illustrated examples of using the unit in various combinations of output/input, it does need careful reading to digest properly (*you're not kidding — Ed*). Even the manufacturer admits that the explanations do not come simply "due to the tremendous flexibility" of the unit. If you do intend interfacing with a micro-computer, you won't find much help in the manual.

A circuit diagram is provided of both the analogue and digital sections of the circuit, together with parts lists and pcb layouts. No explanation of the circuit operation is given, so unless you are into the subject, you may not be able to service the unit yourself. Two microprocessors are used to provide the facilities (3870's). The unit requires 13v DC +/— 3v at 1.2 amps maximum.

Only two phono plugs were supplied — if you need any of the other connectors you will have to supply these yourself, including the coaxial DC input plug — the one supplied didn't fit the socket. The socket has a slightly smaller coaxial centre than the ones easily obtainable in this country. Also beware that the centre pin is the positive connection — other equipment uses the outer sleeve as positive, so check before plugging in if you do have one that fits already.

Construction

The decoder is housed in a substantial steel two-part cabinet — the cover can easily be removed by undoing a handful of screws — and reveals a very well engineered piece of equipment inside. There are two major pcbs on the lower chassis, one above the other, and a further set up against the front panel for the display and switches. If you do need to remove the cover, take care as the internal speaker is on a flying lead, attached to the top cover.

The circuit boards are screen printed with component positions, which should aid any attempted servicing. The review sample did manage to fail at one point, and was returned promptly with a blown transistor replaced.

The MBA-RC on the air CW

In a similar manner to the CWR600 reviewed earlier, when the MBA-RC is used for decoding Morse, it is very dependant on the quality of the input for accuracy of decoding. The speed at which code is transmitted from the unit can be programmed into the decoder, necessary when using a keyboard or teletype for input. If you are using a straight key, this would normally key the transmitter directly, without the MBA unit being involved. However, it is possible to say input at 15wpm from a key into the decoder, and get it to retransmit at a higher speed. If using the ID storage facility, this might be useful for MS work, but you are limited to 40 characters of message. Otherwise one of the less useful facilities.

It was rather interesting watching the decoded output versus the type of sending. Best accuracy of decode was with machine sent code, as might be expected, followed hard by well sent hand or electronic keyed morse.

Brain vs machine...

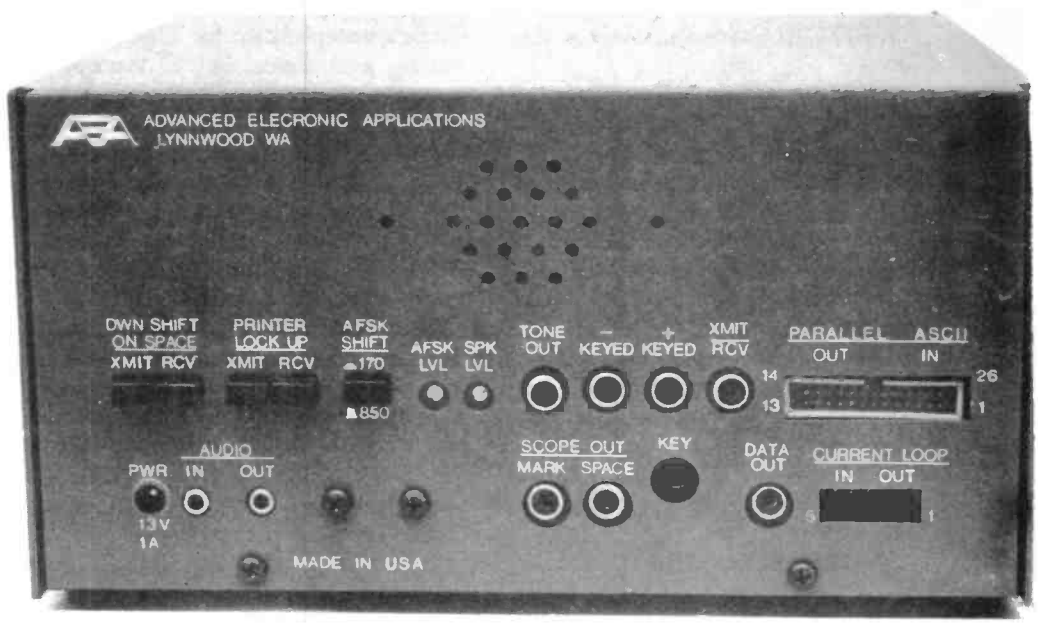
The one variety it didn't like was the Vibroplex type of semi-automatic keyer, the error rate being very high. The human brain gets used to decoding this type of sending, where the operator inevitably puts an accent on the dashes, and adjusts itself accordingly. The machine on the other hand just cannot cope with it, as the long dashes do not conform with any code groupings in its memory. It will immediately try to readjust the speed, then find the dots don't match the dash which it just received, so it gives up in disgust.

Even poorly sent hand keying, provided the spacing and dot/dash ratio were somewhere around the right regions, was reasonably well decoded, but the human brain would win most times. One of the problems is with the abbreviations used in amateur traffic.

When a station sends "TNX FER QSO ES WILL QSL SURE VIA BURO", your brain can almost tell you what is coming before it is sent, even if the keying is less than perfect, through familiarity. To the machine, which only tells you what it actually received, it may appear as "GX FER MASO ES WILL Q SL SUL VV TSURO". All because the spacings were a little out. Result: Human Brain 100% copy — Machine: Dismal failure!

This problem is common to all machine type decoders, and not just to the MBA. I doubt whether the human brain will ever be beaten at decoding hand sent amateur CW (or a lot of commercial traffic) so the MBA is no worse than any other in this respect. Given perfect machine sent code, it will return flawless copy.

Signal strengths needed to be fairly high for reliable copy, much below about S6 and errors were



Rear panel showing connections