

New For

By Bruce Edwards

THE KW2000 series transceivers has been

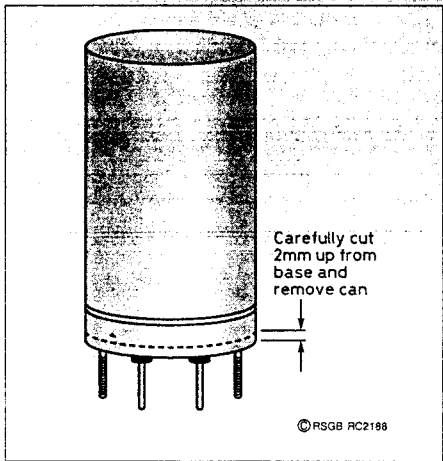


Fig 2: Where to cut the Kokusai filter open.

around the base, as shown in Fig 2, and remove the can. Lift out the filter element and unsolder the four leads. You will now have an assembly which looks like Fig 3. Clean the space that the filter lies in. Methylated spirit will dissolve the residue of foam rubber. Wire the ceramic filter as shown in Fig 4 and wrap it in tape in order to insulate the pins. You will, of course, have colour coded or otherwise marked the leads so that the ground connections can be identified! Place the filter in the appropriate space, and solder the four leads in place, cutting them fairly short first. The top of the can can now be put back in place, held there by three or four blobs of solder, and the whole filter unit refitted in the transceiver.

One point that should be noted concerns the frequency of the carrier crystals. The Murata filter is intended for use with carrier frequencies of 453.5 and 456.5kHz. The Kokusai filter has crystals cut to suit its individual characteristics, so these may vary a little. A carrier frequency that is much closer than it should be to the centre of the filter passband will result in reduced carrier suppression (remember that some 20dB of carrier attenuation is provided by the filter), so

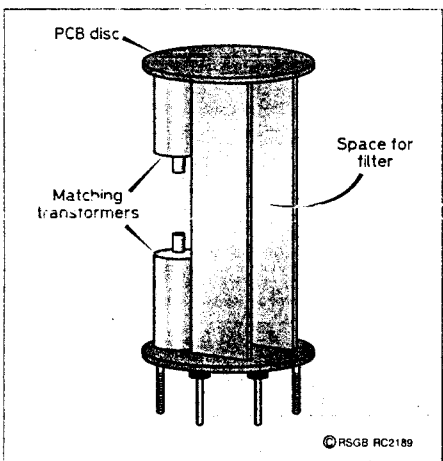


Fig 3: Can removed. Before removing the contents, note where the connections go and which are ground. Pins G and E are connected to the top disc, pins P and B to the bottom disc.

it is a good idea to check your carrier attenuation after fitting the new filter, particularly if the crystal in your rig are very far (say 150Hz) from the ideal. Operating the transceiver into a dummy load and listening on a receiver is a convenient way of checking. Arrange the coupling between dummy load and receiver antenna (a short piece of wire connected to RX ant socket) so that full output from the transceiver (on SSB) result in an S-meter reading of around S9+20. Now reduce mic gain to minimum, and with the transceiver still in transmit adjust receiver tuning until the carrier is head. Any S-meter reading now indicates that there is too much carrier. Hopefully, adjustment of RV14 and C12 (to the right of the crystals, viewed from the front) will reduce it to an acceptable level. If there is a definite reduction (indicating that the adjustments do what they should) but the carrier is still too strong, replacement of the crystals is indicated. If possible, try crystals of a slightly different frequency from another KW rig but if all else fails, you may have to obtain new crystals (which will undoubtedly come in a different casing, but which can be wired directly into the circuit.) However, with the new filter fitted, you should now notice a very marked improvement in the performance of the transceiver.

BUYING AT A RALLY / CAR BOOT SALE

FIRST OF ALL, assume that the filter is faulty. Open the top of the case and check that nothing is missing. Try the tuning drive for wear (lumpiness, sideways movement, backlash). The extra cautious might ask to see beneath the chassis, which will mean removal from the case. Has the wiring been butchered? If so, is it within your ability to sort out the mess? Does the rig come with a manual, or at least a circuit diagram?

A transceiver that has been left in a garden shed for a number of years will almost certainly require a fair amount of work. It will need a good clean, of course. Many of the resistors will have gone high in value. The electrolytic capacitors should be allowed to re-form by raising the supply voltage slowly. A variac is ideal for doing this, but if you don't have access to one connect a 15W 240V bulb in the live lead of the mains to the rig, and leave like this for several hours before apply-

ing full mains [see *In Practice*, March 1995 - Ed].

RE-ALIGNMENT

THE KW2000 SERIES can easily be realigned without a signal generator. All that is needed is a dummy load and a multimeter. The 100kHz calibrator provides the necessary signal for adjusting the receiver circuits, and the S-meter the necessary indication. It helps if the 'cal' switch is temporarily bypassed so that the oscillator is permanently on.

Adjust this tuning for a beat note of around 1kHz. This will place the signal in the centre of the IF passband.

The transmitter tuned circuits can be adjusted by tuning for maximum drive. Simply

watch the PA current (PA tuning should be at resonance) and reduce the microphone gain when it gets too high. (50mA for a KW2000, 100mA for a KW2000A/B). One feature of these transceivers that has caused some speculation is the reason for the strange wiring of the microphone socket. The cathode resistor of the mic amp, instead of being connected straight to ground, goes to a pin on the mic socket which is grounded when the microphone is plugged in. The reason is simple: when operating CW, unplugging the microphone disables the mic amp, stopping it from producing noise which would be transmitted. However, most of these sockets were replaced, as they were an early source of trouble.

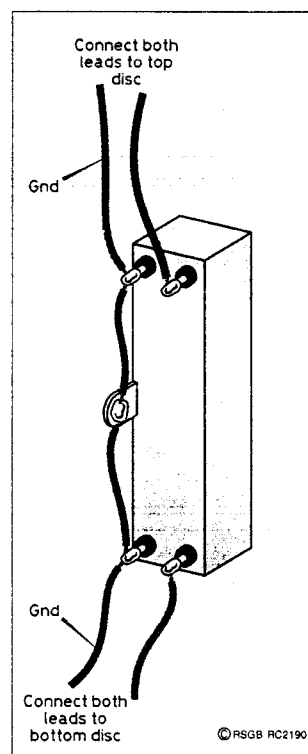


Fig 4: Underside and connections of the CFJ455K5. Connect it in place of the old filter. Note that one connection on each disc in the Kokusai filter housing is ground (examination will reveal which one).

CONCLUSIONS

I HOPE THIS will result in some of these old rigs being put back in to service.

If you don't have one but would like to try, it can be as much fun looking for equipment like this at rallies and getting it to work as it is actually operating it.

Copies of the handbook including circuit are available from Mauritron [2] for £12.50.

I can supply a suitable tuning drive (details on request). Fitting instructions are included.

REFERENCES

- [1] Circuit Distribution Ltd. Park Lane, Broxbourne, Herts EN10 7NQ. Tel: 01992 444111.
- [2] Mauritron Technical Services. 8 Cherry Tree Road, Chinnor, Oxon OX9 4QY. Tel: 01844 352554.