TMC SPECIFICATION				NO. S 1191
REV: Ø				
COMPILED: BN	CHECKED: BM	APPD:		SHEET 1 OF 10
TITLE:				
typed by vita 5/11/66				

TEST PROCEDURE

FOR THE

GPT-10KBA

I. TEST EQUIPMENT

Simpson 260 Multimeter

70 Ω 2W Dummy Load

PTE

SBE MF Crystals 2270 KC
3270 KC
4270 KC

MK102

Square Wave Generator

GPR-90 Receiver

S-540

NOTE: Indicate completion and acceptance of portion (s) of this test preceeded by (*) by recording required observed value or by check (✓) mark as required on attached test DATA SHEET.

II. INTRODUCTION

All units in the auxiliary rack must be tested to individual specifications and approved before installation into the system. Refer to CK , checking all interconnections and terminations.

*III. MECHANICAL INSPECTION

Give the rack a good visual inspection. Check routing of cable to see that no strain exists when units are pulled out and tilted. Check slides for ease of operation. All front panels should line up in the rack with no contact between units.

*IV. PRELIMINARY ELECTRICAL INSPECTION

1. FRAME

Check to see that power switches on all units are in the OFF or STANDBY position. Check fuses in all the units to see that they are the proper rating. On the center shield, CB3000 applies 230 VAC to the primary circuit of T3000, a regulated step-down transformer that supplies 115 VAC to the units. Turn CB3000 ON. The front fan, B3000 should start operating. Removing F3000 must stop the fan. Replace the fuse. CB3000 also controls the 28 VDC power supply and the VOX. The power light on the VOX should be ON and the and the ovens should start to cycle in about ten minutes.

2. SWCU

Turn the unit ON. The Power Light should light.

3. PSP

Turn the current control completely counter clockwise. Turn the unit ON. The light should go ON.

4. KMCU

Open the unit and check that the KEYING SELECT Switch is in the 60 MA position. Turn hold in Adj. completely counter clockwise (minimum delay). Turn unit ON. The light should go ON.

5. TIS

Turn the unit ON. The light should go ON.

6. SBE

Turn the POWER Switch ON. The light on the Power Supply should go ON and the dial light and oven should go ON in the exciter.

7. SLM

Turn the unit ON. The light should go ON.

V. PRELIMINARY ELECTRICAL TEST

1. Allow the unit at least 1/2 hour warm-up before proceeding with this portion at the test.

2. In this system the MCP connects the output of the VOX to the EXT. VOX OUTPUT jack on the center shield or to the SBE VMO IN Switch. The input for the SBE comes from either the EXT VMO jack or the VOX. The audio switches are in series with the lines from the Center Shield to the TIS. Throwing these switches to TONE IN will open the external lines to the TIS and also the TONE jacks on the APP. Thistransmitter is controlled by an AX625, TRANSMIT MODE SELECTOR. When the

PTT is activated or the switch is placed in the FSK position, a relay is energized in the relay panel in the rear of the auxiliary frame. This switches the two antenna coax relays to provide an antenna for the transmitter and grounds the receiver antenna. The coax relay then energizes the second relay in the relay panel which keys the KMCU using the PSP Power Supply. The KMCU applies the HIGH VOLTAGE, removes the RFC bias, applies full screen voltage the the transmitter and activates the PTT circuit in the SBE. Audio applied to the center shield will then go through the TIS to modulate the SBE.

*3. Check the VOX calibration at the 2 and 4 MCS. ends. Adjust if necessary. Check the HFO output on all bands. Check the ZERO BEAT indicator for proper operation.

4. Connect the AX625 to the transmitter with the mike plug going to the SBE and the PTT line going to PTT, Terminal 21 TB3002. Set the mode switch to OFF.

5. Connect a 70 ohm dummy load to the Exciter Output jack.

*6. Turn the mode switch on the AX625 to FSK. This provides a steady key. Check to see that both relays in the panel and both coax relays are activated. Adjust the PSP current to 60 MA.

*This will key the KMCU . With the KMCU keyed check for a short between Terminals 8 and 10, TB3001, 5 and 6, 7 and 8 of TB3004. On the SBE, the EXCITER indicator should go on with the EXCITER switch in the Stand-By position. Check this procedure several times. Check the operation with the AX625 switch in LOCAL position and the MK102 inserted. Turn the switch to OFF.

7. Set the controls on the auxiliary frame equipment as follows:

KMCU	TEST KEY - Normal
	KEYING CONTROL - Local
TIS	CH1-CH2 - Line
VOX	BAND - 2-4MCS
	XTAL - VMO
MCP	SBE VMO IN - VOX
	VOX RF OUT - SBE
	MODE - SBE SSB
	CH1-CH2 - Line Input

*8. SBE Check

a. Check all knobs, switches and output tuning dial for proper alignment. Place the crystals in the VMO top oven. 2270, 3270, 4270 KCS (if available). If the crystals are not available the VOX can be used.

b. Turn the meter switch to CALIBRATE and zero the meter.

c. Place the MF XTAL SWITCH to one of the crystal positions. Turn CARRIER INSERT to approximately 5.

d. Turn EXCITER SWITCH to ON, METER SWITCH to MF.

e. Tune MF TUNING for peak on meter. MF dial must correspond to crystal frequency.

f. Repeat tuning for second and third crystals to check dial calibration.

g. Turn METER SWITCH to RF. Turn OUTPUT Control full clockwise. Check the following frequencies 4, 8, 16, 28 MC.

*9. AUDIO LINE SHECK

a. Tune the SBE anywhere except to the 2-4 MC band.

b. Connect the audio lines from the PTE to LINE 2 on TB3003.

c. Check that the LINE SWITCHES on the TIS and the MCP are in the LINE position.

d. The following controls are on the SBE unless otherwise noted.

e. Turn LSB Switch to CH2, GAIN to halfway.

f. Turn METER Switch to LSB.

g. LSB Meter on SLM should read the same as the SBE meter, if not, calibrate the SLM.

h. Check for sideband reversal by switching the SBE to the 2-4 MC band. The meters on the SLM should reverse. Return the SBE to original position.

i. By switching the CH2 LINE SWITCHES on the MCP and the TIS, the audio line should be opened.

j. Repeat Steps e thru i using USB.

k. Connect the audio lines from the PTE to LINE 1 on TB3003.

l. Repeat Steps e thru j using CH1.

*10. SBE DISTORTION TEST

a. Apply a two tone test to LINE 1 on TB3003.

b. Connect the RF input of the PTE to the RF MON. of the SBE.

c. Audio LINE SWITCHES on TIS and MCP to LINE.

d. SBE VMO INPUT SWITCH to VOX. VOX RF OUTPUT SWITCH to SBE.

e. Turn USB Switch to CH1.

f. Set USB GAIN to -10 db.

g. Tune the SBE to 2.0 MC.

h. Check distortion products and carrier rejection (make sure CARRIER INSERT is at 0). Distortion products should be down at least 40 db. Carrier should be down 50 db.

11. EXT VMO and EXT. VOX

a. Jump the EXT. VMO and the EXT. VOX jacks on the center panel.

b. On the MCP turn the SBE and VOX switches to EXT.

c. The VOX should still drive the SBE. (SBE in VMO position).

*12. SBE CW TEST

a. Turn the mode switch on the MCP to SBE CW.

b. Turn the EXCITER SWITCH to ON.

c. Tune the SBE to any frequency.

d. Grounding Terminal 24, CONT. KEY SBE should key the Exciter.

e. Unground Terminal 24. Leave the SBE ON for the TIS check.

*13. TIS KEYING CHECK

a. Set the TIS as follows:

FUNCTION - FSK
CENTER FREQ. - 2550
TEST - LINE
KEY MODE - 50V
EXCITER - FSK, FAX, CW on one channel

b. Connect a square wave generator to TERMINAL 5 and 6 of TB3001. Observe the polarity.

c. Adjust the output of the square wave generator to 50V.

d. On the MCP, turn the MODE SWITCH to TIS-CW.

e. Tune the receiver to the output of the SBE. By using the CPS SHIFT, the MARK-SPACE tones should vary in the receiver.

*f. Turn the MCP MODE SWITCH and the TIS FUNCTION SWITCH to CW. A single tone should be heard in the receiver.

g. Connect the square wave generator to Terminal 3 and 4 of TB3001. Set the output to variable.

*h. Place the TIS and the MCP to FAX.

i. Varying the voltage output of the square wave generator should vary the tone in the receiver.

j. Check the other TIS channel.

VI. FINAL ELECTRICAL TEST

1. Continue the test of the GPT-10KBA by following the procedure outlined in S-540, Section 3. To key this transmitter, turn the KMCU KEYING CONTROL to LOCAL and operate the TEST KEY. The AX625 TRANSMIT MODE SELECTOR must be in the FSK position to provide an antenna for the transmitter.

*2. After completion of S-540, Section 3, tune the transmitter to any frequency in the SBE SSB mode. Connect the receiver to the receiver antenna jack of the coaxial relay. Tune the receiver to the same frequency. Turn the AX625 switch to LOCAL. Turn the KMCU to REMOTE keying control. Connect the mike to the AX625 and operate the transmitter. Repeat this several times. The transmitter should not interfere with the receiver operation. Check for proper operation of the KMCU ALARM lights.

VII. CHECK LIST

		ACCEPTED
1.	MECHANICAL INSPECTION	
2.	PRELIMINARY ELECTRICAL TEST	
3.	VOX CALIBRATION	
4.	RELAY CHECK	
5.	KMCU KEYING CHECK	
6.	SBE OUTPUT CHECK	
7.	AUDIO LINE CHECK	
8.	SBE DISTORTION CHECK (-40 db)	
9.	SBE CARRIER REJECTION CHECK (-50 db)	
10.	SBE CW KEYING CHECK	
11.	TIS FSK KEYING CHECK	
12.	TIS CW KEYING CHECK	
13.	TIS FAX KEYING CHECK	
14.	FINAL SYSTEM CHECK	
15.	KMCU ALARM TEST	

_____ (TESTER)

_____ (MFG. NO.)

_____ (FINAL APPROVAL)

_____ (DATE)

REMARKS: _____

REVISION SHEET

THE TECHNICAL MATERIEL CORP.
MAMARONECK NEW YORK

S 1191
LIST NO.

DATE	REV.	SHEET	EMN #	DESCRIPTION	APP.
5/17/67				ORIGINAL RELEASE FOR PRODUCTION	