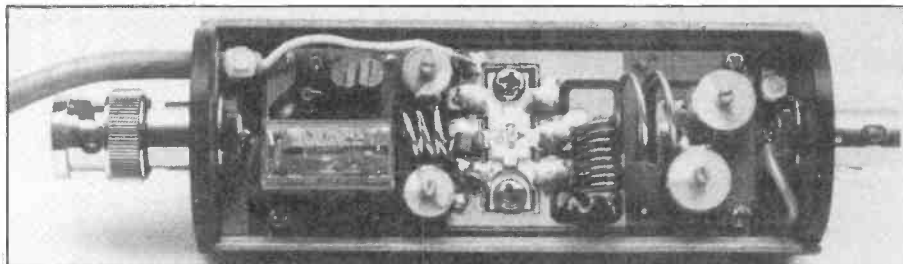


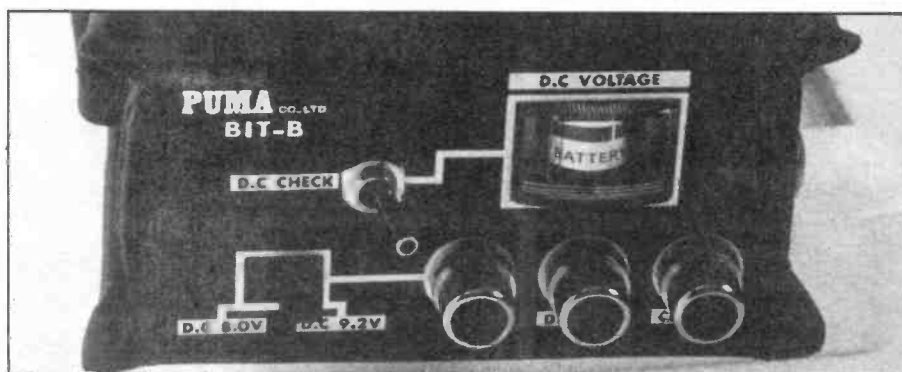
Maidstone rally for five hours, it certainly made its presence known!

The vast majority of the power unit is taken up by a "high performance seal battery" (the mind boggles), this being a lead-acid, spillproof, 12V, 1.8Ah device similar to those supplied by RS at around £14. The rest of the unit consists of a small aluminium box-section on which are mounted a battery check meter and switch, three phono sockets and a DC voltage select slide switch. The sockets are for 12V out to the *BIT-02*, a charger input and a switched 8/9.2V output rated at 1A maximum. This output is derived from a small voltage regulator and can be used to power the portable transceiver driving the *BIT-02*. This could be a very useful feature as it would increase the operation time of a typical portable from say 2½ hours on the internal batteries (*TR2400*) to around 10 hours using the *BIT-B* (assuming, of course, that the PA is not used). With extended use on a field day, expeditions or even Raynet exercises you could use this feature but you do have to suffer lugging the pack around with you. A major disadvantage is that all the three sockets are the same type and could lead to expensive mistakes. Another problem is that the 8/9.2V switch is black on a black background and could easily be knocked without noticing. This would cause no problems for the *2400* (9.6V supply) but it may for other rigs.



**Bit-02 PA inside cylindrical case**

The meter switch is a little confusing and the leaflet does not make its operation obvious. Taking account of the legend on the panel, one would expect something to happen if switched towards the meter. In fact, the DC 8/9.2V output is switched off in this position and that is all! In the other position, power to the portable is restored and the meter acts as a voltage check on the state of the main battery. As most of the scale on this meter shows 'battery voltage low' and only the tiny top portion shows 'OK', I don't see why a



**Bit-B battery pack**

simple voltage metering circuit driving an LED would not have sufficed. The leaflet does warn one to stop operation if the pointer goes into the red zone and this is certainly good advice as the power drops off rapidly once this occurs.

The claimed operation time while using the *BIT-02* at 10W and using the infamous one minute transmit and three minute receive (who does this?) (*Me—Ed.*) is around 120 minutes, but this must be suitably de-rated if the portable is powered from the *BIT-B* as well;

### Precautions and charging the BIT-B

One important precaution mentioned in the leaflet is to take care not to short out any of the phono sockets. This seems a wise piece of advice considering that the maximum discharge current quoted by RS is greater than 40A! That's

indefinite 'float charge' is possible but if greater than 14V is used one has to be careful. I tried it at 14.4V and the current drawn was rather more than 1A, therefore, if the RS recommendation of constant voltage is to be complied with, a supply of much more than 1A is advisable. It is also interesting to note that at 14.4V the quoted charge time is 16 hours but at 15V it drops dramatically to 8 hours. Thus it seems that the charge current rises very rapidly with the charge voltage so take care. I would assume that one has to adhere very carefully to these charge times (from flat) if one is to prolong the life of this rather expensive component.

### Performance

A claimed "unique feature" of the *BIT-02* is that "the transceiver and antenna can be combined into one unit". Now while this is a neat idea (with reservations that I'll mention later), I found that it tended to make the portable top heavy, not to mention the strain it must place on the BNC connectors on top of both the *BIT-02* and the portable, especially if a ¼ wave is used on top. Power output figures, using a Trio 2400 to drive the unit and with a freshly charged power pack, are shown in Table 1. These figures were measured on a Daiwa CN630 meter into a 50Ω dummy load. The slight differences in power could, of course, be rectified by careful 'tweaking' of the trimmers in the *BIT-02*. I would also assume that this could be the case when it comes to the very slight

**Table 1.**

| frequency<br>MHz | 2400<br>output<br>power | <i>BIT-02</i><br>output<br>power |
|------------------|-------------------------|----------------------------------|
| 144              | 1.6W                    | 14.2W                            |
| 145              | 1.6W                    | 13.9W                            |
| 145.995          | 1.6W                    | 13.5W                            |

around ½kW of heat to get rid of somewhere and could be a serious fire risk. A fuse in the battery line would have helped here.

When charging the unit, it is interesting to note the stress that RS places on the need for a constant voltage source. The *BIT-B* notes state "please use a battery charger, regulated power supply (1A or more) or an automobile cigarette lighter" and this is where problems could arise. The quoted charge voltages are between 13.5V and 15V. At 13.5V to 15V (ie. car battery)