Pictures: courtesy of Homestead Air Force Base Photo Lab.

Instant Sideband

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Many more amateurs would enjoy the benefits of sideband were it not for the complexity of building an SSB exciter or the expense of the commercial units. The John Costas (W2CRR) article in the January 1957 CQ certainly changed all that when it introduced double sideband.

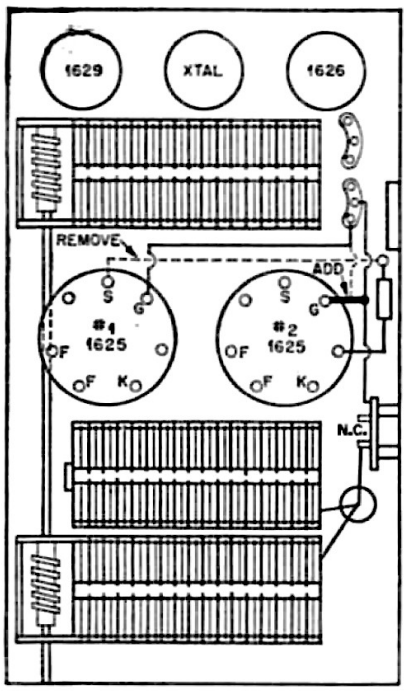


Fig 1. Wiring changes of BC-696 for DSB operation.

The article headed me for the work bench, Command-set (BC-696) in hand. The March 1957 CQ featured a 100 watt mobile conversion of the ARC-5, but I did the whole job even quicker and simpler. The whole conversion shouldn't take but a few minutes. All there is to it is the removal of two wires, the addition of a couple of bypass condensers, a wire jumper, and a screen modulating transformer.

Basically what you have to do is run the grids in push-pull, the screens in push-pull and the plates in parallel. Since all three are in parallel to start with you have to modify the grid and screen circuits. If your unit has not yet been converted at all you will want to wire the filaments for 12 volts instead of 24 volts (see *fig 3)*. You will also probably want to take out the relays and add them to your junk box, you won't need them in the rig.

Remove the screen connections to the 1625's *(fig 1)*. Take out the entire wire, it won't be needed. Remove the wire from the grid connection of the #2 1625 socket, cut it off where it connects to the wire going to #1 1625 grid. . . as shown by the broken line in *fig 1*. Connect a wire from the #2 grid to the neutralizing condenser. Make this connection to the terminal of the condenser that has the black wire connected . . . heavy line in *fig 1*.

If you don't happen to have an audio amplifier or modulator around the shack you can build up something like *fig 2* which will serve adequately. The trick is to have a push-pull output transformer, ground the center tap and run the output to the two 1625 screens. A .0005 (at least 600 volts) condenser from each screen to ground will bypass any stray r.f.

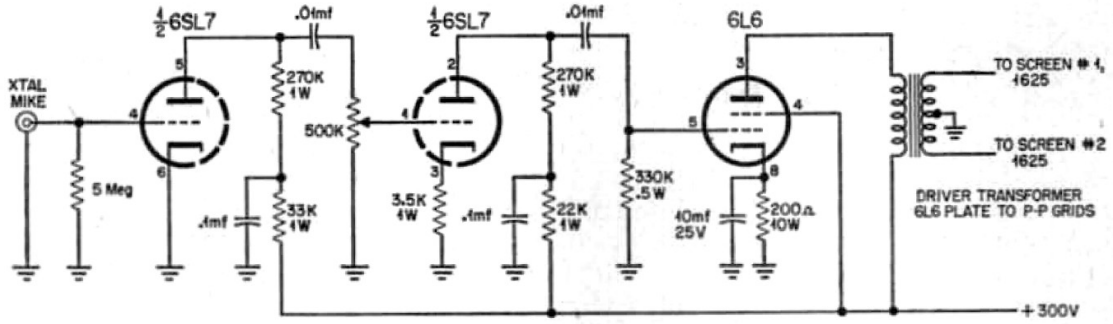


Fig 2. Modulator for BC-696 Transmitter.

Tuning Up

The final may be operated with from 300 to 750 volts on the plates, it is not critical. You can tune up by whistling in the mike, putting in an audio tone, or by temporarily removing one of the 1625 tubes from its socket, putting 250 volts dc on the screen audio driver transformer center tap. Tune the antenna circuit in the customary manner, remove the d.c. from the screens, replace the 1625 tube and you are ready to go.

So there you are on sideband. Double sideband, to be sure, but at least you have gotten away from that arch enemy of the kilocycles: heterodynes. Many of the SSB gang won't know you are using DSB unless you tell them. Come on, get your feet wet. ■

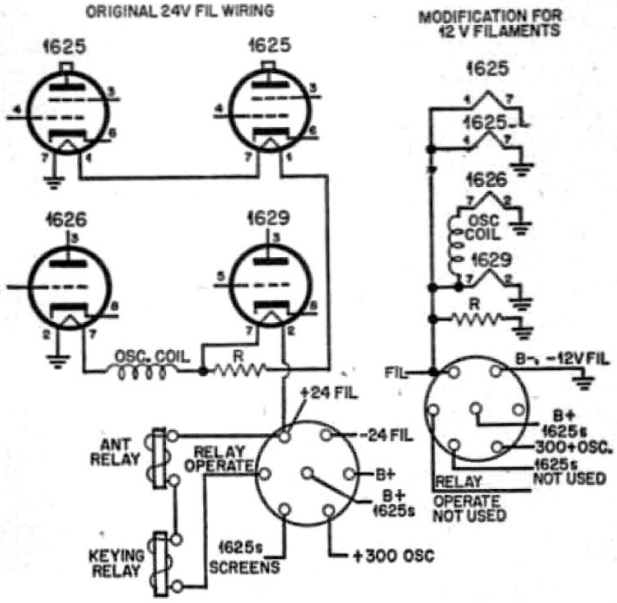
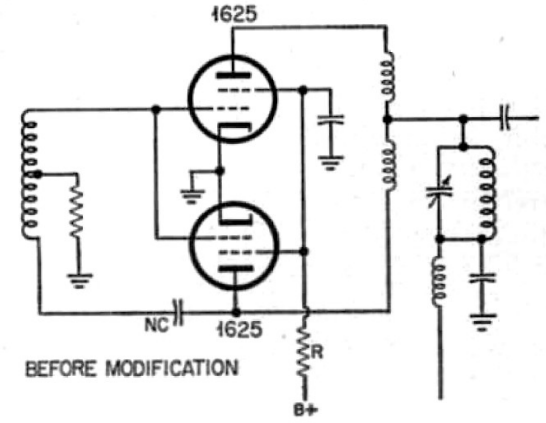
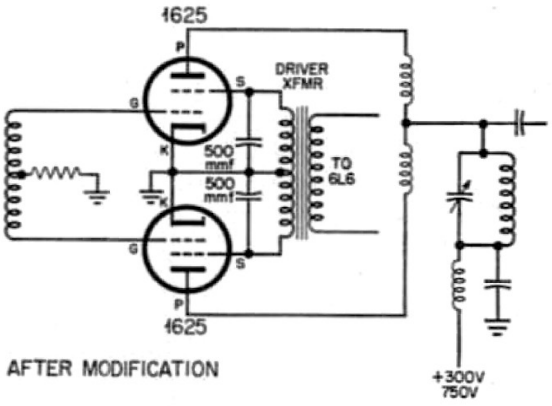


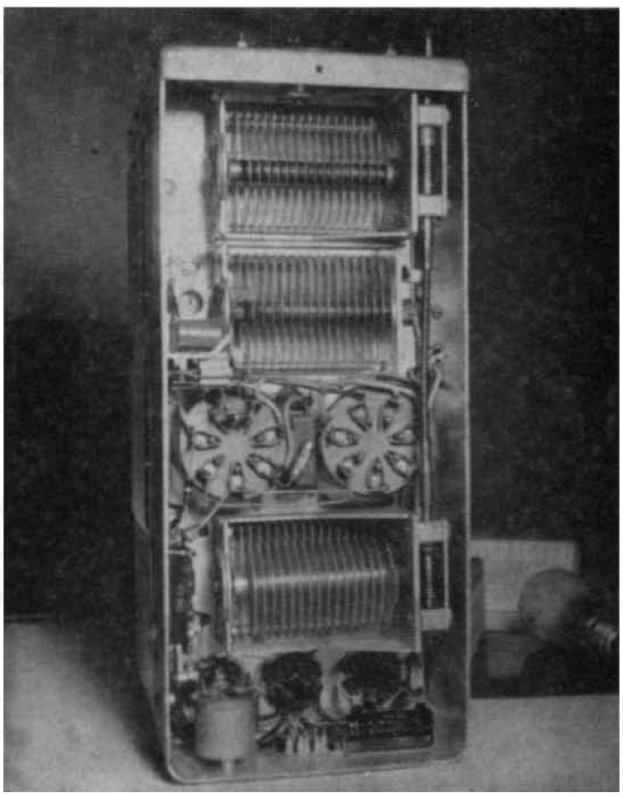
Fig 3.



You start with this . . .



and end up with this.



Showing converted BC-696.