Hoddesdon Radio Club Win
The PW & Kenwood Club Magazine ‘Spotlight’ Trophy

REVIEWED
The AKD ‘Target’ HF-3 Communications Receiver
&
Alinco DJ-S41 UHF Hand-Held

BUILD
A Variometer Tuner

Traders’ Table
Latest Used Equipment Lists

Plus All Your Regular Favourites
**Features**

- **Frequency Coverage:**
  - 2m RX: 110-174 MHz
  - TX: 144-146 MHz
  - 70 cm RX: 410-500 MHz
  - TX: 430-440 MHz

- Spectra-Analyzer™ with adjustable signal width, spacing & span markers
- 6-Character Alphanumeric Display
- 110 Memories (in 5 memory banks)
- Omni-Glow™ Display
- Digital voltage display
- Selectable 1200/9600 baud
- 3-Level Auto-Mute w/Auto Timer
- V+V, U+U, V+U Dual Receive
- 3 Power Output Levels
  - 2m: 50/10/5 Watt
  - 70 cm: 35/10/5 Watt
- Built-in Auto Power Off (APO) and Time-out Timer (TOT)
- MIL-STD 9 Memory DTMF Autodialer
- PC Programmable w/ADMS-2
- 3 Scanning Modes w/Clear Scan
- Adjustable LCD Contrast/Brightness Control
- **Accessories:** Consult your local Yaesu dealer.

**For the first time ever,** the only dual band mobile with alphanumeric capability is available with two microphones. Customize your mobile radio use by choosing the high-tech FS-10 Smart Controller™ Microphone with its unique Joystick-type lever or the new MH-39 DTMF Microphone which includes convenient handheld programmability. The FT-8500 has a built-in function menu, so you can program the radio from the microphone, or use the exclusive, optional new ADMS-2 Windows™ Software Kit. An unbeatable combination—user-friendly Yaesu engineering, and state-of-the-art performance.

The FT-8500 offers more than a choice of microphones. Watch the exclusive Spectra-Analyzer™ exhibit station activity above and below your current operating channel. The radio is PC-programmable with ADMS-2™.

“Each of the mics function the same, and the radio is PC-programmable with ADMS-2™.”

“Look, the digital voltage display monitors my car battery voltage, too!”

“Like the Spectra-Analyzer, it keeps track of my favorite repeaters, and checks UHF and VHF channel activity.”

“Yaesu did it again!”

**The only alphanumeric dual band mobile now comes with a choice of two unique microphones.**

**FS-10 Smart Controller™ Microphone**

Use unique Joystick-type lever to command functions.

**MH-39 DTMF Microphone**

All functions conveniently at your fingertips including two user-programmable buttons.

**DIGITAL VOLTAGE DISPLAY**

Monitor automobile battery voltage. Choose 1200 or 9600 bps from Menu Selectable Packet Baud Rate.

**VHF&VHF, UHF&UHF, V&U Select three dual band configurations. Shown with custom 6-character alphanumeric code.**

**SPECTRA-ANA LYZER™ Display station activity above and below current operating channel. Exhibit programmed channel signal strength in Memory Recall.**

**DIGITAL VOLTAGE DISPLAY**

Monitor automobile battery voltage. Choose 1200 or 9600 bps from Menu Selectable Packet Baud Rate.

**YAESU**

Performance without compromise™

© 1995 Yaesu, USA, 17210 Edwards Road
Cerritos, CA 90703 (310) 404-2700

Specifications subject to change without notice. Specifications guaranteed only within amateur bands. Some accessories and options are standard in certain areas. Check with your local Yaesu dealer for specific details.

YAESU UK LTD. Unit 2, Maple Grove Business Centre, Lawrence Rd., Hounslow, Middlesex, TW4 6DR, U.K.
EDITOR'S KEYLINES
RECEIVING YOU
NEWS 1996
RADIO DIARY
PRACTICAL WIRELESS SUBSCRIPTIONS
NOVICE NATTER
CLUB SPOTLIGHT
 REVIEW - THE AKD TARGET HF-3 COMMUNICATIONS RECEIVER
Rob Mannion G3XFD finds out if British manufacturer AKD have hit the target with their latest product.
BROADCASTING ON A SHOESTRING
Jim Lee G4ABN explains how anyone can start their own a.m. or f.m. radio station.
CARRYING ON THE PRACTICAL WAY
George Dobbs G3UV presents a 'utility' audio oscillator.
THE PRACTICAL WIRELESS 144MHz QRP CONTEST RESULTS
Dr. Neil Taylor C4HLX presents the results of PW's very own 'fun' contest.
THE LEICESTER SHOW - 25 YEARS AND COUNTING
With the help of Frank Elliott G4P112, Rob Mannion G3XFD reflects on 25 years of the Leicester Show.
THE LEICESTER AMATEUR RADIO & COMPUTER SHOW FLOOR PLAN

9
10
12
13
14
16
21
25
30
34
40
42
44
46
48
52
53
58
60
64
66
68
72
74
80
84

EDITOR'S CORNER
Rob Mannion G3XFD and Dick Ganderton G8VPH invite you to stop by and have a chat at the Leicester Show.

REVIEW - THE ALINCO DJ-S41 430MHz TRANSCEIVER
Ken Smith C4HLX says 'small isn't the word' to describe the latest 430MHz hand-held from the Alinco stables.

A VARIOMETER TUNER
Anthony Langton GM4HTU has found that a variometer tuner can outperform other a.t.u.s. in some circumstances.

ANTENNA WORKSHOP
John Heys G3RDO describes his three-band compact transmitting antenna.

VALVE & VINTAGE
Ben Nock G4POX brings a military feel to the PW vintage 'wireless shop'.

VHF REPORT

BITS & BYTES

HF FAR & WIDE

BROADCAST ROUND-UP

BARGAIN BASEMENT

PACKET PANORAMA

THE PW AMATEUR RADIO BUYERS GUIDE
Our guide to helping you find which radio suits your needs.

COMING NEXT MONTH

83 ADVERTISERS' INDEX
Due to space constraints Equipment Specifications has been held over.
THIS MONTH’S SPECIAL OFFERS

KENWOOD TS-450S

**ONLY £1099**

TS-450SAT £1199
Offer only while stocks last

**STANDARD C-188**

2m Handi

**ONLY £119**

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**SAVE £450**

**TERELEADER TNC-24 MkII**

Multimode data terminal

**ONLY £149**

**50% OFF**

**SAVE £160**

**FT-416G** 2m Handi, 5 watts

**ONLY £219**

**SAVE £150**

**ANTENNA BARGAINS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>88F</td>
<td>2m 8/8 mobile whip</td>
<td>£13.50</td>
</tr>
<tr>
<td>12SE</td>
<td>12m mobile whip</td>
<td>£12.50</td>
</tr>
<tr>
<td>15SE</td>
<td>15m mobile whip</td>
<td>£12.50</td>
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<tr>
<td>17SE</td>
<td>17m mobile whip</td>
<td>£12.50</td>
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<tr>
<td>GP23</td>
<td>2m base collinear</td>
<td>£35.00</td>
</tr>
<tr>
<td>SQ144</td>
<td>2m Swiss Quad</td>
<td>£35.00</td>
</tr>
</tbody>
</table>

All discounts are based on recommended retail prices. CARRIAGE: ROTATORS/PSUs £13.50

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SMC (Northern): Nowell Lane Ind. Estate, Nowell Lane Leeds. Tel. (011)

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SEE US ON STAND S8 IN THE SALES HALL AT THE LEICESTER SHOW
**COMET NEW PRODUCTS**

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>CA-HV</td>
<td>HF/VM Mobile Whip 7-14-21-28-50-144</td>
<td>£49.95</td>
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<tr>
<td>CF-706</td>
<td>1.5-5 MHz/7-320 MHz duplexer for CA-HV or similar</td>
<td>£44.00</td>
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**COMET ANTENNA ACCESSORIES**

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<tr>
<th>Product</th>
<th>Description</th>
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<tbody>
<tr>
<td>RS20</td>
<td>Mini Gutter Dip</td>
<td>£19.50</td>
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<tr>
<td>RS21</td>
<td>Mini Hatchmount</td>
<td>£19.50</td>
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<tr>
<td>CK-3MB</td>
<td>Mini Cable Assembly</td>
<td>£26.50</td>
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<tr>
<td>WS-1M</td>
<td>Window Mount &amp; Cable</td>
<td>£39.00</td>
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**COMET STATION ACCESSORIES**

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<th>Product</th>
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<tbody>
<tr>
<td>CBL-200</td>
<td>HF 1.1 Barun 1W PEP</td>
<td>£23.50</td>
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<td>CBL-30</td>
<td>HF 1.1 Barun 1W PEP</td>
<td>£23.50</td>
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<tr>
<td>CF-38MR</td>
<td>HF Low Pass Filter 1Kw PEP</td>
<td>£43.95</td>
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<tr>
<td>CF-50MR</td>
<td>HF Low Pass Filter 15Kw PEP</td>
<td>£43.95</td>
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<tr>
<td>CF-30H</td>
<td>HF Low Pass Filter 2Kw PEP</td>
<td>£69.00</td>
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<tr>
<td>CF-30S</td>
<td>HF Low Pass Filter 150Kw PEP</td>
<td>£25.00</td>
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<tr>
<td>CF-10S</td>
<td>6K Low Pass Filter 150Kw PEP</td>
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<tr>
<td>CF-BPF2</td>
<td>2 Band Band Pass Filter 150Kw PEP</td>
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<tr>
<td>CD-160H</td>
<td>PWR 1.6 60MHz 20/200/2000</td>
<td>£99.00</td>
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<tr>
<td>CMC-2</td>
<td>Pwr 1.6 200MHz 2000/2000</td>
<td>£119.00</td>
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**HF Antennas**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>R6</td>
<td>10/12/15/17/20 vertical</td>
<td>£295.00</td>
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<tr>
<td>R700C</td>
<td>10 thru to 40m vertical</td>
<td>£389.00</td>
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<tr>
<td>R80</td>
<td>Radial kit for R700C</td>
<td>£129.00</td>
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<tr>
<td>AV-3</td>
<td>14-21-28MHz vertical 4.3m long</td>
<td>£19.00</td>
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<tr>
<td>AV-5</td>
<td>3-5-7-14-21-28MHz vertical 7.4m long</td>
<td>£169.00</td>
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<tr>
<td>APA18</td>
<td>8 Band Vertical</td>
<td>£229.00</td>
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<tr>
<td>APR18A</td>
<td>Radial Kit</td>
<td>£54.00</td>
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<tr>
<td>40-2CD</td>
<td>2-4 ele 40m Yagi</td>
<td>£499.00</td>
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<tr>
<td>A13S</td>
<td>14-21-28MHz Yagi</td>
<td>£389.00</td>
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<tr>
<td>A29S</td>
<td>12/17m 3-ele Yagi</td>
<td>£229.00</td>
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<tr>
<td>A13B</td>
<td>30m Extension A29S</td>
<td>£119.00</td>
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<tr>
<td>204C</td>
<td>4 ele 20m Yagi</td>
<td>£99.00</td>
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<tr>
<td>154C</td>
<td>4 ele 15m Yagi</td>
<td>£229.00</td>
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<tr>
<td>D4</td>
<td>Dipole 10/15/20/40m</td>
<td>£229.00</td>
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<tr>
<td>D3W</td>
<td>Dipole 12/17/20m</td>
<td>£139.00</td>
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<tr>
<td>A3S</td>
<td>3-4 ele 10m Yagi 10/15/20m</td>
<td>£429.00</td>
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**Vhf Antennas**

<table>
<thead>
<tr>
<th>Model</th>
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<th>Price</th>
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<tbody>
<tr>
<td>AR-270/3</td>
<td>2/30 Dual Band Vertical 1.3m long</td>
<td>£69.00</td>
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<tr>
<td>AR-270/3</td>
<td>2/30 Dual Band Vertical 2.3m long</td>
<td>£95.00</td>
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<tr>
<td>AR22</td>
<td>2m Vertical 1.2m long</td>
<td>£22.00</td>
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<tr>
<td>AR6</td>
<td>6m Vertical 3.1m long</td>
<td>£52.00</td>
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<tr>
<td>A148-10S</td>
<td>2m 10 ele Yagi 13.2 dB</td>
<td>£72.00</td>
</tr>
<tr>
<td>A144-20T</td>
<td>2m 10 ele Cross Yagi 12.2 dB</td>
<td>£105.00</td>
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<tr>
<td>1322</td>
<td>13-ele 2m Yagi</td>
<td>£219.00</td>
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<td>1723</td>
<td>17-ele 2m Yagi</td>
<td>£190.00</td>
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<tr>
<td>A50-3</td>
<td>3 ele 6m Yagi</td>
<td>£90.00</td>
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<tr>
<td>A50-5S</td>
<td>6 ele 6m Yagi</td>
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<tr>
<td>A50-6S</td>
<td>6 ele 6m Yagi</td>
<td>£295.95</td>
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<tr>
<td>424B</td>
<td>24-40m 70cm Yagi</td>
<td>£119.00</td>
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<tr>
<td>22X8</td>
<td>2m-22 ele Yagi c/w polarisation switching £229.00</td>
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<tr>
<td>7X8X8</td>
<td>70cm 22m 36cm Yagi c/w polarisation switching £219.00</td>
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**TELEX HY-GAIN**

**HF ANTENNAS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>12AVS</td>
<td>10-15-20m vertical, 4.1m</td>
<td>£109.00</td>
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<tr>
<td>12AVOWBS</td>
<td>10-15-20m 40m vertical, 5.5m</td>
<td>£315.00</td>
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<tr>
<td>DX38</td>
<td>10-80m vertical</td>
<td>£369.00</td>
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<tr>
<td>DX77</td>
<td>40-10m vertical</td>
<td>£369.00</td>
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**ROTORATORS**

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
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<tbody>
<tr>
<td>CDA5</td>
<td>Medium duty meter controller</td>
<td>£315.00</td>
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<tr>
<td>HAM IV</td>
<td>Medium duty meter with break</td>
<td>£449.00</td>
</tr>
<tr>
<td>HAM V</td>
<td>Medium duty meter with digital control</td>
<td>£749.00</td>
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**DATA PRODUCTS**

We now have the widest range of data products in the UK, and with our specialist knowledge of the products we must be by far the number one choice for packet equipment.

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<th>Product</th>
<th>Description</th>
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<tbody>
<tr>
<td>PK12</td>
<td>1200 baud TNC</td>
<td>£129.00</td>
</tr>
<tr>
<td>PK96</td>
<td>9600 baud TNC</td>
<td>£219.00</td>
</tr>
<tr>
<td>PK223/MBX</td>
<td>Multimode data modem</td>
<td>£679.00</td>
</tr>
<tr>
<td>*DSP322</td>
<td>Multimode data modem</td>
<td>£479.00</td>
</tr>
<tr>
<td>*PK900</td>
<td>Multimode data modem</td>
<td>£479.00</td>
</tr>
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*Free pack - Win software*

**PacComm**

Tiny 2 1200 baud TNC £139.00
PicoPacket 12 baud portable TNC £119.00
Spirit 2 9600 baud TNC £219.00

**Kantronics**

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**Symek**

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T-7E

IC-706

IC-738

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- **TH-79E**
- **TM -451E**
- **TM -251E**
- **TS -790E**
- **TS -50S**
- **FT -50R**
- **FT -690R2**
- **FT -290R2**
- **FT -736R**
- **FT -840**
- **FT-990/AC**
- **FT-990/DC**
- **FT-1000MP/ AC list £2849**
- **FT -1000**

**KENWOOD**

- **IC-W31E**
- **IC-T42E**
- **IC-T22E**
- **IC-2GXET**
- **IC-2GXE**
- **IC-275H**
- **IC-2710H**
- **IC-T7E**
- **IC-Z1E**
- **IC-2GXE**
- **IC-T22E**
- **IC-T42E**
- **IC-W31E**

**YAESU**

- **FT-50RI 2.5W, 2m multimode mobile £249.00**
- **IC-290E 10W, 2m multimode mobile £249.00**
- **Trio TS -120S HF mobile transceiver, 100W, 80-10m amateur bands £229.00**
- **Trio TM-201A 20W 2m FM mobile £179.00**
- **Kenwood TH-22E 2m handheld, battery box, no charger £119.00**

**SECONDHAND**

- **Alinco DJ-F1E 2m handheld, c/w battery pack, charger and case £159.00**
- **Kenwood TH-75E 2m/70cm dualband handheld, c/w speaker mic, battery pack, case and charger £249.00**
- **Yaesu FT-76R 70cm handheld c/w battery pack, charger and case £159.00**
- **Tokyo HX-240 2m to HF transverter. Covers 80-10m amateur bands £189.00**
- **Trio TS-120S HF mobile transceiver, 100W, 80-10m amateur bands £329.00**
- **Kenwood AT-50 auto antenna tuner for TS-50S £1399.00**

**SPECIAL OFFERS**

- **Kenwood TS-50S 100W mobile HF transceiver, general coverage. (One only) £869.00**
- **Kenwood TH-79E 2m/70cms dualband handheld, wideband receive. (Whilst stocks last) £359.00**
- **Kenwood TH-22E 2m handheld. (Whilst stocks last) £209.00**
- **Kenwood TH-42E 70cms handheld. (Whilst stocks last) £239.00**
- **Icom IC-2350H 2m/70cms dualband mobile £469.00**
- **Icom IC-T7E 2m/70cms dualband handheld, wideband receive £299.00**
- **Alinco DR-605 2m/70cms dualband mobile c/w CTSS, DTMF £495.00**
- **Alinco DJ-G5E 2m/70cms dualband handheld, c/w CTSS, wideband RX £399.00**

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IC-706 along with our
superb SG-230
"Smartuner" automatic
antenna tuner at the very special price of

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SAVE £269.00

**SG-230 Smartuner®**

Antenna Coupler SSB, AM, CW & DATA

£399.00

**YAESU**

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- **FT-1000MP/AC list £2849 our price £2279**
- **FT-990/DC list £1999 our price £1599**
- **FT-990/AC list £2199 our price £1799**
- **FT-900AT list £1649 our price £1149**
- **FT-840 list £959 our price £779**
- **FT-736R list £1999 our price £1399**
- **FT-290R2 list £599 our price £399**
- **FT-690R2 list £649 our price £399**
- **FT-3000M list £479 our price £399**
- **FT-50R list £349 our price £299**

**ICOM**

- **IC-75D5P list £3899 our price £3099**
- **IC-736 list £1969 our price £1599**
- **IC-738 list £1649 our price £1499**
- **IC-706 list £1195 our price £999**
- **IC-820H list £1795 our price £1499**
- **IC-275H list £1495 our price £1395**
- **IC-2710H list £1675 our price £1599**
- **IC-T7E list £329 our price £299**
- **IC-Z1E list £529 our price £459**
- **IC-2GXE list £255 our price £225**
- **IC-2GXE list £279 our price £229**
- **IC-T22E list £259 our price £229**
- **IC-T42E list £269 our price £269**
- **IC-W31E list £469 our price £419**

**5 YEAR WARRANTY AVAILABLE**

**EXAMPLE**

YAESU FT-1000 with 1 year manufacturers warranty:-
4 years extra warranty = £169.80

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Practical Wireless, November 1996

**Keylines**

Rob Mannion’s viewpoint on the World of Amateur Radio

---

If you’ve read the ‘Receiving You’ pages from the October issue, I’ve no doubt you’ll have noticed the letter from Nigerian radio enthusiast Andrew Gani-Bilama. Andrew, like many others in developing countries, needs support in getting going in the hobby and as I mentioned in my comments at the end of Andrew’s letter, I’m planning to recruit the help of you (and particularly) that of your club this month.

I would like to suggest that Auntie Rural sends over the UK (and anywhere PW is read of course) adopt radio enthusiasts (or clubs where they exist) in developing countries. This would mean sending surplus radio components and other “bits and pieces” (which most of us have in abundance but which can be extremely difficult to get in Africa and Asia) to the “adopted” radio enthusiasts.

**Airline Help**

My idea to help and encourage budding radio enthusiasts in developing countries can only work if we can get the help of an airline. With that in mind I’ve written directly to Lord King, Chairman of British Airways asking for his airline’s assistance. I hope to have news on the matter in time for my next ‘Keylines’.

In the meantime...would you and your club like to join in and help enthusiasts who want to join in and enjoy radio, but don’t have the benefit of the enormous quantities of radio “bits and pieces” that we have (and which although perfectly okay, often get dumped or left in store) hidden away? If yes then please drop me a line.

Together we can help others to enjoy radio in the same way we’ve been helping ourselves. The only difference is...these “bits and pieces” will be flown thousands of miles before completing their journey on the back of someone’s bicycle!

**Award For Irish Entries**

As many readers will remember, I’ve been trying to support and initiate an appropriate award for Irish entries to the long-established Practical Wireless 144MHz QRP Contest. I had hoped to attract a sponsor to support the award so we could present it every year to the highest scoring EI or GI entry in the contest in the same way the ‘Tennantast Trophy...in Memoriam To Frank Hall GM2BZX’ is awarded to the highest scoring EI station from the 1996 WPX Contest.

However, as I’ve not been able to attract a sponsor, I propose to make a gift of the award myself. I’ve been delighted to be able to do this because I always made very welcome indeed to Ireland...North and south of the border between EI and GI.

So, in a small way I’d like to repay the kindness extended to PW and myself from Radio Amateur Friends in Ireland by presenting the trophy in time for the 1997 ORP contest. But although I have an idea of the form of the award however, it needs and deserves a name.

Can you help name the new trophy? Personally, I feel that Dr. Neil Taylor GM2UX who has run the contest since its inception, should be honoured. Perhaps you’ve got an ideal name for the award? If so, let me know, as it would be an excellent way of marking Neil’s hard work over the last 14 years and encouraging our friends in EI and GI for their efforts in the past and spur them on to keep trying!

I look forward to hearing from you with your suggestion for a suitable name for the trophy.

---

**Write Carefully! Please!**

In a recent ‘Keylines’ editorial I (on behalf of Zic Crabb) made a request for readers to write their free ‘Bargain Basement’ adverts out carefully, and now it’s time for a similar request! This time it concerns letters aimed for publication in ‘Receiving You’. Your (and let’s face it - it is your column) letters intended for ‘Receiving You’ are coming in thick and fast. We’re never short of letters from readers and the editorial team is delighted to get them. However, we often have great problems in reading your handwriting! Practical Wireless itself and the hobby in general requires feedback and interest from readers.

Because of this we’re delighted to receive your letters but we ask you to carry out the following simple procedures. If the letter is aimed at ‘Receiving You’ make the very plain on the letter. Also, please bear in mind that we cannot publish anonymous letters. I feel frustrated when unsigned letters arrive because often the writer has valid and interesting points to be made. I can’t reply to un-signed letters...so please sign them so I can at least reply to you. If you don’t want your letter to appear in print (but want to have your say anyway)...it won’t be published without your permission. That I promise.

We publish the minimum address of correspondents, and if requested to do so, we’ll only mention the county of origin. But to do so we must have your full name and address. Have the courage of your convictions, trust us and write that letter!

Finally on this topic, I come to the most difficult aspect of all regarding your letters - deciphering them! Typed letters are fine and handwritten letters are just as good (often far less ‘mechanical looking’ than computer generated fonts) provided we can read the handwriting.

So, please ensure you write as clearly as possible. Please print your name, callsign and address in block capitals so we can get back to you to query anything. This is essential nowadays as many people are ‘Particulars Withheld’ in the RSGB Callbook which is often our only way of cross-checking possible combinations of called/named names and callsigns. Thank you...and please keep writing into PW!

---

**Traders’ Table**

By now you’ll have noticed our new advertising feature ‘Traders Table’ which is providing the most up-to-date listing of second-hand equipment possible in the magazine. The feature is aimed at helping readers and traders alike by having a much later advertising ‘closing date’ than is possible for display adverts.

We hope that you’re able to find the equipment you need via this new advertising section. It’s aimed to help the reader who wishes to buy from a known trader (bringing benefits such as finance, part exchange and warranties, etc.). And of course ‘Traders Table’ compliments our very popular ‘Bargain Basement’ readers.

Many of our advertisers sell second-hand items. As ‘Traders’ Table’ establishes itself we hope to include more advertisers, we value and support all our advertisers and as space becomes available, there’ll be room for everyone who wishes to take advantage of the innovative feature.

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**Buyer’s Guide**

We’re introducing another new feature in PW this month - in the form of a ‘Buyer’s Guide’. Compiled by Donna Vincent G7T2BZ, the ‘Buyer’s Guide’ will provide a month-by-month listing of what new equipment is available, average prices, what it does, brief specifications and other information to help you decide what item of equipment suits you best.

Donna hopes to make the guide as comprehensive as possible and we hope you’ll find it useful. We’ve had many requests to provide this form of listing and look forward to your comments.

---

**Haydon Communications**

I’m sorry to say that due to a typesetting error in the Haydon Communications advertisement on page 6 of the October issue, the price of the IC-T9E was incorrect. The correct price should have been £295 and not as published. Please contact the advertiser direct for any queries on this matter.
The Star Letter will receive a voucher worth £10 to spend on items from our Book or other services offered by Practical Wireless. All other letters will receive a £5 voucher.

New Society - Comments From Belgium

Dear Sir,

I respectively disagree with your 'Keylines' editorial in PW of August 1996. I am the President of the Flemish Radio Amateur Society (VVRA). The Society was founded in 1981 as an alternative to the Union Belge des Amateures (UBA) who see radio amateurism rather as an elite group (which is our fullest democratic right). We want to make radio amateurism more popular, in Belgium there are only about 5,000 licensed amateurs out of a population of 10 million. We hope to achieve this goal by our efforts to make the radio exam more reasonable in degree of difficulty, to allow exams more reasonable in government to make the radio easier to achieve this goal by our efforts to make the radio exam more reasonable in degree of difficulty, to allow Novices to have a slim chance of passing an exam without having to do much work.

I recently retired as a senior manager in a very large American company and I know the major driving force to make a better product is competition. Trying to be better not only serves the shareholder but certainly benefits the consumer.

A second amateur society in Great Britain can only result in a better product, even when the present (RSGB) product is superb already, which I do not doubt.

Dr Guido Clinicamallie
ONT7C
President VVRA. Belgium

Dear Sir,

May I be allowed to say that I agree with all that has been said on the future of amateur radio ('Keylines', August PW). There was a time some years ago when I might have thought quite differently following a sad experience with the RSGB - my first and only encounter with the society in 60 years.

I suspect it had something to do with the fact that I was not an RSGB member, just another someone with a lifelong interest in the radio hobby. The advice and information I was seeking eventually came from another radio society outside the UK. But that's another story.

So far as I know, nothing has been published on the present and future agenda of UKRS. All I know comes from 'ear wigging' on the amateur bands, which leaves much to be desired. There appears to be a wide difference of opinion as to who best can serve the UK amateur fraternity and some remarks made by individuals over the air would have been best kept to themselves.

Richard Williams Oxon

Dear Sir,

In your recent letter to me in reply to my comments on your August 'Keylines', you queried my objection to RSGB subs which I mentioned when writing to you. So may I explain some of the basic reasoning for my comments?

My initial introduction to radio was in the early 1940s when I joined the Kingston Radio Society as a very junior member. I can remember the masses of encouragement from existing G2s. The most important factor then was, that the aid and assistance given, especially to the younger and less fortunate amongst us, was free. Education and encouragement was considered more important.

Later on I served my time at Woolwich Arsenal. Again, I was deeply affected by the willingness of the skilled amongst us to give freely of their time, knowledge and skills to teach a group of often quite obscure young men crafts those now old men have to this day.

Then the army called and yet again I met with this wonderful willingness of the skilled man to share his gifts with the less fortunate amongst us with a freedom which can only be described as almost a form of love.

This has left me with the view that I should always be willing to be at least as generous myself towards the young and student among us. We seem to have lost that 'To give and not to count the cost' approach, which so benefited the country and, indeed, the world.

Today, everything is measured by profit and added value, by a 'fairness' which beggars the imagination. How can it be fair for a person with a 'below-the-bread-line' income to pay exactly the same tax or subscription as someone receiving a salary of perhaps several thousand pounds each week? This becomes even more obscene when tax or subscription is being used to help pay the inflated 'wages' within some organisations.

Many of the so called 'professional' men have to this day.

Amongst us to give freely of their time, knowledge and skills to teach a group of often quite obscure young men crafts those now old men have to this day.

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Some amongst us do pay subscriptions to minority-interest professional groupings. We do it for 'professional' reasons, not for 'minority' interests. And we do it freely of choice.

But amateur radio is not a minority interest, it has to do with communication which is world-wide. It has a great deal to do with freedom as...
Morse Language?

Dear Sir

Without wishing in any way to belittle his special interests, may I refer to Mr Brengnan’s letter (Sept ’96) and simply put forward a different point of view. The argument that Morse is an international language is true in a very limited sense and I agree that it is possible to pass Morse or less standardised messages to persons in many bands. But is it communicating? It all depends on how the word is defined. I realise that really expert experimenters could discuss almost anything at length, but I doubt whether the average person does more than exchange the barest details.

If I were in touch with someone in a far-distant country, unless he wished to discuss arial, I would not be particularly interested in knowing he had 270 feet of wire slung between two coconut palms. What use could I make of that? I would much rather know what he did with the coconuts! And if he did not have a good command of English, I do not think the list of Morse abbreviations would get very far is discussing his coconut harvest!

The pro-Morse/anti-Morse argument has gone on for years and has become very tedious. It is well known that the radio communications agency are in favour of scrapping the international Morse requirement and it seems to me that if they were convinced, from their point of view, that the UK Morse test was really necessary, they would have told us all to shut up a long time ago.

The agency is there to request and they should make up their minds and do just that. Perhaps the recent survey will enable them to do so. Suppose the bands were opened up, would not the increased activity eventually produce operating techniques to cope with the livelier conditions? Adding skills and extra interest to the hobby? Perhaps communicating would then take on a new meaning.

W. Parkin G8PBE Cheshire

CB Radio On 6MHz

Dear Sir

I was interested to read David H. Wright’s letter concerning 6MHz CB. Also, sorry to hear that this gentleman finds illegal ‘Pirate’ transmissions between 6.5-6.700MHz of more interest than amateur radio, or as he says: “I now spend more time listening away from the amateur bands than transmitting on them!” Does he write with tongue in cheek I ask myself?

As for his comments about the ‘45 metre’ operators sounding like and using amateur language. I wonder? Mr Wright seems to indicate that a station calling ‘CQ-45 metres’ sounds like an amateur. I disagree!

All radio amateurs know exactly what frequency that are transmitting on and certainly what band they are in and do not call CQ 10, 15, 20 or any other metres wavelength for that matter! In my book, CQ the frequency or CQ X X metres is a sure fire giveaway of ‘so called slick pirate fringe’

Mr Wright does not include his callsign but from his text it suggests that he is a licensed amateur, this may well be the case and seeks to omi it because he raises an issue that he may not wish for any ‘out of licence’ response.

However, Mr Wright, if you are prepared to stick your head up above the trenches, and write into a magazine such as PW, you should really be prepared to fully identify yourself in your full glory with callsign.

I do not listen out of band. I am quite happy with the full amateur licence spectrum, which is quite enough for me! I do not suggest that you should contain yourself just to the amateur frequencies as far as an RX is concerned, but I am sure that you do not know what happens on 6 metres! Again, ‘tongue in cheek’ I think, unless you are a new radio amateur?

Tim Cattley GOCWZ, Salop

History Repeats Itself

Dear Sir

In 1949 when I was a sixth form student in a hill-country school in Ceylon (now called Sri Lanka) I had access to ‘technical Wireless’ in the school reading room. I avidly read each issue and even tried out F. J. Camp’s circuits.

Then came the Beaverbook-orchestrated price war in Fleet Street and the cost of English periodicals shut up alarmingly. PW soared from 6d to 9d a copy, a 50% price rise.

The school librarian, who was also my house master, called a crisis meeting. There had to be cuts and PW was axed.

So one Saturday each month, I walked seven miles across undulating country to the army town of Diyatalawa to buy a copy of my favourite magazine. Leave of absence was readily granted by the house master, who called me a ‘real sport’. Little did he know that the ‘sport’ was doing a roaring trade making purchases for those unable to obtain permission and/or unwilling to walk seven miles each way.

I bought anything from sweets to gramophone records (78r.p.m.) and also those banned comics charging a commission, cash with order! My modest commissions more than paid for PW. They covered the cost of a hot spicy meal in one of those cheap and dingy eating houses.

Had the school matron not known, she would have been horrified ‘not beds of cholera and typhoid’, she would call them. But, on what a welcome change to stodgy hostel!"

Now, in the first year of my retirement, history repeats itself. As a result of budget costs, Hounslow Public Library has discontinued Practical Wireless - fancy that!

Once again I have to walk, not seven miles, but three quarters of a mile to W. H. Smith in Hounslow High Street to buy my radio magazine and at what a price? £2.20 per copy, a 5500% price increase on 1949 prices - that would my pension increase by the same scale!

To compound the situation, there are no commissions to be made - not from my neighbours! That leaves little change for a meal out, The High Street burger bars may be a far cry from Diyatalawa’s grubby cafes, but having weathered the perils of cholera and typhoid, am I pushing my luck with CJD (Creutzfeldt-Jacob disease)?

Oh, if only I could stay put in my shack and download PW on packet!

Maurice De Silva GOWMD Middlesex

Editor’s comment: A fascination hangs Maurice! Specialist magazines such as PW are often difficult to get (unless you place a firm order) at ‘High Street’ newsagents, etc. It may save you much time and frustration if you take out a subscription and you’ll certainly save money from your pension, but unfortunately you won’t get the exercise any more!

Reader’s letters intended for publication in ‘Receiving You’ must be original and not be duplicated. Letters are edited or shortened on the understanding that they have only been submitted to Practical Wireless. Please ensure that your letter is clearly marked for publication in Receiving You and that it has not been submitted to other magazines. We reserve the right to edit or shorten any letter. The views expressed in letters are not necessarily those of Practical Wireless.

Send your letters to the PW Offices, marking it clearly for ‘Receiving You’
Radio Helps Children In Need

The Mid-Sussex Amateur Radio Society (MSARS) together with 20 other clubs from around Britain are joining together to operate special event stations in aid of this year’s BBC Children In Need Appeal. The MSARS station, GI8OK will be operational on h.f. and v.h.f. over the weekends of 15/16th and the 22/23rd of November.

At the time of going to press the GB callings have yet to be confirmed but all stations taking part have been asked to use the word NARCINA as a means of identification. All stations are asked to ‘call in’ and boost the number of contacts.

To date the clubs taking part in the event are: Blackwood, Brantree, Caravan & Camping. Dundee, Grantham, Hastings, Horsham, Keighley, Leicester, Lowestoft, N. Bristol, N. Wales, North Warkfield, Otley, Preston, S. Notts, Thames Valley. Warrington, Wigan, and Worthing.

Any other clubs who wish to take part will be more than welcome to join in. For more details contact G3CLF or (01903) 521152 or on Packet GOGMC@GB7ZZZ.

Leading Scottish Station

On the night of 16 August 1996 the Cockenzie & Port Seton Amateur Radio Club held their 3rd Annual Junk Night, which proved to be a great success. During the evening £477 was raised from the entrance fee, refreshment and raffle money, which when added to other money raised by the club throughout the year amounted to a grand total of £727. This money was donated to the Club’s adopted charity, the British Heart Foundation.

Also during the evening it was announced that the Cockenzie Club had been placed Leading Scottish Station in the Practical Wireless QRP Contest. For the second year running the club were presented with the ‘Tennamast Trophy in Memoriam of Frank Hall’.

Martin Lynch Upstages MicroHenry!

Determined not to be continually up-staged by his son - nicknamed ‘MicroHenry’; Martin Lynch has pulled a master stroke and arranged a birthday party young Henry can’t compete with. MicroHenry can’t compete because he’s not got ‘enough years in’ as Dad Martin is celebrating his 40th birthday while poor young Henry is still in a single figures!

Striking a double blow, Martin Lynch is celebrating his birthday and almost 20 years in the Amateur Radio retail trade and inviting everyone to his ‘Open Day’ on Saturday 2nd November 1996.

Martin, recalling almost 20 years ‘in the trade’ reflects on how much has changed and the widespread nature of his business. And in fact the widespread nature of the customer base was demonstrated during August when Andy Wyspianski - the Customer Services Supervisor called a customer in Belfast to tell them a radio was ready.

The customer’s wife answered and while Andy was explaining the reason for his call, he heard a ‘thud’ from the other end. Not getting an answer from the lady, Andy dialled 999. Contacted by the Metropolitan Police in London, the Northern Ireland police and an ambulance were despatched and after forcing their way into the house, found the lady slumped unconscious on the hallway floor. She’d suffered a burst ulcer, fallen down and knocked herself out! Operated on that night, she is now recovering well.

Martin Lynch says ‘So howzat’ for customer service to the extreme!’ (Well MicroHenry, Dad did at least get the last word!).

Kylie’s The Key Man For 1997

Well known Northern Ireland Radio Amateur Ian Kyle G8AYZ is to be the next President of the Radio Society of Great Britain. Ian will succeed the 1995 President, Peter Sheppard G4EJB and will be installed during a ceremony which is planned to be held in Northern Ireland in early 1997.

Ian who is aged 67 retired after working in radio communications engineering for many years. He’s married to Jean and they have two children, Ailastair and Lynn (both are radio amateurs) - and lives in Lisburn, County Antrim.

An active Radio Amateur, Ian Kyle is well-known for his interests in v.h.f., microwave ‘hill topping’ and enjoying himself on the higher bands. One of his major responsibilities at the moment is the GB2RS News Service.

New Prefixes Included

As from 1 January 1997 the UK Morse test will contain passages with both ‘G’ and ‘M’ prefixes for UK callings. This follows the introduction of their M-series callings. The information sheet Amateur Radio QSO-Format Morse Tests, which is sent out to all candidates who book their Morse tests through the Radio Society of Great Britain, has been amended accordingly.

Ian Kyle G8AYZ, the Radio Society of Great Britain’s President Elect for 1997.

Photo courtesy of Terry Barlow G1USS

In 1973 the ‘young’ Martin was challenging his elders, now ‘MicroHenry’ is challenging Dad!
November 1: The Banor & BARC annual surplus equipment rally is to be held at Hamilton House, Hamilton Road, Banor, Northern Ireland. Rally starts at 7pm on the night. Entry is free. Contact the organisers direct. A variety of refreshments will be available to members and visitors. Entry for children 14 years and under is free of charge with adult. Fees: Adults, £2; OAPs, £1.50; and children up to 14 years old free. The event will feature all the usual trade stands, evening entertainment, a large Bring & Buy stall, Morse tests on demand from 1200 to 1500 (candidates must bring the appropriate documentation), and a variety of refreshments will be available, including full meals in the licensed restaurant, bar meals in the bar (where evecll), snacks/drinks in the main hall, talk-in on S22. Disabled car parking in leisure complex, all other parking in surrounding car parks. Admission to Hamford is £1.50. Follow the large brown Met rodome signs (and Hamfest signs where appropriate). More details from Ernie Bailey on (01226) 716339 or mobile on (0893) 749558.

November 3: Thames Valley Electronics Rally is to be held at Kempston Park Racecourse, Staines Road East, Sunbury On Thames, Middlesex. Doors open 10.30am to 4.30pm. There will be refreshments and a bar available. Admission is £1.50 for adults, OAPs £1 and children up to 14 years old free. The event is on one level. There will be retailers, accessory suppliers, antenna suppliers, a Bring & Buy stall, etc. More information can be obtained from Howard Promotions on (01949) 456504.

November 5: AMS·96 will take place at Bingley Hall, Stafford County Showground, Weston Road, Stafford. This event has not been cancelled and must not be confused with other similar events at this venue. AMS·96 is a consumer and enthusiast rally with an increasing Amateur Radio content. The event regularly attracts over 30 trade stands providing information, log onto the web site at promotions@shawward.kem.e.co.uk or contact the organisers for further information at: Shawward Promotions, 8, Knightsdale Business Centre, 30 Knightsdale Road, Ipswich, Suffolk IP1 4JL. Tel: (01473) 741361. Fax: (01473) 741361.

November 8: The Red Rose Rally is being held at Horwich Leisure Centre, Victoria Road, Horwich, Nr. Bolton OF M81. There will be a cafe, bar, Bring & Buy, RSGB stand, special interest groups, parking for 300 cars, free cash draw every hour, children’s activity room up to seven years supervised by parent, Doors open at 10.30am and admission is £1, free for children on S22. Albert G7ZCV on (01264) 629290.

November 8: The SDX Cluster Support Rally is being held at the Markhill Community Centre Halls, Maryhill Road, Glasgow. The hall is located approx. 1 mile from junction 17 of the M8 motorway and five minutes walk from St. George’s Cross underground station. As well as the normal traders, radio, electronics, computers, antennas, etc., a series of lectures are planned for the day. There will also be a RSGB Forum, which will be attended by members of the RSGB General Council. A cafe will be run throughout the day, serving hot/cold drinks and light snacks. Talk-in will be provided by Strathclyde Net on S22. For additional information, please contact Mike Shield on (01388) 268264.

November 16: The London Amateur Radio & Computer Christmas Rally is being held at the Lee Vic Children’s Centre, Picketts Lock Lane, Edmonton, London N9. Doors open at 10am to 4pm. Trade stands, Bring & Buy, on-demand Morse tests, talk-in on S2m & 70cm, facilities for the disabled, priority admission for disabled visitors, bars, restaurants, ample free parking (01923) 893929.

November 24: The Red Rose Rally is being held at Horwich Leisure Centre, Victoria Road, Horwich, Nr. Bolton OF M81. There will be a cafe, bar, Bring & Buy, RSGB stand, special interest groups, parking for 300 cars, free cash draw every hour, children’s activity room up to seven years supervised by parent, Doors open at 10.30am and admission is £1, free for children on S22. Albert G7ZCV on (01264) 629290.

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Isn’t it time you subscribed to Practical Wireless and got the vital Component to bring your hobby alive?
This month Elaine Richards G4LFM bases her column around questions which have been asked by you in your letters.

**Interference**

Nearly all of us have suffered a bit of trouble with interference at some time or another and Duncan Baker from Reading is no different. I haven’t too many details to go on, but obviously something is causing interference to his radio.

At certain times the signals that Duncan is listening to are wiped out. Basically anything electrical can cause interference, anything from fluorescent lights to central heating systems and televisions to electric drills.

If your neighbour is into d.i.y. and it’s his drills, electric sander or band saw, then you’ll hear a nasty buzzing sound over the radio. Irritating clicks can be things like the starters of lights or the timer on a central heating system.

Unfortunately, even the electrical mains can carry the interference. Obviously, it’s going to take a bit of detective work to find out what is causing the trouble.

If the interference is external to your house then you may never find out. But first, it’s worth making sure that your antenna is as far away from any sources of interference as possible. By this I mean away from things like power lines and TV antennas. Also make sure you are using the right connectors and they are fitted correctly.

If you do decide that the interference is reaching your radio via the mains then you can fit a mains filter unit. It’s very important that you follow the fitting instructions carefully because if they are badly fitted they can cause even more problems than if you had left well alone!

If you can trace the cause of the trouble then there are plenty of books around with helpful advice on how to get rid of it. Even if you can’t work out where it is coming from, all is not lost. With interference that’s fairly permanent, then you could try a noise blanker or a d.s.p. filter. Try contacting some of the advertisers in *PIW* to find out which product will help you most of all.

**Beacons**

Jonathan Wright has written in asking about beacons, what are they, who runs them, etc. And to start replying Jonathan, simply speaking beacons in the h.f. bands are used as propagation indicators and are controlled by the International Amateur Radio Union (IARU).

So, let’s take a look at the most popular DX band, 14MHz or 20m first. And in fact there aren’t that many beacons here, probably because it’s a ‘popular’ band. And there are always stations on the air to give you an idea of what propagation conditions are like.

All the beacons are on the same frequency, 14.100MHz but they take it in turns to transmit. Each beacon transmits for just one minute in every ten. So, if you tune into 14.1MHz you may not hear anything as there are a couple of minutes when no-one transmits and also you won’t be able to hear all the beacons all the time.

There are beacons in Japan, Argentina, Israel, California and Portugal amongst others. Each beacon runs 100W into some kind of omni-directional antenna.

The cycle starts with 4U1UN/B followed by W6WX/B, KH60/B, JA2IGY, 4X4TU/B, Olt2B, CT3B, then a minute’s gap and finally LU4AA. However, the whole beacon picture gets more crowded when you move up to 28MHz.

There are a lot of beacons on the 28MHz band and they operate on different frequencies, but all around 28.2 – 28.225MHz region. It can be difficult to tell which beacons are on the air and which have ceased because they do get taken off the air for maintenance or just because the person running them no longer wishes to keep up the work.

Anyway, if you spend a bit of time listening you will soon work out which are active. If you want to try and use beacons to tell you which areas of the world are workable at any time, it would be a good idea to get a listing of the current beacons on the band you are interested in from the RSGB.

When you move up to the v.h.f. and u.h.f. bands, then the picture changes again. There are a lot of beacons on both the 144 and 432MHz bands all over Europe. Most listeners in this country will probably be interested in the beacons on the Continent as they will let you know whether you are likely to work into certain countries or not. Rather then spending time calling ‘CQ DX’, you could try listening around the beacons to see which countries can be heard and then tailoring your operating to match. Again, the RSGB can help you with a full list of who’s got a beacon on which frequency.

There are beacons in the microwave band too, but these are often used for tasks such as aligning equipment. These bands require specialist knowledge and I would strongly suggest that you talk to members of your local radio club about their experiments before you start trying any of your own.

For details of current beacons, contact: The Radio Society of Great Britain, Lambda House, Cranborne Road, Potters Bar, Herts EN6 3JE.

**Log Keeping**

In these days of computers, is it worth bothering with old-fashioned log book-keeping anymore? asks Richard France in Cheshire. Well, in reply Richard, that depends on your situation and your views on computers!

If you have a computer available, then obviously there are lots of advantages to having your log filed on disk. It’s easier to look back and check whether you’ve worked a station before and what details you wrote last time.

However, paper log books don’t crash and can even be used during a power cut! Mind you, even if you do use a logging program, as an amateur, you are legally obliged to be able to produce hard copy of the log and you have to keep the log separate to anything else.

It’s probably not a bad idea to have a copy printed out for reference either. There is something special about sitting down and leafing through your log
Learning Morse

Learning Morse is not easy for anyone and often seems to be a cross between a foreign language and shorthand! Brian Waller wants to know what’s the best way to learn Morse and what will the Morse test be like. Let’s look at the Morse test first.

Your examiner will want you to pass, they’re not so thin there waiting to pounce on your every mistake with great enthusiasm and don’t take great delight in failing another hopeful. The examiners are perfectly nice human beings, it’s the people arriving for the test that give them ogre-like characteristics.

It’s a very short test, less than 10 minutes. You have a three minute sending test, during which if you make any mistakes you can correct them. I would say that if you are even unsure whether it was a mistake or not I would correct it anyway. That’s because you can’t afford to make any uncorrected errors in your sending.

The receiving test is six minutes in length and you don’t have to be perfect to pass, you can have up to four mistakes and still pass. The RSGB organises the tests and you’ll get all the details on the application form. Each of the test centres in the UK hold tests every couple of months and you can often sit a test at some of the larger rallies. But your test must be booked in advance.

Now to actually learning Morse. There is no formula for learning Morse, different people find different ways to learn. All I can say is there are no short-cuts, it’s hard work and you can’t expect to get it right if you only set aside 10 minutes a week.

Your local radio club will probably run classes and it can be helpful to learn in a group. The classes will probably follow a set course, with extra help as needed.

If you are into contests then you may find Super Duper worth looking at. The latter two programs are available over the Internet if you are interested.

Teaching program.

The Amateur tutor or a teaching program from the club.

Another use for the computer is sending. It’s a very short test. less than 10 minutes. You have a three minute sending test, during which if you make any mistakes you can correct them. I would say that if you are even unsure whether it was a mistake or not I would correct it anyway. That’s because you can’t afford to make any uncorrected errors in your sending.

Another use for the computer is tracking down the contacts you have made that will enable you to claim an award or two. In a paper log this can take some time.

So, I think it is a case of using the method that suits you best, but there are benefits and drawbacks with both. There are a good range of logging programs available, many of my amateur acquaintances use TurboLog and I’ve also heard that FastLog is good.

If you are into contests then you may find Super Duper worth looking at. The latter two programs are available over the Internet if you are interested.

The Amateur’s Code

I was looking something up, just as I was finishing the column and came across something I haven’t seen for ages - The Amateur’s Code. I seem to remember coming across this when I was studying for the RAE, but that was some years ago now and you tend to forget things if you’re not reminded regularly. So, here’s a reminder:

“The Amateur is considerate...He keeps his stations abreast of science. It is well built and efficient. His operating practice is above reproach.

The Amateur is friendly...Slow and patient sending when requested. Friendly advice and counsel to the beginner, kindly assistance, co-operation and consideration for the interests of others. These are the marks of the amateur spirit.

The Amateur is balanced...Radio is his hobby. He never allows it to interfere with any of the duties he owes to his home, his job, his school or his community.

The Amateur is patriotic...His knowledge and his station are always ready for the service of his country and his community”.

The code was written by Paul Segal W9EEA back in 1928 and although it refers to the amateur as “he”, it is equally applicable to the lady operators on the air today.

I know not everyone on the bands sticks to this code, but if we all tried a bit then perhaps the bands would be a better place. But that’s probably wishful thinking!

Well that’s all for this time, so until next month cheerio and happy ‘nattering’, don’t forget I love receiving your letters so keep them coming together with your photos to me at PO Box 1863, Ringwood, Hants BH29 3XD.

Elaine G4LFM
Hoddesdon Wins The Spotlight Trophy!

Winners of the first 'Spotlight' trophy competition are The Hoddesdon Radio Club. The HRC Newsletter scored a total of 48 points (out of a maximum of 50) to earn the distinction of winning PW's first Club Magazine competition.

Summing up the winning entry's adjudication, the Editor G3XFD said that 'Overall, the judging panel were very impressed by the crisp 'newsey', informative, friendly, thoughtfully planned and well-produced Hoddesdon magazine. It's an excellent read and Hoddesdon should be proud...although they should take care the 'clip art' 'Printer's Devil' doesn't take over completely! The trophy - a magnificent silver cup which will be held for a year, will have a separate small plaque attached to the plinth, recording that year's winner. The silver cup itself, kindly donated by Kenwood Electronics UK Ltd., will carry the following inscription: 'The Spotlight Trophy, Awarded To The Radio Club Magazine of The Year by Practical Wireless and Kenwood UK,' and will be presented at the 1996 Leicester Show on Saturday 19th October.

David Barlow G3PLE first suggested the idea to PW Editor Rob Mannion G3XFD and Zoe Crabb ('Club Spotlight' compiler), and very soon Kenwood Electronics UK Ltd. Dave Wilkins G5HY, an active radio club member himself, was fully supporting the idea. Finally, another keen radio club member, Anglia ITV's 'weatherman' Jim Bacon G3YLA, joined the group to complete the panel of judges.

Interesting Comments

There were some interesting comments from the judges on the adjudication sheets with each entry, and they must surely encourage participants. For example Zoe Crabb (commenting on the Cockenzie & Port Seton entry) said 'Very informative events column. I like the 'Amateur Anagrams'. An informative read, nicely spaced out and not cluttered'.

Looking at another entry, Jim Bacon G3YLA (Commenting on the Silverthorn Radio Club's magazine) said 'A nice newsletter with a good details panel. I like the humour and 'the celebrity shock chat' section'.

Highlighting the fact that many club magazines are often produced by 'one man (or woman!) bands', David Barlow G3PLE was appreciative of the Brighton & DARS's magazines efforts. "What an improvement (two issues submitted), they deserve a mention and need encouragement - carry on like this and we'll see them again next year. Well done"!

Dave Wilkins G5HY, commenting on the Yeovil club's entry said "An interesting read...nice to see a technical element too. Good mix of club news and operating news. It continues the Yeovil club's reputation for home-brewing".

Rob Mannion, rounds off with some encouragement to the editors of all club magazines (whether or not they've access to a computer, graphics and lots of 'clip art'). "It doesn't matter if your magazine is only two sheets and is hand typed. If it's good, well balanced and reflects the effort of the person or team involved well, it deserves a chance. Some of this year's entries did not come via 'word processing packages'...but they still produced excellent efforts. Take heart, be encouraged and let's see what your club's up to!"

So there you have it! Enter your magazine next year and you could be accepting the 'Spotlight' trophy at the 1997 Leicester Show, following in the successful footsteps on the Hoddesdon Amateur Radio Club.

Ynys Mon Radio Users Group

As from the end of August, the Ynys Mon Radio Users Group have changed their meeting dates from the last Wednesday in every month, to a three weekly venue, at the Llangefni Scout Hall, opposite 'Kwik Save', from 7.30 to 10pm. There is an entrance fee of 50p. There are refreshments, a raffle and a Bring & Buy sale (radio and computer gear only!) every month.

So, why not go along - you will be made most welcome. And if you like them, you can join for the sum of £1 only!

The Group will also be holding a special event station on the 1920 October to work the JOTA and the callsign will be GB4LSG. On air times are from 0800hrs (Saturday), to 2000hrs (Sunday).

More details available from Tony Anziani GW4ZWN on (01407) 832197.

North Bristol ARC

The North Bristol Amateur Radio Club are going to be able to run RAE classes this autumn. Meetings take place at Self Help Enterprise 7 (SH7), Braemar Avenue, Northville, Bristol, and club rooms are all on one level, so those with access for the chair-bound is fairly easy.

The club have on-going Morse tuition every Friday (which is club night) on the same premises. Anyone interested should call Dick Elford GOXAY on (01454) 218362 or Eric (Chairman), on (01454) 615271.
Worthing’s Ragchew
Although too late to be entered into the competition for the Spotlight Trophy, Stan Williams G3LIQ, Editor of the Worthing & DARC’s magazine, Ragchew, has sent in a copy of the magazine. Each issue is compiled by Stan, produced on a Compaq 386 computer, master copy printed out on a Deskjet 520 and then it’s taken along to the local copy-shop.

The magazine is then ready for collection within a day or so. Stan then collates all the pages, adds the cover (printed on his Adana 8x5 letterpress) staples it together and hand folds them all. The 100 copies are then delivered to the Secretary of the club for distribution.

Stan is a landscape gardener and says that printing has strictly been a hobby. He says that the letterpress is rarely used in these days of computers but he still takes great joy in using it.

Life At Loughborough
Interested in amateur radio, short wave listening, electronics or computers? Then why not pay a visit to the Loughborough & District Amateur Radio Club.

Meetings take place twice a week at Hind Leys Lodge Hotel, Polwarth St Martins Court, Kingstone Crescent, Ashford, Middlesex at 7.30pm, for talks, demonstrations, visits, radio direction finding, social events and quiz’s, etc.

Club members come from all walks of life and have different interests, ranging from amateur television, radio control model helicopters and submarines, weather satellites, computers used with radio, equipment building and just operating. Radio TV and electronics for some members is a profession and for others just a hobby. The club also has a number of junior members.

Although most of the members hold a radio amateur licence, enabling them to transmit, for some there is interest in short wave listening. If you are thinking of studying for a Novice or Amateur Radio Licence A or B, maybe the Loughborough Club can help you.

Why not go along to one of the meetings on a Monday or Tuesday evening. Find out more by contacting Ian GBSNF on (01509) 218259.

Lothians Radio Society
The Lothians Radio Society meet in the Orwell Lodge Hotel, Polwarth Terrace at 7.30pm on the 2nd and 4th Wednesday of the month. Membership is open to all those with an interest in amateur radio, s.w.l. and electronics.

Club members have wide interest encompassing every aspect of amateur radio, including digital communications, short wave DX, construction, microwaves, television and satellites and are willing to help those who are taking up the hobby for the first time.

The Society can offer tuition for those wishing to take advantage of the Novice licensing scheme. There is a full programme of talks, demonstrations, equipment sales and visits throughout the winter months commencing on September 11th. As this year is the 50th year of the Society, the society are planning a number of commemorative events, including a special event callsign to be active during the year commencing in October. A certificate may be claimed for working or hearing four club members using the call, any band, any mode. Details can be obtained by sending a s.a.e. to the club information officer Tommy Main GM4DCL.

Lothians Radio Society are particularly keen to hear from former members who were involved in the early years of the club as they wish to compile a history to be included in their magazine Lothians Radio Amateur.

Further details about the club and its activities can be obtained from Tommy Main GM4DCL, 15 Polton Road, Lasswade EH18 1AB. Tel: 0131-663 8501 day and evening or GM3HAM@GB7EDN.

Repeater For Wincanton
The Wincanton Amateur Radio Club is pleased to announce that their application for a 70cm repeater has been successful. They have been informed by the RSGB that their application for GB3TC has been approved by the RA and MoD and the RSGB will issue an NoV for this repeater when it is ready to become operational.

The repeater will be located in the Wincanton area and will probably operate on channel RBI (which is the channel they applied for). It is intended to provide coverage for users on the A303 trunk road and will use directional antennas pointing up the A303 towards London in order to achieve this.

The repeater will be owned and operated by the Wincanton Amateur Radio Club, which was started approximately four years ago. The club already has the majority of the components required for the repeater and they will be obtaining the last few items when the frequency of operation is confirmed. Further details of the repeater (including confirmation of the frequency and the estimated date of going on the air) will be issued when available.

The Wincanton Amateur Radio Club members own a number of Maxon 70cm crystal controlled transceivers and are intending to order crystals for these to operate on the repeater frequency. Anyone else with a Maxon requiring crystals for the RBI frequency should contact the club, as they may be able to include them in a 'bulk buy' of crystals.

Contact Tim Stellar G6RCT on (01935) 442315 during works time if you have any further queries.

Arden Forest Direction Finding Group
A group of amateurs in the Worcestershire, Warwickshire and West Midlands area have joined together in an informal group to enjoy 'Fox Hunting' and would like to extend an invitation to any readers who would like to take part in this aspect of amateur radio. The group are at present holding two events per month, using the 144MHz band.

The events have been held in the geographical area covered by the north-west quarter of OS map 151. These hunts have so far been in the evening and last about an hour and a half followed by a convivial half hour in a convenient hostelry. Should members wish, events can be organised on other bands, such as 1.8 or 3.5MHz, and at other times. There are no qualifications for entry to the group, except to have an interest in this section of the hobby or a wish to find out more about 'Fox Hunts'.

Whilst it is useful to have your own equipment, this is not essential, as equipment can be borrowed from the organisers or you could team up with another amateur who has some equipment. The group are not attached to a particular club or society and are therefore totally independent.

Should any readers in this part of the Midlands be interested in taking part in these events, contact J. Porter G4OHJ, 77 Westholme Road, Bidford on Avon, Alcester, Warwickshire B50 4AN for more information.

Echelford Events
The Echelford Amateur Radio Society meet on the 2nd and 4th Thursday of each month at The Hall, Echelford Events, November 1996
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<td>2m/12V Mobile Antenna</td>
<td>£109.95</td>
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<tr>
<td>CF-BFP2</td>
<td>2m band pass filter</td>
<td>£109.95</td>
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**HF ANTENNAS (P&P £10)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Our Price</th>
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<tbody>
<tr>
<td>R5</td>
<td>10/12/15/20/25MHz verticle</td>
<td>£169.00</td>
</tr>
<tr>
<td>R7000</td>
<td>10 thru to 40cm verticle 880MHz optional</td>
<td>£389.00</td>
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<tr>
<td>AV-3</td>
<td>14-21-28MHz verticle 4.3m long</td>
<td>£169.00</td>
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<tr>
<td>AV-5</td>
<td>3.5-14-21-28MHz verticle 7.5m long</td>
<td>£169.00</td>
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<tr>
<td>APBA</td>
<td>8 Band Vertical</td>
<td>£229.00</td>
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<tr>
<td>A15</td>
<td>14-21-28MHz Yagi</td>
<td>£399.00</td>
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<tr>
<td>Caroline Windom Z-40-10m 80Hz</td>
<td>£189.95</td>
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<tr>
<td>Caroline Windom Z-60-10m 102m long</td>
<td>£249.95</td>
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<tr>
<td>CBE-30</td>
<td>3.1 balun (1-30MHz)</td>
<td>£24.95</td>
</tr>
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**HUSTLER RANGE NOW IN STOCK**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Our Price</th>
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<tbody>
<tr>
<td>491TV</td>
<td>Four band HF vert 10, 15, 20, 40, 1.5kHz</td>
<td>£299.95</td>
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<tr>
<td>581TV</td>
<td>Five band HF vert 15, 20, 40, 80, 1.5kHz</td>
<td>£419.95</td>
</tr>
<tr>
<td>RM-20</td>
<td>2m mobile (reduced length 100W)</td>
<td>£284.95</td>
</tr>
<tr>
<td>C-32</td>
<td>Ball mount assembly + wire fitting</td>
<td>£284.95</td>
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**PRO-AM HF MOBILE ANTENNAS (P&P £1.00)**

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<th>Model</th>
<th>Description</th>
<th>Our Price</th>
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<tbody>
<tr>
<td>PHF-20</td>
<td>2m mobile whip on thread</td>
<td>£10.95</td>
</tr>
<tr>
<td>PHF-400</td>
<td>40m mobile whip on thread</td>
<td>£10.95</td>
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<tr>
<td>PHF-800</td>
<td>80m mobile whip on thread</td>
<td>£24.95</td>
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**A.E.A. PRODUCTS**

<table>
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<th>Model</th>
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<td>DSP-232</td>
<td>Free p&amp;p</td>
<td>£419.95</td>
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<tr>
<td>PK-232MBX</td>
<td>Free p&amp;p</td>
<td>£319.95</td>
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<td>PK-36</td>
<td>£219.95</td>
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<tr>
<td>PK-12</td>
<td>£129.95</td>
<td></td>
</tr>
</tbody>
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| IC-735 | SX-100 SWE | FT-5200 |
| IC-726 + 6m | SP-102 | FT-51R |
| IC-706 | MD-1 MIC | FT-23R |
| IC-707 | MC-90 MIC | FT-11R |
| FT-980 | TL-922 AMP | FT-10R |
| FT-900AT | FL-2100Z AMP | FT-530R |
| FT-890AT | IC-SP21 | FT-8500 |
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| FT-757 MkI | PS-52 PSU | TM-732E |
| FT-747 | FILTERS YAESU | TH-79E |
| FT-707 | FILTERS ICOM | TH-78E |
| FT-101ZD + FM | KENWOOD | TH-77E |
| TS-940S | MICROWAVE | TR-851E |
| TS-930SAT | MODULES | TW-400E |
| TS-440SAT | LINEARS | DJ-580E |
| TS-430S | TRANSVERTERS | DJ-560E |
| TS-50S | IC-970E | DJ-480 |
| AT-50 | IC-820 | DJ-180 |
| AT-180 A/ATU | IC-W31E | DJ-460E |
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**URGENT**

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Practical Wireless, November 1996
I first heard of AKD's plans to introduce a general coverage h.f. receiver to their range of products last year. The Stevenage-based company revealed their plans to me and I must say that I was very pleased to hear the news.

The next stage was when I saw the early pre-production model of the new receiver on the AKD stand at the Pickers Lock Show in March. What I was able to see then impressed me very much, the receiver front dial and everything on view looked smart and 'non fussy'. However, the aspect that impressed me the most was the planned price - to be around £160.

All then went quiet and I began to wonder how things were going...until Val Wagstaffe of AKD contacted me in early September. The news was that a pre-production receiver was on its way to the PW office for me to try out. I felt honoured because it's not often I get the chance of trying British-manufactured ready-to-go equipment.

On Target

I'm playing with words when I say that AKD seem to be 'on target' with their new receiver. They've kept their promise (I was doubtful if they could keep to their planned price) and the 'Target' receiver will be on sale for around £160.

When the unit arrived in the office Tex Swann G1TEX (Technical Projects Sub-editor and our Photographer) was amazed at its smart charcoal grey plastic case, lightness and general neatness. In appearance - except for the top-mounted loudspeaker - the receiver looked somewhat like a high quality car radio.

As you can see from the heading photograph, the Target HF-3 receiver has a very simple, uncluttered front panel and i.c.d. type display. It's delightfully simple to use and absolutely ideal for the beginner in radio or someone who enjoys simplicity.

Despite its simple uncluttered look the HF-3 hides a good specification 'under the bonnet'. The design incorporates a general coverage 30kHz to 30MHz double conversion superhet with a 45MHz first i.f. (with crystal filter) and a second i.f. of 455kHz using ceramic filters. Tuning is by a synthesiser providing 1kHz steps, with 'fine tuning' provided by a 'Clarifier' control. The main tuning control (flywheel loaded) also controls the rate of tuning (see 'On Air' section').

The manufacturers claim a bandwidth of 3.8kHz for s.s.b. reception and 6kHz for a.m. (see comments by Tex Swann G1TEX). Demodulation in the a.m. mode is quasi-synchronous and s.s.b. is handled by a product detector. So, having taken a first look at the receiver it was time to try it out on air. And although I don't enjoy the crowded bands during contests, I was fortunate enough to begin my listening on the HF-3 in the run-up and during a major event in early September.

On The Air

The acid test for any rig has to be on the air so I switched the HF-3 on, and started listening. However, I was in for a surprise because even with a very short length of wire plugged into the receiver, it produced an interesting signal immediately. Obviously when the HF-3 was set-up, the AKD test team had committed a frequency to the receiver's memory. In this case it was the R.A.F.'s h.f. VOLMET transmissions on 4.717MHz (u.s.b.). It was received loud and clear and it made me jump as I was not prepared for the HF-3 to be tuned into such a strong signal! So, I then proceeded on to Amateur Bands listening complete with the latest information on weather conditions on airfields all over the UK!

The 7MHz band is where I always check out a receiver's capability and I was soon receiving some interesting DX, as the various DXpeditions were preparing 'for the real thing' over the weekend (I started my tests on Thursday prior to the h.f. contest). Operation of the HF-3 is very simple. There's only two reception 'mode' push control buttons on the front panel. One button rosters up through LSB to AM and to USB. And the other button rosters down thorough from USB to AM and LSB. The mode selected is indicated on
The AKD Target HF-3 Communications Receiver

Manufacturer's Specifications

<table>
<thead>
<tr>
<th>Category</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Receiver type</td>
<td>Double superhet, 1st i.f. 45MHz, 2nd i.f. 455kHz</td>
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<tr>
<td>Frequency range</td>
<td>30kHz to 30MHz</td>
</tr>
<tr>
<td>Tuning</td>
<td>1kHz steps</td>
</tr>
<tr>
<td>Clarifier range</td>
<td>±800Hz</td>
</tr>
<tr>
<td>Frequency tolerance</td>
<td>±100Hz</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>3kHz (s.s.b.), 6kHz (a.m.)</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>1µV</td>
</tr>
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<td>Audio output</td>
<td>2W</td>
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<td>Antenna input impedance</td>
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</tr>
<tr>
<td>(Four rates)</td>
<td>1kHz, 10kHz, 1MHz, 10MHz per rev.</td>
</tr>
<tr>
<td>Power supply</td>
<td>12V dc. 300mA (power supply provided)</td>
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</tbody>
</table>

Inside view of the AKD Target HF-3 receiver emphasises the neat design of the entire unit.

the large l.c.d. type display. The frequency read-out (which turned out to be reliably accurate) also displays the frequency, with a very large segmented S -meter immediately below.

I soon became very adept in selecting ‘band changes’ by quick rotation of the nicely loaded flywheel weighted tuning control, which feels almost like the old Eddystone tuning. In fact I found (without even realising I was doing it) that I could literally just flick the control from 3.5MHz to 7 or 14MHz at will. Once on the band you require, the naturally slow operator’s (yes, I am slow!) adjustments ensures that the receiver stays in the frequency area selected.

When a band change is required, a quick flick of the wrist takes you there. All very simple and effective.

Volume is controlled by the usual combined VOL/On-Off rotary control. There’s a separate Clarifier control (see comments later) and memory entry and recall buttons.

Listening to s.s.b. transmissions was no problem and although the band was busy during the evening, the HF-3’s design selectivity coped well. I found that the sensitivity and selectivity were surprisingly good (for a budget priced unit).

However, the fact that the receiver’s synthesised tuning ‘switches’ in 1kHz steps (with noticeable ‘stepping’ on c.w.) and s.s.b. took a little getting used to. The only real problem came when I was listening to a c.w. signal right near the point where the synthesiser would be ‘stepping’ to the next 1kHz up or down frequency and I was using the clarifier.

In use, the receiver ‘clarifier’ tunes the receiver over a relatively small range ±800Hz - to permit the operator to tune in a c.w. beat note or s.s.b. signal to provide clear speech on s.s.b. The problem I discovered was that when the clarifier was at about three-quarters of its range, there was some form of frequency ‘squiggle’. This caused some form of frequency ‘pulling’ on c.w. and s.s.b. reception and made the signals sound very odd!

Fortunately, after using the receiver for a while I found the frequency ‘squiggling’ (I can’t think of a better word to describe the effect) was minimised by careful tuning with the main control to avoid excessive use of the clarifier tuning control.

Sensitivity & Selectivity

Sensitivity and selectivity on the HF-3 proved to be excellent for use on the Amateur Bands. And although the receiver is aimed at the beginner, providing as it does a complete ‘ready-to-go’ package, I would be more than happy to incorporate it into a home-brew portable station.

I found that for listening on the h.f. broadcast bands, the selectivity and received audio bandwidth were just about right. However, despite the nice large speaker which is built into the top of the cabinet, both Tex G1TEX and I thought that the audio was a little ‘tinny’ sounding (which may be of course be a direct result of the filtering).

It was on the h.f. broadcast bands where I found the rear panel mounted r.f. attenuator control to be useful. The receiver seems to be so sensitive on h.f. that the signal levels from Radio Netherlands (Hilversum, etc.) could overload. The attenuator helped a great deal in that respect.

Sensitivity on the medium wave band (500kHz to 1.6MHz approximately) seemed adequate but appeared to be markedly lower than h.f. (This is often the case and is a deliberate design policy with manufacturers). However, I was very surprised at how poorly received the 198kHz (Droitwich, BBC Radio 4) long wave transmissions were.

Reception on long waves and medium waves seemed to be
effected by a mains generated signal which limited sensitivity. And bearing in mind the excellent sensitivity on h.f. (where, quite frankly it’s most important in my opinion) I was really surprised at the performance on the lower frequencies.

**Final Score**

So, what’s the ‘final score’ for the HF-3? What’s my opinion after trying it? Well, answering briefly, I can recommend the AKD Target HF-3 to anyone looking for a budget-priced, general coverage receiver.

Personally, I think AKD have done remarkably well for the price. And bearing in mind that it is a budget-priced receiver, there’s only one essential facility that’s been left off...and that’s dial illumination for the I.C.D. type display. I really think it’s needed and including illumination would help the operator very much indeed.

However, in rounding up, I should say that the purchaser gets a lot for the £160. They’ll get a double conversion general coverage receiver, ready-to-go mains power supply, a suitable antenna and a helpful booklet.

I think there’ll be a lot of HF-3s appearing in Christmas stockings and on birthday gift lists soon. And it won’t be just beginners either, because many operators like to have a workshop set or something for portable work. Now they can, by buying a British-engineered ready-to-go receiver. Well done AKD and I’ve no doubt this receiver will appear in many ‘marks’ and Mark I is a good start!

My thanks for the loan of the review receiver go to AKD, at Unit 5, Parsons Green Estate, Boulton Road, Stevenage, Hertfordshire SG1 4QG. Tel: (01438) 351710, FAX: (01438) 357591. The AKD Target HF-3 receiver will be available from Amateur Radio dealers for £160.

**PW**

---

After seeing a copy of Rob $34'1D's review Roger Wagstaffe of AKD sent us the following comments:

Tests show sensitivity is more than adequate at long and medium wave. However, the antenna supplied was a 10m wire. Whilst this is satisfactory for general h.f. use, once cannot expect too much on the long wave. The quality of ground is also important on l.w., especially when there is mains borne interference from computers.

The comment regarding the dial illumination is valid. We work hard to keep prices down, especially on our ‘Entry Level’ product and we did not consider this to be essential. We are already looking into the addition of this facility on future models with enhanced facilities, of which this will be one.

Roger Wagstaffe

---

A few notes on the sensitivity of the new AKD Receiver from Tex Swann G1TEX, Technical Projects Sub-editor Practical Wireless.

These tests are not definitive as there were several computers in the same room, but should be viewed as representative of the quality of the set.

Like Rob G3XFD, I was pleasantly surprised that the HF-3 coped well with high levels of signal. I did however, feel that for amateur use an add-on audio filter would be needed to counteract the ‘wide-band’ IF filter.

On a.m. use, the set is very capable and produced good sounding audio tone from the in-built speaker. But I felt that the I.F. bandwidth was just a little on the wide side for s.s.b. use.

Perhaps an option for a narrower filter for example?

I was disappointed when listening to long wave signals as the receiver did not seem as sensitive as on h.f. To test this I used a very quick check with a signal generator. These are the rough and ready results I found: At 50kHz the minimum discernible signal (m.d.s.) on a.m. was about 1.5pV with about 10pV giving a good clean signal. Using both l.s.b. and u.s.b. the m.d.s. was about 0.5pV.

In general, the sensitivity rises to a best m.d.s. of 0.1pV at about 1.5MHz. It also had a very good m.d.s. of 0.15pV for s.s.b. The sensitivity curves were of similar values up to about 20MHz. The overall sensitivity at 25/30MHz was just a little lower than the band pass figures for s.s.b. were around 0.5pV, which is still very good. What was very good (bearing in mind the bandwidth, which seems to have been optimised for broadcast stations) was the steep sided selectivity curves.

Very quick and ready tests were carried out with the set tuned to 5MHz. Signals on adjacent channels of some 10mV at ±12kHz were inaudible. This represents a factor of some 80dB rejection. Signals of 100mV or greater more than ±15kHz away from the tune point of 5MHz could not be heard. But they caused a ‘two bar’ indication on the S-meter reading with harsh background noise.

---

G1TEX

Practical Wireless, November 1996
Martin Lynch & Son cordially invite you to the 40th birthday of 'HIMSELF' on the 2nd of November 1996. Doors open at 9am, closing at 6pm.

For those of you who remember Martin in short trousers, he's now a lot older and wants to show that although he can't run 'round the shop quite as quickly as he used to, he still guarantees to empty your wallets at lightening speed.

This year the event is co-sponsored by Icom U.K. who will be in attendance, together with Yaesu, Kenwood, Alinco and AOR.

Bargains? You bet - there will be a 'REVERSE AUCTION' on selected items running throughout the day and also Martin's Mega Raffle.

BE THERE!!!
On a Shoestring

By Jim Lee G4AEH

Professional broadcaster Jim Lee G4AEH says that almost anyone can start their own a.m. or f.m. radio station - read on to find out how.

I was 14 when I first had the desire to be on the radio. The influence came from the 'pirate' stations like Radio Caroline and Big L (Radio London).

The DJs seemed to be having a great time. However, having met and worked with one or two of them since, it seems that the storms, the seasickness and infrequent pay packets meant that pirate radio on the ships wasn't all that great.

Although I got my amateur licence when I was 17, there weren't that many radio stations to try my luck with in those days. It actually took another 11 years before I made my professional radio debut with Mercia Sound in Coventry in 1980.

It's a very different story these days. Even medium sized cities boast at least two or three local radio stations. It still takes a lot of luck to make the break into broadcasting. However, if the 'big boys' won't take you on, it's now a lot easier to set up your own station with a Restricted Service Licence (RSL) issued by the Radio Authority (RA).

Licence Evolved

The RSL evolved from the 'special event' licence first issued in the early 1980s, some 20 years after the call for 'free radio' first went up. In the days of the BBC monopoly, if you didn't like the radio services on offer, you had two choices.

You could either put up with them or you could set up your own. The problem was, that putting up with it was legal, doing your own thing wasn't!
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- Rinke+ 1000AS
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- Kenwood TR-9139 2M ell mode 5/25W mobilo
- KDK 2030Clean example, 2 M mobile.... ...£ i 49
- FOK Multi-700ex
- Derma M2 22.... ...... 2M, mobile + eel set & Hi power £245
- Mato DR -130....
- Yoesu FT -101 .....
- Yoesu FTDX-40I
- Yoesu FT747GX
- Kenwood TS -9305...100W ,C/w 01230 tuner, v.
- Kellwood TS -1405...100W Gen. Loy
- Kellwood TS -1305...100W. easy to use
- Kenwood TS -120V ...1DW C./w 100w amp
- loom 11-706
- loom 11728
- Item IC -725
- HF TRANSCEIVERS
- Kellwood 11179f
- Kenwood TD25A
- Kellwood TH-281....2M +.111-11 receive..
- lum IC -192E
- (TE-1600 ...............2M - work well
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- Alinco 01-100
- Wince DI -F1 E
- ADI-145
- HAHDHELDS
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- Yoesu FT -735K

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- NEVADA

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- FDK Mobile 700exs 2m /... £161
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- Kellwood FT-7001....2M Multimode TOV /web:£295
- Kellwood FT-9130. 2m all mode, S/25W mobile... £999
- Kellwood Th-2200 2m mobile, scrat, works well £225
- Yoesu FT-707 2m mobile, vhf + modum £999
- Yoesu FT-2402 2m mobile, Gen. Cov. Fm fitted £475
- Yoesu FT-9101 2m mobile can. speaker... £445
- Yoesu FT-8016 400W HF Int... £275
- Yoesu FT-701 2m mobile, VHF... £185
- Radio Logic C702 2m mobile, Gen. Cov. £399

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- Alinco DI-F1E 2i, 6m. vhf, am/fm & car kit £185
- Alinco DI-100 2m, ches little rig... £95
- Alinco DI-180 2m, very nice card, boxed... £179
- Alinco DI-505 2m + 70cm NEW redevo no box... £195
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- CET-1600 2m - work well £135
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- ICOM 7020
- Kellwood FT-7001....2M Multimode TOV /web:£295
- Kellwood FT-9130. 2m all mode, S/25W mobile... £999
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- Ionc IC-4E 2m + 15W, nice vhf... £175
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**Broadcasting on a Shoestring**

Continued from page 25

radio broadcasting licence for anyone who meets the criteria. 

Until the introduction of the RSL, licences for broadcasters were not so plentiful. Full time licences still require the bidders to go through a very rigorous competitive procedure.

Once a franchise has been advertised, very large sums of money are needed, typically hundreds of thousands of pounds, for premises, studios and transmitter sites. There are technical standards to be met and the government's regulator, the Radio Authority (successor to the Independent Broadcasting Authority)

**Special Broadcast Stations**

In amateur radio we're used to hearing special calligns from events as diverse as carnivals, scout jamborees and even the Olympic Games. In Britain it's now increasingly common to hear a special a.m. or f.m. broadcast station from all sorts of events including Premier League football matches and drive-in movies.

Last year's VE celebrations in Hyde Park were covered by an RSL station operated by the British Forces Broadcasting Service (BFBS). You may recall the recent PW competition (June 1996) involving the Air Tattoo at RAF Fairford which had its own RSL station, Wings 96 on medium wave providing coverage of the displays and traffic news around the airfield.

In the run up to Christmas in 1991, there was a chain of 90 Radio Cracker stations run by interdenominational youth groups up and down the country. Numbers have trailed off now but over the years Radio Cracker has raised many thousands of pounds for Third World charities, but has also paid out many thousands for the privilege.

**Average Cost**

The average cost of setting up a 28 day RSL station is around £4000 and that's a sore point with many RSL operators including Peter Laverock G8GHQ. Peter, currently a news producer with BBC Radio Suffolk, was granted the first ever special event licence in 1982 for Radio Greenbelt at Knebworth.

With the help of his local MP, the trouble-free reputation of the Greenbelt Festival and his BBC background Peter was able to convince a wary government to create a new category of licence. They charged him £900 for the privilege.

As Radio Greenbelt goes into its 15th year of broadcasting, now from Silverstone and Brands Hatch have £2260 in radio licence fees alone. Peter Laverock has made several complaints to the RA about the fee system, comparing the £18 cost of his amateur licence which allows him access to a multitude of frequencies with up to 400W of power. While he agrees that a high first fee should be a test of an applicant's seriousness, repeat operations should be heavily discounted.

Replying to those complaints, the RA told me that the fees (see Table 1) cover the cost of paperwork and finding clear frequencies. The fee, the majority of which goes to the DTI, is the same if the proposed station is on air for one day or 28 days.

Peter G8GHQ was also told by the RA that the fees also guarantee that interference problems will be dealt with within five working days. "If that's the protection it buys, it's not worth having", says Peter whose August Bank Holiday operation could be over by the time the RA came to fulfil that promise.

Despite the relatively high cost, hundreds of keen enthusiasts are making applications for RSLs. In 1995 the RA granted 318 licences making a total of 1,174 since they took over the administration from the Home Office in 1991 (Fig. 1).

**Student Radio**

Student radio stations are frequent applicants for RSL stations, particularly at the start of the academic year. Student radio pre-dates the RSL by many years.

Normal operation would be via an inductive loop or 'leaky co-ax' which restricts the transmission area to the campus. With a maximum e.r.p. of 25W on f.m., the RSL allows coverage of several miles radius, albeit for a maximum of 28 days.

Brunel University's B-1000 (Fig. 2) in West London was on air with an RSL for the third time in September. It's an invaluable outlet for station members to get themselves heard over a wider area, according to station manager Phil Emery. It's good public relations exercise for the university as well which makes a donation to the £4000 or so it takes to put the station on air.

The 28 day period can be extended in very special circumstances (at no extra charge) and even spread out over a 12 month period. That means that football clubs like Manchester United and Blackburn Rovers (see Short Wave Magazine September and October issues for an indepth look at football radio stations. Copies available for £2.60 from PW post sales dept on 0121203 659390).

Motor racing circuits like Silverstone and Brands Hatch have

---

**Table 1: Restricted Service Licence Fees**

<table>
<thead>
<tr>
<th>RSL Fees</th>
<th>Radio Authority Licence Fee</th>
<th>DTI Licence Fee</th>
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<td>Application Fee</td>
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<td>AM (medium wave)</td>
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<tr>
<td></td>
<td></td>
<td>£2260</td>
<td>£4760</td>
</tr>
</tbody>
</table>

Notes

i) The application fee is non-refundable.

ii) The Radio Authority fee is payable with the application fee, at the time of the licence.

iii) The DTI (Wireless telegraphy Act) fee must be paid prior to the issue of the licence.

iv) AM RSLs may be issued for a non-continuous sequence of 28 nominated dates to cover defined events (e.g. sporting fixtures). Fees for such licences will be subject to an additional fee, representing 25% of the total licence fee payable for each period of 28 days within which these dates fall, beyond the first 28 days. (e.g. In a nine month season, a football club would pay 8 x £155 extra).
RSLs for commentaries on match and race days. They have to pay 25% extra for each month of operation and are restricted to a.m.

**Trial Services**

I mentioned that there are two broad categories of RSL. The second is the trial service.

The RSL is increasingly used by groups looking to apply for full-time licences. The station B-1000 at Brunel University certainly has such aspirations. It's a motive shared by Calderdale Sound in Todmorden (Yorkshire) and Cross Counties Radio (CCR) which was on air in Hinckley and Nuneaton (Leicestershire/Warwickshire) this summer.

A licence for Hinckley is expected to be advertised next January. Jason Faulkner gave up a full-time job and formed the company behind CCR 18 months ago to concentrate on an application.

Jason spent his time lobbying local groups and politicians for support and gathering the opinions of potential listeners. The RSL operation was intended to impress prospective advertisers and investors with the station's professionalism.

In an inspired move, CCR formed a partnership with the local paper, the Heartland Evening News. The paper's proprietors also admit to sponsorships.

The first thing to do is contact the Radio Authority. From the information pack supplied by the RA you find that there are not one but four licences to apply for.

As well as the RA licence, there's a Wireless Telegraphy Act licence plus two licences to allow the playing of music. If you're going to broadcast more than 12 hours of music per day on PWFM, that will set you back £30 per day (plus VAT) with Phonographic Performance Limited (PPL). That's £453 for 28 days.

The Performing Rights Society (PRS) also wants £43.50 (including VAT) per day although you'll get a 33% discount if you pay up in advance. So, if our cash flow doesn't permit pre-payment that's another £1218 and you still haven't got the transmitter and studio equipment!

The constructors in our midst could build the transmitter. The Radio Authority guidelines don't actually state you can't use a home-brew transmitter. It merely asks that an undertaking is given that "transmission equipment including antennas (...) complies with the technical conditions laid out in Appendix II' of the guidelines.

The guidelines state that controls which 'affect the technical characteristics of the transmitter source of annoyance to less tolerant neighbours. His f.m. transmitter cost £5100 from a DTI approved source and a professionally made jingle package from Dallas cost 'a bargain' £250.

No spare bedrooms for Cross Counties Radio in Hinckley though. They persuaded a local landlord to postpone the demolition of a redundant mill so it could be used as an office and studio.

Redundant or not, planning permission was necessary for a change of use from mill to radio station and the insurance for the 28 day operation cost nearly £1000! Something else to think about.

The equipment for RSL stations comes from a variety of sources. To cover costs the more experienced stations hire out their equipment in 'down' time. Cross Counties Radio hired their studio and stereo transmitting equipment from the operators of Wire FM in Warrington. The complete package cost £1500 and even included a Radio Data System (RDS) facility.

**How To Get Going**

So, while there's still a distinct lack of sunspots and the Sporadic-E season is drawing to a close let's say we set up our own RSL? Let's call it PWFM.

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The guidelines state that controls which 'affect the technical characteristics of the transmitter should not be accessible from the exterior'. So no fiddling with power levels!

Obviously operation is restricted to the normal a.m. (531 - 1602kHz) and f.m. (87.7 - 108MHz) broadcast bands. The permissible power levels are 1W effective monopole radiated power (e.m.r.p.) on a.m. and a maximum 25W e.m.r.p. on f.m. There are other conditions relating to frequency stability, bandwidth and spurious emissions, which as radio amateurs we should have no problems with.

You could be visited at any time by the Radiocommunications Agency and/or the Radio Authority. Peter Laverock GB6GHQ remembers the man from the then Radio Investigation Service (RIS) turning up at the first Radio Greenbelt with a car full of test gear.

The RIS man was checking that the signal from the 'leaky' coaxial antenna actually decayed, as required by the licence, at the site boundary. "In fact unless your tent was pitched on top of the cable", says Peter, "you'd have been lucky to hear anything."

In later years scaffold poles and T antennas were employed before Radio Greenbelt moved to f.m. The year that a violent storm blew away tents leaving thousands of concert-goers at risk from hypothermia was the one and only time that Peter broke the rules. To help the emergency services the power was increased above permitted levels because lives were at risk.

For a successful application you have to make sure that you have no 'disqualified persons' on the team. They include advertising agencies, political parties, convicted radio pirates (banned for five years) and the BBC, which - er - means I'll probably have to drop out!

That just leaves the rest of you to find around £5000 and then you can join the professional broadcasters of the world!

**For an information pack containing everything you need to apply for an RSL write to:**

Soo Williams, Radio Authority, Holbrook House, 14 Great Queen Street, Holborn, London WC2 5DG.

--

**Jim Lee says**

*"Why don't you put your rally or show really on the 'map' by getting your own restricted service licence?"*
Isn't it funny how words can change their meanings in common use? Some people when observing my test bench equipment and the methods I use, would perhaps be tempted to say "That's not very sophisticated". To which I could honestly reply "You're quite right!"

The word 'sophisticated' derives from the word sophist, the ancient Greek professional teacher. It was a profession better known for quibbling than reasoning! So to 'sophisticate' was to tamper with for the sake of argument.

So I'm more than pleased to ignore sophistication for the sake of elegant simplicity! My approach continues with the little project I'm describing this month - a useful 'Utility' audio generator.

On My Shelf

I have a decent function generator on my shelf in the shack here in Rochdale. It's capable of producing sine, sawtooth and square waves across a calibrated range from 0.1Hz to 500kHz.

But more often than not, when I need an audio source for test purposes, I use the little utility board I'm describing and the function generator remains on the shelf to impress visitors!

As Fred Bonavita W5QJN once said of an over technical explanation 'given by a fellow radio amateur: "I only asked for the time and you told me how to make a watch"! (And following Fred's lead in spirit and action sometimes I just wet my finger and put it on the audio circuit I want to test).

Audio Oscillator Circuit

There are many uses for a little audio oscillator around the amateur radio shack and almost as many possible circuits to do the job. To do the job, a phase shift between the base and collector, so such a phase-shift filter simply has to add another 180° of shift. An RC network (R1/C1/C2 and R2/R3/C3) provides the required phase shift controls the frequency at which the in-phase feedback occurs. The frequency of the oscillation can be altered by changing the values of the feedback network components. The values shown in the audio oscillator circuit, Fig. 1, produce

transistor can be made to work as an oscillator if some of the signal from the output circuit is fed back, in phase, to the input.

I've seen relaxation oscillators, often based upon the ubiquitous NE555 chip, commonly used as a simple audio source. This technique produces a square wave, ideal for many applications, but not delightful to the ear.

The circuit I've shown is based upon the Twin-T oscillator. It uses a phase shift network between the base and the collector of a single transistor. In the common emitter configuration there is already a 180° phase shift between the base and collector, so such a phase-shift filter simply has to add another 180° of shift. An RC network (R1/C1/C2 and R2/R3/C3) provides the required phase shift controls the frequency at which the in-phase feedback occurs. The frequency of the oscillation can be altered by changing the values of the feedback network components. The values shown in the audio oscillator circuit, Fig. 1, produce

about 500Hz (for 1kHz try 0.01pF for C1 and 2 and 0.022pF for C3.

I favour a slightly low frequency for audio circuit checking. It's just simply better on the ears). With the circuit values of Fig. 1, the output should be in the order of 1V r.m.s.

Output Attenuator

The circuit has an added output attenuator suitable for most applications. To use the oscillator as is the output can be extracted with a coupling capacitor of around 0.1 to 0.5pF at the collector of Tr1.

The output attenuator circuit,
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Practical Wireless, November 1996
R6/R7, allows a low level signal from the oscillator to be used in testing audio circuits. The circuit is a basic resistive divider and values can be calculated for a desired output.

It's possible to make a selection of attenuators. But in practice the one I use has $10\,\text{k}\Omega$ at R7 and $100\,\text{k}\Omega$ at R6 giving an output of about 10mV. (Actually it's feasible to make attenuators down to about 1µV output. Though it's not common with most commercial audio oscillators).

**Built On ‘Perfboard’**

I built my prototype audio oscillator on a piece of ‘perfboard’. This is the form of board with a matrix of 0.1 in holes, similar to Veroboard but without the copper tracks. ‘Perfboard’ is simple to use, like conventional p.c.b. material. In practice the component leads are pushed through the holes and excess leads (or off-cuts from leads) form the interconnections between the parts of the circuit.

A suitable layout for the oscillator is shown in the photographs, Fig. 2. This enables the circuit to be built in a area of some 22mm square (I've shown both sides to illustrate the “wiring up” method!). The “perfboard” is extended from the power supply end of the circuit to allow a PP3 battery to be attached to the spare board area with an elastic band.

The output from the oscillator goes to a phono plug, with its plastic cover removed. There's no on/off switch, you just need to snap the battery in place to use the oscillator.

**Phono Socket**

The attenuator is built on a phono socket of the single screw fixing type, as illustrated in the photograph in Fig. 3. Using this arrangement, several attenuators could be built to plug into the oscillator.

A short length of wire terminated with a crocodile clip provides the ground connection. The free lead from the coupling capacitor acts as a probe.

The audio oscillator provides a simple and cheap little item of test equipment that can serve many useful roles in the shack. Mine is usually pulled out whenever I built an audio circuit. The only problem is I can never find a PP3 battery when I want to use it!

Fig. 3: For simplicity the attenuator can be built straight onto a phono socket and various ratios made. (see text).

---

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<thead>
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<th>Practical Wireless</th>
<th>Short Wave Magazine</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>Dec</td>
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<td>December</td>
</tr>
</tbody>
</table>

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Cheerio from George, see you next month.
Sunday 16th June 1996 seems to have been a hot sunny day in all parts of Britain. It allowed portable stations taking part in the 14th annual PW QRP Contest to make the most of the good v.h.f. conditions that prevailed in many parts of the country.

As the results tables show, the overall winners this year are the Warrington Contest Group G3C2K/P. This group comprise J.E. Gledvillas G8XVJ, G. Schoof G1SWH and D. Leong G4WDL.

Erik Gledvillas had been one of the group who won in 1995, from the same site near Leek in Staffordshire (I093 square). But this year they increased their lead over other GM stations, as last year, the Cockenzie GM8132X, awarded to the group win a 12V, 2.5W Solar transceiver, kindly donated by Yaesu (UK) Ltd.

As well as the prestigious Winner's Cup, the group win the Dragonlayers Contest Group G0BPS, which wouldn't be the same without his efforts! It's time again for our dedicated adjudicator Dr. Neill Taylor to present the results of PW's very own 'fun' 144MHz contest, which wouldn't be the same without his efforts!

Dave has been a loyal supporter of the QRP Contest since 1985 when, as G8ZRE, he was placed 18th. Over the years he has entered from a variety of locations (including as E46GZRE in 1992!), and in 1994 set a new record with the first ever GW to TX (Algeria) contact on 144MHz.

Recent years have seen Dave taking near the top of the table. And although in the notes with his log he comments "I felt there was still complacency on the band this year", Dave will no doubt be pleased to find that he has at last become the top Single Operator.

The second placed Single Operator this year, Peter Lowtie G7J7Y/KPH, who achieves 11th place overall, the highest that a GI or El station has ever reached in the 14 year history of the contest.

Editorial note: Please see 'Keylines' editorial this issue for an announcement especially for the contest. By the way, they used an interesting transceiver - a Racom RZ-CW, a QRP 144MHz rig from the Czech Republic which they say has an excellent receiver.

Contest Certificates
All the groups I've mentioned will be receiving Contest Certificates, as will the leading station in each locators square (see table). The full detailed results list will be posted shortly to all entrants who sent stamped addressed envelopes with their logs, (You can also get a copy by sending an s.a.e. now to the PW Editorial office, or look out on your local Packet BBS for a bulletin from QLX).

If you have Internet access, you'll find the full results list on the PW QRP Contest page, along with an archive of results from earlier years. Point your browser at http://www.rpmc.co.uk/ed

The weather on the day of the contest was superb from GW7LOD/P and as "weather conditions were perfect with enough of a gentle breeze to give a Front A-Near The Top

Some of the other groups near the top of the table have been hovering there for several years, but it's particularly pleasing to see Dave Hewitt, operating as GW8ZREP, taking the title of Leading Single Operator.

 uint8, websites/sites/staylor/pwqrp.htm

Weather Important
The weather on the day of the contest, so important to the smooth setting up and running of a portable station, seems to have been generally hot across the British Isles. Reports from entrants were consistent.

I received comments such as "weather conditions were superb" from GW7LQDP and "the weather was perfect with no wind at all coming in off the Irish Sea with the exception of a gentle cooling breeze which was very welcoming" from G7J7KYP. From Scotland came GM4YQJP's "the weather was superb with enough of a
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Practical Wireless, November 1996
breeze to keep the edge off the sun's heat and assist with burning of the skin!"

On the other hand "the unrelenting sun and wind in an exposed location was becoming too uncomfortable" arrived from GM8DP, who closed down early and forwarded his log as a checklog.

Propagation Conditions
Views on propagation conditions were not so uniform. Some areas apparently getting a better chance than others of DX contacts.

Received comments such as "Band conditions were totally amazing" came from G7JYK/P, and G3CRK/P reported they enjoyed "very good conditions to ON, PA and DL. The beacon from ON was S9+30dB".

From GO6RCP came the report that they found "conditions much better than usual". But "conditions didn't seem to be very good in the south" according to G6BDY/P (Isle of Wight).

For some operators, propagation seemed to be at its best either before or after the contest started or after it had finished: "Conditions seemed very promising...at 0840 I heard an H45 on sideband but within minutes of the contest starting continental activity all but ceased!" reports G4RUL/P. Whereas at GO6PS "the opening to LA, SM and OZ happened after the contest!"

Those who did experience enhanced propagation were pleased with what they worked. "The best DX for me was J030, not worked before or after the contest started or after it had finished: "Conditions seemed very promising...at 0840 I heard an H45 on sideband but within minutes of the contest starting continental activity all but ceased!" reports G4RUL/P. Whereas at GO6PS "the opening to LA, SM and OZ happened after the contest!"

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Leading Stations using a single antenna

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Callsign</th>
<th>Antenna</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>G3CRK/P</td>
<td>GW0NWR/P</td>
<td>ZL special 7-element</td>
</tr>
<tr>
<td>2</td>
<td>G0DPS</td>
<td>GW8ZRE/P</td>
<td>Tonna 17-element</td>
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<tr>
<td>3</td>
<td>G6BDY/P</td>
<td>G4LYK/P</td>
<td>Maspo 10-element</td>
</tr>
<tr>
<td>4</td>
<td>G3CRK/P</td>
<td>G08PS</td>
<td>S-10-element Parabeam</td>
</tr>
<tr>
<td>5</td>
<td>G3CRK/P</td>
<td>G2AQJ/P</td>
<td>Cushcrafts '352 Booster</td>
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<tr>
<td>6</td>
<td>G3CRK/P</td>
<td>G4H4/P</td>
<td>MET 19-element</td>
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<tr>
<td>7</td>
<td>G3CRK/P</td>
<td>G4RUL/P</td>
<td>18-element</td>
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<td>8</td>
<td>G3CRK/P</td>
<td>G4RUL/P</td>
<td>Tonna 13-element</td>
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<td>G4RUL/P</td>
<td>15-element</td>
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<td>10</td>
<td>G3CRK/P</td>
<td>G4RUL/P</td>
<td>Tonna 9-element</td>
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<tr>
<td>11</td>
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<td>G4RUL/P</td>
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<td>12</td>
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<td>G4RUL/P</td>
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<td>Tonna 19-element</td>
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<td>17</td>
<td>G3CRK/P</td>
<td>G4RUL/P</td>
<td>Tonna 21-element</td>
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Mike Baguley G7LQJ crossed the border to operate as GW7LQJ/P near Chirk in North Wales for his entry in the 1996 Contest.

Holding on to their antenna and their lead! The Cockenzie & Port Seton Amateur Radio Club (GM6CL/P) were again the leading Scottish station and have been presented with the Tennant Trophy In Memoriam to Frank Hall GM8BZX, which is awarded annually.

Good luck for next year too!" the recommendation from G0OVA/P is to "spread out, don't call on exact frequencies. Before calling CQ, ask if the channel is in use on all four points of the compass and have a very good listen!"

Those last five words are indeed the key to successful contest operation. G4HLX.

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Mike Baguley G7LQJ crossed the border to operate as GW7LQJ/P near Chirk in North Wales for his entry in the 1996 Contest.
was really big. I sometimes wish I could hear all these stations in a regular [ARU-Region 1 contest]!  

**Special Mention**  
Worth a special mention are the efforts of Derek G0HHL/P. He scaled the summit of Ben Stack to be the most northerly station submitting a log. Derek reports "I spent four hours climbing the hill and about four hours basking in the sun operating the station. The gentle breeze keeping the midgies at bay turned gusty with the distant contacts I had. I sometimes wish I could hear all these stations in a regular [ARU-Region 1 contest]!"

There was a surprise visitor at about 1200, a hill walker. He couldn't understand why anyone would want to take the antenna and radio gear to the top of a hill and I couldn't answer that question!"

**Enjoyable Novelty**  
It's maybe hard to identify just what it is that makes low power v.h.f. contest operation so enjoyable, but for many the novelty doesn't wear off. For example, G7KNQ writes "I have been participating in this contest for seven years now, and I am always amazed at the distances I can achieve with just 3W."

From G0LAR/P came "the knowledge that you are a new square for someone is a welcome thought, often resulting in the same being true in reverse, which is just reward after working hard to make a contact with a more distant station."

Finally (especially for the next contestant) it obviously takes a lot to prevent QRP contests from enjoying themselves! The everyday report from G0UP/Y says "we all had a great day, despite the fact that I got chased by a bull, dived over a fence and ended up in casualty with a twisted knee!"

**Dates Coincided**  
As in 1995, the date of the contest coincided with the second session of the RSGB 144MHz Backpackers' Contest. This year, however, the start times were co-ordinated and the required contest exchange was the same for both events, thanks to the co-operation of the RSGB VHF Contests Committee.

The co-operation made it possible for operators to submit their complete logs to the PWQRP Contest, and the first four hours of the log to the Backpackers’ Contest, and a number of stations did this. The co-ordination of these two contests seems to have worked well, and will continue in the future.

The duration of the QRP Contest was reduced this year to seven hours instead of the normal eight. Many entrants commented on this change - only one opposed it, several were neutral about it, but the vast majority appreciated the change, (some enthusiastically). So we will retain the seven-hour duration, 0900-1600UTC, for next year's contest.

**Generally Good**  
The standard of entries, from my (the adjudicator's) point of view, was generally good, with a few notable exceptions. Log-keeping seems to have been mostly accurate, although failure to log a QR prefix continues to be the most common error.

Entries who fail to submit the covering information in the format required may be penalised, or cause us unwellcome extra work. Because of this the most serious offenders will find that their score has been reduced by a 5% penalty for failing to supply, for example, a list of the locator squares worked.

Entries submitted on the forms downloaded from the Internet page were the easiest to use. Although I don't expect all entrants to be able to access these, it ought to be possible for anyone to read the published rules and write down the required information in the format and in the order that it is asked for.

"Can we E-mail entries in future?", asks G4ARUP. In fact one station (after checking with me) did that this year, although in the end it was the duplicate copy that was sent by post that I actually used. I see no problem in the practice of e-mailing becoming more widespread, provided that the log sent electronically conforms to the required format. More detail of this option for submitting entries will be given with the 1997 rules.

**No G4HLX?**  
"No G4HLX this year?" commented G0OVA/P, and a few others who had noticed my absence. And I'm sorry to say it's true that for the first time in 14 years, G4HLX was not active in the contest, due to unexpected equipment failure shortly beforehand.

However, I was able to listen, all day. I missed the exchange of a few words with the QRP Contest regulars. Rest assured that the station will be back on air, to "give a few points away", by the time of next year's contest, which is set for Sunday 15th June 1997.

I hope that everyone else will also be getting their station equipment into order, ready to make that day as enjoyable and rewarding as the 1996 Practical Wireless 144MHz QRP Contest. My thanks to all who supported this contest, by submitting an entry, sending a checksum (G8BOT and G4MJ/P), or just coming on the band to work some contest stations on the day.

Neil Taylor G4HLX

On behalf of the PW Editorial team and everyone who took part in the contest, I would like to thank Neil Taylor G4HLX. Without the tremendous efforts Dr Taylor puts into the contest every year, we would all be bereft of an occasion that generates the true spirit of Amateur Radio. (For further comment please see "Kerry's" Editorial page).

Rob Mannion G3XFD, Editor Practical Wireless

The 1997 QRP Contest takes place on Sunday 15th June.

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Leading stations in each locator square

<table>
<thead>
<tr>
<th>Square</th>
<th>Name</th>
<th>Callsign</th>
<th>No. entrants in square</th>
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<tbody>
<tr>
<td>J052</td>
<td>Pat Keogh and Michael Kiely</td>
<td>E2HWW</td>
<td>1</td>
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<tr>
<td>I013</td>
<td>Declan Lennon</td>
<td>E19HU</td>
<td>1</td>
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<tr>
<td>I070</td>
<td>Cornish Branch RAFAERS</td>
<td>G0CPC</td>
<td>3</td>
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<tr>
<td>I071</td>
<td>Cheadle ARS</td>
<td>G0VSWG/P</td>
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<td>I072</td>
<td>Abersoch ARC</td>
<td>GB2WSP/P</td>
<td>1</td>
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<tr>
<td>I074</td>
<td>Peter Lovia</td>
<td>G7JYY/P</td>
<td>1</td>
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<tr>
<td>I075</td>
<td>Ay Amateur Radio Group</td>
<td>G0WRY/P</td>
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<tr>
<td>I076</td>
<td>Mid-Angle ARS</td>
<td>GM4QYP/P</td>
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<tr>
<td>I078</td>
<td>Scottish Welsh Alliance</td>
<td>GM4WSP</td>
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<td>I080</td>
<td>Torbay ARS</td>
<td>SP9WJ/P</td>
<td>2</td>
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<td>Broad Radio Society</td>
<td>G4BSP/P</td>
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</tr>
<tr>
<td>I082</td>
<td>North West Wullifiers</td>
<td>G0VQWR/P</td>
<td>7</td>
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<tr>
<td>I083</td>
<td>Dave Hewitt</td>
<td>G0VR2R/P</td>
<td>6</td>
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<tr>
<td>I084</td>
<td>Julian Rios</td>
<td>G0LGB/P</td>
<td>1</td>
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<td>Cockenzie &amp; Port Seton ARC</td>
<td>G0VWJ/P</td>
<td>3</td>
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<td>Marine Mares Group</td>
<td>G0M2X/P</td>
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<td>I090</td>
<td>Horham ARC</td>
<td>G4HRS/P</td>
<td>3</td>
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<tr>
<td>I091</td>
<td>Tony Clark</td>
<td>G0CNA/P</td>
<td>5</td>
</tr>
<tr>
<td>I092</td>
<td>John Rudi &amp; Kevin Porter</td>
<td>G7CCP/P</td>
<td>8</td>
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<tr>
<td>I093</td>
<td>Warrington Contest Group</td>
<td>G3CXR/P</td>
<td>7</td>
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<tr>
<td>I094</td>
<td>Hamiltonshire ARC B Group</td>
<td>GM3AE/P</td>
<td>4</td>
</tr>
<tr>
<td>I100</td>
<td>Alistair Turner &amp; Peter Hutchison</td>
<td>G4ARU/P</td>
<td>1</td>
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<tr>
<td>I101</td>
<td>Dragonstations ORP Club</td>
<td>G0BPS</td>
<td>12</td>
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<tr>
<td>I102</td>
<td>Vicky Tuttle</td>
<td>G0TMT</td>
<td>3</td>
</tr>
<tr>
<td>I101</td>
<td>Jen Cloughs</td>
<td>ON1BCJ</td>
<td>2</td>
</tr>
</tbody>
</table>

John Rule G0JVR/P (single operator station) remembered to fly his Cornish Stannary flag while operating from Tregonning Hill in Cornwall.

An impressive home-brew antenna array! Mark Tuttle G0JMT used four ‘Quagi’ 144MHz antennas (Designed by Kevin James G6VNT and published as ‘A Quick Quagi’ in Practical Wireless September 1995 issue) for his entry.

On behalf of the PW Editorial team and everyone who took part in the contest, I would like to thank Neil Taylor G4HLX. Without the tremendous efforts Dr Taylor puts into the contest every year, we would all be bereft of an occasion that generates the true spirit of Amateur Radio. (For further comment please see "Kerry’s" Editorial page).

Rob Mannion G3XFD, Editor Practical Wireless

Practical Wireless, November 1996
Seems that Icom Japan have been burning the midnight oil. Not only have they bought you an amazing HF and six metre transceiver but there’s talk of a new HF +6m 1kW linear amplifier (ICPW-1), a new dual bander (ICW-32E) and a new scanner (ICR-10E).

### Pricing Watch

**YAESU**

**FT-1000D**

- **200W HF transceiver**
  - RRP £2999
  - Lynch Price: £2599
  - Deposit £599, 12 payments of £27.55.
  - Cost of loan £306.27

**FT-990/AC**

- **300W HF base transceiver**
  - RRP £2199
  - Lynch Price: £1799
  - Deposit £799, 12 payments of £127.82.
  - Cost of loan £396.97

**FT-840**

- **HF 100W simple to use HF transceiver**
  - RRP £859
  - Lynch Price: £699
  - Deposit £299, 12 payments of £51.53.
  - Cost of loan £228.84

**FT-7700**

- **500W solid state HF Linear Amp**
  - RRP £749
  - Lynch Price: £599
  - Deposit £299, 12 payments of £44.08.
  - Cost of loan £185.96

**FT-900**

- **ICW-1 HF base transceiver**
  - RRP £499
  - Lynch Price: £449
  - Deposit £199, 12 payments of £31.58.
  - Cost of loan £133.95

**ICOM**

**IC-73A**

- This IC-73A from Icom in the UK is the only HF base station to offer such a wide range of features, for a £399 price.

**IC-756**

- **25W Amp**
  - Including Spectrum scope
  - Internal Auto ATU for HF
  - Message memory keyer
  - 4.9" Multifunction LCD Display
  - DSP IF at 15KHz
  - Twin pass band tuning
  - Size: 340mm (w) x 111mm (h) x 265mm (d)
  - Weight: 9.3Kg
  - Internal Auto ATU for HF + 6m
  - Price: TBA! (circa max £2200)

**KENWOOD**

**TS-850S**

- **100W HF Transceiver**
  - RRP £1099
  - Lynch Price: £999
  - Deposit £499, 12 payments of £51.53.
  - Cost of loan £228.84

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Standard C-508. £299.95

The world’s smallest dual bander?

2m & 70cm, 250W output. Only160g in weight. Unsurpassed sensitivity, 0.1581 microvolt. (12dB SN/R) 8 tuning steps. 60 channel memory. 39 CTCCS tone included.

Standard C-108 / C-408.

C-108: £169.95, C-408: £179.95

Simple, basic, 230W output on 2m (1C-108) or 70cm, (C-408). Only 130g including batteries 20 channel memory. Built in tone burst & superb sensitivity.

Standard C-568. £49.99

A class leading act? Unlike the usual dual band handheld, amongst other pace setting features, the new C-568 covers the 23cm band on receive together with 35W of TX power! The feature list goes on and on. Contact the sales desk for a full descriptive leaflet.

C-5908D. Circa: £80.00

Coming very soon, the C-5908D is a TRIPLE BAND 2/6/70 mobile FM transceiver. Remote head, 45 watts on 6m, 50 watts on 2m and 75 watts on 40m. Further details follow shortly.
supermodels than the motor show!

Lynch 40th (yes 40th) Birthday Party at the store on 2nd November!

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NEW PRODUCT
FROM KENWOOD

DSP TS-570S

In response to their award winning TS-870S, Kenwood bring you their new TS-450S replacement - the TS-570S with DSP!!

Make sure you call into the Leicester show for the transceivers first showing!

EASYWAVE BY ICOM

The latest commercial 2-way handies operating on UHF. One licence at only £36 and dual for business use indoor or out. Easy to operate with the absolute minimum of buttons. Supplied with wall charger and NiCad batteries.

ONLY £199 INCL. VAT.

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ONLY £199 INCL. VAT.
Believe it or not, the Leicester Show celebrates its 25th anniversary event this year! For those of us who remember the early shows, Rob Mannion G3XF D takes a look back at a show that’s become a traditional autumn treat for radio enthusiasts from all over the UK and Europe.

A

lthough I attended some of the earliest Leicester Shows myself, to get the real ‘flavour’ of this now truly traditional event, I’ve had to be ‘Mr Leicester Show’ himself...Frank Elliot G4PDZ.

But - bearing in mind we’ve got many readers who don’t live in the UK - I’d better explain a little about the show, where it’s held and how you can get there if you’re visiting Britain. Even at this late stage you could find time to get to the show...it would be worth it if you could!

Leicester, is in the eastern English Midlands, approximately 160km (100 miles) or so north of London. For visitors to the UK, thinking of travelling by air for a visit, Leicester is only a short distance from the busy East Midlands Airport. This major regional airport has services to and from many parts of the UK and mainland Europe.

Continuing with the story behind the successful show Frank explained that “The aim of the committee is to be predominantly Amateur Radio or at least be associated with Amateur Radio. It is increasingly difficult to distinguish but we try hard”!

Another vital aspect for the Leicester show is that the city itself is so far off being in the centre of England. Because of this it’s got excellent road and rail communications to the rest of the country.

The M1 - for example - links the city to the south and west very effectively via the M42 and M5 and even from our office here in Dorset I can get to the Granby Halls in around three hours. And many years ago I bought a very heavy Eddystone 888 second-hand receiver and carried it to Leicester stations before travelling home on the train (via London) in just over four hours. However, nowadays, many clubs run coaches or share cars. It’s feasible even if you’re coming from Holland, Belgium or France now the Channel Tunnel is open! (You can even get through trains from the Tunnel to destinations throughout Britain!).

Lastly but not least, it’s time to take a look at the history of the Leicester show itself. And Frank reminds me that the first event was held at the Granby Halls between October 26 and 28th 1972. It was run for the Amateur Radio Retailers Association (AARA) by Les Hellier G3TED and Tony Darzi G3PFC. Following G3TED’s death, his son (also called Les Hellier) took over the responsibilities along with Fred Hopewell G4PG.

Frank Elliot G4PDZ on the Elliot Electronics stand during the 1984 Leicester Show.

The main hall during the 1983 show with the SMC stand prominent in the centre of the photograph.

Visit the PW stand for book bargains and show special offers.

Frank Elliot G4PDZ the Chairman and Geoff Dover GAJGP the Treasurer.

Theodorson G4MTP the Chairman and Geoff Dover GAJGP the Treasurer.

Rounding off our conversation Frank told me: “One of the highlights for me is that I’m concerned in the signed message we’ve received from His Royal Highness Prince Phillip, the Duke of Edinburgh, and each year being able to meet so many of the stalwarts of Amateur Radio. And hopefully, many of the original exhibitors will be at this year’s show”.

The letter featured in October 1995 (page 13) of the October issue of PW.

Tham for the chat Frank. It was fascinating to hear some of the background of the Leicester Show. Personally I think it’s an excellent social event and also provides marvellous opportunities to launch someone off on the radio.

Leicester was (for example) where I was able to help a certain young James Reed (now G4WUDM) get his first licence from the ‘Bring & Buy’ some years back. His treasured Heathkit R1A founded his equipment collection. He then progressed to his RAE and is now at Medical School. He chose me with an active Amateur Radio Club of course! All because his Dad was kind enough to bring him to the Leicester show!

Do come and join the fun. If you’re just entering the hobby, please come and have a chat. We’ll do our best to help you too achieve the best results and you never know, you could find the bargain needed to launch you off into the radio hobby.

So everyone on PW wishes ‘Happy 25th Birthday’ to the event and we’re all very much looking forward to meeting friends old and new on Friday and Saturday 18 and 19th of October. See you there!
The Leicester Amateur Radio Show Committee invite you to the

25th Anniversary

AMATEUR RADIO, ELECTRONICS & COMPUTER SHOW

at the

GRANBY HALLS, LEICESTER

on

Friday & Saturday

18th & 19th October, 1996

Friday 10.00am - 6.00pm. Saturday 10.00am - 5.00pm

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6    Lake Electronics
6a   K.M. Publications
7    South Midlands Communications
8    JPE
9    Timestep
10   Sandpiper Communications
11   Weirmead
12   Display Electronics
13   Strumech Engineering
14   Combitek
15   Waters & Stanton
16   Mutek
17   JMG Electronics
18/19 J.A.B. Electronics
20   Office Land
21   Multicomm 2000
22   G3TUX QRP Component Co.
22a  H. Morgan Smith
23   Satellite Surplus
24   Martin Lynch & Son
25   Barenco
26   J. Birkett
27   R. J. Holderness
28/29 Syon Trading
30   Capital Products
31   Moonraker
32   Wilson Valves/Am. Radio Shop
32a  Mainline Electronics
33   G. S. Electronics
34   Nevada
35   L & S Components
36   A1 Electronics
37   J & P Electronics
38   Len Cooke Enterprises
39   M & B Radio
40   ARE Communications
41   J & P Electronics
42   S.G.S. Electronics
43   Coltec Electronics
44

Exhibition Hall

1    RSGB
2    Icom (UK)
3/4  Practical Wireless & Short Wave Magazine
5    Linear Amp UK
6    Haydon Communications
7    AOR (UK)
8    2J Sound
9    Venus Electronics
10   Ham Radio Today
11   Howes Communications
12   Poole Logic
13   Trio-Kenwood
14   Eastern Communications
15   Videoquip
16   Lowe Electronics
17   Yaesu UK
18   Tennamast
18a  Radiocommunications Agency
19   Field Electrics
20   R.A. Kent
21   Mailtech
22   Rich Electronics
22a  U B M
23   U B M

Visit the PW stand for book bargains and show special offers

Practical Wireless, November 1996
With the 25th Leicester show just around the corner here's brief round-up of who and what you can expect to find at show. If you can't make it to the Granby Halls on October 18/19th this will give you a taster of what you can expect to find on the dealers shelves after the show. And as the Leicester show is traditionally the time of year when new products are launched there should be plenty to choose from!

Lowe Electronics - Stand E16
As well as the usual range of products the Lowe Electronics team will be exhibiting new DX Peep automatic DX transceivers but models for other bands will be available soon. If you visit the Lowe Electronics stand there will also be the chance to see a wide range of masts and towers for the communications industry as well as their innovative boat cradles, which have earned them a strong reputation in the yachting world. They will continue to offer their 'friendly' service and look forward to seeing friends old and new at the Leicester show or at 81 Mains Road, Beith, Ayrshire, Scotland KA15 2HT.

Tennamast (Scotland) Limited - Stand E18
Norrie and Rose Brown will be pleased to welcome you to their stand and as always will have a range of their mast, towers and associated bits and pieces on display. However, one thing that will no doubt stand out as being different this year will be the change of name.

As of 1 September 1996 Tennamast became a limited company and are now trading as Tennamast (Scotland) Limited. Norrie and Rose Brown have been joined by two new Directors, Matthew Dodds and Bill Strachan GM32RT who are two Ayrshire businessmen.

Tennamast will continue to produce their wide range of masts and towers for the communications industry as well as their innovative boat cradles, which have earned them a strong reputation in the yachting world. They will continue to offer their 'friendly' service and look forward to seeing friends old and new at the Leicester show or at 81 Mains Road, Beith, Ayrshire, Scotland KA15 2HT.

Icom UK Ltd. - Stand E2
Icom UK are about to launch some new models for the autumn season. These are expected to be the IC-756 an h.f. d.s.c. 50MHz 100W transceiver, the IC-V10E dual-band hand-held and the IC-821H dual-band base station. In addition to these Icom are also the IC-PW1 an h.f. 50MHz linear 1kW amplifier.

It's hoped that some, if not all of the new models will be ready in time for the Leicester show and so will give all visitors to the Icom stand plenty of variety to choose from. So, why not stop by Stand 2 in the Exhibition Hall to find out more about the latest models in the Icom range or contact them direct at Sea Street, Herne Bay, Kent CT6 8LD, Tel: (01227) 741741.

The QRP Component Company - Stand S22
Chris Roos G3TUX will be displaying some new Morse keys and paddles on his stand in the Leicester Sales Hall. The first of these is the Swedish Pump key, which is said to have a unique soft action and is already a favourite amongst Morse enthusiasts.

Also on display will be two keys ideally suited to the traveller or portable operator. The 'Minky' and 'Twinky' DX/TVW6 miniatures are a miniature pump and a vertical action twin lever paddle key respectively.

For the first time Chris will have supplies of Schurr Morse keys from Germany on display, in addition to all his usual bits and pieces for the QRP enthusiast. If you can't wait until October 18 & 19th to see Chris why not contact him on (01428) 664507.

Sandpiper Communications - Stand S11
Sandpiper Communications have two new antenna products available for the Leicester Show. There's a new range of heavy duty dipoles for the 3.5, 7, 10, 14 and 28MHz bands with a 1kW power limit on 14 and 28MHz. The dipoles for the three lower bands are only 8.5m across with a power limitation of 200W s.s.b.

Covering HF to v.h.f., the PI280KIT antenna system can be adapted to suit all bands from 3.5 to 144MHz. Using a combination of extension rod, a selectable loading coil and a telescopic top section (shown in the illustration) you can make an antenna that can be used on the popular bands.

The optional base mount allows the user to fix the antenna to a luggage rack for mobile use. Or you could fit it to a balcony rail if you're operating from a hotel room. You can have 'two to eightieths' wherever you go.

For more information on Sandpiper’s range of antennas why not contact Chris at The S. Industrial House, Cowburn Industrial Estate, Aberdare, Mid-Glamorgan CF44 6AE. Tel: (01685) 870425.

Eastern Communications - Stand E14
Eastern Communications who are the European agents for Vibroplex Morse keys will be exhibiting the full range on Stand 14 in the Exhibition hall. Over the last year Vibroplex have been busy improving their keys by using new tooling and heavier plating.

As a result of public demand for a Vibroplex straight key and after much discussion between Tim Thirst G4CTT of Eastern Comms and Mitch Mitchell Jr WA4OSR, owner of Vibroplex, the first Vibroplex Straight Key will be on display. The new Straight key will be available in a Deluxe Chrome Version or in a Standard Black Crackle finish. Also on display will be a new Autek antenna analyser, the RF5 which is a v.h.f/u.h.f. version of the RF1. This unit is designed to make the testing of wire and beam antennas very easy to do. The RF5 features an instant watt mode which automatically finds the frequency of the minimum s.w.r.

There will also be the chance to see a new range of low pass filters and lightning arresters from Delta Engineering and a selection of wire antennas from the Sigma range and h.f. beams from Mosley. For more information you can contact Eastern Communications on (01662) 650077.

C.M. Howes Communications - Stand E11
Dave Howes G4KQH and his team will be exhibiting the full range of Howes kits and active antennas and no doubt of particular interest will be the PW Rugby transmitter and matching Daventry receiver. Visitors to the Howes stand will have the opportunity to examine the Rugby's works and see for themselves exactly how easy it can be to build an s.s.b. transmitter.

Together with the kits for the Rugby and Daventry you will also be able to purchase the kit for the newly introduced DC900 shortwave s.s.b. and c.w. receiver. With a price tag of only £22.50 this should ensure that plenty of budding constructors will be busy building throughout the winter months!

If you'd like to know more then why not take time out to speak to Dave G4KQH either at the Granby Halls or by calling him on (01327) 260178.

Visit the PW stand for book bargains and show special offers!
Kenwood Electronics UK Ltd.  
- Stand E13

There's news from Dave Wilkins G5HY, Sales & Marketing Communications Division of Kenwood UK, that new models are on their way. Kenwood's new TS-570D is aimed at replacing the popular mid-priced TS-450S and TS-450SAT models. Dave told PW that the new TS-570D's price will be of interest in that it's £1499.95 including VAT. He states that "the new transceiver is therefore priced significantly below that of the outgoing TS-450SAT, but with greatly improved features and full digital signal processing (DSP) included".

Brief specification details of the TS-570D include Kenwood's manufacturer's claim exclusive 16-bit d.s.p. technology providing extremely effective interference reduction. High quality transmit and receive audio reproduction, Kenwood also claim a "world first" with the TS-570D's c.w. auto tuning. Other important parameters are long transmission times due to improved heat dissipation techniques and automatic antenna tuning. Look out for the latest information on all Kenwood's products on their Stand or contact them direct on (01522) 864644.

South Midlands Communications - Stand S8

If you're looking for a reasonably priced u.h.f. p.m.r. radio suitable for 1200 baud packet use then look no further than the SMC stand. Graham Taylor and the team will be offering single channel units from just £25, as well as a variety of two and seven channel models. There will also be the chance to purchase a new Daiwa PS400SXS 40A p.s.u. which measures 216 x 110 x 280mm, weighs only 8.5kg and costs just £185. And that's not all!

There will be a new mobile antenna on view in the shape of the Comet CA-Hv.v.h.f. The Comet can be used on the 7, 14, 21, 28, 50 and 144MHz bands and is claimed to be the ideal antenna for use with the IC-706.

So, what are you waiting for?

With all these offers together with the all usual SMC products you can't fail to find a bargain! For more details on the full range of products stocked by South Midlands Communications telephone (01763) 25511.

Nevada Communications - Stand S35

Portsmouth based company Nevada will have a selection of new products on show, which have not been exhibited prior to the Leicester Show.

Nevada have recently been appointed distributors for the Rexon brand of hand-held transceivers. The new Rexon RL-115 144MHz hand-held transceiver costing just £189 will no doubt be of interest to amateurs both 'old and new'. Features of this 'palm sized' transceiver include 72 memory channels, built-in DTMF, auto repeater offset, has six types of scanning and toneburst. Finally, there's the C-590D which is due for general release in early 1997.

The C-590D is described as the first dedicated mobile transceiver to offer three v.h.f./u.h.f. in one unit. Features include wide band receive, 45W on 50MHz, 50W on 144MHz and 35W on 430MHz.

In addition to all this Nevada will be exhibiting the range of AEA and Heil products together with Dammike, Yaesu, Kenwood, Icom, Alinco and a vast array of second-hand equipment.

So, if you call at the Stand 35 in the Sales Hall you can be assured of a warm welcome and plenty of 'goodies' to choose from. Jeff Stanton and Peter Waters are looking forward to welcoming you to their stand so make sure you take a look at what's on offer.
COMPUTING

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R. A. Penfold

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86 pages. £4.99

MS-OFFICE ONE STEP AT A TIME (BP/402)

77 pages. £5.99

MS WORD 95 EXPLAINED BP/365

175 pages. £6.99

MS WORKS FOR WINDOWS 95 EXPLAINED BP/409

175 pages. £5.99


Michael Vecsey

256 pages. £12.95


38 pages. £15.95

THE INTERNET AND WORLD WIDE WEB EXPLAINED. J. Shelley

130 pages. £15.95

WINDOWS 95 EXPLAINED (BP/404)

175 pages. £5.99

HISTORICAL

1534 OFFICIAL SHORT WAVE RADIO MANUAL. Edited by Hugo Gernsbach

250 pages. £18.85

THE BRIGHT SPARKS OF WIRELESS. F. A. Wilson

134 pages. £4.95

ARRL UHF/MICROWAVE EXPERIMENTER'S MANUAL Various Authors

446 pages. £14.95

OPERATING AND HANDBOOKS

AMATEUR RADIO OPERATING MANUAL. Ray Erickson G/3PDF

295 pages. £17.23

ARRL HANDBOOK FOR RADIO AMATEURS 1996 (ARRL).

1200 pages. £24.50

THE ATV COMPENDIUM. Mike Wooldridge G/3IPK

101 pages. £4.95

COMPLETE DF ARR L. Jon Farber

204 pages. £6.95

HINTS AND WORKS FOR THE RADIO AMATEUR. Edited by Charles L. Steinhoch and David Newkirk

129 pages. £4.95


790 pages. £21.00

SETTING UP AN AMATEUR RADIO STATION BP/300. L.D. Preece

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Jim Kramann KF4U

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QRN

QRN: CLUB CIRCUIT HANDBOOK. Edited by Rev. G. Debs GB3/4Y

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R. A. Penfold

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102 pages. £4.95

MORE ADVANCED USES OF THE MULTIMETER BP/256. R. A. Penfold

90 pages. £2.95

PRACTICAL TRANSMITTERS FOR NOVICES. John Case G/3IBA

128 pages. £16.00

“Very well, another month and good luck to all of you sitting RAE courses. Don’t forget to make sure you have ‘up-to-date’ books to hand, as things are constantly changing. For those of you interested in listening to the new Passport To World Band Radio 1997 looks interesting and is only £15.50!”

73 Michael
Profiled this month are five antenna titles from our comprehensive book list. All these and more will be available for your perusal on Stand 3 in the Exhibition Hall at this year’s Leicester Amateur Radio & Computer Show on October 18 & 19th at the Granby Halls, Leicester.

**More Out of Thin Air (PWP)**

This book comprises a collection of antenna theory, design and construction articles and has been born from the original *Out of Thin Air* which was launched originally as a ‘one-shot’ booklet way back in 1981. *More Out of Thin Air* contains articles on Antenna Theory and Constructional projects for h.f., v.h.f. and u.h.f. antennas as well as reviews and articles on associated equipment.

Although this publication has been revised and improved upon from the original *Out of Thin Air*, within its 112 pages is still contained some of the old favourites. These include some of the now ‘famous’ Fred Judd G2BCX antenna designs which undoubtedly compliment the new material.

For those of you thinking that you don’t need *More Out of Thin Air* because you have the original, think again! This is one book that no serious antenna enthusiast should be without and after all at only £6.95 you should be able to find it a deserving space on the bookshelf!

**The ARRL Antenna Compendium Vol. 4**

More antennas - ideas and practical projects is the line written immediately under the title and to be truthful this book is certainly packed full! This, as the title suggests, is the fourth volume in the already popular series and contains 38 previously unpublished articles.

*The ARRL Antenna Compendium Vol. 4* covers a wide range of antenna related topics. These cover right through from intensive maths, heavy weight discussions to fun antennas such as a balloon supported Field Day loop.

For the first time in the series *Compendium Vol. 4* comes complete with a free disk. The disk contains source data used to model many of the antennas featured within its 204 pages, as well as the resulting pattern plot files created by the authors.

In short, the *ARRL Antenna Compendium Vol.4* is a must for every antenna enthusiast at £14.50 is well worth every penny! If you decide you’d like to complete the set the *ARRL Antenna Compendiums 1, 2 & 3* are also available for £9.50 each.

**Joe Carr’s Receiving Antenna Handbook**

The ‘blurb’ on the back of this book says it all really “Your receiver is only as good as your antenna!”

Don’t be misled by the title of this book, it contains more than just where to hang the end of the long wire. The word receiving is in the title, but the theory is so well put across that there is something for all of us to learn.

There are 13 chapters that take you through from basics to fairly complex mathematics about antennas. They chapters deal with safety and basics of transmission, real world antennas and the compromises sometimes needed to get them to work and then transmission lines.

Then antennas are dealt with by type groups, quick, dipole and its relatives, longwire and other wire
W1FB's Antenna Notebook (ARRL)

Doug DeMaw W1FB is well known and respected in the amateur radio field. He has been telling amateurs for years how they can improve their stations. And in this notebook he turns his ideas towards the antenna, let's face it whichever rig we believe in, our stations are no good without an antenna!

Printed in the fashion of typewritten notes around good, clear hand drawings, the nine chapters deal with antennas basics, dipoles, single wire antennas, vertical antennas, high performance wire antennas and limited space or ‘invisible’ antennas. There is one chapter that deals with receiving antennas.

The final chapters deal with matching techniques as with simple antenna measurements. Doug also shows you how to make some of your own antenna test equipment to keep costs down to a minimum.

The apparent simplicity of this book belies the amount of information contained in it. After all notebooks are for capturing the essence of information without necessarily containing all the extra words that make it pretty sounding. In a nutshell a good book at a good price - £7.50.

The ARRL Antenna Book 17th Edition

When beginning a hobby, or even when continuing one, the best bit of help anyone can have is the benefit of a good library. However, a good and wide ranging library can cost a great deal of money so which book do you buy?

When cash is in short supply it’s a must to get books that contain as much good data as possible, thus achieving ‘good-value-for-money’.

The ARRL Antenna Book is such a book, it gives good value for money. It may not be as cheap as some, but when it comes to having the information in it, this book is tops.

Twenty eight chapters deal with all aspects of the knowledge of antennas and the various types (multi-band, multi-element, broadband, log periodic Yagis, cubical quads, h.f., v.h.f., u.h.f.) the list goes on for some time. There are chapters also on calculations and testing of antennas, how to feed them from the transmitter and how to support them.

If you use an IBM PC or a ‘clone’ there’s a 3.5in disk full of computer programs that can help with antenna related calculations.

This book really is one you should buy - even if it’s the only book. It may prove to be the only one you need to buy. It won’t break the bank either at just £21.95 for over 700 pages of information.

antennas. Vertical antennas, directional ones, receiving loop antennas and low frequency antennas are dealt with before a chapter called ‘Odds and Ends’.

Odds and Ends deals with pre-amplifiers, active and indoor antennas as well as ‘Clandestine, Stealth And Disguised Antennas’. Finally, the last chapter deals with antenna analysers.

All-in-all, a superb book for anyone interested in antennas as many ‘transmitting’ antennas are described in detail in this 189-page book. At just £17.50 this is affordable too!
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**KENWOOD Deals**

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**ICOM Deals**

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<td>IC-77SDSP</td>
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**ALINCO Deals**

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<td>DX-100</td>
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**ALINCO DR-605 Dual-Band Mobile**

**The Amazing Micro-Mag**

**Mobile Aerials**

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<tr>
<td>WSM-270 Dual Bander</td>
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<tr>
<td>WSM-1800 25-1900MHz</td>
<td>£29.95</td>
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Each comprises latest Japanese "super" 28mm diameter magnet, black element and 2.75mm of coax cable terminated in BNC. WSM-270 460mm, WSM-1900 400mm

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FT-1000MP-AC | £284 | £2249
FT-990DC | £199 | £1599
FT-736R | £199 | £1399
FT-50R New | £329 | £239
FT-640 | £359 | £279
FT-2500 | £399 | £329
FT-51R | £529 | £499
FT-290RR | £599 | £499
FRG-100 | £899 | £499

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The Editors of both Practical Wireless & Short Wave Magazine will be in attendance on the PW Publishing Stand in the Exhibition Hall at the Leicester Show, so why not stop by and meet the men behind your favourite radio magazines.

Rob Mannion
G3XFD, Editor of Practical Wireless invites you to come and have a chat at the Leicester show.

I never cease to be amazed at how quickly the years fly by nowadays! No sooner has one Leicester show disappeared over the horizon it only seems to be a few months before the next year’s is approaching. Perhaps it’s me…but life certainly does seem to be speeding by!

However, it doesn’t matter that life seems to be speeding up…I’ve got plenty of time to meet with you and to chat about PW, your ideas, suggestions and complaints. So how about spending a little time talking things over with the editorial team at the show? It’s our chance to meet you and ‘put a face to the name’ to those of you who write into or telephone the office.

Personal Correspondence

Personal correspondence is very important to me. I value your letters and often I get behind with my replies mainly because I wish to reply personally.

Because we’ve got a very small editorial team I’ve often got to squeeze letter writing between the main job of producing the magazine. But I persevere and (fortunately) readers are very understanding. So, please be patient…you’ll get a reply as soon as I can get round to it.

The many E-mail enthusiasts often ask me why I reply (which I do whenever it’s possible) via what they call ‘snail mail’. Well, in reply I’ve got to say that although it may seem ‘old fashioned’ it’s because I can sign the letter and make it more personal and not via some telephone line!

But in defence of E-mail I’ve got to say that computers ‘stimulate where others can’t reach’ by encouraging non-letter writers to write. The urge to sit at that keyboard overpowers the ‘I don’t want to write a letter’ attitude and they spout reams of E-mail.

This means that in addition to all our usual mail, I’ve got loads of Internet material to read through (to which they all require an ‘instant’ reply?). But I promise that I do read it all and whenever you need or require a reply…you’ll get one!

However, if you want to by-pass the hold-up in the letter writing…come and chat! I’m looking forward to meeting you at our usual stand on Friday and Saturday 18 and 19th of October. See you there!

Rob G3XFD

Dick Ganderton G8VFH, Editor of Short Wave Magazine will be on the stand at this year’s Leicester Show and he too invites you to come and have a chat.

Once again time has flown by and it’s Leicester again—I’m convinced that time accelerates as I get older!

I always look forward to meeting Short Wave Magazine readers face to face at the large number of rallies that I attend each year. For one thing it gives you a chance to let me know what you like, or dislike, about what we are covering in the magazine. I find that I can glean a lot of useful information in a face to face discussion with my readers.

This year Graham Tanner, SWM’s very popular ‘SSB Utility Listening’ columnist is joining us on the stand for the entire show. If you have any questions for Graham he will be only too willing to try to help you.

Finally, a visit to our stand will enable you to influence the ‘look and feel’ of your favourite listening magazine.

Dick G8VFH

Don’t forget not only can you meet our Editors by visiting Stand 3 in the Exhibition Hall, but you’ll also be able to buy copies of PW & SWM, take out subscriptions and browse through our comprehensive selection of radio related publications. So, make sure you don’t leave the 1996 Leicester Show without having paid a visit to the Practical Wireless & Short Wave Magazine stand.
The Alinco DJ-S41
430MHz Transceiver

By Ken Smith G3JIX

Ken Smith G3JIX and some of his young radio club friends say that ‘small isn’t the word’ when it comes to describing Alinco’s little 430MHz hand-held transceiver.

To judge from all the small v.h.f. and u.h.f. hand-holds that continuously enter the Amateur market, you might expect a saturation level of operation going on in these bands.

We don’t notice that this is the case and we’re always being exhorted to ‘use it or lose it’. The tiny Alinco DJ-S41 ‘handy’ for 430MHz might very well increase the activity on that band, with its economic price tag of £149.

I took out two of the DJ-S41 radios for young Novices to operate. They ‘sounded them out’ at a Kent village fete.

The rigs provided a great time for the lads running around the field - after they had tried to figure out the operating manual - all written in Japanese!

Though to be fair, the distributors, Waters & Stanton, say an English version will be available soon. (This will be in addition to the few notes in our language that came with the rigs).

Many Functions

There are only a few buttons...but many functions on the DJ-S41! And to start, briefly pressing the two tuning control buttons Up and Down on the left front side, steps through the channels.

The buttons are different sizes, which makes for convenience. It’s especially useful while operating in the dark, or for partially sighted operators.

Holding down one of the buttons for a second or two starts the scan function. All channels on receive from 415 to 470MHz are scanned.

The transceiver holds a busy channel for about five seconds. You hear a ‘tinkle’ as each 10MHz point passes and a ‘beep’ at each 5MHz.

You can turn off the ‘beeps’ if required, by pressing the Monitor button while turning on the power switch. If you try to transmit on a channel outside the legal band, ‘OFF’ appears on the dial display and no damage is done.

If you operate the Monitor button while pressing ‘F’, then all the keys are locked. This is so that no accidental pressing of buttons will change anything. You can set the channel step size by pressing ‘F’ together with Up. Then selecting the frequency required with further presses of the Up or Down controls.

A touch on the push-to-talk (p.t.t.) control resets the frequency read-out. (Channel spacing in the UK is currently 25kHz but 12.5kHz may become the norm. These frequencies and a number of others are easily set on this rig).

Repeater Shift

Operators can easily set up the repeater shift (+1.6MHz in the UK), by pressing ‘F’ and the RPT/Shift button on the right hand side. The Up and Down buttons then enable selection of the shift frequency.

Pressing RPT/Shift again toggles through +, - or ‘No Shift’ sequentially. A brief touch on p.t.t. returns the transceiver to normal read-out again.

A brief press of RPT/Shift while transmitting, toggles between low power (50mW) and normal power (340mW).

One omission on the transceiver was soon felt, and that was the lack of a tone burst at 1750Hz to open repeaters. However, the lads operating at the village fete soon found that G83EK about 20km away could be ‘whistled up’ easily.

The ‘tinkle’ sound seat or heard when you press the Up or Down button while transmitting would be ideal if it was replaced by the repeater tone.

On the other hand, CTCSS tones are built into this tiny transceiver. For example, G83EK on 434.05MHz opens when the 103.5Hz tone is sent. The ‘tinkle’ sound seat or heard when you press the Up or Down button while transmitting would be ideal if it was replaced by the repeater tone.

On the other hand, CTCSS tones are built into this tiny transceiver. For example, G83EK on 434.05MHz opens when the 103.5Hz tone is sent. To use CTCSS, the operator sets the tone by pressing the ‘F’ button, then while holding it, pressing the Down button. The CTCSS tone frequency can then be selected by operating the Up and Down buttons, and as before, briefly pressing the p.t.t. switch resets the normal frequency read-out.

Memory & Miscellaneous

Let’s now look at the memory and miscellaneous buttons. These include another button on the right hand side which operates the dial lamp (use sparingly!) for visibility at night.

The same button operated with ‘F’ activates the auto power-off function. (The operator can also set the makers to enable 1750Hz tones to be sent). The ‘tinkle’ sound seat or heard when you press the Up or Down button while transmitting would be ideal if it was replaced by the repeater tone.
and had a QSO through it DJ-S41s. They both succeeded 430MHz local repeater with the opening the rather distant 2E1DKM and Alan 2E1ELB to Novices in action'. Richard fitted in the unit. comparing the 'AA' batteries S41 is clearly demonstrated by the small size of the Alinco DJ - and antenna comments). Whilst (see text for details on control ALIO ()gill 1130MHz TRANSCEIVER EBC-6 EDH-18 ESC -27 EME-4 EEC-73 EDP-25N Power set low (50mW) Power output levels are such that you'll obtain 340mW with 4.5V d.c. (i.e. three type AA cells in the cradle). If you use rechargeable NiCads, the power will drop to 300mW. By applying an external d.c. supply at 5.5V maximum to the top mounted socket, the power output will be at the full 420mW capability of the DJ-S41. I wondered about the uses and the market to which the makers had aimed this rig. Naturally, the Novice market is an obvious one, but I think the limited experimental possibilities as mentioned above, restricts the possibilities there a little. The price is perhaps a little high for the average younger Novice licensee (we desperately need a really low cost 430MHz radio for these youngsters). On the other hand, £149 appears very reasonable, especially when you consider the high quality and fine surface mount construction, together with the many functions of this little transceiver. The DJ-S41 would seem to be ideal as a second portable radio for point-to-point operation at say, mobile rallies, etc. The tiny lightweight construction, with the convenient power supply, requiring only three dry cells to put it into action, seems to beg slipping it into your shirt pocket, so that you hardly know it's there. **Options & Accessories** Finally, you'll find options and accessories available from the distributors. These include speaker microphones, headsets, soft case, NiCad battery packs and chargers. The availability of speaker and microphone jacks on the top means that Packet operation is possible with appropriate leads. One surprising little function with the microphone sockets is 'clone' operation. This feature means that if one DJ-S41 (the 'master') has been fully programmed, then switching a 'slave' radio to 'clone' after connecting their microphone sockets together will instantly enable the 'slave' to take up all the programming of the 'master'. My thanks for the loan of the two review transceivers go to Waters & Stanton Electronics of 22 Main Road, Hockley, Essex SS5 4QS, Tel: (01702) 266835, FAX: (01702) 205843 who can supply the DJ-S41 for £149. PW
Amateur Radio Communications Ltd
38 Bridge Street, Earles Town, Newton-le-Willows, Merseyside WA12 9BA

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A Variometer Tuner

The '19 Set' had a variometer antenna tuner and Anthony Langton GM4HTU has found it still can outperform other a.t.u.s in some circumstances.

I have a local Net that meets on 3.5MHz, but the antenna tuner I had only worked effectively on 7MHz and above. So, I decided it was time I joined in, instead of just listening and rather than alter something which worked well I opted to build a separate tuner for this one band. My first step was to find out what was needed to tune the antenna system onto 3.5MHz. I measured the impedance of my doublet antenna system on the 3.5MHz band. I found it to be equivalent to 3kΩ in parallel with 100pF at 3.5MHz and, 1kΩ in parallel with 135pF at 3.8MHz.

As a typical balanced feeder tuner, the circuit was the traditional one for balanced feeders (see Fig. 1). Inductor L1 and C1 form a variable coupling circuit to provide a 50Ω load for the transmitter. L2 and C2a/b resonate the system to the required frequency.

Using a 50+50pF unit as C2a/b, I wound L2 accordingly. The design worked well when using a low power test oscillator, but a few calculations, taking the high impedance involved into account, hinted that I might have trouble when using higher power. With an r.f. output of 100W, the voltage across a 50Ω load will be about 70V r.m.s. When the 50Ω load is transformed up to 3kΩ the voltage needed to produce the same power, rises to about 550V r.m.s.

I was using a receiving grade variable capacitor for C2a/b so, I worked out that the voltage generated might be too much. As you can imagine, the shower of blue sparks appearing across the capacitor plates as I keyed the transmitter was not unexpected!

The obvious solution was to use a capacitor with a higher voltage rating, but this is neither cheap or easy. Transmitting grade variable capacitors are available from a few specialist manufacturers, but they are expensive. Also when you look at the manufacturing work involved, you can see why. I toyed with idea of building my own unit, but when I worked out what was needed, I abandoned the scheme.

An alternative was then considered, leave out the capacitor. If it’s not there, it cannot fail and there is already about 100pF present in the system in distributed form. Whilst a high voltage coil is easy to build, this one had to be variable.

A roller coaster would have been too expensive or very difficult to build. Ferrite cores were out because of saturation problems. A stack of iron dust toroids was considered as the most likely solution. Then I remembered the variometer, which of course has no core to saturate and no sliding contacts.

Old Idea

The variometer is an old idea, from the earliest days of wireless when variable capacitors were not readily available. The unit comprises one fixed coil that is the primary (L1), and a variable coil (L2). The secondary coil L2 is a large diameter unit with a smaller, variometer, coil (rotatable) inside the larger.

In effect the variometer is a variable coupling/ratio transformer. (Refer to the drawing of Fig. 2, where the basic diagram is shown). The turns ratio of L1 to L2 is actually physically fixed. But L2 consists of two separate windings that effectively can vary in a stepless way the apparent number of turns of L2.

The overall action of a variable L2 has the effect of altering the step-up ratio of the L1/L2 transformer action as well as its residual inductance. The textbooks tell us that the total inductance of the system is:

$$LT = (L_a + L_b) + 2M$$

Fig. 2, where high voltage coil is easy to build, this where LT is the total inductance formed from individual inductors L_a and L_b.

The coupling factor M is the mutual inductance between the two coils and may increase or decrease the overall inductance dependent on the coupling. The value of M (absolute value and whether it is positive or negative) depends on whether the rotating coil is aiding or opposing the coupling.

Mutual inductance isn’t something that I’m very familiar with. So, to get an idea of the values which could be obtained, I built a system using a sliding inner coil in place of the seemingly more complex rotating one. I used a nylon core which was a close fit inside the fixed one, reasoning that close coupling would give a higher mutual inductance. I used Nylon screws to ensure concentricity and a smooth sliding bearing. Because the inner coil could not be rotated, the full effect was not available. But in spite of that limitation I obtained an inductance range of 3 to 1 which proved more than I needed.

My initial intention was to position the inner coil with a nylon cord, in the...
Fig. 4: Looking into the variometer unit. The rotor coil is at right angles (null coupling) to the stator.

manner of an old wireless dial. However, routing of the cord around the chassis became so involved it would have challenged Ariadne!

I ran out of both pulleys and patience before I decided to try the rotating system. Now that I had a better idea of what mutual inductance was, and what variations could be obtained, I ended up with the following system I'm going to describe.

My System

My system consists of the following items: The outer fixed coil former is a 55mm length of 38mm (internal diameter) pvc pipe. The inner (or rotor) former is made from a 20mm length of cardboard tube, which has an outside diameter of 30mm.

Two thin screws (M2.5 or 8BA) are mounted opposite each other, on the diameter, in the centre of the cardboard tube. Then they act as both supporting shaft and connections from the winding.

The outer (or stator) coil former was drilled on the diameter, in the centre, as the cardboard tube. But to facilitate assembly the former was sawn through axially on the diameter for two thirds of its length.

Wound First

The inner coil part of L2 is wound first and consists of 11 turns (5+5+1), wound in two sections of five with the middle turn stretched to clear the mounting screws. The ends of the windings are taken and soldered to the heads of the mounting screws (inside the tube). The photograph Fig. 3 shows this step.

When you have finished the inner coil assembly it has to be mounted inside the outer. The two halves of the outer former should be held apart while the inner assembly is dropped as far as the bearing holes.

Wooden endcaps are then fixed in the ends of the outer former to keep it circular and the sprung halves are held together by the windings of the stator. The stator winding part of L2 consists of two groups of nine turns of 0.7mm wire (one group each side of the centre line). The connecting turn is wound in a stretched format as with the inner coil.

One end of the inner winding is connected to one end of the outer winding to complete the connection. The primary winding LI is also wound in 'split turns' method with two plus two plus one stretched winding over the stator part of L2.

The photographs, Fig. 4 and 5, show the completed L2 coil before winding on the primary (LI) coil. Not shown on either photograph is a nylon rod, which is screwed onto one of the rotor coil screws to provide an insulated coupling to the operating dial.

Remember, there's about 500V 'floating about' here! Nylon stand-off pillars keep the whole thing away from the chassis.

The coupling coil was wound with pvc insulated wire, again symmetrically either side of the shaft. The primary capacitor/coil combination C1/L1 is in the low impedance part of the circuit so voltage breakdown is now no longer a problem.

Tuning Sharp

The antenna system is still a high impedance affair, so the tuning is quite sharp. But I’ve found that the variometer proved a useful technique to get round the variable capacitor breakover problem.

On the plus side of course its low cost and surprising ease of construction will, I hope, encourage other experimenters to find uses for this idea from the earliest days of radio.

So get varying. It works well!

Some Short Notes

At 3.5MHz, my antenna system is equivalent to 3kΩ in parallel with 100pF. From the formula:

Using $f = \frac{1}{2\pi\sqrt{LC}}$ some 21µH will be required to bring the system to resonance at 3.5MHz.

At 3.8MHz, the antenna system is equivalent to 1kΩ in parallel with 135pF, so at 3.8MHz only 13µH will be required for resonance.

The inductance has to be capable of at least a 13 to 21µH swing.

I found that the individual coils have the following values:

- Rotor inductance = 4µH
- Stator inductance = 15µH
- Complete variometer unit
- Minimum inductance = 11.5µH
- Maximum inductance = 28.0µH
- From $LT = (L_a + L_b) - 2M$
- M must be approximately 4.5µH
- Rotor: 5+5+1 turns of 0.7mm wire on a 30mm diameter former
- Stator: 9+9+1 turns of 0.7mm wire on a 42mm diameter former
- Coupling: 2+2+1 turns of 1mm (pvc covered) wire wound over stator

For a (primary) 50Ω load, $V = 71V$.

For a (secondary) 3kΩ load, $V = 548V$.  

Fig. 2: The much simpler variometer a.t.o. Secondary winding L2 is a double inductor unit with variable coupling.
John Heys G3BDQ describes his new three-band compact indoor transmitting antenna based on a \( \pi \)-match system.

I often receive letters from amateurs who are frustrated in their efforts to put up outside antennas for h.f. work. Many seem to live in flats, or have restrictions (official or XYL generated) on outside poles and wires. Some don't even have the benefit of a roof space.

Commercially made loop antennas are not cheap (when available). Their design usually incorporates a single turn of thick copper pipe tuned by a motor-driven very high voltage working variable capacitor.

Single turn loops usually have a (very) limited bandwidth. They require re-tuning, even when changing frequency by just a few kHz on the working band.

Considerable thought and a few hours constructional work has resulted in this design for a small loop (or frame) antenna which will operate on the 7, 10 and 14MHz bands. The antenna shows no directional properties on sky-wave transmission or reception, has adequate bandwidth (all the c.w. section of the 7MHz band) and uses cheap easily available parts.

Although just a small diamond shaped construction, the antenna has let me work into all parts of Europe on both c.w. and s.s.b. sections of the 7MHz band) and uses cheap easily available parts.

I've received have been between S5 and S9+ in the 14 countries that were worked in just a few hours.

During the period reported the antenna was placed on a large cardboard box on the upstairs landing outside my shack. I was also using transmitter powers between 50 and 90W. To date I have been unable to locate a description of a similar antenna in my extensive library of antenna books.

**Design & Construction**

The 'Pile-Up' antenna is based upon the well known 'Pi-section' or 'Collins Antenna Coupler'. When used as an a.t.u. the coil will radiate very little and if no external antenna is connected, the r.f. voltages across the tuning capacitors will be very high.

The voltages reduce greatly when an antenna is connected. Fig. 1 shows the circuit for my antenna. An external antenna is not needed as the coil L1 consists of about 3.1m of wire wound into two turns, which has the characteristics of a very short in length but large diameter inductor.

The large-diameter inductor 'leaks' r.f. and so, there will be radiation from the coil. The radiation (loss) of power from the circuit has the side-effect of reducing the r.f. voltages present. The reduction of r.f. voltages means that the main tuning capacitor C1 can be an airspaced receiver type, as it doesn't need wide plate spacing.

**Capacitor C2 matches the antenna into a 50Ω coaxial cable feeder and the r.f. voltages across it will be small so, this too may be an airspaced receiver type. The details all mirror the normal 'Pi' antenna coupler.**

On the 7MHz band some extra capacitance is provided by C3. a 1000pF mica capacitor. This may be 'croc-clipped' into circuit when needed or, it may instead be replaced by a dual section version of C2. This can be adjusted to minimum capacity for 10 and 14MHz operation.

In my prototype antenna, C1 is a 150pF variable which was originally a part of an 1154 aircraft transmitter. I obtained it from Birkett's of Lincoln. The output capacitor C2 is a 500 + 500pF unit salvaged from an old valved broadcast band receiver. (Similar variable capacitors are also available from John Birkett in Lincoln although many amateurs have one or two in their 'junk box').

**The Current Balun**

The key to the 'Pile-Up' antenna is the current balun which is positioned between C2 and the coaxial feeder, which leads to the equipment. Without this balun the antenna will not tune up properly or work as intended. I know this from experience!

There are several designs for current baluns, which by the way, behave as r.f. chokes to prevent the return of r.f. currents on the outside surface of the coaxial cable braid. They only allow r.f. currents to flow (120mm diameter) which are held in place with electrical tape. A balun like this will use up a lot of coaxial cable (around seven and a half metres of it).

Another variety of current balun which I've tried successfully however, uses eight split ferrite beads. They heads I used were type No. SFB1 (available from Ferromagnetics of Mold, Clwyd) which will fit nicely over UR58c/u coaxial cable.

I finally chose a balun type that used four ferrite rings of 'Fair-Rite' type 43 material in a stack. The stack was fixed together with a Cyano-acrylate ('super') glue. Through this stack I wound seven turns of the UR58 coaxial cable, which were held in close to the rings with 200mm (8in) nylon cable ties.

The rings, which are intended for reduction of EMC radiation from cables. I got mine from the RSGB at a very competitive price, but I've also seen them at rallies as well. The rings are very good and can handle 100W into the antenna without heating up.

**Coil Mode**

The coil L1 is made of two turns of 1.5mm (16swg) bare copper wire spaced at 40mm on the frame. Plastic end-pieces keep the wires away from the wooden cross members.

The four pieces of plastic used for the end-pieces were sections of round insulating...
material from the inside of UR67 coaxial cable. All the details of the construction are given in Fig. 2.

I found that the coil L1 has an inductance of some 5.75μH (as measured on an Autek r.f. analyser). This will tune the three bands when using C1.

I used wood in the construction for simplicity and I wouldn't advise using any metal panels or chassis. (That is except for the short length used to connect the frames of C1 and C2 together). The inclusion of other metal parts within the frame could create tuning problems.

I've found that there is some hand-capacity effect when tuning C1 and C2. So, to minimise this change in tuning (as the hand is brought nearer these components) it's best to have insulated extension spindles for the tuning knobs. I've found that an extension of 80-90mm will suffice.

Testing Stage

During the testing stage an s.w.r. meter must be connected between the transmitter and the current balun. The transceiver should be tuned to the c.w. mid-band point of 7.020MHz, and the power turned down to 10W. Place the antenna on a card or plastic box away from large metal objects, but within reach for tuning.

Next set C2 to maximum capacity and slowly tune C1 until the lowest s.w.r. is obtained. At this point C1 will be set to approximately 120pF. It is unlikely that an s.w.r. of unity (1:1) will be obtained at this stage, so connect the extra capacitor, C3.

By readjusting C2 and C1, one combination should enable you to find an s.w.r. reading of 1:1. Swing tune the transceiver by ±1kHz and take notes of the s.w.r. (but without adjusting the antenna controls).

The s.w.r. will change as you swing through the centre frequency. But it shouldn't rise by much, going up say 1:1.5 or less. Now return to 7.020MHz and slowly increase the transmitter power. Tiny adjustments of C1 may be needed to keep the s.w.r. to a minimum.

The tuning technique I've suggested can now be repeated on the 10 and 14MHz bands with C3 removed from circuit. A neon bulb will strike easily all around the loop when the power level is 50W or more.

There should be no striking of the neon along the coaxial cable away from the balun. Touching the coaxial cable between the transmitter and the balun should have no effect upon the loop tuning. If the tuning is disturbed it indicates that the current balun is not effective enough. Then some of the coaxial cable can be coiled for several more turns below the balun.

Amazed At Results

I was amazed at the results and the ease with which I made contacts when using the 'Pile-Oop' antenna. I seldom called CQ (which I normally avoid anyway) but instead listened for strong CQs from others or waited the end of QSOs before jumping in with my callsign.

Don't mention your antenna or power until a report has been received. Experience has taught me that incoming reports are often 'tailored' to fit one's working conditions.

My log shows many daytime (usually morning) QSOs on 7MHz with stations more than 500km away. German stations seem to favour 7MHz c.w. With the result there are many to work. The antenna may be positioned away from the shack if, after setting up for minimum s.w.r., it is moved with care.

Standing the antenna on a chair or box near a large window is idea. Amazingly, the antenna still works well 'through the house' towards stations away and some way from the nearest window.

During daytime hours I found that I could achieve from six to ten QSOs per hour on 14MHz. I must admit I did not try too hard for any 'real' DX.

Perhaps someone else who tries out a copy of the 'Pile-Oop' will have the thrill of making inter-continental contacts with it. I would like to hear about any such success.

My 'Pile-Oop' is 'nosey-neighbour' proof and doesn't provoke any TVI. My local radio friends are now urging me to go ahead and produce a 'Top Band' version.

PW

Fig. 2: Looking 'front-on' to the antenna with all the needed dimensions indicated (measured in millimetres).
It's my turn to submit a few ramblings in this section of the magazine again. So, to use a 'vintage' expression... 'off we jolly well go!' And I'll start by mentioning the May Vintage show at the National Exhibition Centre in Birmingham.

The NEC event turned out to be an interesting meeting. Many old friends were seen and some new contacts made. One interesting meeting I had was with Dr. Peter Walker G4PLW.

Peter is busy restoring a Bedford QL radio truck. Fig. 1. He wants to use it after his retirement as a mobile museum and educational facility. Peter has a scientific background in addition to his work as a General Practitioner and wants to use the vehicle and the space it provides to visit schools and the like, showing the radio history and providing scientific experiments to young and, presumably, old alike.

COMPLETE PROJECT
To complete the project, Peter is looking for a few items. These include large reels of DB, a 19 set high power ATI, a 10 line terminal board. Also required are the high power aerial insulators used in the roof and, if at all possible, a 53 set complete! (Make it two, as I want one!).

So, if anyone can offer help in this worthwhile project, please contact Peter G4PLW direct on (01438) 871350. I'm sure he'd be delighted to hear from you.

'PROFESSOR' UNWIN
Do you remember 'Professor' Stanley 'Jollyfo Jollyfo' Unwin from BBC TV years ago? Well, I had the pleasure of meeting Stanley at the BATC rally in April last.

It turns out that the 'Professor' was in the RAF and worked on sets like the 1082/83 during the war. That explains a lot as to the way he ended up talking 'Professor Unwise' on BBC TV! My best regards to you Sir!

THE HELLSCRIBER
The Hellschreiber shown in the photograph, Fig. 2, was a German method of sending text. In effect it's slightly similar to RTTY, but more closely resembling FAX transmissions.

The Hellschreiber system was (and still is) less prone to interference than RTTY. The image to be transmitted is first scanned and the received printout (or today's v.d.u. screen image) is easily deciphered using the wonderful powers of the human brain and eye.

Even a noisy Hellschrieber image can easily be recognised by eye on the printout. Whereas in RTTY, the interference would cause the system to miss one or more letters.

Timo and others run a 'Hell' Net on Wednesdays, 1100UTC on 14.116MHz L.s.b. (The Hamcom interface can be used with a program by LAOBX which mimics the operation of the Hellschreiber exactly).

BUYING MILITARY GEAR
I often get asked just where you can start buying old military gear. However, in answer to the question the many ex-government equipment shops that once abounded with such stuff are long gone (unfortunately). So today, you'll have to seek it elsewhere.

Rallies of course are one option, as are the occasional auctions of such gear that take place now and then. But there are a couple of inherent problems with these particular routes.

Firstly there are the 'of course its working fine' brigade. This problem includes those rally stallholders who swear on the sacred god Voltan that the bit of rubbish you're buying works! All too often we end up disappointed, but by that time it's too late to take it back.

Then there are the auctions. Again you might have to chance the reliability and honesty of the seller's descriptive licence. You can have the added frustration, as happened to me recently, of having items you bid for, stolen from under your nose, and the none of any security provided.

It's difficult these days to recommend any one source of equipment. But if you have good service from one trader then it may pay to keep in with them.

If you're unable, or unwilling, to fix any faulty sets then the answer is to always try them out before paying. However, it's something not always easy to do at rallies in the open I guess!...
OLD SETS

As a collector of old sets, I think it’s always useful to learn where and when they were used. We all know of the more famous sets and the part they played in the Second World War. But few people know just how long some of the sets were used by the services and where they were employed.

A book entitled The Vital Link by Philip Warner details the history of the Royal Signals between 1945 and 1985 and makes very interesting reading. The book provides various references to the different sets and the locations where they were used. (I’ve listed some of those mentioned in Table 1).

The list is by no means exhaustive, but it does show that the old 62 set was still in ‘mainline’ use as late as 1957 if not later. It probably served in a training role for much longer.

Fig. 3: The Victory Museum, near the Belgian/Luxembourg border, with a Douglas Dakota aircraft in the background.

Fig. 4: The VRKS v.h.f. manpack set, with a few self-defence items (see text).

Fig. 5: The VRHAG collection of clandestine transceivers, used by Finnish guerrillas (see text).

Book reference:
The Vital Link, The Royal Signals 1945-85
by Philip Warner.

Table 1

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949</td>
<td>Suez</td>
<td>No. 19, 10, sets</td>
</tr>
<tr>
<td>1950</td>
<td>Korea</td>
<td>No. 53, 19, 62, 18, 31, 88</td>
</tr>
<tr>
<td>1953</td>
<td>Kenya</td>
<td>No. 53, 19, 22, 62, 31, 88, 46, A510</td>
</tr>
<tr>
<td>1954</td>
<td>Malaya</td>
<td>No. 53 sets</td>
</tr>
<tr>
<td>1955</td>
<td>Cyprus</td>
<td>AN/TRC3 &amp; 4 sets</td>
</tr>
<tr>
<td>1955</td>
<td>Yemen</td>
<td>No. 19 plus high power unit, 53 set</td>
</tr>
<tr>
<td>1956</td>
<td>Egypt</td>
<td>SWB8 RX, 62 sets, BE201</td>
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<tr>
<td>1957</td>
<td>Cyprus</td>
<td>No. 19, 62 1962</td>
</tr>
<tr>
<td>1962</td>
<td>Brunei</td>
<td>B44, No. 19, 62 1962</td>
</tr>
<tr>
<td>1963</td>
<td>Borneo</td>
<td>Larkspar program started</td>
</tr>
<tr>
<td>1963</td>
<td>Aden</td>
<td>C11, R210, C42, A13</td>
</tr>
<tr>
<td>1963</td>
<td>Aden</td>
<td>D11, R230, D13</td>
</tr>
<tr>
<td>1967</td>
<td>Aden</td>
<td>C11, C13</td>
</tr>
<tr>
<td>1972</td>
<td>Northern Ireland</td>
<td>C42, A40, 31, A41, C11, B70</td>
</tr>
<tr>
<td>1980</td>
<td>New Hebrides</td>
<td>D13, VR3321</td>
</tr>
<tr>
<td>1980</td>
<td>Rhodesia</td>
<td>Clansman sets, first operational use, VR3321</td>
</tr>
<tr>
<td>1982</td>
<td>Falklands</td>
<td>Clansman sets, SatCom links</td>
</tr>
</tbody>
</table>

Heligraph finally declared obsolete

Fig. 6: The Finnish Army LV-302 v.h.f., ‘manpack’ equipment. Pouches at the sides hold the aerials, microphone and extension cables for repeater working. (This example is from the G4BXD collection).

4.5MHz, regenerative receiver, the transmitter running about 600mW, (c.w. only) to a V dipole. The sets weigh about 1.6kg with the accessories weighing about 5.6kg. Then there’s the LV-302, Fig. 5 and 6, a Finnish Brigade v.h.f. manpack. This unit works between 47und 57MHz, runs off a 7.2V battery in the base and has 101 channels. Two of these sets can be linked together over 80 yards to form a repeater system.

Cheerio from Ben, see you in February.

Practical Wireless, November 1996
This month David Butler G4ASR continues his review of this summer's Sporadic-E season paying particular attention to propagation on the 50 and 144MHz bands.

In the last three months I've given details of Sporadic-E (Sp-E) activity that affected the v.h.f. bands from April through to July. Although many operators have commented on the lack of Sp-E particularly on the 144MHz band there was still some life left in the 50MHz band.

Daily openings were recorded during much of August and although the intensity of them was very much reduced there were still a number of surprises to be found on this 'magic' band. According to my DX Cluster records there were 35 European countries worked from the UK during August and that doesn't include the seven standard UK prefixes. Even among the 'mundane' European countries there was still DX to be found. On August 11, for example, the stations of JX7DF7A, OX3XL and RF3T were all worked from the UK.

Incidentally, OX3XL (Greenland HP15) also had openings into the UK on August 6 and 10. On August 6 he worked a number of OH and LA stations and heard beacons in VE8, LA7, OH1 and OH9. The Greenland station was also heard in the UK at 2016UTC, by G1SWH (I083). On August 10, between 1830-1945UTC he was spotted operating on 50.110MHz by G4HBA (I080) and GW0PLP (I072). Bob Taylor GIWEX (I082)

Interesting Waining

Comments that his interest in the 50MHz band had been waining somewhat due to lack of activity. However, he recently managed to catch a few European Sp-E openings contacting stations in EH, ES, LA, SM and YL. Bob runs just 10W into a 3-element Yagi.

Ken Osborne G4GGO (I080) reports that the maximum usable frequency (m.u.f.) rose to 90MHz on August 10 and on the following day briefly peaked to 144MHz. For long periods on August 11 the m.f. broadcast band 88-108MHz was wide open to LA and SM.

Around midday on the 50MHz band Ken noted a great deal of short skip propagation to DL, ON, OZ and PA. Stations in over 60 locator squares were heard at this time. 30 stations were heard by Ken during the day, the best being JK7DXFA, OX3XL and RF3T. He mentions that it was interesting to watch Icelandic television at 85MHz in full colour for over two hours during the afternoon event.

Regarding television carriers, Ken notes that he often receives signals on 48.24, 48.25, 48.26, 49.74, 49.75 and 49.78MHz from a north-easterly direction. The TV reception always occurs between the end of July and continues through to the end of August. The signals become audible around 1900UTC and tend to fade out some hours later, normally from 2200UTC.

The tone of the signals is not pure, usually T8 with a ringing sound. (Incidentally, to hear these tones it is necessary to use a narrow-band s.s.b. receiver tuned to the individual video carrier frequencies). Although the signals would appear to come from transmitters located in Scandinavia (LA, SM) and the Baltic States (ES, LV, LY) Ken suspects they actually originate from central Europe (DL, OK, SP).

Signals Bent

Ken suspects that the signals do not arrive via the great circle bearing but are bent, by as much as 40°, during their passage via the ionosphere. No wonder whether this is a form of field aligned irregularities (f.a.i.) This propagation mode is usually observed by stations located in southern Europe (EA, F, I, YU, etc.) and often affects frequencies as high as the 144MHz band.

Ken wonders if anyone else has noticed this propagation mode on the 50MHz band at any time. Certainly I can confirm that I have noted these type of signals from TV transmitters during the summer period. Does anyone else have further observations?

Further Reports

Now back to further reports regarding the 50MHz band. Propagation to areas outside of Europe was not particularly good during August. The path to the middle-east was virtually non-existent, with only the beacon SB4CY (KM64) being reported.

Traffic to Africa was also very much on the decline although the stations of CT3FT, CT3JH, E1BBPX and E1H9B did have a few openings into the UK during the month. What really surprised me, and no doubt others as well, was that the transatlantic path was open to VE and W4 on a number of occasions during August. These E-layer openings occurred on August 5, 12, 13 and 16 and are the latest I have ever recorded on this path in over 20 years of monitoring such events.

Geoff Brown GJ4JCD (I080) reports that the 50MHz band was open to Puerto Rico from 1900UTC on August 5. The station of KPA1ET (FK58) was audible at his QTH for over 45 minutes.

Geoff was also pleased to catch the next opening on August 12. This event commenced with him at 2038UTC and the band was still open at 2333UTC. He worked many c.w. and s.s.b. stations located in call areas W1, W2, W3, W4, W8 and W9. Stations in VE1 and VE2 were also contacted along with FP5EK. The station of VPHMZ was heard briefly and consistently but was not the path.

Bob Mobile WA1OUB (FK35) really enjoyed the opening on August 12. Between 1825-2150UTC he contacted 50 stations located in CT, EH, F, G, GW, HB9, I, ON and S5. Some 14 Italian and 2 Slovenian stations were worked, the best DX being IB1RD (JN68) at 7125km. Bob mentions that this was a pleasant surprise and was the latest transatlantic opening he has ever participated in.

Over in locator square FN20, the station of W3IWU first heard signals from Europe around 1900UTC. He worked operators in CT, EH, F, G, GW, I, ON and SS. The most consistent being that of S5TA.

Emil Pecock W3EIP (FN21) mentions that signals were mainly weak at his QTH. However, he did manage to make contact with stations located in DL, EH, F, GJ, ON, PA and SM.

The next two transatlantic openings, on August 13 and 16 were very interesting and information about them apart from the station of GW4VE (I073) hearing WSJ0 (FM09) at 2228UTC on August 13 and GW4EU (I081) hearing the VD12A beacon (50.039MHz) at 2224UTC on August 16. Earlier that day, around 1400UTC, Spanish stations were working into VE and W4.

Antipodean News

News from 'down-under' indicates that their winter Sp-E season has already produced some interesting results. Steve VK3OT reports that on August 7 stations in the VK3 call area had an opening to FK6SM in New Caledonia. Apparently, no one can recall working this 'double-hop' path in previous seasons.

In Japan JA1VOK mentions an unusual start to the season on August 4 when the station of JAGULT (PM97) worked VK6JLS (OF88) over an 8000km path. The signals were quite weak, peaking 539 on c.w.

At the ETH of JA1VOK signals were also heard from Taiwan and Malaysia. This made him wonder whether the autumn trans-equatorial propagation (t.e.p.) paths had also started to open up.

The results from the Far East, Australia, North America and Europe typify what an unusual Sp-E season it has been on the 50MHz band this year. Convolutional single and double-hop Sp-E openings during May were excellent with openings occurring on 75% of the available days.

Three Days in May

There were three days of transatlantic openings during May. This was very early in the season and it really did look as if this year was going to be a record breaker. In some ways it was.

Transatlantic openings were recorded on May 27, 28, 29, June 6, 7, 9, 10, 11, 16, 20, July 1, 2, 11, 13, 14, 16, 25, August 5, 12, 13 and 16. That's a total of 21 days when the band was open across the Atlantic. (In 1995 I recorded a total of 18 days when
these type of openings occurred.

However, 'conventional' Sp-E openings within Europe (and other parts of the northern hemisphere) were certainly very poor. The intensity and duration of events during June and July (acknowledged to be the peak of the season) was very disappointing. Or perhaps the number of meteor showers is the same but their ionising effect is being reduced by some other factor. Maybe the same factor that is affecting propagation on the v.h.f. bands as a whole?

In the meantime Ken is slowly transferring 22 years of written data, covering frequencies between 48-144MHz, into his computer. When that task is completed he will be in a position to prove his observations of declininc ionospheric propagation modes.

However, Geoff GJ4JCD reckons that this year was probably the best for Sp-E propagation for some time but he does remark that it depends very much on your geographical location. Although short skip Sp-E has been down on previous years, Geoff, located on the Island of Jersey, has enjoyed many openings to North America during the summer. Openings to the Caribbean have also been higher with KP4A and KP4ET being reported several times. Stations in TR8 and ST5 were worked from Jersey and contacts were made from VP5 and V47 with a few stations in Europe.

**Multi Hop Sp-E**

In other parts of the globe multi-hop Sp-E contacts were made between 4L to JA and V8E and from KL7 to JA. All this leads Geoff to the conclusion that 1996 was indeed a good year for 50MHz propagation.

Bob WA1OUB reports that his records show an upward trend in 50MHz activity within Europe. This of course influences the number of events that are now being observed.

Another factor is the improving ability to detect openings on the 50MHz band. Monitoring other indicators, for example TV and miscellaneous p.m.r. services, at slightly lower frequencies. Results of this monitoring can now be communicated instantly via the Internet or OX Clusters.

In fact, many 50MHz enthusiasts have become so efficient at monitoring and reporting that openings not only much longer than 5 to 10 minutes are being observed. This is a far cry from the days when, for example, the 732VHF beacon would suddenly appear as if by magic. Nowadays we know it will appear before we even hear it!

**Propagation Theories**

No matter what your point of view is regarding propagation theories I find it a fascinating subject. One of the discussion points this year is why there were so many long distance transatlantic openings and very few conventional single-hop Sp-E openings.

Ken G4HGO suggests that because there was less Sp-E propagation within Europe there was also substantially less noise from TV video carriers. Normally the interfering TV buzz causes so much noise that it is difficult to hear the weak transatlantic signals. This has not occurred this year and as a consequence the very weak transitory type openings across the Atlantic have been detected.

For the uninhibited there are still many countries in Europe that operate TV systems in the 48MHz region. When Sp-E propagation is encountered during the summer months their f.m. sidebands often encroach into the 50MHz band obliterating s.s.b. and c.w. signals.

Ken also offers another theory why more transatlantic openings were observed this year. In his opinion there are two distinct propagation modes that affect frequencies in the range 28-70MHz. These are Sp-E and E-layer propagation.

The Sp-E is a violent type of propagation in that the signals are obliterated by noise that it is difficult to hear the weak transatlantic signals. The E-layer mode is a slow gentle type of propagation where signals can be quite weak (or strong at times) but do not suffer from deep fades. The propagation can occur for long periods and can result in paths that are predictable to certain areas at specific times.

In previous years the prevailing Sp-E propagation has totally masked the (weaker) E-layer propagation. However, with declining single-hop Sp-E openings, the weaker E-layer modes have become more apparent.

Ken thinks that the E-layer involved is only just ionised at the 50MHz operating frequency. Because of this the skip distances achieved would have been at a maximum. Conversely, if the layer had been highly ionised (creating incidentally more openings on the 144MHz band) then the skip distances would be much less. Ken surmises that the long distance openings were also due to an increase in layer height or possibly some type of chordal hop propagation.

**Deadlines**

Do you have any views on these observations. If so I'd like to hear about them. Please send any details, news and views to reach me by the end of the month) to Yew Tree Cottage, Lower Maescoed, Herefordshire HR2 0HP. Alternatively you can contact me via E-mail at: davebu@mdlh13.igw.bt.co.uk or the DX Cluster @ GB7DXC, packet radio @ GB7MAD or telephone me on (01873) 860679.

END
In case you haven't noticed, version 3.0 of Netscape's Navigator is (at the time of writing) available for free download from the Netscape home site. I mention this because as WWW browsers go, I think the Navigator still holds its position as the best available. Although Microsoft's Internet Explorer is improving rapidly, there is still some way to go to catch Netscape. For those who want to download, the Netscape home site can be found at http://home.netscape.com

Digital Signal Processing
Although I've not reported much on digital signal processing (d.s.p.) lately, there have been a number of developments and many readers have contacted me asking where they should look to find more information. Having spent much time searching around the Internet, it appears that the most up-to-date organisation, from an amateur radio point of view, is the Tucson Amateur Packet Radio (TAPR) organisation.

The Tucson Amateur Packet Radio group have a long association with the integration of amateur radio and digital electronics. From my recollections of the early days of Packet (circa 1982!), it was Tucson that produced the very first Packet TNC kits.

A recent visit to the TAPR d.s.p. pages on the Internet shows that they have maintained their lead at the front-end of amateur radio digital electronics. In addition to providing lots of information for experimenters, they also offer special discounts on the hardware required to build their projects.

Whilst the easiest access to TAPR is via their WWW site at http://www.tapr.org/, they can be contacted by more conventional means at Tucson Amateur Packet Radio, 8987-309 E. Tanque Verde Rd., #337 Tucson, AZ 85743-5399, USA. Tel: 817-383-0000 or FAX: 817-566-2544.

The latest release is in contrast to the previous version, and many other packages, that restrict themselves to ancient 16-bit architecture. By reworking the software into a 32-bit application the program becomes both smaller and faster.

The other main advantage is the removal of the old 84k conventional memory limit. In a 32-bit application the processor can directly access all the machine's memory. In addition to the fundamental change to 32-bit, EZSSTV V3.0 boasts a range of new features designed to make the operator's life a little easier.

If you've used SSTV before you will have come across the problems of having to leave the main SSTV program to create or amend an image. The new EZSSTV overcomes this with a built-in basic paint program.

The basic paint program lets you create simple graphics and text within the main program. The use of colours has also been enhanced and EZSSTV now stores all images with the standard 16 million colours used by most modern PCs.

The resolution of the stored image has also been upgraded to 640 x 480 pixels, as opposed to the previous 320 x 240 pixels. If you have a SVGA monitor and suitable graphics card you can now use the 800 x 600 pixel screen resolution to display a full 640 x 480 SSTV image as well as the main program control icons.

The latest SSTV Software
Hot news for this month is the release of the latest update to John Langer's WB2OSZ EZSSTV package for IBM PCs. The package EZSSTV is the shareware/demo version of his full featured Pasokon TV system. The full version offering a full set of SSTV modes and a Classic interface that offers many advantages over the simple comparator interface used with EZSSTV. Version 3.0 of EZSSTV represents a major upgrade as the program has been restructured into a 32-bit application, so taking full advantage of the extra processing speed available from 386 and later processor chips.

The latest release is in contrast to the previous version, and many other packages, that restrict themselves to ancient 16-bit architecture. By reworking the software into a 32-bit application the program becomes both smaller and faster.

The other main advantage is the removal of the old 84k conventional memory limit. In a 32-bit application the processor can directly access all the machine's memory. In addition to the fundamental change to 32-bit, EZSSTV V3.0 boasts a range of new features designed to make the operator's life a little easier.

If you've used SSTV before you will have come across the problems of having to leave the main SSTV program to create or amend an image. The new EZSSTV overcomes this with a built-in basic paint program.

The basic paint program lets you create simple graphics and text within the main program. The use of colours has also been enhanced and EZSSTV now stores all images with the standard 16 million colours used by most modern PCs.

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Practical Wireless, November 1996

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I'll start this month's column by offering congratulations to Charlie Blake, a long time s.w.l. reporter to "HF Far & Wide". He's now the proud owner of the call sign G3AlAJ!

Well done Charlie! I bet it will seem just that little bit different now. You'll be able to reply to all those stations you used to hear on 7MHz on your faraday disc. Although having said that, I get the impression that you will not let listening take a 'back seat' now that you've got a 'ticket' eh?

Unfortunately, Charlie is unable to transmit from home due to antenna restrictions where he lives. But I wonder if he's thought about loading the house rain guttering up as an antenna for 7MHz? Mine worked a treat here. If your guttering is the plastic type, an 'invisible' wire running along it through the brackets will do the job. (No one would ever know!). Charlie says that most of his operating will take place from mobile and portable locations as well as the GB2BP (Bletchley Park, home of the British decoding in the Second World War) special station.

All the same, hope to hook up with you on 7MHz Charlie, and again, well done!

**Top Band Comments**

Oops! I have been 'takes to task' by Mike Devereux G3Sed on my 'Top Band' comments. Mike, a well known 1.8MHz operator, takes exception to my remark printed in the September column (which was written in July) that 'now that Summer is here Top Band has gone to sleep'.

In support of 1.8MHz Mike provides a list of spectacular DX which he has worked over the past few months from his station located between Southampton and Portsmouth. These include South Africa, North America, and Asia, which definitely disproves my observation. Perhaps Mike, I should have said that "as far as my station is concerned, Top Band had gone to sleep", as I can't (with my antenna down in the Welsh valleys) hear anything of the nature that you do!

Nevertheless, you are more than correct that with a decent antenna on the band, then the summer time DX is available! So, I stand corrected. I'll just have to try and persuade the local farmer to 'lend' me a field and a couple of his trees so that I'll be able to hear and work all this exotic stuff Mike, regardless of the season! Thanks for correcting me. (It's a good job that my reporters keep me on my toes eh?)

Mike uses an inverted 'L' antenna with a 23m long vertical section and an 18m long horizontal section tuned against 70 (yes 70!) 40m long radials. Mike also has a horizontal dipole at approximately 30m high for transmitting on 1.8MHz, and often finds that a loop will receive the DX better than the large antennas due to the lower noise levels. (See Fig. 1).

**News Snippets**

Some DX news snippets from the RSGB's DX Newsheet now. From this it appears that Ted EA6BHH will be operating as 3G1DX from Equatorial Guinea, using c.w. on 3.505, 7.005, 14.005, 21.005 and 28.005MHz, and s.s.b. on 14.195, 21.195, and 28.495MHz between 15/21 October.

John KB4AI will be active as B6HFT from Barbados between the 15th and 22nd of November. He will also be active as BP82 in the CQ CW contest. Per LA7DFA will not, it has transpired, be going QRT as JX7DFA in October. He will in fact be operational from Jan Mayen until April 1997 as he's signed on for another tour of duty there.

In Mauritius, John EA2KL, and Luis EA3ELM will be operating from the 23rd of October to the 30th, including the QO SSB contest, from the shack of 3B8CF. (QSL to their home calls).

**Your Reports**

I'll start your reports this time with some news of 1.8MHz. Mike Devereux G3Sed near Southampton, as already mentioned has sent in a log of DX worked on 1.8MHz over the summer months.

The 3.5MHz Band

Not so much going on the 3.5MHz band (judging by reports anyway), but even so, s.w.l. reports from the 1st Edition of Blundall (Lancs) return reports s.s.b. reception of 9SUDX (Buruundi) at 2219, ZP6VT (Paraguay) at 2320, and PY20CG (Brazil) at 2254.

Meanwhile, the report from Eric Masters G6KRT in Worcester Park (Surrey) comes from the time he was operating as G6KX/WM at the Wimbledon and District Amateur Radio Club Summer Camp. Eric mentions a few QRP c.w. contacts with HAOJ (Hungary) at 0126, 2E0AJS at 1754, and 5W4PFX at 2208, all with a maximum of 5W output.

The 7MHz Band

Up to 'forty now, and the 7MHz band is the favourite of Charlie Blake G3AlAJ, (formerly RS9G034). Charlie as already mentioned, is limited to mobile and portable operation. Nevertheless, his s.w.l. log for this band shows he's been busy!

Charlie reports s.s.b. reception of VK2CP (Australia) working F6ARC at 0526, T14CF (Costa Rica) in contact with K2DBP at 0622, XE1VIC (Mexico) working DXAYD in the Czech Republic at 0511. Also heard was VK5BC (Australia) in contact with G4KEL at 0942, 2L2NY (New Zealand) working DJ6YD in Germany at 0526, and YV5MAV (Venezuela) in contact with HB8AFI in Switzerland at 0509.

Yet another 'early bird' is Ted Trowell G2HKU on the Isle of Sheppey (Kent). Ted says he's been quite busy in the garden of late, and consequently has a shorter report than usual. Too much weeding and not enough keying Ted!

Ted's report is all c.w. with around 70W output, and includes contacts with ZL2AGY (New Zealand), 9H3VQ (Malta), LX1D16M (Luxembourg) all at around 0500UTC. Operating later...
in the day gave him a contact with OHO/DL1RNV (Aaland Island) at 2100UTC.

A little closer to my home now, and to Carl Mason GWOVSW in Skewen, West Glamorgan here in South Wales. Carl uses a 55R dipole on 7MHz and other bands, with an output of around 100W, and offers contacts with VY1UJ (Australia) at 0603, C50A (Gambia) at 0616, and K2T1 at Cape Cod at 2343UTC.

The 10MHz Band

The 10MHz allocation is a rarely mentioned band in the pages of 'HF Far and Wide', due (most months to) its overcrowded nature (space). However as our reporters show, it's not a band to be forgotten by any means! Ted G2HKU for instance has sent a report of his 10.2MHz contact with ZL4EA (New Zealand) which was operated by ZL4HB at 0603UTC, and Carl GWOVSW lists contacts with R6KRA (Russia) at 1630, LX2DX/GRP (Luxembourg) at 1826, VE1GSK (Canada) at 1831, and RS2FRO in the city of Skelleftea (Sweden) at 0948UTC.

The 14MHz Band

The 14MHz band, as usual, seems to be where the bulk of the 'action' is, at least according to our reporters! And I begin with the usual propagation report from Don Mclean G3NOF in Yeovil, who says that "generally conditions have been similar to previous months. The best DX has been during the late afternoons and evenings on 14MHz." Don's lengthy report includes s.s.b. contacts with A71DX (Qatar) at 2204, C50BI (Ghana) at 1620, DJ2FV (Angola) at 1843UTC (QSL to DL4KA). He then logged FM5GE (Martinique Island) at 2222, J4DMS (Japan) at 1513, T14C (Costa Rica) at 2334, VU2KX (India) at 1819, ZD2JP (St. Helena Island) at 1926, SG1MR (Ghana) at 2012UTC (QSL to IK3HHX).

Next, Don reports working 4STDRG (Sri Lanka) at 1529, DSL to DL7DUC, 5OSR (Zaire) at 1920, TUX7F (Ivory Coast) at 1931, DXpedition station UR100DHA at 1833 (QSL to UT7DX), TRY6 (Gabon) at 2011 (QSL to PO Box 137 Libreville), and finally HK42GM (Colombia) at 2302UTC.

Now it's down to the city of Bristol, and Gordon Foote G7NCR who uses a monoband 14MHz receiver and a loft mounted receive antenna. Gordon sent no less than three logs this month, which included his s.s.b. reception of HI10OF (South Korea), VR2KM (Hong Kong), UK8PC (Uzbekistan), 9N1UC (Kathmandu, Nepal), R9KXVD (Asia Pacific), and ZS9HYN (South Africa), all at around 1700UTC. "What a moment for tea-time" says Gordon. (Quite right!)

Gordon's other reports include J41D0G (Olympic Games Special Event station, Athens) working G80VSS at 1605, 859FRD (Sweden) working GM6TM at 1729UTC. Also heard was BV3CD (Taiwan) working EA5GSA at 1743, KG4HO/P2 (Guatemala) working HA9PP at 1145UTC. Next in the log was JA1CG (Japan) in contact with OE1SY at 1413, HS1NGR (Thailand) in contact with G6GXT at 1377. Then it was 9A4A on a Croatian Island working our very own G3NOF at around 1900, 3X0HME (Guinea) working PY2VA in Brazil at 1855, and 926HOZ (Suriname) working SV3XY in Greece at 1500UTC. Eric G0KRT, again as GX3WIM hooked up with RA4HGN (Russia) at 1957 with 5W. Later he worked Y2A3DX (Canada) and K3ERG (USA) while running a gigantic 50W. "High power" says Eric. Careful Eric, or you may find it catching H1!

The 18MHz Band

A brief look at the 18MHz band now, where Ted G2HKU logs just one c.w. contact. It was in the shape of 9K8UF, on Gozo Island, the 'garden of Malta' at 1500UTC.

Don G3NOF however, found time to work s.s.b. with FG5MR (Guadeloupe Island) at 1823, HK1GPL (Dominican Republic) at 2224, and OH6MG/TK7G (Guatemala) at 2322UTC.

And finally, Carl GWOVSW hooked up with 9H3UF (Gozo Island, Malta) at 1740, and A71CW (Clatar) at 1752, and SV2DFA (Thessalonin, Greece) at 1830UTC.

Sign-Off

Well that's it for yet another month, time to sign-off. As you are reading this in the October issue, I'm writing this in August I imagine the dark nights are coming in, those long dark winter evenings in the warm, comfortable shack are approaching! Hopefully conditions on the higher bands will have improved greatly by now, and that the lower bands will be relatively free of static crashes! So, keep up the good work, all the best DX.

Rob G3XFD says that it appears that 78% of the h.f. stations he's worked use TS-850's. Kenwood have recently launched a new h.f. rig, the TS-570D (see pages 42, 43 in this issue) which will be priced midway between the TS-850 and TS-870. The TS-850 was reviewed in PW in the January 1994 issue and the TS-870 in the December 1995 issue.

As usual, reports and information by the 15th of each month to: Leighton Smart GWOVSW, 33 Nant Gwyn, Trelewis, Mid-Glamorgan CF46 6DB, Wales. Tel: (01443) 411459.

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This month Peter Shore has news that the BBC World Service is opening its new relay station in Thailand at the end of October.

**Programme Delivery**

There seems to be hope for short wave as the main means of international programme delivery. A survey carried out by Kim Elliot, host of Voice of America's (VOA) Communications World and coincidentally the station's Audience Research Officer, brought about 6,000 responses from listeners around the world. Special announcements were made during some VOA programmes asking listeners to write in with details of the time they heard the transmission and the frequency they were tuned to.

Kim randomly selected 4,000 of the replies and analysed the data. While he emphasises that this is not a very scientific study, the responses do provide a snapshot of who is listening, when, and how. A majority of the replies came from people listening on short wave, including 187 in Europe, even though the VOA no longer broadcasts directly on high frequencies to our continent. In all, 69% of respondents listen via short wave, 23% via medium wave.

Two per cent tune to VOA on f.m. or cable systems, 0.1% listen via satellite. All of which points resoundingly towards a long life for short wave. And anyone who tells you differently should be ignored!

**Suddenly Silent**

But what happens if you are a listener on short wave and you discover that the frequency that you have tuned to forever and a day is suddenly silent? As a result, you miss your favourite programmes from your favourite broadcaster. It happens when radio stations change their frequencies when we move from summer to winter as we did at the end of October.

Frequency engineers strive for continuity where they can - if sunspot numbers and ionospheric conditions allow, but sometimes even the longest lasting frequencies can vanish. That is the case with the BBC’s 13 metre band channel of 15.07MHz.

A European agreement means that this (and in the next few years other BBC out-of-band channels) can no longer be used for broadcasting. So the BBC has ups and moved to the other end of the band, stretching the hours that 15.575MHz is on the air. Let's hope that listeners get the message from the special frequency change announcements between programmes.

**Back On Air**

The Maltese station Voice of the Mediterranean is back on the air - now calling itself VoM - using short wave transmitters in Russia. The station came to grief when Deutsche Welle closed its relay transmitters on the island, leaving the small Maltese broadcaster without any way of reaching its audience.

Now VoM is back on the air, broadcasting in English and Maltese, directed for a reason that I have not yet worked out, towards Asia and the Pacific. The frequencies for this are 15.56 and 17.57MHz. Contact VoM at PO Box 143, Valletta CMR 01, Malta, or FAX: +356 241501.

**New Relay Station**

The BBC World Service will open its new relay station in Thailand at the end of October, just as the new winter frequency schedule comes in to operation. The station will start to operate with two 250kW transmitters, and will increase this to four, presumably after the Hong Kong relay station is dismantled before China reclaims the colony in June 1997.


Some transmissions come from the high-power Voice of America relay station in Thailand.

**United Broadcasters**

Leslie Wright wrote to me from Higher Kinnerton near Chester to report that United Christian Broadcasters (UCB Europe) has just come on the short wave bands. United Christian Broadcasters has been available on satellite with a mixture of Christian contemporary music, interviews, and Bible readings.

Leslie has been involved in the electrical installation of the organisation's new premises in Stoke-on-Trent. You can tune in on 6.20MHz short wave, or on the audio subcarrier at 7.56MHz on Sky Sports television channel. There is no information about the location of UCB's f.m. transmitter, but it may be in Ireland. Contact the station at PO Box 255, Stoke-on-Trent, ST4 9VY, FAX: (01782) 64121.

That's all for this time. Drop me a line if you would like to pass on any information to other PW listeners. Good DX.
Advertisements from traders or for equipment that is illegal in posess, use or which cannot be licensed in this country. Please ensure that your responsibility will be taken for errors.

It is the responsibility of the buyer to professionally build home-brewed equipment, and to ensure that the used equipment is fully tested. The advertisers cannot be held accountable for the goods offered for purchase.

Free adverts? Yes it's true! Now all adverts are free of charge, to readers and subscribers.

Now's your chance to send in a photograph of your equipment (a good idea if it's really unusual) to accompany your advert. Please note that all photos will only be published at our discretion and are not returnable.

When sending in your advert, please write clearly in BLOCK CAPITALS up to a maximum of 30 words, plus state your contact details. Please use the form order at the bottom of the page.

Adverts are published on a first come, first served basis. All queries to Zoe on (01202) 659910.

All adverts should be sent to: Zoe Crabb, Bargain Basement Free Ads, Arrmvsmith Court, Station Approach, Bridgwater, Somerset, TA6 1SP.

Free ads

Compiled by Zoe Crabb

For Sale

c w with keyp. Ten-Ten 20, p.a.,
all fully serviced, £50. Tenna, M Slev,
compact, Noel Casserley EM02, 16 S
Micro Computer. Weaver, Vandy-Land.

144MHz hand-held FT-200R microphone and charger, £150. 430MHz hand-held FT-5098 with 96 channel fm.
input, h.f. bands, 40w output, Tokyo 73240. 240MHz dual band BNS L5N, 432-500-75. G3YJH, Southampton. Tel: (0703) 523789.

Alinco DJ-580 hand-held dual-band 2m/440MHz, £450. C-221 frequency meter, requires mains power supply, £45, will accept c.p. £50 P&P. Brian Williams GW0GHQ, G1Telegraph. Tel: (01224) 728080.

Datong v.h.f. converter, brand new in box, data, suffering with work, will fit with P69 or 1583/1584 v.h.f. pre-selector, £20. C. Rowse, Thetford, Lincs. Tel: (0523) 48100.

Eddystone receivers EL273, 0.1-5MHz, £500. EL274, 5MHz-30MHz, £600. EL310, 5-30MHz, £110. 17989
144MHz, £50. EL310A, £25. C.V. Turner, 2177, Worldham, Nr. Lewes, Sussex. Tel: (0228) 913437.

Electrometers tuner. 6 wave band RMI21, £195. Offers other values, badly used, write for details. No. 1 The Corner, Magazine Lane, Wivelstone, P.C. 115, L.F.

Fire videos Radio & TV Servicing, 1960-90, £100. U1610, Grass Valley camera, £50. Popular Electronics. Tel: (01525) 21267.


FT-757 h.f. transceiver, 0.03-30MHz, £1200. FT-897 0.03-30MHz, £100. Excellent condition, fully tested, 8 months old. £400. B. Manley, Shoreham-by-Sea. Tel: (0902) 572017.

FT-840 h.f. radio, mini condition. box, mix, etc., cleaning radio, seven months warranty from London. Genuine grade for sale, £150. £2500 WGRFWI or WAXS1, QTH. Tel: (0222) 269699.

FT-900E, £75. w/ 8/150MHz SE transceiver. £200. £350. VHF/UHF unit, £75. MOS Vintage for 2m (144MHz) band. geo, £25. £500. £500. £250. £150.

FT-997, £995. h.f. transceiver, £299. Each. £195. 2m-50MHz dual-band, £200. 2m/10 channel, £200. Very good condition. 4m. £20. (01234) 576036.

Kenwood TR-300 receiver (£200). Functional, £250. £250. £250. £250. £250. £250. £250. £250. £250.

Kenwood TS-2000 receiver (£1150). Good condition, £150. £150. £150. £150. £150. £150. £150. £150.

Kenwood TS-2700 receiver (£1450). Excellent condition as a whole unit, £1500. £1500. £1500. £1500. £1500.

Kenwood TS-530S, £795. new condition, never been used, best class. £125. £25. £25. £25. £25. £25. £25. £25. £25.


Kenwood TS-850S receiver (£1650). Excellent condition, £650. £650. £650. £650. £650. £650. £650. £650.

Kenwood TR-1200 Sav-A-Set receiver, covers 0.03-30MHz and is in good working order. £65. Quick sale and complete set. £65. £65. £65. £65. £65. £65. £65. £65. £65.

Kenwood TR-1800 receiver, excellent condition, £500. TR-1800A, £400. £400. £400. £400. £400. £400. £400. £400. £400.

Kenwood TR-1800S receiver, £1000. £1000. £1000. £1000. £1000. £1000. £1000. £1000. £1000. £1000.


Kenwood TS-3000 receiver (£2250). Excellent condition, £2250. £2250. £2250.


Kenwood TS-430RF receiver (£800). £800. £800. £800. £800. £800. £800. £800. £800. £800. £800.
Please insert this advertisement in the next available issue of Practical Wireless.

Your advert, you decide!

Adverts for sale, wanted or exchange will be published free of charge in Practical Wireless, provided that they are relevant to the hobby of amateur radio. Your article must be less than 300 words and be typed in double spacing. All offers will be published, subject to space. The Editor reserves the right to reject any advert, and to edit all advertisements. The Editor will not accept any responsibility for goods sold or services offered.

Please note that the Editor is not in a position to pass comment on the value of advertised equipment. We publish advertisements solely as a matter of information to readers of the magazine.

BARGAIN BASEMENT ORDER FORM

Please insert this advertisement in the next available issue of Practical Wireless.

Q FOR SALE

WANTED

EXCHANGE

Name

Address

Telephone Number

please write

in block

(30)

CONTACT DETAILS FOR ADVERT

Please only write in the contact details you wish to be published with your advert, i.e. do you want your name, address, or just your telephone number?

Your advert, you decide!
I have recently received several letters from individuals on the subject of libel on BBS systems, including one from Alex
LAGV/G4TBB. He makes some very interesting points in his letter.

In view of the outcome of an Australian case, in which an amateur BBS Sysop was fined $40,000, I think we should all be more wary of our situation. The Law may be a 'Ass', to quote Dickens, but it's the hard way that matters of libel can be settled, and if precedents have been set, as they appear to have been already, then those generating graffiti stand to lose the wall upon which they write their garbage.

I stand by my original suggestion of years ago, that a good and compulsory password system is the way to control our network. Read this quoted passage from Alex LAGV/G4TBB and make up your mind:

"The current situation seems to be that a person who PUBLISHES a libel is as responsible in law as the author of the libel, and this can clearly be applied with some justice and precision to a newspaper publisher or anyone else who presents a written publication. Since the insertion of the libel into the printed document required a conscious effort by an editor who would have had the opportunity to read the subject matter, discuss it with learned advisors, and come to a decision prior to print.

Position Of Responsibility

Alex continues: "In this case, a publisher would be in a position of responsibility, as he would have had fore-knowledge, and total control over the contents of the publication. Clearly the IT and Telecom revolution has produced a system of general access noticeboards, which can take in and relay a vast amount of material to a large and widely spread readership, at a considerably lower cost than any one person could read.

"Although the aged, long-wigged decision-makers may deem these noticeboards to be publications, they are very different in the way they are controlled to the established publishers of paper material. Input to the noticeboard does not require any conscious effort on the part of the contributor, let alone approval and subsequent action, since the author of an article can enter it directly, and reach a readership without further control.

"The new situation is so different from the old, that one wonders if the same laws can be applied by deeming that a PBB is a means of publishing, and the Sysop the publisher. The use of well-tried devices to classify a new development is not really justified.

"For example, cars have replaced horses, but surely we don't think of them a 'horseless carriages'? Would a layman really insist that a London Taxicab be tethered to a lamp post while the driver stops for tea?

"In the same way, the electronic mailbox is not at all similar to a printed journal, the editor's role does not carry the same meaning, and open access is the key difference. The electronic systems need to be considered for what they are today, not what they have replaced in the past. This difference in evaluation must be legislative.

"In coming to terms with the existence of BBSs, the responsibility of the users for content and the operators for performance would be put onto a rational and practical basis, and would allow Sysops to sleep soundly at night. Unfortunately, I am not sure that the arguments directed to removing responsibility from an identifiable individual [however innocent], and passing it over to 'someone else, somewhere else', however culpable, are ever listened to sympathetically by lawyers, who insist that responsibility be placed firmly on those who can be reached." Thanks for that Alex, I'm sure readers of this column will find it very interesting.

The new rules do state that all locally entered bulletins be held for review. This includes compressed material, which should be inspected before release, and so on.

"If the Sysop were to carry this ruling out to the letter of the law, then he would have to spend most of the day in front of the computer. Obviously not a very satisfactory or practical solution.

However, a precedent is all that is required, and one has been set in Australia. Have you got £20000 to pay in fines? I haven't, and don't intend to either. It's about time for mandatory passwords, issued on a personal basis only. What do you think? Let me know.

Bulletin Problem

Sending a bulletin to other countries has always been a problem for a large number of users. Most seem to opt out of targeting the bulletin by sending it @WWW. Thus, a message intended for the Sydney area of Australia wends it's way aimlessly around the globe, stopping at every BBS on it's way, to the annoyance of Sysops. There is no excuse for sending any message World-Wide.

By the time the message reaches every BBS, it will be long out of date anyway, plus some HF BBS (mine included) do not forward WWW mail. By far the better way of targeting bulletins is to have access to a listing of BBS world-wide, and use of the REDIST server, to target your bulletin accurately.

Gordon Brookes G7OEB, has produced an up-to-date listing of World-Wide BBS. This listing includes over 4000 BBS in approximately 145 countries.

There is no excuse now for not knowing where to send your mail. Every BBS should have a copy of Gordon's listing in its files for user access.

Not only does the listing give the call, HR address and full details, but there are also over 550 files of other information, including PACtor/AMtor mailboxes, RTTY stations, OXCC country and zone lists, IP BBS, repeaters and much much more.

There is even a directory dedicated to the REDIST server, so now there is really no excuse! Gordon must have put in months of work to collate all this information, and all credit to him for a great job.

He maintains and updates the list too, as much as he can. I have installed it on the BBS here in Norwich and I hope my users make use of it.

If you would like a copy, please send a formatted HD disk to Gordon G7OEB at 38 Mersey Street, St. Helens, Merseyside WA3 2JX.

Please include the customary s.a.e. and mail with sufficient postage to obtain the return of your disk.

If your local BBS does not have the listing installed, then prod the Sysop, or send for it yourself and ask your Sysop to install it! Gordon is pictured at his station in Fig. 1.

That's all I've got for you this time so until January, happy packeting.

Roger Cooke G3LDI

G7L101 AS6 GB8 EU or The Old Nursery, The Drift, Swardeston, Norwich. Tel: (01603) 570278.

END
New Books Available at the RSGB Book Stand at Leicester

1997 RSGB Callbook & Information Directory
EDITED BY BRETT RIDER, G4FLQ
Includes UK callsigns up to MW0AJH and M1AVK series, and UK Novice callsigns in the 2E0AOX and 2E1FGD series. Also incorporating complete listings of callsigns in county and surname order. As usual, the RSGB Callbook contains information on affiliated societies, local clubs, contacts, and almost 100 pages of essential reference material.
Price: £14.00 + p&p

Practical Receivers for Beginners
BY JOHN CASE, GW4HWR
Companion book to Practical Antennas for Novices and Practical Transmitters for Novices, this book is aimed at the new radio amateur constructor, not just the newly licensed Novice. Many radio amateurs pass their RAE and then buy a brand new rig or handheld for transmissions, but then become curious about how to build this, or how to acquire an economic alternative to the ready made equipment. This book shows you how to build your own receiver at an affordable price.
Price: £12.50 + p&p

1997 RSGB Amateur Radio & SWL Diary
EDITED BY MIKE BAMBER, GOSNY
For the third year running, we have published the Amateur Radio & SWL Diary, and each year it gets better! We have taken members' comments into account, and have incorporated your requests. Maps are now included, plus more space for those mobile logs, telephone numbers and more articles from the various specialists within the Society ... and this year you can buy it WELL BEFORE Christmas!!
Price: £5.00 + p&p
or with callsign gold blocked on cover of diary £2.25 extra
Price: £7.25 + p&p

Come & visit us in the Exhibition Hall
STAND E1

1997 RSGB Christmas Cards
This year we have again joined forces with the GEC-Marconi Company to produce this special Marconi amateur radio Christmas card, which features a reproduction of the painting showing Marconi demonstrating transmissions from Salisbury Plain. This is a brand new card, and of the same size and quality as that sold last year. We have ordered a larger quantity than last year, but supplies are limited, so please buy EARLY if you wish to avoid disappointment.
Price: 20 cards and envelopes for £4.00 + p&p

The Antenna Experimenters Guide
BY PETER DODD, G3LDQ
A brand new edition of Peter Dodd's popular guide on various forms of antenna for the amateur radio experimenter. Contains a wealth of information and measurements on various types of antenna, and also how to construct the right antenna for your requirements.
This edition contains an 8-page colour section, showing the various computer graphs in a much easier to read format. Essential reading for the antenna experimenter and enthusiast.
Price: £15.00 + p&p

RADIO SOCIETY OF GREAT BRITAIN (PW1096)
Lambda House, Cranborne Road, Potters Bar, Herts EN6 3JE. Tel: 01707 659015
Internet: www.rsgb.org
For Sale

TECHNICAL MANUALS. AR88, CR100, R210, HR0. £5 each. Circuits £1.50. Hundreds available. SAE Ist. Bentley, 27 De Vere Gardens, Ilford, Essex IG1 3EB. Tel: 0118 554 6631.

RADIO BOOKS. New and previously enjoyed. S.A.E. for lists. Old Time Supplies, PO Box 209, Banbury, Oxon OX16 7GR.

ANTENNA LIFTING KITES. Powerful stable kites. 70" x 58". Bright yellow nylon. Winds 5-20mph. Designed for the job. £30.00 inc P&P.

EAGLE HIGH PERFORMANCE YAGIS from 50MHz to 1296 MHz. AS-size SAE for details. Eagle Communications, Unit E3, Bank Top Industrial Estate, St Martins, Shropshire SY10 7RQ. Tel: 01691 777511 Fax: 01691 777516.

RF-8000 24 BAND RECEIVER - reasonable offer accepted. Quartz crystals large range £1.00 each. Collection quartz Vfacs. Also Valves. Lists available. Electronic Design Associates 0181-391 0545 Fax: 0181-391 5258.

TECHNICAL MANUALS for WWII radio, radar etc. RAF, Army, Navy, Luftwaffe, Wehrmacht, US Forces. Tel: 0151 722 1178 or SAE with requirements to Vintage Technical Services, 28 Industrial Estate, St Martins, Shropshire SY10. Tel: (01253) 784961. Fax: (01253) 783519.

TOP PRICES PAID for all your valves, tubes, semi-conductors and ICs.

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SEND SHOPPER SAE WITH 'WANTED LIST' CATALOGUE OR SOURCES.

1915, Dept PW, Wincebushe House, Beacon Rd, Crawley, Sussex TN6 1UL.
Tel: 01293 605298 Fax: 01293 667673.

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Some of the products offered for sale in advertisements in this magazine may have been obtained from abroad or from unauthorised sources. Practical Wireless advises readers contemplating mail order to enquire whether the products are suitable for use in the UK and have full after-sales back-up available. The publishers of Practical Wireless wish to point out that it is the responsibility of readers to ascertain the legality or otherwise of items offered for sale by advertisers in this magazine.

Valves

VALVES GALORE: Most valves available from stock. Otherwise obtained quickly. Please send SAE stating requirements or telephone. VALVE & ELECTRONIC SUPPLIES Chevet Books, 157 Dickson Road, Blackpool FY1 2EU.
Tel: (01253) 751858 or Fax: (01253) 302979.

VALVES WANTED for cash: KTB8, £48; PX9/1PX25 £50; DA100 £90; EL34 £10; EL37 £9; CV400 £6; ECC83 £2. Valves must be Mullard/GEC, West European to achieve the price. Ask for our free wanted list. Prompt and courteous service. Visitors by appointment only (we are a very busy Export Warehouse). Billinghams Export Ltd. Billinghamshurst, West Sussex RH14 9EZ.
Tel: (01403) 784961. Fax: (01403) 783519.

VALVES:- OVER 5000 STOCKED Ham, Vintage, Military, Audio. SAE for FREE list to: Wilson Valves, Jlph Fm44M, 28 Banks Ave, Golcar, Huddersfield, West Yorks HD7 4LZ.
Tel: 01484 654650. Fax: 01484 655699.
Vista etc. Fast & personal service.

Miscellaneous

VALVE ENTHUSIASTS: Capacitors and other parts at attractive prices! Ring for free list. Geoff Davies (Radio), Tel: (01788) 574774.

AUTUMN CLEARANCE SALE. Domestic receivers and equipment. Also use/new spares and valves, amps radiograms etc. Magazines and collectables. Tel: 01689 898291. Open Fridays and Saturdays 10am-5pm. 31 High Street, St Mary Cray, Orpington, Kent.

Receivers

B.F.O. KITS Resolves single side band on almost any radio, £16.49. H. CORRIGAN, 7 York Street, Ayr KA8 8AR.

WANTED

WANTED FOR CASH Valve or solid state communication receivers Pre-1980. Preferably working and in good condition. Non working sets considered also domestic valve radios. Items of Government surplus wireless equipment and obsolete test equipment. Pre-1965 wireless and audio components and accessories. Pre-1975 wireless and TV books and magazines. Also, most valves wanted for cash. Must be unused and boxed.
CBS, 157 Dickson Road, Blackpool, FY1 2EU.
Tel: (01253) 751858 or Fax: (01253) 302979.
FERRITE ROD AERIALS. Must be half inch in diameter - no more or less. Must be six inches long or more. Contact Peter Tankard on Sheffield 0114-266 5253 anytime.

Educational

CITY & GUILDS RADIO AMATEURS EXAM. Pass your exam the easy way with an RRC home study course. For details write or phone THE RAPID RESULTS COLLEGE, Dept. JX400, Tuition House, London SW19 4DS. Tel: 0181-947 2211.
RAE: Pay-as-you-learn correspondence. £3 per lesson, includes tuition. Ken Green C.Eng, MIEE, Chylean, Tintagel, Cornwall. Tel 01840 212262.
HEATHKIT EDUCATIONAL PRODUCTS UK distributor/spares and service centre. Cedar Electronics, 12 Isbourne Way, Broadway Road, Winchcombe, Cheltenham, Glos GL54 5NS. Tel: (01242) 602492.

Holidays

NORTH WALES HOLIDAYS - Caravan bunkhouse - camping. Elevated rural site, two miles from beach, use of shack and antennas, open all year. Tywyns, Mynytho, Pwllheli.
Tel: 01758 740712.
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**NEW BOOKS**

**WHO** (German/English/Japanese Military Wireless Equipment Manuals): A facsimile reprint of the original manuals compiled by the War Office Department on captured enemy equipment. Volume I contains photos, technical data, weights, dimensions and tactical information on German and Japanese military receivers and transmitters, etc. Approx. 150 pages, large format. Volume II covers additional German equipment and contains hard-to-obtain information and photos of Japanese military equipment. Approx. 84 pages, large format. The two volume set £13.95 including postage UK only. Overseas carriage at cost.


**JAMES RADDAR AND ELECTRONIC WARFARE SYSTEMS 1991-1992:** A revised version (3rd edition) giving technical details of the world's military communications equipment. British now. Published in over 170 languages. SPECIAL PRICE £20.00 (postage extra).联系电话: 0115 972 9467

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Tel: 01772 814998, Fax: 01772 815437

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**NEW BOOKS**

**WHO** (German/English/Japanese Military Wireless Equipment Manuals): A facsimile reprint of the original manuals compiled by the War Office Department on captured enemy equipment. Volume I contains photos, technical data, weights, dimensions and tactical information on German and Japanese military receivers and transmitters, etc. Approx. 150 pages, large format. Volume II covers additional German equipment and contains hard-to-obtain information and photos of Japanese military equipment. Approx. 84 pages, large format. The two volume set £13.95 including postage UK only. Overseas carriage at cost.


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The prepaid rate for classified advertisements is 42 pence per word (minimum 12 words), box number 70p extra. Semi-display setting £13.90 per single column centimetre (minimum 3cm). Please add 17.5% VAT to the total. All cheques, postal orders, etc., to be made payable to PW Publishing Ltd. Advertisements, together with remittance, should be sent to the Classified Advertisement Dept., Practical Wireless, Arrowsmith Court, Station Approach, Broadway, Dorset BH18 8PW. Tel: (01202) 659026, Fax: (01202) 659990

Please insert this advertisement in the issue of Practical Wireless (if you do not specify an issue we will insert it in the next available issue of PW) for __________ insertion/s. I enclose Cheque/PO for £________ (42p per word, 12 minimum, please add 17.5% VAT to total).

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Box Number @ 70p: Tick if appropriate

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HAYDON COMMUNICATIONS
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MARTIN LYNCH
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ALINCO DJ-280E 2m handheld £185
MIZUHO MH-2500 2m handheld £164
KENWOOD TS-850S HF transceiver £499
FT-290R £249
YAESU FT-290R HF transceiver with £229
KENWOOD TS-50S HF transceiver £195
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FT-762R 2m/10m as new £3599.95
TM-241E 50W FM mobile £3229.95
DR-130 50W FM mobile £3219.95
FT-298R VGC All mode £3299.95
DR-510 HF-PWR dual mode £3298.95
IKIO-260B £3299.95

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ICOM IC-258 2m ten mode mobile £299
ICOM IC-255 £129
ALINCO DR-619E 2m 50W mobile £199
YAESU FT-275DC 2000 10m 25W £169
KENWOOD TR-761E 2m 25W £219
KENWOOD TR-751E 2m 25 multimode transceiver £199
YAESU FT-295E 2m multimode portable transceiver £229
YAESU FT-290R £229

HANDHELD / PORTABLE
ADI 145 2m handheld £129
ALINCO DJ-160 2m handheld £149
ALINCO DJ-180 2m handheld £149
ALINCO DJ-800 2m/10m handheld £199
ALINCO DJ-G5 2m/70cm handheld £185
AOR TR-720 Airband transceiver £199
CET CT-1600 2m handheld, thumbwheel £99
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01925 229881

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 YOUR GUIDE TO SECOND-HAND EQUIPMENT

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 FOR YOUR SPECIAL DEALER RATES CALL PAUL ORCHARD ON 01202 659920

 ARC
01925 229881

 PHOTO ACOUSTICS
01908 610625

 SMC
01703 255111

 SHORTWAVE SHOP
01202 490099
Welcome to The Practical Wireless Amateur Radio Buyers Guide. This has been compiled from information supplied by the various manufacturer's specification sheets. It is only intended as a guide as to what you can expect to find on the dealer's shelves and to help you decide which radio will suit your needs.

All the data given is correct, to the best of our knowledge, at the time of going to press. You are strongly advised to consult your local dealer before finally deciding on which radio to buy, as he will be able to demonstrate working models to you. Further information and full specification sheets are available from all approved dealers or direct from the manufacturers.

We hope you find the 'Buyers Guide' useful and would like to point out that many more radios will be added to the list in the near future.

The PW Editorial team would like to thank Icom UK Ltd., Kenwood Electronics UK Ltd., Waters & Stanton Electronics and Yaesu UK Ltd. for their help in supplying the information needed to compile this new regular feature.

<table>
<thead>
<tr>
<th>Makes</th>
<th>Coverage</th>
<th>Power Source</th>
<th>Power Supply</th>
<th>Display</th>
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<tbody>
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Keys
Coverage
Frequencies listed are not 'true' bands, they are just an indication of the amateur bands that the set covers.

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<tr>
<th>Modes</th>
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<td>D+ Triple Conversion Superhet</td>
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<td>D++ Quadruple Conversion Superhet</td>
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<td>Mains (in-built)</td>
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<td>Dot Matrix Display</td>
<td>H</td>
<td>Data Sheet</td>
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<td></td>
<td>H</td>
<td>9600bps Packet Operation</td>
<td>J</td>
<td>Setpoint Memory</td>
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Special Facilities
A | Automatic Band Change |
B | CTCSS |
C | Emergency Operation without mods needed |
D | Reduced Memory |
E | Theft Deterent Front Panel |
F | Includes one extra coverage band |

Practical Wireless, November 1996
<table>
<thead>
<tr>
<th>Model</th>
<th>Coverage</th>
<th>Power Output (W)</th>
<th>Power Source</th>
<th>Charger Supplied</th>
<th>Weight (g)</th>
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<tbody>
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<thead>
<tr>
<th>Title</th>
<th>Price</th>
<th>Postage</th>
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<tbody>
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</tbody>
</table>

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### Index to Advertisers

<table>
<thead>
<tr>
<th>Category</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A H Supplies</td>
<td>70</td>
</tr>
<tr>
<td>ARC</td>
<td>55</td>
</tr>
<tr>
<td>Castle Electronics</td>
<td>4</td>
</tr>
<tr>
<td>Chevet Supplies</td>
<td>77</td>
</tr>
<tr>
<td>Cirkit Distribution</td>
<td>57</td>
</tr>
<tr>
<td>Coiomer Electronics</td>
<td>67</td>
</tr>
<tr>
<td>Cricklewood Electronics</td>
<td>67</td>
</tr>
<tr>
<td>Essex AR Society</td>
<td>20</td>
</tr>
<tr>
<td>Eastern Communications</td>
<td>55</td>
</tr>
<tr>
<td>Fairhaven Electronics</td>
<td>77</td>
</tr>
<tr>
<td>G3TUX</td>
<td>56</td>
</tr>
<tr>
<td>Haydon Communications</td>
<td>18/19</td>
</tr>
<tr>
<td>Holding's Amateur Electronics</td>
<td>77</td>
</tr>
<tr>
<td>Howes, C M</td>
<td>7</td>
</tr>
<tr>
<td>Icom UK</td>
<td>157</td>
</tr>
<tr>
<td>Interproducts</td>
<td>56</td>
</tr>
<tr>
<td>J Birckett</td>
<td>70</td>
</tr>
<tr>
<td>Lake Electronics</td>
<td>70</td>
</tr>
<tr>
<td>Langrex Supplies</td>
<td>56</td>
</tr>
<tr>
<td>Leicester AR Show</td>
<td>41</td>
</tr>
<tr>
<td>London AR &amp; Computer Rally</td>
<td>35</td>
</tr>
<tr>
<td>Lowe Electronics</td>
<td>56</td>
</tr>
<tr>
<td>Maplin Electronics</td>
<td>43</td>
</tr>
<tr>
<td>Martin Lynch &amp; Son</td>
<td>24, 31, 38/39</td>
</tr>
<tr>
<td>Monitoring Times</td>
<td>35</td>
</tr>
<tr>
<td>Multicom 2000</td>
<td>6</td>
</tr>
<tr>
<td>mufak</td>
<td>77</td>
</tr>
<tr>
<td>Nevada Communications</td>
<td>67</td>
</tr>
<tr>
<td>North Wales Radio Rally</td>
<td>67</td>
</tr>
<tr>
<td>PCB Service</td>
<td>67</td>
</tr>
<tr>
<td>Photo Acoustics</td>
<td>5</td>
</tr>
<tr>
<td>QuartSlab Marketing</td>
<td>77</td>
</tr>
<tr>
<td>R A Kent</td>
<td>77</td>
</tr>
<tr>
<td>RAS Notts</td>
<td>70</td>
</tr>
<tr>
<td>RSGB</td>
<td>75</td>
</tr>
<tr>
<td>Short Wave Magazine</td>
<td>84</td>
</tr>
<tr>
<td>SMC</td>
<td>2/3</td>
</tr>
<tr>
<td>SMC-Siskin</td>
<td>57</td>
</tr>
<tr>
<td>Spectrum Communications</td>
<td>70</td>
</tr>
<tr>
<td>Sunrise Electronics</td>
<td>8</td>
</tr>
<tr>
<td>Tennamast Scotland</td>
<td>70</td>
</tr>
<tr>
<td>Vintage Audio Co</td>
<td>70</td>
</tr>
<tr>
<td>Waters &amp; Stanton</td>
<td>50/51</td>
</tr>
<tr>
<td>Wilson Valves</td>
<td>70</td>
</tr>
<tr>
<td>Yaesu UK</td>
<td>177</td>
</tr>
</tbody>
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