attenuation of incoming signal produced when the unit is in place but this is hardly noticeable under most circumstances. More noticeable, however, is the rather drastic reduction in output power when operating with the PA switched off ie. in the so called "straight through mode". This was found to attenuate the normal 1·6W output of the *2400* down to about 1W.

Possibly this is a case of matching problems, for when using a helical aerial no noticeable difference was reported on the air (what helical matches to 50Ω anyway?) but when feeding a 10X/Y the difference was commented upon. When using a helical or ¼-wave aerial, it was noted that both the *BIT-02* and the aerial became rather warm and various suggestions of "some form of new fangled tea warmer" were forthcoming! It did give a difference of three or four S-points (for what that's worth) of apparently very clean RF over local contacts. However, I feel that the unit comes into it's own when driving a rather more efficient aerial eg. 7/8 mobile or fixed base array. Also noted was a rather disturbing amount of metallic deposition, due to arcing, on the BNC connectors after only a few minutes transmitting using a ¼-wave or helical (hardly surprising). Another problem encountered was that when the 8/9·2V output was used to power the main rig and the current drawn was greater than approximately ½A, the voltage regulator became very hot, due to an inadequate heatsink I believe. As this heatsink is placed near to the sealed battery and its wires, excessive heat could cause problems. A further point concerning this output for powering a portable rig is that it is advisable to use screened cable to prevent excessive RF feedback causing very peculiar effects. Indeed, this is also the case when it comes to the power lead from the *BIT-02*. This is *not* a screened lead and with the battery pack in certain positions can cause similar problems of RF breakthrough. This probably explains the incredibly short lead supplied with the *BIT-02* and is my major criticism of the unit, for such a short lead means that:

(i) the power pack must be hand held close to the portable, a very tiring experience, not to mention the proximity of 10W to 20W of RF close to one's head/eyes (a dangerous occupation if you ask me).

(ii) if the power pack is to be carried on one's belt, then the portable must be also, necessitating the use of a speaker mic.

The second point has the two-fold disadvantage of high levels of RF close to one's kidneys (or whatever, depending on how low your belt is.) and that the human body acts as a good RF shield when the aerial is running up one's back. I therefore question the validity of 20W of RF for true portable operation.

Using the Puma PA

Conclusion

Having said this, however, I feel that the power unit is a very useful addition for extended low power portable use. By the way, the quoted 50mA on receive is very wrong for, thinking it was a very high figure, I checked it and found it to be about 3½mA (perhaps they meant 5mA rather than 50mA). The PA seems to be very neat and is certainly one of the smallest 10W to 20W devices I've seen. It is ideally suited for 'in line' use at home or for fixed station use out of doors. It would even be a useful standby for mobile use but it is certainly not for walking along the street. A final comment made by a visitor to the Maidstone rally, where the device was 'soak tested', causing considerable consternation/interest, was "ah, but my *IC2E* with a 5/8 whip on top can out-perform that and with no increase in power consumption". A *2E* plus a 5/8? The mind boggles but at least this device isn't quite so cumbersome!

Postscript

After discussion with a member of the National Physical Laboratory's RF Measurement team, it would appear that some doubt is cast upon the safety of using relatively high power under portable conditions. At 2m obviously one is not dealing with the same problems as at a few gigahertz (the microwave oven effect) but in some quarters it is thought that RF heating could cause physiological damage to bones, arteries etc. When asked to comment upon the use of 20W of 2m a few centimetres away from the human body, one reply was "that sounds like bad news". ●