



passers-by were startled by the exceptionally loud 'bleep' the equipment produced every time I selected a function.

### Other features

Apart from the S0239, the rear panel allows access to the battery compartment inside which, apart from the battery holders, there is a frequency-step switch mounted to the PCB. Other sockets to the rear include a 3.5mm jack for a morse key and similar shielded socket for DC connection, and another for the Ni Cad charger. A power lead was supplied with the rig, complete with in-line fuse; this is just as well, for the plug is a non-standard 3.5mm type with extra shrouding to prevent accidental shorting. With the positive side of the plug exposed to the world, care must be taken not to allow this to touch the chassis or aerial plug! When using the C58 from home, I attached a separate 25W linear, although Standard does manufacture a slim-line amplifier together with a mobile mount. All three then fit together with a very neat appearance. The rig seemed very sensitive and the pre-amp combined with my linear made little or no difference to the readability of most incoming signals. The only impression was to move the 'S' meter needle. For SSB use, tuning (down to 1kHz) plus the infinite tuning 'rit' facility meant that I was able to resolve all those distant signals. There seemed to be a delay in the noise decay when trying to squelch-out FM signals but otherwise once I had mastered the memory operation and the ability to read the display accurately, I had no real problems apart from the received audio.

### Audio

The quality of the incoming audio was poor seemingly because of a rather cheap and nasty 'wafer thin' speaker inside the rig. The audio lacks resemblance to the peoples' actual voices, even on FM. An external speaker cured the problem though. It is interesting to note, and in fact the case seems to be so with the FT290R as well, that if CW is being used, the PTT switch must be continually depressed while keying to keep the rig in transmit. With the 290 the PTT line socket could be used with a foot-switch. There seems to be no convenient answer as far as the C58 is concerned, unless you get a friend to help.

### Documentation

The 69 page handbook complete with idiot-pictures on operating the various facilities is very handy. The service section, complete with circuit descriptions and detailed explanation of the micro's working, the PLL system and alignment charts. With dis-assembly guidelines and component and board locations, it's virtually all one needs to rebuild the rig. A complete list of component parts and values is included for easy reference. At the end of the manual is a loose circuit diagram, the tracks on which are quite easy to follow, although the component symbols are rather small and the writing unreadable without '20-20' vision. A useful feature, even if they are hard to read, is the inclusion of test voltages at key points in the circuitry. Indeed this circuitry, being that of a synthesized multimode is by definition rather complex, and a look at the block diagram may help the reader follow

it. The receiver section is a double superheterodyne system with a quadrature FM detector. The incoming signal is amplified by a 2SK241 and coupled to the 1st mixer before being combined with the local PLL frequency down to the 1st IF of 10.7MHz. This then passes through a crystal filter before a second mixer, IF amp, quadrature detector, squelch switching amp and the second local oscillator with a frequency of 10.245 MHz, which is mixed, to be converted to the second IF of 455kHz. The signal passes through two ceramic filters and is amplified and demodulated before the final amplifier, audio amp and loudspeaker. The SSB receiver has an IF of 10.7 MHz and the signal is amplified much as the FM signal and appears at the output of the first IF amp. This output is coupled to another MOSFET and to an SSB detector. The demodulated AF signal is then amplified by an exclusive SSB AF amplifier. Looking at the transmit side of the rig, the FM signal is generated by amplifying the microphone audio, and after a limiter and roll-off filter to prevent harmonics out of the audio range, the signal is coupled to a varicap diode to provide direct frequency modulation on the VCO output. The PLL output is connected to the gate of a balanced mixer where it is combined with the FM sub-carrier to give a carrier frequency signal which passes through a linear amplifier stage, transmit amplifier which is then coupled to the antenna. The RF output power is kept constant with the aid of an AGC amplifier which picks up a rectified carrier signal. The SSB transmitted signal is generated differently for obvious reasons.

### Conclusion:

While it is obvious that the FT290R hosts an impressive range of features, certain aspects of the C58 together with its superior 'RIT' and sensitivity seem to suggest that perhaps this is the rig for the SSB man. However, as I tend to operate mainly on FM. I know I'm boring (*I don't think you're boring, Trevor — Ed*) but there is FM DX to be had and accessing distant repeaters can be fun. I utilise the 10 memories offered by the FT290R. I also like its clear readout and that second VFO comes in handy as well. As there is virtually no price difference between the two its really a case of 'you pays your money and takes your choice'. ●