SPECIFICATIONS

FOR THE

KIT-304-1

| COMPILED: | CHECKED: | APPD: | SHEET 2 OF 6 |

TITLE: KIT 304-1

I. This modification affects all model STR-2 receivers. It involves changes to the I.F. board A4020B to improve the gain stability, and AGC action.

II. LIST OF MATERIAL SUPPLIED:

ITEM NO.	SYMBOL	QTY	TMC PART NO.	DESCRIPTION
1	Z1801	1	A4469	IF ASSEMBLY
2	R1802	1	RC20GF103J	RESISTOR
3	R1841	1	RV111V503B	VAR RESISTOR
4		1	CK1158	SCHEMATIC DIAGRAM
5	C1803	1	CM100-11	CAPACITOR
6	R1801	1	RC20GF101J	RESISTOR
7	R1803	1	RC20GF822 J	RESISTOR
8	Q1801	1	TX109	TRANSISTOR
9		1	NP362-67	NAMEPLATE
10	R1842	1	RC20GF562J	RESISTOR
11	R1834	1	RV111U103B	VAR. RESISTOR
12	C1843	1	CE105-200-15	ELEC. CAP.

III. MODIFICATION INSTRUCTIONS

   A. PREPARING THE UNIT FOR THE MODIFICATIONS:

     1. Turn the power OFF.

     2. Remove the top cover and the right side plate.

     3. Loosen the screws on the IF boards and remove T1801, C1803, C1806 R1803, R1834, R1802, and R1801, (if other than 100 ohms). Also Q1801, (if other than TX109).

   B. MODIFICATIONS ON THE A4020 BOARD:

     1. Mount the 10K ohms resistor, Item 2, in place of R1802 and the 8.2K ohms resistor, Item 7, in place of R1803. Solder them.

     2. Mount the 1600 pf. capacitor, Item 5, in place of C1803. Solder it.

     3. Mount the assembly A4469, Item 1, in place of T1801.

     4. Mount the 5.6K ohm resistor, Item 10, across diode CR1805. Solder it.
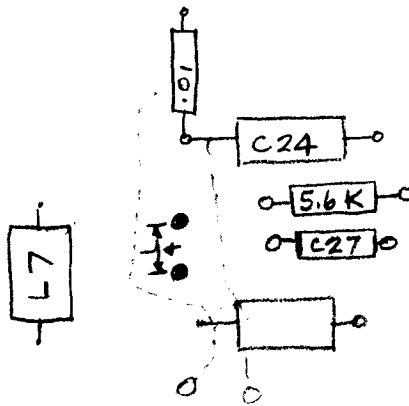
5. Mount the 100 ohm resistor, Item 6, in place of R1801. This step is not neccessary if R1801 was found to be 100 ohms. See step 3.

6. Mount the TX109 transistor, Item 8, in place of Q1801. This step is not necessary if Q1801 was found to be TX109. See step 3.

7. Mount the variable resistor, Item 11, R1834, in the two holes formerly occupied by R1834 and solder.

8. With a #56 drill, make two holes next to L1807 and L1804, approximately $\frac{1}{4}$" center to center.

9. Connect a 50K variable resistor, RV111U503B, Item 3, in the holes drilled in step 8 and connect between emitter of Q1801 and any point in the AGC line.

10. Connect positive of 200 mf, electrolytic cap, Item 12, terminal strip #2. Solder a lead from terminal #2 to positive side of C1842. The negative side of C1843, 200 mf ELECT. CAP., is soldered to grounding post near variable squelch pot.
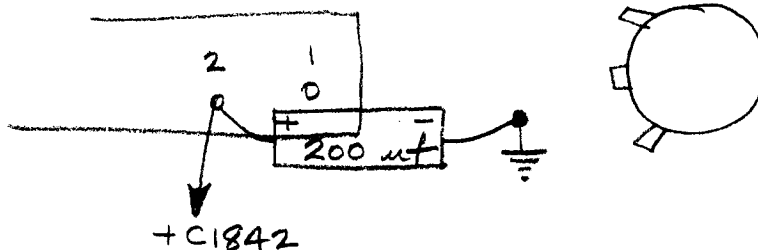
+ C1842

11. **RECEIVER IF ALIGNMENT.**

    a. <u>Test Equipment Required:</u>

        1. HP Model 606A RF signal generator or equivalent.

        2. HP Model 524C frequency counter or equivalent.

        3. HP Model 410 VTVM or equivalent.

        4. Ballantine Model 314 A.C. VTVM or equivalent.

    b. <u>Procedure:</u>

        1. Set the RCVR sideband switch to LSB and turn R1554 & R1555 fully clockwise.

        2. Connect the counter to emitter lead of Q1802 and adjust C1832 for a frequency of 1.5 ± 2 cps as registered on the counter. Leave counter connected.

        3. Set the RCVR sideband switch to USB/REMOTE.

        4. Adjust C1834 for a frequency of 2.0 mc ± 2 cps as registered on the counter. Remove the counter.

        5. Set the RCVR sideband switch to LSB and remove the 1.5 mc crystal Y1801.

        6. Connect the Ballantine between the base of Q1802 and GND.

        7. Connect the HP 606A RF GENERATOR between terminals 1 & 2 on the RCVR IF board with the generator's output control at zero.

TMC FORM SPEC 1

2M 9-65-AINS.

8. Set the generator frequency at 1.75 mc +50 cps using the frequency counter, and increase the generator output to approximately 1.0 mv. The Ballantine should indicate some voltage present at the base of Q1802.

9. Adjust C1804 and C1802 for a peak indication on the Ballantine Meter. Peak reading should be 10 mv minimum.

10. Reinsert 1.5 mc crystal.

11. Remove HP 606A RF GENERATOR from terminals 1 and 2 of IF board, and connect generator to antenna BNC, and Ballantine to 600 ohm line terminals.

12. Insert an RF TTRR head, one which has already been tuned, and set 606A to TTRR heads recieving frequency, modulated by 1kc.

13. Set the 606A GENERATOR output to 3 μv and adjust R1834 (10K VAR. RESISTOR) to read approximately 1.65V DC on terminal 9 (AGC line terminal) of IF board. Use Simpson 260 or HP 410B to measure the AGC voltage. Ballantine should indicate approximately .70, slight adjustment of R1834 may be necessary to obtain .70.

14. Increase 606A GENERATOR output voltage to 100 mv. Adjust R1841 to give you approximately 1.0V on the Ballantine meter.

15. Return 606A GENERATOR voltage back to 3μv and observe Ballantine meter indication. If meter indicates less than .7V readjust R1834 to give you optimum condition. It may be necessary to adjust back and forth between R1841 and R1834 until a satisfactory condition of AGC is obtained.

16. Remove the signal generator and Ballantine connections.

17. Affix adhesive nameplate, Item 9, to th rear apron of STR-2.

REVISION SHEET

THE TECHNICAL MATERIEL CORP.
MAMARONECK   NEW YORK

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LIST NO.

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DATE	REV.	SHEET	EMN #	DESCRIPTION	APP.
7/7/66	Ø			ORIGINAL RELEASE FOR PRODUCTION	
10/13/66	B	ALL	17027	Revised per EMN	
1/16/67	C	2	17674	Revised per EMN	

TMC FORM MLR-1 2-65-AINS.