DATE 6/4/56
SH. 1 OF 4
COMPILED BY

TMC SPECIFICATION NO. S-295 A

TITLE: TEST PROCEDURE--SINGLE SIDEBAND ADAPTER   JOB 459

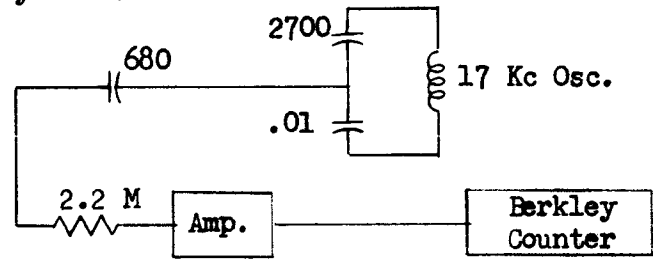APPROVED ╫   Superseded, Directly Replaced By S333

1. Measure B+ lines with an Ohmmeter for shorts to ground.

2. Measure B+ 270V and B+ 150V.

*3. Align 17 Kc oscillator by adjusting C24. The frequency of oscillator is to be measured through an amplifier which feeds the Berkley Counter.

4. Measure the 17 Kc oscillator injection voltage on pin 1, V5. (use Hewlett Packard Model 410 AC VTVM.) (8-10 V.A.C.)

*5. With Band Spread Dial on 0, condenser should be half-way opened. Leave on 0 for remainder of 472 Kc and 438 Kc alignment. Align 472 Kc oscillator (SIDEBAND SWITCH IN "UPPER") by adjusting the slug in L1. Measure the frequency through the amplifier feeding the counter. (SSB-AM SWITCH IN "AM")
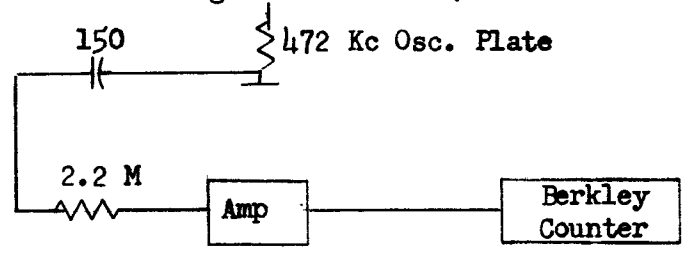
*6. Align 438 Kc oscillator (SIDEBAND SWITCH IN "LOWER") similarly by adjusting C16. (SSB-AM SWITCH IN "AM")

7. Measure the 472 Kc and 438 Kc oscillator injection on pin 1, V2. (use Hewlett Packard Model 410 A.C. VTVM) (8-10 V.A.C.)

8. Band Spread Dial calibration -- ch ck very 1 Kc for both upper and lower sidebands. Bend plates on capacitor if necessary. (Calibration to check within ±1 division - 100 cps)

* Frequency to be adjusted within ±100 cps.

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TMC   SPECIFICATION NO. S-295 A
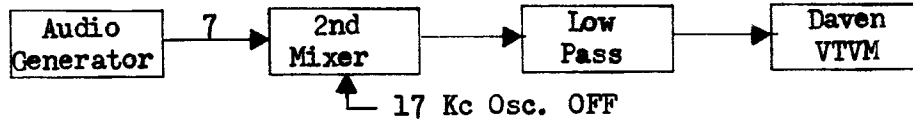
TITLE: TEST PROCEDURE -- SINGLE SIDEBAND ADAPTER   JOB 459

APPROVED

9.   Low Pass Filter rejection of 17 Kc.

SSB-AM Switch in AM position.

```
┌───────────┐  7  ┌───────┐     ┌───────┐     ┌───────┐
│  Audio    │────▶│  2nd  │────▶│  Low  │────▶│ Daven │
│ Generator │     │ Mixer │     │ Pass  │     │ VTVM  │
└───────────┘     └───────┘     └───────┘     └───────┘
                      ▲
                      └── 17 Kc Osc. OFF
```
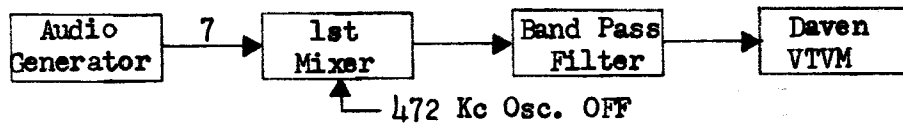
Feed into pin 7, V5, approximately 0.15 V.A.C. at 200 cps.

Read 1 volt on Daven VTVM. Change input frequency to 17

Kc keeping input level constant. Measure voltage on Daven

VTVM and take a ratio between voltage out at 200 cps and

17,000 cps. Ratio should be 100x (40db) or greater.

10.   Band Pass Filter Characterisitcs.

SSB-AM Switch in AM position.

```
┌───────────┐  7  ┌───────┐     ┌───────────┐     ┌───────┐
│  Audio    │────▶│  1st  │────▶│ Band Pass │────▶│ Daven │
│ Generator │     │ Mixer │     │  Filter   │     │ VTVM  │
└───────────┘     └───────┘     └───────────┘     └───────┘
                      ▲
                      └── 472 Kc Osc. OFF
```

Feed into pin 7, V2, a signal at 18,400 of such a magnitude

as to produce 1 V.A.C. on the filter output. Then measure

band widths at 6 db, 20 db, 50 db down from the 1 volt 1 vel.

Check against filter characteristic curve.

11.   Check AVC voltage and effect on audio output signal.

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TMC   SPECIFICATION NO. S-295 A
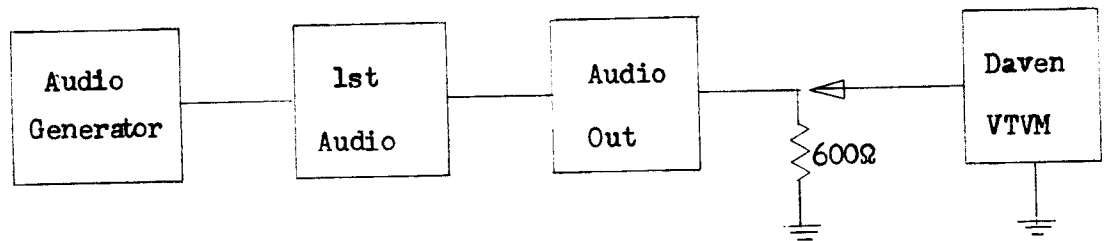
TITLE: TEST PROCEDURE -- SINGLE SIDEBAND ADAPTER

JOB 459

12. **Sensitivity Measurements** -- With AVC "OFF", NOISE LIMITER "OFF" measure the RF input signal at 455 Kc modulated 50% at 1000 cps to produce 0.3V rms audio output at J2 for both positions of SSB-AM switch. ($\approx$0.3V input for SSB position; $\approx$0.4V input for AM position.)

13. Connect the SSB Adapter to a receiver and give an air test. SSB signals are usually found at 14.3 mc.

14. Listen to noise limiter action.

15. Listen to AVC ON-OFF action.

16. Listen to AVC SLOW/FAST action, while listening to a CW signal.

17. With Band Spread at zero tune in an "UPPER SIDEBAND" AM signal in the "AM" position of SSB-AM switch, for maximum intelligibility. Switch to "LOWER SIDEBAND." If signal is unintelligible, adjust C16 until it is. Then there should be no difference in intelligibility as you switch from upper to lower sideband or vica versa.

18. Audic amplifier test.

At 1000$\sim$ input 0.2V a.c. will produce 1 watt across 600 Ω load (24.5V)

DATE 10/29/56
SH. 4 OF 4
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P. L. K.
APPROVED P. L. K.

TMC   SPECIFICATION NO. S-295 A

TITLE: TEST PROCEDURE --SINGLE SIDEBAND ADAPTER   JOB 459

THE TECHNICAL MATERIEL CORPORATION

MAMARONECK, NEW YORK

Test data sheet GSB-1   Part of TMC Specification S-295

Serial Number   _____

17 KC Osc.   _____

472 KC Osc.   _____

438 KC Osc.   _____

Dial Calibration   _____

Sensitivity   AM   _____

               SSB   _____

Audio Output   Line   _____

               Speaker taps   _____

               Phones   _____

Controls   Bandspread   _____

               Sideband Upper/Lower   _____

               Audio Gain   _____

               AVC On/Off   _____

                   Fast/Slow   _____

               Noise Limiter   _____

Tested By_____

Date_____

REVISION SHEET

THE TECHNICAL MATERIEL CORP.
MAMARONECK   NEW YORK

S-295

LIST NO.

DATE	REV.	SHEET	EMN #	DESCRIPTION	APP.
4/15/64	A	1	11242	Superseded Directly Replaced By S333	