

Operating in AM with Collins S-Line

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Simple circuits have been described for modification of Collins S-Line transmitters to operate AM by injection of the BFO output into the first mixer stage, bypassing the balanced modulator and mechanical filter, and a commercial modification kit was at once available for this. (1,2,3) These references are reviewed, and a circuit enabling AM operation with S-Line transmitters is described.

A circuit adapted from the sources mentioned, which was in use in a 32S-3A, follows. This allows carrier insertion in either USB or LSB mode. The inner conductor of the input coax, (RG-174/U was used), is connected to the EMISSION switch of the transmitter, SB-J, contact #12, to which C-92 (.01) and L-28 (2 mH RFC) are connected, (this is the BFO output), and the shield to a convenient ground point. The center conductor of the output coax is connected to pin 7 of V4, (first mixer input), and shield to ground near the tube socket. The potentiometer and capacitors were mounted on a 1 1/2" x 1 1/2" PC board attached to the final amplifier cage with one of the existing screws, and thus no holes were drilled.

Operation is simple. Turning the potentiometer ganged switch "on" enables the AM feature, after tuning up in the usual manner, and turning the EMISSION switch to either USB or LSB. The pot is advanced until 100-125 mA plate current is observed, giving 20 - 30 watts of carrier output, and the MIC GAIN control advanced to give 50 - 60 watts PEP output, (or to the point that upward deviation in plate current is just barely observed on voice peaks, if no PEP reading wattmeter is available). Audio quality reports have been excellent, and no adverse effects on the transmitter have been observed. (100 - 125 mA of carrier plate current should not be exceeded).

The circuit described is a simple way for S-Line owners to join the resurgence of AM operation. Enjoy! * *

Footnotes

1. Popkin-Clurman, "A.M. with Collins SSB Units", QST September, 1961
2. McCollister, "Clean AM with S-Line Units", QST, April, 1962
3. Universal Service, 114 North Third Street, Columbus, Ohio, "Instructions for AM Adapter Mod. AM-S3-1".

