TMC SPECIFICATION

NO. S	1172
REV:	Ø A
COMPILED: NAB	CHECKED: NAB
APPD:	SHEET 1 OF 7

TITLE:

Typed by mtp 1/31/67

TEST PROCEDURE FOR STR-1Y

A. EQUIPMENT REQUIRED:

1. VOM, Simpson Model 260 or equivalent.
2. Audio Signal Generator, H/P Model 200 C/D or equivalent.
3. Loudspeaker, Four (4) ohm.
4. VTVM, H/P Model 410B or equivalent.
5. AC VTVM, Ballantine Model 314 or equivalent.
6. RF Signal Generator, H/P Model 606A or equivalent.
7. Frequency Counter, H/P Model 5244L or equivalent.
8. Step Attenuator, Telonic Model TG950 or equivalent.
9. Resistor, 600 ohm 1 watt.
10. Connector, BNC "T" (UG-274A-U).
11. Three 4' pieces RG58 cable, terminated with male BNC connectors.
12. Schematic Drawings, CK1273, CK1274 and CK1297
13. Headset (Earphones)

B. PRELIMINARY

1. All RF modules should be pre-tested per TMC S-808 before being installed into this unit.
2. Inspect the unit for mechanical imperfections such as loose screws, printed circuit boards, cold solder joints, etc.
3. With the ohmmeter set for (+), check for $<$ 150 ohms from pin 11 on A3190 (Audio Board) to ground. With the ohmmeter set for (-), check for $<$ 1400 ohms from Pin 14 on A3190 (Audio Board) to ground.
4. Be sure RF Module is removed.

C. POWER

1. Connect the unit to an a-c outlet.
2. Set the power switch to ON. The white light should go on.

C. POWER - Cont'd

3. With the H/P VTVM, measure +12V ±5% from Pin 11 on the audio board to ground, from Pin 7 on the IF board to ground, and from Pin 1 on the RF module to ground. Also measure -12V ±5% from Pin 14 on the audio board to ground, from Pin 8 on the IF board to ground, and from Pin 8 on the RF module to ground.

4. Connect the a-c Ballantine between Pin 11 on the AF board and ground. The a-c noise measured should not exceed 1 mv.

5. Repeat Step 5 for Pin 14 on the audio board.

6. Make sure that the removal of the a-c line fuse, will make all DC voltages disappear.

7. Measure 115V a-c with the Simpson between Pin 10 and Pin 9 on the RF module.

D. RECEIVER AUDIO CHECK

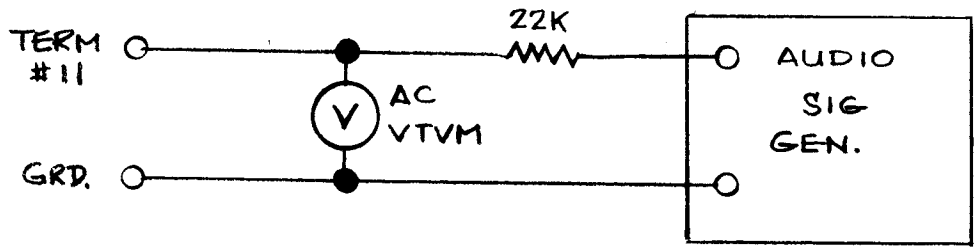
1. Set power switch to ON then rotate control to full clockwise. S1512 (AC ON/OFF) and R1546 (volume control) are ON same control.

2. Delete:

3. Set the SQUELCH control on the rear apron to maximum clockwise.

4. Connect a 600 ohm 1 watt resistor between terminals 3 and 5 on TB1501, and a 4 ohm loudspeaker between terminals 9 & 10 on TB1501.

5. Set the AUDIO SIGNAL GENERATOR at 1 KC and connect to the Receiver IF board as shown below with the generator output at zero, and a-c VTVM across input to board. Ground Terminal 1 on A3190.



D. RECEIVER AUDIO CHECK - Cont'd

6. Increase the Audio Generator output until a 1 KC tone is heard through the speaker. Insert the phones into J1516. The 1 KC tone should disappear from the speaker and should be heard on the phones. Remove phones. Remove ground on A3190 pin 1 .
7. Set R1556 fully clockwise, R1547 fully counter-clockwise, R1669 fully counter-clockwise, R1670 fully clockwise, and R1612 fully counter-clockwise.
8. Connect the frequency counter to Junction of R1619 and collector of Q1605 on the receiver IF printed circuit. The counter should register 250 kHz ±50 cps. Remove counter.
9. Set the receiver sideband switch to LSB.
10. Turn R1554 and R1555 fully clockwise.
11. Connect the counter to emitter lead of Q1602, and adjust C1629 for a frequency of 1.5 ±2 cps as registered on the counter. Leave counter connected.
12. Set the receiver sideband switch to USB/REMOTE.
13. Adjust C1631 for a frequency of 2.0 mc ±2 cps as registered on the counter. Remove the counter.
14. Connect the a-c VTVM between the collector of Q1610 and ground.
15. Adjust R1663 for a minimum (null) reading on the a-c VTVM (approx. 110 mv). Remove the meter.
16. Set the audio generator output for a 10 mv reading on the a-c VTVM. Remove the meter.
17. Connect the a-c VTVM across terminals 3 & 5 on TB1501. The meter should read approximately 780 mv.

D. RECEIVER AUDIO CHECK - Cont'd

18. Connect the a-c VTVM across terminals 3 & 4 on TB1501. The meter should read exactly half the voltage obtained in Step 17. Remove the meter.

E. RECEIVER IF ALIGNMENT

1. Set the receiver sideband to LSB and remove the 1.5 mc crystal Y1603.
2. Connect the a-c VTVM between the base of Q1602 and ground.
3. Connect the RF signal generator between terminals 1 & 2 on the receiver IF board with the generator's output control at zero.
4. Set the generator frequency at 1.75 mc using the frequency counter, and increase the generator output to approximately 1.0 mv. The a-c VTVM should indicate some voltage present at the base of Q1602.
5. Adjust C1602 and C1604 for a peak indication on the a-c VTVM meter. Peak reading should be 10 mv minimum.
6. Reduce generator output to zero and remove meter.
7. Replace the 1.5 mHz crystal, Y1603.
8. Connect the a-c VTVM across terminals 10 and 11 on the A3189 (IF board).
9. Set the RF generator to 1.751 MHZ as indicated on the frequency counter.
10. Increase the signal generator output for an indication on the a-c VTVM. Use 10 mv scale.
11. Adjust C1655 and C1656 for a peak on the a-c VTVM. Do not exceed 10 mv, reduce RF signal generator level if necessary.
12. Connect a-c VTVM across terminals 3 & 5 on TB1501.

E. RECEIVER IF ALIGNMENT - Cont'd

13. Set volume control (R1546) maximum counter-clockwise and SQUELCH control R1547 to mid-position.

14. Turn power switch OFF, insert TTRR-module and turn power switch ON. Allow 10 minutes warm up time.

15. Connect RF signal generator through a step attenuator to antenna input jack (J1502).

16. Set RF signal generator to 100 mv at appropriate frequency ±1 kHz depending on sideband used.

17. Insert 90 db of attenuation in step attenuator. Retune C1602 and C1604 for peak.

18. Remove signal source.

19. Monitor terminal 9 on A3189 with a d-c VTVM. Adjust R1670 for an indication of +1.4V d-c.

20. Insert signal source with 40 db of attenuation. While observing the a-c VTVM carefully adjust R1669 until the meter peaks, then continue adjustment until the meter reduces by.05V from peak.

21. Adjust RF signal generator for 30 mv output, step attenuator for 96 db of attenuation, adjust R1556 until K1601 just de-energizes.

22. Remove 6 db of attenuation, adjust R1547 until K1601 just energizes.

23. Repeat Steps 21 and 22 until K1601 energizes with -90 db, and de-energizes with -96 db. (All in reference to 30 mv source). Insure relay drops out in .5 seconds or less.

24. Set RF signal generator for 100 mv output. Set 100 db of attenuation into st p attenuator.

25. Observe a-c VTVM. Insure that at least .78 volts is indicated. Reduce output, by adjusting R1612 for a 10db reading on the 1V scale.

E. RECEIVER IF ALIGNMENT - Cont'd

26. Remove the 100 db of attenuation. Insure that output does not rise more than 8 db.

27. If AGC does not hold within 8 db, repeat steps 18 & 19 increasing voltage in approximately .05 volt steps.

28. Repeat Steps 21, 22 and 23 using 70 db and 76 db vice 90 db and 96 db.

REVISION SHEET	THE TECHNICAL MATERIEL CORP. MAMARONECK NEW YORK	S 1172 LIST NO.

DATE	REV.	SHEET	EMN #	DESCRIPTION	APP.
6/30/67	Ø			ORIGINAL RELEASE FOR PRODUCTION	
10-11-67	A	ALL	18554	Chg per EMN	

TMC FORM MLR-1 2-65—4INS.