



**Ben Nock's**

# valve & vintage

Ben Nock G4BXD took advantage of a brief spell of good weather to test several new arrivals at the 'Kidderminster Kollection'.

**A** big hello once again as I open the doors to the *Valve and Vintage* (V&V) shop for August! It's been a good few weeks for the Kidderminster Kollection and some interesting German Second World War sets and the odd Eddystone or two have arrived. But this month I'll describe the recent addition of several military man-pack radios that have been delivered.

Many military radio collectors like the idea of man-packs. There's always the thought we will rush off into the hills and sit working the DX while chomping on the buttered scones, although in reality, military man-packs are not as great as they first sound! Being military, weight never seems to be a consideration. It might well take three men to carry the complete radio kit, not a problem when you have an army to employ- but for a single, unfit, overweight civilian, well, it can get too much!

Then there is the fact that 10W or



**Fig. 1: The PRC-74 operating controls.**

so to a short whip does not go far. So, to work any distance the operator will need a pole or two and a few feet of wire, cable, guys, pegs, radials, etc., again all adding to the weight.

### Battery Problem

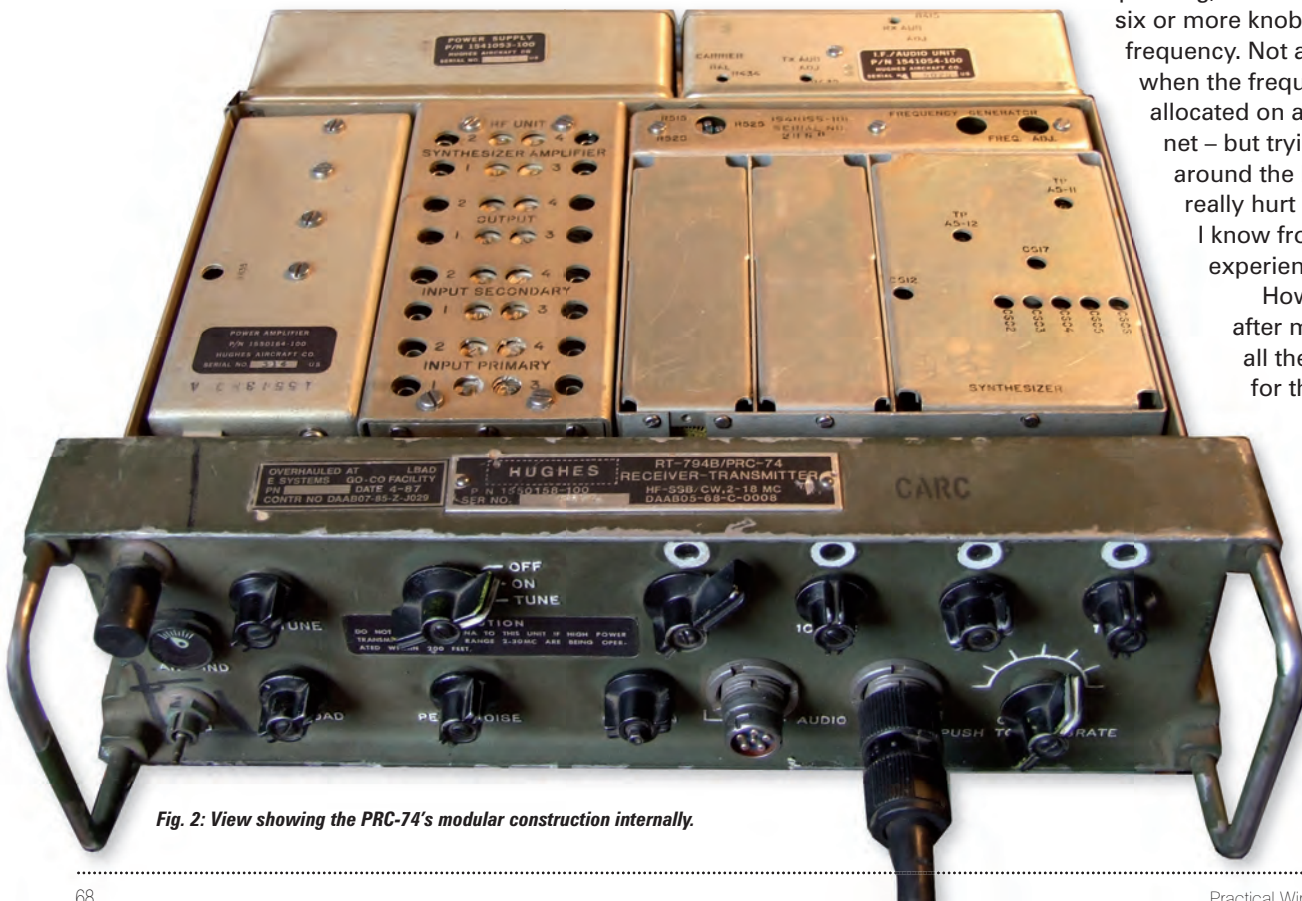
Then there's the battery problem! The man-pack battery (when new) might have lasted 20 hours or so, but that's for short military type messages not prolonged Amateur Radio QSOs!

Nowadays though, with old batteries (if they're available), or new Nicads fitted in their place it's amazing just how quick they run down when out in the field.

So, the modern user either needs to carry extra battery packs – again, this isn't a problem if a three tonne truck is available – or fit sockets on the set so external batteries can be fitted, all adding to the weight once more.

Finally, there's the tuning as many military sets employ dial-up tuning, that is they have six or more knobs to set the frequency. Not a problem when the frequency is allocated on a military net – but trying to tune around the band can really hurt the fingers as I know from blistering experience!

However, even after mentioning all the problems for the modern



**Fig. 2: View showing the PRC-74's modular construction internally.**



Fig. 3: The SEG-15D, with a clean front panel layout.

user, readers will realise I'm one of the collectors who loves the military man-pack despite all its failings! So it was really nice when three new ones arrived for the Kidderminster Kollektion in a very short space of time. An American PRC-74 arrived along with an East German SEG-15D and a Belgian BDR-510C. A search on the Internet throws up loads of info on the '74 and 15D but very little on the '510.

### The American PRC-74

This PRC-74 man-pack, Fig. 1, has a really exciting history as it was widely used in Vietnam during the conflict there and I have found some interesting information and pictures on the web detailing its use. Basically, the set tunes 2 to 18MHz and puts out a good 15W of upper side band (u.s.b.) or Morse (c.w.) signal from a 12 – 15V battery supply.

The series started with the PRC-74 that tuned 2 to 12 MHz, the 74A had a similar range while the 74B and 74C tuned up to 18MHz. Various battery boxes were available and allowed for different battery combinations, one box even taking several wet cells. Other boxes used Ni-cads and various pre-packed units.

Although the transmitter generates u.s.b., the unit can be altered for l.s.b. in a couple of ways. The best method is to replace the internal filter, these are available but finding one is hard. The other method is to shift the carrier oscillator, presently on 1750kHz to the other side of the existing filter and make it about 1747kHz. The latter method would throw out the frequency calibration but there's a way of correcting the error. The photograph, Fig. 2, shows the internal layout of the set.

On the one sunny day we seem to have had so far this summer (at time



Fig. 4: The BDR-510C, with the solid construction on this set clearly visible.

of writing this) in Kidderminster, I took the set to a nearby hill. Using just the whip antenna, I heard USA, Japan, Africa and many European stations whilst working several Europeans and a couple of Scandinavians with good reports on 14MHz. On the next sunny day I intend to take a pole and some wire with me.

### East German SEG-15D

The East German SEG-15D set tunes 2 to 12MHz although it can easily be modified to tune up to 15MHz thus adding the 20 metre band coverage. The set, Fig. 3, generates 3 or 15W of amplitude modulation (a.m.), l.s.b., u.s.b or c.w. signal from a 24V battery supply. By the way, its model number is derived from SendEmpfangGerate, or transmitting/receiving equipment, 15 for 15W of course and the D stands for digital.

This set was manufactured by the East Berlin company RFT VEB Funkwerk Kopenick between about 1975 and 1988. It was intended for both military and civilian use, including – apparently – the infamous Stasi secret police.

The set has at least three battery boxes, one taking Ni-cads, one to power the set from an external 12 or 24V supply as in a vehicle for instance and a mains power unit running of 220V. Luckily, my set came with all

### Ben Nock G4BXD

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three boxes, so I'm well covered and there's also a mention on the Internet about a hand generator as well.

The set is very easy to use, the tuning controls are quite light – probably too light for serious military use – but very easy on the fingers when tuning round an Amateur band. Output is either to a telescopic whip or a BNC type 50Ω socket. A large roller coaster tunes the r.f. output to the antenna, with the panel meter showing either battery state or the output tuning.

There's a very good German web site which details many modifications for this set including the frequency extension. I intend to fit this mod at a later stage to give access to the 14MHz band.

With the mains power unit and the external amplified loudspeaker fitted the set works well as a shack mounted transceiver and I've made several good contacts. The set's lightweight construction, light gauge metal, little reinforcing, makes it look somewhat amateurish compared to the solid make up of the PRC-74.

### The BDR-510C

The BDR-510C is made by MBLÉ in Belgium and the set tunes 2 to 12MHz and generates 10W of a.m., c.w., u.s.b. signal from a 12-15V battery supply. I acquired this set, Fig. 4, along with its

mobile/base station unit. This includes an a.c./d.c. power supply running off 240V mains or 12 or 24V d.c. supply which also has an audio amplifier and speaker fitted and a charger for the set's internal batteries.

For mobile use the man-pack sits in a very secure frame and connects to the base unit via two plugs. One plug carries the charging voltage for the internal batteries with the other connecting the set's audio, receive and transmit to the base unit's amplifier. The handset can be connected to the base unit in this role. There are two sockets for the handset on the man-pack, one is marked 'whisper' and allows the operator to speak very quietly whilst still generating full output.

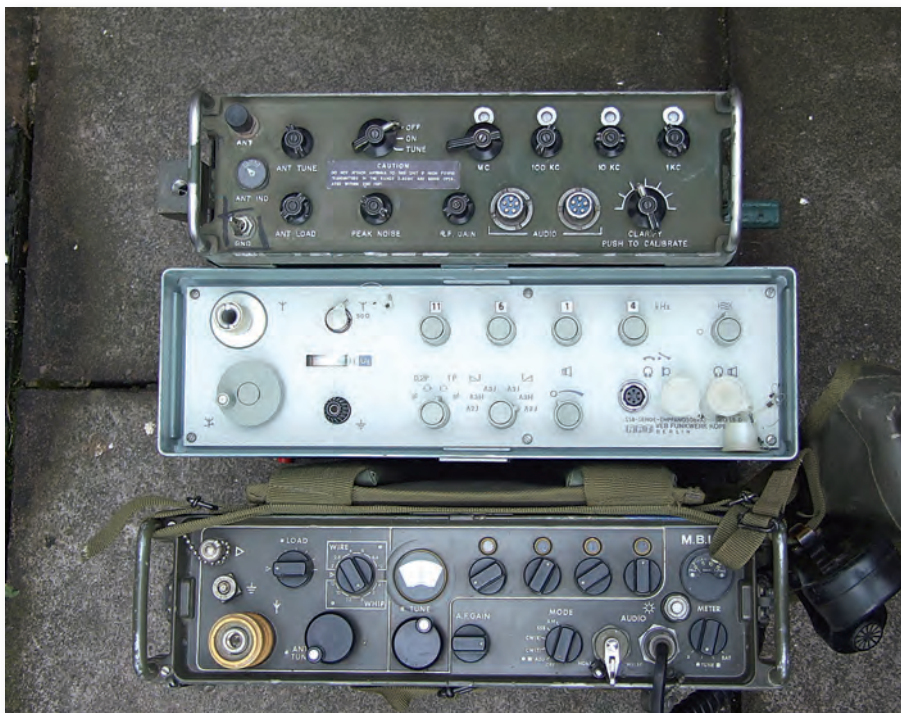
Unfortunately, despite several searches on the Internet and communications with several Belgian Amateurs – including a club for ex-MBLE employees – I can't locate any circuit information on the set but did find a little background information. The set is also known as a BE/PRC-1012; Non-US made back-pack HF USB/CW/AM transceiver. Designed by MBLE as the BDR-500 series, PRC-1012 is the NATO designation for that equipment.

The PRC-1012 is similar in design, technology and purpose to the US PRC-74. Apparently, it lagged the 74's development by about five years but incorporated some improvements which allowed more flexibility.

Two versions of the BDR-500 series are known, the first, BDR-510, tunes 2-12MHz in 1kHz steps with an r.f. power output of 10W. The later – improved – BDR-550 tunes 2-18MHz in 100Hz steps, with an r.f. power output of 4 or 15W. Luckily, the set I acquired is fully working and very nice to use. Again, come a sunny day I intend to try the set out in the field with a decent antenna! The photographs in **Fig. 5** and **6** show the relative sizes of the three units.

**And Finally**

Well that's about it for this stint in the V&V shop. I hope you've enjoyed the selection I have bought you and there are more pictures at [www.qsl.net/g4bxd](http://www.qsl.net/g4bxd) As always I can be contacted directly at: **62 Cobden Street, Kidderminster, Worcestershire DY11 6RP**, or via E-mail at [military1944@aol.com](mailto:military1944@aol.com) Cheerio for now!



**Fig. 5:** The three sets photographed for size and layout comparison.



**Fig. 6:** This month's rigs photographed side-by-side to illustrate the different heights of the three sets.