

COLLINS RADIO COMPANY

CEDAR RAPIDS, IOWA

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WATER ASHE RADIO CO.

FIELD SERVICE

AMATEUR SERVICE INFORMATION LETTER

October 14, 1959

SUBJECT: Loading of the 30S-1 Amplifier

Some customers have reported difficulty in loading the 30S-1 amplifier. The simplicity of the operation itself seems to be the confusing factor.

Particular attention should be paid to pertinent sections of paragraph 3.1, page 3 of the second edition of the 30S-1 Instruction Book which reads as follows: (Sections which are occasionally misunderstood are underlined.)

3.1 OPERATION IN SSB OR CW SERVICE

- A. Set POWER-OFF switch (1) to POWER position. Set up the 32S-1 exciter for the desired band. Adjust exciter idling plate current to 50 ma. Adjust 32S-1 or KWM-1 ALC ZERO with alc jacks on 30S-1 and exciter connected and with 30S-1 filaments hot. Tune and load the exciter into the antenna or dummy load, whichever is connected at ANTENNA jack J103 at the rear of the 30S-1. Tune and load the 32S-1 according to its instruction book, except load only to 200 ma plate current. This change in procedure is necessary to realize the low system distortion for which this equipment was designed.
- B. Reduce exciter output to zero by reducing microphone gain to zero.
- C. Turn 30S-1 BANDSWITCH (3) to desired band, turn MULTIMETER switch (4) to TUNING & LOADING POSITION, and set SSB-CW switch (5) to desired mode of operation. Disconnect dummy load and connect antenna to J103. Press plate ON pushbutton (6). The pilot lamp (7) should light.
- D. With exciter EMISSION switch in LOCK KEY position, increase exciter output by increasing microphone gain until 350 ma plate current is indicated on PLATE CURRENT meter (8).

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- E. Observe the MULTIMETER (9). Adjust the TUNING control (10) for MULTIMETER dip and adjust the LOADING control (11) for MULTIMETER zero, until the meter indication is zero at the dip.
- F. Increase exciter output until 30S-1 plate current is 300 ma for SSB or 400 ma for CW.
- G. Redip and reload with the TUNING and LOADING controls, keeping multimeter indication at zero.
- H. Recheck PLATE CURRENT meter indication for proper value as given in step f. Repeat steps f and g, as necessary, until the power amplifier is loaded to 400 ma for CW or 300 ma for SSB. DO NOT switch from SSB to CW (or from CW to SSB) while operating key or microphone.
- I. Pressing the plate OFF pushbutton (2) automatically switches the exciter to the antenna for low-power operation.

Loading of the 30S-1 differs from the procedure used for most transmitters in that the loading control is used to set the Tuning Meter to zero. The Tuning Meter circuit is actually a bridge across the final tube which checks the gain of the tube. When the output network is tuned so that the final tube sees the proper impedance, the Tuning Meter will be on zero. The 32S-1 mic gain is adjusted to give the proper current indication on the final - which, when the tuning meter is on zero and the final is dipped, will be 300 mils for SSB operation. In other words, the final is loaded to zero indication, while keeping the plate current indication at 300 ma.

One thing left out of the book was that after loading is completed and the emission switch of the 32S-1 set to either USB or LSB, the mic gain should be adjusted to give an average of 6 db of ALC as in normal operation of the 32S-1.