

KW-77 MONITOR MUTING

RECEIVER MODIFICATION

MOST CW and SSB operators like to be able to monitor their transmitted signals without having to fiddle with receiver controls after each change-over operation. In most instances this is easily effected by having a pre-set resistor somewhere in the receiver RF/IF gain circuit, to reduce greatly receiver sensitivity during transmission.

Owners of the KW-77 receiver will have discovered that such a check on transmission can be made only on 80m. and that on all the other bands the muting is such that the receiver is completely dead. Muting in the KW-77 is achieved by switching out the screen-grid HT feed to the RF stage, first mixer and IF amplifier. The HT to the anode of the crystal controlled first oscillator is also switched off. This oscillator is not used when the receiver tunes 80m. so the muting does not completely "kill" the receiver on this band. On all the other bands the crystal oscillator is essential to the operation of the receiver and it must be working if a listen-through facility is desired.

Modification

When a KW-77 was acquired the first thing was to explore the possibility of modifying the muting system without making involved changes in wiring, which might reduce the re-sale value of the receiver. Examination of the circuit diagram and the underside of the receiver showed that the job could be done in less than five minutes, and that the original circuit could be put back in about the same length of time.

Fig. 1 shows the original muting circuit with the wiring identified and circuit references as in the KW-77 manual. Fig. 2 explains the modified version. The crystal oscillator HT supply is no longer switched but comes directly from the 150-volt stabilised line; and an external relay which closes when receiving is energised by the station push-to-talk or change-over switch. It was found that the sensitivity of the receiver during transmission was inadequate, so a 270K 2-watt resistor was wired across the relay contacts to provide a little HT for the screen grids.

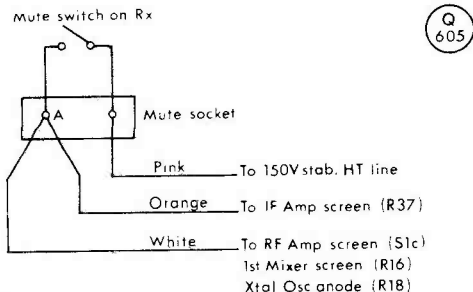


Fig. 1

Fig. 1. Sketch to show the original muting circuit in the KW-77 receiver. This gives sidetone on 80 metres only.

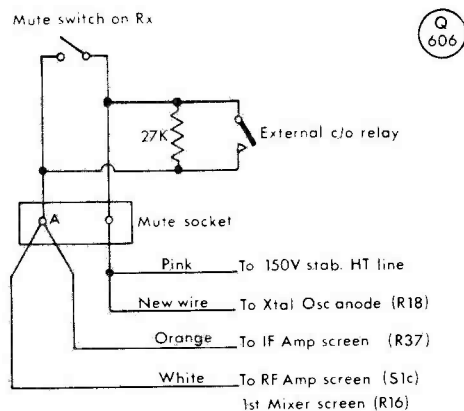
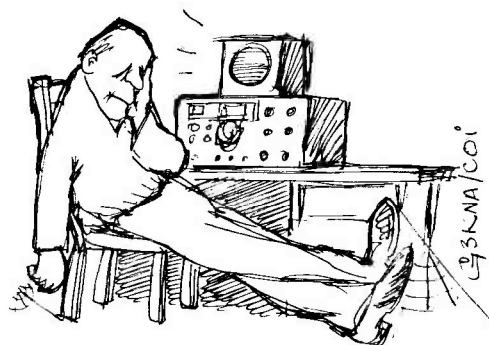


Fig. 2

Fig. 2. The modified muting circuit. It provides for listen-through (monitoring) on all bands and, being easy to apply, is well worth incorporating.

The actual modification involves the unsoldering of the two white plastic covered wires from the lower of the three feed-through insulators located on the central screen beneath the chassis adjacent to V2 (first mixer/oscillator). The two white wires are soldered together and the joint is protected by a strip of insulating tape. The feed-through they came from connects to the anode of the crystal oscillator via R18, and a new lead is soldered to it and taken to the 150-volt stabilised line; a convenient point is the lug of C90a (a metal cased electrolytic capacitor) carrying three pink wires. No other internal changes are necessary if an external relay is used for muting. Should the front panel muting switch be needed to function as a control, the 270K resistor can be wired across the mute socket at the back of the receiver.

Many amateurs hesitate to make any modifications to commercial equipment—but the changes outlined here will be in no way detrimental to the operation or the value of the receiver, and will prove to be the answer for CW, and SSB, operators who normally wear phones and like to know how they sound and that they are dead on frequency.



"... Now for the final-final-final—as I was saying ..."