

SSB and the National NC-300

I am sure that there are many who have the National NC-300 Receiver and are using it to copy SSB and CW. This receiver has many good features and with very little effort can be made to perform exceptionally well in this mode of operation. There are two shortcomings, both of which will be dealt with in this article. In installing the modifications no holes have to be drilled and the front panel is not destroyed. The complete modification can be performed in less than three hours. The first change was to alter the time constant of the avc circuit. The discharge time was lengthened considerably to provide for smoother operation when receiving CW or SSB transmissions. The avc attack and release times have been set so as to give optimum performance while receiving AM, SSB or CW stations. The product detector and bfo oscillator circuits are modified next. In this change the dc voltage ratios and the signal injection voltage ratios are altered. With this change the action of the product detector is smoother and the amount of distortion is greatly reduced.

Another modification was wired into the receiver which made the unit more desirable for SSB use and can prove to be very useful when in the CW mode. This change is also covered at the end of the article.

1. Remove the cover from the bfo can (T6)

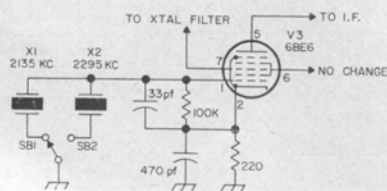


Fig. 1. 2nd converter modifications.

2. Clip out the 100k resistor (R39) located between terminals B & C and replace cover.
2. Connect a .5 uf @ 50 volt mylar capacitor across R-19 which is located on a terminal strip near L9.
3. Remove R-30 (68k) and replace with a 27k ½ watt resistor. This resistor is located on a terminal strip close to the empty hole by V6.
4. Remove C-55 (5 pf ceramic) and replace with a 5-80 pf trimmer (Arco 463). This capacitor is connected between pin 5 of V6 and an adjacent terminal strip.
5. Remove the wire connected between pin 1 of V8 and terminal C of T6.
6. Connect a 100 ohm resistor from pin 1 of V8 to terminal C of T6.
7. Connect a 220k ½ watt resistor from pin 1 of V8 to ground.
8. Connect a combination of a 330 ohm resistor and a .1 uf 200vdc capacitor from pin 2 of V8 to ground.
9. Remove R40 (68k) connected from pin 5 to pin 6 of V8.
10. Remove C-78 (.047uf) which is connected from pin 6 to V8 to ground and replace with a .02uf 600 vdc paper capacitor.
11. Remove R-54 which is connected between pin 6 of V8 and a terminal strip.
12. Remove R-38 which is connected between pin 7 of V8 and ground.
13. Connect a combination of a 200pf ceramic capacitor and a 10k ½ watt resistor from pin 7 of V8 to ground.
14. Solder a 2-lug terminal strip to the case of the output transformer (T2) located near V8. Place the strip on the side nearest V8.
15. Connect a 100k ½ watt resistor from pin 5 of V8 to one of the insulated lugs on the