blade of a small screwdriver.

If you have put all the components in correctly, and have soldered them well, the unit is almost certain to work, and you can turn your attention to installing the PCB module either in your rig or in a separate case. It is important to screen the PCB in a metal box. A plastic case may look smart, but it is not suitable for this application, as RF will probably find its way in and upset the operation of the unit. You can make a very presentable enclosure with an easily obtained diecast box, a drop of ordinary household paint, and some dry transfer lettering. White letters on dark grey paint will match most rigs nicely. A word of advice though, do not squeeze the PCB into the smallest possible box. You will find that the microphone cable will tend to pull a light weight box across the operating desk. A reasonable size box with stick-on rubber feet on the bottom will tend to stay where you put it.

Connect up the PCB as shown in **Fig. 4**. Note the extra ferrite beads on the microphone socket to help keep RF out, and the OA91 diode in the PTT lead as mentioned earlier. The extra ferrite beads and the diode are included in the C.M. Howes Communications kit.

You will have to refer to your rig's handbook for the correct microphone connections for your particular set. The ones shown in the diagram are only an example. When you have double checked the wiring, it is time to switch-on.

Testing and operating

The unit is suitable for use with FM, AM, and SSB rigs, but it is easier to set up the output level with it connected to an SSB rig.

With your SSB transmitter on a dummy load, connect the processor to the mic socket, plug a microphone into the processor, and make very sure you connect the battery or power supply the right way round. Failure to this could well result in a heavy heart and a light wallet, due to the early demise of the semiconductors. Set the unit to minimum clipping, and with the rig's mic gain control in its normal position, adjust RV1 to give a small indication on the ALC meter. Now back off RV1 so that the rig's ALC falls to zero. Your speech processor is now aligned. Do not run your rig with bags of ALC when using a speech processor — you will get no extra power in the wanted sideband, only more power in the unwanted intermodulation products! Monitor your rig's output power, and check that the average power level increases as you increase the amount of clipping . If all is well, call a trusted local for an audio report, just to make sure nothing is amiss — remember, using large amounts of clipping on local QSOs tends to be fatiguing for the listener, and the test of your processor's effectiveness will come when working under noisy or weak signal conditions. You should find that this little processor will enable you to work further for a lot less money than that big linear you were dreaming of! If you had the linear as well though, now that's a thought . . .

Kits

A kit of parts to build the automatic speech processor is available from C M Howes Communications, 139 Highview, Vigo, Meopham, Kent DA13 0UT. The kit, called the *AP3* includes a drilled and tinned PCB and all board mounted components. The price is £14.80 plus 50p for post and packing per order. Delivery should be about one week, but may increase if demand is very high. ●

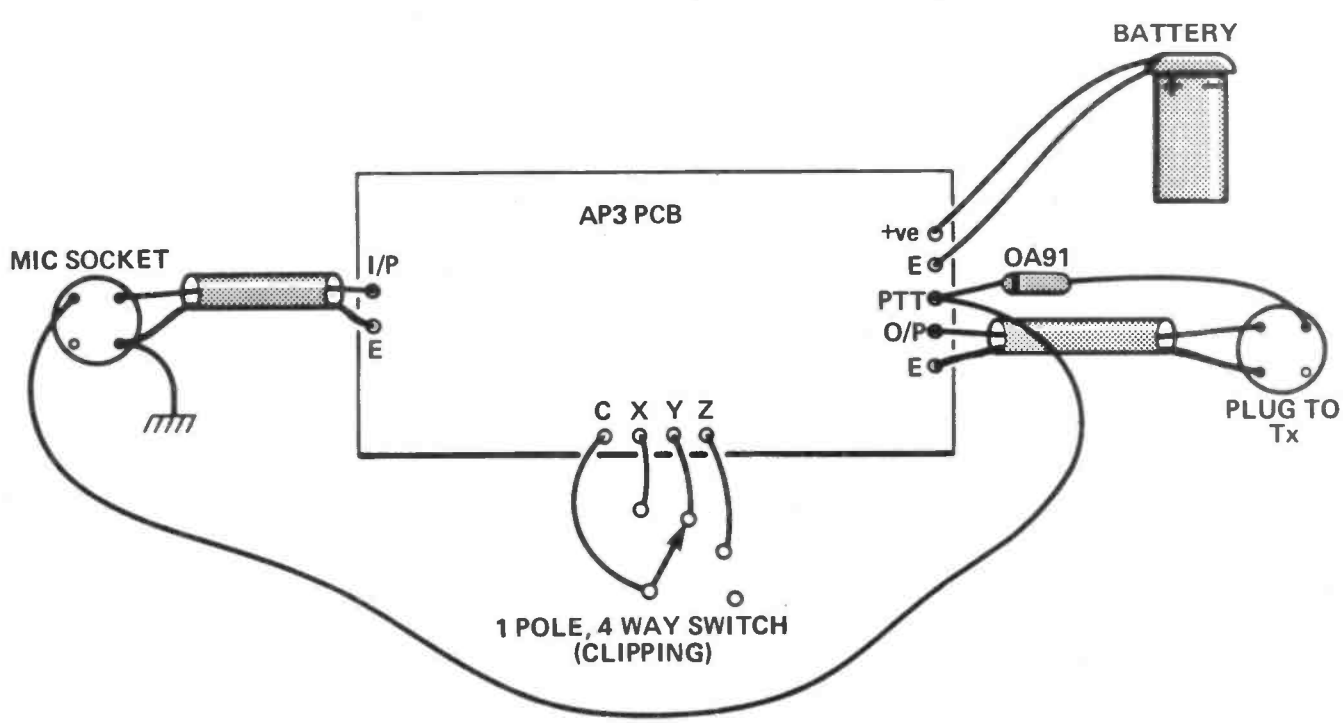

Fig. 4 Connections to processor board. Extra ferrite beads should be fitted to the microphone socket.