



Over the past few years many amateurs have had the rather dubious honour of owning a pair of ex-Home Office Pye Pocketfones. Once the necessary modifications have taken the frequency from the 450MHz slot down to the 430MHz amateur band most people seem amazed by the performance of the beasts. The only snags seem to be the awful audio from the internal transducer and an aerial which habitually stabs you in the right eye. Good fun but the two units are a bit difficult to use, as the receiver has to be silenced when the transmitter is in action otherwise feedback and other noise annoys anyone nearby. This problem of course did not happen when the units were used by the original users, as their receive and transmit frequencies were usually spaced far apart eg. RX 452MHz; TX 466MHz.

Now for the good news. The present radios as issued to most departments by the Home Office are Burndept UHF hand portables made in Birmingham. They are just starting to appear in small numbers on the second hand market. I have been using one for nearly three years and although its spartan specification - 150mW RF and three crystal controlled

**Looking for
a cheap
70cm hand-held?**

**Paul Johnson
may have
the answer...**

channels - seems limiting, I have hardly ever wanted to use my 70cm synthesised portable (in fact it is on permanent loan to someone else at the moment). Burndept produces two models, the 470 and the 471 which are visually identical except from the type of nicad pack fitted. The 470 model uses two yellow Pocketfone batteries, and the 471 has a plug in nicad pack. Most units obtained ex-Home Office are in reasonable condition. If they are not, new cases can be obtained direct from Burndept and these make the rig look as good as new. The hand portable can also be fitted with a remote mic/aerial head and then the radio fits in your pocket.

A rather unusual feature is that the volume control is fitted with a multi-position switch with stepped volume setting, instead of the usual pot. Internal construction is good and uses the mother board principle, making repairs very easy to carry out if required (try fiddling with a Pocketfone with all the components stacked end on, so that you cannot see what value any component is supposed to be).

The units as used by the police suffer from dropping, smashing and sundry electronic faults, but as these faults are user inflicted it would not really be fair to blame the units themselves. Anyway amateur equipment wouldn't last five minutes given the same treatment. I have had one fault in three years with my 471, a crack in the track on the squelch board caused by my dropping it. This took about a minute to find as the design makes fault-finding so easy.

Mobile adaptors

If you have a peep through the window of a police car fitted with a UHF aerial



Using the Burndept on its own and (bottom) with a mobile adaptor.



you will see a small rubber unit with a deep slot in it fitted under the dash with a microphone attached. These units are known as mobile adaptors and enable the standard radio to be used on external aerial and mic. They also contain a powerful audio amplifier capable of providing ample audio into an external speaker. If you think the Japs are fiendish wait until you read how the two units are coupled together. On top of the casing of the radios are two small studs which make contact with two spring steel contacts in the mobile adaptor. Now for the clever bit! One stud is earth, the other carries audio (in and out) and RF (in and out) at the same time. The small $1\frac{1}{2}$ " helical aerial fitted to the top of the radio is fed through a reed relay. When the radio is inside the adaptor, a small magnet operates the relay and RF is directed to the stud contact. The TX/RX switching can also be described as quaint. When the microphone PTT is pressed, a plunger flies out of the adaptor and manually prods the radio's PTT button. This might appear a bit Heath Robinson but in action it works very well. Inside the adaptor a small R/C network separates the RF and audio and the audio goes to the amp and the RF in the original units goes straight to the aerial socket. Spring steel contacts shouldn't really work at UHF, and they certainly do not make a good match to 50 ohms, so I have fitted a small trimmer in line with the aerial socket and this matches the adaptor to the 50 ohm aerial on my car. I can only assume that the aerials fitted to police vehicles are

tuned with a field strength meter as in the original state the best VSWR obtainable was worse than 4:1 on my pre-tuned whip.

The only negative point about owning a Burndept is that the majority of our uniformed gentlemen think that they are the only users of Burndept equipment. This could of course cause a few problems if you use the radio in public. I have never had trouble myself but I have spent an afternoon in the local nick explaining that the G8 in the cells was not Public Enemy Number One. If you have the 471 model with the plug in nicad packs the difference is fairly easy to show, but if you have the other model I think the best way to show that the radio is on amateur bands is to let the officer try and contact his control room on the suspect

radio. The normal method of explaining about frequencies, and explaining what amateur radio is, is not very convincing. Even if you have your licence with you it does not look that official. The best way of proving its validity is not to get in touch with the RRD but to get the police to contact the local Telephone Area Manager who should have an up to date list of all amateurs in his area.

The going price for a 470 or a 471 seems to be about £75 to £100. If a mobile adaptor is offered as well, expect to pay about £25 for it. The Burndept is one of the best radios I have used and you will find it an ideal rig if you can get one. Best of all, the nicad packs on the 471 last for ages, which is certainly not the case with my Japanese rig. Good Hunting.

