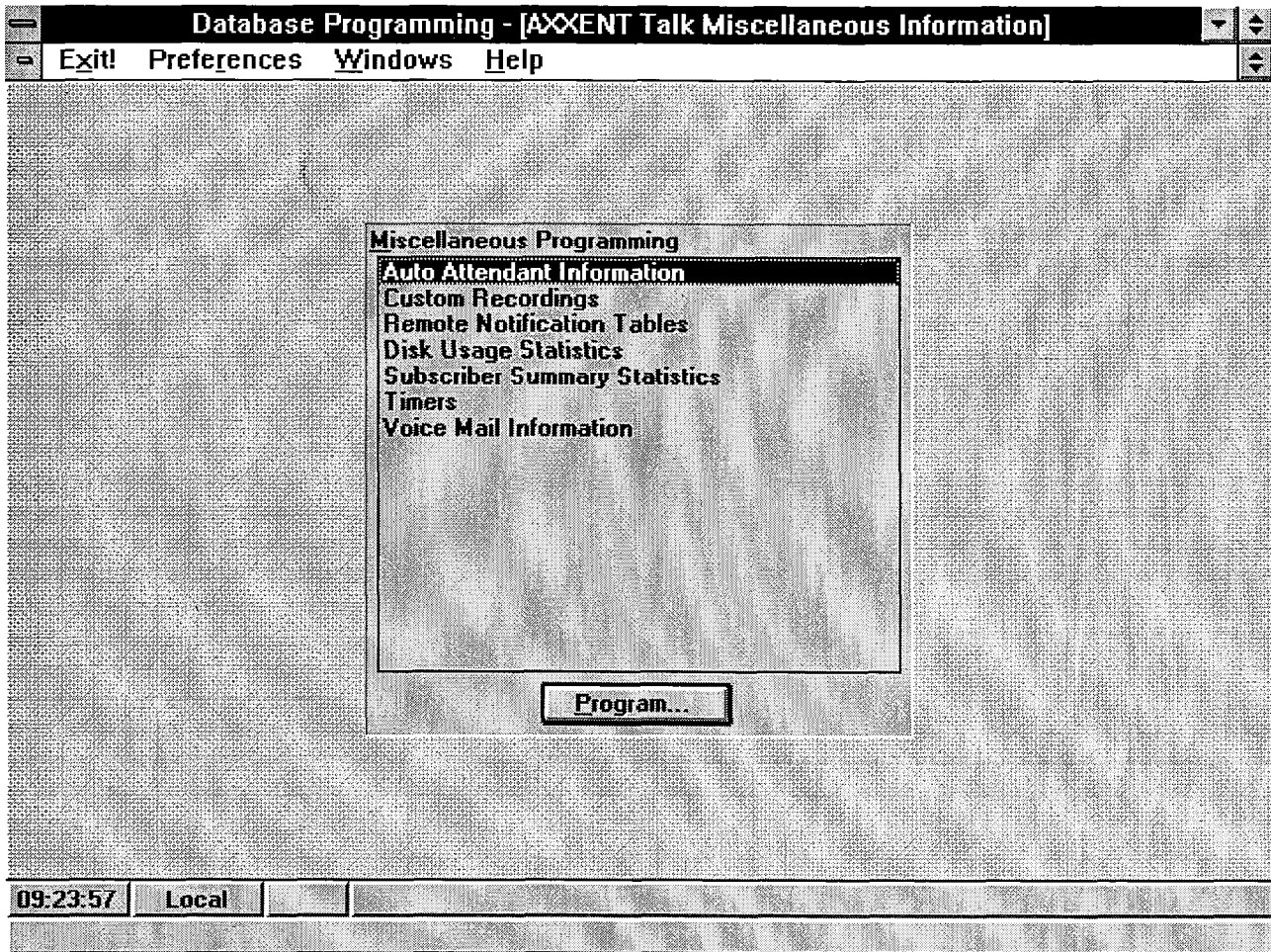
17.104 This window appears when the Subscriber Statistics command button is selected. It shows the following information for the selected mailbox.

17.105 The statistics for this report reflect the period since the last date that the statistics were cleared. Statistics are cumulative and remain as such until cleared using the Axxent Talk Report Programming window.

- **Date and Time of Last Logon:** At default, this displays "None." Once the subscriber logs on to the mailbox this field will reflect the most recent date and time of the last valid logon. (If the System Administrator makes any change to a subscriber's personal options from the System Administrator's mailbox, no change will be made to this field.)
- **Number of New Messages:** This is a count of the number of messages in a subscriber's new message queue. It is the same number that is reported to the subscriber when he or she logs in to the mailbox.
- **Number of Saved Messages:** This is a count of the number of messages stored in the saved message queue for the mailbox. It is the same number that is reported to the subscriber when he or she logs in to the mailbox.
- **Mailbox Percent Full:** This shows the actual percentage of maximum mailbox message capacity used.

- **Number of Times Mailbox Was More Than 80% Full:** This shows the number of times the mailbox reached 80% of its maximum message capacity.
- **Number of Times Mailbox Was Full:** This displays the number of times a mailbox reached its maximum message capacity.
- **Number of Messages Sent:** This is a count of the number of times a subscriber records and sends a message (to one mailbox or a group list of mailboxes), replies to a message sent by another subscriber, or forwards a message with comments.
- **Number of Messages Received:** This shows the number of messages a subscriber has received regardless of where the messages came from (subscriber, non-subscriber, or system).
- **Total Length of New and Saved Messages:** This is a combined total of the amount of time represented by the "Number of New Messages" and "Number of Saved Messages" fields.
- **Number of Times 3 Bad Passwords Were Entered:** This counter increases each time a single call includes three attempts to enter a mailbox and the caller uses an incorrect mailbox/password combination.

17.106 OK: When you are finished viewing the report, select the OK command button to exit.



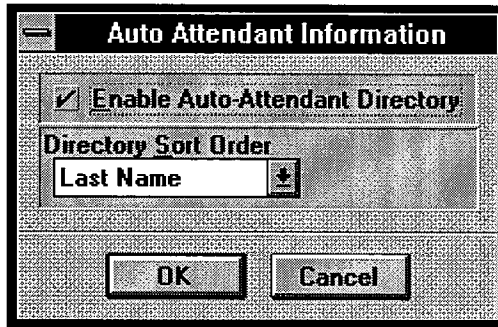
E. AXXENT TALK MISCELLANEOUS INFORMATION

17.107 The following information can be programmed and reports viewed using this window. A program planning sheet is located in Figure 6-29, on page 6-258.

- **Automated Attendant Information:** Enable/disable the directory and/or determine whether the directory is sorted by first or last name. The window is shown on the next page.
- **Custom Recordings:** Program descriptions for Custom Recordings (01-50). The window is shown on page 6-174.
- **Remote Notification Tables:** Determine the numbers that will be dialed by the system for pager answer, LCD display, pager termination, and outgoing trunk access. The window is shown on page 6-175.

- **Disk Usage Statistics:** Display a report that shows the status of the Axxent Talk disk storage. The window is shown on page 6-177.
- **Subscriber Summary Statistics:** Display a report that shows mailbox statistics for all mailboxes combined. The window is shown on page 6-178.
- **Timers:** Program the timers that are used by the Axxent Talk applications. The window is shown on page 6-179.
- **Voice Mail Information:** Select the System Administrator's mailbox, enable/disable the voice mail directory, determine the directory sort order, and set the volume for voice mail prompts. The window is shown on page 6-182.

17.108 **MISCELLANEOUS PROGRAMMING/PROGRAM:** To reach one of the options, highlight it in the list box and select the Program command button. The windows are shown on the pages listed above.



Auto Attendant Information

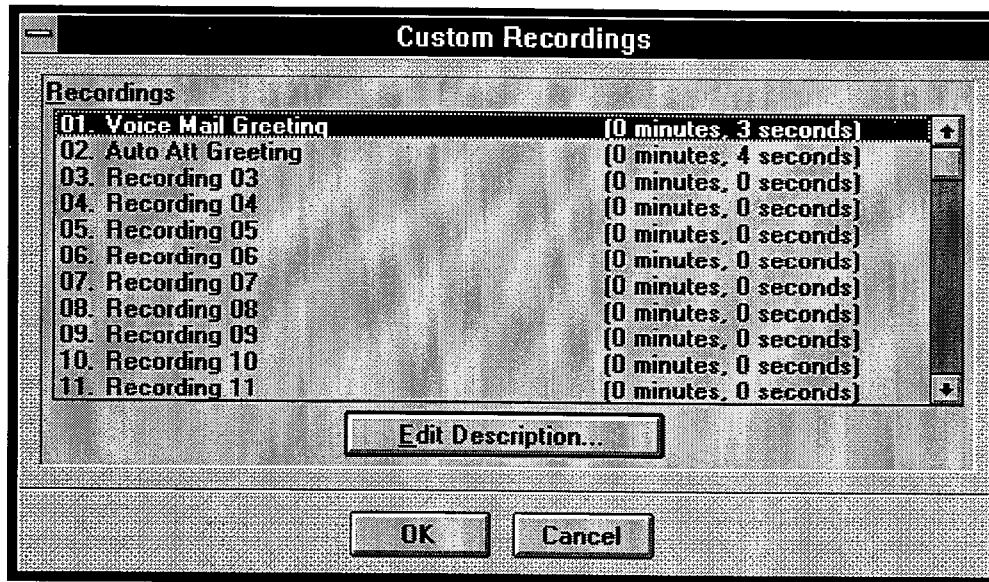
17.109 This window appears when Auto Attendant is highlighted and the Program command button is selected. It is used for determining whether the automated attendant application will use the mailbox and extension ID directory and how the directory is sorted.

17.110 ENABLE AUTO-ATTENDANT DIRECTORY: To enable the directory, select this check box to

place a check mark in it. To disable the directory, select it again to remove the check mark.

17.111 DIRECTORY SORT ORDER: To determine whether the mailbox and extension ID descriptions in the directory will be sorted by first name or last name, select the drop-down list box and scroll the highlight bar to the desired option.

17.112 OK/CANCEL: When finished, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.



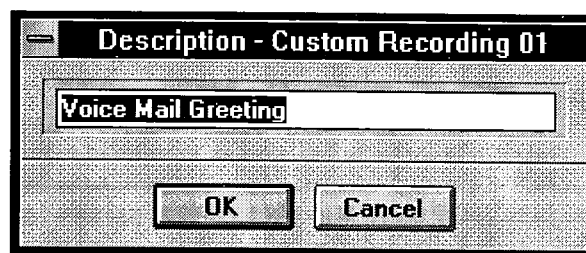
Custom Recordings

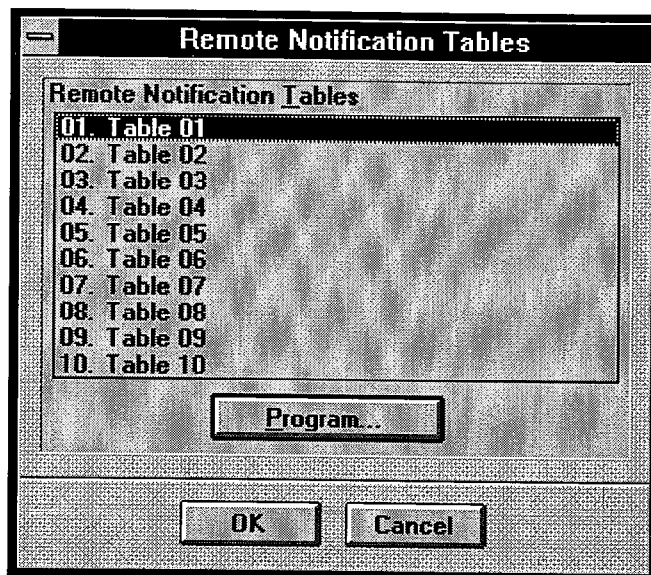
17.113 This window appears when Custom Recordings is highlighted and the Program command button is selected.

17.114 EDIT DESCRIPTION: The Recordings list box shows the custom recordings (01–50) and their current descriptions and lengths. To change the description of a recording, highlight it in the list box and select the

Program Description command button. The following window appears. Enter the desired description, up to 20 characters, and select the OK command button. Or select the Cancel command button to leave the description unchanged.

17.115 OK/CANCEL: When finished, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.





Remote Notification Tables

17.116 This window appears when Remote Notification Tables is highlighted and the Program command button is selected. It allows you to set up pager dialing information and outgoing trunk access criteria in tables that are then assigned to the individual mailboxes in the programming window shown on page 6-169.

17.117 REMOTE NOTIFICATION TABLES/PROGRAM: To program a dial string table, highlight it in the list box and select the Program command button. A window appears as shown on the next page.

17.118 OK/CANCEL: When you have finished programming the Remote Notification Tables, select the OK command button to exit and save the changes. To exit without saving changes, select the Cancel command button.

The screenshot shows a graphical user interface window titled "Remote Notification Table 02". The window is divided into several sections:

- Description:** A text box containing "Table 02".
- Pager Notification Strings:** A section containing three text boxes:
 - Answer:** An empty text box.
 - LCD Number Display:** An empty text box.
 - Termination:** A text box containing "#".
- Outgoing Access Strings:** A section containing two text boxes:
 - Outgoing Access:** A text box containing "9201".
 - Termination:** A text box containing "#".

At the bottom of the window, there are two buttons: "OK" and "Cancel".

17.119 This window appears when a Remote Notification table has been selected for programming, as described on the preceding page.

17.120 DESCRIPTION: Enter a description of up to 20 characters in the Description text box.

17.121 PAGER NOTIFICATION STRINGS: Valid entries for all of the text boxes include: any digit 0–9, P for pause, #, and *. Also, if you wish to have the pager show the number of the mailbox that placed the call, you can use an M in the dial string. For example, if the Pager LCD Number Display is programmed as 9619000*M and a pager call is placed by mailbox number 1234, the pager display would show 9619000*1234. *If you enter an invalid number, you will see a warning message. Press OK to continue and make a valid entry.*

- **ANSWER:** In this text box, enter any digits that the paging company requires prior to receiving the pager LCD number and the pager termination code. The maximum length of this dial string is 18 digits.
- **LCD NUMBER DISPLAY:** Enter the telephone number that the Axxent Talk will send to the pagers as the callback number for all remote message noti-

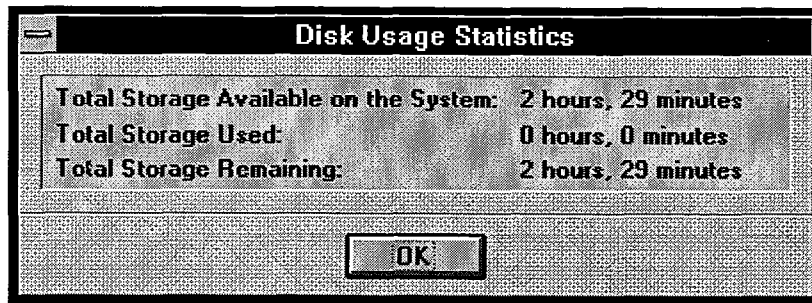
fications sent to pagers. The maximum length for this field is 18 digits.

- **TERMINATION:** Enter the digit(s) (up to 18) that must be dialed to terminate the dialing sequence for a pager. At default, it is #.

17.122 OUTGOING ACCESS STRINGS: The maximum length these dials string is 18 digits.

- **OUTGOING ACCESS:** This text box is used to identify the dial string used for selecting a trunk for placing remote notification calls. The default for this field is Trunk Group 1 (9201). The maximum length is five digits. (Make sure that the Message notification application has outgoing access for the selected trunk group. See page 6–134.)
- **OUTGOING ACCESS TERMINATION:** This text box contains the dial string that the system uses to terminate an outgoing number. The maximum length this dial string is six digits. At default, the setting is #.

17.123 OK/CANCEL: When finished, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.



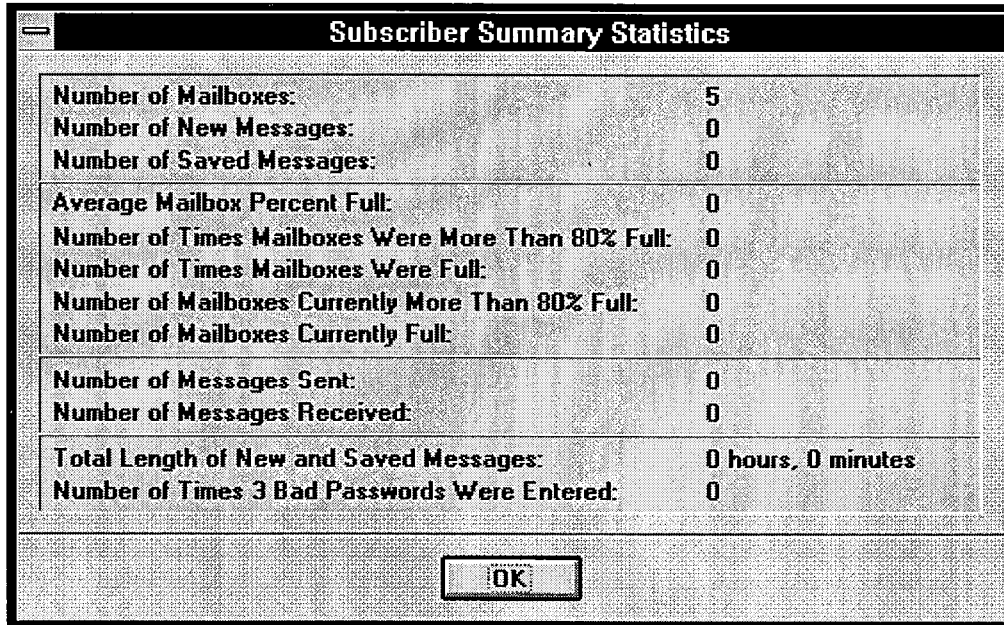
Disk Usage Statistics

17.124 This window appears when Disk Usage Statistics is highlighted and the Program command button is selected. The report includes the following information:

- **Total Storage Available on the System:** This is the amount of disk space available on the Axxent Talk.
- **Total Storage Used:** This is the disk space that has been used by the Axxent Talk applications.

- **Total Storage Remaining:** This is the amount of disk space remaining in the Axxent Talk. If the disk is nearly full, you can increase disk space by clearing the SMDR buffer or mailbox messages. If available disk space is frequently low, a larger-capacity disk drive should be installed in the Axxent Talk.

17.125 OK: When finished, select the OK command button to exit.



Subscriber Summary Statistics	
Number of Mailboxes:	5
Number of New Messages:	0
Number of Saved Messages:	0
Average Mailbox Percent Full:	0
Number of Times Mailboxes Were More Than 80% Full:	0
Number of Times Mailboxes Were Full:	0
Number of Mailboxes Currently More Than 80% Full:	0
Number of Mailboxes Currently Full:	0
Number of Messages Sent:	0
Number of Messages Received:	0
Total Length of New and Saved Messages:	0 hours, 0 minutes
Number of Times 3 Bad Passwords Were Entered:	0

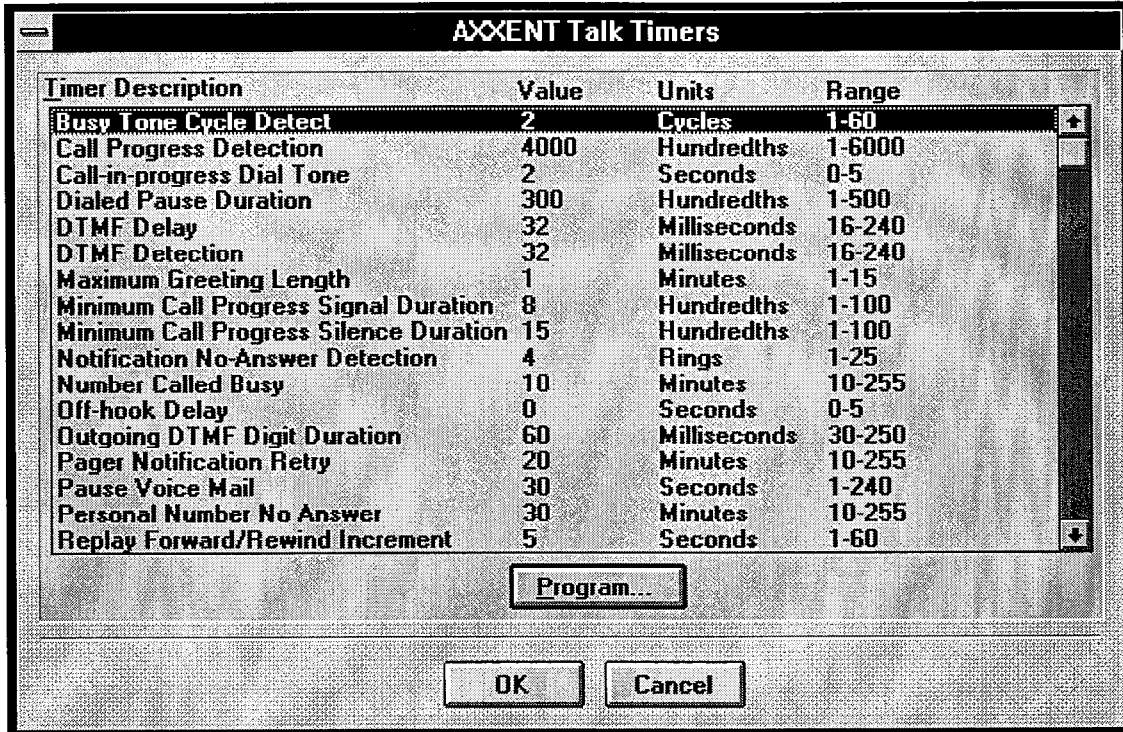
OK

Subscriber Summary Statistics

17.126 This window appears when Subscriber Summary Statistics is highlighted and the Program command button is selected. It displays the following information. (Statistics continue to accumulate until cleared using the Axxent Talk Report Programming window.)

- **Number of Mailboxes:** This shows the number of mailboxes that have been created in voice mail.
- **Number of New Messages:** This is the total of the number of messages in all subscriber's new message queues.
- **Number of Saved Messages:** This is the total of the number of messages stored in the saved message queues for all mailboxes.
- **Average Mailbox Percent Full:** This shows the average percentage of maximum message capacity used by all mailboxes.
- **Number of Times Mailboxes Were More Than 80% Full:** This shows the number of times any mailbox reached 80% of its maximum message capacity.
- **Number of Times Mailboxes Were Full:** This displays the number of times any mailbox reached its maximum message capacity.
- **Number of Mailboxes Currently More Than 80% Full:** This shows how many mailboxes are currently over 80% of their maximum message capacity.
- **Number of Mailboxes Currently Full:** This shows the number of mailboxes that are currently at their maximum capacity.
- **Number of Messages Sent:** This is a count of the number of times subscribers have recorded and sent messages (to one mailbox or a group list of mailboxes), replied to a message sent by another subscriber, or forwarded a message with comments.
- **Number of Messages Received:** This shows the number of messages that subscribers have received regardless of where the messages came from (subscriber, non-subscriber, or system).
- **Total Length of New and Saved Messages:** This is a combined total of the amount of time represented by the "Number of New Messages" and "Number of Saved Messages" fields.
- **Number of Times 3 Bad Passwords Were Entered:** This counter increases each time a single call includes three attempts to enter a mailbox and the caller uses an incorrect mailbox/password combination.

17.127 OK: When finished, select the OK command button to exit.



Axxent Talk Timers

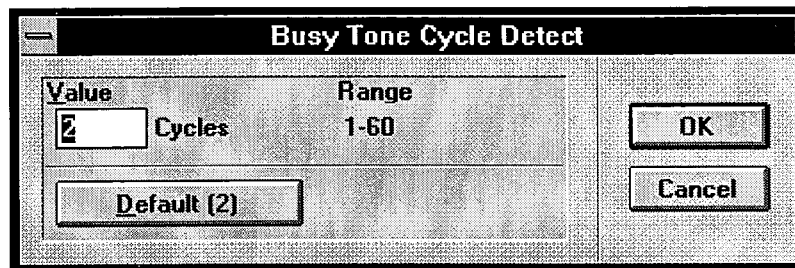
17.128 This window appears when Timers is highlighted and the Program command button is selected. The timers and their default values and ranges are shown on the next page.

17.129 PROGRAM: To program a timer, highlight it in the list box and select the Program command button. The window shown below appears.

- **VALUE:** Enter the desired value for the timer, within the valid range, as shown.

- **DEFAULT:** To return the timer to default value, select the Default command button. The button shows the default value.
- **OK/CANCEL:** When the timer is programmed correctly, select the OK command button. Or to exit without changing the timer, select the Cancel command button.

17.130 OK/CANCEL: When finished, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.



17.131 The following timers can be programmed for Axxent Talk.

- **Busy Tone Cycle Detect:** This is the minimum number of cycles of tone the system needs to recognize busy, do-not-disturb, or reorder tones. When the Axxent Talk does not recognize one of these tones, it will assume the call is answered. The range for this timer is 1–60 cycles. The default is 2 cycles.
- **Call Progress Detection:** This determines the maximum length of time Axxent Talk will wait for a call to be answered before aborting the attempted call. If it detects anything other than silence during this time, the system will consider the call answered. The range for this timer is 1–6000 hundredths of a second ($1/100$ to 60 seconds). The default is 4000 hundredths (40 seconds).
- **Call-In-Progress Dial Tone:** This is the minimum duration of continuous dial tone that Axxent Talk can recognize during an active call (for example, when a caller hangs up while connected to the voice mail application). To disable dial tone detection on active calls, set this timer to 0. The range for this timer is 0–5 seconds. The default is 2 seconds.
- **Dialed Pause Duration:** This determines the length of pauses dialed by Axxent Talk as part of feature codes, telephone numbers, and outgoing dialing strings. The range for this timer is 1–500 hundredths of a second ($1/100$ to 5 seconds). The default is 300 hundredths (3 seconds).
- **DTMF Delay:** This determines the minimum duration of DTMF tones that can be recognized by Axxent Talk when a recording is being played (for example, when a prompt or message is playing). The range for this timer is 16–240 milliseconds. The default is 32 milliseconds.
- **DTMF Detection:** This determines the minimum duration of DTMF tones that can be recognized by Axxent Talk during playback functions (for example, when Axxent Talk is silent and waiting for input). The range for this timer is 16–240 milliseconds. The default is 48 milliseconds.

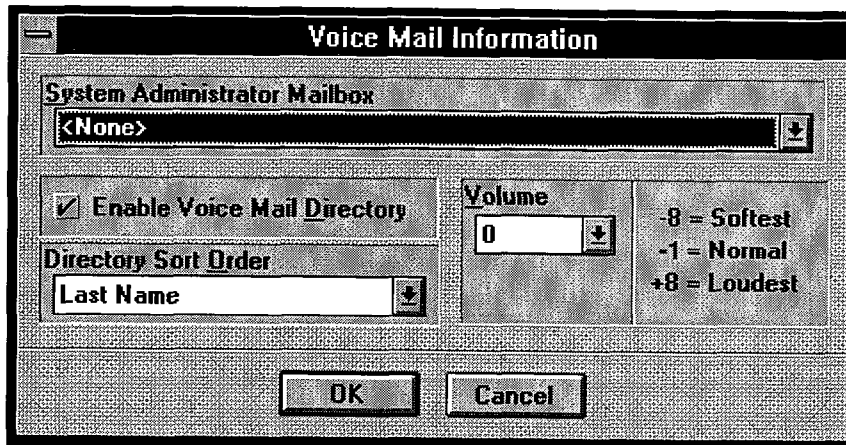
NOTE: If either of the DTMF timers is changed, the new value will not take effect until Axxent Talk is completely idle. Also note that changing the DTMF Delay or DTMF Detection timer value is a trade-off between improving DTMF detection and increasing the possibility that human voices will be detected as DTMF tones (this is called “talk off”). As the value of the timer is reduced, DTMF detection is improved, but the possibility of talk off increases. As

the value is increased, the possibility of talk off is reduced, but the possibility of DTMF detection problems is increased.

- **Maximum Greeting Length:** This is the maximum time allowed for all mailbox greetings and custom recordings. The range for this timer is 1–15 minutes. The default is 1 minute.
- **Minimum Call Progress Signal Duration:** This timer determines the minimum duration of a period of sound necessary for Axxent Talk to detect sound. That is, if a period of silence is broken by a burst of sound on the line and that sound is shorter than this timer, Axxent Talk will ignore the sound. This timer applies to outgoing remote notification calls only. The range for this timer is 1–100 hundredth seconds. The default is 8 hundredths.
- **Minimum Call Progress Silence Duration:** This timer determines the minimum duration of a period of silence necessary for Axxent Talk to detect silence. That is, if a period of sound is broken by silence and the silence is shorter than this timer, Axxent Talk will ignore the silence. This timer applies to outgoing remote notification calls only. The range for this timer is 1–100 hundredth seconds. The default is 15 hundredths.
- **Notification No-Answer Detection:** This establishes the number of rings required before Axxent Talk considers an attempt at remote messaging a “no-answer” condition. The range for this timer is 1–25 rings. The default is 4 rings.
- **Number Called Busy:** This timer defines the amount of time Axxent Talk will wait between outgoing call attempts whenever a busy signal is encountered during a remote message notification attempt to a personal number or pager. The range for this timer is 1–255 minutes. The default is 5 minutes.
- **Off-Hook Delay:** This determines how long Axxent Talk should wait after coming off hook before playing the first prompt. The range for this timer is 0–5 seconds. The default is 0. However, the recommended minimum setting is 1 second to allow a pause before the prompts are played for outside callers, thereby assuring that no text is cut off. It is set to 0 to allow internal callers to hear the prompts immediately.
- **Outgoing DTMF Digit Duration:** This is the length of the DTMF tones (and inter-digit pauses) that are sent during remote notification to a pager or personal number. The range for this timer is 30–250 milliseconds. The default is 60 milliseconds. **NOTE:** If

this timer is changed, the system must be reset to update it with the new timer value.

- **Pager Notification Retry:** This is the amount of time Axxent Talk will wait between outgoing call attempts when the notification number is a pager. The range for this timer is 1–255 minutes. The default is 20 minutes.
- **Pause Voice Mail:** This timer defines the maximum amount of time that Axxent Talk will pause during the playback of a message or recording. The range for this timer is 1–240 seconds. The default is 30 seconds.
- **Personal Number No Answer:** This timer defines the amount of time Axxent Talk will wait between outgoing call attempts whenever a message notification attempt to a personal number is unanswered. The range for this timer is 1–255 minutes. The default is 30 minutes.
- **Replay Forward/Rewind Increment:** This timer determines the number of seconds a message or recording will be advanced or backed up when a user skips ahead or backward during a replay. The range for this timer is 1–60 seconds. The default is 5 seconds.
- **Shortest Message Allowed:** This is the length of the shortest message that will be accepted by Axxent Talk. (Messages terminated with # are always allowed, regardless of length.) The range for this timer is 1–5 seconds. The default is 3 seconds.



Voice Mail Information

17.132 This window appears when Voice Mail Information is highlighted and the Program command button is selected. The voice mail parameters that are programmed in this window must be set up before the voice mail system is able to operate efficiently. These parameters include: defining a System Administrator's mailbox, enabling or disabling the voice mail directory, determining directory sorting order, and adjusting the Axxent Talk audio volume.

17.133 SYSTEM ADMINISTRATOR MAILBOX: A System Administrator's mailbox is defined in order to record custom recordings for system applications created in Applications Programming, broadcast messages to all subscribers, and perform Mailbox and Group List maintenance. Select the System Administrator Mailbox drop-down list box and scroll to the desired mailbox.

17.134 ENABLE VOICE MAIL DIRECTORY: Select the Enable Voice Mail Directory check box to place a check mark in it and enable the voice mail directory. To disable the directory, select the check box again to remove the check mark.

NOTE: If the voice mail mailbox directory is disabled, callers using the voice mail system will not receive a system prompt giving the option to search the directory for the person they wish to speak to. If the dial pad key

normally associated with access to the mailbox directory is selected, the caller will be informed that the selection is invalid.

17.135 DIRECTORY SORT ORDER: Select the Directory Sort Order drop-down list box and scroll to the desired option (last name or first name) to determine the directory sorting order. This parameter also defines which system voice prompt will play when directing callers to spell a first or last name.

17.136 VOLUME: Select the Volume Level drop-down list to select the volume level for all of the voice channels used by the Axxent Talk. Scroll the highlight bar to the desired volume level. (The text adjacent to the drop down list box specifies that -8 is the softest setting, 0 is standard, and +8 is the loudest.)

NOTE: When a caller, using voice mail, increases or decreases the volume during the call, the system volume level currently programmed does not change. Only the voice channel being used by the caller is temporarily altered. When the user has completed the call, the system resets the volume of the voice channel used to the setting currently established in the Volume Level drop-down list box.

17.137 OK/CANCEL: When finished, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.

F. AXXENT TALK REPORTS

17.138 The Axxent Talk system includes reporting capabilities to print reports to a printer or to a file for storage. The reports include Application and Channel Statistics, Directory Listings (by last name or first name or extension), and Group List reporting. A sample report is shown on page 6-186. The reports include the following information:

- **Application and Channel Statistics:** The following information appears individually for each application and as a summary for all applications.

- *Description and extension number of the application:* The “description” field shows the programmed name for the application. (Call Routing Announcement applications are all listed together by extension.) The applications are listed in the following order: Message Notification/Retrieval, Voice Mail, Auto Attendant, and Call Routing Announcement. (Auto Attendant Recall applications are reported within the Auto Attendant information.)

- *Incoming calls:* This shows the total number of calls received by that extension number. This is shown as a combined total for Call Routing Announcement applications.

- *Outgoing calls:* This information is reported only for the Message Notification/Retrieval application. These are the remote message notification calls placed by the Voice Mail application.

- *Connect minutes:* This shows the total time spent on incoming and outgoing calls (if any) combined. This is shown as a combined total for Call Routing Announcement applications.

- *Minutes per call:* This is the average amount of time spent on each call in minutes and seconds. This is shown as a combined total for Call Routing Announcement applications.

- *Transfers to Operator:* This shows the number of times a caller (within Voice Mail or Auto Attendant) presses the dial pad key 0 for operator access.

- *Voice Mail messages left:* This appears in the summary section only. It shows how many voice mail messages were left in all mailboxes combined.

- *Channel statistics:* This portion includes data on the activity of all applications combined. It shows, in 30-minute segments, the total number of minutes and seconds that all of the Axxent Talk voice channels were busy simultaneously. The detailed segments begin at 07:00 AM and conclude at 06:00 PM. The “Off Peak Hours” segment shows statistics for the remaining time period (6:00 PM to 7:00 AM). This section ends with a grand total of busy channel occurrences for each of the days being reported.

NOTE: If the number of voice channels programmed in database programming is greater than the number of actual channels available, the statistics reported will be based on the number available and not the programmed number.

- **Directory Listing Reports:** Directory Listings can be sorted by first name, last name, or extension/mailbox number. The listings show the description for the mailbox or extension ID, the mailbox/extension number, the message notification station (for mailboxes), and mailbox information. The mailbox information tells whether the mailbox is marked Private and/or Unlisted. (An X appears in the Mailbox field to indicate a mailbox that is neither Private nor Unlisted and a blank indicates that it is an extension ID.)

- **Group List Report:** The purpose of the Group List report is to provide the System Administrator with a printed copy of the system’s group lists. The report identifies the group list number, the description for the list, and the mailboxes included in the group list.

17.139 The programmer may establish automatic weekly reports that are sent to a printer on a selected day at a specified time. If desired, the programmer can also clear the system's statistics. If desired, manual reports may also be generated at any time without altering the weekly setup.

17.140 To perform the programming for these reports select Axxent Talk Report Programming from the Axxent Talk menu. A program planning sheet is located in Figure 6-30, on page 6-261.

17.141 The Manual Report Generation section of this window contains controls which allow you to select and print reports, and determine the directory sort order for manually generated reports.

17.142 The Automatic Report Generation section of the window contains controls for establishing the day and time the system should automatically print reports, enabling automatic report printouts, clearing the system's statistics, and a list of the reports to print along with the option to sort the Directory Listing report.

17.143 OUTPUT DEVICE: Select this drop-down list box to specify the report's output device (FILE or LPT1).

17.144 FILE: (Used only if the output device is "FILE.") Enter the name of the desired file in the File text box. The system will validate that the specified drive output is defined but will not validate that the path exists on the Axxent Talk when this option is used. Instead, the database manager merely verifies that the file's syntax is correct (i.e., check for valid characters). However, it will not permit reports to be saved to the C: drive.

17.145 PRINT REPORTS: (The "Print Reports" command button is only available if one of the report check boxes is marked. It is not available during a stand-alone programming session.) When this command button is selected, a window appears that says, "You are about to print the selected reports. Do you wish to continue?" Select Yes to print the report or No to cancel the report. In a direct-connection programming session, as the printing starts, the terminal cursor changes to an hourglass and you must wait until the report is complete before proceeding. If Axxent Talk is unable to print the

report, an error message will display that states, "Ax-
xent Talk is unable to print the selected reports." If print-
ing to a file, it suggests using another disk. If using a
printer, it suggests that the printer may be off line or out
of paper.

17.146 CLEAR STATISTICS: *(Not available in
Stand-Alone programming)* The Clear Statistics com-
mand button allows you to clear all accumulated statis-
tics from the system. When you select the Clear
Statistics command button, a window appears that
reads, "You are about to clear all of the accumulated sta-
tistics. Do you wish to continue?" Select Yes to continue
or select Cancel to leave the messages unchanged.

17.147 PRINT DAY: To select the day for printing au-
tomatic reports, select the Print Day drop-down list box
and scroll the highlight bar to the desired day.

17.148 PRINT TIME: To select the time of day for
printing automatic reports, select the Print Time drop-
down list box and scroll the highlight bar to the desired
time.

17.149 ENABLE AUTOMATIC REPORTS: To en-
able the automatic report option, select the check box to

place a check mark in it. To disable automatic reports,
select the check box again to remove the check mark.

17.150 CLEAR STATISTICS AFTER REPORTS

PRINT: This box is dimmed unless automatic reports
are enabled. If you want the statistics to be cleared every
time an automatic report is printed, select this check box
to place a check mark in it. To retain the statistics, re-
move the check mark by selecting the check box again.

17.151 MANUAL REPORT SELECTION/AUTO-

MATIC REPORT SELECTION: The Manual Report
Selection and Automatic Report Selection portions of
the window contain check boxes that allow you to select
what reports to print (manually or automatically). To en-
able a report, select the check box to place a check mark
in it. To disable the report, select it again to remove the
check mark.

17.152 DIRECTORY SORT ORDER: *(Available*

only if Directory Listing Reports are selected.) The Di-
rectory Sort Order drop down list boxes allow you to se-
lect First Name, Last Name, or Directory Number
sorting order. Select the appropriate drop-down list box
and scroll the highlight bar to the desired option.

FIGURE 6-1. AXXENT TALK APPLICATION STATISTICS REPORT SAMPLE

APPLICATION STATISTICS

Date: xx/xx/xxxx

	Day <u>Monxx</u>	Day <u>Monxx</u>	Day <u>Monxx</u>	Day <u>Monxx</u>	Day <u>Monxx</u>	Day <u>Monxx</u>	Day <u>Monxx</u>
[description] (xxx)							
Incoming Calls	---	---	---	---	---	---	---
Outgoing Calls	---	---	---	---	---	---	---
Connect Minutes	---	---	---	---	---	---	---
Minutes / Call	---	---	---	---	---	---	---
Transfers to Operator	---	---	---	---	---	---	---
[Call Routing Ann.]							
[description] (xxx)	---	---	---	---	---	---	---
[description] (xxx)	---	---	---	---	---	---	---
[description] (xxx)	---	---	---	---	---	---	---
[Call-Routing Totals]							
Incoming Calls	---	---	---	---	---	---	---
Connect Minutes	---	---	---	---	---	---	---
Minutes / Call	---	---	---	---	---	---	---
Totals							
Incoming Calls	---	---	---	---	---	---	---
Connect Time (HH:MM)	---	---	---	---	---	---	---
Minutes / Call	---	---	---	---	---	---	---
Transfers to Operator	---	---	---	---	---	---	---
VM Msgs Left	---	---	---	---	---	---	---

Cumulative statistics since reports were last cleared on xx/xx/xxxx

Totals:	
Calls	xxx
Messages Left	xxx
Transfers to Operator	xx

APPLICATION STATISTICS - CHANNEL ACTIVITY

Date: xx/xx/xxxx

	Day <u>Monxx</u>	Day <u>Monxx</u>	Day <u>Monxx</u>	Day <u>Monxx</u>	Day <u>Monxx</u>	Day <u>Monxx</u>	Day <u>Monxx</u>
All channels busy:							
07:00 - 07:30 AM	---	---	---	---	---	---	---
07:30 - 08:00	---	---	---	---	---	---	---
08:00 - 08:30	---	---	---	---	---	---	---
...							
04:00 - 04:30	---	---	---	---	---	---	---
04:30 - 05:00	---	---	---	---	---	---	---
05:00 - 05:30	---	---	---	---	---	---	---
05:30 - 06:00	---	---	---	---	---	---	---
Off Peak Hours	---	---	---	---	---	---	---
Total hours/minutes all channels busy:	---	---	---	---	---	---	---

FIGURE 6-2. AXXENT TALK DIRECTORY LISTING REPORT SAMPLES

DIRECTORY LISTING BY FIRST NAME

Date: xx/xx/xxxx

<u>Description</u>	<u>Directory Number</u>	<u>Notification Station</u>	<u>Mailbox</u>
ARTHUR GOODMAN	242		U
LAB LAB	200		
MARK FONTANA	272	101	X
MARK HARRIS	216	100	P
NORMA EATON	100	100	X
TODD LINEN	215	100	P/U

DIRECTORY LISTING BY LAST NAME

Date: xx/xx/xxxx

<u>Description</u>	<u>Directory Number</u>	<u>Notification Station</u>	<u>Mailbox</u>
EATON, NORMA	100	100	X
FONTANA, MARK	272	101	X
GOODMAN, ARTHUR	242		U
HARRIS, MARK	216	100	P
LAB, LAB	200		
LINEN, TODD	215	100	P/U

DIRECTORY LISTING BY DIRECTORY NUMBER

Date: xx/xx/xxxx

<u>Directory Number</u>	<u>Notification Station</u>	<u>Mailbox</u>	<u>Description</u>
100	100	X	EATON, NORMA
200			LAB, LAB
215	100	P/U	LINEN, TODD
216	100	P	HARRIS, MARK
242		U	GOODMAN, ARTHUR
272	101	X	FONTANA, MARK

FIGURE 6-3. AXXENT TALK GROUP LIST REPORT SAMPLE

GROUP LIST REPORT

Date: xx/xx/xxxx

Group List Number: xxx

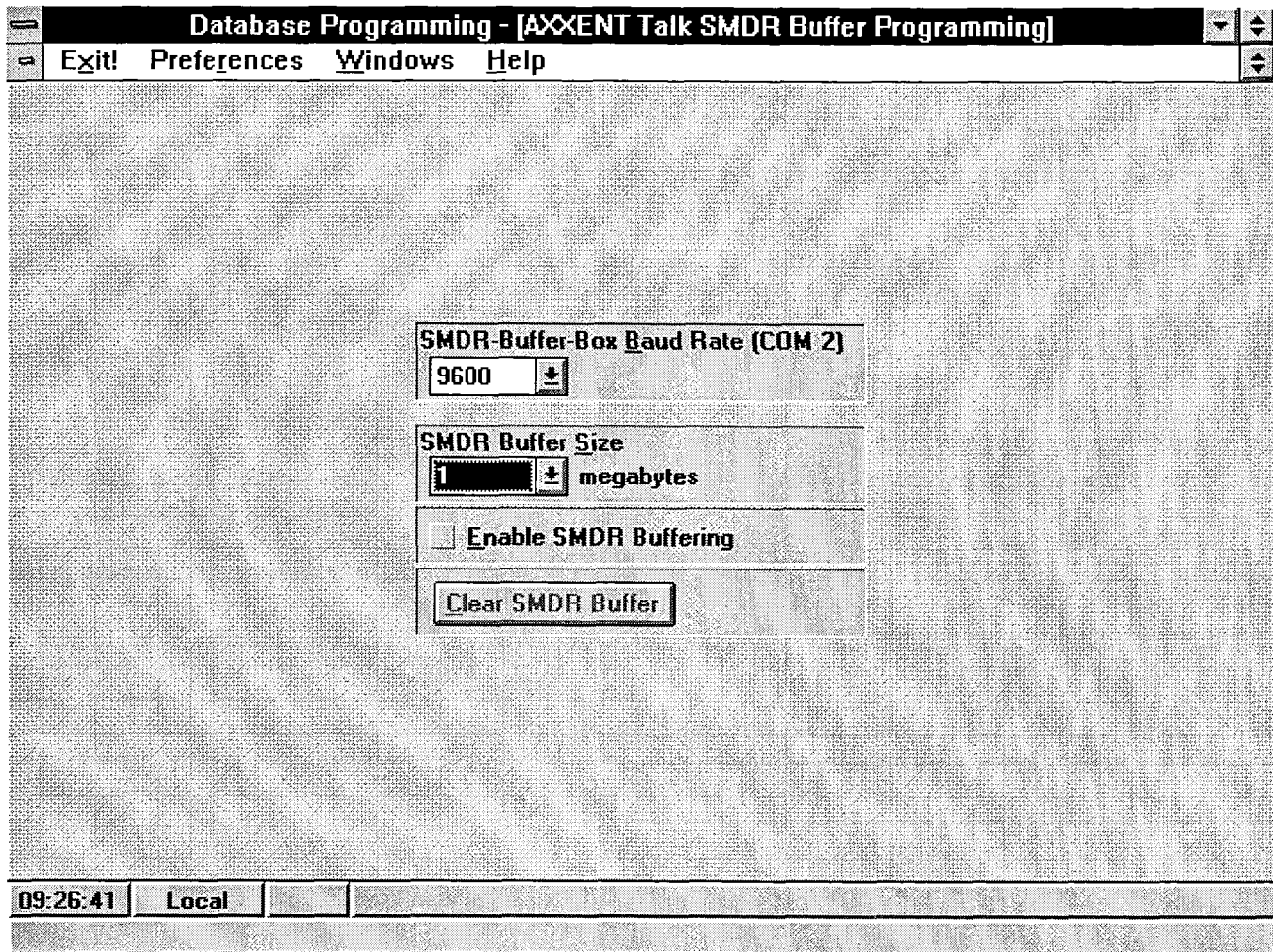
Name: [description]

Mailboxes: xxx

[subscriber description]

xxx

[subscriber description]



G. SMDR BUFFER PROGRAMMING

17.153 This window is displayed when Axxent Talk SMDR Buffer Programming is selected from the Axxent Talk menu. The following information can be programmed for the Axxent Talk SMDR Buffering application. A program planning sheet is located in Figure 6-31, on page 6-262.

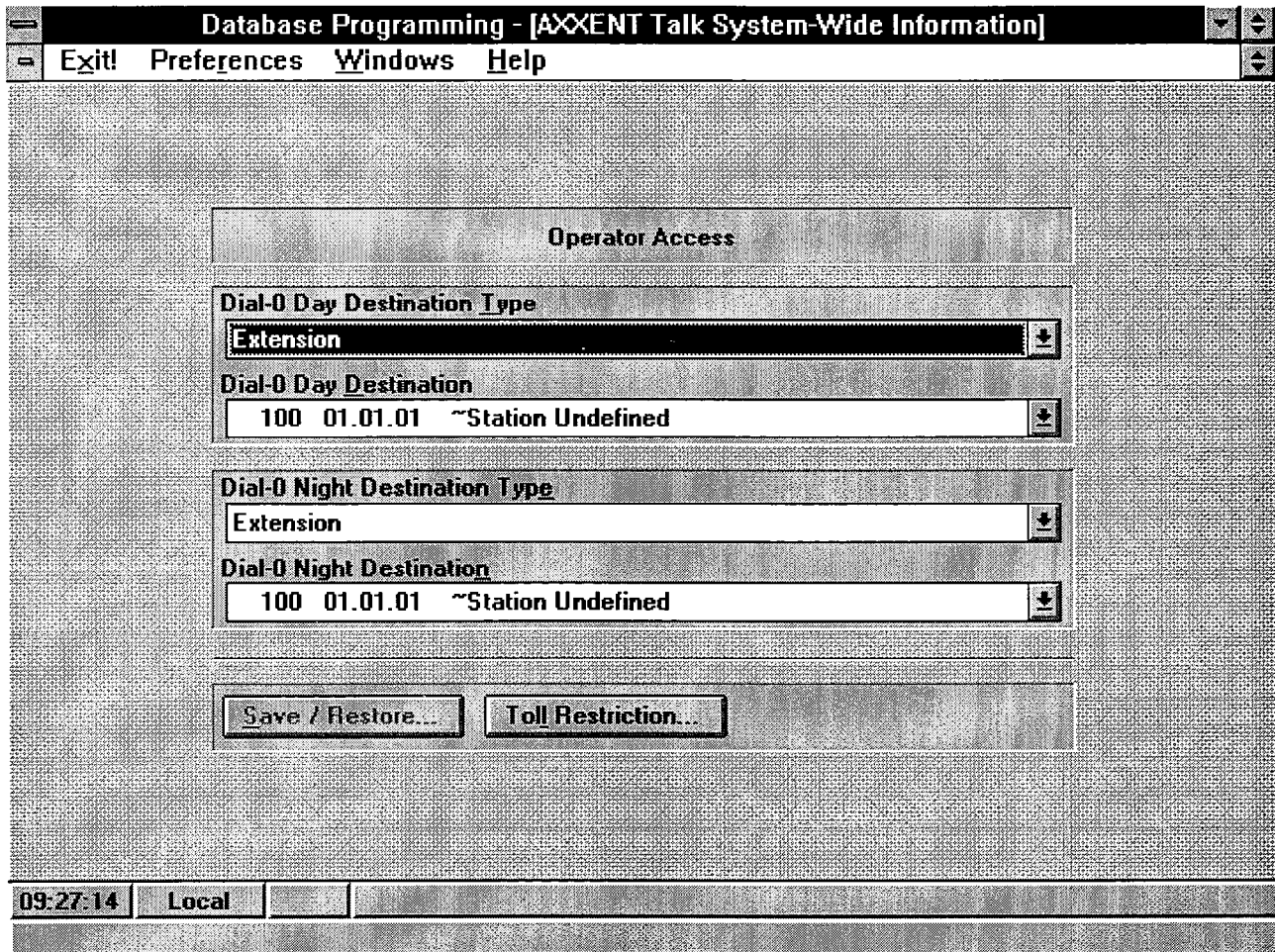
17.154 SMDR BUFFER BOX BAUD RATE: To determine the baud rate of output from the buffer box port (COM2), select this drop-down list box. The available baud rates are 300, 1200, 2400, 4800, and 9600.

17.155 SMDR BUFFER SIZE: To determine how much of the Axxent Talk disk space will be devoted to SMDR buffering, select this drop-down list box and select the desired number of megabytes (0-255). *If you attempt to set the buffer size to a value higher than your available disk space, you will receive a warning message that says, "The Axxent Talk did not have enough disk space to set the buffer size to XXX megabytes. The current buffer size is now 0 megabytes. Note: If there*

was data in the buffer, the data is still intact."; select OK to continue and reset the buffer to a valid size. *If you change the size of the buffer, a window appears that tell you that the buffer will be cleared and asks if you want to continue. Select Yes to complete the resizing or select No to leave the buffer and buffer size unchanged.*

17.156 ENABLE SMDR BUFFERING: *(Buffer size must be greater than 0 for this check box to be selected.)* To enable the SMDR Buffering option, select the check box to place a check mark in it. To disable SMDR buffering, select the check box again to remove the check mark.

17.157 CLEAR SMDR BUFFER: *(Not available in stand-alone programming sessions.)* To clear the current SMDR buffer, select this command button. A window appears that asks if you are sure you want to clear the SMDR buffer. Select Yes to continue or select Cancel to leave the buffer unchanged. If you chose to clear, an information window will appear to tell you that the buffer has been cleared. Select OK to continue.



H. AXCENT TALK SYSTEM-WIDE INFORMATION

17.158 This window is displayed when Axxent Talk System-Wide Information is selected from the Axxent Talk menu. It is used for programming the dial-0 operator destination for the Voice Mail and Automated Attendant applications (where calls are sent if the caller presses 0), for setting toll restrictions for outgoing remote messaging calls, and for saving/restoring the Axxent Talk database. A program planning sheet is located in Figure 6-32, on page 6-262.

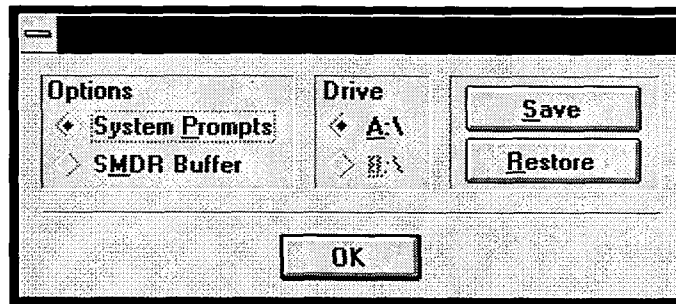
17.159 DIAL-0 DESTINATION TYPE: These drop-down list boxes are used for selecting the type of device that will be used for the day and night operator destinations. Select the appropriate drop-down list box and scroll the highlight bar to the desired type (Extension, Mailbox, or None). If "Mailbox" is selected, the system will automatically transfer the caller to a the mailbox, specified in the dial-0 destination box below, when 0 is pressed. If "None" is selected, operator access will be denied from Voice Mail and Auto Attendant applications. If "Extension" is selected, any station, ap-

plication, or hunt group extension number or Call Attendant feature code (0) can be selected.

17.160 DIAL-0 DESTINATION: If day or night destination types are selected, these drop-down list boxes allow you to select the specific device that will serve as the operator destination. Select the appropriate drop-down list box and scroll the highlight bar to the desired device.

17.161 SAVE/RESTORE: *This command button is not available in Stand-Alone programming mode.* To save or restore the Axxent Talk database, select this command button. The window shown on the next page appears.

17.162 TOLL RESTRICTION: *(This command button is available only if a Message Notification/Retrieval application has been programmed.)* Select this command button to determine the toll restrictions that will apply to remote message notification calls that are placed by Axxent Talk ports. A window appears like the one used for Individual Station Programming. Refer to the instructions on page 6-42 and the window to which they refer.



Axxent Talk Save And Restore

17.163 This window appears when you select the Save/Restore command button shown on the preceding page. (If you need to default the Axxent Talk database, rather than save or restore it, refer to the procedure on page 3-62.)

17.164 To ensure that you have enough diskettes for saving the data, check the Disk Usage Statistics report (as shown on page 6-177) to determine the number of minutes used for the prompts and messages. Each diskette will hold 5-6 minutes of prompts or messages. To calculate the number of diskettes needed, divide the number of minutes used (shown in the statistics) by 5.

17.165 OPTIONS: Determine which information you want to save or restore (System Prompts or SMDR Buffer). Selecting the desired option places a dot in the option button. (Refer to the Save/Restore information on the next page for further Axxent Talk information.) The data included in the options are as follows:

OPTION	SAVE	RESTORE
System Prompts	The system-generated prompts will be saved to the selected drive.	The system-generated prompts contained on the disk in the selected drive will overwrite the current prompts, if any.
SMDR Buffer	The current call record information in the SMDR buffer will be saved to the selected drive. The buffer will not be cleared.	The SMDR call records contained on the disk in the selected drive will overwrite the existing SMDR buffer contents.

17.166 DRIVE: Determine which drive (on the Axxent Talk) will be the save destination or restore source. Selecting the desired drive places a dot in the option button. *Be sure to place a diskette in the correct drive on the Axxent Talk before selecting the Save or Restore command button.*

17.167 SAVE or RESTORE: Determine the operation you wish to perform and select the appropriate command button. The information will be saved or restored to the selected drive. The following windows may appear:

- A restore operation begins with a warning that the database is about to be overwritten with the new data. You are given the choice of allowing the overwrite (select Yes) or cancelling the restore process (select No).
- During a save or restore process, a window appears that shows the percentage of the database that has been copied. To cancel the save or restore operation, select the Cancel command button. **NOTE:** Cancelling a restore operation will cause the system to default the Axxent Talk database.

17.168 OK: When finished with all Axxent Talk save and restore operations, select the OK command button to return to the window shown on the preceding page.

NOTE: The Axxent Talk applications will not be usable during a System Prompts save or restore and callers will receive recorder tones. This is necessary to prevent users from making new recordings and causing database errors.

18. SERVICE

18.1 When the Service command button is selected from the Database Programming Menu window, the list box shows the following options:

Database Save/Restore
Message Print Programming
Passwords
Premium Feature Selection
Report Programming [Customized]
Serial Port Configuration
System Configuration

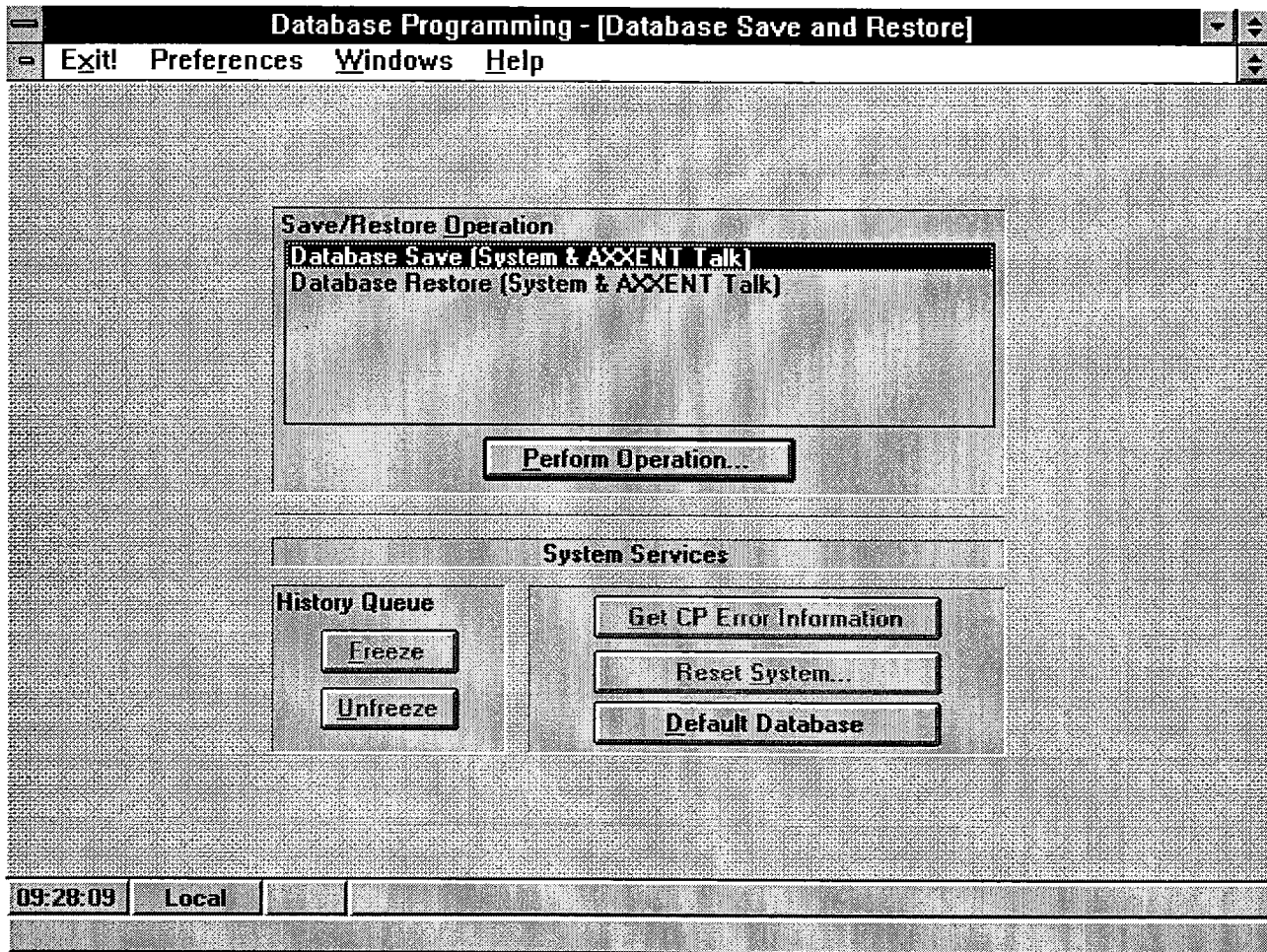
18.2 Each of the options and their programming windows are described in detail in the following pages.

18.3 If you select any of the Service menu options when the Axxent Talk is unable to communicate with the Inter-Tel Axxent System, a warning window will appear that says, "None of the system configuration changes will be made because Database Programming is unable to communicate with the Axxent Talk." The system will not allow you to update the database through the Service options until the system and Axxent Talk are communicating again.

A. DATABASE SAVE AND RESTORE

18.4 This program allows you to perform the following operations:

- **Save Database:** Information is sent from the system to the designated destination. **NOTE:** When the system is in the default state, the Axxent Talk communications port is enabled. If your system does not have the Axxent Talk hardware installed, you must set the communications port to "None" before attempting to save the system database.
- **Restore Database:** Information is transferred from the designated source to the system. **NOTE:** When the system is in the default state, the Axxent Talk communications port is enabled. If your system does not have the Axxent Talk hardware installed, you must set the communications port to "None" before attempting to restore the system database.
- **Freeze History Queue:** This option directs the system to "lock" the current state of the system fault history queue, which is a sequential list of all system commands and inputs. This list, when decoded, can be used to determine a series of events which may have resulted in an error. (This is not available in Stand-Alone programming sessions.)
- **Unfreeze History Queue:** This option directs the system to "unlock" the current state of the history queue, and resume event collection. (This is not available in Stand-Alone programming sessions.)
- **Get CP Error Information:** Engineering error messages are copied to the programming device for review by the Inter-Tel Engineering department. (This is not available in Stand-Alone programming sessions.)
- **Reset System:** (This is not available in Stand-Alone programming sessions.) A system reset is required to ensure proper system operation after any cards or devices are equipped or unequipped, an extension list is changed, a trunk group list is changed, or an extension number is changed. An immediate or delayed reset can be requested as you are exiting from the programming session (see page 6-22) or using this option. An immediate major system reset will terminate all calls and will end the programming session. However, a delayed system reset will check system activity at the scheduled time and wait for the system to become idle and any active programming session to end before allowing the reset to occur.
- **Default Database:** This option is used to restore the system and Axxent Talk databases to default values. (To return only the Axxent Talk database to its default values, use the procedure outlined on page 3-62.)



18.5 To view the window shown above, select Save/Restore from the Database Programming Programming menu.

NOTE: When the system is in the default state, the Axxent Talk communications port is enabled. If your system does not have the Axxent Talk hardware installed, you must set the communications port to “None” before attempting to save or restore the system database.

18.6 SAVE/RESTORE OPERATION and PERFORM OPERATION: The save/restore operations are shown in the screen above. The options that include Voice Data are not available in stand-alone programming sessions or on systems that do not have an operating Axxent Talk. If the Voice Data options are used during a remote session, there must be someone on site who can insert and remove the Axxent Talk Voice Data diskettes. *The Voice Data save/restore should be used any time significant changes are made to the Axxent Talk and/or Inter-Tel Axxent System databases to preserve*

the integrity of the databases. The options without Voice Data should be used for regular system back-ups only. Select the operation you wish to perform by highlighting it in the Save/Restore Operation list box. Then select the Perform Operation command button. The window shown on page 6-194 appears. You may see one of the following messages:

- *If the database being restored requires more Premium Feature units than the system can support, you will see a warning message and the system will be inoperative.*
- *If the database being restored contains Axxent Talk information and the system does not have an operating Axxent Talk, you will see a warning message and no Axxent Talk information will be loaded during the restore operation.*

NOTE: If the Database Restore feature is used during a remote programming session, all calls are disconnected except the modem connection. Before restoring the da-

tabase, ensure that the circuit card being used for the modem connection will not be reconfigured during the restoration (changed to a different type of card).

18.7 GET CP ERROR INFORMATION: When this command button is selected engineering error messages are copied to the programming device for review by the Inter-Tel Engineering department. A window appears as shown on page 6–194 for Save/Restore. Follow the instructions given for selecting a destination drive. Select OK to send the information to the selected destination. This operation automatically freezes and then unfreezes the history queue. If the history was frozen before this operation was performed, a window appears that asks if you want it unfrozen. Select Yes to unfreeze the history, or select No to leave it frozen.

18.8 FREEZE/UNFREEZE HISTORY QUEUE: To stop or start the fault history queue, select the Freeze or Unfreeze History Queue command button.

18.9 DEFAULT DATABASE: To return the call processing and Axxent Talk databases to default values, select this command button. A window appears that warns that defaulting the database will overwrite the current database and asks if you wish to continue. Select Yes to default the database or select no to leave it unchanged. *Defaulting the database will end a direct or modem programming session and drop all calls.*

NOTE: To return only the Axxent Talk database to its default values, use the procedure outlined on page 3–62 in INSTALLATION.

18.10 RESET SYSTEM: To perform a major reset, select the Reset System command button. When this button is selected, the window shown below will appear. (This window also appears when you are exiting from a programming session that requires a major system reset, as described on page 6–22.) You have the following options:

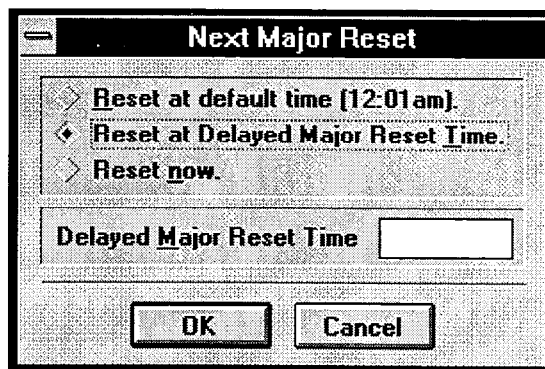
- **Reset at default time:** If the time shown on this line is an acceptable time for a major system reset, select

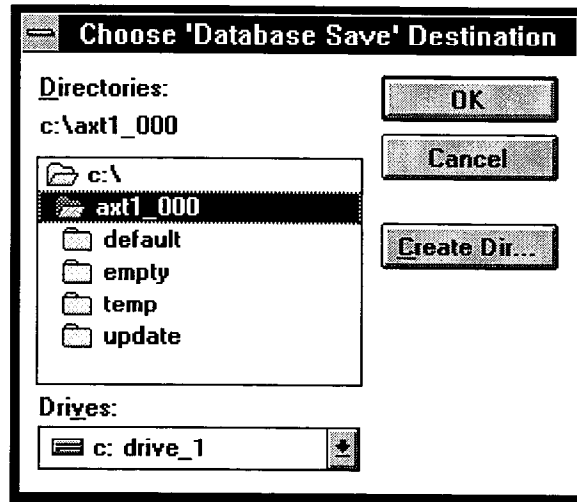
this option button. When you select the OK command button, a window appears that asks you if you are sure you want to schedule a delayed reset. If you select Yes, the reset occurs at the time shown. If you select No, the window below will return.

- **Reset at Delayed Major Reset Time (only for this reset):** Selecting this option button allows you to change the time shown in the Delayed Major Reset Time text box. After selecting the option, move to the text box and enter the desired time. You can use 12- or 24-hour format. This will not change the default system reset time programmed in the Miscellaneous System-Wide Information window shown on page 6–90, but it will override it for this reset only. When you select the OK command button, a window appears that asks you if you are sure you want to schedule a delayed reset. If you select Yes, the reset occurs at the time shown in the text box. If you select No, the window below will return.
- **Reset now:** This option requests an immediate reset. If this option is selected, you will see a warning window when you select the OK command button. The window tells you that the reset will end the programming session and drop all calls, and it asks if you wish to continue. If you select Yes, the reset occurs immediately. If you select No, the window below will return.

NOTE: An immediate major system reset will terminate all calls and will end the programming session. However, a delayed system reset will check system activity at the scheduled time and wait for the system to become idle and any active programming session to end before allowing the reset to occur.

18.11 OK/CANCEL: When you are finished programming the reset, select the OK command button. Or, to exit without changing the reset information, select the Cancel command button.





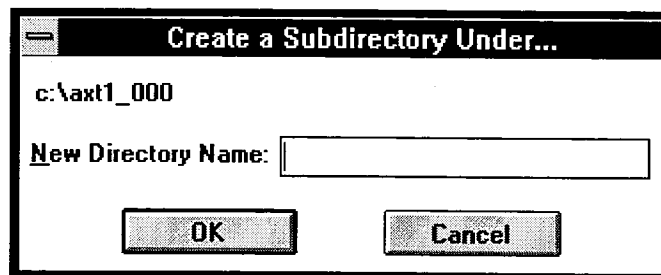
18.12 DIRECTORIES/DRIVES: The a: drive is the default destination directory. If you attempt to perform the operation without changing the directory and without placing a disk in the a: drive, the system will automatically change to the c: drive (as shown above). However, if you use this window to select a specific directory (on any drive) the system will *not* automatically change to the c: drive, but will attempt to use the specified directory. Select the destination drive (on the programming PC) to which you wish to send the database or error list, or the source of the database to be restored, by selecting the drive in the list box. To change drives, select the desired drive in the Drives drop-down list box.

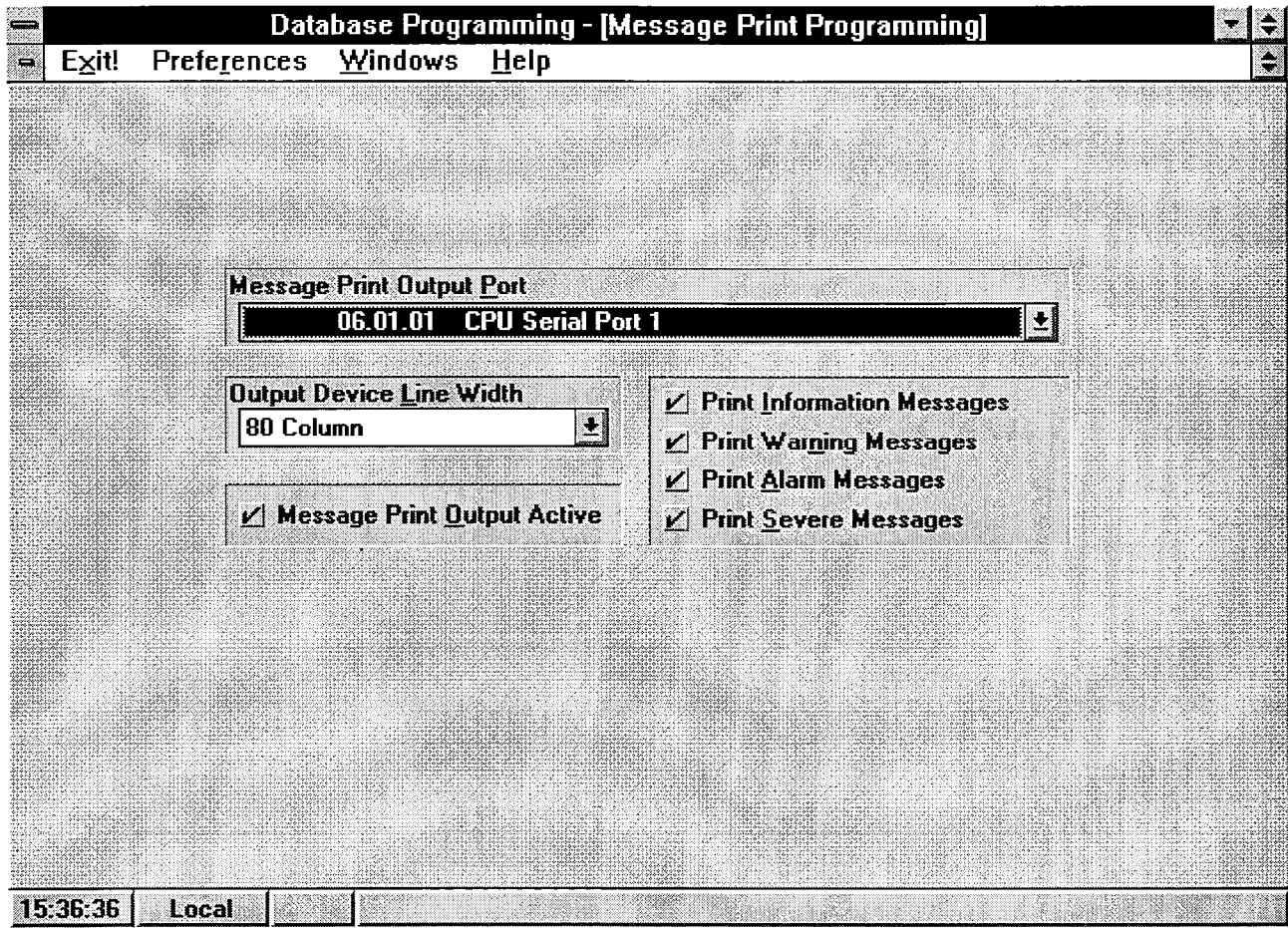
18.13 CREATE DIRECTORY: To create a new directory on the programming PC drive for storing a system database, select the Create Dir command button. The following window appears. Enter the new directory name in the text box and then select the OK command button. Or select the Cancel command button to exit without creating the new directory.

18.14 OK/CANCEL: When the correct destination has been chosen, select the OK command button to start

the Save or Restore. The following windows may appear:

- A system database restore operation begins with a window appears with a warning that the database is about to be overwritten with the new data. You are given the choice of allowing the overwrite (select Yes) or cancelling the restore process (select No).
- During a save or restore process, a window appears that shows the percentage of the database that has been copied. To cancel the save or restore operation, select the Cancel command button. The process may continue for several seconds before canceling, because it cannot abort until the file being used is completely transferred. **NOTE:** Canceling a restore operation will cause the system to default the database and terminate the programming session.
- After performing a restore process in local programming mode (not via modem or direct connection), the options shown in the window on page 6-192 will not be updated to reflect the current Axxent Talk status (available or unavailable) until you exit from and re-enter the window.





B. MESSAGE PRINT PROGRAMMING

18.15 System messages can be printed to give service personnel and Inter-Tel engineers information about system status during troubleshooting. The programmer may enable any combination of the error message types. (A program planning sheet is located in Figure 6-33, on page 6-263.) The available message types are:

- **Information Messages:** These messages give information concerning system operation.
- **Warning Messages:** The warnings in these messages indicate that a condition exists which may affect system performance.
- **Alarm Messages:** Alarm messages indicate that a minor alarm has occurred, but that general system operation was not affected.
- **Severe Messages:** These messages indicate that a severe error has occurred in the system.

18.16 Refer to FEATURES, page 4-119, or TROUBLESHOOTING, page 7-4, for more information regarding system messages and alarms.

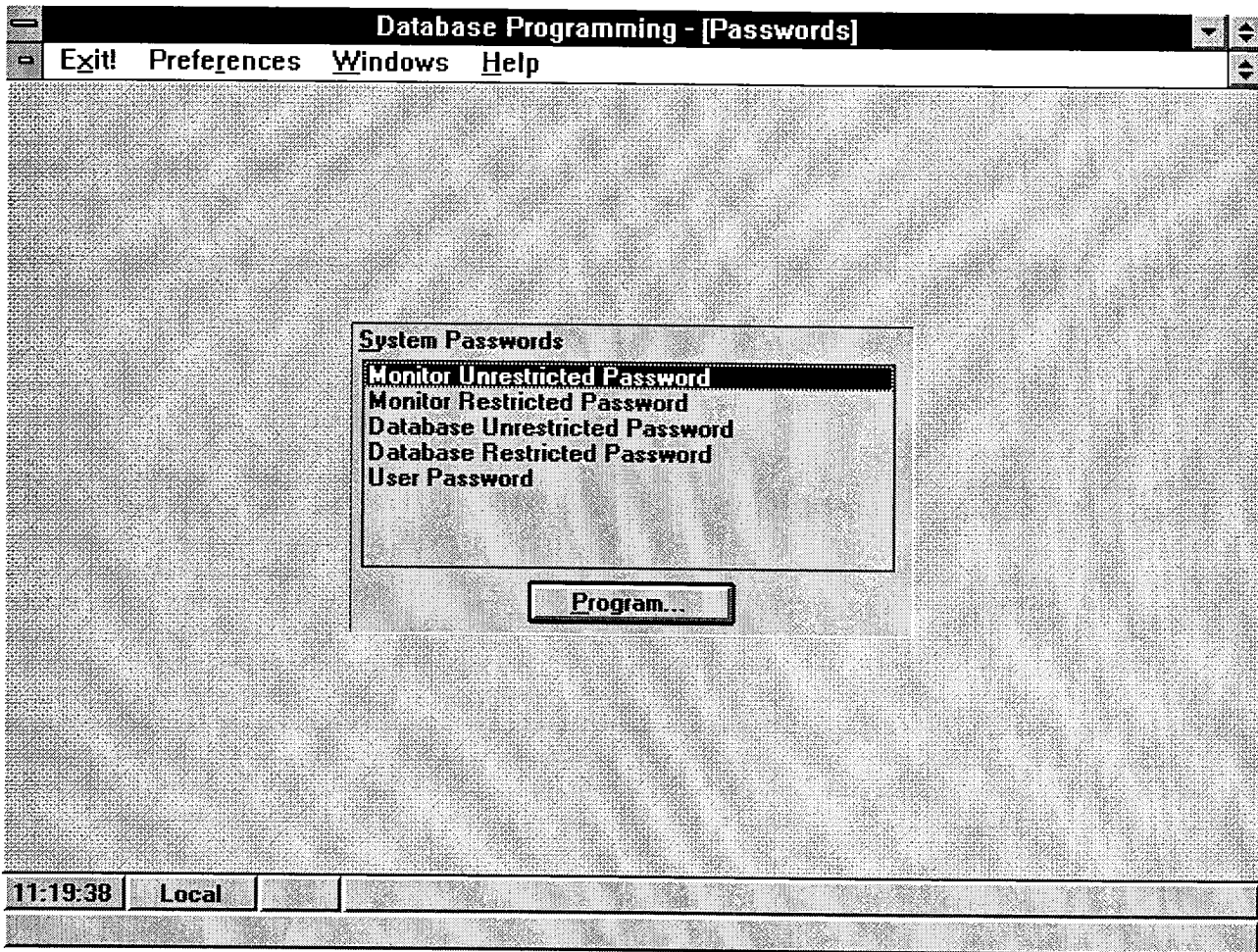
18.17 To reach the window shown above, select Message Print Programming from the Service menu.

18.18 MESSAGE PRINT OUTPUT PORT: A list of available serial ports appears in the Message Print Output Port drop-down list box. Select the desired output port for the error reports by selecting the drop-down list box and scrolling to the desired port. The selected port will appear in the box when it is closed.

18.19 OUTPUT DEVICE LINE WIDTH: To indicate whether the output device has 64, 80 or 132 character columns, select the drop-down list box and scroll to the desired column width. The selected width will appear in the closed drop-down list box.

18.20 MESSAGE PRINT OUTPUT ACTIVE: To activate the error/message reporting feature, place a check mark in the Error Message Output Active check box by selecting it. To disable the error/message reporting feature, remove the check mark by selecting the box again.

18.21 PRINT OPTIONS: These check boxes determine the types of error messages to be included in the error report. To activate a message, place a check mark in its check box. To disable the message, remove the check mark by selecting the box again.



C. PASSWORDS

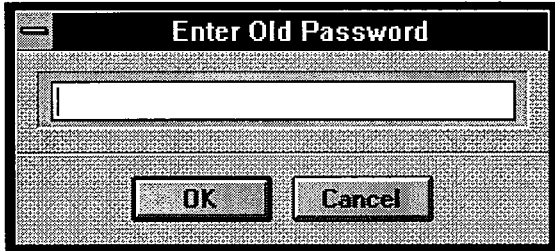
18.22 To set passwords, select Passwords from the Service menu. The system database and the On-Line Monitor feature each can have two passwords assigned to them: Restricted and Unrestricted. A program planning sheet is located in Figure 6-34, on page 6-263.

- **Monitor Restricted:** When the Monitor Restricted password is entered, the user cannot perform a reset, post messages, send commands, reset cards, copy or initialize memory, or modify data.
- **Monitor Unrestricted:** When the Monitor Unrestricted password is used, the user can make changes in any area of the On-Line Monitor feature.
- **Database Restricted:** This password allows access to System Speed Dial and the "Save" function of Database Save/Restore. In Local mode, it also allows access to the Database Restore function. In Remote mode it allows access to Freeze/Unfreeze History and Get CP Error Information functions.

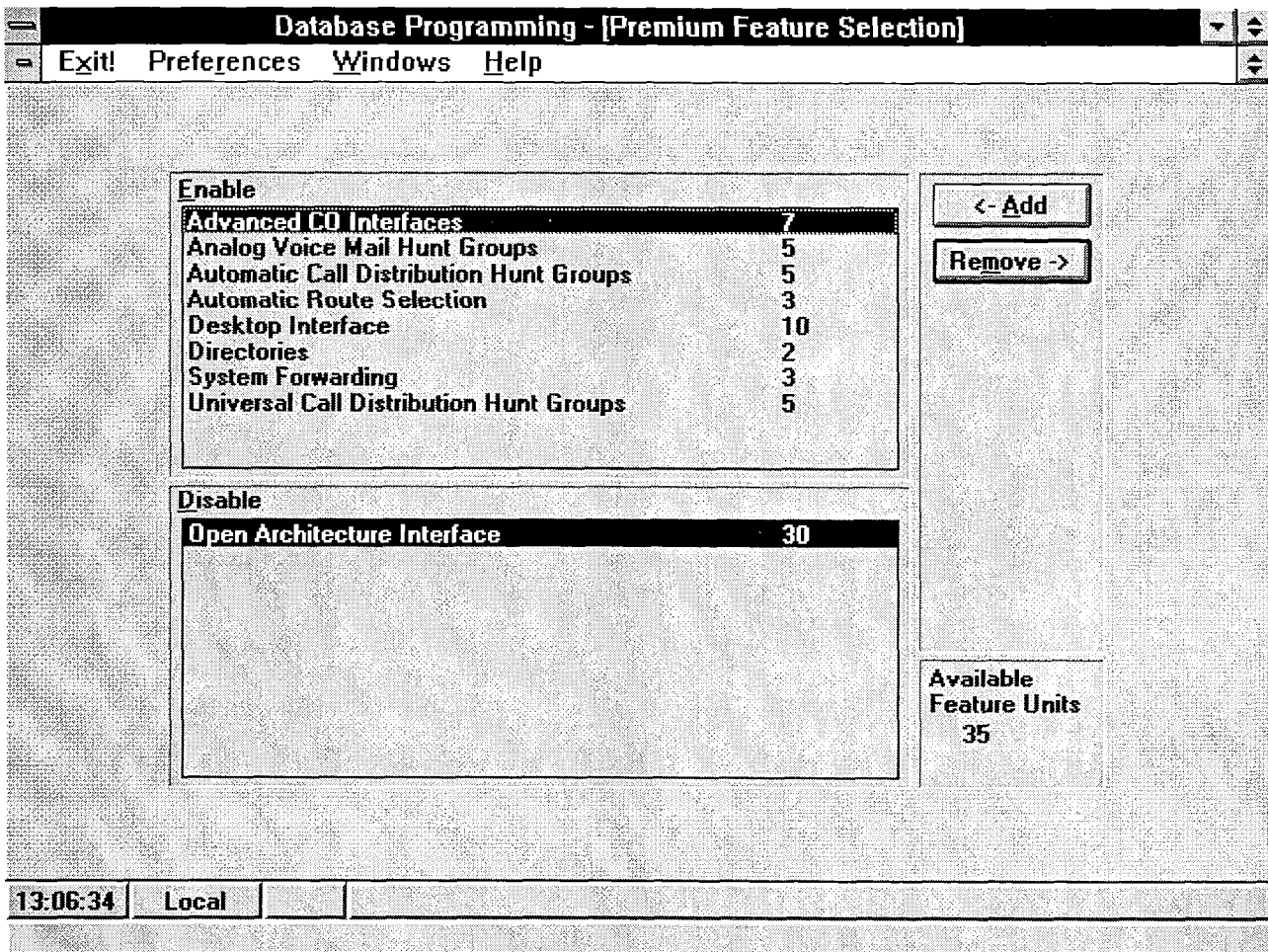
- **Database Unrestricted:** A user who enters the Database Programming Unrestricted password can make programming changes in any area.
- **User Password:** This password allows access to the AXCESSORY Talk programming screens, System Speed Dial, and the "Save" function of Database Save/Restore. In Local mode, it also allows access to the Database Restore function. In Remote mode it allows access to Freeze/Unfreeze History and Get CP Error Information functions.

18.23 If a restricted password is enabled for an application but its corresponding unrestricted password is not, a warning appears because that situation would allow unrestricted access to the programming application. Similarly, a warning will appear if there is a Monitor password programmed without a Database password. The programmer must determine whether to leave the passwords programmed as they are (select OK) or go back and program the missing password (select Cancel).

18.24 SYSTEM PASSWORDS: Choose the password to be programmed by highlighting the desired line in the System Password list box and then selecting the Program command button. The following window will appear. Enter the old password. If the password is correct, the window header then changes to "Enter New Password." Enter the new password as described below.



- **PASSWORD:** Enter the password of up to 8 characters. The characters will not appear on the screen when typed. The system is not case sensitive; you may use upper or lower case characters. To remove an existing password, simply move the cursor to the text box and, without pressing any additional keys, press RETURN.
- **OK:** After typing the password, select the OK command button. The window heading will change to "Verify New Password" and you must retype the password as before. If the entered passwords match, you will return to the Password window, if not, you must re-enter the new password and verify it again.
- **CANCEL:** If you make a mistake while entering the password or wish to leave it unchanged, select the Cancel command button.



D. PREMIUM FEATURE SELECTION

18.25 Select Premium Feature Selection from the Service menu to view the window shown above. It is used for enabling the special features of the Inter-Tel Axxent System. A program planning sheet is located in Figure 6-35, on page 6-263.

18.26 The Inter-Tel Axxent System is available in "Basic" and "Premium" software packages, as described on pages 1-3 and 6-3. You must have a Premium package to assign the units for the premium features.

18.27 The Premium Feature software package is available in four variations, depending on the PAL that is installed. The PAL provided with the software determines whether the software is MF or KF rated and how many premium features can be enabled on the system. The premium features are assigned "unit" values (shown in the window above). The PALs provide up to 75 units that may be used for enabling the premium fea-

tures. The premium features and their unit values are shown in the window above.

18.28 In all default databases, all premium features are disabled.

18.29 ADD: To add a feature to the Enable list box, highlight it in the Disable list box and select the Add command button. The feature will move to the enable list if there are enough units remaining. (Note that the number of available feature units are shown at the bottom of the screen. Stand-alone programming sessions will always be allowed 75 units.)

18.30 REMOVE: To remove a feature from the Enable list, highlight it in the Enable list box and select the Remove command button. The feature will be moved to the Disable list box and the number of available feature units will be increased. (If you remove a feature after it has been programmed, the programming for that feature is preserved and will be in effect again if the feature is ever re-enabled.)

E. CUSTOMIZED REPORT PROGRAMMING

18.31 Customized reports are created by selecting the programming area to be reported and then selecting the information that will be included. When extension numbers are listed in a report, they can be sorted by name, extension number or circuit number. Reports can also be titled. The report types and their options include the following. Sample reports (with all options enabled) are shown in FEATURES beginning on page 4-121.

- **ARS Route Group Report:** If the ARS feature is enabled (see page 6-198), you can select the route groups that are listed in the report which may include any combination of the following items.
 - Route Group Dial Patterns
 - Route Group Dial Rules
 - Route Group Trunk Groups
- **Call Routing Report:** Select the call routing tables that will be listed in the report, showing their dialing patterns, names, and destinations.
- **CO Trunk Groups Report:** You select the trunk groups that are listed in the report which can include any combination of the following items.
 - Day Answer Access
 - Night Answer Access
 - Day Outgoing Access
 - Night Outgoing Access
 - Day Ring-In
 - Night Ring-In
 - Toll Restriction
 - Trunk List
- **Detailed Station Report:** You select the stations that are listed in the report which can include any combination of the following items.
 - Account Codes
 - Mailboxes (not available unless Axxent Talk is enabled)
 - Miscellaneous Flags
 - Miscellaneous Information
 - Programmable Keys
 - Special Purpose Station
 - System Forwarding (not available unless the feature is enabled, as described on page 6-198)
 - Toll Restriction
- **General Station Report:** You select the stations that are listed in the report which can include any combination of the following items.
 - Attendant
 - Class Of Service
 - Equipment
 - Special Purpose Stations
- **Hunt Group Report:** You select the hunt groups that are listed in the report which can include any combination of the following items.
 - List of Stations
 - Timers
- **Individual Trunk Reports:** Selected trunks are listed with their type, circuit number, trunk group, and flags.
- **Keymap Report:** You select the keyset and DSS map groups and the map diagrams that are listed in the report which can include any combination of the following items.
 - Key Assignments
 - Station List
- **Phone List:** You select the stations, hunt groups and page zones that are included in the report.
- **Station Flags:** The report lists the stations that are assigned the station flags that you choose.
- **System Speed Dial Report:** The report lists the system speed-dial numbers that you choose.
- **System Timers Report:** The report lists the system timers that you choose.
- **Toll Restriction Report:** You select the classes of service and/or user groups that are listed in the report which can include any combination of the following items.
 - COS Day List of Stations
 - COS Dialing Patterns
 - COS Night List of Stations
 - User Group Allowed Area Codes
 - User Group Allowed Office Codes

- User Group Day List of Stations
- User Group Extended Area Codes
- User Group Night List of Stations
- User Group Restricted Area Codes
- User Group Restricted Office Codes

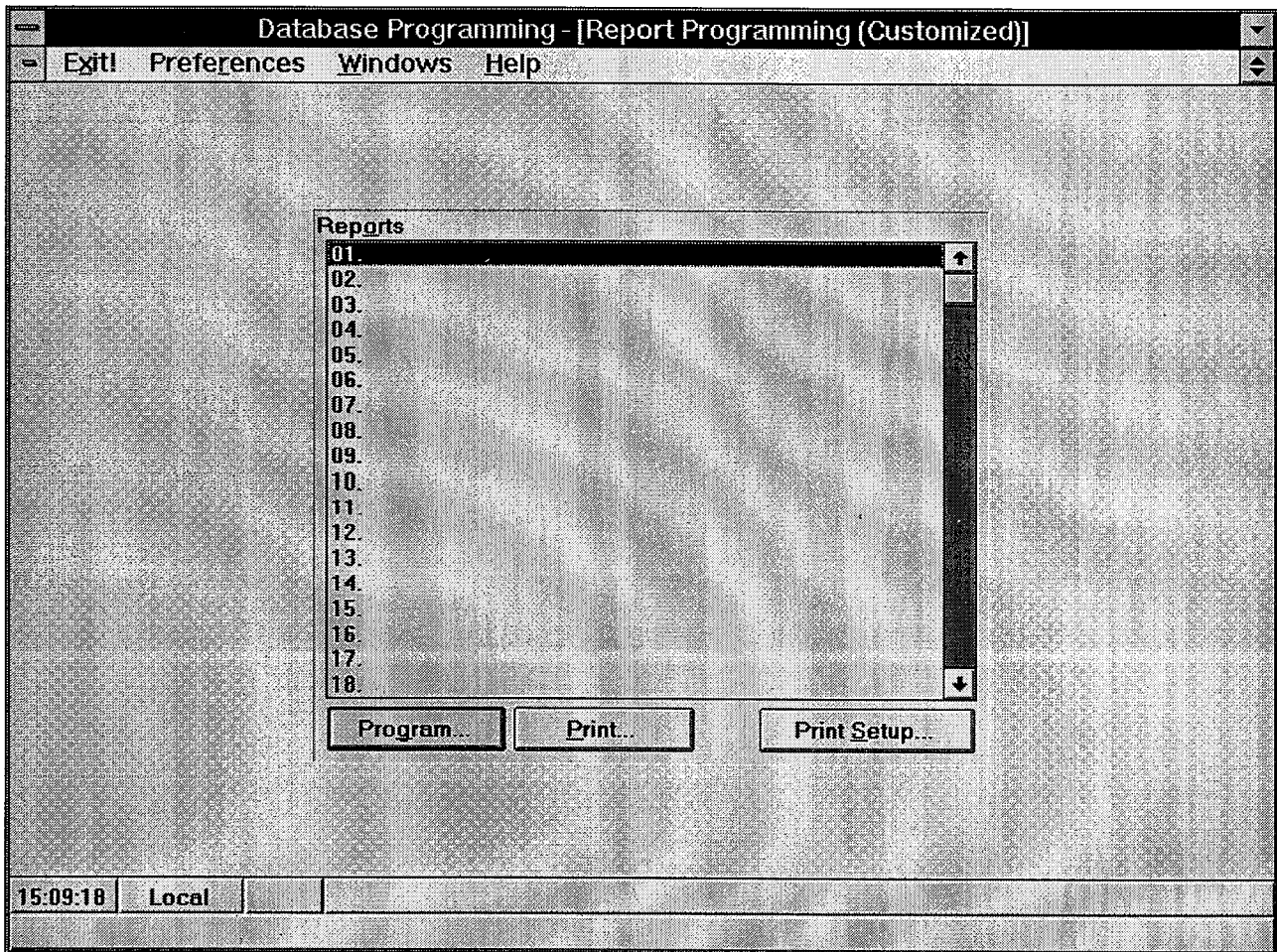
18.32 Reports can be sent to files on the PC or to a printer port.

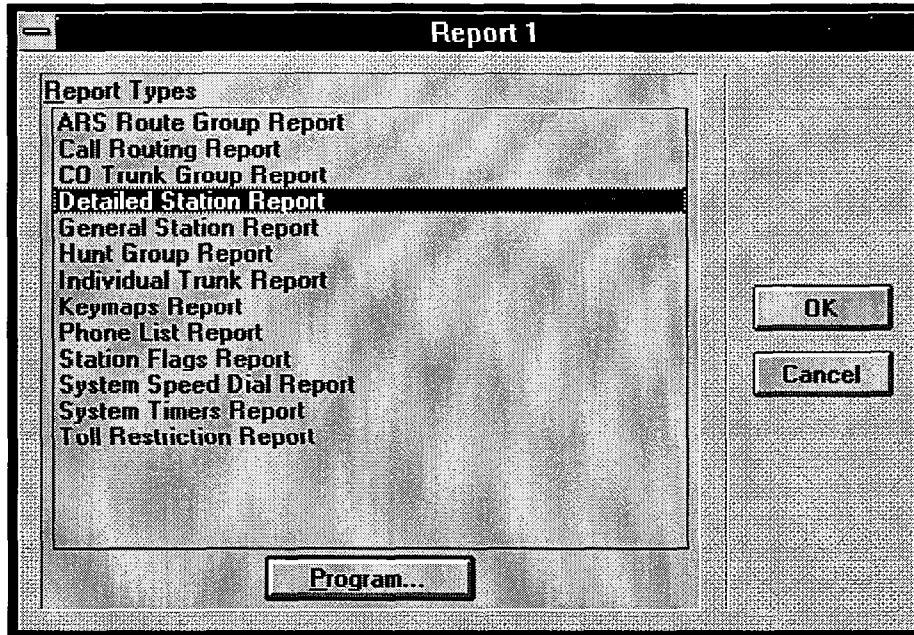
18.33 To reach the window shown below, select Report Programming (Customized) from the Service menu or enter the CREP command.

18.34 REPORTS/PROGRAM: Scroll through the list box until the desired report number is highlighted. The window shown on the following page appears for programming the report parameters.

18.35 PRINT SETUP: Select the Printer Setup command button to designate the destination printer port or PC file for the report. The window on page 6-208 appears.

18.36 PRINT: Select the Print command button to generate the selected report. A window appears as shown on page 6-209. The reports are presented in the formats shown on page 4-121. While the report is being printed, a window appears that contains a Cancel button. If you wish to halt the report, select the Cancel button.



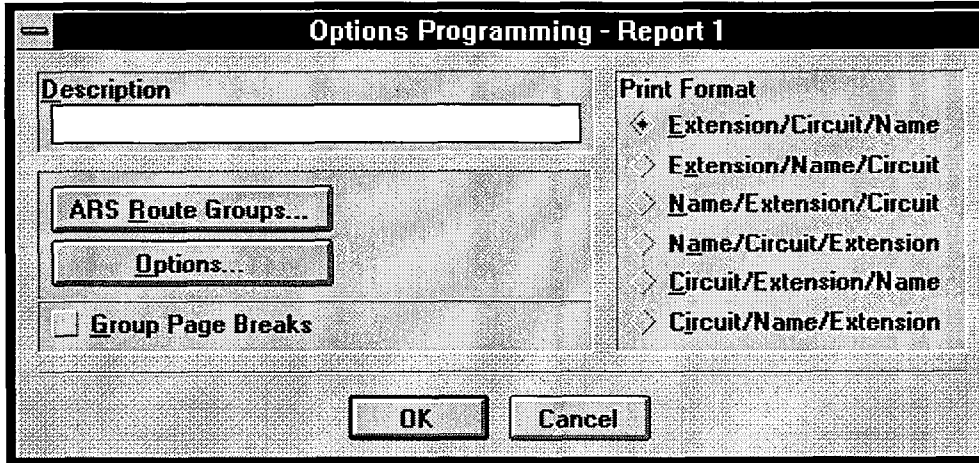


18.37 REPORT TYPES/PROGRAM: Begin programming by selecting the report type. Scroll through the list box until the desired report type is highlighted. Then select the Program command button to view the window that allow you to determine what elements are included in the report (user groups, stations, hunt groups, etc.). The windows are shown on the following pages:

- The window for ARS Route Group, CO Trunk Group, Detailed Station, General Station, Individual Trunks, Hunt Group, and Station Flags, Toll Restriction Reports are all very similar. A representative window is shown on the next page.
- The window for Call Routing Tables is shown on page 6-203.

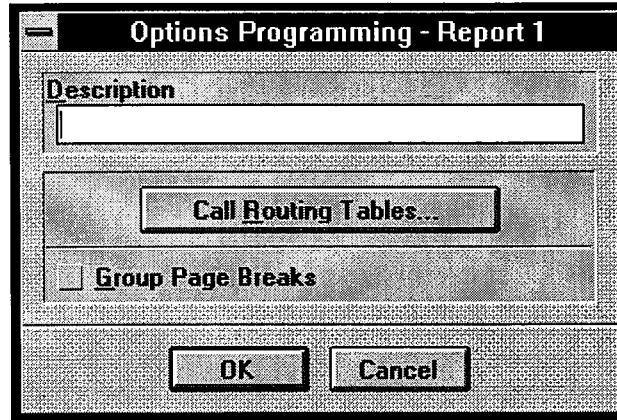
- The window for Keymap Reports is shown on page 6-204.
- The window for Phone List Reports is shown on page 6-205.
- The window for System Speed Dial and System Timer Reports is shown on page 6-206.

18.38 OK/CANCEL: When report programming is completed, select the OK command button to save the information and return to the window shown on page 6-200. Or, select the Cancel command button to return to the Report Programming window without saving the changes.



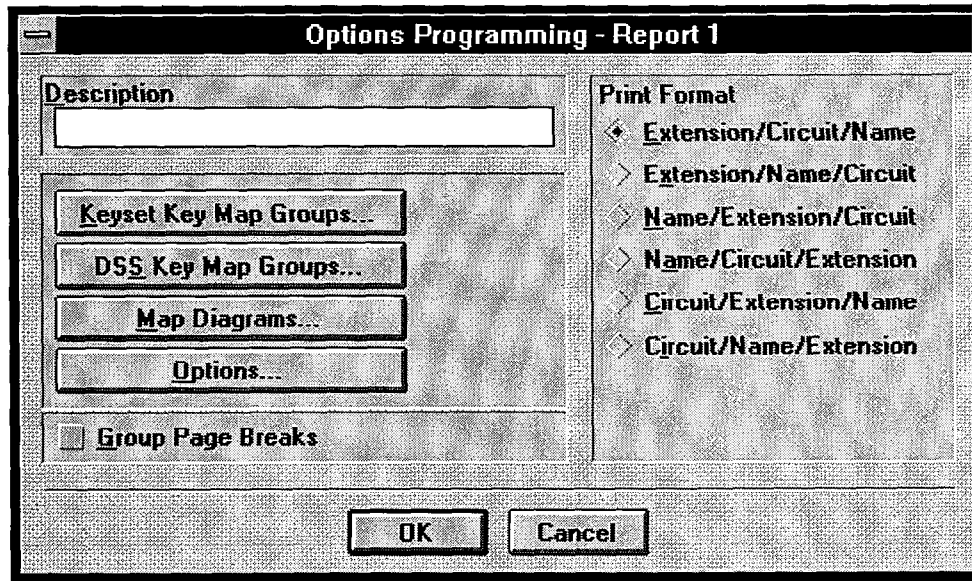
18.39 This sample is similar to the windows is used for ARS Route Group, CO Trunk Group, Detailed Station, General Station, Individual Trunks, Hunt Group, and Toll Restriction Reports. The Station Flags window is also similar, but has no Options button.

- **DESCRIPTION:** If you wish to name the report, enter the desired report name in the Description text box. The description will appear in the Reports list box shown in the window on page 6-200.
- **UNITS:** Depending on the report type selected, the “units” included in the report can be stations, hunt groups, trunks, ARS route groups etc. Selecting this command button allows you to select the units that will be included in the report. (The Toll Restriction Report window will have two command buttons — for Class of Service and User Groups.) When selected, a window like the one shown on page 6-207 appears.
- **OPTIONS:** Select the Options command button for a list box window (as shown on page 6-207) that shows the available options for each report type. (A complete list of report options is shown on page 6-199.)
- **GROUP PAGE BREAKS:** Select this check box to place a check mark in it if you wish to have each group (circuit board, map group, hunt group, etc.) on a separate page of the report.
- **PRINT FORMAT:** The devices included in the report can be sorted by extension number, circuit number, or name. Place a dot in the desired sorting method by selecting it.
- **OK/CANCEL:** When report programming is completed, select the OK command button to save the information and return to the window shown on page 6-201. Or, select the Cancel command button to return to the Report Types window without saving the changes.



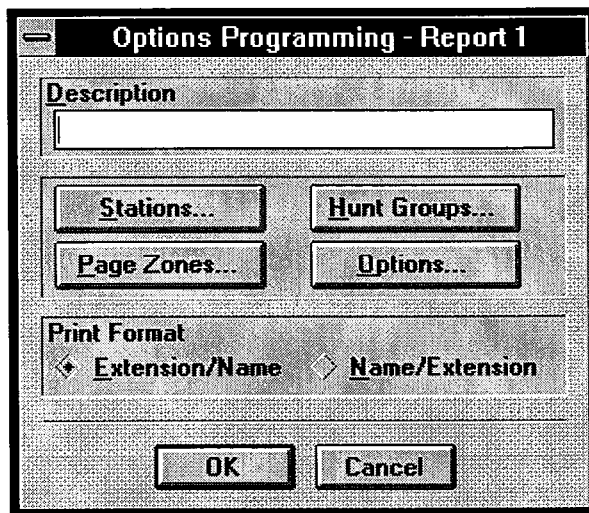
18.40 This window is used for Call Routing Table reports.

- **DESCRIPTION:** If you wish to name the report, enter the desired report name in the Description text box. The description will appear in the Reports list box shown in the window on page 6-200.
- **CALL ROUTING TABLES:** Select this command button to choose the call routing tables that will be included in the report. When selected, a window like the one shown on page 6-207 appears.
- **GROUP PAGE BREAKS:** Select this check box to place a check mark in it if you wish to have each group (circuit board, map group, hunt group, etc.) on a separate page of the report.
- **OK/CANCEL:** When report programming is completed, select the OK command button to save the information and return to the window shown on page 6-201. Or, select the Cancel command button to return to the Report Types window without saving the changes.



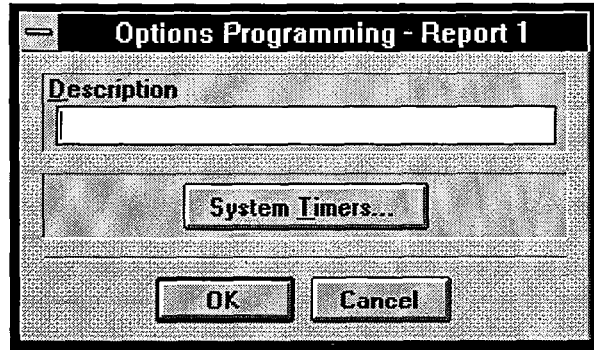
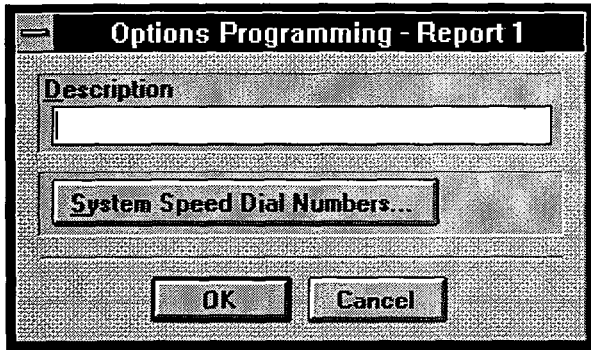
18.41 This window is used for Key Map Reports.

- **DESCRIPTION:** If you wish to name the report, enter the desired report name in the Description text box. The description will appear in the Reports list box shown in the window on page 6-200.
- **KEYSET KEY MAP GROUPS, DSS MAP GROUPS, and MAP DIAGRAMS:** Select these command buttons to choose the map groups and diagrams that will be included in the report. When selected, a window like the one shown on page 6-207 appears.
- **OPTIONS:** Select the Options command button for a list box window (as shown on page 6-207) that shows the available options for the Key Map Reports. (A complete list of report options is shown on page 6-199.)
- **GROUP PAGE BREAKS:** Select this check box to place a check mark in it if you wish to have each group (circuit board, map group, hunt group, etc.) on a separate page of the report.
- **PRINT FORMAT:** The devices included in the report can be sorted by extension number, circuit number, or name. Place a dot in the desired sorting method by selecting it.
- **OK/CANCEL:** When report programming is completed, select the OK command button to save the information and return to the window shown on page 6-201. Or, select the Cancel command button to return to the Report Types window without saving the changes.



18.42 This window is used for Phone List Reports.

- **DESCRIPTION:** If you wish to name the report, enter the desired report name in the Description text box. The description will appear in the Reports list box shown in the window on page 6-200.
- **STATIONS, HUNT GROUPS, and PAGE ZONES:** Select these command buttons to choose the stations, hunt groups, and/or page zones that will be included in the report. When selected, a window like the one shown on page 6-207 appears.
- **OPTIONS:** Select the Options command button for a list box window (as shown on page 6-207) that shows the available options for the Phone List report. (A complete list of report options is shown on page 6-199.)
- **PRINT FORMAT:** The devices included in the report can be sorted by extension number or name. Place a dot in the desired sorting method by selecting it.
- **OK/CANCEL:** When report programming is completed, select the OK command button to save the information and return to the window shown on page 6-201. Or, select the Cancel command button to return to the Report Types window without saving the changes.

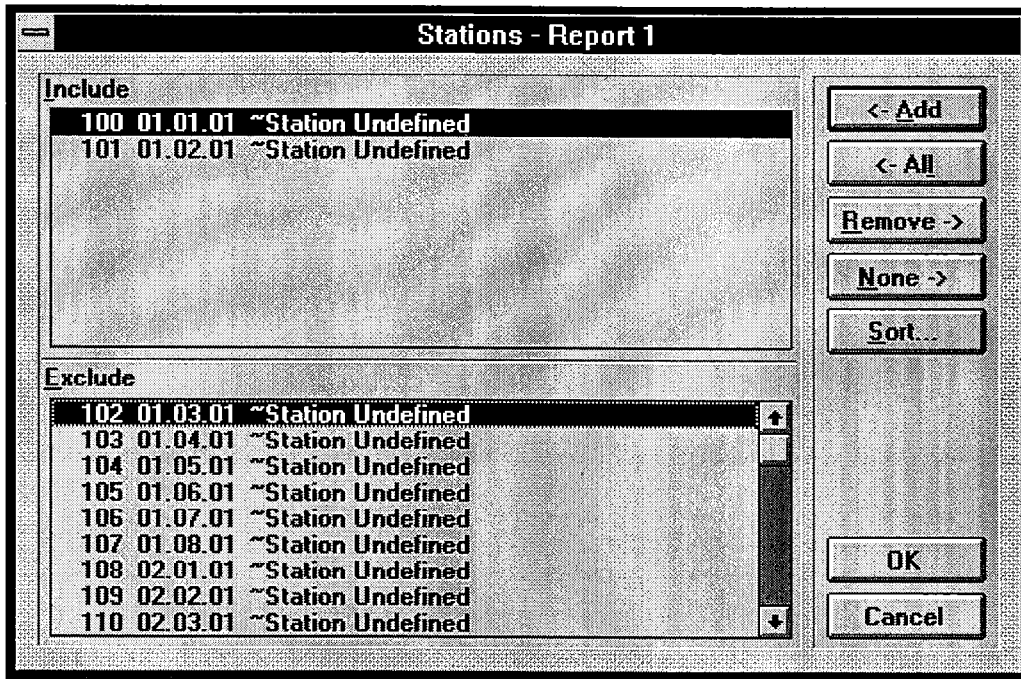


18.43 These windows are used for System Speed Dial Number and System Timer Reports.

- **DESCRIPTION:** If you wish to name the report, enter the desired report name in the Description text box. The description will appear in the Reports list box shown in the window on page 6-200.
- **UNITS:** Depending on the report type selected, the units included in the report can be speed dial numbers or timers. Selecting this command button al-

lows you to select the units that will be included in the report. When selected, a window like the one shown on page 6-207 appears.

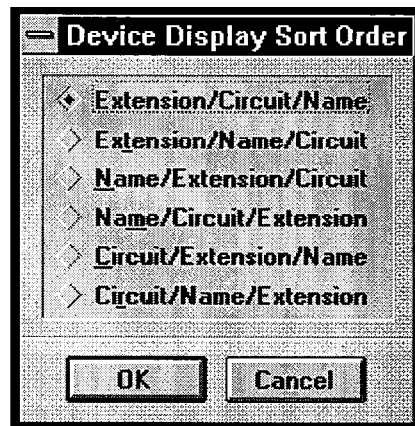
- **OK/CANCEL:** When report programming is completed, select the OK command button to save the information and return to the window shown on page 6-201. Or, select the Cancel command button to return to the Report Types window without saving the changes.



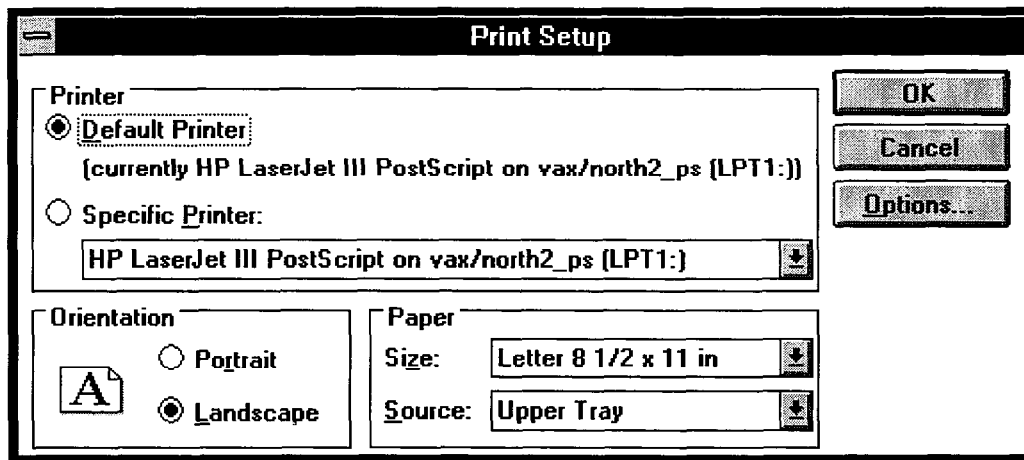
18.44 A window like the one shown above appears when a command button is selected from one of the Options Programming windows shown on the preceding pages. The windows for selecting units and options are similar. To determine the units or options that will be included in the report, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted item from the Exclude list to the Include List, or use the All command button to place all items in the list.
- **REMOVE/NONE:** To remove an item from the Include list, highlight it and select the Remove command button. Or, to remove all items, use the None command button.
- **SORT:** (This button does not appear when an Options command button is selected.) To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select

the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



18.45 This window appears when the Print Set-Up command button (shown on page 6-200) is selected. Set the printer options as follows.

- **PRINTER:** Select the option button for the Default Printer, or select the Specific Printer option and use the drop-down list box to scroll to the desired printer.
- **ORIENTATION:** If applicable to the selected printer, determine whether you want the reports to print in portrait (narrow) or landscape (wide) mode by selecting the desired option button.
- **PAPER:** If applicable to the selected printer, select the Size and Source drop-down list boxes to scroll to the correct paper selections.
- **OPTIONS:** If your printer requires additional setup, refer to your Windows documentation and/or your printer manual to determine the options that are required for your printer and for the instructions to set them.
- **OK/CANCEL:** When your printer is set up, select the OK command button to save the printer options and return to the window shown on page 6-200. Or, to exit without saving any changes, select the Cancel command button.

Print

Printer: Default Printer (HP LaserJet III
PostScript on vax/north2_ps
(LPT1:))

Print Range

All
 Selection
 Pages

From: To:

Print Quality: 300 dpi

Copies:

Print to File

18.46 This window appears when you select the Print command button shown on page 6-200.

- **PRINTER/SETUP:** This shows the currently selected printer. If you would like to change printers, select the Setup command button to display the Print Set-Up window shown on the preceding page.
- **PRINT RANGE:** This is always set to "All," and cannot be changed.
- **PRINT QUALITY:** If your printer has the capability to change print quality, select this drop-down list box and scroll to the desired dots-per-inch (dpi) value.
- **PRINT TO FILE:** If you would prefer to print to a file, select this check box. A window will appear that contains a text box. Enter the output file name in the text box and select the OK command button. Or, select the Cancel command button to return to the window shown above.
- **COPIES:** Enter, in the Copies text box, the number of copies you wish to print.
- **OK/CANCEL:** When you are ready to print, select the OK command button. The report is automatically sent to the printer and the window on page 6-200 returns. Or, to cancel the print command, select the Cancel command button to return to the Report Programming window.

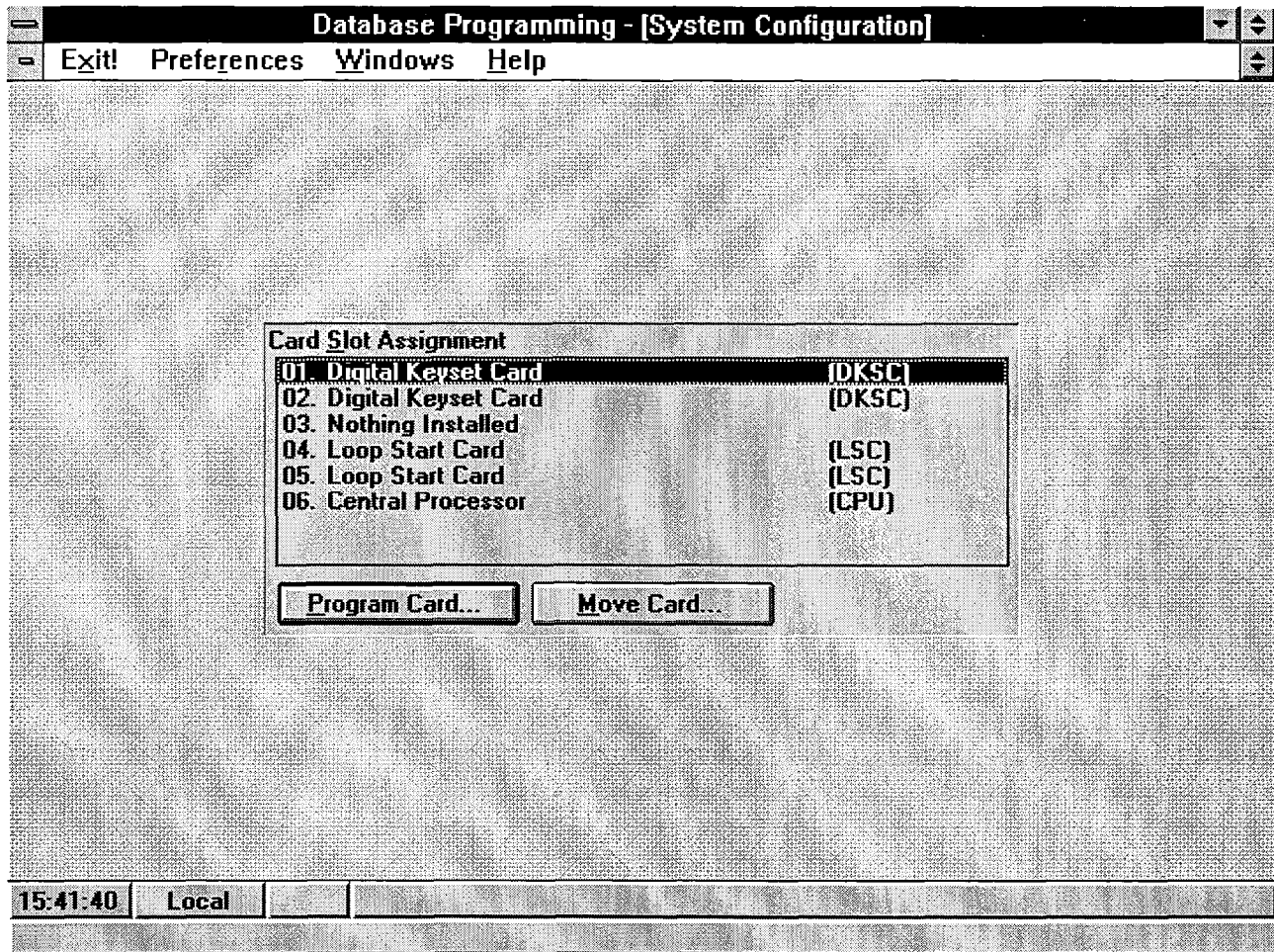
F. SYSTEM CONFIGURATION

18.47 System Configuration allows the programmer to designate the type of interface card that is installed in each of the card slots, and designate the circuits making up the card. In addition, there is information which informs the programmer of the number of timeslots which are required by the database configuration. This is done so that the programmer is aware of the number of timeslots in use by the system. (Refer to page 2-5 in SPECIFICATIONS for further discussion of time slot allotment.)

18.48 The KSU has space for eight cards. Three slots are reserved for voice mail cards, three for keyset cards, and two for trunk cards.

18.49 When changing the board type for equipped slots, existing circuits must first be reconfigured. Failure to redefine the associated circuits before inserting another type of interface board of a different device type will produce an error message.

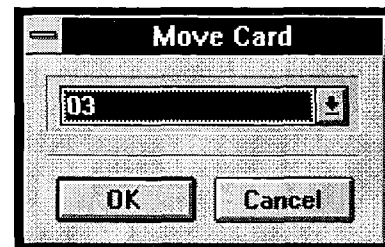
18.50 When you select System Configuration from the Service menu, the programming window appears as shown on the next page. A program planning sheet is located in Figure 6-37, on page 6-264.

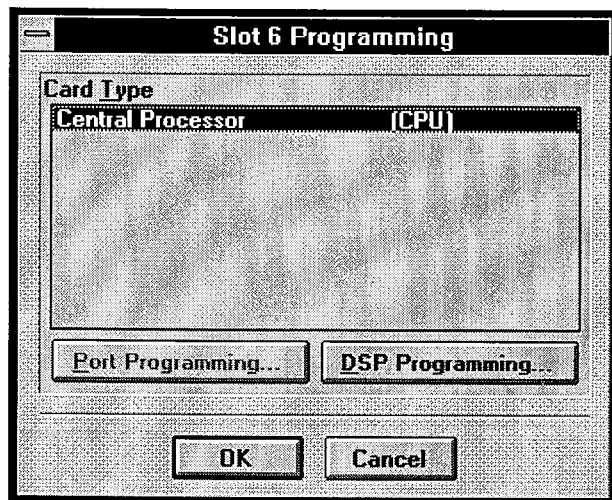
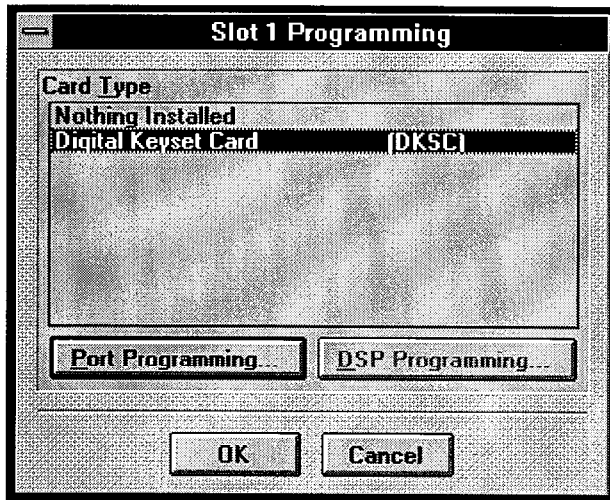


18.51 CARD SLOT ASSIGNMENT/PROGRAM CARD: To configure a card slot for a particular type of card, first locate the desired card position in the System Configuration list box and highlight it. Then, select the Program Card command button. The window shown on the next page appears.

18.52 MOVE CARD: *This option is available only in stand-alone programming sessions and only if there is an available slot.* If you wish to move a card from its assigned location in the cardfile to an available slot, highlight the card to be moved in the Slot Card Assignment list box. Then select the Move Card command button. The following window appears. The drop-down list box

shows all available slots. Move the highlight bar to the desired slot. When the correct slot appears in the box, select the OK command button. Or, to leave the slot assignment unchanged, select the Cancel command button.





18.53 CARD TYPE: Only the card types available for the selected slot are shown in the list box. The list box shown on the left is for slots 1–3, the list box on the right is for slot 6. To select the desired type of card for the card slot, scroll to the desired card type in the list box. When a card is changed, one of the following may occur:

- When a card slot is modified to contain a Digital Keypad Card the new stations will be included in all station “pick” lists in the database, except Keypad Map assignments. Keypads will be included in Keypad Map number 1.
- When a card slot is modified to contain a Loop Start Card, the new ports will be included in the “Unused CO” trunk group.
- When a card slot is modified to Nothing Installed, or where the existing card type is changed to another card type, *all* reference to the stations or trunks that were on the card in that slot will be removed from *all* areas of the Database Manager (unless the card pro-

gramming was first moved using the Move Card option.)

18.54 PORT/DSP PROGRAMMING: To configure the ports on the selected card, select the Port Programming command button, as shown in the DKSC window shown above. To program the DSPs on the CPU card, select the DSP Programming command button as shown above. The window that appears depends on the type of card selected. Each window type is shown in the following pages. There are programming windows for:

- Digital Keypad Card (next page)
- Loop Start Card (page 6–216)
- CPU Card (page 6–217)

18.55 OK/CANCEL: When the card has been selected and configured, select the OK command button to return to the System Configuration window. Or, to leave the card slot programming unchanged, select the Cancel command button.

Digital Keypad Card Configuration

18.56 When Digital Keypad Card is highlighted in the list box and the Port Programming command button is selected, the window shown on the next page appears.

18.57 This window is used for configuring the DKSC card ports to support the various devices. DKSC capacities include the following:

- Keypad ports can be assigned for Single-Line Adapter (SLA) use. (Two single-line sets, two DID trunks, or one of each can be connected to an SLA on a DKSC port.) Refer to INSTALLATION, page 3–51, for special installation instructions.
- To support the Off-Hook Voice Announce feature, an Executive or Standard keypad can be equipped with a PC Data Port Module (PCDPM) or a special OHVA Module. (See page 2–13 in SPECIFICATIONS.) These keypad ports do not require special configuration programming.
- Up to 10 DSS/BLF units can be connected to Executive or Standard keypads with PCDPMs. (Tandem units count as two DSS/BLF Units.) Each of those keypads can have single or tandem DSS/BLF Units in addition to using the Off-Hook Voice Announce feature that is available to all keypads with PCDPMs. (See page 6–33 for keypad attached device programming information.)
- An Executive or Standard keypad with a PCDPM (that does not have a DSS/BLF unit attached) can use a Desktop Interface device such as the AXCESSORY Connect or AXCESSORY ACD that has been developed for the Inter-Tel Axsent system. (See page 6–33 for keypad attached device programming information.)
- Keypad ports with PCDPMs can be designated as system serial ports. (There can be up to eight system serial ports per system, including keypads, and CPU ports.) Keypad system serial ports can be used for system programming, SMDR report generation, and programming report generation. For proper serial port operation, the keypad circuit should also be programmed with camp-on tones disabled, extended ring cadence enabled, different alerting cadence disabled, and different ringback cadence disabled (see page 6–30).

- Modem Data Port Modules (MDPMs) can be programmed for use on Executive and Standard keypads. (There can be up to 16 MDPMs and/or single-line sets on the system. If desired, a single-line set can be attached to an MDPM. This uses one single-line circuit.) A keypad with an MDPM and a PCDPM can use the off-hook voice announce and have a single-line set or data device connected.

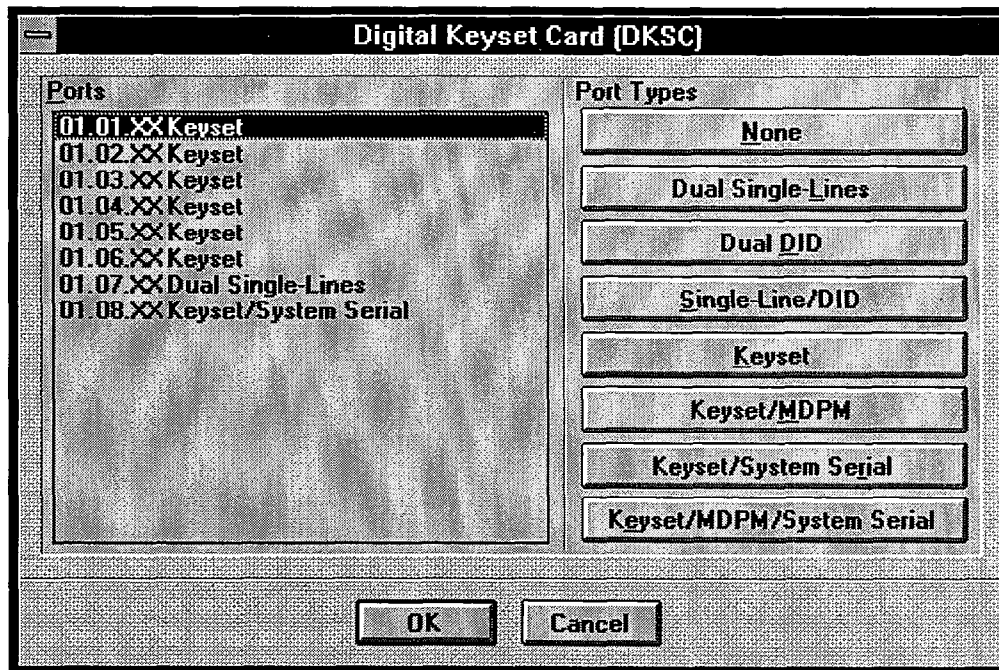
18.58 When multiple purposes are assigned to one DKSC port, the circuit numbers are assigned as follows:

- **Dual Single-Line Sets on an SLA:** The single-line set circuit numbers are XX.XX.01 and XX.XX.02
- **Dual DID Trunks on an SLA:** The DID trunk circuit numbers are XX.XX.01 and XX.XX.02
- **Single-Line Set and DID trunk on an SLA:** The single-line set circuit number is XX.XX.01 and the DID trunk is XX.XX.02
- **Keypad Only:** XX.XX.01
- **Keypad with MDPM:** The keypad is XX.XX.01 and the MDPM is XX.XX.02
- **Keypad with System Serial Port:** The keypad is XX.XX.01 and the serial port is XX.XX.02.
- **Keypad with MDPM and System Serial Port:** The keypad is XX.XX.01, the MDPM is XX.XX.02, and the serial port is XX.XX.03.

18.59 When a DKSC port is changed from single purpose (e.g., Keypad) to multiple purpose (e.g., Keypad with RS232 port), the database will retain all programming for the original single port and it will create new additional station(s) in all other applicable areas of programming. The original single port will retain its extension number; the new ports will have extension numbers assigned as you exit from this programming area.

18.60 If a DKSC port is converted from Keypad to an SLA function, the keypad programming is erased and the two SLA circuits are at default values.

18.61 If a DKSC port is changed from an SLA function to Keypad with MDPM, the port programming for the SLA circuits is erased and the MDPM is set at default values.



18.62 PORTS: The ports on the board and their current configuration are shown in the Ports list box. To program a port, highlight it in the list box. To highlight several ports at once, press and hold the SHIFT key while using the arrow keys to lengthen or shorten the highlighted area; when you change the port type, all highlighted ports will be the same type.

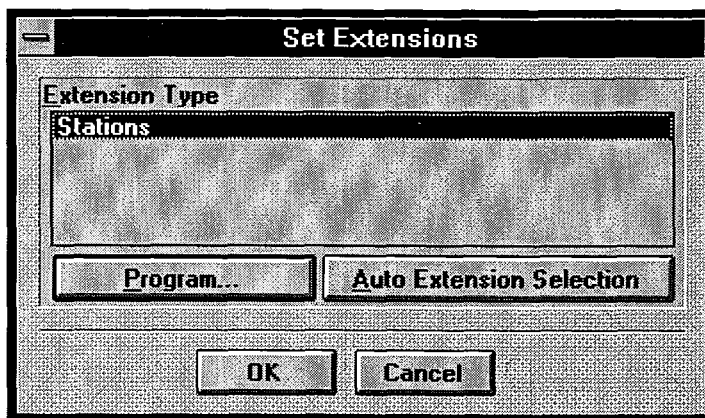
18.63 PORT TYPES: Select the desired option button to determine the port type for the port that is highlighted in the list box. The options are as follows:

- *None:* To disable the port, select the None option.
- *Dual Single-Lines:* If the port will be used for installing two single-line sets on an SLA, select this option.
- *Dual DID:* If the port will be used for installing two DID trunks on an SLA, select this option.
- *Single-Line/DID:* If the port will be used for installing one single-line set and one DID trunk on an SLA, select this option.
- *Keyset:* This option is selected if the port will be used for installing an Executive or Standard keyset

that does not have a DSS/BLF Unit, will not be used as a serial port, and will not have a data device connection. (The Executive or Standard keyset may have a PCDDPM that is used only for off-hook voice announce.)

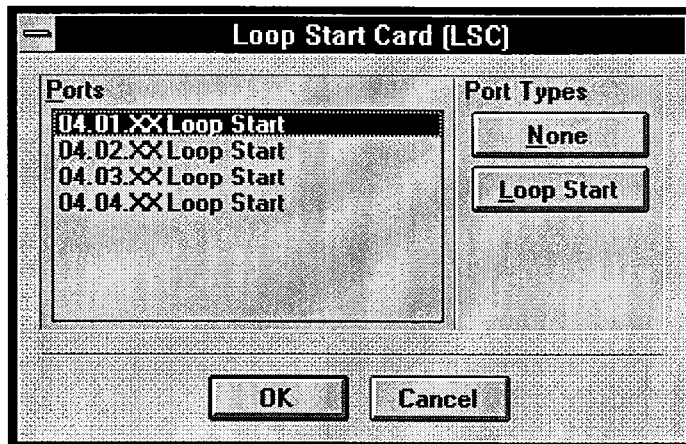
- *Keyset/MDPM:* If the port will support a keyset that is equipped with a PCDDPM and an MDPM, but is used only for off-hook voice announce and a data device connection, select this option.
- *Keyset/System Serial:* To configure the port for a keyset with a system serial port, select the Keyset/System Serial option. (The keyset may also use its PCDDPM for off-hook voice announce.)
- *Keyset/MDPM/System Serial:* To configure a port for a keyset with a PCDDPM and a MDPM that will be used as a system serial port *and* for off-hook voice announce and a data device connection, select this option.

18.64 OK/CANCEL: When the card configuration is as desired, select the OK command button. Or to exit without changing the configuration, select the Cancel command button. *If you have added new stations*, a window appears as shown on the next page.



18.65 This window appears if you have added any stations or trunks during configuration of a card. Program the new extension numbers as follows:

- **EXTENSION TYPE/PROGRAM:** The extension type will always be "Station" or "Individual Trunk." When you select the Program command button, a window appears like the one described on page 6-76. The list box will be labeled "Stations" or "Individual Trunks." Follow the instructions on that page for programming the extension numbers for the new stations or trunks.
- **AUTO EXTENSION SELECTION:** If you select the Auto Extension Selection command button, the extension numbers will be assigned automatically for the new stations. The System Configuration window appears momentarily and then you return to the Database Programming Menu.
- **OK/CANCEL:** When the new stations have been programmed, select OK to exit and save the changes. Or, select Cancel to exit without making any changes.



Loop Start Card Configuration

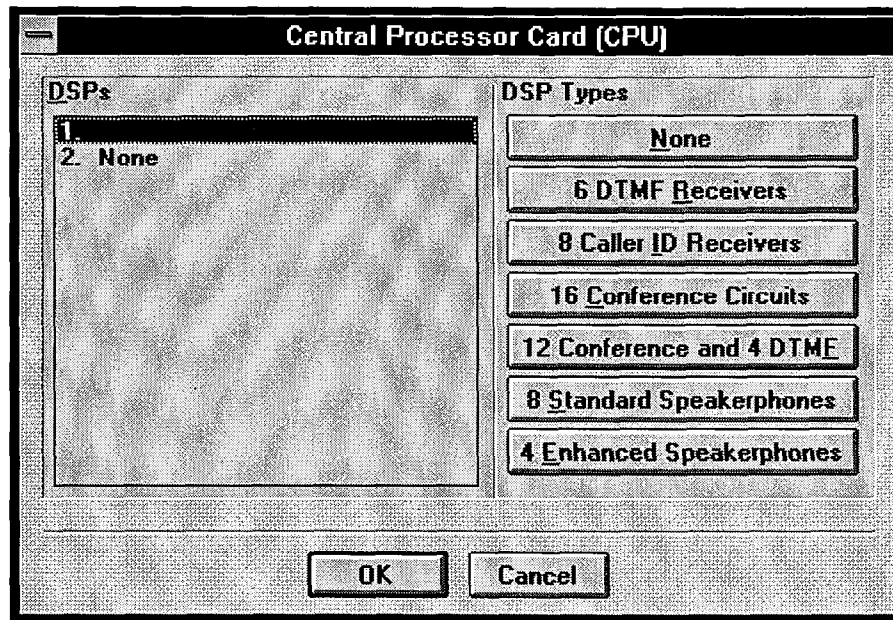
18.66 This window is used for configuring a Loop Start Card. It appears when the Loop Start Card option is highlighted in the Card Type list box and the Port Configuration command button is selected (shown on page 6-212).

18.67 PORTS: The ports on the board and their current configuration are shown in the Loop Start list box. To program a port, highlight it in the list box. To highlight several ports at once, press the SHIFT key while using the arrow keys to lengthen or shorten the high-

lighted area; when you change the port type, all highlighted ports will be the same type.

18.68 PORT TYPES: Select the desired option button to determine the type for the port that is highlighted in the list box. If the highlighted port will not be used, select None. To enable the port, select Loop Start.

18.69 OK/CANCEL: When the card configuration is as desired, select the OK command button. Or to exit without changing the configuration, select the Cancel command button. *If you have added new trunks*, a window appears as shown on page 6-215.



CPU DSP Configuration

18.70 Each of the DSPs installed on the CPU board (up to two) may be configured as one of several available resources. Caller information features require DSP programming to ensure that enough resources are available to support the features. Caller ID uses Caller ID receivers and DID/ANI uses DTMF receivers.

18.71 This window appears when CPU is highlighted in the Card Type list box and the DSP Programming command button is selected (see page 6-212).

18.72 DSPs: The DSPs on the board and their current configurations are shown in the DSPs list box. To program a DSP, highlight it in the list box.

18.73 DSP TYPES: Select the desired option button to determine the function of the highlighted DSP. Refer to SPECIFICATIONS and INSTALLATION for information regarding the equipment supported by these options. The options are as follows:

- **None:** If the DSP will not be used or is not equipped, select this option.

- **6 DTMF Receivers:** To enable six additional DTMF receivers place the dot in this option button.
- **8 Caller ID Receivers:** To enable eight receivers for Caller ID information, select this option.
- **16 Conference Circuits:** To enable 16 conference circuits, select this option.
- **12 Conference Circuits and 4 DTMF:** This option enables 12 conference circuits and four DTMF receivers.
- **8 Standard Speakerphones:** Select this option to support eight standard shared speakerphone resources for use by Standard keysets.
- **4 Enhanced Speakerphones:** Select this option to support four shared enhanced speakerphone resources for use by Standard keysets.

18.74 OK/CANCEL: When the card configuration is as desired, select the OK command button. Or to exit without changing the configuration, select the Cancel command button.

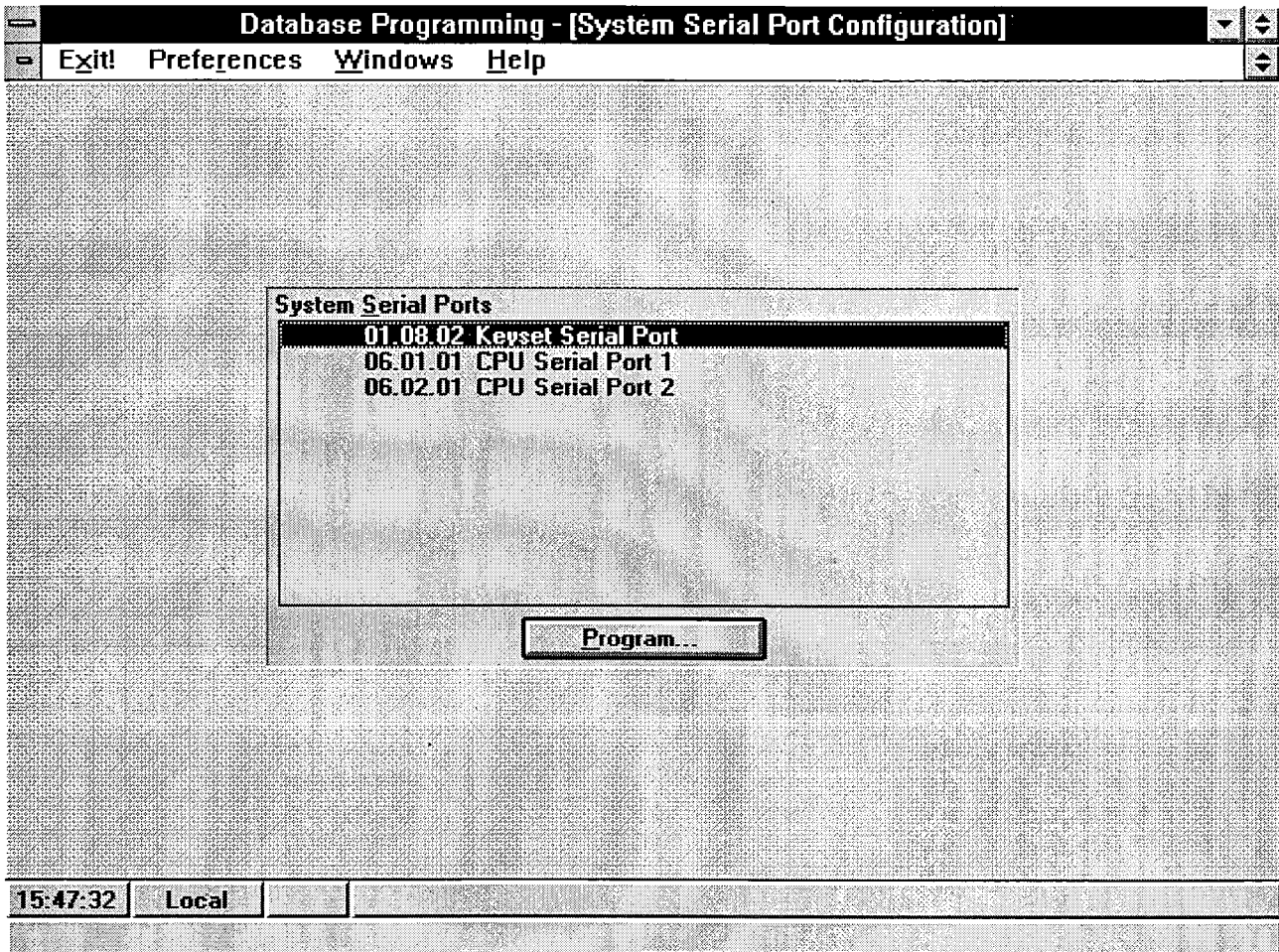
**G. SYSTEM SERIAL PORT
CONFIGURATION**

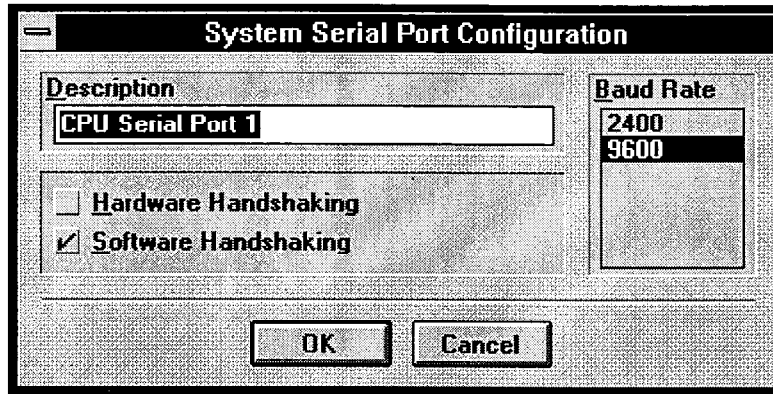
18.75 This window is used to set the baud rate and/or handshaking capabilities of the serial ports to match the configuration of external devices to which they will be attached (such as printers, PCs, etc.). It is viewed by selecting Serial Port Configuration from the Service menu. A program planning sheet is located in Figure 6-36, on page 6-264.

18.76 Serial ports are located on the CPU cards. They can also be configured on keysets with MDPMs.

18.77 The list box in this window shows the serial ports that have been equipped through the System Configuration window. Note that all ports with a circuit number 08.XX.XX are located on the CPU card.

18.78 SYSTEM SERIAL PORTS/PROGRAM: Begin programming by selecting the desired serial port in the list box. Then select the Program command button. The window shown on the next page appears.





- **DESCRIPTION:** To change the description of the serial port, enter a name (up to 20 characters) in the Description text box.
- **BAUD RATE:** Only the baud rates specifically available to the particular device being programmed are shown in this box. To set the baud rate of the serial port, scroll the highlight bar to the desired setting in the Baud Rate list box.
- **HARDWARE HANDSHAKING:** If the device that is connected to the selected port supports handshaking on the RS-232-C connector, select the Hardware Handshaking check box to place a check mark in it. To remove the check mark and disable the handshaking, select the check box again. Refer to SPECIFICATIONS, page 2-21, for information about handshaking.
- **SOFTWARE HANDSHAKING:** If the device that is connected to the selected port supports software handshaking, select the Software Handshaking check box to place a check mark in it. To remove the check mark and disable the handshaking, select the check box again. Refer to SPECIFICATIONS, page 2-21, for more information.

FIGURE 6-4. INDIVIDUAL STATION (STN)

TO USE: Make a copy of this page and the next page for each station in the system.

Circuit number:	
Extension number:	
Description:	
Username:	
Account Code Type:	
Standard account code number, if used	
Mailbox(es) (See also Mailbox planning sheet)	

Miscellaneous Flags:

All Transient Displays	Enabled <i>Or</i> Disabled
Alternate Keymap	Enabled <i>Or</i> Disabled
Alternate Trans. Display Timer	Enabled <i>Or</i> Disabled
Auto Answer CO (Keyset)	Enabled <i>Or</i> Disabled
Auto Answer IC (Keyset)	Enabled <i>Or</i> Disabled
Camp-On Indications	Enabled <i>Or</i> Disabled
Camp-On To ARS	Enabled <i>Or</i> Disabled
CO Reseize (Keyset)	Enabled <i>Or</i> Disabled
DID Receive Busy	Enabled <i>Or</i> Disabled
Different Alerting Cadence	Enabled <i>Or</i> Disabled
Different Ringback Cadence	Enabled <i>Or</i> Disabled
Do-Not-Disturb Allowed	Enabled <i>Or</i> Disabled
DND Override (Keyset)	Enabled <i>Or</i> Disabled
Extended Ring (Single-Line)	Enabled <i>Or</i> Disabled
Handsfree (Keyset)	Enabled <i>Or</i> Disabled
Headset (Keyset)	Enabled <i>Or</i> Disabled
Hunt Group	Replace <i>Or</i> Remove
Hunt Group Camp-On Audio	Enabled <i>Or</i> Disabled
Immediate OHVA (Keyset)	Enabled <i>Or</i> Disabled
OHVA Receive (Keyset)	Enabled <i>Or</i> Disabled
OHVA Transmit	Enabled <i>Or</i> Disabled
OPX Gain Levels (Single-Line)	Enabled <i>Or</i> Disabled
Page Mode (Keyset)	Replace <i>Or</i> Remove
Rec. Busy vs. Do-Not-Disturb	Enabled <i>Or</i> Disabled

Redial Mode	Dialed <i>Or</i> Saved
Ring Intercom Always	Enabled <i>Or</i> Disabled
Standard Tone Frequencies	Enabled <i>Or</i> Disabled
System Forwarding	Enabled <i>Or</i> Disabled

Miscellaneous Station Information—

Attendant	
Message Center	
Outgoing	
Transfer Recall Destination	
Voice Mail Extension	
Alt. Msg. Source	
Data Port Extension	
Speakerphone Type	
Attached Device	
Baud Rate	

Programmable Keys —

Station Programmable Keys:	1
	2
	3
	4
	5
	6
	7
	8
	9
	10
	11
Standard Map Group	
Alternate Map Group	
DSS Key Map Group	

FIGURE 6-4. INDIVIDUAL STATION (Continued)

Special Purpose Stations —

Fill in appropriate information if the station serves as any of the following special purpose stations:

Message Center	List stations served:
Attendant	List stations served:
Administrator:	Yes or No
House Phone	Day Number:
	Night Number:

System Forwarding —

Forwarding Path 1: <i>(Circle the desired options.)</i>	
Station Condition:	Busy No Answer DND Immediate
Sys Condition:	Day Night
Ring Principal:	Yes or No
Call Type:	Call Routing Table Ring-in Recall IC Calls DISA Transfer
Forwarding Path 2: <i>(Circle the desired options.)</i>	
Station Condition:	Busy No Answer DND Immediate
Sys Condition:	Day Night
Ring Principal:	Yes or No
Call Type:	Call Routing Table Ring-in Recall IC Calls DISA Transfer
Forwarding Path 3: <i>(Circle the desired options.)</i>	
Station Condition:	Busy No Answer DND Immediate
Sys Condition:	Day Night
Ring Principal:	Yes or No
Call Type:	Call Routing Table Ring-in Recall IC Calls DISA Transfer

FIGURE 6-4. INDIVIDUAL STATION (Continued)

Toll Restriction —

SCOS	DAY	NIGHT
00 Unrestricted	Yes or No	Yes or No
01 ARS Only	Yes or No	Yes or No
02 Deny Area/Office	Yes or No	Yes or No
03 Deny Operator	Yes or No	Yes or No
04 Deny Toll Access	Yes or No	Yes or No
05 Deny International	Yes or No	Yes or No
06 Deny Equal Access	Yes or No	Yes or No
07 Deny Local Calls	Yes or No	Yes or No
08 Denied Numbers	Yes or No	Yes or No
09 Allowed Numbers	Yes or No	Yes or No
10	Yes or No	Yes or No
11	Yes or No	Yes or No
12	Yes or No	Yes or No
13	Yes or No	Yes or No
14	Yes or No	Yes or No
15	Yes or No	Yes or No
16	Yes or No	Yes or No
User Group Number		

FIGURE 6-5. KEY ASSIGNMENTS — DSS (DSS)

DSS KEYMAP NUMBER: _____ DESCRIPTION: _____

STATIONS: _____

Fill in the desired extension number on each key.

PAGE 1

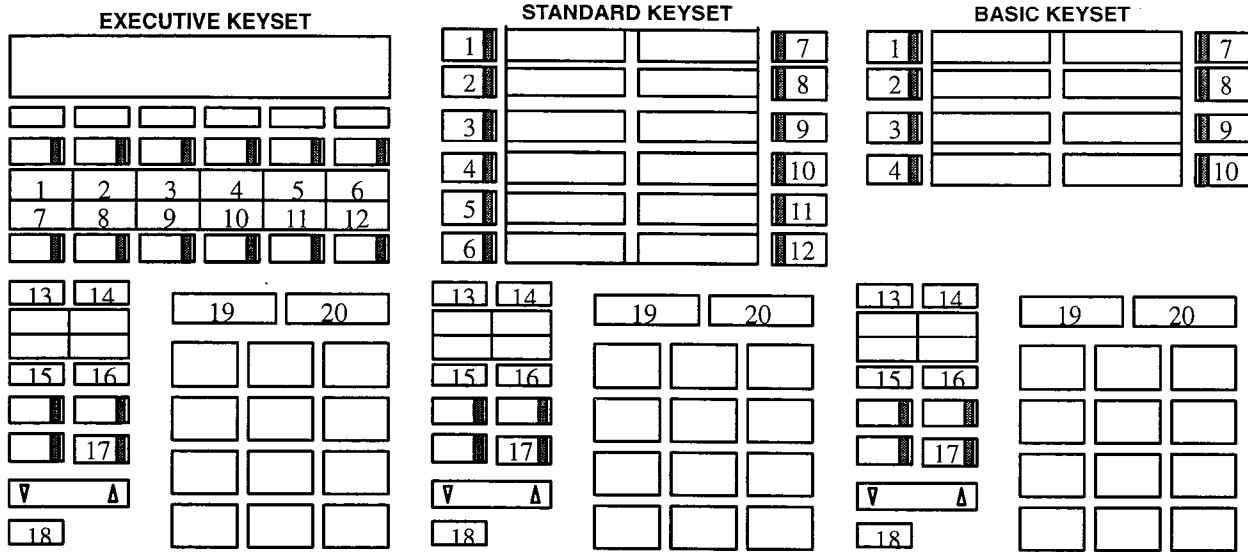
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<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

FIGURE 6-6. KEY ASSIGNMENTS — STATIONS (KEY)

TO USE: This page shows the key numbering scheme and the default values of the keys. The next page contains a chart that can be filled in for each key map.



The keys are numbered to show which keys corresponding on the three key maps. (When a key is changed on one map, the corresponding key on other keyset type is automatically changed to match.) Blank keys are not programmable. The keys are defined as follows in the default key maps:

KEY	EXEC/STAND KEYSETS	BASIC KEYSETS
1	Call Key 1	Individual Trunk 1
2	Call Key 2	Individual Trunk 2
3	Call Key 3	Individual Trunk 3
4	Call Key 4	Individual Trunk 4
5	IC (Intercom)	N/A
6	Prog. Key 1: Do-Not-Disturb	N/A
7	Prog. Key 2: Undefined	Individual Trunk 5
8	Prog. Key 3: Undefined	Individual Trunk 6
9	Prog. Key 4: Undefined	Individual Trunk 7
10	Prog. Key 5: Undefined	Individual Trunk 8

KEY	EXEC/STAND KEYSETS	BASIC KEYSETS
11	Prog. Key 6: Undefined	N/A
12	Prog. Key 7: Conference	N/A
13	Prog. Key 8: Individual Hold	Prog. Key 8: Page
14	Prog. Key 9: Transfer To Ring	Prog. Key 9: Transfer To Ring
15	Prog. Key 10: System Speed Dial	Prog. Key 10: System Speed Dial
16	Prog. Key 11: Redial	Prog. Key 11: Redial
17	Forward	Forward
18	SPCL	SPCL
19	Answer	Answer
20	Outgoing	Outgoing

FIGURE 6-6. KEY ASSIGNMENTS (Continued)

TO USE: Enter the key definition for each key in each of the keyset key maps (01-10). Refer to the maps on the previous page for key locations.

KEY	MAP 1	MAP 2	MAP 3	MAP 4	MAP 5	MAP 6	MAP 7	MAP 8	MAP 9	MAP 10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

FIGURE 6-7. STATION MISCELLANEOUS FLAGS (SFEA)

FEATURE	STATIONS WITH FEATURE ENABLED
All Transient Displays	
Alternate Keymap	
Alternate Trans. Display Timer	
Auto Answer CO (keyset)	
Auto Answer IC (keyset)	
Camp-On Indications	
Camp-On to ARS	
CO Reseize (keyset)	
DID Receive Busy	
Different Alerting Cadence	
Different Ringback Cadence	
Do-Not-Disturb Allowed	
DND Override (keyset)	
Extended Ring (single-line)	
Handsfree (keyset)	
Headset (keyset)	
Hunt Group	
Immediate OHVA (keyset)	
OHVA Receive (keyset)	
OHVA Transmit	
OPX Gain Levels (single-line)	
Page Mode (keyset)	
Rec. Busy vs. Do-Not-Disturb	
Redial Mode	
Ring Intercom Always	
Standard Tone Frequencies	
System Forwarding	

FIGURE 6-8. ACCOUNT CODES (ACCT)

Length of all account codes is _____ (3-12) digits.

STANDARD ACCOUNT CODES:

001	_____	026	_____	051	_____	076	_____
002	_____	027	_____	052	_____	077	_____
003	_____	028	_____	053	_____	078	_____
004	_____	029	_____	054	_____	079	_____
005	_____	030	_____	055	_____	080	_____
006	_____	031	_____	056	_____	081	_____
007	_____	032	_____	057	_____	082	_____
008	_____	033	_____	058	_____	083	_____
009	_____	034	_____	059	_____	084	_____
010	_____	035	_____	060	_____	085	_____
011	_____	036	_____	061	_____	086	_____
012	_____	037	_____	062	_____	087	_____
013	_____	038	_____	063	_____	088	_____
014	_____	039	_____	064	_____	089	_____
015	_____	040	_____	065	_____	090	_____
016	_____	041	_____	066	_____	091	_____
017	_____	042	_____	067	_____	092	_____
018	_____	043	_____	068	_____	093	_____
019	_____	044	_____	069	_____	094	_____
020	_____	045	_____	070	_____	095	_____
021	_____	046	_____	071	_____	096	_____
022	_____	047	_____	072	_____	097	_____
023	_____	048	_____	073	_____	098	_____
024	_____	049	_____	074	_____	099	_____
025	_____	050	_____	075	_____	100	_____

STATIONS WITH STANDARD ACCOUNT CODES:

STATION	STANDARD ACCOUNT CODE

STATION	STANDARD ACCOUNT CODE

FIGURE 6-8. ACCOUNT CODES (Continued)

FORCED ACCOUNT CODES:

001	_____	026	_____	051	_____	076	_____
002	_____	027	_____	052	_____	077	_____
003	_____	028	_____	053	_____	078	_____
004	_____	029	_____	054	_____	079	_____
005	_____	030	_____	055	_____	080	_____
006	_____	031	_____	056	_____	081	_____
007	_____	032	_____	057	_____	082	_____
008	_____	033	_____	058	_____	083	_____
009	_____	034	_____	059	_____	084	_____
010	_____	035	_____	060	_____	085	_____
011	_____	036	_____	061	_____	086	_____
012	_____	037	_____	062	_____	087	_____
013	_____	038	_____	063	_____	088	_____
014	_____	039	_____	064	_____	089	_____
015	_____	040	_____	065	_____	090	_____
016	_____	041	_____	066	_____	091	_____
017	_____	042	_____	067	_____	092	_____
018	_____	043	_____	068	_____	093	_____
019	_____	044	_____	069	_____	094	_____
020	_____	045	_____	070	_____	095	_____
021	_____	046	_____	071	_____	096	_____
022	_____	047	_____	072	_____	097	_____
023	_____	048	_____	073	_____	098	_____
024	_____	049	_____	074	_____	099	_____
025	_____	050	_____	075	_____	100	_____

FORCED ACCOUNT CODE TYPE	STATIONS WITH FORCED ACCOUNT CODE TYPE
All Calls Validated	
All Calls Non-Validated	
Local Toll Calls Validated	
Local Toll Calls Non-Validated	
Long Distance Toll Calls Validated	
Long Distance Calls Non-Validated	
No Account Code	

FIGURE 6-9. AUTOMATIC ROUTE SELECTION (ARS)

Route Groups:

NO.	DESCRIPTION	TRUNK GROUPS	DIAL RULES	DIAL PATTERNS
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				

Dial Rules:

- | | |
|----------------------------------|--------------|
| 1 Echo Equal Access | 9 Add _____ |
| 2 Echo Toll Field | 10 Add _____ |
| 3 Echo 3 Digits After Toll Field | 11 Add _____ |
| 4 Echo Local Address | 12 Add _____ |
| 5 (Add #) Add _____ | 13 Add _____ |
| 6 Add _____ | 14 Add _____ |
| 7 Add _____ | 15 Add _____ |
| 8 Add _____ | 16 Add _____ |

**FIGURE 6-10. DO-NOT-DISTURB AND REMINDER MESSAGES
(DND, REM, OR MESG)**

Do-Not-Disturb Messages:

DEFAULT MESSAGE	NEW MESSAGE
MESSAGE 01 (DO-NOT-DISTURB)	(THIS MESSAGE CANNOT BE CHANGED)
MESSAGE 02 (LEAVE A MESSAGE)	
MESSAGE 03 (IN MEETING UNTIL)	
MESSAGE 04 (IN MEETING)	
MESSAGE 05 (ON VACATION 'TIL)	
MESSAGE 06 (ON VACATION)	
MESSAGE 07 (CALL ME AT)	
MESSAGE 08 (AT THE DOCTOR)	
MESSAGE 09 (ON A TRIP)	
MESSAGE 10 (ON BREAK)	
MESSAGE 11 (OUT OF TOWN 'TIL)	
MESSAGE 12 (OUT OF OFFICE)	
MESSAGE 13 (OUT UNTIL)	
MESSAGE 14 (WITH A CLIENT)	
MESSAGE 15 (WITH A GUEST)	
MESSAGE 16 (UNAVAILABLE)	
MESSAGE 17 (IN CONFERENCE)	
MESSAGE 18 (AWAY FROM DESK)	
MESSAGE 19 (GONE HOME)	
MESSAGE 20 (OUT TO LUNCH)	

FIGURE 6-10. DO-NOT-DISTURB AND REMINDER MESSAGES (Continued)

Reminder Messages:

DEFAULT MESSAGE	NEW MESSAGE
MESSAGE 01 (MEETING):	
MESSAGE 02 (STAFF MEETING):	
MESSAGE 03 (SALES MEETING):	
MESSAGE 04 (CANCEL MEETING):	
MESSAGE 05 (APPOINTMENT):	
MESSAGE 06 (PLACE CALL):	
MESSAGE 07 (CALL CLIENT):	
MESSAGE 08 (CALL CUSTOMER):	
MESSAGE 09 (CALL HOME):	
MESSAGE 10 (CALL CORPORATE):	
MESSAGE 11 (CALL ENGINEERING):	
MESSAGE 12 (CALL MARKETING):	
MESSAGE 13 (CALL ACCOUNTING):	
MESSAGE 14 (CANCEL DND):	
MESSAGE 15 (CANCEL CALL FWD):	
MESSAGE 16 (TAKE MEDICATION):	
MESSAGE 17 (MAKE RESERVATION):	
MESSAGE 18 (REVIEW SCHEDULE):	
MESSAGE 19 (LUNCH):	
MESSAGE 20 (REMINDER):	

FIGURE 6-12. EXTENSIONS, USERNAMES, AND FEATURE CODES (EXT, FEAT, OR NAME)

FEATURE CODES:

_____ Account Code — All Calls Following (391)	_____ Hunt Group Remove/Replace (324)
_____ Account Code — Optional (390)	_____ Hunt Group Replace (323)
_____ ACD Agent Login (326)	_____ Message (365)
_____ ACD Agent Logout (327)	_____ Message — Cancel (366)
_____ ACD Agent Toggle (328)	_____ Message — Cancel Current (368)
_____ ACD Agent Wrap-Up Terminate (329)	_____ Message — Silent (367)
_____ Answer (351)	_____ Mute On/Off (314)
_____ Auto CO Access On/Off (360)	_____ Night Ring On/Off (9860)
_____ Auto IC Access On/Off (361)	_____ Outgoing Calls (8)
_____ Automatic Route Selection (9200)	_____ Page (7)
_____ Automatic Trunk Answer (350)	_____ Page On/Off (325)
_____ Background Music On/Off (313)	_____ Program Baud Rate (393)
_____ Call Attendant (0)	_____ Program Keys (397)
_____ Call Forward — All Calls (355)	_____ Program Station Data (9802)
_____ Call Forward — Busy (357)	_____ Program System Speed Dial (9801)
_____ Call Forward — If No Answer or Busy (358)	_____ Queue Request (6)
_____ Call Forward — No Answer (356)	_____ Redial (380)
_____ Clear System Alarm (9850)	_____ Reminder Message (305)
_____ CO Hookflash (330)	_____ Reminder Message Cancel (306)
_____ Conference (5)	_____ Reverse Transfer (4)
_____ Data (340)	_____ Review Keys (396)
_____ Default Station (394)	_____ Ring Intercom Always On/Off (377)
_____ Directory (307)	_____ Ring Tone Selection (398)
_____ Display Time/Date (300)	_____ Seize Device (9973)
_____ Do-Not-Disturb (370)	_____ Set Time/Date (9800)
_____ Do-Not-Disturb Cancel (371)	_____ Station Monitor (321)
_____ Do-Not-Disturb On/Off (372)	_____ Station Speed Dial (382)
_____ Do-Not-Disturb Override (373)	_____ Station Speed Dial Program (383)
_____ Emergency Calls (911)	_____ Switch Keymap (399)
_____ Enhanced Speakerphone Enable (310)	_____ System Forward Disable (353)
_____ Feature Key Default (395)	_____ System Forward Enable (352)
_____ Handsfree On/Off (319)	_____ System Forward On/Off (354)
_____ Headset Disable (316)	_____ System History — Freeze (9993)
_____ Headset Enable (315)	_____ System History — Unfreeze (9998)
_____ Headset On/Off (317)	_____ System Speed Dial (381)
_____ Hold — Individual (336)	_____ Transfer To Hold (346)
_____ Hold — System (335)	_____ Transfer To Ring (345)
_____ Hunt Group Remove (322)	

FIGURE 6-12. EXTENSIONS, USERNAMES, AND FEATURE CODES (Continued)

HUNT GROUPS:

GROUP #	DESCRIPTION	USERNAME	EXTENSION
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

INDIVIDUAL TRUNKS:

CIRCUIT #	DESCRIPTION	EXTENSION

PAGE ZONES:

ZONE	DESCRIPTION	DEFAULT EXT	NEW EXT
1		960	
2		961	
3		962	
4		963	
5		964	

FIGURE 6-12. EXTENSIONS, USERNAMES, AND FEATURE CODES (Continued)

TRUNK GROUPS:

GRP #	DESCRIPTION	USERNAME	DEFAULT EXT	NEW EXT

FIGURE 6-12. EXTENSIONS, USERNAMES, AND FEATURE CODES (Continued)

AXXENT TALK APPLICATIONS:

	DESCRIPTION	USERNAME	DEFAULT EXT	NEW EXT
1			275	
2			276	
3			277	
4			278	
5			279	
6			280	
7			281	
8			282	
9			283	
10			284	
11			285	
12			286	
13			287	
14			288	
15			289	
16			290	
17			291	
18			292	
19			293	
20			294	
21			295	
22			296	
23			297	
24			298	
25			299	

FIGURE 6-13. HUNT GROUPS (HUNT)

TO USE: *(Make sufficient copies of this page and fill in information for each hunt group.)*

Hunt Group Number:	
Extension Number:	
Announcement Station:	
Overflow Station:	
Description:	
Username:	
Recall Destination:	
Analog Voice Mail?	<i>Yes or No</i>
ACD?	<i>Yes or No</i>
Priority Level:	
Search Type:	<i>Linear or Distributed or Longest Idle or Balanced</i>
Supervisor(s):	
Serial Port(s):	

Timers:

TIMER	DEFAULT	RANGE	NEW VALUE
No Answer Advance	18 seconds	1-255	
Announcement	18 seconds	1-255	
Overflow	72 seconds	1-255	
Recall	180 seconds	1-65535	
ACD Wrap-Up Duration	15 seconds	1-65535	

Stations:

FIGURE 6-14. MISC. SYSTEM-WIDE INFORMATION (MISC OR SYS)

Primary Attendant Station:	
DISA Security Code Failure Limit:	
DISA Invalid Extension Failure Limit:	
System Delayed Major Time:	
Axxent Talk Communications Port:	

Home Area Codes:

Home Area Code:	
Local Area Code #2:	
Local Area Code #3:	
Local Area Code #4:	

Number Plan Area Flags:

Office Codes Used As Area Codes:	Yes or No
Area Codes used As Office Codes:	Yes or No
Toll Digit Allowed On Local Calls:	Yes or No
Toll Digit Required On Toll Long Distance Calls:	Yes or No

Emergency:

Emergency Extension:	
Emergency Number:	

System Flags:

Alternate keyset menu display	Yes or No
Audible message indication for SL sets	Yes or No
Broadcast alarms to all attendants	Yes or No
Broadcast station off-hook alarms	Yes or No
Caller information used on keyset displays	Yes or No
DISA transfer tone	Ring or Music
Drop incomplete outgoing calls	Yes or No
Handsfree announce on system forward transfer	Yes or No
Music-on-hold for IC calls	Yes or No
OHVA enable	Yes or No
Ring flash on DSS lamps	Yes or No
SLC ring zones	Yes or No
System speed dial override toll restriction	Yes or No
Time display format	12-hour or 24-hour
Transfer audio for IC calls	Ring or Music
UCD station monitor indications	Yes or No
Voice mailbox number validation	Yes or No

FIGURE 6-15. PAGE ZONES (PAGE)

ZONE	DESCRIPTION	KEYSETS AND TRUNKS
0		
1		
2		
3		
4		
5		

FIGURE 6-18. SYSTEM TIMERS (TIMR)

TIMER	DEFAULT	RANGE	NEW VALUE
Abandoned Call	10	1-255 minutes	
Camp-On	3	1-255 seconds	
Camp-On Tone	15	5-255 seconds	
CO Reseize	3	1-15 seconds	
Dial Initiation	15	5-30 seconds	
DID Disconnect Recognition	150	2-500 milliseconds	
DID Inpulse-dial Inter-digit Pause Recog.	240	2-500 milliseconds	
DID Off-hook Debounce	10	2-500 milliseconds	
DID On-hook Debounce	12	2-500 milliseconds	
DID Post-Seize Delay	64	2-500 milliseconds	
DID Post-Signal Delay	30	2-500 milliseconds	
DID Pre-Signal Delay	100	2-500 milliseconds	
DID Ready Timeout	4000	2-65000 millisec.	
DID Seizure Recognition	30	2-500 milliseconds	
DID Signal Hold	200	2-500 milliseconds	
Disconnect Wait After Dialing	20	1-60 seconds	
DKTS Alternate Transient Display	10	1-255 tenths	
DTMF Digit Duration/Pause	60	30-255 milliseconds	
Forward No Answer	15	3-255 seconds	
Hold	60	0-255 seconds	
Inactivity Alarm	60	10-255 seconds	
Interdigit — Long	15	2-255 seconds	
Interdigit — Short	4	2-30 seconds	
LS Caller ID Relay Hold	2500	2-4000 milliseconds	
LS Caller ID Ring Idle	500	2-4000 milliseconds	
LS CO Hookflash	60	2-1000 hundredths	
LS CO-CO Disconnect	35	2-1000 hundredths	
LS Dialing Disconnect	120	2-1000 hundredths	
LS Dialing Wait After Connect	15	1-50 tenths	
LS Dialing Wait After Hookflash	30	2-199 tenths	
LS IC-CO Disconnect	60	2-1000 hundredths	
LS Inter-ring Silence	60	1-250 tenths	
LS Loop Current Debounce	100	2-500 milliseconds	
LS Outpulse-dial Inter-digit Pause	700	2-1500 milliseconds	
LS Outpulse-dial Inter-pulse Pause	40	2-500 milliseconds	
LS Outpulse-dial Pulse Hold Duration	60	2-500 milliseconds	

FIGURE 6-18. SYSTEM TIMERS (Continued)

TIMER	DEFAULT	RANGE	NEW VALUE
LS Ring Frequency — High Boundary	100	max. 1000 Hertz	
LS Ring Frequency — Low Boundary	15	min. 4 Hertz	
LS Trunk Ring Detection	5	1-250 tenths	
Message Wait	5	1-255 seconds	
Off-Hook Voice Announce Screening	5	1-255 seconds	
Page	15	0-255 seconds	
Pause Dialing Digit Length	3	1-15 seconds	
Queue Callback	15	10-255 seconds	
Recall	60	10-255 seconds	
SL Disconnect Flash Duration	15	1-250 tenths	
SL Hookflash Maximum	12	2-20 tenths	
SL Hookflash Minimum	2	1-10 tenths	
SL Inpulse-dial Inter-digit Pause	300	2-1500 milliseconds	
SL Wait For Disconnect	2	1-60 seconds	
System Forward Advance	15	2-255 seconds	
System Forward Initiate	15	2-255 seconds	
Transfer — Attendant	30	10-255 seconds	
Transfer — Available	20	10-255 seconds	
Transfer — Axxent Talk	20	10-255 seconds	
Transfer — Busy	24	10-255 seconds	
Trunk Key Debounce	3	1-30 seconds	
UCD Station Monitor Indication Frequency	15	1-255 seconds	
Unsupervised CO	5	1-255 minutes	
Valid Call	15	1-60 seconds	
Voice Mail Dial Delay	5	1-250 tenths	

FIGURE 6-20. TOLL RESTRICTION (TOLL)

CLASSES OF SERVICE:

COS	DESCRIPTION	DIALING PATTERNS	A/R	DAY LIST	NIGHT LIST
00					
01					
02	See next page				
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					

FIGURE 6-20. TOLL RESTRICTION (Continued)

USER GROUPS FOR COS 2:

USER GROUP 1: Description: _____

DAY LIST	NIGHT LIST	ALLOWED AREA CODES	RESTRICTED AREA CODES	EXTENDED AREA CODES	OFFICE CODES

USER GROUP 2: Description: _____

DAY LIST	NIGHT LIST	ALLOWED AREA CODES	RESTRICTED AREA CODES	EXTENDED AREA CODES	OFFICE CODES

USER GROUP 3: Description: _____

DAY LIST	NIGHT LIST	ALLOWED AREA CODES	RESTRICTED AREA CODES	EXTENDED AREA CODES	OFFICE CODES

FIGURE 6-20. TOLL RESTRICTION (Continued)

TOLL STRINGS:

CHARACTER	DIGIT STRING(S)
S	
R	
T	
I	
Q	

FIGURE 6-21. INDIVIDUAL TRUNK (INDT)

TO USE: *(Fill in information for each trunk.)*

CIRCUIT NUMBER	TRUNK GROUP NUMBER	DTMF?	ANSWER SUPERVISION	HYBRID BALANCE or START TYPE	SERVICE TYPE	DID BASE NO. AND RANGE

FIGURE 6-22. TRUNK GROUPS (TRNK)

TO USE: *(Duplicate and fill in this form for each trunk group.)*

FIELD	INFORMATION
Description	
Username	
One-Way Incoming Only	Yes or No
Enable Hookflash	Yes or No
Search Algorithm	Linear or Distributed
Music-On-Hold	Music or Silence or Tick Tones
Audio On Transfer	Music or Ringback
Day Ring-In	Call Routing Table or Single or DISA or Multiple
	Call Routing Table, Extension(s) or DISA Code:
Day Answer Access	Stations:
Day Outgoing Access	Stations:
Night Ring-In	Call Routing Table or Single or DISA or Multiple
	Call Routing Table, Extension(s) or DISA Code:
Night Answer Access	Stations:
Night Outgoing Access	Stations:
Trunk List	Trunks:
Day Class Of Service	
	User Group if COS 2:
Night Class Of Service	
	User Group if COS 2:
Subject To Toll Restrict	Yes or No
Exempt From ARS Only	Yes or No
Assigned Call Cost	Free Local Toll-Local Toll-Long Distance Operator/International
Absorbed Digits	Yes or No
	If yes, String or Pattern(s):
PBX Line	Yes or No

FIGURE 6-23. CALL COST (COST)

CALL COST TYPE	RATE IN \$ PER MINUTE
Local Call	
7-Digit Toll	
10-Digit Toll	
Operator/International	
Incoming Call	

MULTIPLICATIVE FACTOR	DISCOUNT RATE
Local Call	
7-Digit Toll	

FIGURE 6-24. STATION MESSAGE DETAIL RECORDING (SMDR)

Output Port	
Output Active?	Yes or No
Suppress Absorbed Digits?	Yes or No
Suppress Equal Access Digits?	Yes or No
Suppress Toll Digits?	Yes or No
Suppress All Caller Numbers?	Yes or No
Display Elapsed Time In Seconds If <999999 sec?	Yes or No
Record All Incoming Calls	Yes or No
Record All Local Calls	Yes or No
Record All Free Calls	Yes or No
Record All Ring-In Diagnostics	Yes or No
Record All Toll Local Calls	Yes or No
Record All Toll Long Distance Calls	Yes or No
Record All Operator/International Calls	Yes or No
Record All DISA Calls	Yes or No
Record All Conference Calls	Yes or No
Record All DID/DNIS Calls	
List of stations to be included in SMDR:	

FIGURE 6-25. AXXENT TALK APPLICATION (APPL OR AAPP)

APPLICATIONS: *(Duplicate and fill in this form for each Axxent Talk Application.)*

FIELD	INFORMATION
Extension	
Description	
Username	
Day Greeting	
Night Greeting	
Attendant	
Time Slot Group	
Transfer Recall Destination	
Digit Translation (Enter action and, if applicable, destination.)	1:
	2:
	3:
	4:
	5:
	6:
	7:
	8:
	9:
	0:
	*:
	#:
	Timeout: Timer value: sec

FIGURE 6-25. AXXENT TALK APPLICATION (Continued)

TIME SLOT GROUPS:

GROUP NO.	DESCRIPTION	VOICE CHANNELS
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		

FIGURE 6-28. AXXENT TALK MAILBOX (MAIL, AMAIL, OR AMB)

TO USE: (Make sufficient copies of this page and fill in information for each mailbox.)

FIELD	INFORMATION
Mailbox Number	Associated? Yes <i>or</i> No Number:
Description	
Username	
Message Notification Station	
Password	
Mailbox Type	Standard <i>or</i> Receive Only
Enable Remote Messaging?	Yes <i>or</i> No
Primary Message Notification:	Enabled: Yes <i>or</i> No
	Notification Number:
	Notification Type: Personal <i>or</i> Pager
	Notification Category: Each New <i>or</i> Priority
	Start Time: Stop Time:
	Remote Notification Table:
	Days of the Week: Sun Mon Tue Wed Thu Fri Sat
Alternate Message Notification:	Enabled: Yes <i>or</i> No
	Notification Number:
	Notification Type: Personal <i>or</i> Pager
	Notification Category: Each New <i>or</i> Priority
	Start Time: Stop Time:
	Remote Notification Table:
	Days of the Week: Sun Mon Tue Wed Thu Fri Sat
Miscellaneous	Maximum Mailbox Message Capacity (1-120 minutes):
	Maximum Non-Subscriber Message Length (1 min.-Max. Capacity):
	Maximum Outgoing Message Length (1-120 minutes):
	Greeting: Primary <i>or</i> Alternate <i>or</i> System
	Play Recording Instructions: Yes <i>or</i> No
	Envelope Settings: Date/Time – Message Source – Message Length
	Directory Information: Unlisted No. Private Ext. and Mailbox No.

FIGURE 6-29. AXXENT TALK MISCELLANEOUS (AMSC OR AMISC)

AUTO ATTENDANT INFORMATION:

FIELD	INFORMATION
Enable Auto Attendant Directory?	Yes <i>or</i> No
Directory Sort Order	Last Name <i>or</i> First Name

REMOTE NOTIFICATION TABLES:

TABLE #	PAGER ANSWER	PAGER LCD # DISPLAY	PAGER TERMINATION	OUTGOING ACCESS	OUTGOING ACCESS TERMINATION
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					

FIGURE 6-29. AXXENT TALK MISCELLANEOUS (Continued)

TIMERS:

TIMER	DEFAULT	RANGE	NEW VALUE
Busy Tone Cycle Detect	2	1-60 cycles	
Call Progress Detection	4000	1-6000 hundredths	
Call-In-Progress Dial Tone	2	0-5 seconds	
Dialed Pause Duration	300	1-500 hundredths	
DTMF Delay	32	16-240 milliseconds	
DTMF Detect	48	16-240 milliseconds	
Maximum Greeting Length	1	1-15 minutes	
Minimum Call Progress Signal Duration	8	1-100 hundredths	
Minimum Call Progress Silence Duration	15	1-100 hundredths	
Notification No-Answer Detection	4	1-25 rings	
Number Called Busy	5	1-255 minutes	
Off-Hook Delay	1	0-5 seconds	
Outgoing DTMF Digit Duration	60	3-250 milliseconds	
Pager Notification Retry	20	1-255 minutes	
Pause Voice Mail	30	1-240 seconds	
Personal Number No Answer	30	1-255 minutes	
Replay Forward/Rewind Increment	5	1-60 seconds	
Shortest Message Allowed	3	1-5 seconds	

VOICE MAIL INFORMATION:

FIELD	INFORMATION
System Administrator Mailbox	
Enable Voice Mail Directory	Yes or No
Directory Sort Order	Last Name or First Name
Volume	

FIGURE 6-29. AXXENT TALK MISCELLANEOUS (Continued)

CUSTOM RECORDINGS:

REC #	DESCRIPTION	REC #	DESCRIPTION
01		26	
02		27	
03		28	
04		29	
05		30	
06		31	
07		32	
08		33	
09		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

FIGURE 6-30. AXXENT TALK REPORT (AREP)

FIELD	INFORMATION
Output Device	
File	
Manual Report Generation:	Application and Channel Statistics? <i>Yes or No</i>
	Directory Listing Reports? <i>Yes or No</i>
	Group List Report? <i>Yes or No</i>
	Directory Sort Order: <i>Last Name or First Name</i>
Automatic Report Generation:	Print Day:
	Print Time:
	Enable Automatic Reports? <i>Yes or No</i>
	Clear Statistics After Reports Print? <i>Yes or No</i>
	Application and Channel Statistics? <i>Yes or No</i>
	Directory Listing Reports? <i>Yes or No</i>
	Group List Report? <i>Yes or No</i>
	Directory Sort Order: <i>Last Name or First Name</i>

FIGURE 6-31. AXXENT TALK SMDR REPORT BUFFER (ASMDR)

FIELD	INFORMATION
Enable SMDR Buffering?	Yes or No
SMDR Buffer Box Baud Rate	
SMDR Buffer Size	

FIGURE 6-32. AXXENT TALK SYSTEM-WIDE INFORMATION (ASYS)

Operator Access:

FIELD	INFORMATION
Dial-0 Day Destination Type	Extension or Mailbox or None
Dial-0 Day Destination	
Dial-0 Night Destination Type	Extension or Mailbox or None
Dial-0 Night Destination	

Toll Restriction for Remote Messaging:

TOLL RESTRICTION COS	DAY	NIGHT
00 Unrestricted	Yes or No	Yes or No
01 ARS Only	Yes or No	Yes or No
02 Deny Area/Office	Yes or No	Yes or No
03 Deny Operator	Yes or No	Yes or No
04 Deny Toll Access	Yes or No	Yes or No
05 Deny International	Yes or No	Yes or No
06 Deny Equal Access	Yes or No	Yes or No
07 Deny Local Calls	Yes or No	Yes or No
08 Denied Numbers	Yes or No	Yes or No
09 Allowed Numbers		
User Group Number		

FIGURE 6-33. MESSAGE PRINT (MPP)

FIELD	INFORMATION
Message Print Output Port	
Output Device Line Width	64 or 80 or 132 (characters)
Message Print Output Active?	Yes or No
Print Information Messages?	Yes or No
Print Warning Messages?	Yes or No
Print Alarm Messages?	Yes or No
Print Severe Messages?	Yes or No

FIGURE 6-34. PASSWORDS (PASS)

Applications Restricted Password	
Applications Unrestricted Password	
Monitor Restricted Password	
Monitor Unrestricted Password	

FIGURE 6-35. PREMIUM FEATURE SELECTION (PREM)

FEATURE	UNITS REQUIRED	ENABLED?
Advanced Trunk Interfaces	7	Yes or No
Analog Voice Mail Hunt Groups	5	Yes or No
ACD Hunt Groups	5	Yes or No
Automatic Route Selection	3	Yes or No
Desktop Interface	10	Yes or No
Directories	2	Yes or No
Open Architecture Interface (OAI)	30	Yes or No
System Forwarding	3	Yes or No
UCD Hunt Groups	5	Yes or No

FIGURE 6-36. SERIAL PORT CONFIGURATION (SPP OR PORT)

CIRCUIT NO.	DESCRIPTION	BAUD RATE	HARDWARE HANDSHAKE?	SOFTWARE HANDSHAKE?
			Yes or No	Yes or No
			Yes or No	Yes or No
			Yes or No	Yes or No
			Yes or No	Yes or No
			Yes or No	Yes or No
			Yes or No	Yes or No
			Yes or No	Yes or No
			Yes or No	Yes or No

FIGURE 6-37. SYSTEM CONFIGURATION (CNFG OR CONF)

CPU CARD DSPs:

DSP	DSP TYPE
1	
2	
3	
4	

FIGURE 6-37. SYSTEM CONFIGURATION (Continued)

KEYSET CARDS (KSC SLOTS 1 & 2):

CIRCUIT	CIRCUIT TYPE
01.01.XX	
01.02.XX	
01.03.XX	
01.04.XX	
01.05.XX	
01.06.XX	
01.07.XX	
01.08.XX	

CIRCUIT	CIRCUIT TYPE
02.01.XX	
02.02.XX	
02.03.XX	
02.04.XX	
02.05.XX	
02.06.XX	
02.07.XX	
02.08.XX	

TRUNK CARDS (LSC SLOTS 3 & 4):

CIRCUIT	CIRCUIT TYPE
03.01.XX	
03.02.XX	
03.03.XX	
03.04.XX	

CIRCUIT	CIRCUIT TYPE
04.01.XX	
04.02.XX	
04.03.XX	
04.04.XX	



TROUBLESHOOTING

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NOTICE

Throughout the TROUBLESHOOTING section of the manual, there are numerous references to replacing the CPU Motherboard or the KSU and returning it for repair. To do this, remove the following items from the system and return the rest of the KSU (including the attached CPU Motherboard) for repair: station cards, trunk cards, memory card, optional DSP kit parts, and optional voice processing kit parts. The CPU Motherboard itself cannot be replaced in the field.

Some of the cards and cables inside the KSU may have been spot-glued into place to help prevent them from working loose during shipment. To remove one of these cards or cables from the KSU, first break the glue seal by gently wiggling the connector with a pair of pliers.

1. INTRODUCTION

1.1 This section of the manual describes the troubleshooting procedures to follow in the event of a system or station instrument malfunction. System repair is limited to replacing parts (keysets, circuit cards, cables, power supply, etc.).

2. TROUBLESHOOTING CHECKLIST

2.1 To save time, perform the troubleshooting procedures in the following order:

- (1) Check for proper light-emitting diode (LED) indications on the circuit cards (refer to Figure 7-1 on the following pages).
- (2) Check the alarm message output (see pages 7-4 to 7-7).
- (3) Isolate the problem and refer to the appropriate troubleshooting chart (refer to page 7-8).

3. LIGHT-EMITTING DIODE (LED) INDICATIONS

3.1 LEDs on the front of the KSU and on the front edge of the circuit cards indicate specific functions. Figure 7-1 starting on page 7-3 lists the various LEDs and describes their purposes.

3.2 If the CPU ACTIVE LED on the front of the KSU is flashing (or if referred to this page to isolate a problem), follow these procedures to check the system voltages:

- (1) Turn OFF the AC power.

CAUTION

Always turn OFF the AC POWER before removing or inserting any cards in the KSU.

- (2) Remove the four screws securing the cover to the rear of the KSU.
- (3) Slide the cover toward the rear of the KSU until the front tabs on the cover are released from the chassis. Lift the cover off and set it aside.
- (4) Ensure that all cables and wires in the KSU are securely attached to their appropriate connectors.
- (5) Check to make sure that all of the components on the CPU Motherboard are properly seated and that no pins are bent. (For a drawing of the CPU Motherboard, see Figure 3-15 on page 3-30.)
- (6) Check to see that all telecom cards and voice processing cards (if installed) are securely seated in their appropriate slots on the CPU Motherboard.

NOTE: If the PAL on the Memory Card is not properly seated and/or if the Memory Card itself is not properly seated, the CPU ACTIVE LED on the front of the KSU may flash when power is turned on and the card will not operate properly. Also, if the card is not seated properly, the HALT LED on the CPU Motherboard may light to indicate that a hardware failure has halted the system.

- (7) Turn ON the AC power.

- (8) If the CPU ACTIVE LED is still flashing (or if the problem still persists), measure the following system voltages as outlined on page 3-25. A digital voltmeter of $\pm 0.5\%$ accuracy is required. Insert the "common" voltmeter probe into the ground point and insert the other probe into the desired voltage test point. (Refer to Figure 3-15 on page 3-30 for voltage test point locations.)

<u>VOLTAGE</u>	<u>TOLERANCE</u>
-5VDC	$\pm 5\%$
+5VDC	$\pm 5\%$
-12VDC	$\pm 5\%$
+12VDC	$\pm 5\%$

- (9) Perform *one* of the following steps:
 - a. *If the system voltages are not within the specified limits*, replace the defective power supply unit as outlined on page 3-26.

CAUTION

DO NOT attempt to adjust the power supply voltages. Damage caused by unauthorized voltage adjustment will not be covered by the warranty.

- b. *If the system voltages are correct and the CPU ACTIVE LED is still flashing*, remove the following items from the system and return the rest of the KSU (including the attached CPU Motherboard) for repair: station cards, trunk cards, memory card, optional DSP kit parts, and optional voice processing kit parts. The CPU Motherboard itself cannot be replaced in the field.

NOTE: If possible, use the save/restore program to save the customer's database before returning the KSU (see page 6-191 in PROGRAMMING). It can then be restored (loaded) into a new CPU Motherboard if necessary.

- c. *If the system voltages are correct and the CPU ACTIVE LED is properly lit, yet the problem still persists*, contact Customer Support for assistance.

FIGURE 7-1. LIGHT-EMITTING DIODE (LED) INDICATIONS

LOCATION	LED	DESCRIPTION
KSU	CPU Active	Lit green to show that the main processor is operating properly. If flashing at least once every five seconds, refer to paragraph 3.2 on page 7-2 for troubleshooting procedures. If unlit, check for improper connection (i.e., cabling, card seating, power supply, etc.); if still unlit, try another CPU Motherboard. NOTE: If flashing slower than once every five seconds, turn off the battery back-up enable switch on the CPU Motherboard, turn off the system power for thirty seconds, turn the battery switch back on, and turn the power back on. If still flashing, refer to paragraph 3.2 on page 7-2 for troubleshooting procedures.
	Database Error	Lit red when a database error has caused the system to return to default values. When the system is first installed, the LED will remain lit until the clock is initialized through database programming (or other database programming is performed).
CPU Motherboard	Halt	Unlit during normal system operation (although it may light briefly whenever the system power is turned on). Lit red when a hardware failure has caused the system to halt operation. If the LED remains lit, turn off the system power, carefully reseal the Memory Card on the CPU Motherboard, and turn the system power back on. If the LED remains lit, return the KSU for repair.
Digital Keypad Card	Card On-Line	Lit green to show functional readiness (i.e., the card is communicating properly with the rest of the system). If unlit, check for improper connection; if still unlit, try another card or another card slot.
	Circuit Busy	Lit yellow to indicate that at least one of the eight circuits is busy (i.e., connected to a voice channel). Unlit when all the circuits are idle.
Loop Start Card	Card On-Line	Lit green to show functional readiness (i.e., the card is communicating properly with the rest of the system). If unlit, check for improper connection; if still unlit, try another card or another card slot.
	Circuit Busy	Lit yellow to indicate that at least one of the four circuits is busy (i.e., connected to a voice channel). Unlit when all the circuits are idle.

4. ALARM MESSAGES

4.1 System alarm messages can be printed to give service personnel information about system status during troubleshooting. The programmer may enable printing for any combination of the following system message types: information messages, warning messages, alarm messages, and severe messages. (Refer to FEATURES, page 4–119, and PROGRAMMING, page 6–195, for more information.)

4.2 Minor alarm messages can be programmed to appear on all administrator stations' displays or on the primary attendant's display only. (Refer to PROGRAMMING, page 6–93, for details. For additional information on responding to and clearing minor alarm messages, refer to page 4–113 in FEATURES.)

4.3 Major alarm messages will appear on all affected display keysets, regardless of programming. (Refer to page 7–7 for more information.)

4.4 Some of the possible alarm messages, along with their associated troubleshooting procedures, are outlined in the following sections.

NOTE: If a procedure suggests replacing the CPU Motherboard (i.e., the KSU), first try using the save/restore program to save the customer's database (see page 6–191 in PROGRAMMING). It can then be restored (loaded) into a new CPU Motherboard, if necessary. Make sure that the database back-up battery on the new CPU Motherboard has a charge of at least 3.2VDC and that the battery back-up switch is in the ON position (see page 3–28 in INSTALLATION).

A. MINOR ALARMS THAT ARE USER CORRECTABLE

4.5 Minor alarm numbers 000–019 are reserved for Inter-Tel Axxent problems that can be corrected without calling service personnel. These alarm messages (as they appear in the error message printout) currently include:

- **000 Alarm Cleared** — The alarm was automatically cleared, or an administrator entered the Clear Alarm feature code (9850).
- **010 Device x.y.z 'xxxxx' Is Off Hook** — The indicated station is off hook and the Inactivity Alarm timer has expired. (The station's display shows STATION OFF HOOK, and the station's associated key on DSS/BLF Units and other keyset speed-dial keys flutters continuously.) Locate the station and place the handset back in its cradle.

NOTE: Calls being transmitted over the secondary voice path are not affected or interrupted by an off-hook alarm condition. Also, there is a system option to disable this alarm, if desired.

- **011 Emergency Call Made By Device x.y.z 'xxxxx'** — A user at the indicated station dialed the Emergency Call feature code (911).
- **012 SMDR Printer Off-Line** — The system has been unable to write to the SMDR printer for at least five minutes. The indicated printer or serial port is not functioning properly. Make sure the printer is turned on and has plenty of paper and ribbon. Check to see that the interface cable and power cord are properly connected.
- **013 Message Printer Off-Line** — The system has been unable to write to the Message Print printer for at least five minutes. The indicated printer or serial port is not functioning properly. Make sure the printer is turned on and has plenty of paper and ribbon. Check to see that the interface cable and power cord are properly connected.
- **014 Real-Time Clock Needs To Be Set** — The system real-time clock on the CPU Motherboard has not been initialized or has been corrupted. Set the system time and date from an administrator station.
- **015 Hardware Real-Time Clock Inoperative** — During normal operation, the system has detected that the real-time clock circuitry on the CPU Motherboard is not operating properly. The system is now using a software clock, which may not be as accurate. Check to make sure that all of the components on the CPU Motherboard are properly seated and that no pins are bent. If the problem persists, replace the CPU Motherboard and return it for repair.

4.6 Minor alarm numbers 020–039 are reserved for Axxent Talk voice processing problems that can be corrected without calling service personal. (**NOTE:** Even though an Axxent Talk alarm has been registered, the Inter-Tel Axxent System itself may still be functioning properly.) These alarm messages (as they appear in the error message printout) currently include:

- **020 Axxent Talk: Printer Off-Line** — The system has been unable to write to the Axxent Talk printer for at least one minute. The Axxent Talk printer or parallel port is not functioning properly. Make sure the printer is turned on and has plenty of paper and ribbon. Check to see that the interface cable and power cord are properly connected.
- **021 Axxent Talk: Voice Mail Storage 80% Full** — The portion of the Axxent Talk hard disk reserved for voice mail is 80% full. Have the users delete all

old messages. If the alarm continues to occur, it may be necessary to install a larger hard disk.

- **022 Axxent Talk: Voice Mail Storage 100% Full** — The portion of the Axxent Talk hard disk reserved for voice mail is completely full and cannot accept any new messages until more disk space is made available. Have the users delete all old messages. If the alarm continues to occur, either increase the assigned disk space or install a larger hard disk.

NOTE: In order to send out a broadcast message to all users telling them to delete their old messages, it is necessary to first clear up some disk space by deleting some existing messages.

- **023 Axxent Talk: SMDR Storage 80% Full** — The portion of the Axxent Talk hard disk reserved for SMDR is 80% full. Empty the SMDR buffer using the Inside Track call accounting software. If the alarm continues to occur, empty the buffer more often or increase the size of the buffer.

NOTE: Changing the SMDR buffer size discards all stored SMDR records.

- **024 Axxent Talk: SMDR Storage 100% Full** — The portion of the Axxent Talk hard disk reserved for SMDR is completely full. The oldest SMDR records are discarded as new ones arrive. Empty the SMDR buffer using the Inside Track call accounting software. If the alarm continues to occur, empty the buffer more often or increase the size of the buffer.

NOTE: Changing the SMDR buffer size discards all stored SMDR records.

B. MINOR ALARMS REQUIRING ATTENTION FROM SERVICE PERSONNEL

4.7 Minor alarm numbers 100–199 are reserved for Inter-Tel Axxent problems that require attention from service personnel. These alarm messages (as they appear in the error message printout) currently include:

- **100 Device x.y.z 'xxxxx' Reset Due To Excessive Data Errors** — The indicated keyset has detected an unusually large number of data errors from the corresponding DKSC and has been reset (dropping any active call). If the resets continue, the system will “lock out” the keyset. The data errors may be caused by a defective keyset (perform keyset self-test), defective wiring, defective station cable, or a defective Digital Keyset Card.
- **101 Device x.y.z 'xxxxx' Reset Due To Excessive Hardware Failures** — The indicated keyset has been reset (dropping any active call) because the

corresponding DKSC has detected an unusually large number of hardware errors. If the resets continue, the system will “lock out” the keyset. The hardware errors may be caused by a defective keyset (perform keyset self-test), defective wiring, defective station cable, or a defective Digital Keyset Card.

- **102 Logical Port nn Tx Interrupt Is Not Operational** — The indicated serial port (nn) has a transmit interrupt problem. Replace the component that has the defective serial port (KSU or PCDDPM) and return it for repair.
- **103 Logical Port nn Clock Is Not Operational** — The indicated serial port (nn) has a clock problem. Replace the component that has the defective serial port (KSU or PCDDPM) and return it for repair.
- **104 CPU: Database Corruption** — The system database stored in battery-backed memory on the CPU Motherboard appears to be corrupt. Although it may be corrupt, try saving the database onto backup disks (but not on top of a previously known-good database). Turn off the system AC power and turn it back on. The system should default the database and the red DATABASE ERROR LED on the front of the KSU should be lit. Initialize the system clock through database programming (or do some other database programming) to turn off the LED. Then turn the system power off and back on again. *If the database does not default the second time*, the CPU Motherboard may be okay. Try restoring the database. If the restore is not successful, restore an older version of the database. *If the database defaults the second time*, replace the defective CPU Motherboard and return it for repair. Then try restoring the database in the new CPU Motherboard. If the restore is not successful, restore an older version of the database.
- **105 CPU: Write-Protect Is Not Operational** — The circuitry that prevents the software or hardware from accidentally writing to the database is no longer functioning properly. Replace the CPU Motherboard and return it for repair.
- **106 CPU: Real-Time Clock Is Not Operational** — During power-up, the system has detected that the real-time clock circuitry on the CPU Motherboard is not functioning properly. The system is now using a software clock, which may not be as accurate. Check to make sure that all of the components on the CPU Motherboard are properly seated and that no pins are bent. If this does not solve the problem, replace the CPU Motherboard and return it for repair.
- **107 CPU: Watchdog Is Not Operational** — The watchdog circuitry on the CPU Motherboard is not

functioning properly. Check to make sure there is no strap installed on jumper JP4 on the CPU Motherboard. If the problem continues, replace the CPU Motherboard and return it for repair.

- **108 CPU: Interval Timer Is Intermittent** — The interval timer on the CPU Motherboard is not functioning properly. Replace the CPU Motherboard and return it for repair.
- **109 CPU: Watchdog Expired During Minor Reset** — When the system attempted a minor reset, it did not recover and refresh the watchdog timer, so the hardware watchdog assumed the system was down. Check the error message output, note the circumstances under which the message(s) occurred, and contact Customer Support for assistance.
- **110 CPU: Database Feature Bundling Error** — The system has detected an inconsistency between the PAL on the Memory Card (i.e., the hardware information about the number of feature bundling units available) and the information stored in the database. When the problem is detected, the system automatically defaults the database to the basic feature configuration. (This will prevent a computer “hacker” from stealing feature units.) This alarm also occurs when attempting to restore a database that has more features enabled than the PAL allows. In database programming, enable the appropriate number of features. If the problem persists, try another PAL. If the problem still persists, replace the Memory Card and/or CPU Motherboard and return it for repair.
- **111 CPU: Battery Backed Memory Too Low** — The system has detected a battery-backed memory problem. Either the database is so large that the battery-backed memory cannot store further information (such as message requests, reminder messages, queue requests, hardware configuration changes, etc.) or there is a system software problem. Cancel all message requests, reminder messages, and queue requests. If this does not solve the problem, try saving the faulty database (for possible future evaluation) and contact Customer Support for assistance.
- **112 CPU: Running Low On System Dynamic Memory (Heap)** — The system has detected a dynamic memory problem. Either there is so much call handling activity that the dynamic memory on the CPU Motherboard is running low or there is a software problem. The system uses “dynamic” memory for performing call handling functions, storing temporary information, etc. Each device in the system (CO trunk, keyset, single-line set, Axxent Talk port, etc.) requires some dynamic memory. In addition,

each call that is currently active requires some dynamic memory.

When the first memory-low threshold is met (currently set to less than 160k free), the system starts forcing multiple CO ring-ins to ring only at the primary attendant since ringing one station will consume less dynamic memory than ringing several stations. The alarm and a delayed major reset are activated at this time.

If the condition persists and the second low-memory threshold is met (currently set to less than 60k free), the system starts to prevent new calls from being made. CO ring-ins are ignored, and station users cannot make calls (they see an ALL CIRCUITS BUSY display). The alarm and a delayed major reset are activated at this time.

If the condition persists and no dynamic memory is available, the system immediately performs a major reset (drops all active calls) to free up the dynamic memory.

If the customer’s configuration has multiple trunks ringing into multiple stations and/or has multiple all-ring hunt groups with large numbers of stations in them, it can consume a lot of dynamic memory each time a call rings in because the call “fans out” to make one call to each device in the list. Try reducing the number of stations in each multiple ring-in group. If the problem still persists, contact Customer Support for further assistance.

- **115 Alarm History Frozen Due To System Exception** — The system has frozen the call processing history automatically because a system exception has occurred. Save the database and the CP Error Information and contact Inter-Tel Customer Support for further assistance.
- **116 Database Battery Low** — The system has detected that the voltage of the database back-up battery on the CPU Motherboard is low (below 3.2VDC). Save the system database, if possible, and replace the battery.
- **117 Database Battery Switch Off** — The system has detected that the database back-up battery switch on the CPU Motherboard is turned off. Set the switch to the on position.
- **118 Voice Mail Card Reset By OS** — The system has detected that the PC CPU Card has failed to tickle the watchdog and has reset the card. If the problem persists, check to make sure the card is properly seated on the CPU Motherboard. If it still persists, replace the PC CPU Card.

4.8 Minor alarm numbers 200–299 are reserved for Axxent Talk voice processing problems that require attention from service personnel. (**NOTE:** Even though an Axxent Talk alarm has been registered, the Inter-Tel Axxent System itself may still be functioning properly.) These alarm messages (as they appear in the error message printout) currently include:

- **200 Axxent Talk: Hard Drive Failure** — The system has detected a possible Axxent Talk hard disk failure. If the problem persists, save the current database (if possible) and replace the hard disk.
- **201 Axxent Talk: Channel(s) Failure** — The system has detected a failure of one or more of the voice channels between the Axxent System and the Axxent Talk. If the problem persists, check the cabling between the two and reboot the Axxent Talk portion of the KSU. If the problem still persists, check for a defective PC CPU Card, Voice Processing Card, or CPU Motherboard.
- **202 Axxent Talk: Database Corruption** — The Axxent Talk applications database stored on the hard disk appears to be corrupt. Reboot the Axxent Talk portion of the KSU. If the problem persists, try saving both the Axxent and Axxent Talk databases (for possible future evaluation), then restore older valid versions or reprogram manually. (It is possible to restore just the Axxent database and then reprogram the Axxent Talk database, if desired.) If the problem still persists, try replacing the hard disk. If this does not solve the problem, contact Customer Support for further assistance.
- **203 Axxent Talk: Communications Link Down** — The system has detected a loss of communications between the Axxent System and the Axxent Talk System. This alarm is generated whenever the Axxent Talk portion of the KSU crashes or is rebooted, the RS-232-C cable is disconnected, or a communications channel is rendered inoperable (e.g., due to a bad serial port or RS-232-C cable). First verify that the problem still exists by placing a call to a valid voice mail extension number.

If any message other than “xxxxx IS UNPLUGGED” is displayed, the communications link is now okay. If not, check the RS-232-C cable and make sure it properly connected, and verify that the Axxent Talk communications port is still enabled and set to 9600 baud and software handshaking. If the problem persists, reboot the Axxent Talk portion

of the KSU. If the communications link is still down, reboot the Axxent System. (**NOTE:** This will drop all calls). If rebooting both systems does not clear the problem, replace the RS-232-C cable or replace the component that has the defective serial port (KSU or PC CPU Card) and return it for repair.

- **204 Axxent Talk: Version Mismatch** — The version of software on the Axxent Talk hard disk drive is not compatible with the version of software on the Axxent System. Upgrade one or both to the appropriate version.
- 4.9** If any other alarm messages are encountered, note the circumstances under which the message(s) occurred and contact Customer Support.

C. MAJOR ALARMS THAT REQUIRE IMMEDIATE ATTENTION

4.10 If a system-wide failure is detected, a MAJOR ALARM message appears on all display keysets. If the major alarm message appears only on a group of keysets, their associated Keypad Card may have failed. If the major alarm message appears on a single keyset, the keyset or its cabling may be defective.

4.11 Since major alarms indicate that all or part of the system is inoperative, they require immediate attention from service personnel. When a system-wide major alarm occurs, do the following:

- (1) Attempt to reset the system by using the reset switch on the front of the KSU or by using the programming PC (see PROGRAMMING, page 6–191). If the system does not recover from the alarm, continue to the next step.
- (2) Turn OFF the AC POWER for at least ten seconds and then turn it ON again.
- (3) If the system still does not recover from the alarm, check the system voltages as outlined on page 7–2. Using the troubleshooting charts beginning on page 7–8, try to isolate the defective part(s). If it is determined that the CPU Motherboard (or any other part) is faulty, return it for repair and include any indicated error messages in the problem description.

NOTE: When returning a faulty card, indicate all applicable error messages on the material return authorization (MRA) tag. For more information on returning equipment, see page 7–38.

5. TROUBLESHOOTING CHARTS

5.1 The simplified troubleshooting charts located on the following pages list symptoms, possible causes, and corrective actions for problems. Look up the problem in the appropriate chart and perform the corrective actions in the order given. The troubleshooting procedures for correcting equipment failures have been divided into six categories:

- A. System
- B. CO Trunks
- C. Features
- D. Keysets
- E. Single-Line Sets
- F. DSS/BLF Units
- G. Axxent Talk Hardware and Applications

NOTE: Throughout the troubleshooting section of the manual, there are numerous references to replacing the defective part and returning it for repair. However, before returning any part, proper troubleshooting procedures should be used to verify that the part is actually defective. For example, if a Digital Keypad Card (DKSC) appears to be defective, swap it with a "known good" DKSC presently installed in the system. If the problem follows the suspect card, it can be considered defective. For more information on returning defective equipment, refer to page 7-38.

A. SYSTEM

5.2 If the problem involves one of the following system features, refer to Figure 7-2 on pages 7-10 through 7-13.

- Repeated occurrence of all calls in progress dropping.
- All keysets are inoperative.
- Database restore aborts before finishing
- DISA is inoperative.
- Unable to interface with a computer call-up device.
- Remote maintenance modem cannot communicate properly with the system
- No music-on-hold/background music.
- RFI/EMI present over conversations.
- Faulty DID numbers displayed at attendant stations.
- DID numbers routed before all digits are dialed.

B. CO TRUNKS

5.3 If the problem involves one of the following CO trunk symptoms, refer to Figure 7-3 on pages 7-14 through 7-18.

- CO trunk inoperative throughout the system.
- Cannot obtain CO dial tone.
- Low volume on all CO trunks.
- Cannot break CO dial tone.
- Cannot place an outgoing call.
- Other station conversations can be heard on the CO trunk.
- Calls are dropped during conversation or when answered.
- CO trunk cannot be re-seized.
- Noise on CO trunk at all stations.
- CO trunk remains seized after the call is ended.

C. FEATURES

5.4 For problems involving the following features, refer to Figure 7-4 on pages 7-19 to 7-22.

- Feature does not appear to work properly.
- Cannot transfer CO or intercom calls to other stations.
- Cannot transfer calls to outside numbers.
- Cannot transfer incoming CO calls or place them on hold.
- Cannot initiate a conference.
- Redial feature is inoperative.
- Cannot initiate a page.
- House phone is inoperative.
- Cannot initiate a call forward.
- Calls do not follow requested forward.
- Station is not receiving hunt group calls.
- Station is not receiving pages.
- Station cannot be placed in do-not-disturb.

D. KEYSETS

5.5 If problems involve keysets or their optional equipment, refer to Figure 7-5 on pages 7-23 through 7-27.

- Keypad is inoperative.
- A group of eight keysets is inoperative.
- LCD is inoperative.
- Headset is inoperative.
- Keypad squeals when placing and/or receiving calls.
- Cannot break CO dial tone.
- Data device not operating properly.
- Data noise when the keypad is off hook.

- Cannot obtain intercom dial tone.
- Cannot break intercom dial tone.
- Cannot place an intercom call.
- LRA not operating properly.
- Cannot receive off-hook voice announce calls.
- Cannot place off-hook voice announce calls.
- Erratic keyset operation.

E. SINGLE-LINE SETS

5.6 The following problems are discussed in Figure 7-6 on pages 7-28 through 7-30.

- Single-line set is inoperative.
- A group of single-line sets is inoperative.
- Single-line set will not ring.
- Ring trip is not provided to a group of single-line sets.
- AC ringer-equipped single-line sets will not ring.
- Cannot obtain intercom dial tone.
- Cannot place an intercom call.
- Cannot break CO dial tone.
- Cannot place off-hook voice announce calls.
- Single-line sets not receiving audio message waiting indications.

F. DSS/BLF UNITS

5.7 For the following DSS/BLF Unit problems, refer to Figure 7-7 on pages 7-31 and 7-32.

- DSS/BLF Unit is inoperative.
- Incorrect LED indications.
- Calls are transferred to the wrong station.
- Cannot place immediate off-hook voice announce calls.

G. INTER-TEL AXXENT TALK HARDWARE AND APPLICATIONS

5.8 The following Axxent Talk hardware and/or Axxent Talk applications problems are outlined in Figure 7-8 on pages 7-33 through 7-37.

- Axxent System unable to communicate over voice channels with Axxent Talk portion of the KSU.
- System programming PC unable to communicate with Axxent Talk portion of the KSU.
- ASCII-type programming terminal unable to communicate with Axxent Talk portion of the KSU.
- Automated attendant not responding properly.
- Automated attendant not receiving incoming calls; callers routed to primary attendant instead.
- Automated attendant indicates that an extension number is invalid even though it exists on the Axxent System.
- Automated attendant transfers calls directly to voice mail without trying the extension number first.
- Unable to access desired Axxent Talk application.
- Axxent Talk Applications are slow.
- When power is turned on, the Axxent Talk portion of the KSU does not boot up properly.
- Both internal and remote users have no message notification after receiving voice messages in their mailboxes.
- Audio volume levels from Axxent Talk applications (such as voice mail and automated attendant) are too low or too high.
- No audio from Axxent Talk applications (such as voice mail and automated attendant).
- Station has message waiting indication from voice mail, but associated mailbox has no message.
- Unable to record any voice mail greetings or messages and/or unable to hear any voice prompts.

NOTE: If an Axxent Talk applications problem cannot be resolved, Customer Support may instruct the installer on how to use the diagnostics software and the optional diagnostics cable kit. See pages 2-19 and 3-61 for cabling instructions. Also, for additional troubleshooting procedures and important diagnostic information, refer to the new voice processing system diagnostics manual, which will be published at a later date.

FIGURE 7-2. SYSTEM TROUBLESHOOTING CHART

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Repeated occurrence of all calls in progress dropping	AC line is not isolated and dedicated	Have isolated, dedicated line installed. Refer to page 3-5 in INSTALLATION for details.
	Defective power supply	Refer to INSTALLATION, page 3-25, to perform the power supply electrical test. Replace the power supply if faulty.
	KSU located near a strong magnetic field or other potential source of interference (copy machines, power transformer, etc.)	Relocate the KSU a minimum of 20 feet from any equipment that is a potential source of interference.
	IC-CO/CO-CO Disconnect timer(s) need(s) adjustment	See <i>dialed digits</i> field in SMDR, page 4-118 in FEATURES. Set timer(s) to a higher value. Refer to PROGRAMMING, page 6-101.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

NOTE: The central office must provide a minimum of 18mA loop current.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
All keysets in the system are inoperative; no LED indication when a trunk key is pressed; +22V measurement is not present	Open or loose connection in the cable between the power supply and the CPU Motherboard, or a defective cable	Turn off the AC power. Check to see that the power supply interface cable is properly connected. Repair or replace the power supply, the cable, and/or the KSU if the connection is faulty.
	Defective power supply or connector	Use a voltmeter to check the +12VDC voltage on the CPU Motherboard or power supply. If the voltage is not +12VDC $\pm 5\%$, replace the power supply and/or the cable.
	Defective DKSC	Remove all DKSCs from the KSU. Replace the DKSCs one at a time and check the system voltages on the CPU Motherboard or power supply (refer to page 7-2), until the defective card is isolated. Replace the faulty card.
	Defective CPU Motherboard	Check the system voltages on the CPU Motherboard (refer to page 7-2). Replace the KSU if necessary.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Database restore aborts before finishing	PC's power saver feature shuts down the PC and severs the communications link	Disable the PC's power saver feature.

FIGURE 7-2. SYSTEM TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
DISA inoperative	User error	Refer to FEATURES, page 4-33, for correct procedures.
	Telephone not compatible	User must dial in from a DTMF telephone.
	Programming error	Ensure that the trunk group is identified correctly as a day or night DISA trunk group. Refer to PROGRAMMING, page 6-128.
	Defective trunk card	Replace the associated card.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

NOTE: Due to the natural characteristics of the CO trunk, the volume level of DTMF tones transmitted over the trunk may be substantially reduced before reaching the Inter-Tel Axxent System. This natural degradation in tone volume may adversely affect the reliability of the DISA feature. Other factors which can affect DISA performance are CO trunk noise and the quality and strength of the DTMF tones generated by the off-premises phone itself.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Unable to interface with computer call-up device (banking machine, answering machine, auto dialer, etc.)	Equipment being called is defective	Ensure that the called equipment is functioning correctly.
	DTMF digit duration/pause specifications of called equipment is incompatible with Axxent System	Check with the equipment manufacturer for DTMF digit duration/pause specifications. Adjust DTMF Digit Duration/Pause timer. (Refer to page 6-101 in PROGRAMMING.) Default value is 6/100 second.
	CO trunk is designated for dial-pulse signaling	CO trunk must be designated as DTMF. Refer to page 6-124 in PROGRAMMING.
	Defective trunk card	Replace the associated trunk card.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Remote maintenance modem cannot communicate properly with the system	Optional modem kit not installed correctly	Refer to the instructions included with the modem kit. Also, refer to the information on page 2-22 in SPECIFICATIONS.
	Some modems need a special setup command	Program the modem with the setup command string "ATEØQ1SØ=1&W" per the modem manufacturer's instructions. If this setup command does not work, try configuring the modem into dumb mode where it ignores commands and doesn't issue responses (if this option is available).

FIGURE 7-2. SYSTEM TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
No music-on-hold/back-ground music (external music source connected)	External music source turned off or inoperative	Check the external music source for proper operation. Refer to INSTALLATION, page 3-67.
	Programming error	Programmer can determine whether a user hears music when placed on hold by another station or camps on to a resource. In the default state, this is enabled. Refer to PROGRAMMING, page 6-94.
	Defective cable between music source and KSU	Repair or replace the cable. Check to see that the proper connector was used. Refer to SPECIFICATIONS, page 2-8.
	Defective CPU Motherboard	Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
RFI/EMI present over conversations	AC power source or grounding incorrect	Verify that the AC circuit is isolated and dedicated and check for proper grounding (see pages 3-5 and 3-24 in INSTALLATION).
	Grounding point is source of RFI/EMI	While the system is running on AC power, temporarily remove the grounding wire to see if it is the source of the RFI/EMI. See page 3-24 in INSTALLATION for proper grounding requirements.
	AC power source is causing RFI/EMI	If an external battery back-up power source is installed, switch system operation to battery back-up power by unplugging the power source's AC power cord (with grounding wire connected to KSU). If RFI/EMI stops, the AC power source is the cause. Install an RFI/EMI filter or equivalent on the AC outlet.
	Trunk from central office is picking up interference	At the CO block, remove the bridging clips for the trunk. On the telco side of the block, use a test set to check for interference. Also, move the CO trunk to a known good CO circuit. If the problem follows the trunk, contact the telephone company.

NOTE: For further RFI/EMI troubleshooting assistance *while on site*, certified technicians should contact Customer Support with the following information:

1. Modulation — AM, FM, or other
2. Frequency of the interfering station (in Hz)
3. Broadcast power
4. Distance between KSU and broadcast antenna
5. Who hears RFI:
 - Outside call — inside party only?
 - Outside call — outside party only?
 - Outside call — both parties?
 - Intercom call — one or both parties?
6. Type of instrument(s) on which RFI is heard — Standard Digital Keyset, Executive Digital Keyset, or single-line DTMF set

FIGURE 7-2. SYSTEM TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Faulty DID numbers displayed at attendant stations	User error (after dialing the correct 3- or 4-digit "base" number, the user entered incorrect or incomplete "start" digits)	Only valid DID "start" digits can be properly processed by the system.
	Programming error	Ensure that all valid DID numbers have been programmed to ring in to the appropriate locations. (See page 6-127 in PROGRAMMING.)
	Defective DID trunk from central office (the system is receiving incomplete or mutilated DID "start" digits)	At the DKSC block, remove the bridging clips for the trunk. On the system side of the block, use a test set to verify the DID trunk connection and the system's ability to accept and process valid digits. Also, move the trunk to a known good DKSC circuit. If the problem follows the trunk, contact the telephone company.
	Defective SLA or DKSC	Replace the associated SLA or DKSC.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
DID numbers routed before all digits are dialed	Non-programmable system timer expiring before CO completes digit transmission	The Axxent System allows seven seconds for DID input. After seven seconds, the system routes the call based on information received to that point. The Central Office must complete DID digit transmission within seven seconds.

FIGURE 7-3. CO TRUNK TROUBLESHOOTING CHART

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
CO trunk inoperative throughout the system	Defective CO trunk from central office	At the associated CO block, remove the bridging clips for the trunk. On the telco side of the block, use a test set to verify the CO trunk connection. Also, move the CO trunk to a known good CO circuit. If the problem follows the trunk, contact the telephone company.
	Trunk is dedicated to a secondary carrier requiring an access code	Verify the type of CO trunk. Instruct users to dial access code if required.
	Defective cabling or miswired amphenol connector on the trunk card	Using a test set, ensure presence and correct location of the CO trunk at the associated CO block.
	Programming error	Ensure that the trunk is assigned to the correct trunk group and stations have been given access to it. See page 6-128 in PROGRAMMING.
	Defective trunk card	Replace the associated trunk card.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot obtain CO dial tone	If reorder tone is heard, programming error	Ensure that keyset has outgoing access. Refer to page 6-134 in PROGRAMMING. Check to see if the keyset is programmed for ARS only. Refer to pages 6-42 and 6-107 in PROGRAMMING. If so, check ARS programming, page 6-64 in PROGRAMMING. Ensure trunk is assigned to the correct trunk group. Refer to page 6-128 in PROGRAMMING.
	If progress tone is heard, user error	System is programmed to expect a forced account code. Refer to PROGRAMMING, pages 6-27 and 6-60.
	Selected trunk is designated as incoming-only	Cannot dial out on an incoming-only trunk.
	Defective trunk card	Replace the associated trunk card.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

FIGURE 7-3. CO TRUNK TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Low volume on all CO trunks; cannot break CO dial tone	Defective trunk card	Measure the system voltages. If not within tolerance, remove all trunk cards and check voltages again. If the voltages return to normal, replace the cards one at a time until the defective card is isolated and replaced.
	Defective CO trunk from central office	At the CO block, remove the bridging clips for the trunk. On the telco side of the block, use a test set to verify the CO trunk connection. Also, move the CO trunk to a known good CO circuit. If the problem follows the trunk, contact the telephone company.
	Open or loose connection in the cable between the power supply and the CPU Motherboard	If, with all trunk cards removed, the system voltages are still not within tolerance, turn off the system and check the cable and connector with an ohmmeter. Replace or repair the faulty cable.
	Defective power supply	With all trunk cards removed, measure the system voltages. If not within tolerance, replace the power supply.
	Hybrid balance mismatch	Select the balance network — normal or short — that best matches the trunk's impedance. See PROGRAMMING, page 6-124.

NOTE: See also keyset problems on page 7-24.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot break CO dial tone	CO circuit is programmed for wrong signaling type	Ensure that CO trunk and CO circuit use same type signaling (DTMF or dial pulse). See PROGRAMMING, page 6-124.
	Defective CO trunk from central office	At the CO block, remove the bridging clips for the trunk. On the telco side of the block, use a test set to verify the CO trunk connection. Also, move the CO trunk to a known good CO circuit. If the problem follows the trunk, contact the telephone company.
	Timer error	If trunk is DTMF, the DTMF Digit Duration/Pause timer setting may not be compatible with the trunk. See PROGRAMMING, page 6-101.
	Defective trunk card	Replace the associated trunk card.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

NOTE: See also keyset problems on page 7-24.

FIGURE 7-3. CO TRUNK TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot place an outgoing call; CO dial tone is present; intercom works	Programming error	Check station class of service (COS). See PROGRAMMING, pages 6-42 and 6-107. Check that equal access and absorbed digit programming for the trunk group are correct. See PROGRAMMING, page 6-128. If using ARS, check ARS programming on page 6-64 in PROGRAMMING.
	Defective CO trunk from central office	At the CO block, remove the bridging clips for the trunk. On the telco side of the block, use a test set to verify the CO trunk connection. Also, move the CO trunk to a known good CO circuit. If the problem follows the trunk, contact the telephone company.
	Defective station instrument	Replace the station instrument and/or perform the keyset self-test as outlined in INSTALLATION, page 3-41.
	Selected trunk is designated as incoming-only	Cannot dial out on an incoming-only trunk.
	Defective trunk card	Replace the associated trunk card.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Other station conversations can be heard on the CO trunk (crosstalk)	Defective CO trunk(s)	Isolate the trunk(s) with crosstalk by removing the bridging clips from the CO block. On the telco side of the block, attach a test set to each trunk and check for crosstalk. If present, contact the telephone company.
	Defective cabling or miswired amphenol connector on the trunk card	Using a test set, ensure presence and correct location of the CO trunk at the associated CO block.
	Defective station card	Replace the associated station card.
	Defective trunk card	Replace the associated trunk card.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

FIGURE 7-3. CO TRUNK TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Outside calls dropped during conversation or upon answering CO trunk	User error (trunk key being pressed after initial connection is made)	Instruct users not to press the trunk key while on a call. Or, if necessary, set the CO Reseize timer to a higher value. Default value is 3 seconds. See page 6-101 in PROGRAMMING. Or, program the station to disallow CO reseize. See PROGRAMMING, pages 6-30 and 6-58.
	Defective CO trunk from central office	At the CO block, remove the bridging clips for the trunk. On the telco side of the block, use a test set to verify the CO trunk connection. Also, move the CO trunk to a known good CO circuit. If the problem follows the trunk, contact the telephone company.
	Insufficient loop current supplied by central office	Central office must supply 18mA minimum loop current.
	IC-CO Disconnect timer value is set too short	Ensure timer value is long enough to ignore normal interruptions in CO loop current. Default value is 0.6 seconds. See page 6-101 in PROGRAMMING.
	Defective station instrument	Replace the station instrument and/or perform the keyset self-test as outlined in INSTALLATION, page 3-41.
	Defective trunk or station card	Replace the associated card.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
CO trunk cannot be reseized	CO Reseize feature is disabled	Check station programming as described on pages 6-30 and 6-58 in PROGRAMMING. If the CO Reseize option has been disabled, the user cannot reseize a trunk until it has been disconnected by hanging up or pressing another trunk key.
	CO Reseize timer is set too high	Set the timer to a lower timer value. Default value is 3 seconds. See page 6-101 in PROGRAMMING.
	User error	If the station is programmed with the validate account codes option and the user enters an invalid Account Code For All Calls Following, calls will not be allowed at the station until the code is removed or reprogrammed. See page 4-65 in FEATURES.

FIGURE 7-3. CO TRUNK TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Noise on CO trunk at all stations	Defective CO trunk	At the CO block, remove the bridging clips for the trunk. On the telco side of the block, use a test set to verify the CO trunk connection. Also, move the CO trunk to a known good CO circuit. If the problem follows the trunk, contact the telephone company.
	Defective trunk card	Replace the associated trunk card.
	Defective power supply	Refer to INSTALLATION, page 3-25, to perform the power supply electrical test. Replace the power supply if faulty.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
CO trunk remains seized after a call has been ended	Characteristic of some ESS central offices	Central office must provide disconnect signal. Or, install a trunk release module available from most supply houses.
	IC-CO or CO-CO Disconnect timer value set too long	Central office disconnect signal was not detected by IC-CO or CO-CO Disconnect timer. Default value of the IC-CO timer is 0.6 seconds; the CO-CO timer is 0.35 seconds. See page 6-101 in PROGRAMMING.
	Defective CO trunk	At the CO block, remove the bridging clips for the trunk. On the telco side of the block, use a test set to verify the CO trunk connection. Also, move the CO trunk to a known good CO circuit. If the problem follows the trunk, contact the telephone company.
	Defective station instrument	Replace the station instrument and/or perform the keyset self-test as outlined in INSTALLATION, page 3-41.
	Defective trunk card	Replace the associated trunk card.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

FIGURE 7-4. FEATURE TROUBLESHOOTING CHART

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Feature does not work properly	User error	Refer to FEATURES for procedures. Also, ensure that the feature is available on the software package installed.
	Programming error	Check feature code programming. Refer to PROGRAMMING, page 6-75. Also, check user-programmable feature key programming. Refer to FEATURES, page 4-48, and PROGRAMMING, pages 6-35 and 6-56.
	Defective station instrument	Replace the station instrument and/or perform the keyset self-test as described in INSTALLATION, page 3-41.
	Defective station card	Replace the associated station card.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot transfer CO or intercom calls to other stations	User error (e.g., wrong feature code)	Refer to FEATURES, page 4-69, for procedures.
	Called station is in do-not-disturb	A station in do-not-disturb cannot receive transferred calls.
	Call transferred to an illegal intercom number	Use only valid intercom numbers.
	Defective station instrument	Replace the station instrument and/or perform the keyset self-test as described in INSTALLATION, page 3-41.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot transfer calls to outside numbers	User error (e.g., wrong feature code)	Refer to FEATURES, page 4-69, for procedures.
	Programming error	Check trunk access and toll restriction.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

FIGURE 7-4. FEATURE TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot transfer incoming CO calls or place them on hold	User error	Refer to FEATURES, page 4-69, for procedures.
	User error (trunk key being pressed after initial connection is made)	Set the CO Reseize timer to a higher value. Default value is 3 seconds. See page 6-101 in PROGRAMMING. Or, program the station to disallow CO Reseize. See PROGRAMMING, pages 6-30 and 6-58.
	Programming error	Check user-programmable feature key programming. Refer to FEATURES, page 4-48, and PROGRAMMING, pages 6-35 and 6-56.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot initiate a conference	User error	Refer to FEATURES, page 4-73, for correct procedures.
	System capacity exceeded	Refer to the maximum system capacities on page 1-8 in OVERVIEW.
	Defective station instrument	Replace the station instrument and/or perform the keyset self-test as described in INSTALLATION, page 3-41.
	Defective station card	Replace the associated station card.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Last number redial feature inoperative	User error	Refer to FEATURES, page 4-88, for procedures. Keyset may be programmed for last number saved.
	System speed-dial number identified as non-display	A system speed-dial number identified as non-display cannot be redialed.
	Defective station instrument	Replace the station instrument and/or perform the keyset self-test as described in INSTALLATION, page 3-41.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

FIGURE 7-4. FEATURE TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot initiate a page	User error	Refer to FEATURES, page 4-90, for correct procedures.
	All stations in the paging zone are busy, or a voice channel is not available	Reorder tone is heard. Wait several seconds and then attempt to place the page again. Paging requires a voice channel.
	All stations in the paging zone are in do-not-disturb	Reorder tone is heard if all stations in the zone are in do-not-disturb and if external paging for the zone is disabled.
	No stations are programmed to receive pages	Reorder tone is heard. Check paging assignment. Refer to page 6-95 in PROGRAMMING.
	Defective station instrument	Replace the station instrument and/or perform the keyset self-test as described in INSTALLATION, page 3-41.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
House phone is not working properly or is inoperative	User error	Incoming calls take precedence over outgoing calls. Refer to FEATURES, page 4-87.
	Programming error (database)	Ensure that the station is designated as a house phone. Refer to page 6-37 in PROGRAMMING. Also, make sure the station has been assigned the proper COS and trunk access. See pages 6-42 and 6-107 in PROGRAMMING.
	Programming error (database or speed-dial)	Ensure that the correct numbers are in appropriate day number and night number (speed-dial) locations. Refer to page 4-83 in FEATURES.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot initiate a call forward	User error	Refer to FEATURES, page 4-79, for correct procedures.
	User attempting illegal forward	Stations are not allowed to set call forward if it forms an unconditional loop, the receiving station is in do-not-disturb, or an invalid intercom number is dialed. COS and outgoing access are checked when a call is forwarded to an outside telephone number. Also, ARS cannot be used to forward to an outside number.
	Defective station instrument	Replace the station instrument and/or perform the keyset self-test as described in INSTALLATION, page 3-41.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

FIGURE 7-4. FEATURE TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Calls will not forward	User error	Refer to FEATURES, page 4-79, for procedures.
	Illegal forward	Conditional forwards (i.e., if busy, if unanswered) may form an undetected loop. If a call forward request forms a conditional loop, the call returns to the first station.
	Defective station card	Replace the associated station card.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Station not receiving hunt group calls	User error	Hunt group calls may have been halted using the Hunt Group Remove feature code (see page 4-14 in FEATURES). Or, the station may be in do-not-disturb.
	Programming error	Check hunt group programming. Refer to page 6-80 in PROGRAMMING.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Station is not receiving pages	User error	Pages may have been halted using the Page Remove feature code (see page 4-90 in FEATURES). Or, the station may be in do-not-disturb.
	Programming error	Check page zone programming for the station. See PROGRAMMING, page 6-95.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Station cannot be placed in do-not-disturb	User error	Refer to page 4-91 in FEATURES for correct procedures.
	Programming error	Station is programmed to disallow do-not-disturb. See PROGRAMMING, pages 6-30 and 6-58.
	Defective keyset	Perform the keyset self-test as described in INSTALLATION, page 3-41, and replace the keyset if faulty.

FIGURE 7-5. KEYSSET TROUBLESHOOTING CHART

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Keyset inoperative; LED indication present while any key with an LED is held down; reorder tone is heard when key is pressed	Programming error (circuit identified as dual single-line sets (SLA); no reorder tone is heard)	Identify the circuit for keyset use, not dual single-line sets (SLA). Refer to page 6-213 in PROGRAMMING.
	System lockout caused by excessive data errors (displays SYSTEM LOCKOUT)	Remove and replace the line cord to reset the keyset.
	Defective cabling or connections	Ensure that all cables are correctly connected to the modular jack as shown in Figure 3-2 on page 3-9 in INSTALLATION. Check for loose or open connections in the station cabling and the line cord.
	Defective keyset	Perform the keyset self-test as described in INSTALLATION, page 3-41, and replace the keyset if faulty.
	Defective DKSC	Replace the associated DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Keyset inoperative; no LED indication when any key is pressed; no audio is present	Open or defective thermistor on the associated DKSC	If a short causes a thermistor to open, it automatically closes when the short is removed. Replace DKSC if the thermistor is faulty.
	Defective keyset	Perform the keyset self-test as described in INSTALLATION, page 3-41, and replace the keyset if faulty.
	Defective cabling or connections	Ensure that 30VDC is present at the modular jack and polarity is correct. Check for loose or open connections in the station cabling and the line cord. Refer to Figure 3-2 on page 3-9 in INSTALLATION.
	Defective DKSC	Replace the associated DKSC.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
A group of 8 keysets inoperative; no LED indication when a trunk key is held down; all affected keysets are located on one DKSC	Defective station amphenol connector or cable attached to the associated DKSC	Remove the cable from the card. Using an ohmmeter, verify the pinout of the cable. (Refer to the information on pages 3-12 to 3-15 in INSTALLATION.) Ensure that 30VDC is present at the modular jack and polarity is correct. Check for loose or open connections in the station cabling and the line cord.
	Defective DKSC	Replace the associated DKSC.
	Defective connector on the CPU Motherboard	Replace the KSU.

FIGURE 7-5. KEYSSET TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
LCD inoperative; otherwise, keyset functions normally	Defective LCD Unit or LCD ribbon cable	Replace the LCD Unit or ribbon cable. Refer to page 3-39 in INSTALLATION.
	Improper installation	Refer to INSTALLATION, page 3-39.
	Defective ribbon cable connector	Replace the keyset.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Optional headset inoperative	User error	Ensure the enable headset feature code (315) was entered. Check feature code programming to see if code was changed. Refer to page 6-75 in PROGRAMMING.
	Incorrect or defective headset	Ensure the headset contains a dynamic microphone, or a carbon microphone and an external AC power source. Replace headset if necessary.
	Defective keyset	Try another keyset.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Keyset squeals on outside calls or when receiving a handsfree intercom call from a single-line station (feedback)	Speaker volume is too loud	Reduce feedback by lowering speaker volume using keyset volume controls.
	Poor acoustics	Poor acoustics can cause poor quality on handsfree calls. Try placing a private call.

NOTE: A two- to four-wire converter is used during communication between keysets and single-line stations. Reflection is a normal characteristic of these converters. Feedback on intercom calls is eliminated when the single-line station user places a private intercom call by pressing the pound (#) key before dialing the intercom number or by entering the ring intercom always feature code — 377 (provided the keyset user does not press the SPKR key to respond).

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot break CO dial tone	Defective keyset	Perform the keyset self-test as described in INSTALLATION, page 3-41, and replace the keyset if faulty.
	Defective trunk card	Replace defective trunk card.
	Defective DKSC	Replace the associated DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

NOTE: See also CO trunk problems on page 7-15.

FIGURE 7-5. KEYSSET TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Data device connected to keyset not operating properly	User error	Refer to manufacturer's operating instructions.
	Secondary voice path busy	The keyset will not transmit data calls when the secondary voice path or speakerphone are in use. Refer to page 4-95 in FEATURES.
	Problem with data device	Disconnect data device and check operation according to the manufacturer's instructions.
	Defective cabling or connections	Ensure that all PCDPM and MDPM cables are correctly connected. Refer to INSTALLATION, pages 3-45 and 3-48.
	PCDPM, MDPM, or AC transformer not installed properly or defective	Check installation and connections. Refer to INSTALLATION, pages 3-45 and 3-48. Replace if defective.
	Defective keyset	Try another keyset.
	Defective DKSC	Replace the associated DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Data noise in any off-hook condition	Defective keyset	Try another keyset.
	Defective DKSC	Replace the associated DKSC.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot obtain intercom dial tone; no tone heard; CO trunk works	Defective keyset	Perform the keyset self-test as described in INSTALLATION, page 3-41, and replace the keyset if faulty.
	Defective DKSC	Replace the associated DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot break intercom dial tone	Defective keyset	Perform the keyset self-test as described in INSTALLATION, page 3-41, and replace the keyset if faulty.
	Defective DKSC	Replace the associated DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

FIGURE 7-5. KEYSSET TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot place intercom call; intercom dial tone is present, but reorder tone is heard when call is attempted	User error	Invalid intercom number or improper dialing procedure. See FEATURES, page 4-52, for procedures.
	Defective keyset	Perform the keyset self-test as described in INSTALLATION, page 3-41, and replace the keyset if faulty.
	Defective DKSC	Replace the associated DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot receive off-hook voice announce calls	Programming error	Ensure that the system option for off-hook voice announce is enabled (PROGRAMMING, page 6-93), that the called keyset is programmed to receive OHVA calls, and that the calling keyset is programmed to transmit OHVA calls (PROGRAMMING, pages 6-31 and 6-58).
	User error	The called station is a single-line set or a keyset that is programmed not to receive OHVA calls. Or, the called keyset user may have blocked the OHVA call. See FEATURES, page 4-59, for details.
	Secondary voice path busy	The keyset will not receive off-hook voice announce calls when the secondary voice path or speakerphone are in use. Refer to FEATURES, page 4-59.
	Defective PCDDPM or OHVA Module	Check installation and connections. Refer to INSTALLATION, pages 3-43 and 3-45. Replace if defective.
	Defective keyset	Perform the keyset self-test as described in INSTALLATION, page 3-41, and replace the keyset if faulty.
	Defective DKSC	Replace the associated DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

FIGURE 7-5. KEYSSET TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot place off-hook voice announce calls	Programming error	Ensure that the system option for off-hook voice announce is enabled (PROGRAMMING, page 6-93), that the called keyset is programmed to receive OHVA calls, and that the calling keyset is programmed to transmit OHVA calls (PROGRAMMING, pages 6-31 and 6-58).
	User error	The called station is a single-line set or a keyset that is programmed not to receive OHVA calls. Or, the called keyset user may have blocked the OHVA call. Refer to page 4-59 in FEATURES for more information.
	Secondary voice path busy	The called keyset cannot receive off-hook voice announce calls when its secondary voice path or speakerphone are in use. Refer to FEATURES, page 4-59.
	Defective keyset	Perform the keyset self-test as described in INSTALLATION, page 3-41, and replace the keyset if faulty.
	Defective DKSC	Replace the associated DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Erratic keyset operation (lamp status incorrect)	Station cable exposed to interference	Ensure proper station cable runs. Refer to INSTALLATION, page 3-8.
	Station loop limits exceeded	Perform the station loop resistance test as outlined on page 3-16 in INSTALLATION.
	Defective cabling or connections	Ensure that 22VDC is present at the modular jack and polarity is correct. Check for loose or open connections in the station cabling and the line cord. Refer to Figure 3-2 on page 3-9 in INSTALLATION.
	Defective keyset	Perform the keyset self-test as described in INSTALLATION, page 3-41, and replace the keyset if faulty.
	Programming error	Ensure that the proper key map has been assigned to the keyset. See PROGRAMMING, pages 6-35 and 6-52.
	Defective DKSC	Replace the associated DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

FIGURE 7-6. SINGLE-LINE SET TROUBLESHOOTING CHART

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Single-line set completely inoperative	Defective set	Replace the single-line set.
	Defective cabling	Check amphenol connector and station cabling. Refer to INSTALLATION, pages 3-12 and 3-14 to 3-15.
	Defective SLA or DKSC	Replace the associated SLA or DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Single-line set inoperative; talk battery present	Defective set	Replace the single-line set.
	Defective SLA or DKSC	Replace the associated SLA or DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Single-line set inoperative; calls ring in; talk battery is present	Defective set	Replace the single-line set.
	Defective SLA or DKSC	Replace the associated SLA or DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
A group of single-line sets is inoperative; all are on the same SLA or DKSC	Loose amphenol connector or cable	Ensure connector or cable is securely attached to the SLA or DKSC.
	Defective SLA or DKSC	Replace the associated SLA or DKSC.

FIGURE 7-6. SINGLE-LINE SET TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Single-line set will not ring for CO or intercom calls; talk battery is present; calls can be placed	Single-line set ring jumper strap not set for correct ringing	Set the single-line set's ring jumper strap for AC ringing. Refer to INSTALLATION, page 3-51.
	Defective set	Replace the set.
	Defective SLA or DKSC	Replace the associated SLA or DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Ring trip is not provided to a group of single-line sets; outgoing calls are not affected	Proper voltage absent from SLA or DKSC	Defective connection or incorrect installation of SLA or DKSC. Using a voltmeter, measure the voltage at the DKSC block. Refer to installation, pages 3-12 to 3-15.
	Defective cabling	Using a voltmeter, measure the input at the amphenol connector. Refer to Figure 3-7 on page 3-15 in INSTALLATION.
	Defective SLA or DKSC	Replace the associated SLA or DKSC.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
A group of AC ringer-equipped single-line sets will not ring for CO or intercom calls; talk battery is present; calls can be placed; all stations are on the same SLA or DKSC	Defective power supply	Refer to INSTALLATION, page 3-25, to perform the power supply electrical test. Replace the power supply if faulty.
	Defective SLA or DKSC	Replace the associated SLA or DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
No AC ringer-equipped single-line set will ring for CO or intercom calls; talk battery present; calls can be placed	Defective power supply	Refer to INSTALLATION, page 3-25, to perform the power supply electrical test. Replace the power supply if faulty.
	Defective SLA or DKSC	Replace the associated SLA or DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

FIGURE 7-6. SINGLE-LINE SET TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot obtain intercom dial tone; no sound is heard	Either a DTMF decoder, voice channel, or tone generator is not available	Single-line station user will hear busy tones when any of the necessary resources are not available. User may camp on.
	Defective set	Replace the single-line set.
	Defective SLA or DKSC	Replace the associated SLA or DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot place intercom call; dial tone present, but reorder tone heard	User error	Try the call again. User may have dialed an invalid number.
	Defective set	Replace the single-line set.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot break CO dial tone	Defective set	Replace the single-line set.
	Defective SLA or DKSC	Replace the associated SLA or DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

NOTE: See also CO trunk problems on page 7-15.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot place off-hook voice announce calls	Programming error	Ensure that the system option for off-hook voice announce is enabled (PROGRAMMING, page 6-93) and that the station is programmed to transmit (pages 6-31 and 6-58).
	User error	Called station is a single-line set or a keyset that is not equipped with a secondary voice path.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Single-line sets not receiving audio message waiting indications	Programming error	Message waiting indication option must be enabled in the database. Refer to page 6-93 in PROGRAMMING.

FIGURE 7-7. DSS/BLF UNIT TROUBLESHOOTING CHART

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
DSS/BLF Unit inoperative; no LED indication present while key is pressed	Defective cabling or improper installation	Check for loose or open connections. Refer to INSTALLATION, page 3-49.
	AC transformer unplugged or defective	Check the transformer. Replace if defective.
	Defective PCDPM or OHVA Module	Check installation and connections. Refer to INSTALLATION, pages 3-43 and 3-45. Replace if defective.
	Defective DSS/BLF Unit	Replace the DSS/BLF Unit.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
DSS/BLF Unit inoperative; LED indication present while key is pressed	Programming error	Circuit is identified for keyset use, not as a DSS/BLF Unit. Refer to page 6-213 in PROGRAMMING. Also, check DSS/BLF key assignments in PROGRAMMING, page 6-48.
	Defective DSS/BLF Unit	Replace the DSS/BLF Unit.
	Defective DKSC	Replace the associated DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
DSS/BLF Unit LED indications incorrect	Programming error	Check DSS/BLF key assignments in PROGRAMMING, page 6-48.
	Defective DSS/BLF Unit	Replace the DSS/BLF Unit.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.
	Cable exposed to interference	Refer to INSTALLATION, page 3-8, for correct cabling procedures.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Calls are transferred to the wrong station	User error	Refer to FEATURES, page 4-47, for procedures.
	Programming error	Check DSS/BLF key assignments. Refer to PROGRAMMING, page 6-48.

FIGURE 7-7. DSS/BLF UNIT TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Cannot place immediate off-hook voice announce calls (using the DSS/BLF key)	Programming error	Ensure that the system option for off-hook voice announce is enabled, that the immediate off-hook voice announce option is enabled, that the DSS/BLF station is programmed to transmit, and that the called keyset is programmed to receive. Refer to pages 6-31, 6-58, and 6-93 in PROGRAMMING.
	User error	The called station is a single-line set or a keyset that is programmed not to receive OHVA calls. Or, the called keyset user may have blocked the OHVA call. Refer to page 4-59 in FEATURES for more information.
	Defective keyset	Perform the keyset self-test as described in INSTALLATION, page 3-41, and replace the keyset if faulty.
	Defective DSS/BLF Unit	Perform the DSS/BLF Unit self-test as described in INSTALLATION, page 3-49, and replace the DSS/BLF Unit if faulty.
	Defective DKSC	Replace the associated DKSC.
	Defective CPU Motherboard	Refer to pages 7-2 and 7-2 for LED and system voltage information. Replace the KSU if faulty.

FIGURE 7-8. AXXENT TALK TROUBLESHOOTING CHART

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Axxent System unable to communicate over voice channels with Axxent Talk System (see page 5-3 in AXXENT FEATURES for a detailed list of symptoms)	Programming error	Make sure the appropriate time slot group (number of Axxent voice channels) is assigned to each Axxent Talk application. Voice channels are used for processing calls between the Axxent System and the Axxent Talk System. See AXXENT FEATURES, page 5-3, and PROGRAMMING, page 6-152.
	Loose or defective cabling between the CPU Motherboard and the PC CPU Card or VPC	Check the cabling connecting the CPU Motherboard to the Axxent Talk cards.
	Defective PC CPU Card or VPC	Replace the defective card.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
System programming PC unable to communicate with Axxent Talk (monitor may display message about being unable to communicate with or losing connection with Axxent Talk)	Programming error	Axxent Talk programming cannot be accessed until an Axxent communications port has been established. See PROGRAMMING, pages 6-23 and 6-89. (NOTE: It normally takes about two minutes after power up to access the Axxent Talk database.)
	Loose or defective RS-232-C cabling between the CPU Motherboard and the PC CPU Card	Check the RS-232-C cabling connecting system SERIAL #2 to COM1 on the PC CPU Card.
	Defective CPU Motherboard or PC CPU Card	Replace the defective card or KSU.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
ASCII-type programming terminal unable to communicate with Axxent Talk portion of the KSU	Loose or defective cabling between the PC CPU Card and the programming terminal	Check the cabling connecting the PC CPU Card to the programming terminal.
	The programming terminal is not configured correctly or defective	Ensure that the programming terminal is configured with the parameters listed on page 3-61 in INSTALLATION. Replace the terminal if defective.
	During boot up with an applications software disk inserted, Axxent Talk may send out characters (e.g., X-OFF) that disable the terminal	Reset the terminal.
	Defective serial port	Replace the defective PC CPU Card.

FIGURE 7-8. AXSENT TALK TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Automated attendant not responding properly	User error	The caller must use a DTMF phone to enter digits. Refer to AXSENT FEATURES, page 5-4.
	DTMF tones not being interpreted correctly (see NOTE below)	If numbers appear to be misdialled frequently, due to trunk noise or other problems, use the digit translation feature as described on page 5-6 in AXSENT FEATURES and page 6-148 in PROGRAMMING.
	Programming error	Automated attendant station(s) must be designated in the database. Refer to PROGRAMMING, pages 6-144 and 6-172.
	Defective PC CPU Card, VPC, or hard disk	Replace the defective PC component.

NOTE: Due to the natural characteristics of the CO trunk, the volume level of DTMF tones transmitted over the trunk may be substantially reduced before reaching the Inter-Tel Axxent System. This natural degradation in tone volume may adversely affect the reliability of the automated attendant feature. Other factors which can affect automated attendant performance are CO trunk noise, the quality of the recording device, and the quality and strength of the DTMF tones generated by the calling phone itself.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Automated attendant not receiving incoming calls; callers routed to primary attendant instead	Programming error	Ensure that the desired trunks (in day and/or night mode) are programmed to ring in directly to the proper automated attendant extension number. See AXSENT FEATURES, page 5-4, and PROGRAMMING, page 6-144.
	Loose or defective cabling between the Axxent System and Axxent Talk	Check the cabling connecting the CPU Motherboard to the Axxent Talk cards.
	Defective PC CPU Card or VPC	Replace the defective card.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Automated attendant indicates that an extension number is invalid even though it exists on the system	The extension does not have an assigned mailbox or an extension ID number	Extension ID numbers provide the automated attendant application a means for transferring calls to extensions which do not have mailboxes. See PROGRAMMING, page 6-154.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Automated attendant transfers calls directly to voice mail without trying the extension number first	Programming error	Make sure the mailbox is associated with a corresponding extension number. See PROGRAMMING, page 6-166.

FIGURE 7-8. AXXENT TALK TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Unable to access desired Axxent Talk application (intercom callers hear reorder tones and see a CALL CANNOT BE COMPLETED display; outside callers are rerouted to the primary attendant)	The number of call attempts exceed the ports available through the VPC	Callers must wait for an available port.
	Loss of RS-232-C connection between the CPU Motherboard and PC CPU Card	Check the RS-232-C cabling connecting the system SERIAL #2 to COM1 on the PC CPU Card.
	Axxent Talk processing has slowed down and call processing has timed out	If the problem continues to occur, even during periods of low activity, reboot the Axxent Talk portion of the KSU.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Unable to access desired Axxent Talk application (intercom callers see a XXXXX IS BUSY display and camp on until a voice channel is available; outside callers hear ringing until a voice channel is available)	All programmed voice channels are currently busy	Make sure the appropriate time slot group (number of Axxent voice channels) is assigned to each Axxent Talk application. Voice channels are used for processing calls between the Axxent System and Axxent Talk. See AXXENT FEATURES, page 5-3, and PROGRAMMING, page 6-152.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Unable to access desired Axxent Talk application (intercom callers hear reorder tones and see a XXXXX IS UNAVAILABLE display; outside callers are rerouted to the primary attendant)	A database save or restore is in progress, or the PC portion of the KSU is being reset or is starting up for the first time	Try again within five or ten minutes.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Unable to access desired Axxent Talk application (intercom callers hear reorder tones and see a XXXXX IS UNPLUGGED display; outside callers are rerouted to the primary attendant)	The system power switch is off, the cabling between the system and the Axxent Talk cards is disconnected or defective, or the Axxent Talk cards are inoperative	Check to make sure the system power switch is on, and check the cabling connecting the system to the Axxent Talk cards.
	Axxent Talk system is rebooting	When the KSU is powered up, the "unplugged" message is generated until the Axxent Talk system is fully booted (approximately two minutes).

FIGURE 7-8. AXXENT TALK TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Axxent Talk applications are slow (e.g., voice prompts are slow and display messages are delayed)	The Axxent Talk PC CPU Card's high-speed (turbo) processor mode is turned off	For optimal performance, the Axxent Talk PC CPU Card is configured with the high-speed (turbo) mode <i>always</i> enabled. Do <i>not</i> disable the turbo mode setting.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
When power is turned on, the Axxent Talk portion of the KSU does not boot up properly	Diskette in floppy drive	Ensure that Axxent Talk is not trying to boot off a diskette in the floppy drive.
	The two-pin PC Reset cable assembly is not connected properly	Be sure that pin 1 marked on each end of the cable matches pin 1 on the PC CPU Card and the CPU Motherboard. (If connected incorrectly, the PC will be reset continuously.)
	The DB-25 modular adapter (supplied with the diagnostics cable kit) is still connected to the COM2 serial port on the PC CPU Card	Remove the DB-25 modular adapter when not being used
	The Axxent Talk PC CPU Card's high-speed (turbo) processor mode is turned off	Axxent Talk boots up much faster in turbo mode. Before shipping, the PC CPU Card is configured with the high-speed (turbo) mode <i>always</i> enabled. Do <i>not</i> disable the turbo mode setting.
	The keyboard and primary display options in the PC CPU Card's CMOS set-up routine are set to "installed"	Before removing the keyboard and monitor from the KSU, always be sure to set the keyboard and primary display options to "not installed" in the Standard CMOS Setup program.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Both internal and remote users have no message notification after receiving voice messages in their mailboxes	The Message Notification/Retrieval application has not been set up	The system must be programmed with the Message Notification/Retrieval application in order to allow voice mail message notification and quick mailbox access. See PROGRAMMING, page 6-144.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Audio volume levels from Axxent Talk applications (such as voice mail and automated attendant) are too low or too high	Programming error	To adjust the volume level for all of the voice channels used by Axxent Talk, refer to PROGRAMMING, page 6-182.

FIGURE 7-8. AXXENT TALK TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
No audio from Axxent Talk applications (such as voice mail and automated attendant)	Loose or defective cabling between the PC CPU Card and the CPU Motherboard	Check the cabling.
	Incorrect strap settings on the Voice Processing Card (VPC)	Ensure that the VPC has its jumper straps set in the proper positions. Refer to step 17 on page 3-54 in INSTALLATION.
	Defective PC CPU Card or CPU	Replace the defective card.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Station has message waiting indication from voice mail, but associated mailbox has no message	Station is assigned as the message notification station for one or more unassociated mailboxes	Check the unassociated mailboxes to find the waiting message. See AXXENT FEATURES, page 5-10, and PROGRAMMING, page 6-166, for more information.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Unable to record any voice mail greetings or messages and/or unable to hear any voice prompts	Incorrect strap setting on the Voice Processing Card (VPC)	Ensure that the VPC has its jumper straps set in the proper positions. Refer to step 17 on page 3-54 in INSTALLATION.
	Loose/defective cabling between the PC CPU Card and the CPU Motherboard	Check the cabling.
	Defective VPC	Replace the VPC.

6. CUSTOMER SUPPORT

A. TECHNICAL SUPPORT

6.1 If problems persist when installing or servicing Inter-Tel equipment: While *on site* and *with the proper troubleshooting tools* available, *certified technicians* may contact Inter-Tel's Customer Support Department for assistance. They can be reached from 7:00A.M. to 5:00P.M. Mountain Standard Time at 602-961-9000 or 1-800-669-5858.

B. EMERGENCY ASSISTANCE

6.2 After office hours and on weekends, call 602-961-0277 and leave your message with the voice mail service. A Customer Support Product Specialist will return your call as soon as possible, usually within an hour. Please remember that this is an emergency number for *critical system problems only*. Sales ques-

tions, equipment orders, etc., can only be handled during normal business hours.

7. DEFECTIVE UNIT RETURN POLICY

7.1 For complete information on returning equipment, refer to the *current Inter-Tel Customer Service Policy* (document part no. 835.1065). This document includes specific information on the following subjects: warranty, procedures to follow when returning equipment, equipment damaged in shipment, insurance, repair policy, and advance replacement policy.

NOTE: Some of the cards and cables inside the KSU may have been spot-glued into place to help prevent them from working loose during shipment. To remove one of these cards or cables from the KSU, first break the glue seal by gently wiggling the connector.

REPLACEMENT PARTS

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1. Introduction	8-1
2. Ordering Procedure	8-1
3. Replacement Parts List	8-1
4. Recommended Spare Parts	8-1

1. INTRODUCTION

1.1 This section provides the information necessary to order and stock replacement parts for the Inter-Tel Axxent System.

- Part number(s) of equipment ordered
- Quantity required

2. ORDERING PROCEDURE

2.1 When ordering equipment for the Inter-Tel Axxent System, provide the following information to the order processing clerk:

- Company name
- Purchase order number
- Required date of shipment

3. REPLACEMENT PARTS LIST

3.1 Figure 8-1 lists authorized parts available for replacement on the Inter-Tel Axxent System.

4. RECOMMENDED SPARE PARTS

4.1 *It is mandatory that spare parts be kept on hand to ensure the best possible customer service.*

4.2 Figure 8-2 on page 8-3 lists the quantities of spare parts recommended to adequately maintain and service ten Inter-Tel Axxent Systems.

FIGURE 8-1. REPLACEMENT PARTS

<u>DESCRIPTION</u>	<u>PART NUMBER</u>
Station Instruments	
Basic Digital Keypad (or Terminal) — non-display	520.4000
Standard Digital Keypad (or Terminal) — non-display	550.4300
Standard Digital Keypad (or Terminal) — display	550.4000
Executive Digital Keypad (or Terminal) — display	550.4100
Digital DSS/BLF Unit (includes AC transformer & PCDPM-To-DSS cable)	550.4200
KSU and Power Supply Parts	
KSU Assembly (includes CPU Motherboard and power supply) ..	520.1000
Power Supply Unit	520.0101
PC Fan and Cable	817.3135
MOH/E-Page Cable Assembly	813.1602*
PCM Port Cable Assembly	813.1603*
Serial Port Cable Assembly	813.1616*

* These are internal KSU cable assemblies that originate on the CPU Motherboard and terminate on the rear of the KSU.

FIGURE 8-1. REPLACEMENT PARTS (CONT'D)

<u>DESCRIPTION</u>	<u>PART NUMBER</u>
Circuit Cards	
Memory Card	520.2004*
Digital Keypad Card	520.2200
Digital Keypad Card (includes custom DKSC interface cable)	520.2201
Loop Start Card	520.2300
Single-Line Adapter (includes AC transformer)	550.2500
* The pre-production 520.2001 and 520.2003 Memory Cards function the same as and are completely interchangeable with the production 520.2004 Memory Card.	
Software	
MF-Rated 15-Unit PAL	827.8298
MF-Rated 25-Unit PAL	827.8299
MF-Rated 50-Unit PAL	827.8300
MF-Rated 75-Unit PAL	827.8301
KF-Rated 15-Unit PAL	827.8302
KF-Rated 25-Unit PAL	827.8303
KF-Rated 50-Unit PAL	827.8304
KF-Rated 75-Unit PAL	827.8305
Database Programming Software (two floppy disks)	827.8367
Axxent Talk Applications Software (four floppy disks)	827.8340
Axxent Talk CMOS Setup Software (one floppy disk)	part no. depends hard drive model
Axxent Talk Hardware	
4-Port Voice Processing Kit (includes hard disk drive)	520.5101
PC CPU Card (includes DB25 cable assembly)	520.5103
Voice Processing Card (VPC)	550.3006
Floppy Disk Drive (3½-inch double-sided/high-density)	550.5111
Hard Disk Drive — 200 MB or larger	691.3010
Keyboard Cable Assembly	813.1612
MVIP Cable Assembly	813.1618
DB9F-To-DB9M Cable Assembly	813.1615
Hard Drive Cable Assembly	813.1617
Floppy Drive Cable Assembly	813.1619
PC Reset Cable Assembly	813.1588
Optional Diagnostics Cable Kit	828.1282
Miscellaneous Equipment	
Custom DKSC Interface Cable	813.1610
First Options DSP Upgrade Kit	828.1323**
Second Options DSP Upgrade Kit	828.1324**
Keypad OHVA Module	550.3114
Keypad PC Data Port Module (PCDPM) — includes AC transformer & PCDPM-To-RS232C cable	550.3014
Keypad Modem Data Port Module (MDPM) — includes PCDPM-To-MDPM cable	550.3015
PCDPM-To-Keypad Interface Cable	813.1567
PCDPM-To-MDPM Interface Cable	813.1566
PCDPM-To-RS232C Interface Cable	813.1565
PCDPM-To-DSS Interface Cable	813.1595
DSS-To-DSS Interface Cable	813.1519
** The first options DSP upgrade kit must be installed before the second options DSP upgrade kit can be installed.	

FIGURE 8-1. REPLACEMENT PARTS (CONT'D)

<u>DESCRIPTION</u>	<u>PART NUMBER</u>
Miscellaneous Equipment (continued)	
Keypad LCD Kit (for non-display Standard Keypads)	828.1211
AC Transformer — 24VAC, 450mA (for PCDPMs, MDPMs, and DSS/BLF Units)	806.1045
AC Transformer — 24VAC, 1.25A (for SLAs)	806.1046
Digital Attendant Playback Device	828.1315
Wall-Mount Shelf	691.3109
Modem Kit (includes modem and custom cable)	520.3016
Custom Modem Cable (DB9M-to-DB25M)	813.1620
Database Programming PC Cable (DB9M-to-DB9F)	813.1622
9-25 Converter (DB9M-to-DB25F)	804.2483
CPU Database Back-Up Battery (3.6V, 1/2AA lithium)	815.1011
Documentation	
Installation & Field Maintenance Manual	520.8000
Owner's Guide	520.8004
Executive Keypad User Guide	520.8005
Basic & Standard Keypad User Guide	520.8006
Single-Line Set User Guide	520.8007
Keypad Quick Reference Guide	520.8008
System Administrator Quick Reference Guide	520.8009
Axxent Talk Voice Mail User Guide	520.8003
Axxent Talk Voice Mail Subscriber Quick Ref. Guide	520.8002
Axxent Talk Voice Mail System Administrator Q.R. Guide	520.8001
Axxent Talk Voice Mail Documentation Package	520.9000
Technical Training Videos	815.1616

FIGURE 8-2. RECOMMENDED SPARE PARTS

<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>PART NO.</u>
KSU Assembly (with CPU Motherboard and power supply)	2	520.1000
Memory Card	2	520.2004
Digital Keypad Card	2	520.2200
Loop Start Card	1-2	520.2300
Single-Line Adapter	1	550.2500
Custom DKSC Interface Cable	2	813.1610
First Options DSP Upgrade Kit	2	828.1323
Second Options DSP Upgrade Kit	2	828.1324
Power Supply Unit	1	520.0101
Basic Digital Keypad (or Terminal)	5-10	520.4000
Standard Digital Keypad (or Terminal)	5-10	550.4300
Executive Digital Keypad (or Terminal)	5-10	550.4100
Digital DSS/BLF Unit	2	550.4200
Keypad PC Data Port Module	2	550.3014
Keypad Modem Data Port Module	2	550.3015
Keypad LCD Kit (for non-display Standard Keypads)	5	828.1211
AC Transformer (for PCDPMs, MDPMs, & DSS/BLF Units)	3	806.1045
AC Transformer (for SLAs)	3	806.1046

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DEFAULT FEATURE CODES

Outside Trunk Access Codes:

Select Trunk Group 1-8	9201-9208
Automatic Route Selection (ARS)	9200
Emergency Call	911
Outgoing Call	8

Extension Numbers:

Stations	100-115
Hunt Groups	255-264
Attendant	0

Administrator Feature Codes:

Clear System Alarm	9850
Diagnostics Mode	9900
Freeze System History*	9993
Unfreeze System History*	9998
Night Ring On/Off	9860
Print Message Log*	9975
Print Reset Log*	9972
Program Station Data	9802
Program System Database	9932
Program System Speed Dial	9801
Seize Device	9973
Set Time/Date	9800

* The Diagnostics Mode feature code (9900) must be entered at the administrator's station to enable system diagnostic mode before these feature codes can be used.

Station Feature Codes:

ACD Agent Login	326
ACD Agent Logout	327
ACD Agent Login/Logout Toggle	328
ACD Agent Wrap-Up Terminate	329
Account Code — All Following Calls	391
Account Code — Optional	390
Answer (Ringing Call)	351
Automatic CO Access On/Off	360
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