

DATE <u>1-24-62</u>	TMC SPECIFICATION NO. S 632				
SHEET <u>1</u> OF <u>5</u>					
<table border="1" style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;">A. R. F.</td> <td style="width: 50%;"></td> </tr> <tr> <td style="text-align: center;">COMPLETED</td> <td style="text-align: center;">CHECKED</td> </tr> </table>	A. R. F.		COMPLETED	CHECKED	TITLE: <u>SBS-1 TEST PROCEDURE AUDIO AND DETECTOR DECK</u>
A. R. F.					
COMPLETED	CHECKED				
<u>O.R.F.</u> APPROVED	OBSOLETE, USE S705				

The audio deck of the SBS-1 consists of the following:

- Two product detectors, Channel A and B.
- Two AM detectors, Channel A and B.
- Two audio amplifiers, Channel A and B.

I TEST EQUIPMENT REQUIRED (OR EQUIVALENT)

- A. 1- AC VTVM, Ballentine 861.
- B. 1- RF VTVM, H.P. 410B.
- C. 1- RF Generator, Model 82.
- D. 2- 1 watt, 680 ohm resistors.
- E. 1- Audio generator, H.P. 200CD.
- F. 1- Audio analyzer LP-1a.
- G. 1- Counter, H.P.

II PRELIMINARY

- A. Inspect the unit for mechanical imperfections such as loose screws, terminal boards, etc.
- B. Inspect for obvious wiring errors.
- C. Check for ~~B+~~ shorts with an ohmmeter.
- D. Turn power switch from STAND-BY to ON position and AFC to ON.

III TESTING OF THE AUDIO SECTION, CHANNEL A.

- A. Rotate the Line Level control of Channel A to full clockwise position. This control is screwdriver adjusted behind the front panel.
- B. Place the AC VTVM across terminals 2 and 4 of E-6800. This connection places the meter across the Chann I A-0-1 watt audio output.
- C. Connect a 1 watt 600 ohm resistor across terminals 7 and 9 the 0-1 MW output of Channel A.
- D. Place the audio generator on the post of R-6005, (15K resistor to ~~S~~4 grid) and set frequency at approximately 1KC and 2.5 millivolts. Both detection switches should be in the SSB position.

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- E. The line level meter of Channel A should read OVU or 100%,
- F. The AC VTVM should read approximately 23 volts (one watt across 600 ohms). This meter reading is also the "0db reference setting."
- G. Vary the audio generator above and below 1KC; in both cases record the 3db drop off points. Record this data on the spec. sheet. The 3db points should be 200 cycles or lower, and 10KC or higher. Another quick run with the audio oscillator, and viewing the scope at the same time should reveal a clean sine wave. If distortion, such as clipping of the waveshape appears, check for wrong components, wiring errors, or bad tubes.
- H. Set up as in D and F, then remove generator. Switch the AC VTVM on a low range so as to obtain a reading. Rotate R-6036, the hum balance pot, CW and CCW to obtain a minimum reading on the AC VTVM. This reading should be below 23 millivolts. Record on the spec. sheet in the last page of this test procedure.
- I. Replace audio generator with TTG. Set up TTG as follows:
1. Audio two tone position.
 2. RF tones OFF.
 3. Vary gain as in III F.
- J. Place an audio analyzer across the Channel A. One watt output in B and set up as follows:
1. Power-on.
 2. Vertical calibration selector-DB.
 3. Sweep range selector-20KC log.
 4. Max. input Mult. -X1000.
 5. Input Pot-set to 0db reference line the amplitude of the two audio tones from the TTG.

The total distortion products should be down 40db or better. Record on spec. sheet.

IV TESTING OF THE AUDIO SECTION, CHANNEL B

- A. ~~Rotate~~ the line level control of Channel B to full clockwise position. This control is screwdriver adjusted behind the front panel.

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- B. Place the AC VTVM across terminals 12 and 14 of E6800. This connection places the meter across the Channel B 0-1 watt audio output.
- C. Connect a 1 watt 600 ohm resistor across terminals 17 and 19, the 0-1 MW output of Channel B.
- D. Switch the AC VTVM on a low range so as to obtain a reading. Rotate R-6073, the hum balance pot, CW and CCW to obtain a minimum reading on the AC VTVM. This reading should be below 23 millivolts. Record on the spec. sheet in the last page of this test procedure.
- E. Place the audio generator on the post of R-6042, (15K resistor to 6S4 grid), and set frequency at approximately 1KC and 2.5 milliwatts.
- F. The line level meter of Channel B should read OVU or 100%.
- G. Same as III G.
- H. Same as III H.
- I. Repeat III I.
- J. Repeat III J.

V TESTING OF THE AM DETECTORS, CHANNELS A AND B

- A. Place the AC VTVM and scope as in Part III B, and both ~~det~~ection switches to the AM-position.
- B. Connect the signal generator to T-6000, Pin 3, located on the detector board, A-2193. Adjust generator for 250KC, modulated with 50% of 1KC, output .33 volts. The AC VTVM should read approximately 23 volts and a clean 1KC sine wave ~~shape presentation~~ on the scope.
- C. Place A.C. VTVM and scope as in Part IV B.
- D. Connect signal generator to T-6002, pin 3 also a detector board, A-2193. Adjust generator for 250KC, modulated with 50% of 1KC, output .33 volts. The AC VTVM should read approximately 23 volts and a clean sine wave presentation.

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VI PRODUCT DETECTOR TEST

- A. Place the AFC switch to the ON position. This disables the 250KCS oscillator going to the post of R-6005 & post of R-6042 of the Channel A and B detector. With the AFC switch in the OFF position, there will be 1 volt of 250KC at the two points mentioned. Record the voltage on the spec. sheet.
- B. Turn the Channel A AM CW SSB switch to the SSB position and the AFC switch to OFF.
- C. Place the RF signal generator on the post of R-6074. Set generator for 250KC, modulated 50% with 1KC .33 volts output.
- D. The output of Channel A, terminals, 2 and 4 should read 23 volts with the AC VTVM, or OVU on the Channel A, line level meter. Remove generator and AC VTVM.
- E. Turn the Channel B AM CW SSB switch to the SSB position and the AFC switch should remain OFF.
- F. Place the RF signal generator on the post of R-6075. Set generator as in C.
- G. Repeat D, but for channel B. This completes the product detector tests.

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1. HUM BALANCE

Channel A _____ Milliwatts.

Channel B _____ Milliwatts.

2. FREQUENCY RESPONSE (3DB POINTS)

Channel A _____ Cycles and _____ KCS.

Channel A waveshape _____.

Channel B _____ Cycles and _____ KCS.

Channel B waveshape _____.

3. Line level meter Channel A _____.

Line level meter Channel B _____.

4. AM detector Channel A _____.

AM detector Channel B _____.

5. 250KC Product Detector injection _____ volts.

Product Detector Channel A _____.

Product Detector Channel B _____.

Distortion Channel A _____ db.

Channel B _____ db.

Serial Number _____

Date _____

Tested by _____

Accepted by _____

