THIRTY METERS ANYONE?

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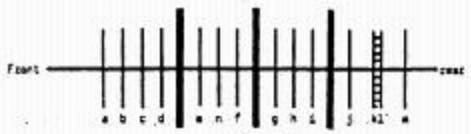

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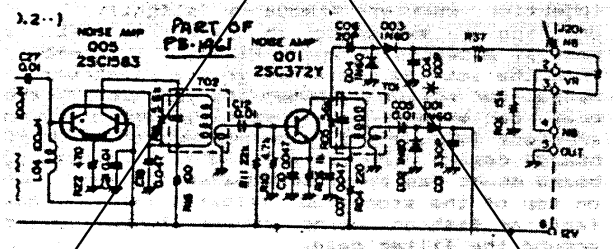
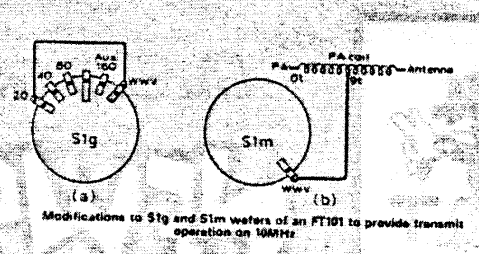
From Fox Tango Newsletter May 1980 pps. 26-27

will not be affected by the filter and neither will the resulting hole (or noise-blanking notch). However, the noise pulse itself must pass through the filter---which will make it wider (last longer). What to do? If nothing is done, Terry reports that his noise blanker retains about 80% of its prior effectiveness. Dissatisfied, he looked for a solution and found it. He changed the value of C04* on PB-1961 (which is taken out anyway when the IF board is removed) from 100pF to 330pF. This altered the time constant of the circuit from from 1 to 3, increasing the width of the notch about 3 times. This is enough to take care of most pulses widened by the cascading filter and, indeed, starts to become effective against the woodpecker. (Terry reports it reduced a typical S9 woodpecker signal to S4, while restoring the noise blanker to practically full effectiveness against short-duration ignition pulses for which the circuit was originally designed.)



That's it, gentlemen. Get your 4K-ID kits now! Incidentally, while you have the IF board out, this might be a good time to install a CW filter too; 250 and 500Hz are available for drop-in installation. N4ML



Modifications to Sig and Sim wafers of an FT101 to provide transmit operation on 10MHz

I had already completed this modification, I used the information to adapt the "WWV" band for transmit operation as follows:

"Remove base and lower cover of the PA compartment. Locate switch wafer Sig (seventh [8th? N4ML] wafer from front) and then link the WWV position to the 14MHz position as shown in the diagram. This permits tuning of the driver anode, 4-5 on preselector. Then locate the Sim ceramic wafer at the rear of the switch. Link the WWV position to turn 9 on pa tank coil, measured from PA end. This permits final tuning.

"Use of the Yaesu operating manual will help in finding the correct switch wafers."

G3TSO adds: "Addition of either the 18 or 24.5MHz band could be achieved by using the "27MHz" switch position. Although I have not tried this myself the following details may act as a guide.

"For 18.0 to 18.5MHz tuning a 24.02MHz crystal would be required. Locate S1e, S1c, and S1g (5th, 3rd and 7th wafers from front). Cut link joining 27MHz position to 28A, B, C and D position, link 27 MHz position to 21MHz position on all three wafers. Then connect 20pF capacitor across TC20 on S1b. Locate Sim ceramic wafer, remove link to 27 MHz position on PA tank coil and reconnect to turn 5 from the PA end.

"For 24.5 to 25 MHz tuning, a 30.52MHz crystal would be required. It can then be expected that the 27MHz tuning range will cover this band without further modifications."

Peter Mackrell G3AEP adds a comment on G3TSO's method. While G3AEP has successfully completed the G3TSO's mod, as suggested, he suspects that some readers may not have found this quite so 'simple' as it sounds. He writes: "...For the benfit of other would-be modifiers, I would make the point that the switch wafer Sig does NOT appear to be the seventh wafer from the front in my FT-101E, as stated by G3TSO, but the EIGHTH (i.e. the wafer nearest to the front INSIDE of the PA screening box. The reason for the quotes around 'simple' is that, as one might expect, the WWV contact is the least accessible but becomes possible by just undoing two screws and gently moving the small PCB of compression trimmers to one side.

"The connection from the WWV tag on S1m to the 9th turn of the PA coil can, in my opinion, be simplified. It is not the easiest task to solder a tap onto this coil without bridging the turns with solder, but having finally succeeded and conducted tests, I decided to remove the tap again and simply connect WWV to the 7MHz point, since this is adjacent to turn 9. On test, this appears to be entirely satisfactory, with plenty of leeway on the 'plate' tuning capacitor (in my case indicating the dip between the 7 and 14MHz setting). I feel that omitting the tap soldering could well save many yards of singed insulation.

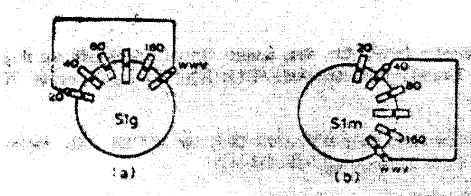
SETTING OLD FT-101's READY FOR WARC BANDS

[The following is a collection of items related to the above. The first references appeared on page 26 of the 1980 NL, with a follow-up on page 3, 1981 (both by Mark Monson KB8NO/EL5B). In this issue we have abstracted items from "Radio Communications" (UK), January and May 1981. We held off printing them because the availability of the WARC bands hardly seemed imminent at that time. Since then, most new rigs have featured the WARC band availability, so it's about time that we learned how to do it for the old clunkers. Doesn't seem all that hard in the versatile FT-101 line. Our thanks to Pete Hoover W6ZH and Geoff Dover G4AFT for the RAD COMM material.]

The item from Bill Kitchen, G4GHB, on modifying the FT101 in readiness for transceive operation on 10MHz [reprinted on Page 12, 1981 NL] stirred up quite a lot of interest and some alternative suggestions. For example, M.J.Grierson, G3TSO, writes: "I have completed a similar modification to my own FT101, enabling it to transmit in the 10 MHz band, in what would seem to be an even simpler manner. No extra components are required, there are no holes to drill, and it does not affect the performance of the equipment on any of the other bands.

"My modification was based on a leaflet bearing the Yaesu stamp which initially was intended primarily to facilitate the addition of the 1.8 MHz band to early FT101 models by using the 'auxiliary' switch position. Since

"Referring to the diagram in the January issue [above] my suggestions remain the same (link from WWV to 20M on Sig) but the second diagram now also becomes similar though with the WWV tag linked to the 40M tag on Sim wafer as shown below.
[Incidentally Geoff Dover G4AFJ has tried two of the above but ended up with the "no tap" version. He says it works well with resonance at 7 1/2 on plate control; preselector peaks at 3 1/2 with good RX/TX convergence.]



G3AEP's suggestions for modifying an FT101E for 10MHz

G3TSO also calls attention to the "very worthwhile" modification to the FT101 featured in RAD COM some time ago, consisting of replacing the existing receiver mixer with doubly-balanced types. He comments: "This modification can be done without surgery and greatly improves the receiver. I have found that very few amateurs are prepared even to consider carrying out this particular modification for fear of devaluing the equipment . The only comment I would make is that my modified Mk1 FT101 when placed alongside an FT101E appeared marginally better, and there is no difference between the FT101 and my new FT707. So much for progress". [G3TSO is speaking about the Club's "Blob" modification (BA2) which was first recommended in the June 1972 Newsletter and, on and off, by many others ever since. Yaesu endorsed the idea by using essentially the same circuit in its then top-of-the-line FR-101 a year or two after it was described in the NL and attributed to its designer: Don Millar VK3PX. We find that it improves all '101s, not only the Mk I and is relatively easy to install---only one pluggable board need be removed. N4ML

COMMENT

If I were making a selection for my rig, I would chose Peter Mackrell's. Finally, a few words of caution from W4PME: "...When I wrote an article several years ago on converting FT-101's with 160m to MARS/CAP on 4.5-5.0MHz I got a lot of responses over the years from owners of later sets in which unrecorded production changes had made my instructions invalid. Therefore, no matter which mod you chose, be aware that an earlier or later model may have minor (or major) differences from the one which the author used as the basis for his design..." And don't forget---until the band is properly assigned to us: use DUMMY LOADS ONLY in testing your transmitters. Reports on your experiences will be welcomed and reported. N4ML

CURES FOR FT-901DM PROBLEMS

by Bob Lewis VE1AJB

I've had a few problems with my FT-901DM. I pass along my solutions for the benefit of those who have not yet spent the countless hours I did in finding them.

1. FREQUENCY DRIFT (Also small jumps). This was tracked down in my unit (S/N 9M100317) to the 6-volt adjustment pot (VR01) on PB1717A. This six volt supply is used for the VFO oscillator and should be stable to +/-.01V or better for good frequency stability. Replace the pot with one of better quality if your supply voltage drifts more than this. Also move the power resistors away so as to minimize drift caused by heating. The stability of my rig, after the above changes, is excellent.

2. FM PROBLEM. The FM board was purchased and installed as an option and resulted in the following difficulty: A very chirpy CW note and a tone when transmitting on SSB. The fault was traced to a wrongly installed jumper on the board. The jumper is intended to by-pass the NOT-installed FM filter. As received, the jumper allowed the FM Oscillator to be ON in transmit, regardless of the operating mode. The jumper should be on the filter side of C972 to the top of T904.

3. THE CLARIFIER. The Yaesu manual states that the clarifier will provide +/-2.5kHz action. Mine turned out to have +/-5kHz resulting in very coarse adjustment; it was actually harder to use than the main dial. I modified the circuit to provide +/-500Hz range by connecting a 330 ohm 1/4W resistor across the 5K Clarifier pot. Now it acts more like a fine tuning control, great for placing a CW signal in the slot of the narrow CW filter. The pot is readily accessible and a different value of resistance can be used if you wish other than the clarifier range I chose. Don't forget to adjust the clarifier as per page 44 Item 12 of the Instruction Manual if you make this change.

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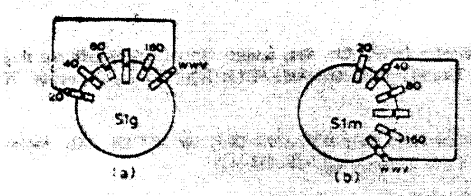

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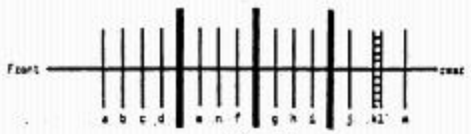

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From Fox Tango Newsletter May 1980 pps. 26-27

CONTINUATION "30 METERS ANYONE?" ARTICLE

The following is from Mark Monson KB8NO/EL5G whose article appeared in the May issue of the Newsletter recently (see page 26):

Thank you for printing my article "Thirty Meters Anyone?". I think that others will be interest in this rather easy modification. However, I would like to make note of the following:

1. There is an error in transcribing paragraph 8 [starting with: *"The only problem is..."*]. When the typist got to the sentence *"Then break the wafer along the axis of the tab through the rivet..."* she jumped a line to the word "rivet" in the next sentence so that the whole makes no sense. The two sentences should be corrected to read:

   "...Then break the wafer along the axis of the tab through the rivet hole freeing the rivet and the tab without damaging them. Then take a good wire cutter and carefully nip the lip off the end of the rivet that was under the wafer until it fits freely through the empty hole on S1-1."

   Since this is the trickiest part of the modification, this clarification is very important!

(Even is you do not plan to make the modification to your FT-101 at this time, please make a note on your page 26 referring to this correction so you will not be misled in the future. N4ML)

2. If publication of enabling the 11M band is "against club policy" how come I first saw this very information in NL Vol. 4, No. 5, page 4? The information I gave is for modifying the rig to transmit in the new 24MHz Amateur band, not for use on the CB band, and is of legitimate interest to amateurs.

(Mark's point (about Club policy) is well taken, but just because we made a mistake in the early days does not mean we cannot correct it as we gain in maturity. We were much impressed by the ARRL's campaign a few years ago and modified the information sheet sent to prospective members to contain the following statement:

...The Club supports the philosophy of the ARRL that Amateur Radio equipment capable of transmitting signals should be sold only to those who can show a valid license to operate it. The Club will not knowingly contribute to illegal operation by making available specific service information to those seeking to alter equipment for unauthorized use...

Unfortunately, I misunderstod the intent of the modification and regret the unwarrented implications of my original statement. I will publish the missing part of Mark's artical shortly---there is time since use of the new band will not be authorized for some years.

Finally, I omitted a statement that the article had been submitted to "73" magazine and that they had graciously granted permission to publish it in the Newsletter in advance of its publication in "73". No doubt when it does appear in "73" the story will be more complete and better illustrated than it was in the Newsletter version. And, hopefully, it will have fewer errors and omissions.

Haste makes waste! N4ML)

CONCLUSION "30 METERS ANYONE?" ARTICLE

The above article by Mark Monson KB8NO/EL5G which first appeared on page 26 ('80NL) was further discussed on page 36 because a portion of it had been inadvertently omitted as a result of a misunderstanding about the use of the former 11-meter band. We had promised to publish the missing portion at the first opportunity and we do so now. We regret the delay.

Mark's article dealt with modifying the original FT-101 series to include all the new WARC '79 band allocations. The following deals with the 24MHz band:

"...For future reference, the 11M band will be easily modifiable to the 24MHz band. Probably all that will be necessary is the addition of a different crystal and adjustment of the heterodyne oscillator. To enable the 11M transmit section all hat needs to be done is:

1. Remove the jumper from the 11M tab on S1g that goes to S1h.

2. Remove the jumper from the 11M tab on S1i that goes to ground.

The article concludes on page 27 with "... If you want to get on to the 18MHz band..." N4ML

From Fox Tango Newsletter July-August 1980 and January 1981

SUMMARY: FT-901 MODS FROM VARIOUS SOURCES

by L. N. Higgins W6CAE

As a newcomer to the FTNL ('79 and '80) I had a lot of catching up to do on my '901DM ('78 Run 4 per '80NL page 4). I accomplished the following apparently benficially but without ectacular results:

1. Matched antennas input (FTNL '79 p. 2) averaged 210 watts.

2. Changed C218 on PB1703 from 100pF to .01 uF 50V disc ('79NL p. 15 and Yaesu CA:?; to improve processor.)

3. Changed R1013 on PB1708 from 47K 1W to 2W(NL p. 2 and Yaesu CA:?; cooler Bleeder).

   Note: "CA:.." is the identifying number that Yaesu in California uses on its modifications.

4. Changed C2861 on PB 1787 from .33 to 6.8uF 35V tantulum (NL '79 p2; to stop "M" blinking).

5. C2954 alread reinstalled by factory noting incorrectly marked polarity on PB1729 (NL'79 p2 and Yaesu CA:153).

6. Added diode (1N4007, 1A 1kV) between points 8(+) and 5 on PB1715 (NL '79 p. 2 and Yaesu CA:159; insurance mod.).

7. My cooling shroud (NL '79 p. 25) is a piece of cardboard covering the front and roughly 2/3 of the top of the final box, specifically the coils, and directing fan air across the tubes.

8. On PB1717 changed R1801, 02, 04, 05 from 470K to 180K, 1/2W; R1803 from 470 to 390, 2W; added "R1819" 39, 1W between D1801 and C1801 (NL '79 p. 31 and Yaesu CA:172; "Beefier" and surge protected bias supply).

9. Shorted out R1806, 15K 3W on PB1717, increasing