comprises a dual-gate MOSFET RF amplifier followed by a JFET mixer: good RF practise but heavy in current consumption. The output from the JFET mixer is passed through a crystal filter (centred on the 7.8MHz IF) and then on to a two stage, dual-gate MOSFET IF amplifier. This is followed by a four-diode product detector and an integrated circuit audio amplifier.

The AGC is carrier derived; and the receiver circuit also incorporates a noise blanker. Aerial switching, like most of the other circuits which need to be switched on changeover from receive to transmit, is achieved by diodes.

The transmit path is similarly simple. A VOGAD (voice operated gain adjusting device) microphone amplifier passes audio to a balanced mixer together with a signal from the carrier insertion oscillator. The unwanted sideband is removed by the crystal filter. The wanted sideband is subsequently mixed with a 137MHz signal derived from the VXO to produce SSB or CW at 144MHz. A succession of buffers and bandpass filters remove unwanted mixer products. The PA final amplifies the SSB signal to the 200mW PEP level. CW keying is achieved by unbalancing the first transmit mixer.

Operation

You should be aware of the limitations of a little set such as this. At about half an inch shorter than an IC2-E

(fitted with the smallest battery pack) it is undeniably small and handy. The manufacturer and importer (Waters & Stanton) would have you believe that the place for this set is in the pocket, with the owner at the top of a mountain somewhere. "You would be surprised at the DX which can be worked from a hilltop, even with just 200mW".

That is how the publicity blurb goes, or at least something like it. Although the importer supplies a short set of instructions in English, I suspect there is considerably more information in the original Japanese which has been left untranslated. The reality is yes, the MX-2 works extremely well on both receive and transmit and lots of contacts can be made with its 200mW. However you have to complete your QSOs very rapidly as the battery life is, quite frankly, a joke.

As supplied, the battery carrier takes six AAA dry cells to produce the 9V supply which the set requires. Unfortunately these cannot be replaced directly with Ni-Cd rechargeable batteries (capacity 180mA/hour) because the terminal voltage would be reduced to just 7.2V. Although the receiver would operate satisfactorily at this voltage the TX would produce something under 100mW which isn't really enough. The set requires the full 9V to produce 200mW output. A similarly sized PP3 Ni-Cd battery will fit into the battery compartment but the capacity of these is only 100mA/hour although the terminal voltage is 8.4V.

This is the heart of the matter. The

battery consumption of the MX-2 is excessive for the size of battery which the unit is able to accommodate internally. On standby receive, the manufacturer quotes a supply current of 40mA (review sample 50mA) which rises according to volume. The transmit current consumption is 160mA (review sample 180mA) maximum reducing to 100mA with no modulation. Even when using expensive manganese alkaline cells, the set's endurance is no more than about six hours; a PP3 type Ni-Cd pack would offer less than two hours. The only way that the set can match the battery endurance of other models is by using an external battery pack together with the DC power cord (supplied). I, for one, would have preferred the MX-2 to have been housed in a larger case accommodating much bigger batteries.

This major criticism aside, I have unreserved praise for every other aspect of the set's operation bar the internal CW key. It's not the fact that the button on the front panel has absolutely nothing in common with a conventional Morse key, but rather that the circuit doesn't generate a sidetone. This means that you can't hear what you're sending. I guess it wouldn't matter for the majority of two metre working but there are times when I would like to have sent clean CW. When there is only 200mW coming out, CW offers a distinct advantage over SSB.

The audio, both received and