

terminal strip just installed.

16. Connect a 56k ½ watt resistor from the lug on the terminal strip with the 100k resistor just connected to it, to the other insulated lug on the terminal strip.
17. Connect a 10k ½ watt resistor from the lug with the 56k resistor only on it to pin 6 of V8.
18. Connect a wire from the junction of the 56k and 100k resistors to pin 6 of V10 (6AQ5). Replace C-41 (.01) with .22µf at 35v.
19. Turn the receiver on with the rf gain fully clockwise and the mode switch in the AM position. The calibrator is then turned on. Tune in the calibrator for maximum deflection of the "S" meter. Place the mode switch in SSB and rotate L6 until the beat note is zero-beat. This operation sets the bfo in the proper position on the *if* slope.
20. With the receiver in the SSB mode of operation and the rf gain fully clockwise, adjust the variable trimmer on V6 from minimum capacity up to the point where distortion is heard while receiving a strong SSB or CW station. Back the capacitor off about one-half turn and leave at this setting.

This completes the wiring changes dealing with the product detector, CWO oscillator, and AVC circuits. The receiver *if* stage should be aligned for optimum performance as some of the components that were changed will tend to load the *if* strip differently than before. If the following selectable sideband modification is going to be installed do not realign the receiver at this time as this will be necessary after the sideband change also. Whether the receiver is aligned or not the trimmer capacitor in step 20 will have to be set as this sets the level of the signal fed from the *if* strip to the detector. The receiver should be placed in the SSB mode when receiving CW or SSB stations because in this position only is the avc employed. If it is desired to eliminate the avc action when receiving a station the mode switch should be placed in the CW position. The "S" meter will become more "bourbon" and will read much higher than before. By retarding the rf gain control one-quarter turn, the meter will read correctly.

### Selectable sideband modification

Following is the modification for installing a switch in the NC-300 in order to provide for upper and lower sideband selection without touching the CWO control. This is ac-

complished thru the addition of two crystals, one on each side of the *if* bandpass

1. Remove the wires from the phone jack on the front panel and connect the blue and green wires together. Do not remove the black wire from the xmt-rec switch. If desired, the phone jack may be mounted on the rear of the chassis and re-connected so the front panel will not be disturbed. Remove the phone jack from the front panel.
2. Install a spdt rotary switch in the hole where the phone jack was removed. If a rotary type switch is used, the hole will not have to be enlarged.
3. Disconnect the wires connecting T5 to the rest of the circuits.
4. Remove T5 and replace with a plate upon which are mounted 2 crystal sockets which will hold crystals X1 and X2.
5. Remove R9 which is connected to pin 1 to V3.
6. Remove the wire connected to pin 2 of V3.
7. Connect a combination of a 33pf capacitor and a 100k ½ watt resistor from pin 1 to pin 2 of V3.
8. Connect a combination of a 220 ohm ½ watt resistor and a 470pf capacitor from pin 2 of V3 to ground.
9. Connect a wire from pin 1 of V3 to one end of each of the two crystal sockets.
10. Connect the common terminal of the spdt switch installed earlier to the black wire, the other end of which is connected to the xmt-rec switch.
11. Connect one of the switched terminals of the spdt switch to one of the crystal sockets.
12. Connect the other terminal of the switch to the remaining crystal socket.

The wiring changes required to provide for selectable sideband are complete. In most receivers it will be found that the correct setting for the CWO control is half-way between the center and the position marked "2". The *if* strip in the receiver should be peaked up due to the fact that the crystals will be on a slightly different frequency than the coil network that was removed. The 2295 kc crystal will provide lower sideband on 80 and 40 meters and upper sideband on 20,15 and 10 meters. The 2135 kc crystal will provide upper sideband on 80 and 40 with lower sideband on 20,15 and 10 meters.

This completes a series of modifications that I believe you too will agree makes the National NC-300 a real fine-business single sideband receiver. . . . W6HOC