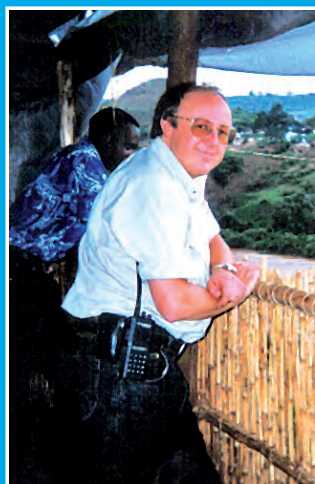


Practical

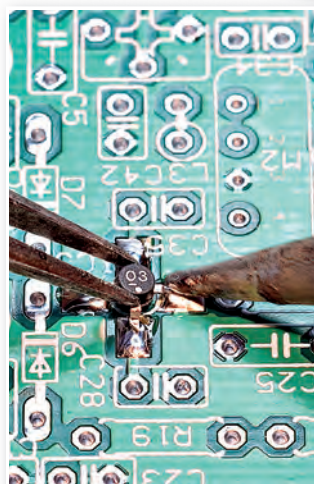
WIRELESS

Britain's Best Selling Amateur Radio Magazine

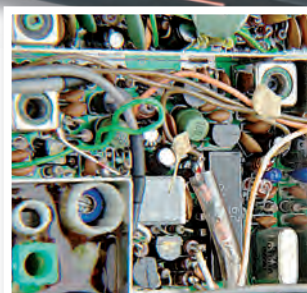
Alinco DM-330MW Switch Mode Power Supply Reviewed



Radio Personality
Chris Lorek G4HCL



What Next?
Colin Redwood G6MXL



In the Shop
With Harry Leeming G3LLL



In Focus
The RAF ARS

R 2



WATERS & STANTON



SCOTTISH STORE • W&S @ JAYCEE, 20 WOODSIDE WAY, GLENROTHES, FIFE KY7 5DF -CLOSED MONDAYS

• ENQUIRIES: 01592 756962 FAX: 01592 610451 EMAIL: jayceecom@aol.com OPENING TIMES: Tue-Fri: 9.15am - 5pm Sat: 9am - 4pm



MIDLANDS STORE • W&S @ LOWE, BENTLEY BRIDGE, CHESTERFIELD RD, MATLOCK, DERBYSHIRE, DE4 5LE

• ENQUIRIES: 01629 584181 FAX: 01629 580020 EMAIL: W&S@lowe.co.uk OPENING TIMES: Tue-Fri: 9am - 5pm Sat: 10am - 4pm



HEAD OFFICE & SOUTHERN STORE • SPA HOUSE, 22 MAIN RD, HOCKLEY, ESSEX, SS5 4QS

• ENQUIRIES: 01702 206835/204965 FAX: 01702 205843 EMAIL: sales@wspc.com OPENING TIMES: Mon-Sat: 9am - 5.30pm



Proluxe Noise Cancelling Phones

NC-2 Special Reader Offer

The Amazing Phones
That Remove External Noise!



These headphones dramatically reduce external noise. Powered by a single AAA cell, at the flick of a switch you can enjoy quiet listening without interference from extraneous noise. Works great with iPods as well!

BARGAIN PRICE! £14.95 A

FT-450 NEW YAESU

160m - 6m 100W
SSB CW AM FM
IF DSP
Voice Memories
23 x 8.4 x 22 cm



Also get voice recorder and announcer!

W&S Deal: Get FREE Extra DC Lead! Exclusive to PW Readers - Request when ordering

FT-450AT with Built-In ATU £609 C

FT-950 NEW YAESU



100W
160 - 6m
W&S £999 D

DSP filtering, incorporating features such as Variable Bandwidth, IF Shift, and Passband Contour tuning. Digital Noise Reduction and Digital Auto-Notch Filtering. On transmit you get a three-band graphic equaliser and the ability to change the transmit SSB pass-band. There are plenty of other features which you will get from the Internet. What you won't get is our special offer to PW readers!

Deal: Get FREE W-25XM power supply worth £99 when you buy FT-950 from W&S. Offer to PW readers only at time of order.

These Yaesu offers expire 31/1/08

PAY NOTHING FOR 12 MONTHS

BUY NOW PAY LATER AT ALL 3 STORES



AVAILABLE ON ALL SALES OVER £200



On most items over £200 in value it is now possible to buy with a finance agreement and pay nothing for 12 months without incurring any interest charges. If paid in full within 12 months then a £29 settlement fee is payable. **Typical example of Buy Now Pay Later:** Cash price - £600. Pay no deposit and pay the full amount in 12 months. **Pay no interest - just £29 fee. OR - 29.8% APR - Repay £30.85 per month for 36 months.** No settlement fee. Total amount due £1110.60. Interest is calculated from date of agreement. All finance is subject to status - written quotation on request.

FLEX-5000A NEW

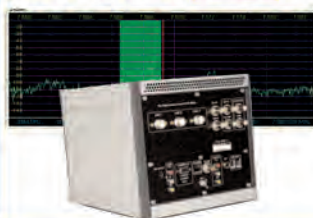
HF Transceiver 100W 160m-6m

FlexRadio Systems

Software Defined Radios

Performance Packed Radio!

This new software transceiver brings you performance and features no other radio in the world can offer!



SSB CW AM FM from milliwatts to 100W. 105dB dynamic range at 2kHz! 33dB intercept point. Single Firewire cable to PC. No sound card needed. 24 bit sampling at 192kHz, TCXO 0.5ppm ref. xtal, True plug and play with PC or laptop, Self-test and calibrate, Many contest & DXing features - **www.flex-radio.com**

Auto ATU **£225**

W&S £1695 D

Avair Power Meters

AV-201

Ideal for HF and VHF operation. It features high power handling up to 1kW.
* 1.8-160MHz * 5W, 20W, 200W, 1kW * Av or PEP



£49.95 C

AV-400

140 - 525MHz, 5W, 20W, 200W, 400W

£49.95 C

AV-601

1.8 - 160MHz(S1), 140-525MHz(S2)

£69.95 C

Get Ready For D-Star (first repeater at Herne Bay)
Log on to GB7WW repeater at Hockley

ICOM IC-E2820

This dual band mobile offers D-Star facilities with digital speech as well as normal FM at 50W



IC-E2820 Mobile FM £379 C

IC-E2820 with D-Star £519 C

PW customers can claim an extra DC lead when ordering!

IC-E91

Fitted with D-Star

£349.95 C



FREE repeater: Your club could qualify for a FREE repeater. Call Mark Francis here and ask for details

FT-2000



1.8-30MHz +6m 100W

£1695 D

FT-2000D 200W

£2399 D

FT-897D

*HF + 6m, 2m, 70cm
*CW, SSB, AM, FMN, FMW, PACKET, DIGITAL
*HF/6m 100W, 2m 50W, 70cm 20W



W&S £599 D

FT-857D



*Tx: 160-6m(100W), 2m(50W), 70cm(20W)
*USB, LSB, CW, AM, FM (WFM Receive)

W&S £449 D

New Low Price!

FT-DX9000D



FT-DX9000D £7,299 D

FT-DX9000CONTEST £3,799 D

FT-DX9000MP £8,299 D

FT-817ND

*Tx: 160-10m, 6m, 2m, 70cm
*USB, LSB, CW, AM, FM, WFM, Digital (AFSK), Packet (1200/9600 FM)



Deal: bhi DSP fitted £449

W&S £349 D

TM-V71E NEW

EchoLink Memories & NODE Terminal
50W on 2m & 70cms!

KENWOOD



W&S £269 D

FTM-10R/E NEW



New 2m/70cm Mobile with Bluetooth option

*50W 2m 40W 70cms
*Removeable front
*Built-in PTT & Microphone!
*Size: 11 x 3.7 x 17 cm!

W&S £249 D

IC-7700 NEW



ICOM

*160m-6m *200W *SSB CW AM FM *+40dBm Intercept *7" Colour TFT Spectrum Scope

Billed as a Contest Radio, the design takes features from the IC-758 and IC-7800 to give you a hefty transceiver packed with features. Available January. Inc. NC-4 h'phones

W&S £3999

IC-7800

icom's greatest HF transceiver ever. Invest in the best! 200W HF Built-in PSU



Deal: SP-120 Filter Spkr FREE

W&S £6400 D

Carriage Charges: A=£3, B=£4, C=£6.95, D=£10, E=£12

Freephone Orderline



08000 73 73 88

Online Catalogue



www.wsplc.com

UK's
Lowest
Prices



Zero Deposit
Zero Interest

Banish Switch Mode Noise!

Meet the New Power Mite NF



£59.95 C

22 Amps of continuous power output with variable voltage plus the new Noise Offset Function (NF). This allows you to move any noise spikes out of the ham band with the front panel tuning control.

Banish Switch Mode Noise!

Meet the New Power Max NF



£89.95 C

This very compact base station supply delivers 22 Amps of continuous power with the new Noise Offset Function (NF) that moves noise out of the band. Includes cigar socket.

TS-2000

PW Deal: FREE Delivery on
TS-2000 & TS-480 (ends 31/12/07)

KENWOOD



Deal: FREE Extra DC Lead
(Quote advert when ordering)

W&S
£1295 D

TS-2000X with 23cms

£1599 C

*100W All-mode
*160m - 70cms
*Duplex operation
*Satellite ready
*DX cluster QSY



TS-480SAT

100W HF+6m £679 D

IC-756PROIII

ICOM



W&S £1749 D

HF + 6m
100W
All-Mode

Exclusive to Waters & Stanton!

Radiomate NEW

For **YAESU**
Keyboard
For FT-817,
FT-857 & FT-897



Rig not included!
* Direct frequency entry
* Mode change
* Carrier tune mode
* VFO A/B
* 20 Memories
* Self-Powered

£99.95 C

IC-756PROIII Special Deal :-

IC-756 Pro III
+ SM-20 Desk Mic
+ NC-2 Noise cancelling 'phones
+ W-25AM power supply
+ Spare DC lead

W&S £1829 D

IC-7000

ICOM



W&S £899 D

HF/VHF/UHF
All-Mode
Transceiver

Deal2: With TFT PAL TV Screen £989

Deal3: With TFT + Power-Mite PSU £1009

IC-7400

ICOM

HF - 70cms 100W transceiver plus
SP-21 skr and SM-20 mic

£1245

IC-718 HF 100W transceiver £439

IC-706IIGDSP

ICOM



HF/VHF/UHF
100W
Transceiver

Includes Travel Mite
Dual Voltage PSU

W&S £Phone

IC-703DSP

ICOM



10W QRP
HF-6m built-in
Auto ATU + DSP

W&S £449.95 D

Visit our eBay shop for more bargains!

eBay

Go to
www.wsplc.com
& click on the link
to our eBay shop

bhi
DSP Noise Cancelling

NES10-2 MkII



Speaker and
programmable DSP unit.
Offers dramatic noise
reduction.

£99.95 C

ANEM

"Noise Away" Amplified
Noise Elimination Module.
Fits in-line between the
equipment & speaker.

£124.95 C

NEIM-1031

Noise Eliminating
In-Line Module.



£139.95 C

NEDSP-1061-KBD

Noise Eliminating DSP module designed
for retro-fit in a number of transceivers,
FT-817, TS-50, IC-
706MkII, FRG-100,
DX-77. With Keyboard.



£99.95 C

NEDSP-1062-KBD

Noise Eliminating DSP module
simply fits into Loudspeaker
path, features a small
keyboard to control
functions.



£104.95 C

Icom
VHF/UHF Mobile/Base

IC-E208

Dual Band FM Mobile
*144-146MHz, 430-
440MHz Tx *55/50W (3 pwr steps each
band) *Wideband Rx 118-173,
230-549 & 810-999MHz



£219.95 D

IC-910H

2m/70cm 100W Base station all-modes
Option for 23cm module (UX-910 £359)

£1089 D

IC-910HX

As Above but with 23cm Module ready
fitted and a big saving as well.

£1239 D

IC-2200H

2m 55W FM mobile with rugged
construction and with digital option.

£179.95 D

IC-2725E

2m/70cm radio. Easy to operate and
install and a lovely detachable head.

£279.95 D

Kenwood
VHF/UHF Mobiles/Base

TM-271E

2m FM 60W Mobile
Transceiver. MIL-SPEC
DTMF Mic. Built-in
CTCSS & DCS
encoder / decoder.



£149 D

TM-D710E Low Price

Dual band APRS 50W FM

£399 C

Yaesu
VHF/UHF Mobiles/Base

FT-7800E

*2m/70cm Dual Band
Mobile *High power
50W 2m /40W 70cms
*Wide receive inc. civil & military airband
*CTCSS & DCS with direct
keypad mic. *1000 memories



£169 D

FT-1802E Low Price!

*2m FM Mobile transceiver *5,10,25,50W

£99 D

FT-8800E Low Price!

*2m/70cm Dualband FM Mobile transceiver

£219 D

FT-8900R Low Price!

*2m/70cm/6m/10m Quadband FM Mobile

£249 D

Yaesu
ADMS Software

Programming Software For your Radio
Programme Memories and all your radio's
functions from your PC. Includes Windows
software and serial lead with adaptor for your Radio.

ADMS-1 F for VX-110/150 / ADMS-1G for VX-7

ADMS-1H for VX-2E / ADMS-1J for FT-60E

ADMS-2H for FT-8900 / ADMS-2I for FT-8800

ADMS-2J for FT-2800 / ADMS-2K for FT-7800

ADMS-3 Programming Kit for VR-500

ALL £39.95 with FREE PC Radio Data Lead.

ADMS-4A for FT-817 & ADMS-4B for
FT-857/8 BOTH £29.95 both these items require
a separate CT-62 lead at £29.95

PEET Bros.
Ham Radio Weather Stations

Ultimeter-100



*Wind speed *Wind
direction *Outside
temperature *Wind
chill factor *Date and
time *Highs and lows
*Long-term memory data

£119.95 C

Ultimeter-800

This is the next model up and adds
• Humidity • Dew point option socket
• Indoor temperature • Static protection
• Illuminated keys • Blue LCD backlight.

£159.95 C

Ultimeter-2100

The top model adds to the Ultimeter-800
• Built-in pressure sensor
• Electrical output alarm trigger voltage

£219.95 C

All Models come with Software & data cable.

Icom
VHF/UHF Handhelds

IC-E91

D-Star Ready

Latest dual-band handheld
transceiver. receiver that
covers 0.495 to 999MHz.



£239.95 C

IC-V82 7W 2m Digital

IC-U82 70cms Digital

IC-E90 6m/2m/70cm

IC-T3H 2m 5W

IC-E7 2m/70cm Wide Rx

£159.95 C

£159.95 C

£199.95 C

£129.95 C

£169.95 C

Kenwood
VHF/UHF Handhelds

TH-F7E

* 144-146MHz Tx/Rx: FM
* 430-440MHz Tx/Rx: FM
Up to 6W out with Li-ion
battery and "scanner" style
coverage from 100kHz to
1300MHz including
SSB on receive!



£199.95 C

TH-K2E 2m 5W

TH-K2ET 2m 5W FM

TH-K4E 79cm 5W FM

£99 C

£145 C

£139 C

Yaesu
VHF/UHF Handhelds

VX-7R (Black)

Limited Special Offer

Totally waterproof. Wide
frequency coverage
500kHz-900MHz AM/FM.



£209 C

VX-6E 2m/70cm wide rx 5W

FT-60E 2m/70cm wide rx 5W

VX-120 2m 5W w/8-key pad

VX-170 2m 5W w/16-key pad

£169 C

£129 C

£99 C

£109 C

Carriage Charges: A=£3, B=£4, C=£6.95, D=£10, E=£12



08000 73 73 88



01702 206835

01702 204965



www.wsplc.com

MFJ MFJ ATU's & Analysers

MFJ-929

Compact IntelliTuner
Compact 200W,
1.8-30MHz, Coax or Random Wire
Auto ATU **£199.95 D**

MFJ-927

Remote IntelliTuner
Compact 200W,
1.8-30MHz Auto ATU
with Power Injector **£229.95 D**

MFJ-976

Balanced Line ATU
1.8-30MHz, 1500W Balanced Line
Antenna Tuner **£429.95 D**

MFJ-948

1.8030MHz ATU
300W, large cross
needle meter **£109.95 C**

MFJ-993B

Auto ATU
1.8-30MHz, 300W SSB, 150W
CW, Matches 6-800
Ohms **£189.95 C**

MFJ-945E

Auto ATU
1.8-30MHz, 300W SSB, 150W CW,
Matches 6-800 Ohms **£89.95 C**

MFJ-949E

ATU / Dummy
Load. 1.8-30MHz, 300W, large
cross needle meter **£124.95 C**

MFJ-901B

Versa Tuner.
1.8-30MHz, 200W, 135x150x60mm,
weight 760g **£74.95 C**

MFJ-902

Travel Tuner
3.5-30MHz, 150W,
Mobile & portable use,
90x60x80mm **£65.95 C**

MFJ-259B

HF Digital SWR Analyser
1.8-170MHz, Freq
Counter, SWR & Imped.
meters, SO-239 (Ant),
BNC (Counter). **£199.95 C**

MFJ-269

HF Digital SWR Analyser
1.8-170MHz, 415-450MHz
Freq. SWR & Imped.
meters, N-Socket
(Ant), BNC (Counter). **£269.95 C**

ABM-1 NEW Ramsey Airband Monitor Kit

Passengers can now hear the crew's VHF transmissions -
Anywhere - Anytime No tuning required!

A passive airband monitor with no oscillator or IF -
so no risk of interference even inside an aircraft
cabin. It is highly sensitive (2uv) and will hear all
local aircraft and is even safe to use inside aircraft
cabins. The radio is only available in kit form
(small components are ready mounted on board)
and it takes around 3 hours to build. Has
everything you need including smart case and
earbud phones. PP3 battery
required - not included. **£79.95 C**

Miracle Whip HF Antenna



A tuneable telescopic
whip covering 3.5 to
460MHz. Rated up to 25
Watts, just plug it
directly into your FT-817
or IC-703 etc. and tune!
It really works great. **£99.95 C**

Watson WATSON Power Inverter



WISP-300 300W at 230V
AC. Also fitted
with USB for
phone or iPod
charging. Plugs
directly into
cigar socket. **£29.95 A**

Heil HEIL Audio Accessories

PRO-SET 4 & 5

Headphones and
boom mic. Choose
insert. **£84.95 C**

PRO-SET PLUS

As above but fitted both inserts
switchable. **£132.95 C**

AD-1 matching rig leads **£12.95**

HC-4 Dx Mic Insert **£29.95**

HC-5 Normal Insert **£29.95**

HTDS Traveler

Traveler Double Sided
Headset & Boom Mic
Requires HSTA patch
lead. **£59.95 A**

HTSS Single earpieces model
£49.95 A

HSTA Matching rig leads for "Travelers"
£17.95 A

Goldline Mic

Use as fist mic or with
optional desk stand. Your
choice of HC4 or HC5
insert. **£89.95 B**

Goldline models GM-4 or GM-5
require a CC-1 adaptor lead to
match your rig. **£19.95**

Check out other accessories
on www.wsplc.com

Watson WATSON Power Supplies



The Widest Range
& The Best Prices!

W-3A Output 3A, 13.8V DC, supply 230V AC **£22.95 C**

W-5A Output 5A, 13.8V DC, supply 230V AC **£29.95 C**

W-10AM Output 10A, 0-15V DC, supply 230V AC **£59.95 D**

W-25AM Output 25A, 0-15V DC, Dual meters **£89.95 D**

W-25XM Output 25A, 9.7-17V DC, Dual meters **£99.95 C**

W-30AM Output 30A, 0-15V DC, Dual meters **£119.95 D**

W-25SM Output 22A (25peak), 13.8V DC, supply 230V / 115V AC **£79.95 C**

Diamond DIAMOND Power Supplies

GSV-3000

*Output voltage: 1 - 15V DC
*Output current 30A continuous
*Built-in cooling fan *Supply 230V
AC 50Hz *Size 250x150x240mm
*Weight 9kg **£124.95 D**

GSV-2500 Output 25A, 5-15V DC, supply 230V AC, Switch
Mode, Overvolts Protected. 21x11x22cm **£119.95 D**

GSV-4000 Output 40A, 5-15V DC, supply 230V AC, Switch
Mode, Overvolts Protected. 21x11x30cm **£159.95 D**

GSV-6000 Output 60A, 1-15V DC, supply 230V AC, Switch
Mode, Overvolts Protected. 21x11x36cm **£299.95 D**

Manson Power Supplies

EP-925 Price Down!

A general purpose 3-15V DC,
25A (30A peak) power supply
able to provide the needs of the
modern 100W HF transceiver. **£89.95 D**

NEW W-8681 Wireless Weather Station



- * No Cable Connection Required
- * LCD Touch Screen
- * Atomic Locked Date & Time
- * Indoor / Outdoor Temperature
- * Wind Speed & Direction
- * Rain Gauge
- * Indoor / Outdoor Humidity



What You Get:
Large LCD Control Panel
(23x14.5x3.5cm),
Wind Speed Sensor,
Wind Direction Sensor,
Rain Gauge, Stub Mast,
Outside Temperature Sensor
& Transmitter,
Sensor Mounting Arms,
Sensor Cable Harness,
USB Lead & PC Software.

- * Barometer with Trend Data
- * Forecaster & Weather Alarm
- * USB Connection to PC
- * PC Software Control & Data
Programme
- * Historic Data Storage & Display

W&S
£89.95 D

Carriage Charges: A=£3, B=£4, C=£6.95, D=£10, E=£12

Hundreds In Use - Simple To Install



Practical Wireless February 2008

contents

Volume 84. Number 2. Issue 1210. On sale 10 January 2008

6 Keylines

Rob Mannion G3XFD voices his concerns over planning issues.

7 Readers' Letters

10 News

Elaine Richards G4LFM brings you news of the latest products in the hobby.

17 Rally News

Elaine Richards G4LFM brings you an update of rallies and events in the coming months.

18 Alinco DM-330MW Review

Rob Mannion G3XFD takes a look at a switch-mode power supply that could prove very useful in the shack.



18

20 Antenna Workshop

We welcome new author **Vince Lear ZL1VL/G3TKN** who sets out to answer the frequently asked question of what antenna to use on the h.f. bands.

26 The St. Brandon 3B7C Story

Don Field G3XTT reports on the successful St. Brandon DXpedition that took place in September.

28 Club News

Elaine Richards G4LFM brings you news of clubs and meetings in your area.

32 Technical for the Terrified

Tony Nailer G4CFY revisits antennas, addresses some errors and extends the topic to include antenna tuning units and baluns.



26

36 Amateur Radio Personality

In the second feature of our new series we interview the well-known, prolific author and professional radio communications engineer, **Chris Lorek G4HCL**.

39 In Focus

This month we take a closer look at the **Royal Air Force Amateur Radio Society (RAFARS)**.

42 Carrying On The Practical Way

A one f.e.t., multi-mode receiver built and explained by the Rev. **George Dobbs G3RJV**.

46 In The Shop

Harry Leeming G3LLL looks at core problems and how to service with the minimum of equipment.

52 What Next?

Colin Redwood G6MXL continues his new series by describing good construction and soldering issues before inviting you to ask the next question.



52



55

55 The G4TPH Magnetic-Loop Antenna

Tex Swann G1TEX reviews a loop antenna that is eminently portable.

56 A Power Supply for Valves

Ben Nock G4BXD offers his thoughts and suggestions for improvements to a recent power supply project by **Stefan Niewiadomski**.

58 VHF DXer

David Butler G4ASR reports on the conditions on the v.h.f. and u.h.f. bands.

62 Valve & Vintage

This month **Ben Nock G4BXD** looks at a receiver used in Zeppelin airships, an aircraft transmitter and an army set from Russia.

66 HF Highlights

Carl Mason GW0VSW covers what has been heard and what you're likely to hear on the h.f. bands in his expanded column.

70 In Vision

Graham Hankins G8EMX rounds-up the action in the ATV scene and introduces *CQ-ATV's* new editor.

72 Traders' Table

74 Classified Adverts

75 Bargain Basement

76 PW Publishing Bookstore

80 Subscriptions

81 Topical talk

Rob Mannion G3XFD reflects on callsigns and techniques to reduce the effects of interference carried by the mains.

Copyright © PW PUBLISHING LTD. 2008. Copyright in all drawings, logos, photographs and articles published in Practical Wireless is fully protected and reproduction in whole or part is expressly forbidden. All reasonable precautions are taken by Practical Wireless to ensure that the advice and data given to our readers are reliable. We cannot however guarantee it and we cannot accept legal responsibility for it. Prices are those current as we go to press. Published on the second Thursday of each month by PW Publishing Ltd., Arrowsmith Court, Station Approach, Broadstone, Dorset BH18 8PW. Tel: 0845 803 1979. Printed in England by Holbrooks Printers Ltd., Portsmouth PO3 5HX. Distributed by Seymour, 86 Newman Street, London, W1P 3LD, Tel: 0207-396 8000, Fax: 0207-306 8002, Web: <http://www.seymour.co.uk>. Sole Agents for Australia and New Zealand - Gordon and Gotch (Asia) Ltd.; South Africa - Central News Agency. Subscriptions INLAND £37, EUROPE £45, REST OF WORLD £55, payable to PRACTICAL WIRELESS, Subscription Department. PW Publishing Ltd., Arrowsmith Court, Station Approach, Broadstone, Dorset BH18 8PW. Tel: 0845 803 1979. PRACTICAL WIRELESS is sold subject to the following conditions, namely that it shall not, without written consent of the publishers first having been given, be lent, re-sold, hired out or otherwise disposed of by way of trade at more than the recommended selling price shown on the cover, and that it shall not be lent, re-sold, hired out or otherwise disposed of in a mutilated condition or in any unauthorised cover by way of Trade, or affixed to or as part of any publication or advertising, literary or pictorial matter whatsoever. Practical Wireless is Published monthly for \$50 per year by PW Publishing Ltd., Arrowsmith Court, Station Approach, Broadstone, Dorset BH18 8PW, Royal Mail International, c/o Yellowstone International, 87 Bulewts Court, Hackensack, NJ 07601. UK Second Class Postage paid at South Hackensack. Send USA address changes to Royal Mail International, c/o Yellowstone International, 2375 Pratt Boulevard, Elk Grove Village, IL 60007-5937. The USPS (United States Postal Service) number for Practical Wireless is: 007075.



Rob Mannion's

keylines

Rob G3XFD voices his concerns over planning issues.

It's not often I look back to a news item for use in the Keylines editorial. However, a news item featuring the **Scouts Jamboree On The Air GB500DS** station (page 12 January 2008 *PW*) attracted my attention.

On the face of it – the story was full of good news about two active clubs – the **Hog's Back Amateur Radio Club** (I shall be visiting them in 2008) and **Mad Jack's** group, based on the borders of Hampshire and Surrey. Unfortunately, despite the good news and the support the groups provided for the Scouting event, my attention was drawn to the reported reaction of local people when the antenna tower was raised. The news report mentioned that the local councillor received four telephone calls as soon as the antennas and tower appeared above the treetops!

Fortunately, the group had the support of the local councillor – who acted as a great ambassador – and the event was able to proceed. Indeed, it seemed as though both the local councillor and her son – who was one of the Scouts taking part – really enjoyed the event and the son returned on the Sunday for more Amateur Radio!

Because the local councillor was at the event, possible problems due to the complaints about the antenna system were minimised. However, what would have happened if the councillor wasn't present? And what if the councillor was apathetic towards Amateur Radio?

Disturbing Effect

It might seem strange for an ordinary news story to have a disturbing effect on me. However, my reaction was immediate on reading it and I feel that the telephone calls to the councillor shows the tip of an iceberg regarding anything that's 'different' in the community – especially anything to do with communications antennas. Included in this, of course, are the ubiquitous mobile telephone system masts!

We all know the reaction that develops when a new 'phone mast is to be erected. Many people often object to the mast near their home or school but I've no doubt many of the same adults and their children still clamp mobile 'phones to their ears!

I've recently been involved with helping out a local Amateur with his antenna

problems, which were soon sorted out with the help of the **Radio Society of Great Britain's (RSGB) Len Pagett GM00NX**. Len is very experienced in planning matters, as regular readers will remember from his article in *PW* on the subject. The problem was simply overcome – an unreasonable neighbour objected to antennas that had been present for many years. Following Len's help the local council very quickly reversed their removal order and decided that the antennas could stay, even though there had been no planning application originally.

Planning Permission Confusion

Along with the often less-than-understanding attitude of local authorities towards antenna systems, I'm afraid we have to add the confusion that lies within local authorities regarding their own rules, which can lead to a planning permission themed nightmare! The problems then extend far beyond our specialist antennas, and in fact, they could begin at ground level at the kerbside!

Recently, my wife **Carol** and I have had the proverbial 'run around' from **Bournemouth Borough Council** (the BBC!) regarding the installation of dropped kerbing at the front of our house for car parking purposes. At first, we were told that planning permission (requiring a hefty fee and formal plans) was required. Then, from the same department we were told that planning permission wasn't required to get the council to do the work (only they are allowed to install the dropped kerbing) and we would only need to pay an 'administrative' fee.

Unfortunately, less than a week later Carol discovered that we will (unfortunately) have to apply for full planning for the work and provide full architectural plans for the front of our house! With such confusion regarding such simple things as roadside kerbstones, it seems obvious to me that Amateur Radio needs strong support against bureaucratic foolishness and I'm pleased to have the support of the RSGB and Len Pagett GM00NX. Without Len and the RSGB it could be extremely expensive to overcome the bureaucratic confusion that exists within the incredibly powerful and autocratic local authority monopolies.

Rob Mannion G3XFD/EI5IW

Practical Wireless

PW Publishing Limited
Arrowsmith Court
Station Approach
BROADSTONE
Dorset BH18 8PW

Editor

Rob Mannion G3XFD/EI5IW
rob@pwpublishing.ltd.uk

Technical Editor

NG (Tex) Swann G1TEX/M3NGS
tex@pwpublishing.ltd.uk

Art Editor

Stephen Hunt
steve@pwpublishing.ltd.uk

Advertising Typesetting/Admin

Peter Eldrett
peter@pwpublishing.ltd.uk

Advertisement Sales

Roger Hall G4TNT
roger@pwpublishing.ltd.uk

Finance Manager

Alan Burgess
alan@pwpublishing.ltd.uk

Book Orders

bookstore@pwpublishing.ltd.uk

Tel: 0845 803 1979

Fax: 01202 659950

PW Publishing Website

www.pwpublishing.ltd.uk

Our 0845 numbers are charged at the BT Standard local Rate

Directors: Stephen Hunt & Roger Hall

Subscription Administration

Webstore

Practical Wireless Subscriptions

PO Box 464

Berkhamsted

Hertfordshire HP4 2UR, UK

pw@webscribe.co.uk

www.webscribe.co.uk

☎ 01442 879097

Fax: 01442 872279

Subscriptions

Subscriptions are available at £37 per annum to UK addresses, £45 Europe Airmail and £55 RoW Airmail. See the Subscriptions page for full details.

Components For PW Projects

In general all components used in constructing PW projects are available from a variety of component suppliers. Where special, or difficult to obtain, components are specified, a supplier will be quoted in the article.

Photocopies & Back Issues

We have a selection of back issues, covering the past three years of PW. If you are looking for an article or review that you missed first time around, we can help. If we don't have the whole issue we can always supply a photocopy of the article. See the Book Store page for details.

Placing An Order

Orders for back numbers, binders and items from our Book Store should be sent to: PW Publishing Ltd., Post Sales Department, Arrowsmith Court, Station Approach, Broadstone, Dorset BH18 8PW, with details of your credit card or a cheque or postal order payable to PW Publishing Ltd. Cheques with overseas orders must be drawn on a London Clearing Bank and in Sterling. Credit card orders (Access, Mastercard, Eurocard, AMEX or Visa) are also welcome by telephone to Broadstone 0845 803 1979. An answering machine will accept your order out of office hours and during busy periods in the office. You can also FAX an order, giving full details to Broadstone 01202 659950. The E-mail address is bookstore@pwpublishing.ltd.uk

Technical Help

We regret that due to Editorial time scales, replies to technical queries cannot be given over the telephone. Any technical queries by E-mail are very unlikely to receive immediate attention either. So, if you require help with problems relating to topics covered by PW, then please write to the Editorial Offices, we will do our best to help and reply by mail.



readers' letters

The Star Letter will receive a voucher worth £20 to spend on items from our Book Store or other services offered by *Practical Wireless*.

Star Letter

Practical – But Protected by Fuses?

Dear Editor,

From the first 'teaser' sentence onwards the article *The Stroke Alternative – a station with a difference* by **Andy Foad G0TFD** in the December 2007 issue of *PW*, made it clear to me that it deserved attentive reading. The direct and highly practical manner in which Andy optimises the equipment for his preferred facet of our pastime is to be admired. However, having completed the reading and scrutinised the photographs used, I'm concerned that despite the references to safety precautions (including the hazards of acid leakages, Andy made no mention of the necessity to provide appropriate fusing for the installation.

Our local RAYNET group regularly use large lead-acid batteries to power portable equipment. These batteries carry an automotive type bladed fuseholder attached directly to the positive terminal post and all supplies are taken from this protective device. Further protection is provided in that each battery is housed in a purpose-made stout plastic enclosure, purchased at a very modest cost from a caravan equipment supplier.

The lidded box covers the battery top plate and provides protection from conductive items accidentally being dropped onto the terminals and making electrical contact. This is a hazard that those who are inspired to replicate the 'Stroke A' arrangement could well encounter if they don't possess the same high level of engineering skills demonstrated by G0TFD.

Altogether the *Stroke A* concept is a commendable device but deserves the note of caution I've provided. However, might I enquire if Andy is working on a tracked version for use on loose sand?

Yours sincerely,

Robin Parker G8HNM
Taunton
Somerset

*I'm not sure what a 'teaser sentence' is Robin, but I'm very grateful that you have pointed out the (apparent) lack of fuse protection on Andy Foad G0TFD's ingenious device (The tracked version will only appear if and when Andy moves away from the Dungeness area of Kent, world famous as a desert-like mass of shingle). However, with apologies to the author, I'm afraid that it was the Editorial Team's choice of photographs that led to Andy's (very cleverly designed) portable station to appear in PW seemingly without fuse protection. This error on our part is made worse because of Andy's great depth of experience in the design of automotive electronics! I'm afraid that in choosing the best of a large selection of excellent photographs, we inadvertently left out a shot of the (more than adequate) fuse protection Andy provided on the unit, together with the explanatory caption. Anyone who has had the misfortune – as I have – to drop a spanner across a set of terminals on a fully charged 200Ah battery will realise just how much fuses are need for safe operation. As the Editor (the buck stops here!) I'm sorry for the mistake! **Rob G3XFD***

Send your letters to:

Rob Mannion
PW Publishing Ltd.,
Arrowsmith Court,
Station Approach,
Broadstone,
Dorset BH18 8PW
E-mail: pwletters@pwpublishing.ltd.uk

A Listener's Plea for Callsigns!

Dear Rob,

Although retired, I'm now a full time carer for my wife who has dementia. Despite this, I still have plenty of opportunities to snatch a few minutes through the day to listen on the Amateur bands. Although I have a licence, as soon as I talk, I disturb my wife, so I spend most of my time listening to the bands either with my headphones covering one ear only, or on the loudspeaker with the volume turned down.

I thoroughly enjoy keeping up with everything in the UK on 80 and 40m and hearing the DX come up on 20, 15 and 10m during contests. But despite the pleasure I get, I do wish modern Amateurs would provide their callsigns carefully, and regularly, so that I know who and where they are!

Every year I buy the RSGB *Yearbook*, which had developed from the old call book. But as time passes the columns of 'details withheld' gets longer, so it really becomes difficult to locate individual stations – unless the operator provides information over the air as to where they are.

Since I've retired, and my wife of 45 years has become so ill, listening on the Amateur Bands has provided a great deal of enjoyment. When I'm listening to nets I can break off and then soon catch up with what's going on, especially when the net controller is a strong signal and clearly announces the individual callsigns. The **RAFARS (RAF Amateur Radio Society)** is good in this respect, as is the **Poldhu** net in Cornwall.

Incidentally Rob, I heard you on this net recently – a very rare participation by G3XFD in a net think!

My plea to everyone on the air is – please provide listeners with the part of the country you are in. Since the old regulations have gone – announcing your callsign on a fixed time scale (this was what I had to do when first licensed) I can often listen in to a QSO without ever knowing where the various stations are in the UK when I'm listening on 80 and 40 metres .

I know that the middle-of-the-night boys on 80 metres are an exception in being totally anonymous but it would spoil my listening pleasure if everyone became equally vague about where they are. Listening to GB75PW on 40 metres has been interesting because all the operators – without exception – ensure we know exactly where they're operating from. Perhaps everybody could learn something from the Special Event stations? Thanks for allowing me to be 'name and address supplied' Rob.

Peter
Southern Midlands
(Full address supplied)

I have great sympathy for the situation 'Peter' is in as he looks after his wife as I know of a number of readers and authors who are in the same situation. 'Peter' tells me that he's on duty' for up to 20 hours a day, although carers do come in to help him and his wife. I now invite readers to join me on the Topical Talk pages for further discussion on the matters he's raised. Rob G3XFD.

Battery Power Better?

Dear Rob,

I heard you on 40 metres recently when you were in QSO operating as G3XFD from home. One of the topics raised with the other station (I couldn't hear him) in Scotland was the problems you were getting from a switched mode power supply. In fact, you mentioned the problems that arise from one switch mode supply that has a harmonic just below the International Beacon Project (IBP) frequency on 18.110MHz. And it's because of that nuisance I'm writing to let you know how I overcame similar difficulties here in Yorkshire.

Listening on the bands was becoming so difficult here because of

the harmonics from switched mode power supplies. Even with extensive mains filtering I was beginning to think of giving up listening from home altogether. Then, as I pulled the mains plug out for the power supply one of my short wave broadcast bands receiver (an old Grundig *Yacht Boy*) while it was still switched on at the radio, I noticed much of the interference disappeared before the radio went of as the reservoir capacitor drained. This gave me the idea of running my receivers from battery power.

I got a good quality portable caravan style battery – I think they're called 'Leisure Batteries' – and keep it on trickle charge when I'm not in my listening room – a corner of our conservatory.

When my radios are powered from the battery supply the reduction in noise levels from interfering switched mode power supplies is really noticeable. I like listening on Top Band

and to long wave DX stations and the benefits of the battery supply are worthwhile. I hope that my experience might help other readers.

Best wishes to you and **Tex G1TEX**.

Andrew Brown
Skipton
North Yorkshire

An excellent idea Andrew! I have used the system myself and now invite you to join me on the Topical Talk pages for further comments. Rob G3XFD.

The Bifocal Age Brigade!

Dear Rob,

You may remember talking to me at the last Rochdale QRP Convention where I was discussing the *PW* IBP Beacon Clock PIC version by **Phil Cadman G4JCP**. It was really good to be able to talk to you and **Tex Swann G1TEX** about the *PW* projects. I was hoping to stay long enough to

Whatever Happened To Uncle Vic?

Dear Rob,

I found the article *Whatever Happened to Uncle Vic?* (December 2007 *PW*) quite fascinating, especially the illustrations of the early QSL cards. Over the years I have collected tens of thousands of QSL cards, many being of pre-1930 vintage. Lack of storage space has meant that I now only keep the real 'goodies', such as original cards for 'firsts' and cards from prominent Amateurs from the past, etc.

I remember having more than one of Mr Jeffery G5UV's (Uncle Vic) cards but they are no longer in my collection. However, I looked up his callsign in a 1951 *Radio Amateur Callbook* (USA) and discovered that Mr. Jeffrey was then living at 21 Chestnut Avenue, West Wickham, in Kent. However, I have no way of discovering the point when he was no longer active on the air.

Of course, the 'real' and very well known 'Uncle Vic' was **Bill Corsham G2UV**, who became a Silent Key in the early 1980s. His club donated a large quantity of research material to me, which merits an article at some time in *PW* perhaps?

I possess some of G2UV's very early QSL cards (circa 1922-1923), which reveals that his best DX then, was a QSO with 2JZ (GB) and reception of 9OX in the USA. His antenna in those days was a 5 wire 'sausage' with a 70ft wire counterpoise. He operated on 200 metres and his transmitting antenna current was 500mA! My last QSO with G2UV was on 2 metres s.s.b. not long before he became a Silent Key.

Best wishes to everyone at *PW*.

John Heys G3BDQ
Guestling
Near Hastings
East Sussex

Having seen your QSL card collection John, I know it's a valuable Amateur Radio historical archive! Thanks for your letter and we look forward to seeing your suggested article on G2UV, which will appear in the Valve & Vintage slot. Rob G3XFD.

attend the *PW* 'State of the Nation' talk (as you call it!) in the afternoon but because the preceding lectures over-ran I had to leave as I was giving an elderly friend a lift back to Altrincham before dark.

Later, we heard that even though you were almost an hour late starting your *PW* talk – it was very well attended. Well done – I had heard you were thinking of cancelling the talk to help people get away on time – I'm pleased you changed your mind!

I'm writing to continue what we were discussing at the rally – the problem of projects for us members of the 'bifocal age brigade' as I call it! As I told both you and Tex, I really enjoy home construction but as I approach 60 my eyes are beginning to become a problem. First it was bifocals, so I could solder easily and see the p.c.b. tracks. Then, a magnifier glass became necessary as I worked.

Talking to you and Tex I fully understand I'm not alone – but what can we do about it? Project building is the heart of my hobby and the main reason why I've always read *PW* in preference to other magazines.

But, as time goes on I seem to be struggling with smaller components – even though *PW* has avoided projects using surface mount components. I tried the **Blue Anchor** projects years ago from **Bill Mooney** with great difficulty – but even standard sub-miniature components are becoming a problem nowadays. From what you and Tex told me at the Rochdale rally – I'm not alone and you understand what the problems are yourself.

Now I've finally written to you, can you consider the idea of a special article for those of us who have difficulties due to *anno domini*? You were talking to Tex and I about the idea of a special article – similar to the one that **Ben Nock G4BXD** published some years ago regarding his approach to the hobby using his severely disabled arms. I very much admired Ben's approach and learned a lot, but now we need help and advice on working in the hobby with less-than-perfect eyesight. Can you help us Rob?

Steve Tomlinson
Atrincham
Cheshire

Contests Keying & Reports

Dear Rob,

I have not been very active recently, due to ill health and then mostly on 2 metres and 70 centimetres. However, having received an early Christmas present from my wife of a nice wee FT-817ND I could not wait for Santa, so I connected up my quite old G5RV to try it out. Surprisingly enough, it seemed to be working okay. A quick tune up on 40 metres c.w. brought in a 4X4 at RST589. Then a switch to 20 metres, produced an N2 booming in at 58 on s.s.b. It's a fine little QRP rig.

This evening, as I write this E-mail to you on Saturday 24 November, I switched in the c.w. filter and tuned to 40 metres and found a contest in progress. But what the heck was going on? Dozens of stations all calling 'Test', at speeds of around 30 words per minute.

I am a bit rusty after years of not using c.w. and had difficulty reading most of them. Everyone was giving 599 reports to everyone else and getting 599 reports back! What has happened to genuine signal reports, which were of some use to perhaps, a novice with a homebrew transceiver, which is perhaps drifting a shade or has some key clicks? Perhaps an RST529C report instead meaning 'good copy, bit weak, nice tone with a trace of chirp' a report with meaning! What's the point of '599' all the time I ask?

Obviously computer controlled rigs are being used, with everything sent by using pre-written macros. Nobody making mistakes, even at 30w.p.m. plus Even good operators make the odd mistake with a paddle keyer. Is this a contest to see who can press the computer keyboard quicker than anyone else? Not my idea of a contest!

My rules would be: No computer except for logging. Key speed 15 to 20w.p.m. maximum (give the new lads a chance). A meaningful exchange of perhaps, Locator plus operator's age or name. Similar rules for s.s.b.

There, that's my grumble, I am not a speed merchant on the key. I want to chat to people and make friends. Not try to be faster or cleverer than they are with computer aids. So, 73 to all at *PW*.

Jim Martin G3PBA
Slough
Berkshire

Tex and I enjoyed chatting to you during the rally Steve. I'm planning to publish an article as you've suggested during 2008. I'll be pleased if readers can send in their own tips on how to overcome their own vision problems so I can incorporate them into the article. Rob G3XFD.

Practical Wireless & Schools

Dear Rob,

From the **Southgate ARC** website and reading *PW* itself, I read that you visit Amateur Radio Clubs regularly. However, even though *PW* seems to support Amateur radio clubs, it's not often I read that you've visited a school club. Are school clubs on your

'visits' timetable or is there a problem with visiting schools?

I'm asking because when I was at school (longer ago than I wish to remember – 20 years ago!), my attempts to start a radio club in the school foundered. The reason why it failed was because we couldn't get an adult interested. I'm sure that there are many youngsters at school who would love to join us and that *PW* could help very much indeed.

Mike Pointer
Warsop
Nottinghamshire

*I'll go anywhere I'm invited Mike! If anyone is keen enough to start a school club they'll certainly get *PW* support! Rob G3XFD.*

A great deal of correspondence intended for 'letters' now arrives via E-mail, and although there's no problem in general, many correspondents are forgetting to provide their postal address. I have to remind readers that although we will not publish a full postal address (unless we are asked to do so), we require it if the letter is to be considered. So, please include your full postal address and callsign with your E-Mail. All letters intended for publication must be clearly marked 'For Publication'. **Editor**



Elaine Richard's

news & products

A comprehensive round-up of what's happening in our hobby from G4LFM.

Charity Mobile Radio Shack Stolen

Members of the **Sheffield Amateur Radio Club** are coming to terms with the theft of a vital Amateur Radio trailer station, used at many local charity events, to assist in raising thousands of pounds for charities, including **Sheffield Childrens' Hospital**.

Club spokesman, **Colin Wilson** told *PW*, "We've had the trailer less than two years; the stolen equipment, including solar panels, an h.f. beam, two telescopic masts and furniture was valued at over £3,000 and we used it to transport radio equipment to many local events and even for a club trip to the Isle of Arran. Without

the trailer, charity fund raising projects for 2008 will have to be reduced or even cancelled."

Club members are now looking for a kind benefactor, to possibly donate a replacement two-axle box trailer. Anyone who can help should call Club Chairman, Colin Wilson on 0114 274 7844.

Anyone with information about the white, four-wheel trailer should contact **Sally Reekie at South Yorkshire Police Crime Management Unit** on **01709 832215** quoting **Crime no. C/148558/07**.

The SARC trailer in use at a summer 'Greenfair'.



Rechargeable Batteries

Unlike traditional NiMH batteries, Imedion batteries can be stored for an extended period of time without substantial loss of power and are ready to use out of the package. As the name suggests, the Imedion rechargeable batteries will be 'ready when you are'!

A common problem that plagues rechargeable batteries is that they need to be recharged about once every one to three months even if they are not used. Maha tackled this issue by developing advanced electrode materials to reduce the rate of power loss during storage. As a result, the Imedion batteries retain up to 85% of their charge even after one year of storage (at a room temperature of 20°C). They can also be recharged for hundreds of times and perform extraordinarily well at elevated temperatures.

The Imedion batteries are fully compatible with all Powerex chargers and are available in 2100mAh capacity for AA size and 800mAh for AAA. The selling prices £12.95 for a 4 AA pack and £11.95 for a 4 AAA pack, respectively.

Nevada, Unit 1, Fitzherbert Spur, Farlington, Portsmouth PO6 1TT. Tel: 0239 231 3090 www.nevadaradio.co.uk



Operating GB75PW in Scotland

Rob Mannion **GM3XFD**, flew from Southampton and was met at Glasgow airport by **Len Paget GM0ONX** who provided the taxi service. And **GB75PW** was then operated from the **Kilmarnock and Loudon club's** headquarters in the local council depot in Kilmarnock. The station was able to use the big h.f. antenna farm and had two h.f. stations active over the two days. Rob concentrated on 7 and 14MHz talking to *PW* readers in UK, USA and Europe using Len Paget's FT-1000MP.

The second station, using the club's rig, really went to town, working Saudi Arabia, Malaysia, Indonesia and some pretty rare DX. There were portable and mobiles stations as well as the usual base stations in the logs. Notably, there were two maritime mobiles stations too: **Mark CT/MM0MBH/MM**, in Logos and **Johan CU3AL/MM**. In total there were over 70 7MHz band stations and over 180 14MHz band stations in the log from more than 30 different countries.

Everyone worked very hard and the stations were causing pile-ups on whatever band they were working on. Rob managed to clear the 7MHz pile up before Len Pagett **GM0ONX** took him back to Glasgow for the flight back to Southampton. Altogether a very effective airing of **GB75PW** thanks to Len and everyone at the club!

Rob Mannion GM3XFD and Len Paget GM0ONX airing GB75PW

Picture courtesy Colin Topping GM6HGW



Successful Open Day

Well over 500 visitors attended the **Martin Lynch & Sons** Open Day on December 1st 2007, making it one of the most successful to date. For the first time Martin and his team not only had the 'Big Three' distributors (**Yaesu, Icom & Kenwood**) but a selection of UK manufacturers and publishers on site.

Visitors had 'bacon butties' from 8am (in fact, the earliest arrivals were let into the store from 7am!) and then the usual Hog Roast from midday. Hot tea and coffee was supplied on tap by **Jennifer**, Martin's wife, who was grateful for the sunny day amongst



some terrible weather.

Tens of thousands of bargains were snapped up and, in particular, members of the **Newhaven Fort Amateur Radio Group** collected their Icom Amateur station on the day. The new Yaesu FT-950 h.f. and 6m base was also in demand as several customers travelled hundreds of miles just to be the first in the UK to own this new radio from Japan.



Send all your news to:

PW Publishing Ltd.,
Arrowsmith Court,
Station Approach,
Broadstone,
Dorset BH18 8PW
E-mail: pwnews@pwpublishing.ltd.uk

Listen Out For

The **Blue Mountains Amateur Radio Club** in Australia is celebrating its 50th birthday in January 2008. A special callsign to commemorate the 50 years has been allocated. The callsign is **V12BMARC50** and will only be valid for 10 days from January 18th to January 28th, 2008. A special QSL card will be available for all stations contacting **V12BMARC50**.

A team from **Barry Amateur Radio Society** (GW4BRS) will be operational on a number of bands and modes from Guernsey Island EU-114, from April 19th to 26th using the callsign **GP4BRS**. QSL route is direct via manager GW0ANA (**Nirvana Castle Precinct, Llandough, Cowbridge, South Glamorgan CF7 7LX**) or RSGB Bureau.

Direction Finding Competition

After a first ARDF event in Tandle Hill Country Park, **Oldham Amateur Radio Club** did a second, larger, event in Lever Park, Horwich just north of Bolton on Sunday, November 25th. Unfortunately, a large portion of the site suddenly became unavailable due to the discovery of a disease in the oak trees in the eastern area so some of the planned transmitter sites had to be changed.

The site changes became a problem with spacing and, in the end, the minimum distances between some transmitters was borderline. Eventually, a satisfactory course was planned on the map amounting to a 4.4km distance.

In all there were 16 entrants but, as three of these were a family group and could only be counted as one, there were 14 who eventually set off round the course. Amazingly, they had travelled considerable distances to take part. The nearest had come from Southport and the furthest from Gatwick and Dumfries! One participant was **Bob Titterington G3ORY** who heads up the ARDF effort nationally. The club felt privileged to have him test them out. The winner was **Michael Dunbar**. He had travelled all the way from Frimley in Surrey to take part. He obviously thought it was worth it!



The SOS Radio Week

The 2008 RNLI SOS Day takes place on Friday January 25th to raise money for the **RNLI**. On SOS Day, people raise money for this most worthy of charities by organising sponsorship events, doing crazy things for sponsorship, or doing something simple like dressing down for a £1 on the day and Radio Amateurs are doing their bit too.

Last year, a group of Radio Amateurs from around the UK got together and got sponsored for the number of contacts they made in the week leading up to SOS Day and raised over £400 – so SOS Radio Week was born. The **Southport & District Amateur radio Club's (SADARC)** SOS Radio Week will start at 0000UTC on Saturday January 19th and conclude at 2359UTC on the evening of SOS Day itself, January 25th.

To find out more about SOS Radio Week and how you can take part, visit the SADARC website at www.sadarc.org.uk/rnlis to download sponsorship forms and log sheets – there are certificates available to all with special awards to the most contacts (group and individual) and most money raised (group and individual).

Stolen Equipment - 3B7C

Sadly, some of the equipment that was loaned for the Yaesu sponsored 3B7C DXpedition was stolen when the container returned to the UK. It would be appreciated if readers could please look-out for any of the following being offered for sale or trade-in and, if seen, then please contact the police quoting the Crime Incident Number: 44070539181

FT-2000 100W Serial number 7D170271

FT-2000 100W Serial number 7D170459

FT-847 100W h.f./v.h.f./u.h.f. Transceiver 3C131053

FT-847 100W h.f./v.h.f./u.h.f. Transceiver 3C131054

VP-1000 Quadra Power Supply unit 7F920017

Yaesu UK is offering a reward for information leading to the conviction of the criminals responsible.

New Icom Dealership

The **GMS Electronics** company of Dereham Norfolk have just been given Icom dealership for the Norfolk area. The company is run by **Mike MOXWS** and his wife **Gill**, between them have over 50 years experience in electronic repairs. They are offering a repair service to most transceivers new and old and can also supply cable, plugs, aerials and accessories and so on.

Gill and Mike started GMS electronics in April 2007 after both being made redundant. They started by taking on contracts from local TV and audio retailers to carry out repairs to l.c.d. and plasma screens, audio and DVD recorders.

Mike has been involved in Amateur Radio for many years and knows there is no one in the Norfolk and Suffolk area providing repairs or supplies for the Amateur Radio enthusiast, (even a simple PL259 plug could be a problem to source locally). So now he has decided to fill the gap in the market and provide a local service for fellow amateurs.

GMS Electronics (www.gms-electronics.co.uk) can be contacted on **01362 698754** or E-mail mike@gms-electronics.co.uk



Poldhu Beacon

A beacon, **GB3SSS**, is operating at Poldhu in Cornwall during the winter months. The frequency is 3.597MHz and the format is the same as that of the 5MHz beacons, so 5MHz beacon software can be used for decoding. The one-minute transmissions are on the

hour and at each 15 minute interval.

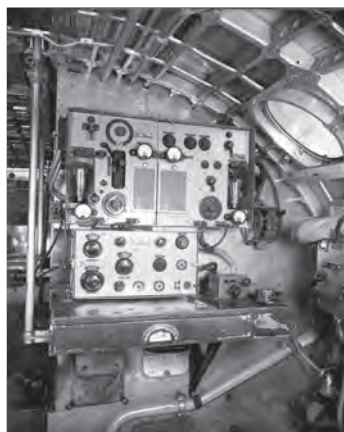
Computer simulations indicate that the 1901 Marconi transmitter at Poldhu could have put out considerable power around this frequency and it will be interesting to see whether there is a transatlantic path during late afternoon on this frequency.

Please send reports to gb3sss@yahoo.co.uk

Can You Help?

Roy Walker G0TAK writes: "As I have an interest in things flying, floating and radiating I have been contacted by 'Clyde Aviation' asking me to identify (and Source) the type of Morse key used in the Short *Empire* Class of Flying Boats.

"Clyde Aviation is an enthusiasts group based in Clydeside who have bitten off the challenge of creating a full size replica of an Empire boat and place it on display as the centrepiece of a museum of aviation history for the area. Details of the group's activities can be found at www.clydeaviation.org.uk



"In the meantime, I attach copies of some photographs of the rather Spartan 'shack' inside this class of boat. The photographs are official Short Bros records. Will anyone who can identify the equipment, particularly the 'Key' to get in touch with **Linton R Dixon** on (01475) 799958 or by E-mail to lintie@ntlworld.com"

Bath Buildathon

The first Bath Buildathon will now be held on Saturday, January 26th 2008 and not the 12th as was previously advertised. The idea is to encourage newcomers to have a go at home-brewing. The Buildathon will run from 9 to 5pm. All soldering and test equipment will be made available on the day and refreshments will be provided. All you need to bring is a bucket full of enthusiasm and a packed lunch. The cost of the day will be £60 to include the cost of the Brendon DSB transceiver kit from **Tim Walford G3PCJ**, refreshments, room hire and so on.

If you are interested in joining in, please contact Steve Hartley G0FUW on (01225) 464394

German 50MHz transmitters closed

On November 27th, German Television 'Das Erste' switched off its analogue TV-transmitter Grönten/Allgau on v.h.f. Channel 2 and replaced it by a new digital DVB-T transmitter.

The very last German Channel 2 transmitter Götterborner Höhe in Saarbrücken will be switched off on December 13th. This means that the ban of Amateur Radio transmissions on 50MHz within the protection zones of 200 x 200km around these transmitters is to be lifted and gives all German Class A licensees access to the 6m band.

Low price Short Wave radios

The UK High Street store Superdrug are again selling low priced short wave radios priced at £3.99. For that you get a 10-band short wave radio with digital readout and that's still cheaper than you could build one for!

Hans Summers G0UPL has an excellent website on modifications to these radios to add a beat frequency oscillator (b.f.o.), fine tuning and so on.

Hans Summers G0UPL Superdrug Radio webpage: <http://www.hanssummers.com/radio/superdrug/>

The SOTA Mountain Goat Award

Tom Read M1EYP, from Macclesfield in Cheshire, has become a SOTA Mountain Goat. He is the 32nd in the world to reach the mark for 1,000 activator points and the 11th in the England SOTA association. Tom got the last eight points he needed with an activation of Cadair Berwyn GW/NW-012 (North-East Wales) on Wednesday, October 24th, 2007. This was his 504th SOTA activation in just over five years of participation in the SOTA programme.

Myke Oldham G6DDQ, from Rossendale in Lancashire, has also achieved the coveted SOTA Mountain Goat award for attaining 1000 activator points. Myke began with an activation of Pen-y-ghent G/NP-010 in December 2002 and achieved 'MG' status with his 196th expedition - Stony Cove Pike G/LD-018 in September 2007.

Myke is well-known in SOTA circles for organising a series of successful SOTA Youth Hostel weekends.



Clifden 100 Year Celebration

On October 17th, 1907, **Guglielmo Marconi** sent his first commercial message from the then new station at Clifden, Ireland. In October, in celebration of this historic event, members of the **Galway Radio Experimenters Club** ran a special event station, **EI100MFT**. (MFT was the last callsign used on the original station). **Princess Electra Marconi** was present as she came to Clifden for the festival and brought with her an Exhibit from the Marconi Foundation in Bologna. The Galway Radio Experimenters Club also presented a display of vintage equipment.



Deputy RSGB Manager Needed

Can you help? A Deputy Regional Manager for District 132 (S.Nottingham/ South Derbyshire) is required. Anybody with a few hours to spare would be suitable, although they must reside within the District and must be an RSGB member. If you would like to apply, please contact the Regional Manager for Region 13, East Midlands **Jim Stevenson G0EJQ** on (01522) 806935 or E-mail: g0ejq@rsgb.org.uk

D-Star Repeater

A new D-Star repeater, GB7PI, located in North Hertfordshire, became operational on Monday, November 19th. The input is on 433.9125MHz and the output 439.9125MHz.

Keep it Safe

This gadget will keep your hand-held radio safe when you need to leave it unattended. The safe emits a piercing 90dB alarm even if anyone tries to move it. Invented in Australia following a spate of beach thefts, the **Yelpie** (www.yelpie.co.uk) is little bigger than a shoebox.

The Yelpie is large enough to hold your hand-held radio, wallet and even car keys. It's weather resistant, so is ideal for outdoor uses like the beach or camping but the Yelpie can be used indoors too. The lid is locked and opened via a clever keypad – which means the safe is keyless – and it is bolted in place by a powerful motor.

A sophisticated sensor detects even the slightest movement, yet is clever enough to ignore accidental bumps so false alarms are avoided. The 90dB alarm attracts attention quickly and keeps going while the safe is moved. Larger items can be secured to the Yelpie using the latch strap that's included. Priced at £49.99, the Yelpie Portable Safe is available from **Yelpie UK, KBF Enterprises Ltd, B54 The Ropeworks, 35 Little Peter Street, Manchester M15 4QJ**. Tel: 0161 236 1588.



Worked All Britain

The WAB Special Event Stations award will run from January 1st until December 31st each year. Only contacts with special event stations using a 'GB' prefix will be valid and a station may only be claimed once during each 12 month period for any particular endorsement. A certificate will be awarded for working/hearing 20 stations, with endorsements for each subsequent 20.

On working/hearing 100 stations, a further certificate will be awarded. In common with all WAB awards, this is open to s.w.l.s also.

The photograph shows **Kevin M0XLT** proudly showing off his Special Event Stations Award for Working 100 GB Stations in the year 2007, in fact, this is now endorsed for working 120 stations.

Full details of the award can be found at www.worked-all-britain.co.uk



Open Day Winner

Ray Owen 2E0RDO recently attended the Jaycee Electronics Open Day in Glenrothes, Scotland. Although travelling from Worktown on Tees – a 400 miles round trip – the day was certainly worthwhile. He was lucky enough to be the winner in the free raffle, going home with an Icom IC-E208 dual band f.m. transceiver.



Thanks to RAYNET

Maldon District Council Emergency Planning Officer and Essex Police Maldon Divisional Commander have expressed their sincere thanks to Essex RAYNET for their assistance during the expected flooding on November 8th/9th, 2007.

Essex RAYNET were placed on standby after alerts were received from the Environment Agency warning of potential flooding to low lying areas. It was from the Maldon District Emergency Planning Room that Essex RAYNET controllers deployed 18 operators to predetermined 'high risk' areas to monitor sea levels. Simplex v.h.f. communications were utilised to maintain an 'up to the minute' status on the flood situation.

For more information about Essex RAYNET, check out: www.essexraynet.co.uk



Log Periodic

MLP32	£119.95
* Frequency:100-1300MHz TX & RX	
* Boom:142cm Long Element 150cm	
* Gain 11-13 dB	
MLP62	£199.95
* Frequency:50-1300MHz TX & RX	
* Boom:200cm Long Element 300cm	
* Gain 10-12 dB	



AM-Pro Mobile HF Whips (with 3/8 base fitting)

AM-PRO 6 metre (Length 4.6' approx).....	£17.95
AM-PRO 10 metre (Length 7' approx).....	£17.95
AM-PRO 17 metre (Length 7' approx).....	£17.95
AM-PRO 20 metre (Length 7' approx).....	£17.95
AM-PRO 40 metre (Length 7' approx).....	£17.95
AM-PRO 80 metre (Length 7' approx).....	£19.95
AM-PRO 160 metre (Length 7' approx).....	£49.95
AM-PRO MB5 Multi band 10/15/20/40/80 can use 4 Bands at one time (Length 100").....	£69.95

Slim Jims

SJ-70 430-430MHz slimline design with PL259 connection. Length 1.00m with N-TYPE socket.....	£19.95
SJ-2 144-146MHz slimline design with PL259 connection. Length 2.00m with SO-239 socket.....	£24.95



VHF/UHF Mobile Antennas

MICRO MAG Dual band 2/70 antenna complete with 1" magnetic mount 5mtrs of mini coax terminated in BNC.....	£19.95
MR700 2m/70cm, 1/4 wave & 5/8, Gain 2m 0dB/3.0dB 70cm Length 20" 3/8 Fitting.....	£8.95
MR700S PL259 Fitting.....	£9.95
MR 777 2 Metre 70 cm 2.8 & 4.8 dBd Gain (5/8 & 2x5/8 wave) (Length 60") (3/8 fitting).....	£17.95
MR 777S (PL259 fitting).....	£19.95
MRQ525 2m/70cm, 1/4 wave & 5/8, Gain 2m 0.5dB/3.2dB 70cm Length 17" PL259 fitting commercial quality.....	£19.95
MRQ500 2m/70cm, 1/2 wave & 2x5/8, Gain 2m 3.2dB/5.8dB 70cm Length 38" PL259 fitting commercial quality.....	£24.95
MRQ750 2m/70cm, 6/8 wave & 3x5/8, Gain 2m 5.5dB/8.0dB 70cm Length 60" PL259 fitting commercial quality.....	£34.95
MRQ800 6/270cm 1/4 6/8 & 3 x 5/8, Gain 6m3.0dB/2m 5.0dB/70 7.5dB Length 60" PL259 fitting commercial quality.....	£39.95
GF151 Professional glass mount dual band antenna. Freq: 2/70 Gain: 2.9/4.3dB. Length: 31".....	£29.95



Rotative HF Dipoles

RDP-3B 10/15/20mtrs length 7.40m.....	£119.95
RDP-4 12/17/30mtrs length 10.50m.....	£119.95
RDP-40M 40mtrs length 11.20m.....	£169.95
RDP-6B 10/12/15/17/20/30mtrs boom length 1.00m.....	£239.95

Single Band Mobile Antennas

MR214 2 metre straight stainless 1/4 wave 3/8 fitting.....	£4.95
PL259 type.....	£5.95
MR214S-2 2 Metre stainless steel 1/4 wave with built in spring PL259 fitting.....	£12.95
MR258 2 Metre 5/8 wave 3.2 dBd Gain (3/8 fitting) (Length 58").....	£12.95
MR268S 2 Metre 5/8 wave 3.5dBd gain Length 51" S0239 fitting.....	£19.95
MR290 2 Metre (2 x 5/8 Gain: 7.0dBd) (Length: 100"). PL259 fitting, "the best it gets".....	£39.95
MR444S-2 4 Metre straight stainless 1/4 wave with spring and PL259 fitting.....	£14.95
MR625 6 Metre base loaded (1/4 wave) (Length: 50") commercial quality.....	£19.95
MR614 6 Metre loaded 1/4 wave (Length 56") (3/8 fitting).....	£14.95



Single Band End Fed Base Antennas

2 metre 1/2 wave (Length 52") (Gain 2.5dB) (Radial free).....	£24.95
4 metre 1/2 wave (Length 80") (Gain 2.5dB) (Radial free).....	£39.95
6 metre 1/2 wave (Length 120") (Gain 2.5dB) (Radial free).....	£44.95
6 metre 1/4 wave (Length 150") (Gain 4.5dB) (3 x 28" radials).....	£49.95

Vertical Fibreglass Co-Linear Antennas

New co-linear antennas with specially designed tubular vertical coils that now include wide band receive! Remember, all our co-linears come with high quality N-type connections.

SQBM105 Mk.2 Dual Bander Radial FREE!.....	£29.95
(2m 2.0dBd) (70cm 4.5dBd) (RX:25-2000 MHz) (Length 28")	
SQBM100 Mk.2 Dual Bander.....	£39.95
(2m 3dBd) (70cm 6dBd) (RX:25-2000 MHz) (Length 39")	
SQBM110 Mk.2 Dual Bander (Radial FREE!).....	£49.95
(2m 3dBd) (70cm 6dBd) (RX:25-2000 MHz) (Length 39")	
SQBM200 Mk.2 Dual Bander.....	£49.95
(2m 4.5dBd) (70cm 7.5dBd) (RX:25-2000 MHz) (Length 62")	
SQBM223Mk.2 Tri Bander.....	£59.95
(2m 4.5dBd) (70cm 7.5dBd) (23cm 12.5dBd) (RX 25-2000MHz) Length: 62"	
SQBM500 Mk.2 Dual Bander Super Gainer.....	£64.95
(2m 6.8dBd) (70cm 9.2dBd) (RX:25-2000 MHz) (Length 100")	
SQBM800 Mk.2 Dual Bander Ultimate Gainer.....	£119.95
(2m 8.5dBd) (70cm 12.5dBd) (RX:25-2000 MHz) (Length 5.2m)	
SQBM1000 Mk.2 Tri Bander.....	£69.95
(6m 3.0dBd) (2m 6.2dBd) (70cm 8.4dBd) (RX:25-2000 MHz) (Length 100")	



Single Band Vertical Co-Linear Base Antenna

BM33 70 cm 2 X 5/8 wave Length 39" 7.0 dBd Gain.....	£34.95
BM45 70cm 3 X 5/8 wave Length 62" 8.5 dBd Gain.....	£49.95
BM55 70cm 4 X 5/8 wave Length 100" 10 dBd Gain.....	£69.95
BM60 2mtr5/8 Wave, Length 62", 5.5dBd Gain.....	£49.95
BM65 2mtr 2 X 5/8 Wave, Length 100", 8.0dBd Gain.....	£69.95
BM75 2mtr 2 X 5/8 Wave, Length 175", 9.5dBd Gain.....	£89.95

MFJ Products

See our website for full details.

Automatic Tuners	
MFJ-991 1.8-30MHz 150W SSB/100W CW ATU.....	£199.95
MFJ-993 1.8-30MHz 300W SSB/150W CW ATU.....	£189.95
MFJ-994 1.8-30MHz 600W SSB/300W CW ATU.....	£319.95
Manual Tuners	
MFJ-16010 1.8-30MHz 20W random wire tuner.....	£49.95
MFJ-902 3.5-30MHz 150W mini travel tuner.....	£65.95
MFJ-902H 3.5-30MHz 150W mini travel tuner with 4:1 balun.....	£109.95
MFJ-904 3.5-30MHz 150W mini travel tuner with SWR/PWR.....	£109.95
MFJ-904H 3.5-30MHz 150W mini travel tuner with SWR/PWR 4:1 balun.....	£129.95
MFJ-901B 1.8-30MHz 200W Versa tuner.....	£74.95
MFJ-971 1.8-30MHz 300W portable tuner.....	£79.95
MFJ-945E 1.8-54MHz 300W tuner with meter.....	£89.95
MFJ-941E 1.8-30MHz 300W Versa tuner 2.....	£99.95
MFJ-948 1.8-30MHz 300W deluxe Versa tuner.....	£129.95
MFJ-949E 1.8-30MHz 300W deluxe Versa tuner with DL.....	£124.95
MFJ-934 1.8-30MHz 300W tuner complete with artificial GND.....	£179.95
MFJ-974B 3.6-54MHz 300W tuner with X-needle SWR/WATT.....	£169.95
MFJ-969 1.8-54MHz 300W all band tuner.....	£149.95
MFJ-962D 1.8-30MHz 1500W high power tuner.....	£249.95
MFJ-986 1.8-30MHz 300W high power differential tuner.....	£299.95
MFJ-989D 1.8-30MHz 1500W high power roller tuner.....	£329.95
MFJ-976 1.8-30MHz 1500W balanced line tuner with X-needle SWR/WATT meter.....	£429.95



HB9CV 2 Element Beam 3.5dBd

HB9-70 70cm (Boom 12").....	£19.95
HB-2 2 metre (Boom 20").....	£24.95
HB9-4 4 metre (Boom 23").....	£34.95
HB9-6 6 metre (Boom 33").....	£44.95
HB9-10 10 metre (Boom 52").....	£69.95
HB9-627 6/2/70 Triband.....	£64.95



Halo Loops

HLP-2 2 metre (size approx 300mm square).....	£14.95
HLP-4 4 metre (size approx 600mm square).....	£24.95
HLP-6 6 metre (size approx 800mm square).....	£29.95

These very popular antennas square folded di-pole type antennas



G5RV Inductors

Convert your half size G5RV into a full size with just 8ft either side. Ideal for the small garden

G5RV-IND	£19.95
-----------------------	---------------



Crossed Yagi Beams (fittings stainless steel)

XYG5-2 2 metre 5 Element (Boom 48") (Gain 7.5dBd).....	£89.95
XYG8-2 2 metre 8 Element (Boom 126") (Gain 11.5dBd).....	£109.95
XYG13-70 70 cm 13 Element (Boom 83") (Gain 12.5dBd).....	£79.95



Yagi Beams (fittings stainless steel)

YG4-2C 2 metre 4 Element (Boom 48") (Gain 7dBd).....	£29.95
YG5-2 2 metre 5 Element (Boom 63") (Gain 10dBd).....	£49.95
YG8-2 2 metre 8 Element (Boom 125") (Gain 12dBd).....	£69.95
YG11-2 2 metre 11 Element (Boom 185") (Gain 13dBd).....	£99.95
YG3-4 4 metre 3 Element (Boom 45") (Gain 8dBd).....	£59.95
YG5-4 4 metre 5 Element (Boom 128") (Gain 10dBd).....	£69.95
YG3-6 6 metre 3 Element (Boom 72") (Gain 7.5dBd).....	£64.95
YG5-6 6 metre 5 Element (Boom 142") (Gain 9.5dBd).....	£84.95
YG13-70 70 cm 13 Element (Boom 76") (Gain 12.5dBd).....	£49.95



ZL Special Yagi Beams (Fittings stainless steel)

2 metre 5 Element (Boom 38") (Gain 9.5dBd).....	£39.95
2 metre 7 Element (Boom 60") (Gain 12dBd).....	£49.95
2 metre 12 Element (Boom 126") (Gain 14dBd).....	£84.95
70 cm 7 Element (Boom 28") (Gain 11.5dBd).....	£34.95
70 cm 12 Element (Boom 48") (Gain 14dBd).....	£49.95



The biggest advantage with a ZL-special is that you get massive gain for such a small boom length, making it our most popular beam antenna

G5RV Wire Antenna (10-40/80m) (Fittings stainless steel)

Standard (enamelled).....	HALF	FULL
Hard Drawn (pre-stretched).....	£19.95	£22.95
Flex Weave (original high quality).....	£24.95	£27.95
Flexweave PVC (clear coated PVC).....	£29.95	£34.95
Deluxe 450 ohm PVC	£34.95	£39.95
Double size standard (204ft).....	£44.95	£49.95
TS1 Stainless Steel Tension Springs (pair) for G5RV.....	£19.95	



Reinforced Hardened Fibreglass Masts (GRP)

GRP-125 ★ Length: 2m ★ Size: 30mm OD Grade: 2mm.....	£14.95
GRP-150 ★ Length: 2m ★ Size: 37mm OD Grade: 2mm.....	£19.95
GRP-175 ★ Length: 2m ★ Size: 44mm OD Grade: 2mm.....	£24.95
GRP-200 ★ Length: 2m ★ Size: 51mm OD Grade: 2mm.....	£29.95

Portable Telescopic Masts

LMA-S Length 17.6ft open 4ft closed 2-1" diameter.....	£79.95
LMA-M Length 26ft open 5.5ft closed 2-1" diameter.....	£89.95
LMA-L Length 33ft open 7.2ft closed 2-1" diameter.....	£99.95
TRIPOD-P Lightweight aluminium tripod for all above.....	£39.95

5ft Poles Heavy Duty (Swaged)

20ft Heavy Duty Swaged Pole Set These heavy duty aluminium (1.8mm wall) have a lovely push fit finish to give a very strong mast set	
1.25" set of four 5ft sections.....	£29.95
1.50" set of four 5ft sections.....	£39.95
1.75" set of four 5ft sections.....	£49.95
2.00" set of four 5ft sections.....	£59.95



Mini HF Dipoles (Length 11' approx)

MD020 20mt version approx only 11ft.....	£39.95
MD040 40mt version approx only 11ft.....	£44.95
MD080 80mt version approx only 11ft.....	£49.95



CHECK ON-LINE FOR ALL UPDATES, NEW PRODUCTS & SPECIAL OFFERS

www.moonrakerukltd.com

★ Postage is a maximum of £7.00 on all orders ★
(UK mainland only)

Connectors & Adapters

PL259/9 plug (Large entry)	£0.75
PL259/9C (Large entry) compression type fit	£1.95
PL259 Reducer (For PL259/9 to conv to PL259/6)	£0.25
PL259/6 plug (Small entry)	£0.75
PL259/6C (Small entry) compression type fit	£1.95
PL259/7 plug (For mini 8 cable)	£1.00
BNC Screw type plug (Small entry)	£1.25
BNC Solder type plug (Small entry)	£1.25
BNC Solder type plug (Large entry)	£3.00
N-Type plug (Small entry)	£3.00
N-Type plug (Large entry)	£3.00
PL259 Chassis socket (Round)	£1.00
PL259 Chassis socket (Square)	£1.00
N-Type Chassis socket (Round)	£3.00
N-Type Chassis socket (Square)	£3.00
PL259 Double female adapter	£1.00
PL259 Double male adapter	£1.00
N-Type Double female	£2.50
PL259 to BNC adapter	£2.00
PL259 to N-Type adapter	£3.00
PL259 to PL259 adapter (Right angle)	£2.50
PL259 2-Piece adapter (2xPL 1XSO)	£3.00
N-Type to PL259 adapter (Female to male)	£3.00
BNC to PL259 adapter (Female to male)	£2.00
BNC to N-Type adapter (Female to male)	£3.00
BNC to N-Type adapter (Male to female)	£2.50
SMA to BNC adapter (Male to female)	£3.95
SMA to PL259 adapter (Male to PL259)	£3.95
PL259 to 3/8 adapter (For antennas)	£3.95
3/8 Whip stud (For 2.5mm whips)	£2.95

Please add just £2.00 P&P for connector only orders

PLEASE PHONE FOR LARGE CONNECTOR ORDER DISCOUNTS

Mounting Hardware (All galvanised)

Tripod-2 (free standing with 2-OD for use with 2" joiner or 1.5" pole inside)	£69.95
Tripod-3 (free standing with 3" OD for use with 2.5" pole inside)	£79.95
6" Stand Off Bracket (complete with U Bolts)	£6.00
9" Stand off bracket (complete with U Bolts)	£9.00
12" Stand off bracket (complete with U Bolts)	£12.00
12" T & K Bracket (complete with U Bolts)	£17.95
18" T & K Bracket (complete with U Bolts)	£19.95
24" T & K Bracket (complete with U Bolts)	£24.95
36" T & K Bracket (complete with U Bolts)	£39.95
Single chimney lashing kit (suitable up to 2 mast)	£14.95
Double chimney lashing kit (suitable up to 2 mast)	£19.95
3-Way Pole Spider for Guy Rope/wire	£3.95
4-Way Pole Spider for Guy Rope/wire	£4.95
Mast Sleeve/Joiner (for 1" pole)	£6.95
Mast Sleeve/Joiner (for 1.25" pole)	£7.95
Mast Sleeve/Joiner (for 1.5" pole)	£11.95
Mast Sleeve/Joiner (for 2" pole)	£13.95
Earth rod including clamp (copper plated)	£9.95
Earth rod including clamp (solid copper)	£19.95
Pole to pole clamp 2"-2"	£4.95
Di-pole centre (for wire)	£4.95
Di-pole centre (for aluminium rod)	£4.95
Di-pole centre (for wire but with an PL259 socket)	£6.95
Dog bone insulator	£1.00
Dog bone insulator heavy duty	£1.50
Dog bone (ceramic type)	£1.50
EGG-S (small porcelain egg insulator)	£1.95
EGG-M (medium porcelain egg insulator)	£2.50
EGG-XL (extra large porcelain egg insulator)	£5.95
CAR PLATE (drive on plate to suit 1.5 to 2" mast/pole)	£19.95
PULLEY-2 (Heavy duty adjustable pulley wheel)	£19.95

Cable & Coax Cable

RG58 best quality standard per mt	35p
RG58 best quality military spec per mt	60p
RGMini 8 best quality military spec per mt	70p
RG213 best quality military spec per mt	£1.00
H100 best quality military coax cable per mt	£1.25
3-core rotator cable per mt	45p
7-core rotator cable per mt	£1.00
10 amp red/black cable 10 amp per mt	40p
20 amp red/black cable 20 amp per mt	75p
30 amp red/black cable 30 amp per mt	£1.25

Please phone for special 100 metre discounted price

Baluns

MB-1 1:1 Balun 400 watts power	£24.95
MB-4 4:1 Balun 400 watts power	£24.95
MB-6 6:1 Balun 400 watts power	£24.95
MB-1X 1:1 Balun 1000 watts power	£29.95
MB-4X 4:1 Balun 1000 watts power	£29.95
MB-6X 6:1 Balun 1000 watts power	£29.95
MB-Y2 Yagi Balun 1.5 to 50MHz 1kW	£24.95

Duplexers & Antenna Switches

DX-720D Duplexer *Port 1: HF + 6 + 2m (1.6-150MHz). *Port 2: 70cm (400-460MHz). *Connection: Fixed 2 x PL259 & 1 x PL259	£19.95
MX-72 Duplexer *Same spec as DX-720D but with PL259 fly leads	£29.95
MX-627 HF/VHF/UHF internal Tri-plexer (1.6-60MHz) (110-170MHz) (300-950MHz)	£39.95
CS201 Two-way di-cast antenna switch. Freq: 0-1000MHz max 2,500 watts PL259 fittings	£14.95
CS201-N Same spec as CS201 but with N-type fittings	£19.95
CS401 Same spec as CS201 but 4-way	£39.95
CS401N Same spec as CS401 but with N-type fittings	£49.95

Antennas Rotators

AR-300XL Light duty UHF/VHF	£49.95
RC5-1 Heavy duty HF	£339.95
RC5-3 Heavy Duty HF inc pre set control box	£419.95
AR26 Alignment Bearing for the AR300XL	£18.95
RC26 Alignment Bearing for RC5-1/3	£49.95
RC5A-3 Serious heavy duty HF	£579.95

Complete Mobile Mounts

All mounts come complete with 4m RG58 coax terminated in PL259 (different fittings available on request).

3.5" Pigmy magnetic 3/8 fitting	£7.95
3.5" Pigmy magnetic PL259 fitting	£9.95
5" Limpet magnetic 3/8 fitting	£9.95
5" Limpet magnetic PL259 fitting	£12.95
7" Turbo magnetic 3/8 fitting	£12.95
7" Turbo magnetic PL259 fitting	£14.95
Tri-Mag magnetic 3 x 5" 3/8 fitting	£29.95
Tri-Mag magnetic 3 x 5" PL259 fitting	£29.95
HKITHD-38 Heavy duty adjustable 3/8 hatch back mount	£29.95
HKITHD-SO Heavy duty adjustable SO hatch back mount	£29.95
RK1T-38 Aluminium 3/8 rail mount to suit 1" roof bar or pole	£12.95
RK1T-SO Aluminium SO rail mount to suit 1" roof bar or pole	£14.95
RK1T-PR Stainless PL259 rail kit to suit 1" roof bar or pole	£24.95
PBK1T-SO Right angle PL259 pole kit with 10m cable/PL259 (ideal for mounting mobile antennas to a 1.25" pole)	£19.95

Antenna Wire & Ribbon

Enamelled copper wire 16 gauge (50mtrs)	£17.95
Hard Drawn copper wire 16 gauge (50mtrs)	£19.95
Equipment wire Multi Stranded (50mtrs)	£14.95
Flexweave high quality (50mtrs)	£27.95
PVC Coated Flexweave high quality (50mtrs)	£37.95
300Ω Ladder Ribbon heavy duty USA imported (20mtrs)	£14.95
450Ω Ladder Ribbon heavy duty USA imported (20mtrs)	£17.95

Miscellaneous Items

CDX Lightning arrestor 500 watts	£19.95
MDX Lightning arrestor 1000 watts	£24.95
AKD TV1 filter	£9.95
Amalgamating tape (10mtrs)	£7.50
Desoldering pump	£2.99
Alignment 5pc kit	£1.99

Telescopic Masts (aluminium/fibreglass opt)

TMA-1 Aluminium mast ★ 4 sections 170cm each ★ 45mm to 30mm ★ Approx 20ft erect 6ft collapsed	£99.95
TMA-2 Aluminium mast ★ 8 sections 170cm each ★ 65mm to 30mm ★ Approx 40ft erect 6ft collapsed	£189.95
TMF-1 Fibreglass mast ★ 4 sections 160cm each ★ 50mm to 30mm ★ Approx 20ft erect 6ft collapsed	£99.95
TMF-1.5 Fibreglass mast ★ 5 sections 200cm each ★ 60mm to 30mm ★ Approx 30ft erect 8ft collapsed	£179.95
TMF-2 Fibreglass mast ★ 5 sections 240cm each ★ 60mm to 30mm ★ Approx 40ft erect 9ft collapsed	£189.95

HF Yagi

HBV-2 2 BAND 2 ELEMENT TRAPPED BEAM
FREQ:20-40 Mtrs GAIN:4dBd BOOM:5.00m
LONGEST ELEMENT:13.00m POWER:1600
Watts

£399.95

ADEX-3300 3 BAND 3 ELEMENT TRAPPED
BEAM
FREQ:10-15-20 Mtrs GAIN:8 dBd
BOOM:4.42m LONGEST ELE:8.46m
POWER:2000 Watts

£329.95

ADEX-6400 6 BAND 4 ELEMENT TRAPPED
BEAM FREQ:10-12-15-17-20-30 Mtrs GAIN:7.5
dBd BOOM:4.27m LONGEST ELE:10.00m
POWER:2000 Watts

£599.95

40 Mtr RADIAL KIT FOR ABOVE

£99.00

Trapped Wire Di-Pole Antennas (Hi grade heavy duty Commercial Antennas)

MTD-6 FREQ:40 & 160m LENGTH: 28m POWER:1000 Watts	£59.95
MTD-1 (3 BAND) FREQ:10-15-20 Mtrs LENGTH:7.40 Mtrs POWER:1000 Watts	£49.95
MTD-2 (2 BAND) FREQ:40-80 Mtrs LENGTH: 20Mtrs POWER:1000 Watts	£59.95
MTD-3 (3 BAND) FREQ:40-80-160 Mtrs LENGTH: 32.5m POWER: 1000 Watts	£99.95
MTD-4 (3 BAND) FREQ: 12-17-30 Mtrs LENGTH: 10.5m POWER: 1000 Watts	£49.95
MTD-5 (5 BAND) FREQ: 10-15-20-40-80 Mtrs LENGTH: 20m POWER:1000 Watts	£89.95

(MTD-5 is a crossed di-pole with 4 legs)

"NEW" M-100 Professional 24-2300MHz Pre-amplifier



This is brand new M-100 Professional GaAs FET Pre-amplifier uses the most upto date and advanced technology. With variable gain control and band pass filters to minimize interference, just connect between your radio and antenna for amazing results!

SPECIFICATION:

- Frequency: Band A:225-1500MHz Band B:108-185MHz Band C: 24-2300MHz
- Gain: -10 to +22dB
- Impedance: 50 Ohms
- Weight: 100g
- Size: 100 x 53 x 38mm
- Power: 9v battery (PP3) or 12v DC supply

Just £69.95
plus £5.00p+p



Callers welcome. Opening times: Mon-Fri 9-6pm sales@moonrakerukltd.com
CRANFIELD ROAD, WOBURN SANDS, BUCKS MK17 8UR

HF Verticals

VR3000 3 BAND VERTICAL FREQ: 10-15-20 Mtrs
GAIN: 3.5dBi HEIGHT: 3.80m POWER: 2000 Watts (without radials) POWER: 500 Watts (with optional radials).....**£99.95**
OPTIONAL 10-15-20mtr radial kit.....**£39.95**

EVX4000 4 BAND VERTICAL FREQ:10-15-20-40 Mtrs
GAIN: 3.5dBi HEIGHT: 6.50m POWER: 2000 Watts (without radials) POWER: 500 Watts (with optional radials).....**£119.95**
OPTIONAL 10-15-20mtr radial kit.....**£39.95**
OPTIONAL 40mtr radial kit.....**£14.95**

EVX5000 5 BAND VERTICAL FREQ:10-15-20-40-80 Mtrs
GAIN: 3.5dBi HEIGHT: 7.30m POWER: 2000 Watts (without radials) POWER: 500 Watts (with optional radials).....**£169.95**
OPTIONAL 10-15-20mtr radial kit.....**£39.95**
OPTIONAL 40mtr radial kit.....**£14.95**
OPTIONAL 80mtr radial kit.....**£16.95**

EVX6000 6 BAND VERTICAL FREQ: 10-15-20-30-40-80 Mtrs
GAIN: 3.5dBi HEIGHT: 7.30m POWER: 2000 Watts (without radials) POWER: 500 Watts (with optional radials).....**£299.95**

EVX8000 8 BAND VERTICAL FREQ:10-12-15-17-20-30-40 Mtrs (80m optional) GAIN: 3.5dBi HEIGHT: 4.90m RADIAL LENGTH: 1.80m (included) POWER: 2000 Watts.....**£319.95**
80 MTR RADIAL KIT FOR ABOVE.....**£89.00**

(All verticals require grounding if optional radials are not purchased to obtain a good VSWR)

Scanner Discone Antennas

DISCONE ★ Type: Ali ★ Freq: 25-1300Mhz
★ Length: 100cm ★ Socket: PL259.....**£29.95**

SUPER DISCONE ★ Type: Ali ★ Freq: 25-2000Mhz ★ Length: 140cm ★ Socket: PL259
★ Gain: 3dB.....**£39.95**

HF DISCONE ★ Type: Ali ★ Freq: 0.5-2000Mhz
★ Length: 185cm ★ Socket: PL259
★ Gain: 1.5dB.....**£49.95**

ROYAL DISCONE 2000 ★ Type: Stainless
★ Freq: RX: 25-2000Mhz Freq: TX 6/2&70cm+ ★ Length: 155cm
★ Socket: N-Type ★ Gain: 4.5dB.....**£49.95**

ROYAL DOUBLE DISCONE 2000 ★ Type: Stainless ★ Freq RX: 25-2000Mhz Freq: TX 2&70cm ★ Length: 150cm ★ Socket: N-Type
★ Gain: 5.5dB.....**£59.95**

Scanner Mobile Antennas

G.SCAN II ★ Type: Twin coil ★ Freq: 25-2000Mhz
★ Length: 65cm ★ Base: Magnetic/Cable/BNC.....**£24.95**

SKYSCAN MOBILE ★ Type: Multi whip
★ Freq: 25-2000Mhz ★ Length: 65cm
★ Base: Magnetic/Cable/BNC.....**£19.95**

Scanner Portable/Indoor Antennas

SKYSCAN DESKTOP ★ Type: Discone style
★ Freq: 25-2000Mhz ★ Length: 90cm
★ Cable: 4m with BNC.....**£49.95**

Tri-SCAN 3 ★ Type: Triple Coil ★ Freq: 25-2000Mhz
★ Length: 90cm ★ Cable: 4m with BNC.....**£39.95**

Scanner Hand-held Antennas

Going out? Don't miss out! Get a super Gainer!
p+p just £2.00

MRW-100 SUPER GAINER ★ Freq: 25-1800Mhz ★ Length: 40cm ★ Fitting: BNC.....**£19.95**

MRW-210 SUPER GAINER ★ Freq: 25-1800Mhz ★ Length: 40cm ★ Fitting: SMA.....**£19.95**

Scanner Fibreglass Vertical Antennas

SSS-MK1 Freq: 0-2000Mhz RX ★ Length: 100cm ★ Socket: PL259.....**£29.95**
SSS-MK2 Freq: 0-2000Mhz RX ★ Length: 150cm ★ Socket: PL259
★ Gain: 3dB over SSS-1.....**£39.95**

Scanner Preamplifier

A great pre-amp at an incredible new low price!

MRP-2000 Mk2 ★ Active wideband pre-amp
★ Freq: 25-2000Mhz
★ Gain: 6-20dB ★ Power: 9-15v (battery not included) ★ Lead: 1m with BNC.....**£29.95**
M-100 ★ Professional 24-2300Mhz pre-amp ★ Freq: Band A: 225-1500Mhz Band B: 108-185Mhz Band C: 24-2300Mhz ★ Gain: -10 to +22dB ★ Impedance: 50 Ohms.....**£69.95**

Guy Rope 30 metres

MGR-3 3mm (maximum load 250 kgs).....**£6.95**
MGR-4 4mm (maximum load 380 kgs).....**£14.95**
MGR-6 6mm (maximum load 620 kgs).....**£29.95**

Hand-held VHF/UHF Antennas

Postage on all handies just £2.00

MRW-300 ★ Type: Helical rubber duck ★ Freq TX: 2&70 RX: 25-1800Mhz ★ Power: 10w ★ Length: 21cm
★ Connection: SMA.....**£12.95**

MRW-310 ★ Type: Helical rubber duck ★ Freq TX: 2&70 RX: 25-1800Mhz ★ Power: 10w ★ Length: 40cm ★ Connection: BNC Gain: 2.15dBi.....**£14.95**

MRW-200 ★ Type: Helical rubber duck ★ Freq TX: 2&70 RX: 25-1800Mhz ★ Power: 10w ★ Length: 21cm ★ Connection: SMA.....**£16.95**

MRW-205 ★ Type: Helical rubber duck ★ Freq TX: 2&70 RX: 25-1800Mhz ★ Power: 10w ★ Length: 40cm ★ Connection: BNC Gain: 2.15dBi.....**£19.95**

MRW-222 SUPER ROD ★ Type: Telescopic whip ★ Freq TX: 2&70 RX: 25-1800Mhz ★ Power: 20w ★ Length: 23-91cm
★ Connection: BNC ★ Gain: 2m 3.0dB 70cm 5.5dB
★ DX Performance.....**£24.95**

Hand-held HF Antennas

Postage on all handies just £2.00

MRW-HF6 ★ Type: Telescopic Whip ★ Freq: TX: 6m RX: 6-70cm ★ Power: 50 Watts ★ Length: 135cm
★ Connection: BNC.....**£19.95**

MRW-HF10 ★ Type: Telescopic Whip ★ Freq: TX: 10m RX: 10-4m ★ Power: 50 Watts ★ Length: 135cm
★ Connection: BNC.....**£19.95**

MRW-HF15 ★ Type: Telescopic Whip ★ Freq: TX: 15m RX: 15-6m ★ Power: 50 Watts ★ Length: 135cm
★ Connection: BNC.....**£19.95**

MRW-HF20 ★ Type: Telescopic Whip ★ Freq TX: 20m RX: 20-6m ★ Power: 50w ★ Length: 135cm ★ Connection: BNC.....**£22.95**

MRW-HF40 ★ Type: Telescopic Whip ★ Freq TX: 40m RX: 40-10m ★ Power: 50w ★ Length: 140cm ★ Connection: BNC.....**£22.95**

MRW-HF80 ★ Type: Telescopic Whip ★ Freq TX: 20m RX: 80-10m ★ Power: 50w ★ Length: 145cm ★ Connection: BNC.....**£24.95**

100m Cable Bargains

RG58 Standard 6mm coax cable.....**£24.95**

RG58M Military spec 6mm coax cable.....**£39.95**

RGMINI8 Military spec 7mm coax cable.....**£54.95**

RG213 Military spec 9mm coax cable.....**£84.95**

RH100 Military spec 9mm coax cable.....**£99.95**

FLEXWEAVE Original antenna wire.....**£49.95**

PVC FLEXWEAVE Original pvc coated antenna wire.....**£69.95**

300 Ribbon cable USA imported.....**£59.95**

450Ω Ribbon cable USA imported.....**£69.95**

Books

UKSCAN-B The 9th Edition UK Scanning Directory A must have publication!.....**£19.50**

LOGBB-B Base log book for licensed amateurs.....**£4.95**

LOGBM-B Mobile/Portable log book for licensed amateurs.....**£4.95**

Patch Leads

STANDARD LEADS

1m RG58 PL259 to PL259 lead.....**£3.95**

10m RG58 PL259 to PL259 lead.....**£7.95**

30m RG58 PL259 to PL259 lead.....**£14.95**

MILITARY SPECIFICATION LEADS

1m RG58 Mil spec PL259 to PL259 lead.....**£4.95**

10m RG58 Mil spec PL259 to PL259 lead.....**£10.95**

30m RG58 Mil spec PL259 to PL259 lead.....**£24.95**

1m RG213 Mil spec PL259 to PL259 lead.....**£4.95**

10m RG213 Mil spec PL259 to PL259 lead.....**£14.95**

30m RG213 Mil spec PL259 to PL259 lead.....**£34.95**

1m H100 Mil spec PL259 to PL259 lead.....**£5.95**

10m H100 Mil spec PL259 to PL259 lead.....**£19.95**

30m H100 Mil spec PL259 to PL259 lead.....**£44.95**

(All other leads and lengths available, ie. BNC to N-type, etc. Please phone for details)

ATOM Single Band Mobile Antennas

New low profile, high quality mobiles that really work!

ATOM-6 ★ Freq: 6m ★ Length: 130cm ★ Power: 200W
★ Fitting: 3/8.....**£22.95**

ATOM-6S ★ Freq: 6m ★ Length: 130cm ★ Power: 200W
★ Fitting: PL259.....**£24.95**

ATOM-10 ★ Freq: 10m ★ Length: 130cm ★ Power: 200W
★ Fitting: 3/8.....**£22.95**

ATOM-10S ★ Freq: 10m ★ Length: 130cm ★ Power: 200W
★ Fitting: PL259.....**£24.95**

ATOM-15 ★ Freq: 15m ★ Length: 130cm ★ Power: 200W
★ Fitting: 3/8.....**£22.95**

ATOM-15S ★ Freq: 15m ★ Length: 130cm ★ Power: 200W
★ Fitting: PL259.....**£24.95**

ATOM-20 ★ Freq: 20m ★ Length: 130cm ★ Power: 200W
★ Fitting: 3/8.....**£22.95**

ATOM-20S ★ Freq: 20m ★ Length: 130cm ★ Power: 200W
★ Fitting: PL259.....**£24.95**

ATOM-40 ★ Freq: 40m ★ Length: 130cm ★ Power: 200W
★ Fitting: 3/8.....**£24.95**

ATOM-40S ★ Freq: 40m ★ Length: 130cm ★ Power: 200W
★ Fitting: PL259.....**£26.95**

ATOM-80 ★ Freq: 80m ★ Length: 130cm ★ Power: 200W
★ Fitting: 3/8.....**£27.95**

ATOM-80S ★ Freq: 80m ★ Length: 130cm ★ Power: 200W
★ Fitting: PL259.....**£29.95**

ATOM Multiband Mobile Antennas

ATOM-AT4 ★ Freq: 10/6/2/70cm ★ Gain: (2m 1.8dBd) (70cm 3.5dBd) ★ Length: 132cm ★ Power: 200w (2/70cm) 120w (10/6m) ★ Fitting: PL259.....New low price **£49.95**

ATOM-AT5 ★ Freq: 40/15/6/2/70cm ★ Gain: (2m 1.5dBd) (70cm 3.5dBd) ★ Length: 129cm ★ Power: 200w (2/70cm) 120w (40/6m) ★ Fitting: PL259.....New low price **£59.95**

ATOM-AT7 ★ Freq: 40/20/15/10/6/2/70cm (5 bands at once) ★ Gain: (2m 1.8dBd) (70cm 3.5dBd) ★ Length: 200cm ★ Power: 200w (2/70cm) 120w (40/6m) ★ Fitting: PL259.....New low price **£69.95**

SPX Multiband Mobile Antennas

All these antennas have a unique flyleaf & socket to make band changing easy! Just plug-n' go!

SPX-100 ★ Portable 9 Band Plug n' Go HF mobile antenna ★ Freq: 6/10/12/15/17/20/30/40/80m ★ Length: 1.65m retractable to 0.5m ★ Power: 50w ★ Fitting: 3/8 or PL259 with adapter included.....**£44.95**

SPX-200S ★ Mobile 6 band Plug n' Go HF mobile antenna ★ Freq: 6/10/15/20/40/80 ★ Length: 130cm ★ Power: 120w ★ Fitting: PL259.....**£49.95**

SPX-300 ★ Mobile 9 band Plug n' Go HF mobile antenna ★ Freq: 6/10/12/15/17/20/30/40/80m ★ Length: 165cm ★ Power: 200w ★ Fitting: 3/8 Thread.....**£59.95**

SPX-300S ★ Mobile 9 band Plug n' Go HF mobile antenna ★ Freq: 6/10/12/15/17/20/30/40/80m ★ Length: 165cm ★ Power: 200w ★ Fitting: PL259.....**£64.95**

Mobile Colinear Antennas

Ever wanted colinear performance from your mobile?

MR3-POWER ROD ★ Freq: 2/70cm ★ Gain: 3.5/6.5dBd
★ Length: 100cm ★ Fitting: PL259.....**£29.95**

MR2-POWER ROD ★ Freq: 2/70cm ★ Gain: 2.0/3.5dBd
★ Length: 50cm ★ Fitting: PL259.....**£24.95**

CALL MAIL ORDER 01908 281705

Opening times: Mon-Fri 9-6pm sales@moonrakerukltd.com

**UNIT 12, CRANFIELD ROAD UNITS, CRANFIELD ROAD
WOBURN SANDS, BUCKS MK17 8UR**





rallies

Radio rallies are held throughout the UK. They're hard work to organise so visit one soon and support your clubs and organisations.

Send all your rally info to:

PW Publishing Ltd.,
Arrowsmith Court,
Station Approach,
Broadstone,
Dorset BH18 8PW
E-mail: pwnews@pwpublishing.ltd.uk

January 27th

Horncastle Winter Rally

Contact: Tony Nightingale
Tel: (01507) 527835
E-mail: G3ZPU@hotmail.com

The Horncastle Winter Rally will be held at the Horncastle Youth Centre, Willow Row, Horncastle LN9 6DZ. Tables cost £5 and entry for visitors is £1. The venue is all on one level, making access easier for disabled visitors. Usual refreshments will be available, including hot bacon butties. Doors open 10.30am.

February 3rd

RadioActive Rally

Contact: Roger Reeves M0ROJ
Tel: (01829) 771440
E-mail: info@RadioActiveShow.co.uk
Website: www.RadioActiveShow.co.uk

The RadioActive Rally will be held at Civic Hall, Nantwich Town Centre, Cheshire CW5 5DG. Doors will open at 10.30am and admission will be £3 (under 16 free). There will be over 100 trade stands and covered flea market, a Bring & Buy, Special Interest Groups, talks and demonstrations, a licensed bar and restaurant and disabled facilities.

South Essex ARS Rally

Contact: Ken G0BBN
Tel: (01842) 861089
E-mail: Hendryken@aol.com

The South Essex Amateur Radio Society Rally will be held at *Paddocks*, Long Road, Canvey Island, Essex SS8 0JA. There will be free car parking with a disabled persons' area at the front. Admission is £2 and doors open at 10.30am. There will be trade and club stands, home made catering and a 'Rent-a-table' option for private sellers (£3.50/hr)

February 8th - 10th

Orlando Hamcation

E-mail: hamcation@oarc.org
Website: www.hamcation.com

Orlando Hamcation takes place in the Central Florida Fairgrounds, Orlando, Florida, USA. They have a mix of traders, boot sale and flea market traders. They also have classes for the ladies in case they don't wish to walk around all the radio bits! Tickets cost \$10 for the three days and parking is free.

February 10th

Harwell Radio & Computer Rally

Contact: Ann Stevens
Tel: (01235) 816379
E-mail: Ann.Stevens@btinternet.com
Website: <http://www.ntay.com/hars/rally.html>

The Harwell Radio & Computer Rally will be held in the Didcot Leisure Centre, Mereland Road, Didcot, Oxon OX11 8AY. This rally has been going for 12 years and they have moved accommodation four times! They now seem settled in the Didcot Leisure Centre where they enjoy warm, comfortable accommodation - essential for a rally run in February! Last year the number of people attending was up by 12% on the previous year and they hope

that this trend will continue. They have the advantage of running their rally at the beginning of the season and also of being very centrally situated near good road systems - midway between the M4 and M40 and 3 miles off the A34 halfway between Oxford and Newbury. The rally still consists of about 70% radio stalls, which attracts lots of visitors. They also have an RSGB stall, Special Interest Groups, computer stalls, a small selection of craft stalls, a bar and homemade refreshments at very competitive prices - indeed some traders only come if Sarah's homemade chocolate cake is on the menu!

17th Northern Cross Rally

Contact: John G7JTH
Tel: (01924) 251822
E-mail: g7jth@wdrs.org.uk
Website: northerncrossrally.org

The Wakefield and District Radio Society are holding their Northern Cross Rally at Thornes Park Athletic Stadium on the A642 Horbury Road, Wakefield WF2 8TY. The dealers are on the ground floor and there is good disabled access. The Bring & Buy has booking-in from 10.15am. Doors open from 10.30am with disabled access from 10.15am. There will be ample parking on site and admission is £3.

February 24th

Bredhurst R&TS Radio Rally

Contact: Owen Wheeler G0NCE
Tel: (01634) 254420
E-mail: O.wheeler@btpopenworld.com

The Bredhurst Receiving & Transmitting Society Radio Rally will be held at Rainham Girls School, Derwent way, Rainham, Kent ME8 0BX, just off the A2 & M2 J4. There will be car parking, special interests groups and trade stands. Doors open 9.30am for disabled visitors and 10am for others, admission is £2.50.

Swansea ARS Amateur Radio Show

Contact: Roger Williams
Tel: (01792) 404422

The Swansea ARS Amateur Radio Show will be held at Afan Lido (The Aquadrome), Aberavon Seafront, Port Talbot SA12 6QW. There will be trade stands, a Bring & Buy, special interest groups, catering and talk-in on S22. Doors open at 10.30am.

March 1st/2nd

MOVOG Radio Club Rally

Contact: Michael Buckley
Tel: 0208 654 2582
E-mail: mikeb@vmars.org.uk
Website: www.firepowerradiorally.zoomshare.com/

The MOVOG Radio Club Rally will be held in the Firepower Museum, Royal Arsenal, Woolwich, London SE18 6ST. This small rally will have a vintage radio display, demonstrations and radio junk sale (no computers).

March 2nd

Exeter Radio & Electronics Rally

Contact: Pete Longhurst G3ZVI
Tel: 07714 198374

The Exeter Radio and Electronics Rally will take place in America Hall, Pinhoe, Exeter EX4 8PW. There will be traders, a Bring & Buy and refreshments.

Cambridge and District Amateur Radio Club Rally

Contact: David G8JKV
Tel: (01223) 355254
Website: http://www.sim-racing.co.uk/cdarc/cdarc_rally2008.php

The Cambridge and District Amateur Radio Club Rally will be held at the Britten Arena, Wood Green Animal Shelter, King's Bush Farm, London Road, Godmanchester, Cambridgeshire PE29 2NH. The Britten Arena is 1650 square metres in size and is heated. Free parking is available for up to 4000 cars. With a bar, restaurant and the other attractions on site, this makes a great day out for all the family. Restaurant opens from 8.30am. Bar open from 12 noon. Doors open at 10am, entry is £3 (children under 16 free).

Wythall Radio Club Radio & Computer Rally

Contact: Chris G0EYO
Tel: 07710 412 819,
E-mail: g0eyo@blueyonder.co.uk
Website: www.wrcrally.co.uk

The 23rd Wythall Radio Club Annual Radio and Computer Rally will be held at Woodrush Sports Centre, Shawhurst Lane, Hollywood, near Wythall, Birmingham B47 5JW. There will be radio and computer traders, a Bring & Buy, refreshments and good on-site parking. Admission will be £1.50.

March 15th

Lagan Valley Radio Rally

Contact: Jim Henry
Tel: 048 926 62270

The Lagan Valley Radio Rally will be held at Lagan Valley Hospital, 39 Hillsborough Road, Lisburn, Northern Ireland BT28 1JP. Doors open 11.30am.

Dutch National Radio Flea Market

E-mail: info@radiovlooiemarkt.nl
Contact: Eric Elstrodt PA2ELS
Tel: 0031 (0)411 610737
Website: www.radiovlooiemarkt.nl

The Dutch National Radio Flea Market will be held at Autotron, Rosmalen ('s-Hertogenbosch, just off A59 motorway). Doors open at 9am with trade stands, a flea market and admission is 6 Euros.

March 16th

NORBRECK Amateur Radio, Electronics and Computing Exhibition

Contact: Peter Denton G6CGF
Tel: 0151 630 5790

The NORBRECK Amateur Radio Electronics and Computing Exhibition organised by the Northern Amateur Radio Societies Association (NARSA) will be held at the Norbreck Castle Exhibition Centre, Blackpool FY2 9AA. It's the largest single day exhibition in the country. Morse tests will be available at the show.

The Alinco DM-330MW Switch-Mode Power Supply

In the past few months I've discussed switch-mode power supplies on a number of occasions. Mostly, I've commented on the many domestic types that seem to cause so much interference with their switching harmonics on the Amateur Bands. With this in mind I thought it was time I looked at a switch-mode supply that has been designed for use in Amateur Radio workshop or shack.

The unit I eventually chose for reviewing was the Alinco DM-330MW 30A switch-mode unit. However, at this stage I must admit to readers that I have a great admiration for Alinco equipment as it usually provides excellent value for money equipment that's also well finished and durable. I'm pleased to say that after using the DM-330MW it's certainly up to the standard I expect from Alinco.

Neat & Substantial

The photographs, **Fig. 1** (the heading picture) and **Fig. 2** give a good impression of the neat and substantial Alinco DM-330MW. It's an attractive little



unit and is eminently practical looking with all the main controls at the front with a clearly displayed voltage and current supply indication via the built-in moving coil meter. One of the coaxial shaft type controls enables the user to vary (shift) the switching mode frequency away from any incoming communications signal. Quaintly, Alinco refer to it as the **Noise Offset Volume Control** and I'll be referring to this again later in the article.

When I opened the box after it had arrived overnight from **Nevada Radio** in Portsmouth in Hampshire, I was immediately impressed at the engineering involved with the power supply. There's a substantial ribbed heat sink formed from cast aluminium alloy in a wrap-around type of casing. Indeed, the whole unit looked, robust and attractive at the same time. Indeed, I'll go as far to say that it was beautifully finished.

Along with the main controls at the front, the power supply has a good number of quick-connect sockets (maximum 5A) at the front, along with the ubiquitous cigar lighter (maximum 10A) type of socket. The main – substantial – output terminals are at the rear, **Fig. 3**, along with the voltage pre-set adjustable control and the separate 'set' switch.

The rear mounted mains input socket has the necessary fast-blow type ceramic tube 4A fuse mounted above it. The separate grounding post is above the fuse socket.

The miniature cooling fan (it switches in automatically as soon as the temperature reaches 45°C) is mounted on the left of the rear of the unit. Although it's only a small unit – as I was to find out later – it's extremely efficient.

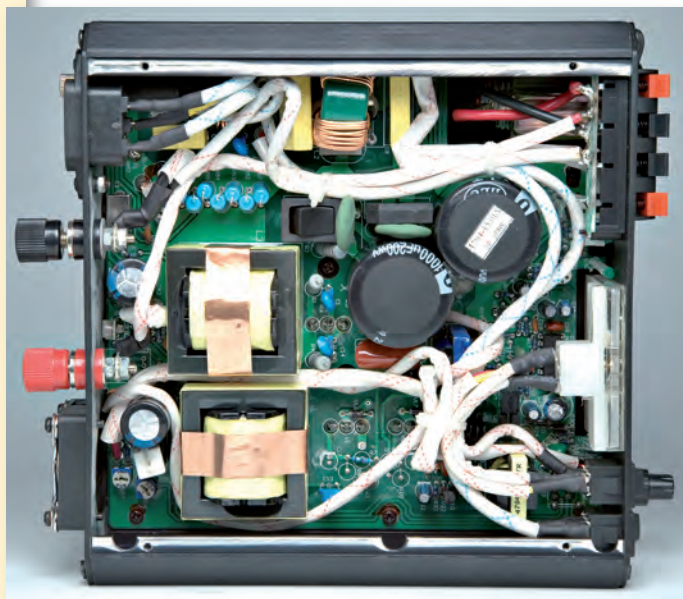


Fig. 2: The insides are well engineered from high quality components and materials.

Rob Mannion G3XFD takes a look at a switch-mode power supply that could prove very useful in your shack.

Instructions & Specifications

The folded leaflet that acts as the instruction manual is simple, easy-to-understand and provides much of the information that's required. The only information that's missing in the leaflet is a circuit and a description of how the unit works – switching frequency, etc., which personally, I would like to know. The more we know about our equipment the better we can use it!

The manufacturer's specifications are straightforward: The input voltage is 230V a.c. with the output voltage variable between 5 and 15V d.c with less than 15mV ripple peak-to-peak at the rated load. The output voltage regulation is stated to be "less than 2%", which I took to mean that it varies less than 2%, and in fact, the regulation (as measured by my test meter) as I operated on the air, seemed better than Alinco claim.

The DM-330MW is rated at 30A maximum and 25A continuous. The unit has built-in short circuit protection (very quick acting indeed – as I proved on accidental test!) and automatic current limiting at currents of over 30A.

On The Air

I decided to use the Alinco DM-330MW with my own Alinco DX-70TH transceiver for the on the air tests using c.w. and s.s.b. and spent a Saturday using both modes on 3.5, 7 and 14MHz. I also listened on 1.8MHz 'Top Band' for r.f. noise comparison purposes (more on this later).

In use the DM-33MW was superbly efficient. Even when I was operating at 100W on c.w. for long periods the heat sink only became slightly warm to touch. The fan proved to be extremely quiet and efficient it was very difficult to detect that it was on! In fact, I had to turn off the main rig (as its own fan was working quite hard) to detect the sound of the power supply fan working.

Having had some unpleasant results from domestic switch-mode power supplies, I took some time listening for harmonics from the switch-mode circuitry. I hadn't been able to detect many of the switching harmonics with the supply on and with the rig's antenna disconnected – but I knew that the 1.8 and 3.5MHz bands would be a real challenge!

However, listening on Top Band in the afternoon until mid-evening I was very pleased to discover that the received noise level using both the Alinco switch-mode power supply and my own 30A transformer bench supply was basically the same. I really could not tell the difference as I listened to my old friend **Ian Keyser G3ROO** chasing the Top Band DX at RST599+10 on c.w. from his QTH along the coast in Kent. In fact, listening on Top Band was no problem at all, even though there were some low level harmonics from the the DM-330MW as I tuned over the band.

Up on 3.5MHz I was again delighted that the difference in the general background noise between my

transformer power supply and the switch-mode unit was barely detectable. Tuning over the band I did, as expected, encounter some harmonics from the switching circuitry but none seemed troublesome. Listening into several QSOs I only encountered low level harmonics and I was able to tune these off the frequency by using the **Noise offset volume control**.

I had 20 or so c.w. QSOs during the day on 3.5MHz c.w. on various frequencies although I didn't have to use the offset control once. It was the same when I was using s.s.b. up on the top end of 80 metres – I again didn't have to use the off set control.

Comparing Power Supplies

However, when I plugged in a 12V 4A switch-mode power supply (from a miniature



Fig. 3: The back of the unit has the main output terminals as well as two lesser used controls.

I.c.d. type TV), to power the DX-70TH on receive only – the harmonics were so many and so strong that reception of all Amateur signals on all bands from 1.8 to 10MHz were overwhelmed, although broadcast stations on 30 and 41 metres were of reasonable quality but accompanied by various burbling noises!

The difference is what I expected between a correctly filtered switch-mode supply in a metal casing to provide screening and a plastic cased unit. It's very unfortunate that manufacturers of domestic type switch-mode power supplies seemingly aren't required to ensure that harmonics from their units don't cause problems between 1.8 and 30MHz, whereas no doubt they place more importance to attenuation on v.h.f. and u.h.f.!

Altogether, I was very impressed by the Alinco DM-330MW and I wouldn't hesitate to recommend it to readers. But on this occasion – as he summed up his opinion on the unit so well – I'll let **Tex Swan G1TEX** (who came to collect the unit for photography) have the last word.

Tex said that the DM-330MW, "is quietly capable!" ●

Product

The Alinco DM-330MW 30A switch-mode power supply.

Company

Nevada Radio (UK Importers and Distributors).

Contact

Sales at 023-9231-3090

Pros

Well made and easy-to-operate. Quiet and efficient in operation and well equipped with output sockets.

Cons

None that the reviewer can think of!

Price

£99.95 including free delivery.

Supplier. My thanks for the loan of the review unit go to **Nevada Radio, Unit 1, Fitzherbert Spur, Farlington, Portsmouth, Hampshire PO6 1TT. Tel: 023-9231-3090, Fax: 023-9231-3091. E-mail sales@nevada.co.uk**

antenna workshop

Vince Lear ZL1VL/G3TKN sets out to answer the frequently asked question, 'What Antenna should I use' on the h.f. bands?

I find it very encouraging that the UK-based **Five Star DXers Association** makes an effort to mount DXpeditions with the intent on giving the Amateur with only a modest station, a chance to work them. This isn't an easy task and it's to their credit that they go equipped on these DXpeditions with such a fine array of equipment and antennas to make this possible.

However, we shouldn't leave all the hard work to these guys! It's important that our stations, as simple as they may be, are as efficient as we can make them and the effectiveness of the antenna system is probably one of the most vital factors in any station.

helping to improve the situation.

For anyone who is wondering what antennas to erect so as to increase their chances of working a DXpedition from the typical suburban location, I've listed a selection of antennas that are simple to make up and adjust. The featured antennas don't take up too much space and I have found them to be good performers over the years.

The Dipole

I'd like to start off with the 'humble dipole', **Fig. 1**, which at frequencies of 14MHz and upwards, at a height of say 9.2m (30ft) can prove to be a very effective antenna. It's also simple to construct and adjust.

using larger apex angles (greater than 90°) between the legs if this can be accommodated.

A number of such dipoles could be connected in parallel, as shown in **Fig 2**, from a common feeder. Alternatively, one dipole could be made for 14MHz with insulators in at quarter wave points from the centre outwards for and 18 and 21MHz, **Fig. 3**. This would likely be a more temporary option but would allow for band changing once a DXpedition had been worked on one band and it was time to give other bands a go.

Balanced Antenna

The dipole is a balanced antenna and if it's fed with 50Ω coaxial cable, then

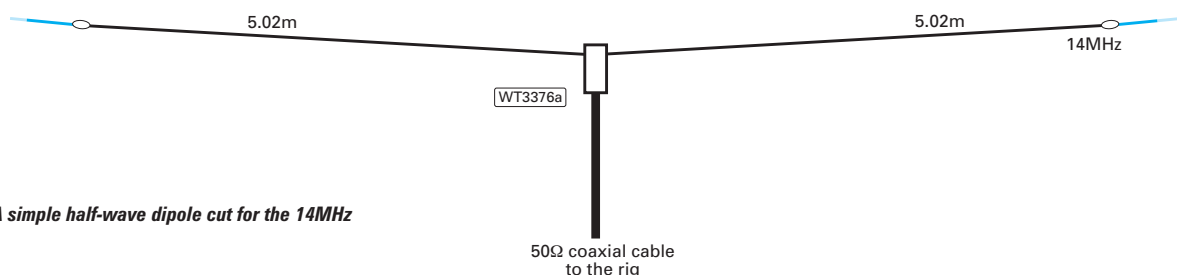


Fig. 1: A simple half-wave dipole cut for the 14MHz band.

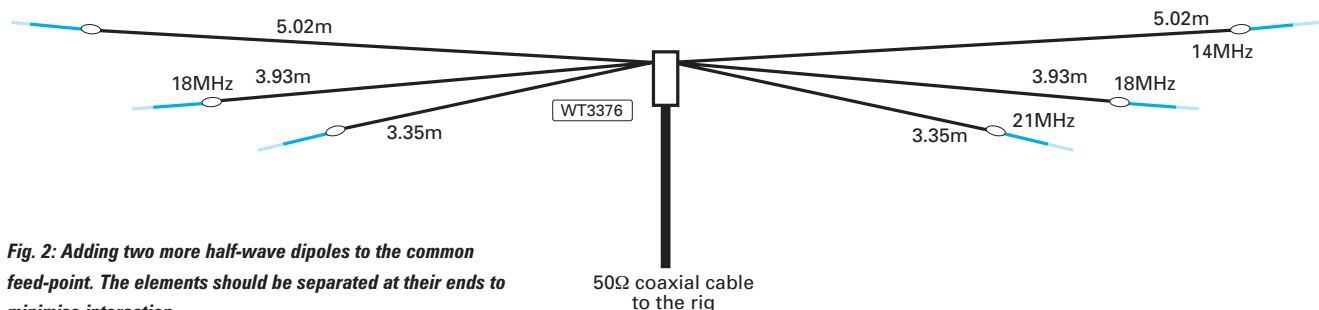


Fig. 2: Adding two more half-wave dipoles to the common feed-point. The elements should be separated at their ends to minimise interaction.

What Antenna?

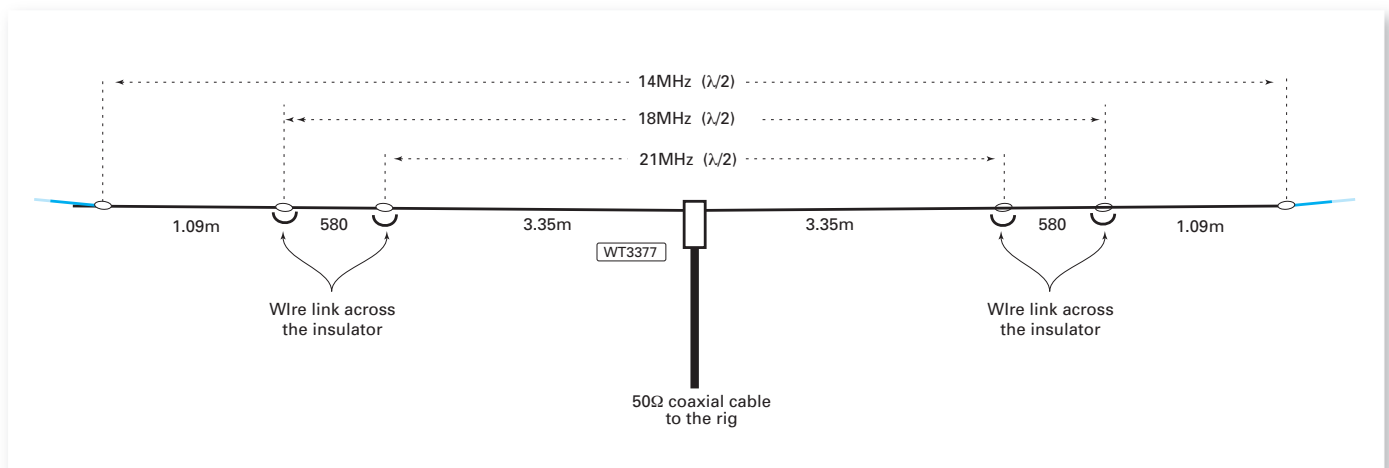
If you are fortunate enough to have a tower and beam, then life suddenly becomes a lot easier when you want to make your signals heard in far away places. However, it's probably fair to say that the vast majority of Amateurs aren't in this fortunate situation and this article is aimed at

I have modelled half-wave dipoles using the *EZNEC* computer program and have found that a completely horizontal dipole, broadside to the wanted direction is always preferable. However, excellent results can be had with the half-wave dipole in the inverted V configuration and *EZNEC* shows some small advantages in

it should be fed via a balun so as to prevent common mode current flow on the outer of the coaxial cable. Common mode currents on the coax may lead to Electromagnetic Compatibility (EMC) problems.

An effective balun may also help reduce 'noise pick up' on the coaxial cable and give an improved signal-

Fig. 3: Another three wave-band antenna, but one that needs attention when changing bands to make, or open the linking connections.



to-noise ratio on receive. A simple current mode choke balun can easily be made by winding the coaxial cable into a coil at the feed point of the dipole.

An effective design that offers good 'choking' action between 14 to 30MHz is six turns of coaxial cable with a diameter of about 115mm (4.5ins). If the frequency range of the choke balun is to include 10MHz and 7MHz for example, the number of turns should be increased to 12.

On 7 and 10MHz the dipole performance for DX working will depend to a large degree on its height above ground. It's probably fair to say that dipoles for 10MHz and 7MHz should really be up in the 13.8m (45ft) to 15.3m (50ft) region for effective DX performance. So, much will depend on path length, arrival angle of the signal, local terrain and ground conditions.

Delta Loop

I've done tests out here in New Zealand on the long path (LP) to Europe on 7MHz, comparing my corner fed low angle Delta Loop – with the apex at 11.7m (38ft) to an inverted V at apex height 9.2m (30ft) on 7MHz. Sometimes the differences are not that dramatic, while at other times the corner fed Delta loop might enjoy a one S-unit advantage – and sometimes even more – for a few seconds in the QSB.

However, my overall impression when comparing the two antennas on the LP to Europe is that the low angle Delta Loop produces the better 'peak signals'.

My corner fed Delta Loop, **Fig 4**, is reduced in size to fit into my garden. Each sloping leg is approximately a quarter wave (taking into account no end effects on a loop antenna). The bottom wire is loaded by the two wires (C) to bring the whole system to resonance. Maximum in phase currents are in the two sloping vertical sections, making them resemble a pair of quarter wave phased vertical antennas fed in phase.

Although the corner fed Delta Loop doesn't require radials, the quality of the ground beneath the antenna will still affect its performance as it's transmitting a vertically polarised signal. I've also found it important to keep the antenna in the 'clear'. (I live in an area of single storey housing in the Eastern Beaches area of Auckland, so the antenna is less obstructed than it would be with larger buildings around it.

The Inverted 'L' Antenna

I've always found that when it comes to working DX on 1.8 and 3.5MHz the choice is an easier one. A vertically polarised antenna is likely to produce better results at greater distances since horizontals at 9.2m (30ft) to

15.3m (50ft) do not give the lower angle of radiation required for DX working. A simple and popular DX antenna for these frequencies is the quarter wave inverted L, **Fig. 5**, with as much vertical section as one can get up.

The inverted L can be coil loaded if it's not possible to get out a full quarter-wavelength as might be the case on 1.8MHz. With any vertical a good earth/radial system is essential. I have operated verticals on these bands from suburban locations in the UK and find it's nearly always necessary to consider using separate receive antennas (i.e. small receiving loops) to counter the higher noise levels that verticals will bring in on receive.

When using the inverted L in the UK on 1.8MHz, I have generally had a vertical section of at least 15m (50ft). However, there are many people who have still obtained quite satisfactory results with shorter vertical lengths. Although main polarisation should be vertical from an inverted L, there will also be a horizontal component depending on the ratio of lengths A to B, in Fig. 4. This can sometimes be quite useful and can allow for maybe more 'fill in' of the signal at closer distances.

With any vertical or inverted L it's always advisable to have a common mode choke balun, at or near the feed point, to reduce common mode

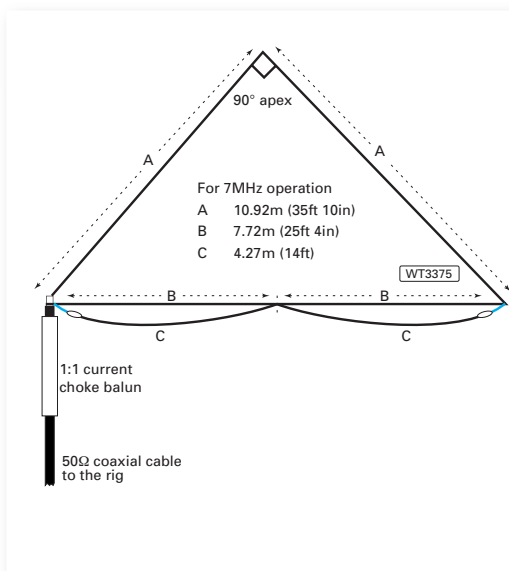
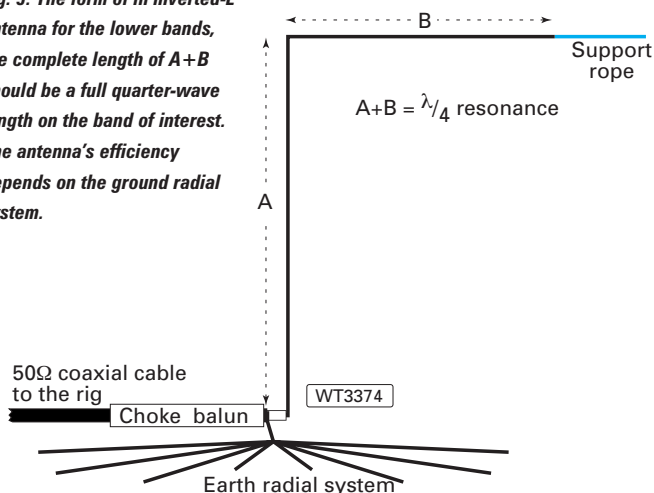


Fig. 4: A vertically mounted delta loop antenna with 'mixed' polarisation.

Fig. 5: The form of an inverted-L antenna for the lower bands, the complete length of A+B should be a full quarter-wave length on the band of interest. The antenna's efficiency depends on the ground radial system.



currents that may be introduced into the feeder. A suitable choke for a 1.8/3.5MHz inverted L could consist of 13 turns of RG58 coaxial cable around a pair of stacked FT240-43 ferrite rings.

Many Amateurs will have their favourite antenna. However, when assessing how effective an antenna is for DX, you must have a source of comparison. This comparison may be against other stations with known h.f. DX capability or relative to another antenna.

It's only by the comparison method that you can get a realistic idea of how well an antenna is working and whether there's room for improvement. **Important note:** When comparing antennas that are

relatively close to each other, it's essential to check for any interaction effects between the two antennas, as this will hamper effective assessment of antenna performance.

Good Antenna book!

The *PW Bookshop* contains a good source of antenna books. Readers will find many simple practical antenna designs contained in these books, together with explanations of the

relevant theory behind aerial design. A couple of good antenna books can be a very worthwhile investment and can really enhance your enjoyment of the hobby.

Finally, it's sometimes a sobering thought that at the end of the day no matter what antenna we use, we are **all** still at the mercy of propagation! Enjoy the challenge of DX and the propagation and enjoy the hobby!

THE PW PUBLISHING LTD RADIO BOOKSTORE

mail order...huge range in stock...fast delivery...

Even More Out of Thin Air

Published by PW Publishing Ltd.

Even More Out of Thin Air (EMOTA) is the latest collection of antenna related articles to be published by PW Publishing Ltd. The *Practical Wireless* team know that readers have an insatiable appetite for antenna articles so, to keep that appetite fed, they have selected even more of the best!

All the articles, which appear in *EMOTA*, have been published in previous issues of *PW* and are collected together for your enjoyment, as a single point of reference and to encourage you to get out there and start experimenting. All the antenna systems featured in *PW* have been practically proven by their authors and will give you plenty of new ideas to try out as well as reminding you of old favourites you'd forgotten about. The book is divided into three sections within its 80 pages, covering, h.f. designs, v.h.f. designs and theory.

Articles included are:

- 3.5MHz Band Antenna
- Off-Centre Fed Dipole
- Flat Dwellers Beam
- DX Antenna for 50MHz
- Five Antennas for 70MHz
- Moxon Rectangle for 6m
- Improve your Mobile Operating
- Antennas & Propagation
- and much more



See the bookstore on page 76 for ordering information

A BIG thank you to all my UK and international customers that supported ML&S in 2007.

Without your continued business we wouldn't have a business, simple as that.

Mini VNA PC Controlled Antenna Analyser

The mRS miniVNA is a compact 100kHz to 180MHz antenna analyser interface that is operated via a PC powered by a single USB connection. You can see at a glance where the antenna is resonant, what the SWR and the return loss is. The best (minimal) SWR frequency is automatically found and displayed. An optional internal RS232 connection is also available.



ML&S Price

£209.95

Technical Specifications:

- Frequency coverage 0.1MHz to 180MHz
- DDS Generator with 0 dBm output
- 2 BNC Ports allow Transmission Measurements e.g. filters, traps
- USB 1.1 and USB 2 compatibility
- RS232 optional socket for Pocket PC's or Remote Displays
- Fast Scan (typical 0.6 sec for 500 points)
- Use of an internal Industrial Directional Coupler
- High Reflection Dynamic Range 40dB to 35dB (VSWR 1.06:1 or better)
- Wide Transmission Dynamic Range > 50-55dB
- Measures VSWR, RL, Rs, Z +/-jx, Phase, Cable length, R/L/C
- Finds Minimum VSWR automatically
- New transparent box with LED indicators for the operation status
- In-Circuit-Programming for future firmware onboard CPU upgrades
- Operation from 3.6V Phone Batteries possible (current drawn <150mA)
- Software compatible with Windows and Linux operating systems.
- Save and Load of previous measurements
- Software for Pocket PC available

MFJ Innovative Ham Radio Accessories at LOW Prices



MFJ-949E 300 Watt Antenna Tuner

If you want a good reliable All-in-One ATU this is the one for you. Worldwide reputation for being able to match just about anything.

£124.99

MFJ-993B

This very popular Autotuner from MFJ lets you tune any antenna automatically balanced or unbalanced - ultra fast. It's a comprehensive automatic antenna tuning center complete with SWR/Watt-meter, antenna switch for two antennas and 4:1 current balun for balanced lines. What will it tune? Just about anything! End feds, open wire feeders, beams, dipoles, G5RV's you name it.

Only £189.95

MFJ-974HB 160 Thru 6 Meters Balanced Line Antenna Tuner.

The MFJ-974HB is a fully balanced true balanced line antenna tuner. It gives you superb current balance throughout its very wide matching and frequency range.

£159.95

MFJ-259B/L

Range: 1.8-170MHz. HF frequency coverage. Keeps your antennas in check. Complete pictures of your antenna's performance. You can read antenna SWR and Complex Impedance 1.8 to 170MHz.

£199.95

MFJ-269 1.8-450MHz version of the above. £239.95 Add an MFJ-29C Carry Case for only £22.95!

MFJ-971

Portable ATU, 1.8-30 MHz 200W cross needle SWR/PWR. An ideal QRP ATU. Easy to use and very compact. QRP Portable ATU

Only £79.95!

MFJ-834 RF Current Meter 160-10M 3 Amps.

£59.95 Only £49.95 this month only!

MFJ-16010 Mini Random Wire 100W ATU.

Just plug your HF transceiver on one end, throw out some wire out of the window and tune. Nice and compact (only 2 x 3 x 2 inches)

Only £48.95



Don't forget ML&S stock one of the largest displays of MFJ in the country!



British products from WonderWand

New! WonderWand Combo

A one-stop solution to your portable antenna requirements. The new WW Combo is a single unit housing the famous WonderWand and TCP Tuneable Counterpoise. Full operation 7MHz-440MHz, max 40PEP. **In stock now! £159.95**

New! WonderWand WonderPole

As featured in CQ magazine in Japan! Yet another new antenna system from WonderWand products. 20-10M Portable dipole for any rig with an SO-239 Socket. 40 Watts PEP. **Only £129.95**



The original and best selling WonderWand

40m-6m portable antenna for all rigs. Ideal for IC-703, FT-817, FT-897 etc. Superbly made and excellent value for money. **Only £89.95**



WonderWand TCP

A tuneable counterpoise ideally suited to the WonderWand for increased performance. **Only £59.95**

Real-time Virtual Radar

AirNav RadarBox

The AirNav RadarBox is the closest you can be to real world aviation without leaving your chair thanks to next generation Radar decoding.

By decoding ADS-B (Automatic Dependent Surveillance Broadcast) radar signals, you will be able to see on your computer what real Air Traffic Controllers see on their screens in Real-Time. Flight number, aircraft type, altitude, heading, speed are all updated each second. Included is the award winning software interface developed by the world's leader in flight tracking and monitoring solutions, AirNav Systems.



MLS Price: £469.95 incl. VAT

For further information see www.VirtualRadar.co.uk

Kinetic SBS-1 MkII

Aircraft enthusiasts worldwide are now able to directly monitor the skies in an unprecedented fashion. Additionally, the SBS-1 provides small and medium sized airfields with many of the safety and operational benefits previously only available to large international airports - at a fraction of current radar costs. Coupled with a Mode-S/ADS-B transponder the SBS-1 becomes an invaluable tool in flight training operations.

NEW LOW PRICE!

SBS-1MkII
£379.95



- Connects to laptop/desktop PC via USB
- Track Mode-S/ADS-B equipped aircraft in real time*
- An invaluable tool for aircraft enthusiasts
- Enhances operational efficiency at airfields
- Easy to install, portable and lightweight
- Real-Time aircraft position and identity data
- Powerful SBS-1 Basestation software included
- Package includes all necessary components to connect to your Windows XP PC

*UK airspace from March 2005 and for all categories of flights in all other airspace from March 2008.

Shipping \$10.00 (UK mainland)

STOP PRESS!
SBS-1 OPEN DAY
Saturday 2nd of February '08

An ideal opportunity for an informal meeting of SBS-1 users from all over the UK!

- In depth demo's of the SBS-1 & accessories
- The best way to install the Base Station software and "bolt-ons"
- Meet & Speak to other users of the famous SBS-1 Virtual Radar
- Special Deals on all ML&S products bought on the day
- Free Refreshments
- Lots of Free Parking

ML&S martin lynch & sons
Suppliers of Communications Equipment



Tel: **0845 2300 599** (Local Call Number)

Tel: 01932 567 333 (Direct Dial Number)

Fax: 01932 567 222

Web: www.hamradio.co.uk

E-mail: sales@hamradio.co.uk

Outline House, 73 Guildford Street, Chertsey, Surrey KT16 9AS

Open six days a week Mon - Fri: 9.30am - 5.30pm Sat: 9.00am - 5.00pm

see our web site or call in to our store, there's lots more on show

E&OE.

Icom

The NEW Icom IC-7700 HF/6m All Mode Base Transceiver

Remember our information on the Icom X3? We may have got the number wrong but here is a fantastic looking new HF & 6M radio from those very clever guys at Icom Japan. The new Icom IC-7700 is a self-contained, top-performance HF/6m transceiver closely related to its "bigger brother", the IC-7800.



RRP: £3999.95
Call ML&S for more details

Icom IC-E2820 Dual Band Mobile

ONLY: £379.95
Call ML&S for more details

D-Star Capable



PC Controlled Receivers from ICOM



Four models to choose from:



IC-PCR1500 10kHz-3300MHz All Mode **£369.95**
IC-R1500 As above but with remote head **£419.95**
IC-PCR2500 Twin Receiver version of PCR-1500 **£474.95**
IC-R2500 As above but with remote head **£529.95**

See web for full details, PDF's etc.

Icom IC-7000

Full range of accessories available, please see web for more details.



ML&S CALL

Icom IC-706MkII

HF + 6M + 2M + 70cms Mobile/Base.

CALL! special offer low price

subject to availability



Icom IC-7400

Fantastic HF + 6M + 2M 100W All Mode Base Transceiver.



SPECIAL PACKAGE DEAL

SM-20 Desk Mic, SP-21 Speaker, MP-250A PSU

All for £1359.00 Rig only CALL

Icom IC-910X

The best 2/70 & 23cm dedicated all mode base. 23cm included.



RRP £1675 ML&S £1239

Basic Version (without 23cm) also available: **£1089**

Icom IC-E91 VHF/UHF DUAL-BAND FM TRANSCEIVER

CALL for special offer price!

D-Star Capable

A truly versatile multi-featured radio that further advances Icom's lead in digital amateur communications!



New IC-E90
Triple Band Handie
Only £199.95!
Or available with 4m and extra antenna for **Only £239.95**



Icom IC-703
IDEAL FOR M3 USERS
10W Portable/Base HF Transceiver with built-in ATU.
RRP £703 ML&S: CALL!

Icom IC-E208

2/70 mobile 50/55W Transceiver with host of additional features. Remote head leads included.
RRP £365 ML&S: £219



NEW Icom IC-E7E
The latest micro Twin Band Handie from Icom! 2m/70cms
CALL FOR SPECIAL OFFER PRICE

Icom IC-718
Basic ready to go 100W HF Transceiver supplied with Microphone & DC Lead.



CALL FOR BEST PRICE

Kenwood

NEW Kenwood TM-D710E

The Kenwood TM-D710E is the replacement for the previous TM-D700E, which was hugely successful in introducing mobile APRS to Amateur Radio operators around the world. As well as a built-in 1200/9600 baud TNC with improved APRS functions, the TM-D710E also incorporates as standard firmware to enable it to operate as an Echolink Node Terminal when connected to a PC (running Echolink software).



IN STOCK!!!
Price - CALL!

NEW Mobile Transceiver

TM-V71E

v.h.f./u.h.f. mobile transceiver
● High r.f. power output (50W)
● Dual receive on same band
● Green and amber colour display
● Invertible and detachable front panel
● Programmable memory
● Multiple scan
● Built-in CTCSS/DCS
● Wide Band Reception : 118-524MHz & 800-1300MHz (excluding cellular blocked frequencies)



NOW AVAILABLE, ONLY £269.95

Kenwood TS-2000E

Just superb on all bands 160m-70cm with optional 23cm (X-Version)
RRP: £1699 ML&S: £1299



Kenwood TS-2000X

As above but with 23cm fitted. **RRP: £1999 ML&S: £1699**

TS-2000 Bundles

Bundle 1 TS-2000E Supplied with hand Mic, DC Lead ... **£1299**

Bundle 2 As above with MyDEL MP-250A PSU **£1379**

Bundle 3 As above with MC-60A Desk Mic **£1499**

The TS-2000X (fitted with 10W 23cm module) version of any of the above is available for an additional £400 on the above prices.

Kenwood TS-480SAT

The best selling Kenwood H.F. can be used mobile or base. Includes ATU.
ML&S £699.95



Kenwood TS-480HX

As TS-480SAT but 200 Watts, no ATU. **ML&S £799.95**



Kenwood TH-F7E

2/70 Handie with Gen Cov RX. If you must have SSB RX on your dual-band then buy one!
RRP £289.95 ML&S LOW PRICE £199.95

MyDEL Power Supplies with 2-Year Warranty

MyDEL MP-250A

Only £89.99

25 Amps maximum, 22Amps constant, ideal for most modern HF Transceivers



MyDEL MP-925 £99.95

Linear 25-30A 13.8VDC PSU, using a large transformer, twin meters to monitor Volts & Amps. Been on the market for over 20 years in various different brand names and model numbers.



MyDEL MP-8230 £69.95 The latest version of our popular MP-4128. 13.8V DC, 25Amps, rear posts for neat installation of cables & Cigar outlet.

MyDEL MP-9600 £179.94 Massive rear facing binding posts with additional low current front facing sockets. Digital Volts & Amps reading in big clear numbers. Housed in a strong metal case, huge near-silent speed sensitive fan to enable cooling. Over Volts protected.

MyDEL MP-6A £29.95 13.8V DC, 6 Amps with front facing binding posts. Ideal for FT-817, handies etc.

Icom

Icom IC-756Pro mkIII

Buy now, pay later*

Package Deal

IC-756ProIII, SM20

Microphone, SP-23

New Base Speaker

with filters.

RRP £2768

ML&S £1995



Rig Only New Low Price - Call

Icom IC-7800mkII

ALWAYS IN STOCK RRP £6400.00

Defer payment for 6 months - Interest FREE!*

The Icom Flagship Base Transceiver just keeps getting better & better. Now fitted with 3 Roofing Filters for even more receiver performance. On permanent display next to the FTdx9000.



CALL FOR ML&S Package Deal

Yaesu

NEW FTM-10R

First rig with BLUE TOOTH!

The NEW Yaesu FTM-10R is a small compact dual band 2m/70cm transceiver with high power output of 50W on 2m and 40W on 70cm, (adjustable power levels of 50/40W, 20/20W, 5/5W). Receive range from 0.5-1.8MHz, 76-108MHz, 137-222MHz and 300-999MHz.



ML&S £239.95

Yaesu FT-857 Bundle

FT-857D + ATAS-120

Auto Antenna Bundle

Only £699.95 for both
(Rig only £499.95)

The Ultimate HF Mobile Installation!



ML&S £699.95

VERY LIMITED OFFER!

Yaesu FT-897D Bundles

5-Ways to buy your FT-897!

High Power version of the FT-817. Use as a transportable, (20W) or as a base/mobile (100W)



Bundle 1.

FT-897D 'Vanilla' Basic FT-897 HF-70cm Transportable.

£Call!

Bundle 2.

FT-897D + LDG AT-897 & MP-8230 22Amp PSU.

Only £849

Bundle 3.

FT-897D, FP-30 7 FC-30 The most compact HF base with built-in mains PSU & Bolt-On Auto ATU.

Only £849

Bundle 4.

FT-897D, 2 x FNB-72, CD-24 & PA-26. The ultimate HF/V/U system with both batteries, charger & adapter.

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

Only £849

yaesu **YAESU'S "MIDSHIP RADIO"**

FT-950

Many of you grabbed the new Yaesu FT-950 HF6BM from us at the end of November. Once again Yaesu identified a position in the market and hit it spot on. When Peter Hart said it was "An eye catching radio with some very nice features" and "it represents extremely good value" he wasn't kidding. If you don't need dual receive or internal PSU like its Dad, (the FT-2000) then check out the FT-950. You can even own an FT-950 for just £100 deposit and 36 payments of £32.67 (STGS).

The FT-950 available NOW from ML&S at only £999.95 including FREE UK Mainland delivery.



For more information see:
www.FT-950.com

yaesu

FT-2000

- Two Versions, 100W and 200W
- FT-2000 100 Watts, 160-6m, Internal PSU
- FT-2000D 200 Watts, 160-6m, External PSU
- Variable RF Tuning & Roofing Filters as standard

Accessories

DMU-2000 Data Management Unit

- Spectrum Scope with Limited Bandwidth Sweep feature
- Audio Scope/Oscilloscope Display Page
- Sweep-Frequency SWR Page
- Memory Channel List
- World Clock with GreyLine Page
- Rotator Control Page
- Log Book Feature

£699.95

SP-2000 External Speaker with 2 inputs & filters. £139.95

MD-200A8X Desktop Deluxe Microphone, sounds amazing with the FT-2000! £189.95

MD-100A8X Desktop Microphone £116.95

CW Filters for Sub-Receiver YF-122C (500Hz) CW Filter £94.95

YF-122CN (300Hz) CWN Filter £109.95


FM-2 Remote Control Keypad £33.95

RF External Tune Kits 3 versions available. 160m Band Kit "A". 80/40 Band Kit "B". 30/20m Band Kit "C".

NOW IN STOCK £359.95

The ultimate accessory Quadra System 1kW HF Linear Amplifier, PSU & Auto ATU. Always available from stock, £Call

Available from stock and on permanent demo in our showroom



ML&S Call for latest prices

yaesu

NEW FT-450AT

Full 100 Watts, DSP, Optional internal ATU & measuring only 9"x3.3"x8.5"

Just like a good radio station... the Yaesu hits keep on coming!

Without ATU
ML&S CALL FOR PRICE

With ATU
ML&S CALL FOR PRICE

For more details see:
www.FT-450.com



HF & 6m full DSP

Linear Amp UK

LINEAR AMP Ranger 811

The Ranger 811H uses four vertically-mounted 811A valves to produce 800W on the Amateur HF bands. As with all our models, the Ranger has a toroidal transformer providing the power into a voltage doubler board. The voltage doubler is used in preference to a bridge rectifier as it keeps the AC volts down.

ML&S £949.99

New! Ranger 572



Identical to 811 but fitted with rugged 572B's.

ML&S £999.99

New! Challenger IV Minimum 1.5kW output.

Using a single 3CX1500A7 ceramic triode valve due to its rugged construction and high gain. There is a massive 2.2kVA toroidal transformer producing 3200V after the voltage doubler board. The Challenger will cover all the HF bands, 10m - 160m with separate band switch positions for the WARC bands.

ML&S £2099.99

palstar

Full range of Palstar now in stock

AT1KM 1200 Watt Antenna Tuner £289.95

AT1500CV 1500 Watt Antenna Tuner £349.95

BT1500A 1500 Watt Double L. Balanced Antenna Tuner £449.95

AT-AUTO 1500 Watt Automatic Antenna Tuner £899.95

AT4K 2500 Watt Antenna Tuner £649.95

AT5K 3500 Watt Antenna Tuner £849.95

DL1500 1500 Watt Dummy Load £69.95

DL2K 2000 Watt Dummy Load £139.95

DL5K 5000 Watt Dummy Load £279.95

NEW! ZM-30 1-30MHz Digital Antenna Analyser £289.95

NEW! PALSTAR PM-5K Digital Watt Meter

1-5kW Digital 1.5 MHz to 30 MHz, 50-54 Mhz Meter £299.95





Full range of Hustler Mobile & Base HF antennas available from stock

Base Station Range, free standing, max 7.3m tall, 1kW

- 4-BTV 40/20/15/10m £169.95
- 5-BTV 80/40/20/15/10m £199.95
- 6-BTV 80/40/30/20/15/10m £229.95
- 17-BTV-S 17m add on for 5-BTV or 6-BTV £49.95

Mobile Range, 200W or 1kW, both stocked.

RM10 to RM-80 10M to 80m single-band whips, £19.95 to £31.95

Full range of Hustler accessories in stock.

See web for full listing.

DIAMOND ANTENNA **COMET** **Maldol**

ML&S are now UK Agents for Optibeam Antennas

Made in Germany, these are the best engineered HF Beams in the world.

Super Antennas, Diamond, Comet, Optibeam and Maldol always in stock!

Please call for details.

mydel **ML&S Only £229.95**

NEW MYDEL CG-3000.

200W and 200 memory channels.


- Tunable frequency: 1.8 - 30 Mhz with long wire antenna from 8 meters
- Input impedance: 50 ohms
- Input power: 10 - 200W PEP
- SWR: <2:1
- Power supply voltage: 12V +/- 10%
- Current consumption: <0.8A
- Auto tuning time: Approx. 2 seconds (first time tuning) Less than 1 second (return to memory frequency)
- Memory channels: 200
- Weight: 1.8 KG
- Size: 310 x 240 x 72mm (L - W - H)

As reviewed by Steve White in Radcom

"A real bargain when compared to its obvious USA competitor" "Well built & performs impressively"

Steve White, Radcom November.

CG-3000 shown with optional remote switch.



NEW! Remote control for the CG-3000. £29.95


NEW MYDEL CG-5000

At last! 600W PEP High Speed Remote Tuner from MyDEL

Specifications:

- Tunable frequency: 1.8 - 30Mhz with long wire antenna from 8 meters
- Input impedance: 45-55 ohms
- Input power: 10 - 600W PEP
- SWR: <2:1
- Power supply voltage: DC 13.8V
- Current consumption: <1.5A
- Memory channels: 800
- Auto tuning time: 0.5-6 seconds (first time tuning), less than 0.2 second (return to memory frequency)
- Weight: 1.8 KG
- Size: 365mm x 240mm x 75mm (L - W - H)

ML&S Only £439.95



Nifty Equipment Manuals and Quick Reference Cards for Yaesu, Icom, Kenwood, Elecraft & Ten-Tec radios. See Web for details.

LDG

LDG Tuners & Accessories

If you see LDG advertised cheaper in this magazine (or on the web) from a UK stockist we will try and BEAT it! Please call.

LDG Z-100 100W Auto ATU 160M-6M Only £119.95

LDG AT-100Pro & AT-200Pro 100W or 200W Auto Tuner, 160M-6M with 2 Antenna outputs. AT-100Pro £169.95 AT-200Pro £179.95

LDG AT-1000 1kW Auto Tuner, wide tuning range (10:1 SWR) 160M-6M Only £499.95

AT-897 Bolt-on Alternative Auto Tuner for the FT-897. Wider tuning range and cheaper too! Only £179.95 Special 'Intro' price






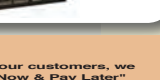
LDG Z-11Pro Portable compact & tunes 100mW to 125W £139.95

LDG RBA-1:1 & RBA 4:1 Probably the best 1:1 & 4:1 baluns out there. £29.95 each

LDG TW-1 & TW-2 Talking Wattmeters! TW-1 HF 0-2kW TW-2 6/2/70 250W. £109.95 each

LDG DTS-4+4R & DTS-6+6R Remote Antenna Switchers. 1.5kW 1-54MHz. Either 4 or 6 way. £89.90 & £119.90

FT Meter - External meter Add-on analogue meter for the FT-857 and FT-897. Just plug & go! Enables you to read signal strength. Discriminator, power output, SWR, ALC etc. £39.95

LDG AT-7000 Specifically designed for the IC-7000! The AT-7000 is the ideal tuner for your shiny new IC-7000. First, it matches up to 10:1 SWR (3:1 on 6 meters), so just about anything you can feed with coax is good to go. And, it has 2,000 (not a typo; that's 2,000!) memories.

Take Away Now and Pay NOTHING for Six Months!

Having many years of experience offering specific finance packages for our customers, we can now offer various options on payment. We have added "Take-Away Now & Pay Later" to all our products over £199. It works like this: 0% APR An example of our Take-Away Now: Discounted price of £300. Pay no interest provided you pay by the date the amount is due, in full. If you do not settle the original amount deferred within the six month period* you will then pay £13.54 for 36 months at an APR of 29.8% TAP £487.44. Please note that interest is calculated from the date of the original agreement. 29.8% APR. E&OE

* For six months deferred a £30 set up fee is required for all confirmed applications, payable in advance.

ML&S martin lynch & sons

Suppliers of Communications Equipment

Outline House, 73 Guildford Street, Chertsey, Surrey KT16 9AS

Open six days a week Mon - Fri: 9.30am - 5.30pm Sat: 9.00am - 5.00pm




(Local Call Number)

Tel: **0845 2300 599**

Tel: 01932 567 333 (Direct Dial Number)

Fax: 01932 567 222

Web: www.hamradio.co.uk

E-mail: sales@hamradio.co.uk



The St. Brandon 3B7C Story

Practical Wireless introduced the **Five Star DXers Association 3B7C** expedition to St. Brandon in two articles, in the July and August 2007 issues. Now, as I look back, the statistics tell a large part of the story – 137,500 contacts at the bottom of the sunspot cycle!

Indeed, not a single sunspot was recorded while we were on St. Brandon. But that didn't prevent us making contacts!

Worked 3B7C?

Hopefully, many *PW* readers will have worked 3B7C – although it wasn't only the contacts that kept Amateurs interested. The innovations on our website, thanks largely to **Marios Nicolaou G0WWW (5B4WN)**, proved extremely popular as anyone could check the DXpedition log and could also see who the expedition operator was for each of their QSOs. They could also see how they ranked among other Amateurs from the same country in

terms of band/mode contacts with 3B7C.

A graphical feature on the website showed when contacts were being made from your location to 3B7C on each of the bands. You could then easily see when other UK stations were working the DXpedition based **on the actual** DXpedition log! There were an astonishing 6.7million hits on the web page which, during the expedition, was seeing 8GB of traffic a day!

Limited Island Communications

From our point of view, on the island with only limited communications – other than Amateur Radio, of course! – with the rest of the world, we were largely unaware of the high level of interest – except that the pile-ups never diminished **on any band** during the 17 days of operation! A new experience for us because on past DXpeditions we've seen a falling-off of demand on the main bands towards the end of the second week (on the highest and lowest bands this is less

true as the bands are open for shorter periods each day).

We started at midnight our time (2000UTC) on the Friday after we arrived on the island, opening up simultaneously on 1.8, and 3.5, and 7MHz using c.w. and s.s.b. and 10MHz c.w. (the higher bands were closed at that time). The waiting world was ready for us!

An advance party had arrived a couple of days ahead and had unpacked the shipping container with its six tonnes of equipment. This was stowed in the hold of the *Sainte Rita*, the fishing boat that was to take us to St. Brandon. Most of us arrived on the day we were due to sail and were met at Mauritius airport by **Don Beattie G3BJ** before transferring to the *Sainte Rita*.

The 28 hour sea crossing was really unpleasant! After we cleared the shelter of Mauritius we encountered some very unpleasant seas indeed, which stayed with us until we arrived at St. Brandon. The majority disappeared to their bunks and weren't seen again until we anchored outside the reef at St. Brandon – ready to be taken ashore in small open motor boats!

The island was everything we could



Team photo of the 3B7C Team, **Peppe Arninge SM5GMZ**, is of course 'missing' behind the camera!



Arnie N6HC, the team medic, pushes up one of the quarter-wave verticals of the 40m four-square array.

Don Field G3XTT rounds up the *PW* coverage of the St. Brandon 3B7C DXpedition that took place in September 2007.

hope for. We had free run of the place, as only the Manager and his wife, a couple of our cooks and a few local fisherman (using Isle du Sud as their base) were there!

A frenzied three days followed, setting up the stations and logging computers, putting up 12 main antennas (two each for 3.5 and 14MHz, one each for the other bands 1.8 to 50MHz) together with several receive antennas. Finally, we set the six 5kW diesel generators running.

Would It Be Worthwhile?

But would the trip be worthwhile and would conditions be so bad that nobody could work us? On the Friday evening I was scheduled to start up on 7MHz. A few minutes before we planned to start I tuned across the c.w. end of the band and heard only a couple of European signals and nothing else – but within moments of my first “CQ” call I had a pile-up of almost unmanageable proportions. It rather seemed that everyone was biding their time waiting for us!

The days quickly became a blur as we all worked on the reliable bands which, on this occasion, were essentially 7, 10, 14 and 18MHz, where the pile-ups were large and the signals generally strong. But everyone also took their turn at 1.8 and 3.5MHz where the noise levels are high and QSOs a struggle.

The high bands were frustrating too, as they were so unpredictable. On a four hour shift on 24MHz the band may barely have opened at all, with maybe just a handful of Far Eastern stations. But you had to hang in there because on some days those bands would suddenly open up and we couldn't afford to miss the openings when they occurred.



Paul EI5DI (of SD logging software fame) concentrating hard on the pile-up!

We realised that we needed a second antenna for 21MHz, so that when 15m opened we could maximise our QSO rate by operating on two modes simultaneously. A vertical dipole (a length of wire taped to a bamboo pole!) was then erected at the water's edge – it's remarkable how well such a simple antenna works **when it's right next to seawater**.

In the tropics the low bands (up to 14MHz) suffer from high absorption during much of the day, while at night at this stage of the sunspot cycle the maximum usable frequency (MUF) dropped below 10MHz for at least some of the time. Around dawn and dusk it's frantic with every band being open. The net effect is that everyone ends up doing about 50% of their operating in daylight and 50% during the hours of darkness.

The 7MHz band was remarkable, opening to the whole of the USA about two hours before our dusk and staying open, again to the USA but via the opposite path, until about two hours after our dawn. This was very much a result of the low solar activity – on previous trips the band has not been open to anything

like the same extent during daylight hours.

Another eye-opener was the difference in propagation between the top and bottom ends of the 3.5MHz band. This probably shouldn't have surprised us, as the frequency difference between 3.5 and 3.8MHz is around 10%, equivalent to that between 24 and 28MHz. But it's rare to have the opportunity to check this out as we were able to run two 3.5MHz stations, one on c.w. and one on s.s.b., largely thanks to some superb narrowband bandpass filters constructed by **Tony Canning G0OPB**.

Third Highest!

We were delighted to achieve the third highest expedition QSO total ever (and the highest for a generator-powered effort). The low bands were good and the high h.f. bands too, although one disappointment was the lack of any 50MHz (6m) propagation.

Why do we do the trips when we know that we'll suffer from deliberate QRM? And we know that there'll be those who knock our efforts and that there'll be a certain amount of discomfort? (The journey back to Mauritius was not much better than the journey out!).

We do the trips because there's no doubt many thousands of Amateurs get pleasure from chasing us, especially those who wouldn't necessarily work a less well-equipped expedition. Our group develops huge camaraderie and I'm sure that every team member would say they've learned a lot from the experience. It can't have been that bad as – towards the end – we inevitably turned to the perennial question, 'Where do we go next?'



Don G3BJ at the computer, struggles with the pile-up on 10MHz RTTY (see the waterfall display in StarLog).

Team members G3SVL, G0OPB, K3NA, DK7YY and MD0CCE come ashore from the Sainte Rita in the background.

Photography: Peppe Arninge SM5GMZ



club news

Please remember to include full details of your club, E-mail and telephone contact details and the postcode of your meeting venue - it helps potential visitors to find you!

Send all your club info to:

PW Publishing Ltd.,
Arrowsmith Court,
Station Approach,
Broadstone,
Dorset BH18 8PW
E-mail: pwnews@pwpublishing.ltd.uk

CHESHIRE

Chester & District Radio Society

Contact: Graham
Tel: (07930) 655 121
E-mail: info@chesterdars.org.uk
Website: www.chesterdars.org.uk

The Chester & District Radio Society meets on Tuesday evenings at the Burley Memorial Hall, Common Lane, Waverton, Chester CH3 7QT. January 22nd is the Construction Contest Winners presentation.

Macclesfield & District Radio Society

Contact: Ray King M1REK
Tel: (01260) 278431

The Macclesfield & District Radio Society meets every Monday at the Pack Horse Bowling Club, Westminster Road, Macclesfield SK10 3AT at 8pm. January 14th is a talk on Offshore Pirate Radio by Tom Read M1EYP, 28th is Bits & Pieces, compared by Dave Lucas G0BIE and February 18th is a talk on ARDF (Amateur Radio direction finding) by Bob Titterington G3ORY. The club continues to hold successful licensing courses. A new Foundation Licence course is underway, with keen youngsters taking part and enjoying the practical assessments. Additionally, a group of the club's current Intermediate Licence holders are holding regular study clubs, in addition to their tuition, in preparation for their forthcoming full licence examinations.

Stockport RS

Contact: David Simcock
Tel: 0161 456 7832
Website: www.stockportradiosociety.co.uk
The Stockport Radio Society meets on the first and third Tuesdays at the Bramhall Air Scouts HQ, Leewood Hall, Benja Fold off Ack Lane East, Bramhall, Stockport SK7 2BX.

COUNTY DOWN

Bangor and District ARS

Contact: Mike G4XSF
Tel: 028 4277 2383
Website: <http://www.bdars.com>

Bangor and District Amateur Radio Society meets on the 1st Thursday of every month in *The Boathouse*, Harbour Car Park, Groomsport at 8pm. Visitors and new members are most welcome.

COUNTY DURHAM

Great Lumley AR& ES

Contact: Nancy Bone
Tel: 0191 477 0036
E-mail: nancybone2001@yahoo.co.uk
Website: www.glares.org.uk

Great Lumley Amateur Radio & Electronics Society meets in the Community Centre, Front Street, Great Lumley, Chester le Street, County Durham DH3 4JD every Wednesday 7.30 to 9.30pm. January 23rd is the AGM when various committee members will be standing down.

Bishop Auckland RAC

Contact: Mark Hill
Tel: (01388) 745353
Website: <http://barac.m0php.net/>

The Bishop Auckland Radio Amateur Club meets every Thursday at 8pm in the Village Community Centre, Stanley Crook, County Durham DL15 9SN. Tuition for Foundation, Intermediate and Advanced licences is available. The club is registered as an RSGB exam centre.

DERBYSHIRE

South Normanton Alfreton and District ARC

Contact: A J Highton
Tel: (01773) 783658
E-mail: snadarc@linuxmail.org
Website: www.snadarc.me.uk/

South Normanton Alfreton and District Amateur Radio Club meets weekly on Mondays in the Village Hall, Community Centre, Market Street, South Normanton, Derbyshire DE55 2EJ.

DEVON

Torbay ARS

Contact: Dave Helliwell
E-mail: g6fsp@tars.org.uk
Website: <http://www.tars.org.uk/>
Torbay Amateur Radio Society meets Fridays at 7.30pm in the Teignbridge District Scout Headquarters, Wolborough Street, Newton Abbot, Devon TQ12 1JR. January 18th and February 22nd are Technical Nights, January 25th is a Construction Contest, February 1st and 15th are Operating Nights, February 8th is a Natter Night and 29th is the AGM.

THE LOTHIAN

Cockenzie & Port Seton ARC

Contact: Bob Glasgow
Tel: (01875) 811723
E-mail: gm4uyz@cpsarc.com
Website: <http://www.cpsarc.com/news.php>
Cockenzie & Port Seton Amateur Radio Club meets in the Thorntree Inn (Lounge Bar), High Street, Cockenzie, East Lothian EH32 0HP from 7pm till late. Organised talks are held in the Port Seton Community Centre, South Seton Park, Port Seton, East Lothian EH32 0EE. January 18th is an Open Forum and February 15th is a Radio Check Night by John MM0JXL, both at Port Seton Community Centre Resources Room 2 from 7 to 9.30pm.

Lothians Radio Society

Contact: Tony Sigouin MM0TSS
Tel: 07739 742367
E-mail: enquiries@lothiansradiosociety.com
Website: www.lothiansradiosociety.com

The Lothians Radio Society meets on the second and fourth Mondays of the month in the Royal Ettrick Hotel, 13 Ettrick Road, Edinburgh EH10 5BJ from 7pm. Membership costs £12 per year and includes a free BBQ every June! January 14th is a talk on Software Defined Radio by Peter Waters G30JV (Waters and Stanton), 30th is a video night and February 13th is My Favourite Receiver.

EAST SUSSEX

Hastings E&RC

Contact: Gordon Sweet

Tel: (01424) 431909
E-mail: gordon@gsweet.fsnet.co.uk
Website: www.herc.uk.net

The Hastings & District Radio Club meets on the third Wednesday at The Phoenix Hall, William Parker School, Parkstone Road, Hastings TN34 2NT at 7pm. January 16th is a talk on Soft Rocks and Computer Radio by Leon Heller and February 13th is the AGM.

ESSEX

Braintree & DARC

Contact: Keith G4MIU
Tel: 01376 329279
Website: www.badars.org.uk

The Braintree & District Amateur Radio Society meets on the first and third Monday of the month in The Clubhouse, Braintree Hockey Club, Church Street, Bocking CM7 5LJ.

Chelmsford ARS

Contact: Martyn Medcalf G1EFL
Tel: (01245) 469008
E-mail: info2007@g0mwt.org.uk
Website: www.g0mwt.org.uk

The Chelmsford Amateur Radio Society meets on the first Tuesday of each month in the Marconi Sports & Social Centre, Beehive Lane, Great Baddow, Chelmsford CM2 9RX at 7.30pm. February 5th is a talk on Operating in West Africa by Roger Weston G3SXW and March 4th is Hylands House by Ceri Lowen and Richard Oscroft.

Loughton & Epping Forest ARS

Contact: Marc Litchman G0TOC
Tel: 020 8502 1645
E-mail: info@lefars.org.uk
Website: www.lefars.org.uk

Loughton & Epping Forest ARS meet Friday fortnightly at All Saints House, Romford Road, Chigwell Row, Essex, IG7 4QD between 7.45 and 10pm. January 18th is a talk on The Work of the RSGB's EMC Committee by Colin Richards G3YCR and Robin Page-Jones G3JWI. All visitors will be made most welcome.

HAMPSHIRE

Fareham & District ARC

Contact: Ken Sapsed
Tel: 023 9279 7240
E-mail: secretary@fareham-darc.co.uk
Website: www.fareham-darc.co.uk/
Fareham & District Amateur Radio Club meets on Wednesdays evenings from 7.30pm in the Portchester Community Centre, Westlands Grove, Portchester, Fareham PO16 9AD.

Horndean & District ARC

Contact: Stuart Swain
Tel: (02392) 472846
E-mail: g0fyx@msn.com
Website: www.hdarc.co.uk

Horndean & District Amateur Radio Club meets on the first and fourth Tuesdays each month in the Lovedean Village Hall, 160 Lovedean Lane, Lovedean, Hampshire PO8 9SF at 7.30pm. Visitors are always very welcome. January 22nd is a quiz

night arranged by Arthur G0JRN, February 5th is a natter night/social evening and 26th is a Bring & Buy Sale.

HUMBERSIDE **Hull & District ARS**

Contact: Raymond Penny
Tel: (01482) 504618
E-mail: sirraymond@sirraymond.karoo.co.uk
Hull & District Amateur Radio Society meets every Friday at the Walton Leisure Centre, Walton Street, off Anlaby Road, Hull HU3 6JB.

KENT

Bredhurst RATS

Contact: Owen Wheeler G0NCE
Tel: (01634) 254420
Website: <http://www.the-brats.net/>
The Bredhurst Radio Amateur & Transmitting Society meets on Thursdays at the Parkwood Community Centre, Rainham, Gillingham, Kent ME8 9PN at 8.30pm. The Club holds a net 145.400MHz \pm Tuesdays at 9pm coverage about 15 miles around the Medway Towns Kent.

Bromley & DARS

Contact: Graham
E-mail: bdars@grahamc.net
Website: www.bdars.org
The Bromley & District Amateur Radio Society meets in The Victory Social Club, Kechill Gardens, Hayes, Kent (off B265, Hayes Lane, Bromley) on the third Tuesday of the month at 7.30pm.

LANCASHIRE

Oldham RC

Contact: Christopher Cunliffe G7OOD
E-mail: secretary@oarc.org.uk
Website: <http://www.oarc.org.uk/>
The Oldham Radio Club meets on Thursdays at No.1855 (Royton) Squadron Air Training Corps, Park Lane, Royton, Oldham at 7.30pm.

LONDON

Southgate ARC

Contact: Donald F Berry G4DFB
Tel: 020 8360 3614,
E-mail: dfberry@eggconnect.net

Website: www.southgatearc.org

The Southgate Amateur Radio Club meets on the 2nd Thursday of the month at Winchmore Hill Cricket Club, The Paulin Ground, Firs Lane, Winchmore Hill, London N21 3ER at 7.30pm.

NORFOLK

King's Lynn ARC

Contact: Ray Dowsett, MBE
Tel: (01553) 671307
E-mail: ray-g3rsv@supanet.com
Website: www.klarg.org.uk
King's Lynn Amateur Radio Club meets every Thursday at the Scout HQ, Chequers Lane, West Winch, King's Lynn PE33 0NY, off the A10 at West Winch at 7.30pm.

SHROPSHIRE

Telford & District ARS

Contact: Mike Street G3JKX

Tel: (01952) 299677
E-mail: mjstreetg3jkk@blueyonder.co.uk
Website: www.tdars.org

The Telford & District Amateur Radio Society meets on Wednesdays at the Community Centre, Bank Road, Dawley Bank, Telford, Shropshire TF4 2AZ at 8pm.

SOMERSET

South Bristol ARC

Contact: Len Baker
Tel: (01275) 834282
E-mail: g4rzy@msn.com
Website: www.sbarc.co.uk
South Bristol Amateur Radio Club meets at the Whitchurch Folkhouse Association, Bridge Farm House, East Dundry Road, Whitchurch, Bristol BS14 0LN. January 16th is a Technical Matters Forum and 23rd is Computer Training Software.

SOUTH GLOUCESTERSHIRE

Thornbury and South Gloucestershire ARC

Contact: Tony
Tel: (01454) 417048
E-mail: tonytsgarc@beeb.net
Website: http://jma-databases.co.uk/tsgarc/index.php/Thornbury_%26_South_Gloucestershire_Amateur_Radio_Club

Thornbury and South Gloucestershire Amateur Radio Club meets in the United Reform Church Hall, on the corner of Chapel Street and Rock Street, Thornbury at 7.30 - 9.30pm. January 23rd and 30th are On the Air Nights and 16th is a Video night.

TYNE & WEAR

Tynemouth ARC

Contact: Tony Regnart
E-mail: tony.regnart@gmail.com
Website: <http://www.gx0nwm.co.uk/>

Tynemouth Amateur Radio Club meets each Friday from 7 to 9pm at St. Hilda's Church, Stanton Rd, North Shields, Tyne & Wear NE29 9QB. It's known locally as 'the church near the fire station'. January 11th and 25th are Operating and Morse Nights, 18th is a talk on Magnetic Baluns by Glen G0SBN. February 1st is a Quiz Night, 8th and 22nd are operating evenings and 15th is a Pie & Peas Supper.

WEST MIDLANDS

Aldridge & Barr Beacon ARC

Contact: Roy Horton
Tel: 01922 691646
E-mail: leslie137@btinternet.com
Website: www.g0neq.co.uk
The Aldridge & Barr Beacon Amateur Radio Club is a daytime club and meets at the Aldridge Community Centre, Middlemore Lane, Aldridge, Walsall WS9 8AN on the first and third Monday of every month at 2pm to 4pm. The club has a long wire and a 144MHz antenna for radio operation using the club callsign G0NEQ. January 21st is an On the Air Night (this is an amendment and replaces AGM which has been rescheduled for February 4th) and 23rd is the New Year Lunch, February 4th is the AGM and 18th is an on the air evening.

Wythall Radio Club

Contact: Chris Pettitt G0EYO

Tel: (07710) 412 819
E-mail: g0eyo@wythallradioclub.co.uk
Website: www.wythallradioclub.co.uk
Wythall Radio Club is based at Wythall House, Silver Street, Wythall, near Birmingham B47 6LZ. They meet every Tuesday at 8pm and meetings are informal and friendly.

WEST SUSSEX

Brighton RC

Contact: Reg Moores
Tel: (01273) 503869
Radio Club meets on the second and fourth Tuesdays of each month at the Vallance Community Centre, Sackville Road, Hove BN2 3WR, at 7.30pm. Anyone wishing to know more are welcome to come along to a meeting, entrance is free.

Horsham ARC

Contact: Andrew Vine
Tel: 01483 272456
Website: www.harc.org.uk
The Horsham Amateur Radio Club meets on the first Thursday of the month at The Guide Hall, Denne Road, Horsham, West Sussex RH12 1JF.

WEST YORKSHIRE

Pontefract & District Radio Club

Contact: Colin G0NQE
Tel: (01977) 677006
E-mail: info@pontefractradioclub.org
Website: www.pdars.com
The Pontefract & District Radio Club club meets every Tuesday from 7pm and Thursday from 8pm at the Carleton Centre, Carleton Grange, Carleton Road, Pontefract, West Yorkshire WF8 3RJ. January 15th is a construction evening, completing and testing the useful audio amplifier for the shack or workbench (materials and parts provided). February 5th & 12th is building a PIC-based c.w. keyer (p.c.b., parts and enclosure available as a kit); 19th & 26th is building a c.w. decoder (p.c.b. and parts provided as a kit).

WILTSHIRE

Trowbridge & District ARC

Contact: Ian Carter
Tel: (01225) 864698
E-mail: ian.l.carter@btinternet.com
Website: <http://uk.geocities.com/tdarc@btinternet.com>
Trowbridge & District Amateur Radio Club meets at Southwick Village Hall, Southwick (nearest postcode is BA14 9QN). On January 16th, the club will hold their Annual General Meeting starting at 8pm. The 2007 Committee wish to remind members and prospective members that the club celebrates its 25th Birthday in December 2008 and all members joining in 2008 will have free membership in 2009.

WORCESTERSHIRE

Worcester RAA

Contact: Daniel Thompson
E-mail: m3jtt@hotmail.co.uk
Website: <http://g0wxj.demon.co.uk/>
Worcester Radio Amateurs Association meets at the 3rd Worcester Scouts HQ, Vicar Street, Off Rainbow Hill, Worcester WR3 8EU.

Lots of hard work is involved in running and promoting your local radio club so please try and support them. Why not pop along and join in? New members will be made most welcome.

SHOWROOM & MAIL ORDER:

Unit 1, Purfleet Industrial Estate,
Off Juliette Way,
Aveley RM15 4YA

NEXT DAY DELIVERY MOST AREAS £12.50



TO ORDER ON-LINE SEE www.haydon.info

Haydon Communications



TEL: 01708 862524

FAX: 01708 868441

Showroom Open:
Mon-Thurs, 10.00am - 4.00pm.

Mail Order Open:
Mon-Fri, 10.00am - 4.00pm.

West Midlands Showroom:
Tel: 01384 481681

E&OE

HF TRANCEIVERS

YAESU FT-450



Compact HF + 50MHz. All mode (100W) transceiver. And yes, it has "IF" DSP. And the voice announcement function can be useful as well! Available in two versions.

FT-450SAT (with ATU) Sale price £599.00
FT-450S (without ATU) Sale price £525.00

YAESU FT-817 ND



100kHz-440MHz (with gaps). All mode transportable. Includes NiMH battery/charger. Latest spec.

HF + 6m + 2m + 70cm Tx **£345.00**

FT-817ND + case + CW filter £420.00
FT-817ND pack + MS-1228 £469.99

NEW YAESU FT-950



- ★ DSP enhance on TX
- ★ High speed DDS
- ★ Built-in auto ATU
- ★ Built-in TCXO

HF + 6m/100W. IF DSP tripple conversion receiver. Direct lineage from the legendary FT-DX9000 and FT-2000.

£999.00

YAESU FT-857D DSP



The ultimate HF excitement in a small package. HF + 6m + 2m + 70cm. Incl's digital signal processor unit. Incl's optional DSP unit. Rig only **Xmas special**

FT-857D + ATAS-120.....£669.00 **£469.00**
FT-857D + MS-1228 PSU.....£519.99

YAESU FT-2000



Latest marvel of technology from Yaesu. With Built-in power supply and specification to shock even the professionals!

MD-200 broadcast quality mic. £229.99 **£1649.00**

Yaesu SP-8 extension speaker (filtered)£119.00

YAESU FT-897D



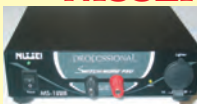
HF + 6m + 2m + 70cm all mode. An amazing DSP Tcvr for base/mobile or portable use. Very little has been left out! **Xmas special**

FT-897D + MS-1228 **£629.00** **£569.00**

ATAS-120 antenna...£219.00 MD-200£229.99

PSUs

NISSEI MS-1228



28A at 13.8V yet under 2kgs. (H 57mm, W 174mm, D 200mm approx). Fully voltage protected. Cigar socket & extra sockets at front/rear. Ultra slim.

NISSEI HAVE BECOME RENOWNED FOR PUTTING QUALITY FIRST, YET MAINTAINING A GOOD PRICING STRUCTURE. A TRULY SUPERB POWER SUPPLY UNIT

'Smallest version to date' now with cigar socket.

Xmas special £59.95

NISSEI PS-300



Features: ★ Over voltage protection ★ Short circuit current limited ★ Twin illuminated meters ★ Variable voltage (3-15V) latches 13.8V

★ Additional "push clip" DC power sockets at rear. Dim'ns: 256(W) x 135(H) x 280(D)mm. A truly professionally made unit built to outlast most PSUs.

Xmas special £99.95

30 AMP/12 VOLT PSU
TRUE 'LINEAR' PSU



DIAMOND GZV-4000

Diamond quality power supplies/switch mode. 40 amp version

SALE PRICE **£119.99**



DIAMOND GSV-3000

"Linear power supply". 30 amp @ 13.8V. 1-15V variable. Was £149.95.

Diamond quality PSU **£139.95**

HF RCV'RS

SANGEAN ATS-505



105-380kHz/520kHz-30MHz (88.108). All-mode, incl's SSB. Superb low cost all-mode portable, ideal for around the house & holidays. **Free PSU**

Includes free 240V power supply **£79.95** (P&P £10)

SANGEAN ATS-909



A superb performance all mode synthesized world receiver with true SSB and 40Hz tuning for ultra clean reception. Other features include RDS facility, 306 memories and WFM. Incl's case/earphones/wind-out antenna. A truly remarkable receiver, especially on SSB - you'll be amazed.

Includes free 240V Power Supply **£139.95** Send SAE for copy of review

REALISTIC DX-394



- ★ Superb performance SW receiver ★ 0.2-30MHz (all mode)
- ★ Selectable tuning steps (down to 100Hz)
- ★ 240 or 12V ★ Digital S-meter ★ Attenuator ★ Key pad entry ★ 160 memories
- ★ Noise blanker.

£249.95 Send SAE for review

ACCS

SGC BARGAINS



SGC MAC-200 New auto tuner 1.8-54MHz (200W) wire, vertical, dipole. You name it.

(5 selectable outputs). **£239.99**

SGC-239 Mini tower ATU (1.8-30MHz) £169.99
SGC-230 (HF-200W) ATU £319.99
SGC-237 HF+6m Tuner.....£269.99
SGC-231 HF+6m (Deluxe).....£319.99

MFJ-259B



HF digital SWR analyser - 1.8-170MHz.

(Optional case £24.99) **£194.99**

MFJ-269B HF 70cm analyser £259.99
MFJ-901B Superb versatile ATU.....£69.99
MFJ-902 Compact ATU.....£59.99
MFJ-16010 Random wire ATU£39.99
MFJ-260C 300W dummy load£39.99
MFJ-264 1.5kW dummy load.....£69.99
MFJ-993T Intellituner ATU£189.99



MFJ-969

300W

SALE PRICE **£149.99**



MFJ-949E

£110.00

- 1.8-30MHz 300W ATU ● Large cross needle meter
- 30/300W PEP power meter ● VSWR ● 3-way antenna selector
- Internal balun + dummy load.

VHF/UHF TRANS

ALINCO DJ-596



2m + 70cm Handie. Includes: (NiMH) Battery/Charger. Wide + narrow switchable. High power (4.5W) OP as standard. (DTMF keypad as standard)

Xmas special £119.99

Optional case£16.99
Cigar lead£19.99
Optional headset (Boom mic)£24.99

NEW YAESU VX-3E YAESU VX-7R



2m/70cm Tx Rx: 500kHz-1GHz. Includes: battery/charger. **£109.99**

£199.99 Includes battery & charger

YAESU BARGAINS

6 pin modular DTMF mic£39.99 VX-6E£159.99
MD-200£229.99 ATAS-120£219.99



YAESU FTM-10R/E

2m/70cm mobile + wide Rx.

Blue tooth facility. **£219.99**

Blue tooth adapter £49.99



YAESU FT-7800

2m/70cm + wide Rx. A superb 50W mobile Tcvr.

£169.99

Optional in-car kit £10 when purchased with FT-7800



YAESU FT-8900r

10m + 26m + 2m + 70cm. (up to 50W).

£245.00



YAESU FT-2800M

2m FM (65W). Includes DTMF mic

£119.99

SUPER-GAINER RH-9000

Tx: 2m + 70cm (Rx: 25MHz-2.9GHz).

BNC 40cm flexible whip for the ultimate in gain. **£26.95** P&P £4.00

SUPER-GAINER RH-9090

replacement Tx: 2m + 70cm. Rx: 25MHz-2.9GHz

SMA 40cm flexible whip that is ideal as **£29.95** P&P £4.00

D-308B DELUXE DESK MIC



(with up/down). Many amateurs (over 4000) have been pleased with it's performance. Includes 8-pin round Yaesu mic lead. Icom/Kenwood & other leads available. Phone (£9.95ea). Replacement foam windshield available.

Truly remarkable audio on both SSB & FM/AM **£59.99** P&P £7.50

DIAMOND CP-6
A superb (diamond quality) 6 band trap verticle antenna with trap radials - "rotary" trap system allows "flat wall" mounting. 80m/40m/20m/15m/10m/6m. 200W SSB, HT 4.6m

SEND SAE FOR DATA SHEET

OUR PRICE **£219.99**

W-8010 DIAMOND SHORTEND DIPOLE



80-10m & only 19.2m long! (Up to 1.2kW) Includes 1:1 Balun. Bargain. Superb Japanese quality antenna system.

YES, ONLY **£89.99**

Q-TEK PENETRATOR

"We've sold 100s all over Europe"

★ 1.8 - 60MHz HF vertical ★ 15 foot high ★ No ATU or ground radials required ★ (200W PEP).

SEND SAE FOR LEAFLET

£179.95

Q-tek wire penetrator (45ft long)£159.99

Standard G5RV

Full size - 102ft (now includes heavy duty 300 ribbon)£28.95
Half size - 51ft (now includes heavy duty 300 ribbon)£24.95

DELUXE G5RV

P&P on either full/half size £6.50

Double size - 200ft (160-10m)£84.95
Full size - 102ft (80-10m)£42.95
Half size - 51ft (40-10m)£36.95

Q-TEK INDUCTORS

80mtr inductors + wire to convert 1/2 size G5RV into full size. (Adds 8ft either end)£29.99 P&P £4.00 (a pair)

In-line "RF" choke balun (for G5RV's).....£32.99

COAX BARGAINS

RG-213 Military spec x 100m.

£99.99 or 2 for **£170.00**

RG-58 Military spec x 100m.

£35 or 2 for **£60.00**

Coax stripping tool (for RG-58)£4.00



True military spec real UK coax

DOUBLE THICK FERRITE RINGS



A superb quality ferrite ring with incredible properties. Ideal for "R.F.I.". Width 12mm/OD35mm. 6 for £12.00 P&P £3.50
12 for £20.00 P&P £4.50
50 for £40.00 P&P £7.00

LOW LOSS PATCH LEADS



Connectors	Length	Price
PL-259 - PL-259	0.6m	£6.99
PL-259 - PL-259	1m	£7.99
PL-259 - PL-259	4m	£10.99
BNC - BNC	1m	£6.99

REPLACEMENT POWER LEADS

DC-1 Standard 6-pin/20A fits most HF£22.00

DC-2 Standard 2-pin/15A fits most VHF/UHF£10.00

YAESU REPLACEMENT MICS

MH-IC8 8 pin Yaesu mic (8-pin round)£29.99

MH-4 4 pin fits older HF, etc. (4-pin round)£24.99

COAX SWITCHES (P&P £5.50)



2 way CX-201 (0-1GHz) S0239£19.95
2 way CX-201 'N' (0-1GHz) 'N'£24.95
4 way CX-401 (0-500MHz) S0239£69.95
4 way CX-401 'N' (0-500MHz) 'N'£79.95

METALWORK & BITS (DEL Phone)

2" mast-floor base plate£13.50

6" stand off brackets (no U-bolts)£6.99

9" stand off brackets (no U-bolts)£9.99

12" T & K brackets (pair)£18.99

18" T & K brackets (pair)£22.99

24" T & K brackets (pair)£26.99

U-bolts (1.5" or 2") each£1.50

8mm screw bolt wall fixings£1.70

8-nut universal clamp (2" to 2")£6.95

2" extra long U-bolt/clamp£4.50

2" crossover plate with U-bolts£11.99

15" long (2") sleeve joiner£11.99

3-way guy ring£3.99

4-way guy ring£4.99

Heavy duty guy kit (wire clamp, etc.)£29.99

Set of 3 powder coated heavy duty fixing spikes (~0.7m long)£24.99

30m pack (4.4m) 480kg B/F nylon guy£12.50

Roll of self-amalgamating tape£6.50

Nylon dog bone insulators£1.00

Very large nylon insulators£2.00

PL-239 (small of large entry)£1.10

N-type plugs (high quality)£3.95

Copper plated earth rod (1.2m long with wire clamp)£13.99

Copper plated earth rod (as above) + 10m earth wire£19.99

CUSHCRAFT BARGAINS Delivery £12.50

MA5B Mini beam 10, 12, 15, 17, 20m. **SPECIAL OFFER** £349.95
A4S 4 ele beam (10 - 20m)£499.99
A3S 3 ele beam (10-20m)£449.00
R-8E Vertical (40 - 6m) "special"SPECIAL £425.00

DIAMOND V-2000 COLINEAR

6m + 2m + 70cm (2.15/6.2/8.4dB).

2 section (2.5m long) PL-259 fitting.

Was £89.95.

Superb quality Now **£84.99**

Q-TEK COLINEARS (VHF/UHF)

X-30 GF 144/70, 3/6dB (1.1m)£39.95
X-50 GF 144/70, 4.5/7.2dB (1.7m)£54.95
X-300 GF 144/70, 6.5/9dB (3m)£69.95
X-510H GF 144/70, 8.5/11dB (5.4m)£120.00
X-627 GF 50/144/70, 2.15/6.2/8.4dB (2.4m)£79.95

MOBILE ANTENNAS

DB-7900 2m/70cm (5.5/7.2dB) 1.6m (PL-259)£39.99
DB-770M 2m/70cm (3.5/5.5dB) 1m (PL-259)£24.99
PL-62M 6m/2m 1.4m (PL-259)£23.99
PL-627 6m/2m/70cm (1.7m) up to 7.2dB (PL-259)£44.99



YAESU G-450C

Heavy duty rotator for HF beams, etc.

Supplied with circular display control box and 25m of rotator cable.

OUR PRICE **£299.99**

G-650Cour price £339.99

G-1000DXCour price £429.99

G-5500 (azimuth/elevation) rotatorour price £499.99

GC-065 thrust bearing£48.00

GC-038 lower mast clamps£25.00

7 core heavy duty rotator cable£1.40/mtr



AR788

Quality rotator for VHF/UHF. Superb for most VHF-UHF yagis, 3 core cable required. 3 core cable 50p per mtr.

OUR PRICE **£49.99**

AE-201 thrust bearing£19.99

CAROLINA WINDOM

CW-160S (160-10m) 40m long£124.95 P&P £10.00

CW-160 (160-10m) 80m long£129.95 P&P £10.00

CW-80 (80-10m) 40m long£99.95 P&P £10.00

CW-80S (80-10m) 20m long£109.95 P&P £10.00

CW-40 (40-10m) 20m long£89.95 P&P £10.00

BALUNS & TRAPS

Baluns 1:1 or 4:1 or 6:1£29.99 each P&P £4

Traps 80m or 40m or 20m£29.99 pair P&P £4

COPPER ANTENNA WIRE ETC

Enamelled (50m roll)£16.95 P&P £7.50

Hard drawn (50m roll)£16.95 P&P £7.50

Multi-Stranded (Grey PVC) (50m roll)£13.95 P&P £7.50

Flexweave (H/duty 50 mtrs)£39.99 P&P £7.50

Flexweave H/duty (18 mtrs)£18.95 P&P £7.50

Flexweave (PVC coated 18 mtrs)£19.95 P&P £7.50

Flexweave (PVC coated 50 mtrs)£50.00 P&P £7.50

Special 200mtr roll PVC coated flexweave£150.00 P&P £10.00

Copper plated earth rod (4ft)£13.00 P&P £7.50

Copper plated earth rod (4ft) + earth wire£18.99 P&P £7.50

New RF grounding wire (10m pack) PVC coated£12.50 P&P £5

20mm ribbed circular conduit70p/mtr

NEW CAR BOOT MAST SET

Superb 18 foot (6 x 3 foot sections) that slot together.

Dia: 1 1/4" ideal to take anywhere.

£34.99

2 for **£39.99** del **£12.50**

FIBRE GLASS POLES

1m 1 3/4" £10.50 2" £12.50 Del £10.00

2m 1 3/4" £20.00 2" £24.00 Longer lengths available - phone

MFJ-125



12" Dxr's quartz wall clock. give:- 24hr time + 3 smaller dials give 12 hour time/day of week/date.

£37.99 P&P £6.00

NEW NOISE FILTER!



A superb TDK 'snap fix' ferrite clamp for use in Radio/TV/ Mains/PC/Phone etc.

Simply close shut over cables and notice the difference! Will fit cables up to 13mm diameter. Ideal on

power supply leads/mic leads/audio leads/phone leads.

2 for **£10.00** or 6 for **£25.00** (P&P £3.50)



NEW EASY FIT WALL PULLEY

Pulley will hang freely and take most rope up to 6mm. (Wall bracket not supplied).

£8.99 + P&P £4.50

Wall bracket, screws not supplied. Simply screw to outside wall and hang pulley on WALL BRACKET £2.99 P&P £1.00

30m pack (4.4mm) nylon guy (480kg)£12.50

132m (4.4mm) nylon guy (480kg)£40.00



MAST HEAD PULLEY

A simple to fit but very handy mast pulley with rope guides to avoid tangling. (Fits up to 2" mast)£8.99 + P&P £4.50

30m pack (4.4mm) nylon guy rope £12.50

132m roll 4.4m nylon guy (480Kg h/f)£40.00 Del £7.50



BARGAIN WINCH

500kg brake winch. BARGAIN PRICE

£59.95 Del £8.50

Winch wall bracket£19.99

TELESCOPIC MASTS

6 section telescopic masts. Starting at 2 1/2" in diameter and finishing with a top section of 1 1/4" diameter we offer a 8 metre and a 12 metre version. Each mast is supplied with guy rings and steel pins for locking the sections when erected. The closed height of the 8 metre mast is just 5 feet and the 12 metre version at 8 feet. All sections are extruded aluminium tube with a 16 gauge wall thickness.

8 mtrs **£159.99** 12 mtrs **£189.99** Carriage £12.00.

NEW 20' SLEEVED MAST SET

A heavy duty-sleeved, mast set that will tightly slot together. 4 x 5' (2" dia) 16 gauge heavy duty aluminium tubes. (Dimensions approx).

£59.99 Del £12.50.

TWO FOR £110.00
DEL £12.50

HEAVY DUTY SWAGED MAST SET

New extra heavy duty 2" mast set. 4 sections x 5 1/2' foot slot together.

£58.99 each.

TWO FOR £99.00
DEL £15.00

ALUMINIUM POLE CLEARANCE

We have sets of 4 (2") poles (3 of which are swaged) that slot together to make a (approx) 20' pole. Each section is approx 5' long - some have small dents in - some have been swaged slightly off centre - hence the price.

3 SETS FOR £69.99 DEL £17.00 SET PRICE **£29.99** Del £12.50

NEW SWAGED MAST SETS

20 foot mast.

1 1/2" - 4 x 5 foot sections. (Swaged)

£39.99

24 foot mast.

1 1/4" - 6 x 4 foot sections. (Swaged)

£39.99

ALLUMINIUM POLES

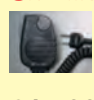
20 foot (collection only) 2"£49.99

10 foot (collection only) 2"£29.99

2.4m (2") Ally pole£24.99

5 foot (2") Ally pole£12.50

SPEAKER MICS



M-1020 Fits most handies. Alinco, Kenwood, Yaesu.



MS-107K Fits Kenwood handies.

£14.99 P&P £3.00

£14.99 P&P £3.00

LIGHTNING ARRESTOR



SP-350V

Replacement fuses £5.00

DC-1000MHz (400W through power).

S0-239 fitting.

£22.95 P&P £3.00



MFJ-1118 metered

High current distribution unit£64.95

NISSEI PWR/SWR METERS



RS-502 1.8-525MHz (200W)

.....£79.95 P&P £6

RS-102 1.8-150MHz (200W)

.....£49.95 P&P £6

RS-402 125-525MHz (200W)£49.95 P&P £6

RS-3000 1.8-60MHz (3kW) Incls mod meter£59.95 P&P £5

RS-40 144/430MHz Pocket PWR/SWR£29.95 P&P £4

DL-30 diamond dummy load (100W max)£26.99 P&P £4



Tony Nailer's

technical for the terrified

Antony Nailer G4CFY says that, in this issue he's going to revisit antennas.

In *Technical for the Terrified* in June 2007's issue of *PW*, I dealt with long wire and dipole antennas, and balanced feeders, together with basic theory. There were, unfortunately, a few errors introduced in production, which we're sorry about. But I'd like to take this opportunity to address those errors, together with extending the work to include antenna tuning units (a.t.u.) and baluns.

Long Wire Antenna

The name long wire antenna should apply to an horizontally supported wire of at least several wavelengths long at the lowest operating frequency. In the June 2007 article I implied that a long wire antenna could be a single quarter-wave resonant length at the lowest frequency of operation, which traditionally is not the case. These days generally, with much smaller gardens such antennas would be better described as random wire antennas.

The usual length of wire, referred to as a 'random wire antenna', may

be close to quarter-wave resonant on the lowest operating frequency. Wire lengths corresponding to multiples of half-wavelength are difficult and dangerous to try loading up. My calculations undertaken prior to the previous article indicated that a good length of random wire was 16.33m (or 53ft 8in).

Although the 16.33m length isn't quarter-wave resonant on any amateur band, it's close enough for the 3.5, 7 21 and 28MHz bands to be within easy tuning range of an a.t.u. The antenna will be driven in respect to ground by the transmit system. In areas of poor ground conductivity, it will be necessary to lay a wire on the ground beneath the radiating wire, to provide the required ground. This ground wire is called a counterpoise, and shown in **Fig. 1**.

Earth Return

The grounding, or r.f. earth return, for equipment in the radio shack is something that should be given as much attention as the antenna system. In many cases the ground return is an important part of the

antenna, as in the case of long or random wires. It's also important when using 50Ω coaxial feeder on dipoles. It is nowhere near as important in systems using 75 or 300Ω balanced feeder to a dipole.

Ideally the wire to a good size ground stake should be very short. In practice this may not be possible. In these situations the length should not be quarter-wave, or any odd multiple of this on any frequency you wish to operate on. In the previous article my keyboard's 'quarter' character wasn't imported into the system correctly and was mistakenly printed as half-wave.

Duplicate earths are one way to overcome the quarter-wave ground problem. Whereas a short run to one ground stake may be quarter-wavelength, another double the length to a more remote ground stake will provide the necessary low impedance path.

Balanced Signals

Dipoles and Trap Dipoles are balanced and must be fed with balanced signals to each half.

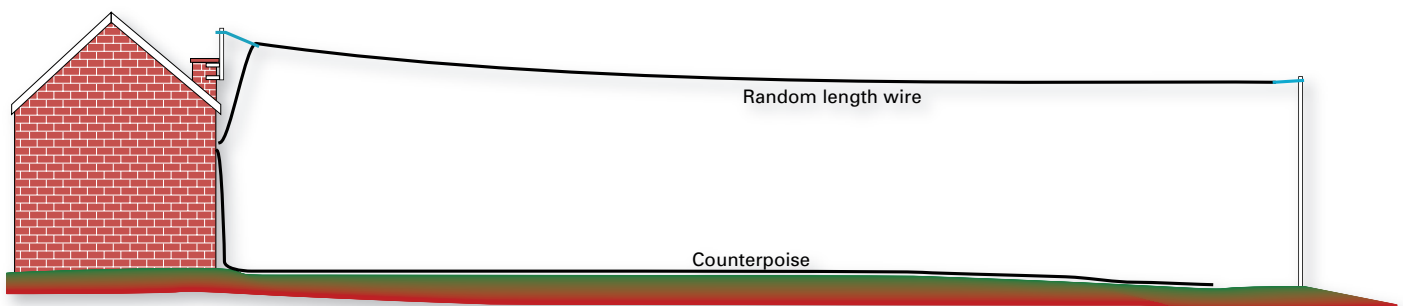


Fig. 1: A simple random wire antenna layout, in general the wire may be almost any length but the longer the better.

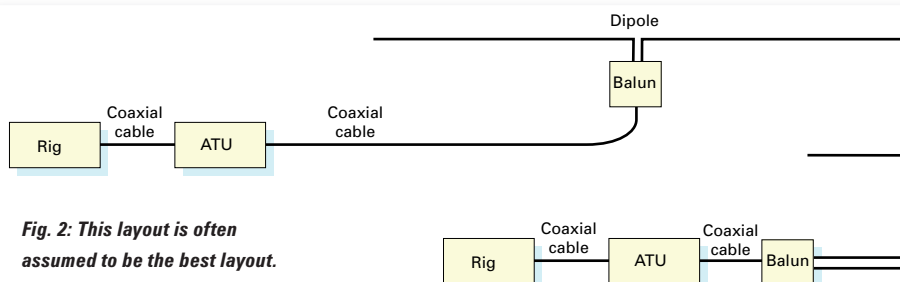


Fig. 2: This layout is often assumed to be the best layout. But is it?

Fig. 3: This layout has many benefits over that of Fig. 2.

Tony Nailer G4CFY

PW Publishing Ltd.,
Arrowsmith Court,
Station Approach,
Broadstone,
Dorset BH18 8PW
E-mail: tony@pwpublishing.ltd.uk

Tony Nailer G4CFY

To subscribe to my readers' list, send a blank e-mail to: pw-g4cfy-on@pwpublishing.ltd.uk with the word subscribe in the subject box. When you receive confirmation from the server you can then send e-mails to pw-g4cfy@pwpublishing.ltd.uk and your comments will be answered by myself or the PW team.

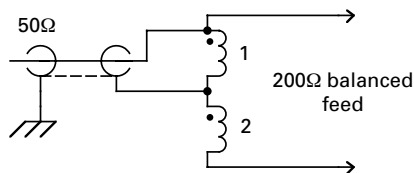


Fig. 4: A 4:1 impedance step-up is easily created,

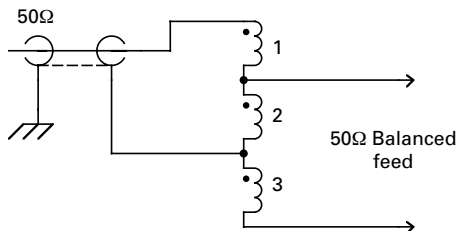


Fig. 5: Creating a 1:1 balun for 50Ω impedance is rather more complicated than the simple circuit of Fig. 4.

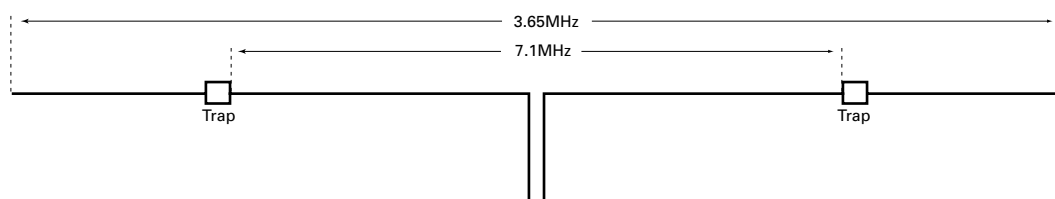


Fig. 6: A trapped dipole has two distinct half-wave resonance points, which may be on unrelated frequencies.

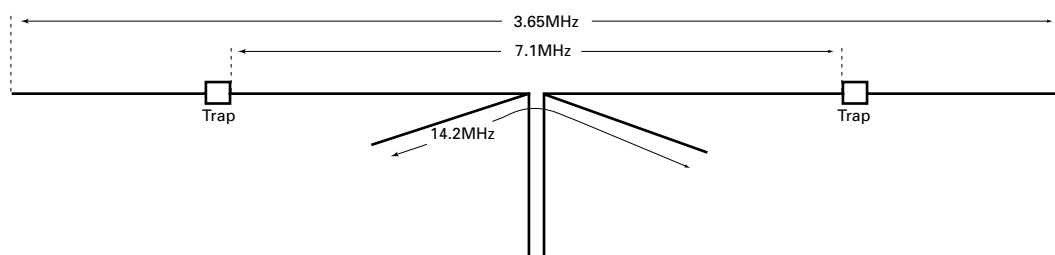


Fig. 7: A combination trapped and nested dipole arrangement offers some advantages.

Amateur transmitters are universally supplied with unbalanced coaxial outputs. So somewhere between the transmitter and the feedpoint of the dipole, a balanced-to-unbalanced transformer (balun) is required.

Coaxial cable is so widely used in Amateur shacks, that it's often assumed to be the preferred antenna feeder in all cases. This leads many to assume that the best arrangement is coaxial cable from the rig to the a.t.u., then more coaxial cable from the a.t.u. to the antenna feedpoint where a 1:1 ratio balun is used, **Fig. 2**.

As I pointed out in the previous article, the use of coaxial cable is detrimental to the operation of the antenna system. The power losses are greater, it's heavier, and it picks up and radiates signal, giving rise to both television interference (TVI) and man-made noise pick-up. The

preferred arrangement is coaxial cable from rig to the a.t.u., a very short length of the same (less than 2m) to the 1:1 ratio balun, then a half-wavelength or more of 75Ω twin feeder to the dipole. See **Fig. 3**.

In the case of other doublet antennas fed with 300 or 450Ω twin, a 1:4 ratio balun is generally used at the a.t.u. end. Indeed the majority of commercial a.t.u.s. include a 1:4 balun that's not suitable for use with 75Ω twin. Conversely though, a 1:1 balun can be used to couple 75Ω twin with 300Ω and 450Ω twin feeder.

Wound Together

The manufacture of the 1:4 balun requires two wires, wound together on a ferrite core or on a pvc pipe. The start of one winding is connected to the end of the other, and this point is taken to the ground terminal. One

free end is taken to the centre of the coaxial feed socket and also to one of the balanced output terminals. The other free end is taken to the other balanced line terminal, **Fig. 4**. The two windings form a transmission line transformer, and the twin line outputs are equal in impedance and magnitude with respect to ground, but opposite phase.

Strangely enough the 1:1 balun is more complicated, requiring three wires wound together on a ferrite core or on a pvc pipe. As in the case of the 1:4 balun, the three windings are connected start to finish in the correct sequence. The coaxial cable centre is connected to one free end and the other free end to a balanced line terminal. The joint of windings 1 & 2 are connected to the other balanced line terminal, and the joint of 2 and 3 to coaxial cable earth,

LAM COMMUNICATIONS

Specialist Dealers in New and Used Equipment Located within 1 mile of junction 36, M1 Motorway

The North's Leading Radio Emporium
71 Hoyland Road, Hoyland Common, Barnsley, S74 0LT, South Yorkshire
www.lamcommunications.net
sales@lamcommunications.net
Tel: 01226 361700



IC-756 PRO 3
@ **£1749.00**

ICOM
Authorised Dealer



IC-7400 @ **£1199.00**
with the SM 20 desk mic and
SP 21 speaker @ **£1295.00**

IC-718 HF160-10M @ **£439.99**

IC-208 145/430 + Wide RX @ **£219.00**

IC-E90 includes 6/4/2/70 @ **£239.99**



IC-910H 2m/70cm Base
@ **£1089.99**



IC-910HX
2m/70cm Base +23cm module
@ **£1239.99**



IC-7000 click on-line for
'Special Offers' on this rig
@ **£899.00**



IC-706 MKIIG
HF160-6M+145/430Mhz
@ **£649.00**

IC-703 HF160-6MQR+ATU @ **£449.00**

IC-E7+ stand in charger @ **£169.99**

We carry a large selection of Icom accessories.

Going digital

IC-2820

50W VHF-UHF, D-Star
and GPS compatible, inc
UT-123 digital board and
GPS antenna

@ **£519.99**



IC-E91 'Going Digital' @ **£249.99**
+ the UT 121 digital unit @ **£129.99**
or 'Special Offer' for the both together
price of **£369.98**

LAMCO Antennas

D-Star Digital compatible

LAMCO-X30 145/430Mhz 3/5.5dB

1.3m base aerial @ **£39.99**

LAMCO-X50 145/430Mhz 4.5/7.2dB

1.7m base aerial @ **£49.99**

LAMCO-X200 145/430Mhz 6/8dB

2.5m base aerial @ **£69.99**

LAMCO-X300 145/430Mhz 6.5/9dB

3.1m base aerial @ **£79.99**

LAMCO-V2000 50/145/430Mhz

2.5m base aerial @ **£69.99**

Sirio CX 4-68 4m

base aerial @ **£49.99**

+ a whole lot more!!!!

Want the **BEST GAIN** on 2 & 70 get the
LAMCO CGF 6000 'High Gain' 145Mhz
9dB gain / 430Mhz 12dB gain, 5.6m tall
@ **£109.99**

POWER SUPPLIES

MyDEL power supplies carry a 2 year warranty
MP-925

25 amp transformer PSU @

£99.99 Best selling ever!

MP-8230 23 amp

switchmode PSU

MP-250, MP-9600 also available



@ **£69.99**

SPEAKERS

bhi NES 10-2 MKII

Noise eliminating speaker

@ **£99.99**

ANTENNA TUNERS

Palstar

AT1500CV 1500 watts

ATU @ **£349.99**

AT1KM 1200 watts

ATU @ **£289.99**



MyDEL CG3000 ATU @ **£229.99**

- Tunable frequency: 1.8 - 30 Mhz
minimum wire length 8 meters
- Input impedance: 50Ω
- Input power: 10 - 200W PEP
- SWR: <2:1 • PSU: 12V +/- 10%
- Auto tuning time: Approx. 2 sec
(1st tune) >1 sec to memory
- 200 Memorys • Weight: 1.8 KG,
Size: 310 x 240 x 72mm(LWH)
- Remote switch optional **£29.99**



CG-3000 shown with
optional remote switch.

CG5000 500W version of above @ **£439.99**

LDG

Z100 100W auto ATU

160-6m @ **£119.99**

AT100PRO 100 watts

160-6m @ **£169.99**

AT 200PRO 200 watts

160-6m @ **£179.99**

Z-11PRO portable QRP

to 100 watts ATU @ **£139.99**

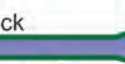
AT7000 for the

Icom IC7000 rig @ **£139.99**

AT897 100 watts

160-6m @ **£179.99**

MFJ also in Stock



WonderWand

A one stop solution to your
portable antenna requirements.
The **New WonderWand Combo**,
7MHz to 440MHz, 40W @
£159.95
WonderPole, 20-10M portable
dipole @ £129.95
WonderWand Original, 40M- 6M
ideal for FT817, FT897 and IC703
@ £89.95 **WW TCP**, a tunable
counter poise for the
WonderWand for increased
performance @ £59.95



STOP PRESS

ALL NEW YAESU FT-950

Arriving Shortly

HF 160-10 + 6M All
modes, 100 Watts, DSP
@ **£LOW PRICE**



FT-2000 HF/50Mhz

@ **£CALL**

FT-2000D 200 W

version of above @ **£CALL**

THE ALL NEW YAESU FT450

Yaesu FT-450

HF 160-10 + 6M All modes,
100 Watts, DSP @ **£CALL**

Yaesu FT-450AT

including internal ATU @ **£CALL**



FT-897 D Battery deal -

2x FNB 78 batteries, 1 x PA
26 adaptor, 1 x CD 24rapid
charger @ **£849.99**

Power supply deal

1 x FP 30 PSU, 1 x FC 30 ATU @ **£849.99**



FT-857D HF/50/145/430Mhz @ **£499.00**

FT-817ND the ultimate portable rig HF/50

145/430MHZ all mode QRP @ **£349.99**

FT-8900 10/6/2/70 dual receive +

DTMF 50watts @ **£249.99**

FT-8800 145/430 dual receive +

DTMF 50watts @ **£219.99**

FT-7800 145/430Mhz +

DTMF 50watts @ **£169.99**

VX-6 submersible 5watts

145/430Mhz handheld @ **£169.99**

VX-7 submersible 5watts

50/145/430Mhz handheld @ **£209.99**

FT-60 5watts

145/430 Mhz handheld @ **£129.99**

VX-170

5watts 144/145Mhz handheld @ **£99.99**



A LAMCO FIRST

The Ultimate in RF Cables
imitations need not apply

T TIMES MICROWAVE SYSTEMS

LMR400 Extra low loss coax @ **£2.50 /m**

LMR300 Extra low loss coax @ **£2.10 /m**

For more info visit www.timesmicrowave.com



junksale

-Buy-Sell-Exchange-Wanted-

The Premier Radio Website for UK & Europe



LAM Communications

stock a comprehensive range of
ML&S products,
eg; MyDel, Alpha Delta & Maldol etc...



Fig. 5. Again, the twin line outputs are equal in impedance and magnitude with respect to ground, but opposite phase.

Dipoles & Trap Dipoles

Dipoles and trapped dipole antennas present a feed-point impedance between 40 and 100Ω on frequencies at which they're resonant. Resonance occurs when the overall length is one half-wavelength and all odd multiples of half-wavelength. **This was stated wrongly in the previous article that it applied to all multiples.**

So, a full size dipole for 3.65MHz will also resonate at 10.95, 18.25, 25.55, and 32.85MHz. Similarly a dipole for 7.1MHz will also resonate at 21.3, & 35.5. The trapped dipole has two half-wave resonances, one for the inner section between the traps, the other resonance includes the traps and the outer sections, **Fig. 6.**

I recently undertook tests with a G4CFY Trapped Dipole configured as an inverted-V with the apex at 12.5m. This gave the results that at 3.65, 7.0, 18.25, 21.3, and 24MHz, the standing wave ratio (s.w.r.) values were better than 2:1. At frequencies of 10.0 and 14.2MHz, s.w.r. levels were way over 5:1. I didn't carry out tests on the 28MHz band but other users have reported good s.w.r. readings across the whole of that band with the antenna configured as an horizontal dipole.

I believe there is scope here to use a G4CFY 80/40m trap dipole in the horizontal configuration with a 20m dipole attached to it as an inverted-V, **Fig. 7.**

Antenna Tuning Unit

The title 'antenna tuning unit', is really misleading because to tune an antenna requires inductance or capacitance added either in the top wires or at the feed-point of the antenna. Long, or random wire antennas, and doublets with high impedance open twin-wire or semi air-spaced feeder can be tuned with an a.t.u. as the feeder is, in effect, a part of the antenna.

Antennas with low impedance down-leads cannot be 'tuned' with an a.t.u., they can only be matched. A better name for the unit would be antenna matching unit. The Americans have coined the name 'Transmatch' which describes its

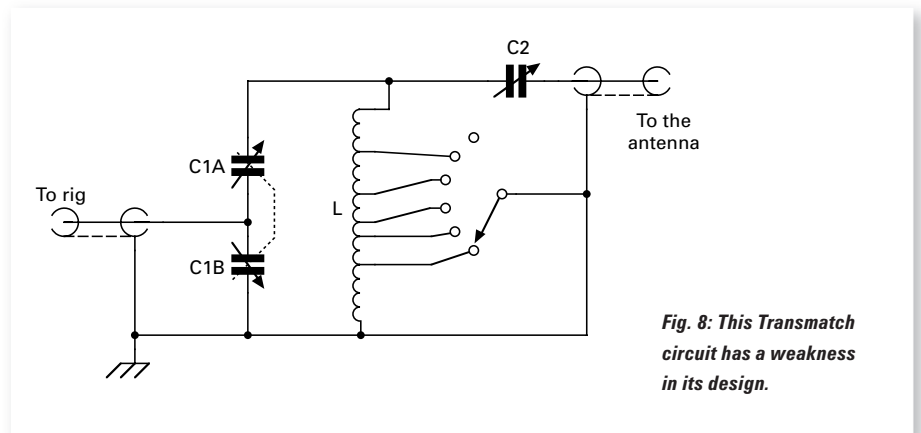


Fig. 8: This Transmatch circuit has a weakness in its design.

function much better.

A very popular unit called the Ultimate Transmatch was produced in huge quantities over many decades – but did have a design flaw. The circuit is shown in **Fig. 8** and which includes a split stator capacitor C1A and C1B made up from two variables with their rotors 180° apart. When the spindle was rotated, one capacitor would increase in value while the other decreased and vice versa.

The flaw in that design was that it was quite easy to tune up where capacitor C1A was at maximum and C1B at minimum. The circuit then became a peaked high pass filter providing very little harmonic attenuation, **Fig. 9.** A better arrangement evolved and has been called the Series Parallel Capacitor (SPC) Transmatch, shown in **Fig. 10.**

In the design of Fig. 10, the two capacitors C2A and C2B are made up using a dual gang capacitor. Then both parts increase or decrease together and the unit cannot become a high pass filter. Consequently it usually provides harmonic attenuation of the order of 20dB.

Suitable values for a home-brew Transmatch are capacitors with 1.6mm spacing and 200pF per section. The inductor, with a value of around 20μH should be an airwound

one, or wound on a ceramic former. Such a unit can be created using about 32 turns of 14 s.w.g wire with a former diameter of about 45mm. A roller coaster type is ideal but a regular coil with taps at two, four, eight and 16 turns should provide suitable ranges.

Final words

Though it's often said that, having a low s.w.r. is unnecessary, many modern rigs have an s.w.r. protection circuit which begins to operate at an s.w.r. value of around 2.5:1. And many rigs with built-in matching units cannot cope with initial s.w.r. values greater than 5:1. So, by adjusting the antenna top wires to achieve 'natural' s.w.r. figures of less than 2:1 on the appropriate bands, you should improve the whole station. ●

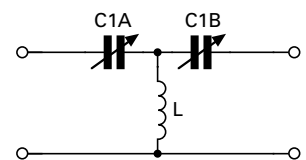


Fig. 9: A peaked high-pass, such as this one does little to attenuate harmonics.

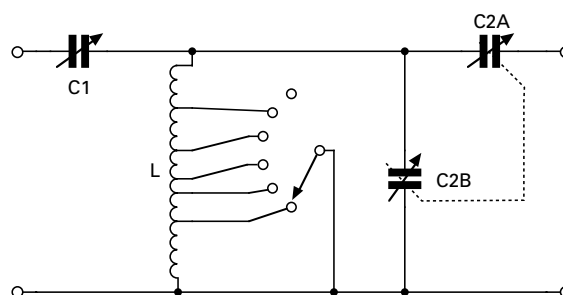


Fig. 10: An improved Series Parallel Capacitor Transmatch is recommended by Tony G4CFY

radio personality

Chris Lorek G4HCL

Rob Mannion G3XFD: *Thanks for accepting our invitation to join us in the PW Amateur Radio Personality article Chris! I'm now wondering, knowing you've had many years experience just how did you get started in the hobby?*

Chris Lorek G4HCL: "Thanks for the invitation Rob, I'm delighted to chat to you! I first became interested in radio communication, and more specifically walkie talkies, at the age of five! I was then using my Lego building brick set to make models of walkie talkies to play with, and the police series *Z Cars* on BBC TV was a favourite of mine. A few years later I had a valved broadcast receiver, which was salvaged from a Nash *Metropolitan* car's dashboard – in my bedroom and powered from a car battery – I often burned the midnight oil listening into overseas stations on medium wave.

"Just before I became a 'teen I'd saved up and bought a multi-band portable radio by mail order, it covered medium wave, several short wave bands, Band II f.m., v.h.f. airband and high-band v.h.f. I'd already 'been inside' and fitted an external aerial socket, so I could plug

in a wire aerial for short wave and an indoor dipole for v.h.f. This is what introduced me to Amateur Radio. I came across Amateurs chatting on 'Top Band' on a.m., which I could receive and I was hooked! I then found out about other bands, such as 80m, which I could also receive but found lots of 'Donald Duck' type noises."

Rob G3XFD: *Where did you go from there Chris?*

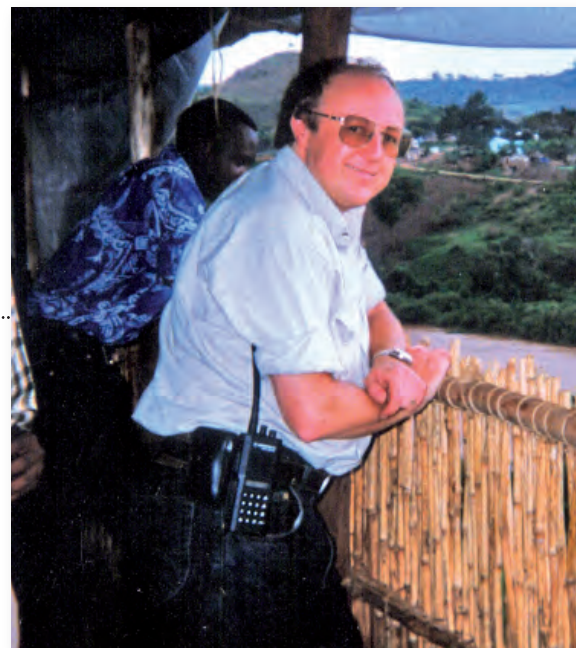
Chris G4HCL: "I headed to the local library and found that the 'Donald Duck' noises were s.s.b. signals. I built myself a beat frequency oscillator (b.f.o.) from parts sourced from an old transistor radio. Fortunately my receiver had a 'fine tuning' control, essential for s.s.b., and I converted the radio's 'tone' control potentiometer into an r.f. gain control – so I could demodulate stronger s.s.b. signals.

"I eventually decided I wanted a dedicated Amateur band receiver, so I again started saving to try to get 'the best' I could, even though I'd still not left secondary school. I sold my push-bike, my stamp collection, everything I could, did jobs and eventually I had enough for a second-hand Trio JR-599, the 'Rolls Royce' of Amateur receivers at the time. I found one for sale in *Short Wave Magazine* from a dealer in Huddersfield, Yorkshire.

"One Friday I 'phoned the owner, gave him my name, address, 'phone number, and arranged with him the time I'd be there the next day with my carefully collected pile of five pound notes for the full advertised price."

Rob G3XFD: *Where were you living at the time Chris?*

Chris G4HCL: "I was living in Preston, Lancashire at the time so I travelled by bus, two trains with a



bus connection, then bus again – the shop owner had told me which bus to catch to his shop from Huddersfield train station. I got there at the time I'd arranged but was mortified to find he'd sold the radio to someone else that very morning. How could he have treated a 14 year-old schoolboy and aspiring Radio Amateur in that way? I've never ever wanted to have anything to do with that dealer since then!

"Fed up and tired I returned home. But in a twist of fate, a couple of months later I found that a local dealer in Blackburn, Lancashire, had a few brand new JR-599 receivers for sale at around the same price as the second hand one I went for. I'd already looked at sets such as the Yaesu FT-101 in the shop window several times before, hoping that maybe one day I'd be able to own one of those!

"So my dad drove me over there, and I was really pleased to meet **Harry Leeming G3LLL** who conducted the sale. This was the beginning of a long friendship and of course Harry writes for *PW* nowadays.

"Using the JR-599 I managed to tune into a world of Amateur Radio excitement, I was in my 'seventh heaven'. I joined my local Amateur Radio club in Preston and the members welcomed me with open arms and were a great help. I started studying for my Radio Amateurs Examination by reading the RSGB's *RAE Manual*, it was a three-hour written exam in those days and



Sunshine as a wide-area VHF repeater antenna in the Middle East is erected.

An adventurous life in Amateur Radio!

This month, the Editor interviews G4HCL – someone who has travelled the world and has had many adventures on the way!

Just about to have a mud-hut meal in Rwanda, complete with v.h.f. belt-mounted handheld



Rapid fire with an AK47 Kalashnikov assault rifle in Yemen!

fortunately I passed it, becoming **G8IYA**.

"I'd bought a low band 68–88MHz Pye *Vanguard* valved a.m. transmitter, which **Greg G8GLS** kindly helped me get it converted and going on two metres. Within seconds of my Licence coming through the letterbox I was on the air!

"I then became interested in ex-PMR (Private Mobile Radio) units to get on the air and started to try and convert them – learning the hard way. I also took my Morse test just to be able to get onto 4m with a converted Pye *Europa* transceiver to join in with one of the local nets and became G4HCL."

Rob G3XFD. *How did you get into professional radio communications Chris?*

Chris G4HCL: "I'd just finished my City & Guilds at college and was about to start a degree course in Communication Engineering and I was fortunate in being sponsored by Pye Telecommunications, a company I revered. In my interview I even used my hand-held transceiver and had a chat over the local repeater **GB3PI**. It used a 1700Hz – not 1750Hz – access tone at the time and I'd built my own switchable 1700/1750 tone burst into the radio.

"I gained my degree and was offered the three jobs I'd asked for at the Pye company's design departments – in the mobile equipment, portable equipment and fixed equipment design labs. Over the next few years I worked in all three departments.

"I eventually wrote two books on converting ex-PMR radios onto the Amateur bands. During my time at Pye and living in Cambridge area I created and became the Editor and producer of the **Cambridgeshire Repeater Group's Newsletter**, which started out as a four-page folded A4

affair and ended up into a 32 -page 'fanzine' with technical reviews, constructional articles, conversion details for ex-PMR radios, and the like.

"I was also soon writing bespoke technical reviews for the Amateur Radio press. The first was for a Yaesu FT-2700 from **South Midlands Communications** – who were the sole Yaesu distributors at the time – and another was for the Yaesu FT-23R and Icom IC-2S from **Raycom Ltd**.

"I eventually joined South Midlands Communications in their Professional Radio division as Head of Research and Development in January 1989. And 19 years later I'm still there – as their Chief Engineer!"

Rob G3XFD. *When did you start your travels and adventures to the Middle East?*

Chris G4HCL: "A few months after joining SMC, I received a 'phone call from one of our associates, in Riyadh, Saudi Arabia. The chap talking to me was asking lots of questions such as my date of birth, passport number, etc. I said I didn't mind telling him – but I questioned the reasons!

"He said, "Oh, hasn't anyone told you? You're flying out tonight to meet with the Saudi Government's GID – General Intelligence Division, their version of our MI5 – first thing in the morning!



Operating 2m portable in Sfax, Tunisia.

"I had go home and pack my bags while our transport driver, **Mike**, took my passport to the Saudi Embassy in London for a pre-arranged visa, while I was to pick my ticket up at the airport desk – no e-tickets then! Mike returned with my visa-stamped passport together with a small torn-off piece of paper from the person issuing the visa, with a couple of lines of Arabic handwriting and his telephone number. He'd apparently said, "if there are any problems with the visa, give me a call.

"I arrived, complete with working samples of spy radio paraphernalia – covert radios, wireless microphones, earpieces, etc. – in my hand baggage and presented myself to immigration at Riyadh airport, where everyone's bags were routinely and thoroughly searched.

"Within seconds I was surrounded by security guards toting their sub-machine guns! I pulled out the scrap of paper from my shirt top pocket, held it out to them with both hands and in the limited Arabic I'd learned from the phrase book on the overnight flight I asked "*Min Fadalak*" (i.e. "*please*"). Within seconds they looked at it, horrified, put all my gear back – just saying, "Please, please, go Sir, please Sir, sorry, sorry Sir!" I found later that the note was from a member of the Saudi Royal family saying that I was providing vital anti-terrorist help to their government



Village People' look-alike! G4HCL operating 2m f.m. on an oil rig offshore from Tunisia working for British Services.

and that I should be offered every assistance!"

"While there, **Ziad Al-Sheik HZ1ZS**, was informed I was visiting and I was invited to his "humble home" – what an understatement! – for an evening meal. So there we were, sitting on plush rugs, eating an absolute banquet with our fingers, and after our meal he invited me to use his Amateur Radio station. I was honoured!"

"What callsign should I use?" I asked.

He replied, "No problem – just use mine".

"So I did – but after a few minutes I was answered by a Saudi Government station demanding who I was and what I was doing! Ziad asked me to pass him the microphone, he spoke a few words of Arabic, passed the microphone back to me and said, "Please carry on – they will not bother you again."

"The next day I received a 'phone call at my hotel room. The department had obviously found out who I was and where I was, offering their profuse apologies for offending me and asking me if I would accept an invitation to go camel racing with them that day as retribution!"

Rob G3XFD: Did you have any more adventures Chris?

Chris G4HCL: "Many subsequent UK and overseas trips followed. They were all combined with organising radio communications for government security organisations, such as police and emergency service organisations around the world. My childhood dream had been fulfilled!"

"I visited Rwanda a few years ago, where together with my friend and SMC colleague (now retired) **Colin Thomas G3PSM** who is the current RSGB President. We commissioned a country-wide h.f. and v.h.f. communication system supplied by SMC as a UK Government Foreign Aid gift to the Rwandan Government to aid refugee rehabilitation. Meeting the happy smiling children in remote Rwandan villages was a real eye-opener, especially as they chased our vehicles with arms waving, they knew the only overseas people to visit the country were there to help them."

"While in Rwanda I operated as



Chris G4HCL with guests from the Rwanda Government Communication Division Rwandatel, seen here in Southampton.

9X/G4HCL from the **Hotel Milles-Collines** where I stayed – the same hotel which later starred in *The Hotel Rwanda* film, 'borrowing' the Sabena airlines rooftop wide band dipole during their off-duty hours with coaxial cable fed down to my window linking to my FT-990 which I'd taken along. Early evening trips to the rooftop to switch cables, then early morning visits to re-connect it, were the daily norm!"

Rob G3XFD: I've heard that you may have had some real adventures in The Yemen Republic Chris?

Chris G4HCL: "Yes, it's quite a story Rob! The Yemen Republic was another country I repeatedly visited. The latest was earlier this year when I managed to get an official stamped and signed letter from the Communication Manager of the government-owned Sana'a airport authority to operate as **70/G4HCL**.

"Operating from The Yemen was certainly not and never ever intended to be a 'DXpedition', as I was only to be able to get on the air



The main Kigali radio mountain site in Rwanda. The locals bash the bullet-ridden mast with sticks to get the bee's honey while the soldiers run away for cover!

using the 1kW h.f. s.s.b. ground-to-air communication system, with its massive wide band 70m high and 50m wide multi-wire h.f. biconical antenna and extensive ground plane, which SMC had installed and commissioned to test its effectiveness."

"I was overwhelmed with callers! But operations were limited by the high-specification professional equipment I was using, as there was no continuously tunable receiver, etc. But there were plenty of Amateurs in the log and I've yet to send all the QSLs out!"

"During previous visits to The Yemen I also survived a kidnapping attempt! I also nearly ended up with another wife – but that's a very long story!"

"My teenage dreams of owning some of the radios I'd seen advertised in magazines throughout the late 1970s and 1980s have been fulfilled. In my shack I currently use an FT-990 and FT-847 as main rigs for h.f. and v.h.f./u.h.f. But I also have Heathkit radios including the HW-202 crystallised and synthesised HW-2030 2m f.m. mobiles and lots more. All of which I'd seen in my younger years and wished for! I still have my 'all band' portable h.f./v.h.f. receiver – it's stored in the loft and one day I'll get it down to re-live my younger days."

"From making Lego models of police walkie talkies, to designing and commissioning complete country-wide communications systems for the very same people, I'm glad to have achieved my dream in radio!"

Rob G3XFD: Thanks for sharing your adventures with us Chris!



Amateur Radio

in focus

The Royal Air Force Amateur Radio Society

Send all your club info to

PW Publishing Ltd.,
Arrowsmith Court,
Station Approach,
Broadstone,
Dorset BH18 8PW
E-mail: pwnews@pwpublishing.ltd.uk

Roy Walker G0TAK/2E1RAF shares the history of RAFARS, a society that started in the RAF 70 years ago.

The **Royal Air Force Amateur Radio Society (RAFARS)** was founded in 1938, springing from the 'Cranwell Amateur Radio Transmitting Society'. Suspended for the duration of the Second World War, it reopened in 1947. Its Aim was *"To promote and foster Amateur Radio activities within the Royal Air Force (RAF) and, through Amateur Radio, to maintain and foster the close bonds that exist between Radio Amateurs who are serving in the RAF and those who have retired from or who have close associations with the RAF."*

Although times and circumstances have changed over the years that aim is as good today as when the RAFARS Constitution was written. The Society is fortunate in that there is, in existence in the RAF, a General Administrative Instruction (GAI) which details the support and encouragement that individual licence holders in the service can expect from commanders.

the Service although they are not necessarily licensed (the Chairman is usually licensed).

The present Chairman is **Squadron Leader Gary Wann G0DNI** who is, "within the exigencies of the service" (he has a job to do!), active on the bands.

The Society has to live with the fact that, today a lot of the serving members spend much of their time

Amateur Radio for those associated with the RAF!

The Patron of RAFARS is Air Marshal **Sir Eric Dunn** KBE CB BEM CEng RAF (Retired) who holds the callsign **G3KED** and who keeps a strong and active interest in the health of the Society. The President, Vice President, and Chairman of the Society are all serving officers in

'on camp' in foreign locations. There are in fact, permanent Amateur Radio stations set up in the Falkland Islands and in Cyprus, which are there for the use of serving members and civilian RAFARS members who find themselves serving in those areas.

The members of the Society, who



An unknown cast G8FC-F (that was the way they denoted a field day station in those days). This picture was taken in 1938 at RAF Cranwell and shows the National Field Day team. The team 'won the long coveted trophy for the best performance on 3.5Mc/s during the Annual national Field Day contest, an excellent tribute to the team work by the RSGB members at Cranwell'. RAFARS has now been an RSGB member for 70 years!



The GB2VET QSL card.



Patron's visit to RAFARS HQ, Air Marshal Sir Eric Dunn KBE CB BEM RAF(Retired) G3KED sits with Air Craftsman Rhys Hizzey M3GAA



Two of the society's magazines, QRV and QRZ.

are spread about the world, keep in touch by way of daily, weekly, and monthly radio nets on appropriate high frequency (h.f.) and very high frequency (v.h.f.) frequencies. In addition, twice a year, they receive the RAFARS's *QRV* the 64-page journal. The title *QRV* (which means "Are you ready?") has been awarded the **Northern Amateur Radio Society's Association (NARSA)** 'Best Club Magazine' Trophy for the past two years.

There's also a member's callbook issued every 18 months, which is updated by interim amendments. A monthly newsletter is sent out by packet or E-mail to all those members requesting it.

RAFARS members hold a number of RAF-significant callsigns and they are keen to operate them on the various nets, and as part of the 'Roadshow', teams visit various locations and rallies during the year.

Society members operate:

G8FC from the RAF Cosford Headquarters,
G8RAF RAF Cosford,
G0RAF from RAF Waddington,
G0RFC RAFARS Cornwall,
GB2RAF from the Air Defence Radar Museum at RAF Neatishead,
GB2AIR from the South Yorkshire Air Museum,
GB2BHM from Blake Hall Museum,
GB2BP from Bletchley Park,
GB2GM from Poldhu, Cornwall,
RAFARS In Focus
GB2IWM from Duxford,
GB2MAS from Montrose Ash Centre,
G3RAF Operated by RAFARS Council Members,
VP8RAF from Mount Pleasant in the Falklands,
ZC4RAF from the Sovereign Base in Cyprus,
And last but not least, **2E1RAF**, from Cumbria.

In addition, if and when appropriate, members are keen to apply for Special Event callsigns for specific notable anniversaries and functions. One of the most recent of these was the operation of **GB2VET** in August 2007 from East Park in Hull, a callsign which is likely to crop up regularly in the coming years.

The ATC & RAFARS

There has been a significant

'infiltration' into the ranks of the **Air Training Corps (ATC)** by the RAFARS membership over the years. Society members have long appreciated that the youth organisation is very much a part of the 'RAF Family' and may well be a source of future membership. Many members give their time as volunteers to the Corps.

Latest Count

There are, at the latest count, 32 ATC Squadrons affiliated to the society either as licensed stations or as listeners. Callsigns such as **G3ATC**, **G4ATC**, **M0ATC**, **M0FLT**, (**B148 Barnsley Squadron**), **M0KAC** (**Kendal Air Cadets**), and **ZC4ATC**, appear in the callbook. Individual members also hold distinctive callsigns such as **G0VRT**, **G7VRT**, and **G3ATC** which is held by the **Air Cadet Radio Society**. The VR(T) acronym relates to Volunteer Reserve (Training), the class of commission held by ATC Officers.

The Council of RAFARS are keen to form even closer liaison links with the ATC as well as becoming involved in instructing on Squadrons. To this end on a number of occasions Cadets, whether licensed or not, are asked to assist with the staffing of Special Event Stations and provide valuable, and very efficient, operating and logging skills as well as assisting with the erection and management of the station.

The Chairman has set up and maintains an excellent website at **www.rafars.org**, which is well worth a visit and gives a lot of information on the activities undertaken by the Society.

The AOTA Launch

Early in 2007, RAFARS launched **Airfields On The Air (AOTA)** – a members-only competition and award scheme which seeks to Activate and Operate Amateur Radio



Our badge, the RAFARS Wings.



The GB2RAF station being operated by Terry Owen G4PSH and Keith Johnson M0DZB, at RAF Neatished.

from any of the current or past RAF flying stations in the UK. The scheme operates like **Summits On The Air (SOTA)** and **Islands On The Air (IOTA)** but without the hills to climb or the ferries to catch! Presently there are somewhere in the region of 1500 such stations recorded, so there's scope for a lot of fun operating.

The scheme has created so much interest among members, and indeed among other Radio Amateurs, that it has been decided to throw the scheme open to operators other than RAFARS members. The full details of how the enlarged scheme will work haven't yet been decided but those

interested should look at the website for the current conditions and keep an eye out for updates!



Society Chairman and long time club member, Squadron Leader Gary Wann G0DNI.

Join Us?

If you wish to join us in the Society, please go to the web site. If you wish to join us on the air please do so. Look for the net on or around 3.700 – 3.710MHz at 18.30 local time every day, the net controller will probably be **Peter Carbutt G2AFV**.

Alternatively you will find the 40m net on 7.045MHz each Tuesday at 1400 local time, the controller being **Jim Harding G4PFR**. Those of you of the c.w. (Morse) persuasion will find the net on Tuesdays on 3.515MHz at 1900 local time. The c.w. calling frequency is 3.568MHz for the full 24 hours.



The Rev. George Dobb's

carrying on the practical way

A one f.e.t., multi-band, multi-mode receiver!

*"from above, thin squeaks of radio static,
the captured fume of space foams in
our ears—."*

Hart Crane (1899–1932), American Poet.

For somewhat over 30 years I have been interested in Amateur Radio QRP operations; trying to do the most with the least. It has been described by some as "Amateur Radio meanness". (Praise indeed for those who do it!).

Trying to do the most with the least has come full circle. In recent times, the proliferation of books and groups based on simplicity has been amazing. But nothing is new – in the fourth century BC Epicurus pointed out that the troubles entailed in maintaining an extravagant lifestyle tend to outweigh the pleasure of partaking in it!

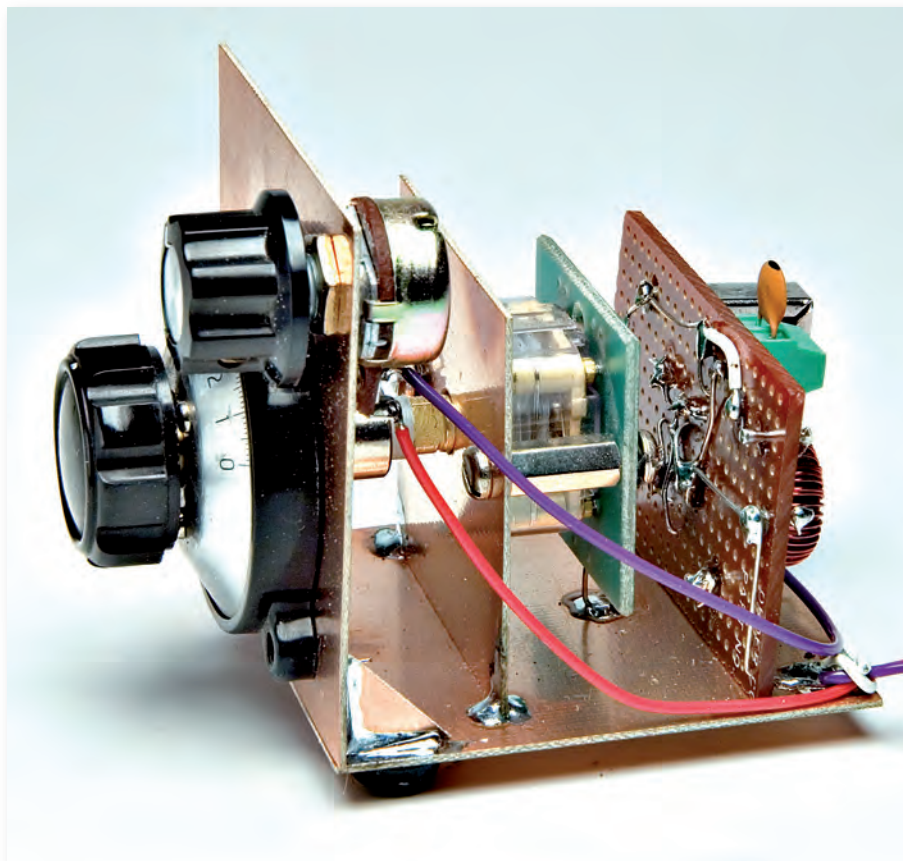
Perhaps it won't be a case of "lives transformed by learning to do more with less" – but this month I'm describing a multi-band, multi-mode receiver based on a single field effect transistor (f.e.t.). A tall order perhaps? Well – it is – and it isn't as the receiver requires skill to obtain reasonable results. Having said that, it will cost very little to build and could be assembled in an evening. In short it's a little fun project.

Straight To Business!

So, it's straight to business! The circuit is shown in **Fig. 1**. The tapped coil (L1) immediately gives it away as a Hartley oscillator. Regular readers will recall that I've spent a little time playing with Hartley oscillator circuits in recent editions of this column.

In fact, I described a Hartley based regenerative receiver in the November column. So, COTPW is not only inspired by simplicity but also follows the principles of recycling!

This month's circuit is one of the configurations I tried as I prepared the November article. However, I'm not sure where I first met this version



This month's project. The one f.e.t., multi-band, multi-mode receiver.

of the Hartley regenerative receiver as it was one of the many circuit doodles in my receiver circuit folder.

The Hartley oscillator uses an inductive tap in the tuned circuit coil to provide positive feedback to maintain oscillation. The regenerative stage is made to operate either just before, or just after, the device goes into oscillation. This cancels out losses in the tuned circuit to produce a high Q and good selectivity and gain.

However, the apparent 'win-win' arrangement does have some drawbacks as the operating condition can be difficult to maintain. Adjusting the tuned circuit will shift the point of oscillation, as will the strength and nature of the signal.

So, these simple little receivers require some operating skill! This is not a 'dial-up the frequency and hear the signal type of radio'.

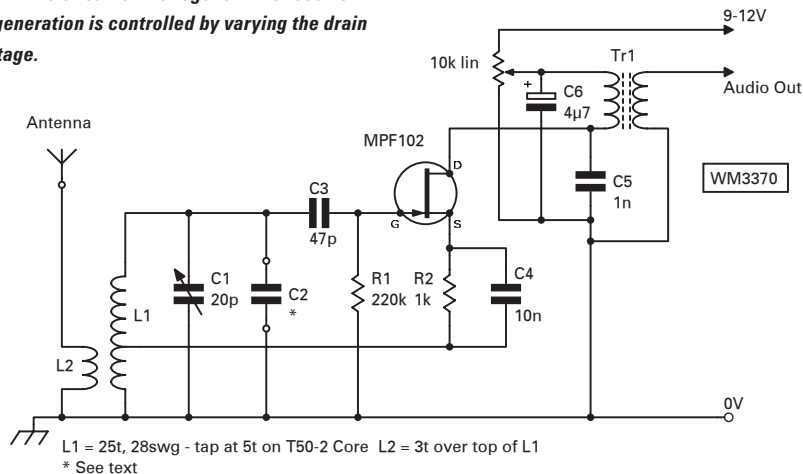
Regenerative Detectors

Regenerative detector stages require some method of control that will move them into and out of the oscillating condition. The receiver I described in the November 2007 edition of COTPW used a linear potentiometer in the source of an f.e.t., to control the amount of signal fed back to the tapped point of the tuned circuit coil.

The circuit, Fig.1, shows another method of controlling the level of feedback. A potentiometer controls the supply voltage available to the f.e.t. This potentiometer should have a carbon linear track and a value of at least 10k Ω .

In Fig.1 the tuned circuit is made up of L1 with C1 and C2. The inductor L2 is a link winding to accept the input from the antenna. Hartley oscillators can maintain oscillation over a wide frequency range and this

Fig. 1: The circuit of the regenerative receiver.
Regeneration is controlled by varying the drain voltage.



receiver could receive most of the h.f. spectrum.

The inductor, L1, has a total of 25 turns wound on a T50-2 core, the tapping point being five turns from the ground end. Winding L1 is not difficult – although it does require some care (the nice thing about the T50 cores) the turns can be held in place by the thumb as they're added.

Begin with the first five turns; each pass through the hole counts as one turn. At the fifth turn pull out a loop of about 30mm of wire. A few twists in the wire close to the core may be used to maintain the loop. The 20 further turns can then be added. I find that adding turns five at a time, then pulling them against the previous five turns makes for a tidy and even winding.

I use beeswax to secure the turns on a coil. My method for a toroidal coil would be to put a small loop of masking tape in the workbench. After tidying up the turns with my thumb nail I push the wound inductor onto the tape to secure the turns.

Beeswax is then melted on the tip of a soldering iron and a few drips are allowed to fall on the coil. The wax does not harm the soldering iron tip as it burns off quickly.

The core is removed from the tape and a few touches of the soldering iron will melt enough wax to flow round both sides of the ring. This holds the turns in place and has the advantage that the turns can be removed or manipulated in the soft wax.

Band Switching

I promised readers a "multi-band" receiver and indeed this receiver

does have band switching!

The tuned circuit is completed with C1 and 2. The capacitor C1 is the f.m. section of a polyvaricon variable capacitor of the type used in the older a.m./f.m. radios. The one I used, has an f.m. section with a capacitive range of some 5 to 25pF and C2 is a parallel capacitor to bring the tuned circuit into the desired tuning range.

I arranged for C2 to be a plug-in component, so that by changing the value, different tuning ranges can be achieved. I found I could hit the 7MHz band by using 120pF, the 10.1MHz band by using 68pF and the 14MHz band by using 22pF. So it really is a multi-band receiver!

In practice C2 should be a ceramic NPO-type capacitor to eliminate frequency drift caused by temperature fluctuations. If NPO capacitors are not available, polystyrene or silvered-mica capacitors offer good temperature stability.

Output Load

The output load for the MPF102 is an audio transformer. In the example of Fig.1, I used a transistor receiver audio output transformer to give a low impedance output.

If you don't have anything suitable the LT700 output transformer is still easy to obtain from Maplin Electronics and several other suppliers. It has a 2kΩ centre tapped input winding and an 8Ω output winding – we use the whole of the

Rev. George Dobbs G3RJV

PW Publishing Ltd.,
Arrowsmith Court,
Station Approach,
Broadstone,
Dorset BH18 8PW
E-mail: pracway@pwpublishing.ltd.uk

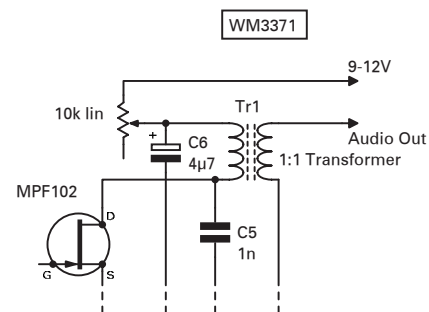


Fig. 2: An alternative output to a higher impedance load, such as amplified loudspeakers.

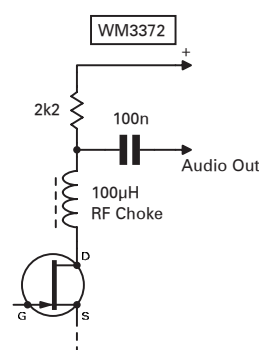


Fig. 3: Another alternative higher impedance load output that saves on the cost and complexity of a transformer.

input winding. Any similar surplus transformer from an old transistor radio would do the job.

My idea was to be able to connect a pair of low impedance headphones to the output to make the simplest possible receiver. But in practice the audio output is very low, so unless the listener only wants to listen to broadcast stations, I suggest the output is connected to an external audio amplifier.

Adding a bench audio amplifier – or computer type amplified speakers – will provide better audio output. I only had an LT700 to hand, but a better match to an audio amplifier would be provided by using a 1:1 ratio audio transformer. The LT44 transformer, as shown in Fig. 2, would be ideal. An alternative might

ALINCO

Wet and Wild



DJ-V17E

- **Tough 2 metre handheld - with great Audio and high grade waterproof design**
- **The perfect companion for all your VHF radio needs. Take it fishing, camping, on holidays, or just out and about.**
- **Operates on the 2 metre band with full 5 Watt output (with optional 137 - 174 MHz coverage)**

The rugged polycarbonate materials are compatible to IPX7 so it's submersible 1m/3ft for 30 minutes! And unlike water-resistant radios you may have looked at before, the DJ-V17E has a large 40mm internal speaker so its audio is clean and crisp, not muffled. You can enjoy 500mW max audio-output, new two touch repeater access and over 200 memories. A special battery drain function helps avoid battery memory effect. Other features include an ergonomic design, ultra flexible antenna with SMA connector, 39 CTCSS settings, split function, two level attenuator and more. Whatever your idea of outdoor fun, the DJ-V17 takes on the challenges of rain, dirt and dust and comes back for more!

£129.95

DJ-V17E also available from

maplin Electronics tel: 0870 429 6000
133 stores nationwide

Features

- Frequency range TX/RX 144 - 145.995MHz (optional 137 - 173.995MHz)
- New, two touch repeater access
- High Grade body compatible to IPX7 (submersible 1m/3feet for 30min) and rugged body
- 39 CTCSS tone squelch encode + decode settings)
- Large 40 mm internal speaker for great audio
- Highly visible backlit alphanumeric display
- Direct frequency input through illuminated keypad
- 200 memories, plus one call channel and one repeater access parameter memory
- VFO, Memory and scan modes
- Ultra flexible antenna with SMA connector - avoids breakage
- 4 User selectable tonebursts (1750, 2100, 1000, 1450Hz)
- 104 DCS digital code squelch
- Time out Timer
- 9 Auto dial memories easily accessed from the DTMF keypad
- Ni-Mh Battery 7.2v 700mah fitted as standard
- Refresh function for rechargeable battery reconditioning
- Cable Cloning feature
- Frequency step: 5, 10, 12.5, 15, 20, 25, 30kHz
- Dimensions: 58(W) x 110(H) x 36.4(D)mm
- Weight: Approx 280g (9.9oz) with EBP-65N & antenna
- Power output: Approx 5W (with EBP-65N) 0.8W (LOW output)



DJ-195
VHF Handheld

£99.95



DJ596
Dual Band
Handheld

£149.95



DJ-V5
Dual Band
Handheld

£129.95



DR635 Dual band
mobile

£249.95



DR135
VHF
Mobile

£129.95



DX-70TH HF radio

£499.00



DM-330MW Power supply

£99.95

nevada[®]radio

Unit 1 Fitzherbert Spur Farlington Portsmouth PO6 1TT

For full details go to our website: www.nevadaradio.co.uk

UK Importers & Distributors of Alinco

phone 023 9231 3090

email sales@nevada.co.uk

fax 023 9231 3091

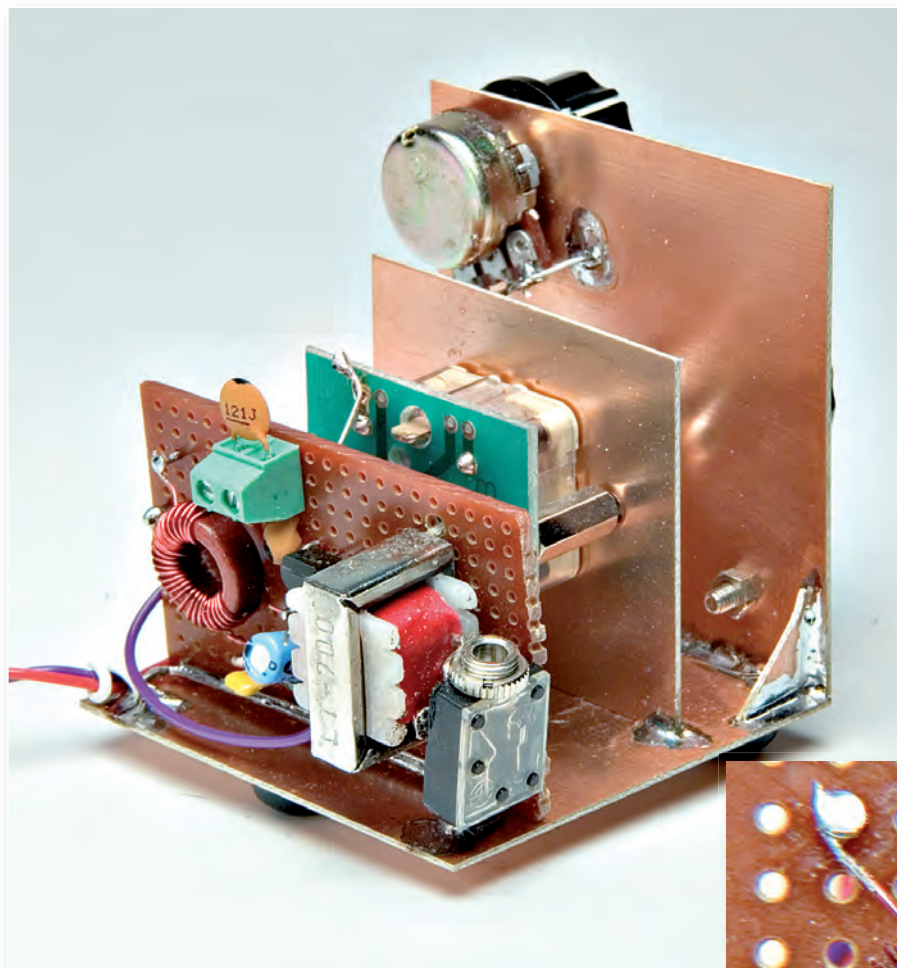


Fig. 4: The project uses a combination of p.c.b. material and Perf-board construction techniques.

be to use a radio frequency choke of around $100\mu\text{H}$ for the MPF102 load wired as shown in Fig. 3.

Physical Construction

The circuit is very simple but the most complex part is the physical construction and C1 requires some form of reduction drive for careful tuning of the individual stations. Unfortunately, there are few cheap options if a reduction drive is purchased at today's prices.

I have a few of the epicyclic friction slow motion drives and after searching around, I managed to find a small vernier drive rescued from an old project. This required mounting the dial and drive firmly in line with the variable capacitor, C1. Regenerative receivers require a metal front panel to screen the variable capacitor from the hand. Without the screening the capacitive effect of the hand ('hand capacity') will almost certainly affect the tuning.

I made the mountings for the

receiver out of scrap pieces of double sided printed circuit board (p.c.b.) material. This is easy to fabricate and can produce a sturdy result.

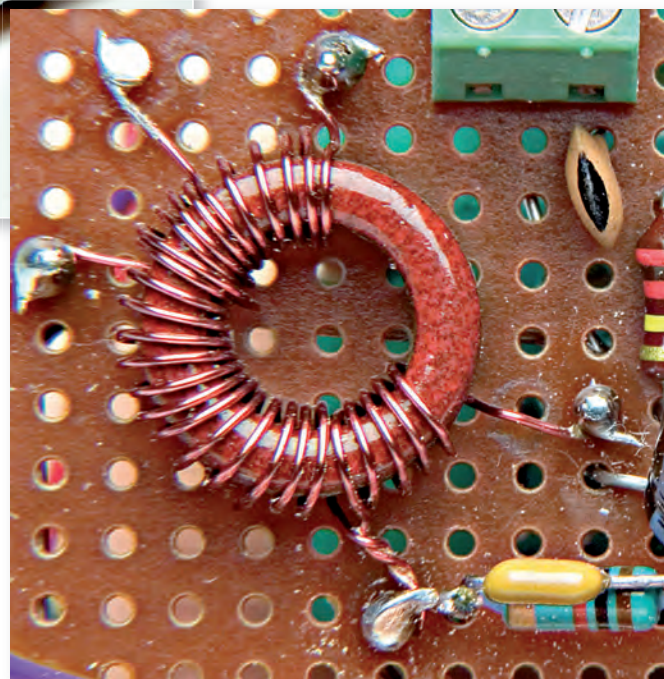
Two panels of p.c.b. material were used to make front and bottom panels for the receiver. When the panels are cut to size they're joined to form the L-shape by seam soldering. A higher wattage iron is required and I'm lucky enough to have a small Weller temperature controlled soldering station, using a larger soldering tip to join the panels.

I've found the best method is to place the base plate on the workbench and push a large block of planed wood against the side to the joined. The front panel can then be held against the base plate using the block of wood to obtain a right angle.

After tacking the plate together with a few blobs of solder, I run the iron tip slowly along the right-angled joint to from a solder seam along the whole joint. Although this produces a nice right-angled joint, the solder alone is probably not enough to withhold any pressure applied to the front panel.

I cut a couple of right-angled triangle supports from the p.c.b. material; 10mm high is usually large enough and these are added at either end of the seamed joint. I use a similar approach for the panel that holds the variable capacitor.

The project can be built using ugly construction techniques or Perf-board Fig. 4. In my prototype the circuit board stands vertically behind the variable capacitor. The front panel only contains the tuning control and the regeneration feedback



A close look at the way the input coils are wound on the toroidal core.

potentiometer. The gain control can be fitted to the external amplifier is you use one!

The little receiver is about as basic as it can be but I managed to hear a surprising number of Amateur signals on the 7MHz and it has no problems with the stations on the nearby 41 Metre broadcast band. Try it for yourself!



Harry Leeming's

in the shop

Harry looks at core problems and how to service with the minimum of equipment. Expensive test gear is not needed!

Driver Coil Core Stuck!

When trying to peak up the front-end alignment, it's not uncommon to find that one of the driver cores is jammed. This often happens with the FT-DX401, FT-DX560, and FT-DX500 series as the anode coil is near to the driver valve and the core is fixed in place with a piece of elastic which gets 'cooked'.

The first move when trying to adjust any core should be to make sure that you have the correct hexagonal or flat bladed alignment tool and then to apply a little heat. Quite often the tip of a very thin soldering iron, or a length of 18s.w.g. wire wrapped round an iron, will do the trick. Force should not be applied or you will damage the core and turn a simple job into a very difficult one.

If the core can't be moved – don't force it! Remember that for correct pre-selector alignment it's only necessary that all the front-end tuned circuits should peak at the same point on the rotation of the pre-selector. If one core is stuck therefore, the easiest solution to the problem is to re-peak the other cores so that they match the one that's no longer adjustable. Let's now look at how we do it!

Switch to transmit and peak up the drive with the pre-selector. Adjust the drive control so that the power amplifier (p.a.) anode current falls to a level that won't cause overheating – let's say less than 100mA. Then note the I/C (cathode current) meter reading and then turn the pre-selector (drive tuning) control a fraction

clockwise until the reading starts to fall.

Then retune the drive cores that are free and watch as to whether the drive is now up or down on the previous peak reading. If it goes down, try turning the pre-selector a little anti-clockwise and repeat the operation. Keep repeating this and eventually, with a little trial and error, you will find the combination of pre-selector and core settings that gives maximum drive.

When you have done the job, leave the pre-selector alone and go over to receive. Next you should find the antenna coil core and reset this to give maximum receive gain. Job done, with no damage and everything will be spot on. Of course in the unlikely event it's the antenna coil core that's jammed, you'll have to start off on receive, and reverse the operation!

However, what do you do if some ham-fisted person has already damaged a core and its coil? In this case it's often possible to add a few pieces of ferrite from a spare core, until the coil in question peaks up in the centre of the pre-selector range, and then to fix them in place with melted candle wax. Once you have done this the other cores can then be aligned to it as I've already described.

After you have finished the alignment the coil cores need to be locked in position. The best way to do this is to melt candle wax into them, when at some future time the wax is warmed, it will form a lubricant, and make adjustment easy.

Expensive Equipment Needed?

Customers often looked at my workshop test equipment shelf and commented that they couldn't possibly do their own repairs, as so much expensive equipment was needed. They were – perhaps – meant to think this, as from the service and alignment instructions for some modern transceivers, you could easily gain the impression that the National Physics Laboratory would only just about be up to the job!

The FT757 manual – for example – demands a counter with an accuracy of 0.1 PPM (0.1 parts per million). I certainly never had a counter that could be relied upon to this degree of accuracy and in truth most of the equipment that looked so impressive was old, seldom used and had cost peanuts.

You can, of course, run a frequency counter from an external standard that's locked to a standard frequency station. But for most repair work, doing it with my Black Star counter, would have been rather 'over the top'.

Setting the tuning steps and aligning the frequency on h.f., v.h.f. and u.h.f. equipment the maker's way, demands equipment of high cost and accuracy and also requires probes to be poked around to pick up signals from pins on I/Cs and other closely spaced test points. These probes can so easily slip causing a short, so that you start with a piece of gear that's just slightly off frequency and you

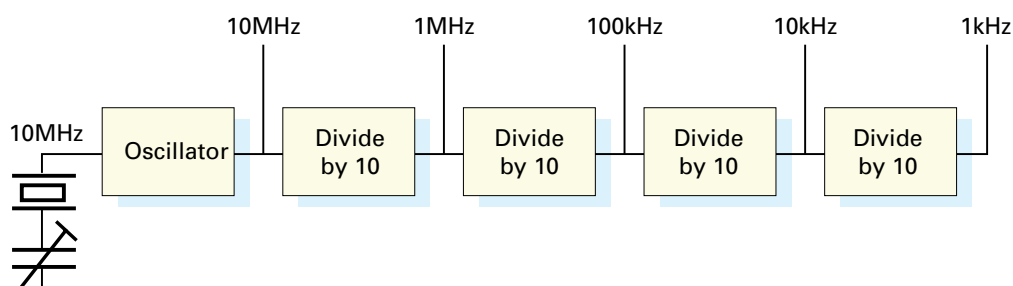


Fig. 1: A crystal calibrator circuit is an extremely useful tool when set up as described in text.

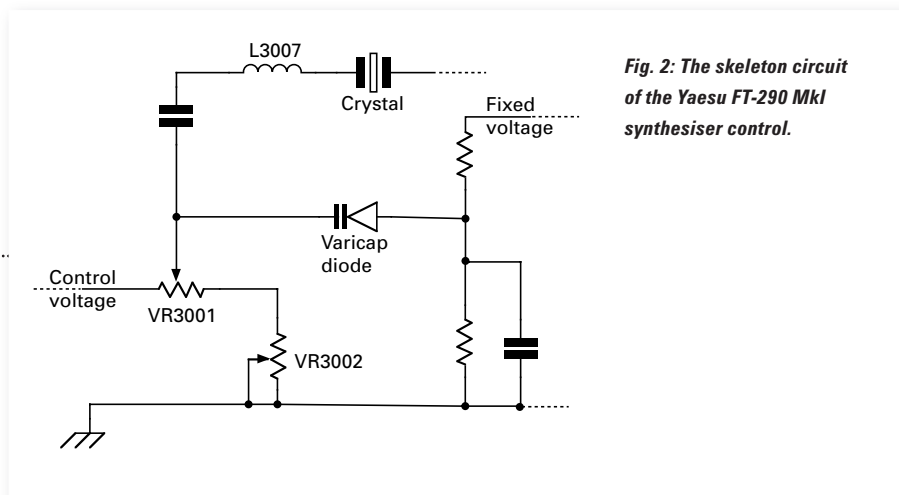


Fig. 2: The skeleton circuit of the Yaesu FT-290 MkI synthesiser control.

Harry Leeming G3LLL

The Cedars
3a Wilson Grove
Heysham
Morecambe LA3 2PQ
Tel: (07901) 932763
E-mail: G3LLL@talktalk.net

end up with something that doesn't work at all.

I think that – provided that you know what you're doing – simple equipment will often do the job in a fraction of the time. It will be just as accurate and need no connection to the circuit.

The Magic Tool

If there is a 'magic tool' – that will do most frequency related tests – I think it's got to be an accurate crystal calibrator. While it's possible to purchase or build a calibrator that is locked to the BBC standard frequency transmission, this is not really necessary.

All that's needed is a d.i.y. calibrator with a crystal oscillator and a chain of dividers on the lines of the one shown in **Fig 1**, and a receiver with a good audio response that will tune to 198kHz, (or even a 5MHz crystal oscillator that has good harmonic output and a receiver that will tune to a standard frequency station on 5, 10, or 15MHz). Details of such calibrators – including the *PW* article, *Locking The Robin to Droitwich* and others – will be found in back numbers of *PW** and the ARRL and RSGB publications.

**Please see information panel. Editor.*

Checking The FT-290

As an example we will see how to check the frequency alignment of the FT-290 144MHz multi-mode

transceiver. Whilst this is a relatively modest piece of equipment, it follows the same principles as many other items. When tuning in the s.s.b. mode the synthesiser generates fixed steps of 10kHz, and between these there are fitted steps of 100Hz.

The 100Hz steps are generated by an analogue to digital converter, see **Fig 2**. Inductor L3007 sets the frequency, and the 99 small steps are inserted evenly between the main 10kHz steps by the settings of VR3001 and VR3002. If these controls are set wrongly, smooth tuning in the s.s.b. mode will be impossible, as the small steps will not 'fit in', there will be a large jump in frequency between the 10kHz steps and the first and last 100Hz steps and at these points on the dial the tuning might even jump backwards!

Aligning The Set

To accurately align the set, first I needed to set the crystal calibrator's oscillator exactly on frequency, and to warm up the FT-290. To do this, I left them running for about half an hour at room temperature. Next, I attached a short length of wire to a calibrator output that had an harmonic that falls on the frequency of a standard frequency station. (If the BBC on 198kHz is being used, the 1kHz output is appropriate). I tuned the receiver to 198kHz, while switched on to the amplitude modulation (a.m.) mode, and then as the calibrator is brought

near, I could hear interference from the crystal oscillator.

When doing the job yourself, you should ignore the 1kHz and higher pitched tones and concentrate on the lowest pitched tone or 'grunting noise'. You should adjust the crystal trimmer, and the tone will vary from a low pitched note down through to a grunting noise, to the point where the BBC is fading in-and-out a few times a second.

An accuracy of better than one part in a million (1p.p.m.) will be achieved using the 198kHz transmission as a standard, when the fading takes place no more frequently than once every five seconds. If instead, another standard frequency station at, let's say 10MHz, is being used a 'beat' of less than ten times per second will assure the same accuracy, or one every second against a 1MHz standard.

Aligning the rig to within an error of 1p.p.m. or better will ensure that at 145MHz the frequency read out is within 145Hz, but at 430MHz this would allow up to 430Hz error, which might be a little too much. If greater accuracy is required using a standard frequency transmission, the crystal calibrator would have to be set even more carefully.

Once the calibrator has been set to the required accuracy, connect a few inches of wire to a 1 or 5MHz output, and poke a similar length of wire to the rig's antenna socket (or in the case of the FT-290 pull up the whip antenna). It should now be possible to tune in to a harmonic of the counter at 145MHz in the u.s.b. mode.

If the transceiver is correctly aligned zero beat should come at exactly 145.000 on the display, and the pitch of the note should change

Harry G3LLL is waiting to hear from You!

I like to hear about problems with older equipment, particularly pre-1990 Yaesu rigs. Please E-mail me, (please add some radio related term in the subject heading, to differentiate against spam), or write and enclose a stamped addressed envelope.

Remember that electricity is dangerous stuff, if you're not familiar with safety precautions you must never work on your equipment while it's plugged into the mains. Switching off at the wall socket does not necessarily make equipment safe.

smoothly as the radio is gradually tuned down in frequency. In the case of the FT-290, when passing a dial reading of 144.998.5, a 'glitch' will be heard as the rig switches from one 10kHz band to the next. At this point the frequency should not jump up or down, but should change in frequency by only 100Hz as per all the other steps. Note what happens here and then switch to LSB and tune through the glitch at 145.001.5, once again the frequency change should be smooth.

Adjustment Needed

The FT-290 is not noted for long term frequency stability, and so it is more than likely that some adjustment will be needed. First set L3007 so that zero beat occurs with a dial setting of 145.000, and then set VR3007 and VR3001 for a smooth change of frequency at the 'glitch' points. These adjustment points are shown on page 37 of the 290MkI manual, and in Fig. 3. Repeat these adjustments until the frequency is correct at **145MHz**, compromising if necessary on u.s.b.

and l.s.b., making sure that the change of frequency is still smooth at the 'glitch' points.

What I've discussed applies to the FT-290, but many other synthesised rigs work on the same principle, although with h.f. equipment the steps are likely to be much smaller. With the FT-757 for instance the large steps are at 1kHz and the small intermediate steps are at 10Hz.

With an h.f. rig, use a frequency in the centre of the range that corresponds with a harmonic of the calibrator, 15MHz for instance, note as to where the 'glitch' points are on the tuning. Then adjust the relevant coils trimmers and potentiometers until the frequency is correct and the steps are smooth.

Plink, Plank, Plunk!

Setting the frequency steps does, perhaps, require the very slightest musical ability, as you have to be able to tell if a pitch is going up or down (difficult perhaps?). One of my customers certainly seemed to have problems with music. He couldn't get

Information Panel

Readers interested in undertaking crystal calibrator projects (especially any that are locked to the BBC's 198kHz transmissions are invited to contact **Tex Swann G1TEX** at tex@pwpublishing.ltd.uk telephoning the office on **0845-803-1979** for information on past *PW* projects. If you write for assistance, please provide an A5, 50p stamped addressed envelope. **Editor.**

into the shop to pick up his rig and so I arranged to take it home with me. He came round that evening and while he was standing in our hallway commented, "Is that you wife playing the piano?" Well, although Brenda does play the piano very nicely – on this occasion she was cleaning the keys in a 'plink, plank, plunk style' as her fingers ran the cloth over the keyboard!!

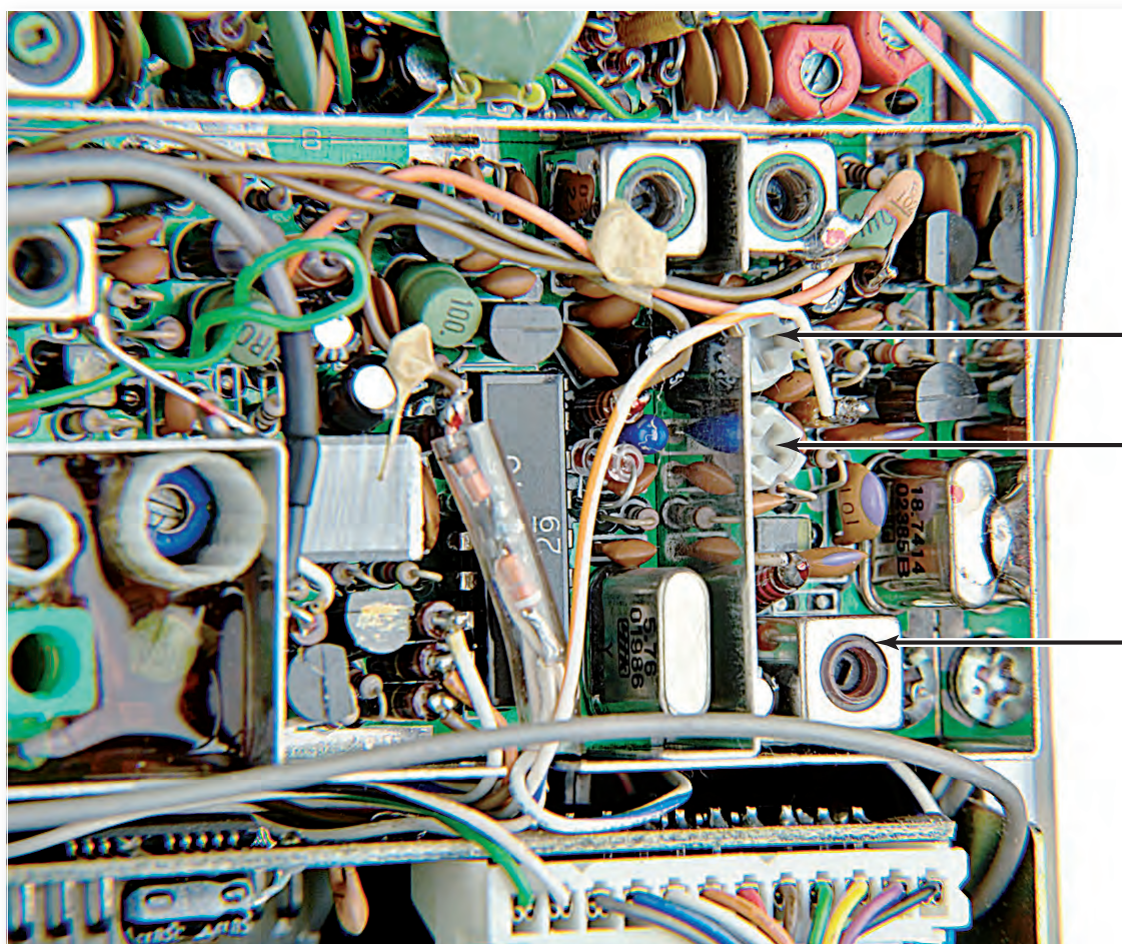


Fig. 3: How to identify the calibration components in the shielded synthesiser of an FT-290 (with the upper metal shield removed). This is towards the front of the set.

the new Short Wave Magazine radiouser

incorporating Radio Active

RADIOUSER JANUARY



Sangean ATS 909 Synthesised Receiver

A Potpourri of good
ideas for the listener



Amateur Bands Crystal Set Experiments



The Cipher Challenge

Radio Questions & Answers

Have You Tried Direction Finding Yet?



SBS-1 Software Updated

Software updates explained and the last chance
to get your easy-reference CD



**ON
SALE
NOW**

Regular Features Include

- Military Matters
- Reviews
- Scanning in Action
- Radio Questions & Answers
- Scanning Scene
- New Products
- Sky High
- Airband News
- News
- LM&S Broadcast Matters
- Websites
- Maritime Matters
- Info in Orbit
- SBS-1 Files
- Decode
- Comms From Europe
- Off the Record
- Software Spot
- DXTV
- Events
- Looking Back
- Feedback
- Bookstore
- Trading Post - Readers' Ads

Available from all good newsagents
Price £3.50



radiouser
see www.radiouser.co.uk

RadioUser is Published by: PW Publishing Ltd.,
Arrowsmith Court, Station Approach,
Broadstone, Dorset BH18 8PW.
Tel: 0845 803 1979

RADIOWORLD

E-mail: Sales@radioworld.co.uk

kenwood



****NEW**** TM-V71E
Dual-Band Mobile +
Echo link £268.00

TS-480SAT - HF&6m 100W... £699.00.
TS-480HX - HF & 6m 200W... £799.00.
TS-2000 - HF/6/2/70cm's... £1275.00.
TS-2000X-HF/6/2/70/23cm £1695.00.
TM-G707-Dual Band Mobile £265.00.
TM-V7E - 2m/70cm's... £359.00.
TH-F7E - 2mtrs/70cm's... £199.95.
THG-71E-Dual Band Handy £169.00.
TM-271E-2m/FM Mobile TX/RX £185.00.
TM-D710E - VHF/UHF Trx £399.00.

ICOM IC-7800MK2 **"IN STOCK"**

*** FREE SPEAKER SP-20! ***



ICOM

2 YEAR WARRANTY

IC-E2820 Dualband VHF/UHF £379.00.
IC-7800-2 HF/50MHz 200W... £6400.00.
IC-756PRO3 - HF/50MHz... £1995.00.
IC-7400 - HF 6m/2m 100W... £1295.00.
IC-7000 - HF/6m/2m/70cm's... £899.00.
IC-718 - HF 100W... £439.95.
IC-910H - 2M 100W/70cm 75W £1089.00.
IC-E7 - Mini Dual-Band Handy... £169.95.
IC-E91 - Top Flight Handheld... £239.95.
IC-706M2G - All-Mode TX/RX... £649.00.
IC-E90 - 2m/6m/70cm Handheld £199.95.
PW-1 Amplifier 1KW solid state £3995.00



YAESU

2 YEAR WARRANTY

FTM-10E - VHF/UHF Trx **NEW** £248.00
FT-897D - HF/6m/2m/70cm... £599.00.
FT-817ND - 1.8-430MHz 5W... £349.00.
FT-857D - HF/6m/2m/70cm's £499.95.
FT-7800E - 2m/70cm mobile... £169.00.
FT-8800E - 2m/70cm mobile... £219.00.
FT-8900 - 10m/6m/2m/70cm... £249.00.
FT-1802E - 2m 50W mobile... £99.95.
FT-2800M - 2m 65W mobile... £129.00.
VX-7R - 6m/2m/70cm handy... £209.00.
VX-6E - 2m/70cm handheld... £169.00.
VX-2E - 2m/70cm handheld... £115.00.
VX-127 - 70cm handheld 5W... £99.95.
VX-120 - 2m handheld 5W... £98.00.
VX-170 - 2m handheld 5W... £105.00.
FT-60E - DB "limited Stock"... £129.00.
QUADRA VL-1000... £3750.00.



YAESU FT-2000 - **£1695.00**
FT-2000D 200W - **£2399.00**

www.radioworld.co.uk



MFJ TUNERS

MFJ-989D 1500W Auto ATU... £329.95.
MFJ-986C 3Kw HF... £299.95.
MFJ-991B Auto Intellituner... £169.95.
MFJ-976 1500w ATU... £429.95.
MFJ-969 300w Rollercoaster £149.95.
MFJ-962D 1.5Kw Inductor... £249.95.
MFJ-949E 300w W/D-Load... £124.95.
MFJ-948 300w HF... £109.95.
MFJ-945E Mobile... £89.95.
MFJ-941E 300w... £99.95.
MFJ-934 ATU+AG... £179.95.
MFJ-921 2m ATU... £79.95.
MFJ-924 70cms... £79.95.
MFJ-914 Extender... £69.95.
MFJ-901B 200w Versa tuner... £74.95.

MFJ-259Z,
Batteries, Loop
& charger.

£239.95.

Analysers



Reads SWR +
Resistance (R) &
Reactance (X) or
Magnitude (Z) &
Phase (degrees).
Coax loss (dB),
Coax cable length &
Distance to fault.
plus more.

MFJ-249B 1.8-170 Dig... £219.95.
MFJ-259B 1.8-170... £199.95.
MFJ-269 HF/VHF/UHF... £269.95.
MFJ-201 grid dip meter... £119.95.
MFJ-269PRO 1.8-170&430-520 £319.95.
Dummy Loads

MFJ-250 1kw Oil filled... £69.95.
MFJ-250X 1KW without oil... £49.95.
MFJ-260C 300w PL259... £32.95.
MFJ-260CN 300w N-Type... £49.95.
MFJ-264 1.5kw PL259... £69.95.
MFJ-264N 1.5kw N-Type... £74.95.
MFJ-267Load/VSWR... £149.95.

Kuranishi - Analysers.



BR-210 1.8-170MHz with S0-239 socket... £359.95
BR-400 100-170 & 30-500MHz... £369.95
BR-510A 1.8-170MHz, S0-239 socket... £439.95
BR-510D 1.8-170MHz & 300-500MHz S0-239/N socket £479.95

**New lower
prices on..**



PR-781-PTT deluxe base mic... £99.00.
Pro-Set-Plus Headset... £132.95.
Pro-Set-Plus-IC Headset... £94.95.
Pro-Set-HC-4/5 Headset... £84.95.
Pro-Set-HC-IC Headset... £94.95.
Goldline GM-4 Stick mic... £89.95.
Goldline GM-5 Stick mic... £89.95.
HM-4 Handy mic w/HC-4 insert £59.95.
HM-5 Handy mic w/HC-5 insert £59.95.
HM-IC Handy mic + Icom insert £59.95.
HM-10-4 Hand mic + HC-4 £56.95.
HM-10-5 Hand mic + HC-5 £56.95.
Traveller-817 Yaesu headset.
(traveller headsets require leads)

W4RT Accessories

BOSS-II - Auto control for screwdriver ant
6-160m W/icom interface cable... £119.95.
OBF-817 - One board filter dual Collins
SSB/CW filter for FT-817... £179.95.
OPP-817+ - One plug power plus - 9.6V
NiMH battery for ft-817... £47.95.
OPP-817+KIT - 9.6V NiMH FT-817 battery
cover needs OFC-817... £54.95.
FT-817 - Adjustable stand... £19.95.

Comet Antennas

H422



Comet H422 - High power
1Kw, 4 Band Rotary V Dipole.
Frequencies : 7,14,21,28 Mhz
£169.00

CHA250B broadband vertical,
covers 80-6m, no gaps **£295.95.**

Comet V-250 3.5-54MHz Max 200w.
Ideal for limited space **£199.00.**

GP-6 High Gain Dualband
Co-Linear 2/70cm. Max 200w **£85.95**

GP-15 Tri-Band 2/6/70 Fibreglass
Antenna. Max 150w **£89.95**



V-250



Watson Power Supplies



POWER-MITE * NEW * Watson 20A, £49.95

W-25AM 25A Supply... £89.95.
W-10AM 10A Supply... £59.95.
W-5A 5A Supply... £29.95.
W-3A 3A Supply... £22.95.
W-25SM 25A Supply... £79.95.
W-10SM 10A Supply... £49.95.

Watson Antennas



W-30 2/70 Base... £29.95.
W-50 2/70 Base... £39.95.
W-300 2/70 Base... £49.95.
W-2000 6/2/70 Base... £59.95.
WBV-70 4m 1/2 Wave Base... £39.95.

Bencher Antennas

Butternut HF-2V 40/80m... £249.95.
Butternut HF-6V 80-10m... £334.95.
Butternut HF-9V 80-6m... £389.95.
Butternut HF-5B 20-10m... £389.95.
30-MRK 30m ad for HF2V... £114.95.
A-17-12 17&12 ad for HF6V... £59.95.
A-6 6m ad for HF6V-X... £19.95.
TBR-160S 160m HF2/6/9V... £139.95.

Hustler Antennas



Hustler 5-BTV £195.00

5 Bands - 80-10m
Height 7.64m - Weight 7.7kg
SWR 1.15:1 - Power 1kW
Hustler 4-BTV 4 Band Vert... £169.95

Palstar Tuners

AT-1KD Digital Display... £279.95.
AT-1KM Regular Display... £289.95.
AT-1500CV 1500w ATU... £349.95.
AT4K 2500 Watt ATU... £649.95.
AT5K 3500 Watt ATU... £849.95.

Avair Power Meters

AV-201 HF/VHF... £49.95.
AV-400 VHF/UHF... £49.95.
AV-601 HF/VHF/UHF... £69.95.
AV-20 HF/VHF... £29.95.
AV-40 VHF/UHF... £29.95.

AUTO

AT-1000



1KW Auto ATU - 1.8-54MHz - 1-8 secs
Tune - Approx SWR Rating of 10:1
£449.95

LDG Z-100



100w Auto ATU -
1.8-54MHz - 0.5 - 6 secs
£115.00

DM-7800 *NEW*



Dual meter system made
exclusively for the IC-7800. This will
give you a true analogue meter
£139.00

FT-METER



Plug-and-play FT-meter,
specifically designed for the
Yaesu FT-857 and FT-897.
Gives you an analogue meter.
£38.00

LDG AT-100Pro



100w Auto ATU - 1.8-54MHz
1-5 seconds Tune - 2 Pos Ant switch
£169.95

LDG RBA 1:1&4:1



1:1 or 4:1 Balun - Covers 1.8 - 30Mhz
Power rating 200w
£29.95

LDG

The world's best Auto Tuners!

LDG

TUNERS

Tonna Antennas.

Tonna 20505 6m 5el	£89.95
Tonna 20809 2m 9el	£54.95
Tonna 20811 2m 11el	£79.95
Tonna 20817 2m 17el	£99.95
Tonna 20909 70cm 9el	£45.95
Tonna 20919 70cm 19el	£59.95
Tonna 20921 70cm 21el	£74.95
Tonna 20635 23cm 35el	£84.95
Tonna 20655 23cm 55el	£89.95
Tonna 20745 13cm 25el	£89.95

West Mountain Radio.

RIGblaster Pro	£199.95
RIGblaster Plus Serial	£109.95
RIGblaster Plus USB	£134.95
Nomic 8P	£59.95
Nomic RJ	£59.95
M4-CBL RC45/4Pin lead	£12.95
RIGRunner 10way 12v distribution board	£99.95



Diamond Antennas.

HF10FX 10m Mobile	£39.95
HF15FX 15m Mobile	£39.95
HF20FX 20m Mobile	£39.95
HF40FX 40m Mobile	£39.95
HF80FX 80m Mobile	£42.95
CR8900 10/6/2/70	£89.95
CP6 Base 6m-80m	£239.95
X50 Base 2/70	£54.95
X200N Base 2/70	£84.95
X300 Base 2/70	£89.95
X700H Base 2/70	£249.95

Ameritron amplifiers.

AL-811XCE 10-160m 600w	£729.95
AL-811HXCE 10-160m 800w	£849.95
ALS-600 Solid State 10-160m 600w	£1249.00
AL-1500XCE 10-160m 1.5KW	£2699.00
AL-1200XCE 10-160m 1.5KW	£2345.00
AL-82XCE 10-160m 1.5KW	£2299.00

Radioworks Wire Ants Carolina Window

CW-160 160-10m (252ft)	£129.95
CWS-160 160-10m (133ft)	£124.95
CW-80 80-10m (133ft)	£99.95
CWS-80 80-10m (66ft)	£109.95
CW-40 40-10m (66ft)	£89.95
CW-40+ 40-10m (66ft)	£99.95
CW-20 20-10m (34ft)	£89.95
G5RV+ 80-10m	£59.95
Radioworld G5RV Fullsize	£29.95
Radioworld G5RV Halfsize	£27.95

SGC Smartuners

SGC-230 200Watts
£339.95



SGC-230 HF	£339.95
SGC-231 HF+6m	£349.95
SGC-235 HF-500w	£749.95
SGC-237 HF+6m	£299.95
SGC-237 Porta	£529.95
SGC-237 PCB	£279.95
SGC-239 HF	£185.95
MAC-200	£339.95
SGC-211 1.8-60MHz 60W	£189.95

Rotators



G-2800SDX Rotator	£999.95
G-450C Rotator	£299.00
G-550C Rotator	£309.00
G-850C Rotator	£379.00
G-1000DXC Rotator	£429.00
G-5500C Rotator	£569.00
AR3000XL Light Duty	£54.95

Feeders & Wire

RG-213 Military Spec High grade 50 Ohm coaxial Cable
£84.95 A 100m Drum

RG58U	£0.60 per Metre
RG8 Super	£0.80 per Metre
RG213	£1.00 per Metre
W103 Westflex	£1.50 per Metre
RG-8 75 Metre Drum	Special £39.95

Flexweave 50m Flex	£29.95
Flexweave-PVC-50 50m	£39.95
Enamelled Copper Wire 50m	£12.95
Hard Drawn Copper Wire 50m	£14.95

Rotator Cable: - Color coded Cable	
3 core	£0.45 per Metre
7 core	£0.79 per Metre
8 core	£1.09 per Metre

DC Connecting Cable	
5A DC Cable	£0.50 per Metre
10A DC Cable	£0.75 per Metre
20A DC Cable	£1.00 per Metre
25A DC Cable	£1.10 per Metre

TGM Antennas Mini Beams

* Call for prices on TGM upgrade kits.

MQ-24SR 6-20m 2el	£379.95
MQ-34SR 6-20m 3el	£489.95
MQ-1 6-20m 2el	£329.95
MQ-26 6-20m 2el	£409.95
MQ-26SR 6-20m 2el + EH	£439.95
MQ-36SR 6-20m + Dir	£579.95

Cushcraft Antennas.

X-7 - 20/15/10 7EL Yagi	£699.95
A3S - 20/15/10 3EL Yagi	£499.95
A4S - 20/15/10 Yagi	£599.95
A3WS - 12/17 3EL Yagi	£399.95
ASL-2010 13-32MHz Log	£799.95
MA5B - Mini Beam	£399.95
D-3 - 20/15/10 Dipole	£269.95
R-8000 - 8Band Vertical	£329.95
R-8 - 40-6m Vertical	£499.95
MA5V - 10/20m Vertical	£249.95

Second Hand List.

Yaesu FT-8500 dual band mobile	£179.00
AEA PK-12 Packet Terminal	£99.00
AEA PK-900	£199.00
AKD 7003 - Amateur 70cms FM tsciever	£99.00
Alinco DJ-X10 Wide Band Rx	£165.00
Alinco DR-805 2 / 70cm	£175.00
Alinco DX-77E HF Transceiver	£379.00
Alinco ELH-730G 30W output lin amp	£59.00
AOR 8200 Mk I	£220.00
AOR AR-1500 Wideband Receiver	£89.00
AOR AR-2002 Receiver	£199.00
AOR AR-3000 Wide Band Receiver	£350.00
AOR AR-3030 HF Rx	£350.00
AOR AR-7030 £550.00	
AOR AR-7030+ HF Receiver	£699.00
AOR AR-8000	£149.00
AOR AR-8600 Mk2 530kHz-3.000GHz	
Wide-band Receiver	£450.00
AOR AR-8600MK1 WideBand Rec	£349.00
AOR AR8000	£139.00
AOR AR8600MKII	£509.79
AOR ARD9000 Digital Voice Interface	£129.00
AR5000+3 is a 'feature loaded' version	£950.00
Bearcat UBC-278 XLT Scanner	£99.00
Bearcat UBC-3300XLT Scanner	£129.00
Bearcat UBC-780XLT Scanner	£149.00
Bearcat UBC-9000 Scanner	£179.00
Binatone MR600 Twin 8-channel PMR	£20.00
Bnos 20AMP PSU	£89.00
Cobra 200 GTL DX 10 Meter T'ceiver	£220.00
Comet DC-270D Meter	£49.00
Comet CF-BPF6	£25.00
Commetel COM510 scanner	£79.00
CX-201 Diecast Coax Switch	£10.00
Daiwa CNA-1001	£149.00
Daiwa CS-201 antenna switch	£10.00
Daiwa SW-110A 1.8-150MHz 20W and 200W	
Power Meter	£40.00
Datong FL-2 filter	£60.00
Datong FL-2 Multimode Filter	£69.00
DCW-15B SSB ELEC Sequencer	£55.00
Diamond SX-200 Meter	£69.00
DISCOVERY-2-31 Lin Amp UK	£999.00
DISCOVERY-70 Lin Amp UK	£1100.00
EDC-16B adapter	£9.99
ERA MK2 Microreader	£89.00
EXPLORER 1200 Linear Amplifier	£899.00
FL-100 9MHz Filter CW/RTTY	£40.00
FL-223 9MHz Filter SSB narrow 1.9kHz	£40.00
FM-UNIT 100 - for FRG-100	£39.00
FT-2700RH VHF/UHF transceiver	£99.00
FT-2800M 2m Mobile	£115.00
FT-290R 2m Multi mode	£150.00
FT-60E Yaesu 2m / 70cm FM 5W	£139.00
Fujion F-2000A Finder	£99.00
Heil BM-10-5 Headset	£50.00
HL-1KFX Tokyo 500W HF Lin Amp	£949.00
HM-133 Remote Control Mic	£46.77
Hora C-150 2m FM Handy Transceiver	£79.00
IC-275H - 2m Base Transceiver 100W	£399.00
IC-756PRO-MKIII Icom HF + 6m Trx	£1599.00
IC-7800 Icom HF + 6m Trx	£4995.00
IC-E90 6m / 2m / 70cm Handheld	£169.00
IC-R71E HF Receiver	£349.00
IC-V82 2m FM 7w Digital Handheld	£129.95
Icom IC-R1500 Receiver	£349.00
Icom AT-180 AUTO ATU	£225.00
Icom IC-229H 144-148 MHz	£119.00
Icom IC-24ET Dual Band Handy	£139.00
Icom IC-2725E	£199.00
Icom IC-2800H Dual Band Mobile	£289.00
Icom IC-703 HF, 6m Portable	£379.00
Icom IC-706mk1	£399.00
Icom IC-706MKII Mobile Transceiver	£425.00
Icom IC-706MKIIG	£499.00
Icom IC-718 HF Transceiver	£359.00
Icom IC-735 HF all mode transceiver	£299.00
Icom IC-736 HF 6	£699.00
Icom IC-740 HF Transceiver	£389.00
Icom IC-746 HF/6m Transceiver	£799.00
Icom IC-756Prol HF / 6m Transceiver	£1150.00
Icom IC-775DSP HF Base T'ceiver	£1499.00
Icom IC-821H	£599.00
Icom IC-821H Dual Band transceiver	£549.00
Icom IC-910HX 2 / 70 / 23cms Base	£1099.00
Icom IC-PCR1500	£289.00
Icom IC-R2 Wideband Receiver(Scanner)	£89.00

Icom IC-R7000 £449.00	
Icom IC-R7000 Mint Condition	£550.00
Icom IC-R72 Receiver	£399.00
Icom IC-T7E Dual Band Handy	£139.00
Icom IC-TBE	£189.00
Icom IC-W31E Dual Bander	£160.00
Icom PS-125	£220.00
Icom PS-55 Power Supply	£99.00
Icom SM-8 Desktop Microphone	£80.00
Icom SP-23 Base Station Speaker	£89.00
Icom ut-102 Voice Synthesizer Unit	£25.00
Kamtronics KAM Multimode TNC	£140.00
Kantronics KPC-3+ TNC	£129.00
Kenwood DFC-230 ext dig freq controlle	£89.00
Kenwood MB-201	£20.00
Kenwood MC-50 Base Mic	£60.00
Kenwood MC-80 Base Mic	£50.00
Kenwood PS-30 PSU	£89.00
Kenwood PS-430 Power Supply	£109.00
Kenwood R-5000 Comms Receiver	HF £450.00
kenwood SM-220 Scope	£199.00
Kenwood TH-47E 430-440 MHz	£79.00
Kenwood TH-F7E	£189.00
Kenwood TH-G71E	£139.00
Kenwood TH-K2E 2m Handie	£99.00
Kenwood TM-255E 2m Mobile	£329.00
Kenwood TM-G707E Mobile Transceiver	£159.00
Kenwood TM-V7E Mobile Transceiver	£250.00
Kenwood TR-251E 144-148 MHz	£120.00
Kenwood TR-751E 2m transceiver	£299.00
Kenwood TR-9130 transceiver	£249.00
Kenwood TR-9500 70cms Transceiver	£220.00
Kenwood TS-140S HF Transceiver	£299.00
Kenwood TS-271E	£165.00
Kenwood TS-50	£399.00
Kenwood TS-570DG/E	£675.00
Kenwood TS-680S HF / 6m	£399.00
Kenwood TS-690SAT HF Transceiver	£549.00
Kenwood TS-700G	£179.00
Kenwood TS-711E 2 Meter base	£299.00
Kenwood TS-790E	£799.00
Kenwood TS-830S HF Trx Base	£349.00
Kenwood TS-850S /AT	£699.00
Kenwood TS-870S HF Transceiver	£749.00
Kenwood TS-940SAT	£575.00
Kenwood TS-950SD HF Transceiver	£1099.00
Kenwood TS850S HF	£550.00
Kenwood VFO-120	£89.00
Kenwood YK-88SN SSB Filter	£40.00
Kenwood/TRI TR-2300 portapack	£99.00
KSC-14 Fast Charger for TH-22E	£76.55
LDG AT-1000 Autotuner	£299.00
LDG AT-897 Autotuner	£149.00
Linear Amp Challenger II amplifier	£1050.00
Low HF-225 HF receiver	£275.00
M/Mods 144/100	£119.00
Magellan GPS 315 Receiver	£129.00
Maldol MR-2000 SWR Power meter	£40.00
MB-12M - Mobile Mounting bracket	£10.00
MB-62 Mobile Mounting Bracket (Main)	£12.72
MCL1100 EasyReader	£59.00
MFJ-382 Deluxe Amplified Speaker	£30.00
MFJ-442 Elec + Memory keyer	£89.00
MFJ-452 Super CW Keyboard	£119.11
MFJ-452X CW Keyboard keyer	£93.57
MFJ-781 DSP filter	£89.00
MFJ-901S 15m cw Trx	£84.26
MFJ-901B	£60.00
MFJ-921 VHF 200 Watt ATU	£50.00
MFJ-948 ATU	£89.00
MFJ-969 ATU	£120.00
MH-34B4B Speaker/Microphone	£15.00
Microset PC2S 30 Power Supply	£99.00
Microset PT 135 PSU	£120.00
Microset R50 2m Amp	£79.00
Mirage B-108 2m Linear Amplifier	£129.00
MML432-30L	£89.00
NEUMANN U 87 Ai condenser mic	£1100.00
Optoelectronics DIGITAL-SCOUT Digital RF	Counter £199.00
OptoElectronics X Sweeper	£1199.00
Palstar PS-30N PSU	£75.00
PSR-282 GRE Handheld Scanner	£76.55
PT-1012 Microset 12A 13.5 PSU	£93.57
PT-50A Microset 50A 13.5V PSU	£238.26
R-30CC HF PALSTAR HF Rx	£399.96
Realistic Pro-2006 Scanner	£129.00

Quality Used Equipment, 3 Month Warranty.
Best prices paid on your used equipment.

The UK's No.1 Used Equipment Trader

Realistic Pro-43 Scanner £89.00
Rexon RL-501 Dual Band Handy £89.00
Sanyo DSB-WS1000 receiver £99.00
SEC-1223 SEC 23A 13.8V PSU £85.06
SM-20 Deluxe Base Station Desk Mic £89.00
SMC 150PL Dummy Load £29.00
SMC-34 Speaker/Mic with Vol Control £20.38
Snooper S5-R Safety Alert System £119.95
Sony ICF-2001D AM/SSB/CW/WFM £169.00
SP-23 Base Speaker £50.00
Standard C-156E 2m Handheld £125.00
Target HF3 HF3 RX £99.00
Tentec Orion II HF with ATU £2795.00
TH-K4E Kenwood Handy £118.30
JUST-100 +PSU £399.00
Timewave DSP-5+ Filter £129.00
Timewave PK-12 Packet £99.00
Tokyo Hy-Power HL-37VX £69.00
Trio (Kenwood) TS-711E £375.00
Trio (Kenwood) TS-830S £325.00
Trio (Kenwood) YK-88C IF Filter £40.00
Trio PS-430 Kenwood PSU £100.00
Trio TS-530SP £299.00
TS-480S / AT £549.00
TSA-6602 - 144-430 £25.00
UBC-280 XLT Handheld Scanner £109.00
UNIDEN UBC-3000 Hand Scanner £129.00
VX-150 Yaesu with 16-keys £75.00
Watson W-25SM 22A Power Supply £59.00
Yacht-Boy 1100 £79.00
Yaesu FC-700 ATU £99.00
Yaesu FC-757AT Auto ATU £169.00
Yaesu FL-2050 amp £99.00
Yaesu FP-757HD Power Supply £139.00
Yaesu FR-101 HF RX £399.00
Yaesu FRG-100 HF Receiver £299.00
Yaesu FRG-7700 HF Receiver £199.00
Yaesu FRG-9600 Receiver £199.00
Yaesu FT-1000 Transceiver £1399.00
Yaesu FT-1000MK V 200w £1299.00
Yaesu FT-1000MP Mark -V Field £1199.00
Yaesu FT-1012DMkll with FM fitted £350.00
Yaesu FT-1500M £129.00
Yaesu FT-1500M 2m FM transceiver £109.00
Yaesu FT-1802E Transceiver £89.00
Yaesu FT-2000 with int. psu £1550.00
Yaesu FT-2500M Transceiver £99.00
Yaesu FT-2800M FM transceiver £119.00
Yaesu FT-2900MkII transceiver £250.00
Yaesu FT-41R Handheld £120.00
Yaesu FT-470R Handheld £129.00
Yaesu FT-480R 2m Transceiver £220.00
Yaesu FT-50R Handy £99.00
Yaesu FT-690R II 6m transceiver £275.00
Yaesu FT-7100M Mobile Transceiver £159.00
Yaesu FT-726R Base Transceiver £299.00
Yaesu FT-736R Base Multimode £499.00
Yaesu FT-736R Base £699.00
Yaesu FT-736R Transceiver £899.00
Yaesu FT-767GX HF £599.00
Yaesu FT-767 70 cms Handheld £99.00
Yaesu FT-790 £159.00
Yaesu FT-847 HF-6-2-70 Base £899.00
Yaesu FT-847 Multi-Band £749.00
Yaesu FT-857 Mobile Transceiver £425.00
Yaesu FT-857D Multi-Band Mobile £425.00
Yaesu FT-8900 Quad Band Mobile £199.00
Yaesu FT-897D Portable £499.00
Yaesu FT-900/AT HF Transceiver £475.00
Yaesu FT-902DM HF transceiver £325.00
Yaesu FT-920 £799.00
Yaesu FT-920AF HF / 6M Base £899.00
Yaesu FT-980 HF Transceiver £425.00
Yaesu FT-990 AC £899.00
Yaesu FTV-1000 20 W Transverter £450.00
Yaesu FV-101DM Dig Mem VFO £199.00
Yaesu MD-200 Desktop Mic £175.00
Yaesu MW-1 Remote Control Mic £60.00
Yaesu NC70 Battery Charger £60.00
Yaesu VX-1R Dual Band Handy £85.00
Yupiteru MVT-3300UE Scanner £99.00
Yupiteru VT-125 Air Band Scanner £99.00
Z-100 Autotuner £89.00



Colin Redwood's

what next?

Colin G6MXL welcomes readers to his new column where he's discussing soldering.

Colin says: I aim to cover the multitude of topics that don't appear on examination courses. If you've just got your licence and you're wondering what to do next, or have a question that's puzzled you for years – I'm the man to ask. So, it's next question please!



One of the tasks in the Intermediate Licence course is building a project that requires you to learn good soldering techniques. The Weller soldering iron's power supply is visible by the base of the lamp.



Good strong lighting makes the tasks of building and soldering easier.

This month I want to have a look at one of the topics in the Intermediate Course.

Here the focus is on acquiring some essential basic skills of constructing Amateur Radio equipment.

Probably the key skill above all others here is learning to make good solder joints. Whilst you may think that you do not want to build your own transmitters and receivers, some basic soldering skills are needed even to set up a fairly basic station, and you need to demonstrate these in order to obtain your intermediate licence.

Most Amateurs will need to be able to solder in order to attach a PL259 or BNC plug to some feeder cable. Others will want to make up leads to connect data interfaces or terminal node controllers (TNCs) to their computers and transceivers so that they can enjoy making contacts using Slow Scan Television (SSTV), packet radio or the popular PSK31 data modes. If you want to have a go at making your own equipment – then soldering skills are even more important.

If you look around you'll find that there are a wide range of soldering irons available. However, the types that plumbers use **are not what we need!** Instead, we need the type with a fine tip suitable for soldering electronic components.

Many of the cheapest soldering irons are not powerful enough for our purposes. Over the years I've found that 25W irons from Antex are really excellent.

The 25W Antex type is powerful enough to provide enough heat for nearly all our purposes – so don't be tempted with a more powerful iron. You may overheat and damage temperature sensitive components.

Antex have a range of bit sizes to suit any solder joint you might

Colin Redwood G6MXL

PW Publishing Ltd.,
Arrowsmith Court,
Station Approach,
Broadstone,
Dorset BH18 8PW
E-mail: what.next@pwpublishing.ltd.uk

wish to make and they also have iron stands and replacement bits available. If you're new to soldering, or haven't soldered for a few years, I suggest that you practice with a few odd components and a bit of Veroboard.

Soldering Safety

Before we go on, we need to consider safety when soldering. The iron gets very hot when soldering – even brushing against the tip can hurt! They need to be hot to melt solder, so they're hot enough to burn you badly!

You should hold the iron by the handle only and it should be held as if you were holding a pen when writing. Don't be tempted to see if it's warming up by touching the metal parts! (this is another common way of burning yourself) and use a proper soldering iron stand.

When you're soldering, some fumes will be produced and while the amounts are small they can accumulate in your lungs with time. So, make sure that you solder in a well ventilated place indoors, preferably with a window open nearby.

Soldering outdoors, particularly in winter is not such a good idea, as the components (especially wires on antennas) to be soldered are so much colder than indoors and any wind is likely to have a cooling effect. It's best to arrange it so you can solder indoors, away from the wind, etc.

You should also consider your eyes. If you don't wear spectacles, then you should certainly wear some eye protecting goggles. Although it's very rare for solder or the flux (held in the solder centre cores) to splash up into the air – it's not unknown. The instance where this is particularly



An older temperature controlled soldering iron, such as this Weller 24V iron can often be found at rallies. But do try to check that it works first.

likely to happen is when you are removing components from a circuit, and when soldering a p.c.b. where there is some moisture present (perhaps a new board that you have just washed). Remember – don't lean down closer than is absolutely necessary to see what you're doing.

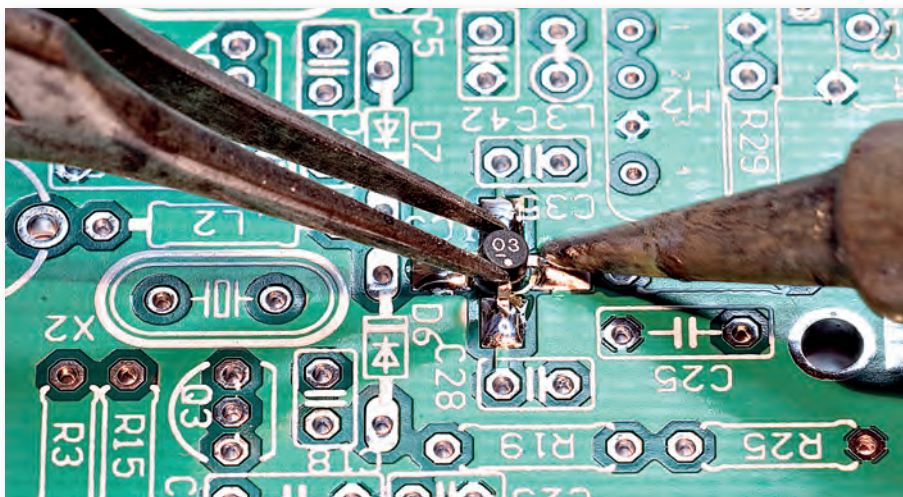
Quick Scrub

Before soldering a joint it's important that both items to be joined are clean. With a p.c.b. a quick scrub with some wire wool will do the job if the board is not really shiny. Wire wool can easily

be obtained from your local d.i.y. shop.

Pan scourers, such as Brillo pads, can be used but they tend to leave behind a soapy layer, which then needs to be washed off, so I wouldn't recommend them. Whatever you do make sure that you don't leave any wisps of the wire wool around to short out the copper tracks!

Component leads probably will not need any preparation unless they have been lying around in a junk box for years. But to be sure, a gentle twist of wire wool will do the job if you have any doubts.



When you become confident with a soldering iron, even small items, such as this amplifier i.c. become much easier to deal with.

Colin's waiting to hear from You!

I like to solve problems with anything to do with Amateur Radio! I can answer questions and publish my findings here for the benefit of all PW readers.

Remember the mains supply is potentially lethal. Unless you really know what you are doing, always pull the mains plug out, do not just switch off at the wall socket, when working on equipment.

If you're soldering components to a p.c.b., push the leads through the correct holes and bend them back slightly so that they won't fall out.

However, before plugging in the soldering iron – check that the tip is clean. If it isn't you may need to lightly file it. Also before you plug in your soldering iron, soak the sponge at the base of the stand in some cold water. Please note that if your soldering iron has an iron-plated bit you **should not file it clean** under any circumstances!

You can then plug your soldering iron in and wait for a few minutes for it to really warm up. After a few minutes, dab a bit of solder on the tip. If it doesn't melt immediately, then it isn't hot enough. If in doubt, wait a few minutes longer.

Once it's good and hot, tin the tip. This is done by dabbing a little resin-fluxed solder on to the tip and allowing it to flow around the surface of the tip. Don't over do this – we just need a shiny surface on the tip itself. This process is **very important** as it helps transfer the heat of the soldering iron to the joint quickly and efficiently.

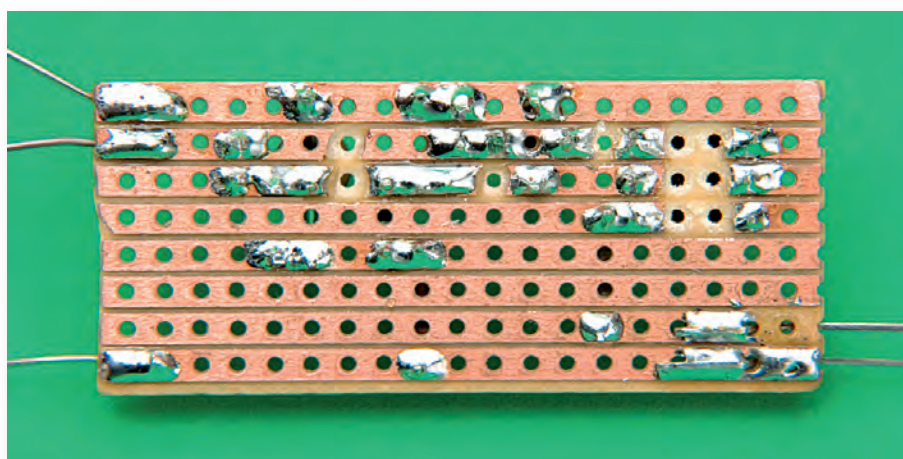
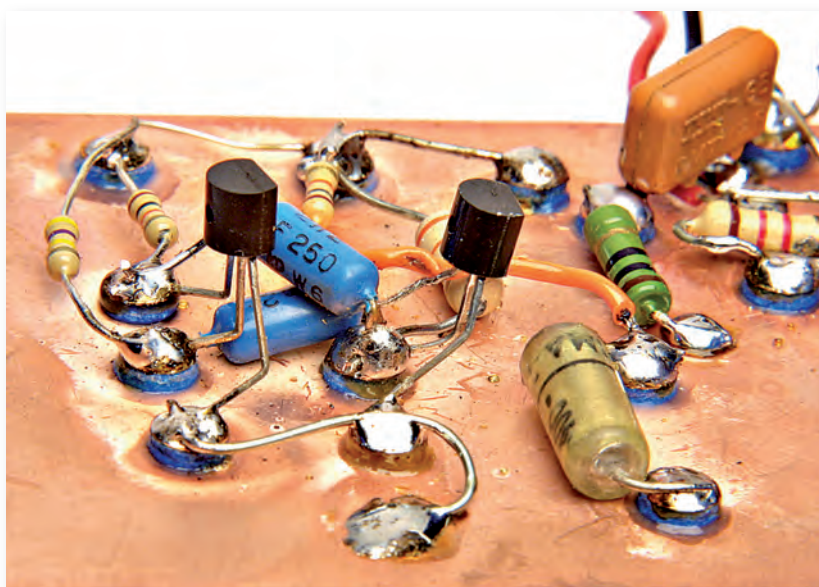
If at anytime you feel that there is too much solder on the tip of the iron, wipe it off on a small sponge soaked in water. (The Antex soldering iron stands come with a suitable sponge).

Making The Joint

Now to make the joint. Bring the soldering iron tip and some solder up to the joint simultaneously. Melt the solder and heat the joint and wait while the solder flows around the joint. This will take perhaps five seconds or so.

Don't just dab the soldering iron on to the joint. We really want the solder to flow, helped by the core flux as it melts with the solder. Once the solder has flowed, remove the iron and return it to the stand. Next, let the joint cool for at least 30 seconds. Very gently try moving the component (which might still be quite hot). Make sure that you cannot move it. Congratulations! You should have made a good joint!

When it comes to soldering PL259 plugs, I have to admit that it's a bit of a challenge. A 25 Watt soldering iron will just about tackle the centre pin but the screen is a real challenge as there's simply too much metal to heat



The track side of a recent club data project, soldered together on a small section of Veroboard.

up to the melting point of solder for a 25W iron to cope with.

Many PL259 plugs have a hole through which you are expected to solder the screen. If you manage to do this with a 25W soldering, I'd love to know how!

In practice I think there are only two ways to do this. One is to use a much more powerful soldering iron, having filed the plug across the hole so that it's really clean and shiny.

Personally, I much prefer to use the more expensive clamping-type PL259s, where the screen is attached in a similar way to BNC and N connectors. These seem to me to be far more satisfactory, resulting in a near water-proof arrangement. I use these pressure sleeve versions on all out-door connections.

Removing Components

Sooner or later you will need to remove a component from a p.c.b. Perhaps you have put a component in

the wrong place or round the wrong way, or perhaps you've decided that a component is faulty and needs to be replaced.

My preferred method is to remove as much of the solder on the joints by use of a soldering iron and solder sucker. Heat the joint until the solder is liquid and use the solder sucker to suck as much of the solder up into itself as possible.

You may need to repeat this process several times. Once most of the solder has been removed, place a small screwdriver tip under the component and whilst heating the joint gently apply pressure to lever the component up.

Repeat this process for each lead of the component. To prevent the difficulties of carrying out the process with multi-pinned integrated circuits (i.c.s), I recommend using i.c. sockets, which are usually a lot cheaper than most integrated circuits!

Our technical editor 'Tex' Swann G1TEX takes a look at a new loop antenna that's eminently portable.

The G4TPH Magnetic-Loop Antenna

As I meandered around the outside area at the 2007 Castle-Donington Show, I spotted the display of **Tom Brockman G4TPH** who had two of his folding loop antennas hanging from parasol garden umbrellas. On display were two sizes of loop antenna, The ML20, which covers the 14-28MHz bands and the ML-40, which covers the 7-14MHz bands.

Tom kindly let us have one of each loop to try out so, let's begin! The two loop antennas look similar, though there are important differences. Each antenna kit consists of a number of flat aluminium bars, with holes 400mm apart near the ends. The ML-20 kit has eight bars, while the ML-40 has twelve. The ML-20 kit is shown in **Fig. 1**.

The difference of the number bars is easy to see but there are also two accompanying units that, if you had both loops, could be mixed up, without care. These units are the coupling units that feed the signal into the loop elements and the tuning units,

Fig. 2. I've opened up one of the tuning units to see the capacitor that's isolated by the box and knob.

When constructing tuned loop antennas, they're often fed via a secondary small loop or a tapping point on the main loop. Tom has used a ferrite transformer to couple to his loops, **Fig. 3.** It's the first time I've seen this method used – and it's so blindingly obvious – especially as I've seen the technique used for high current probes in measurements.

The transformer of **Fig. 3** is a formed from multiple windings for the primary, and the loop element itself forming the single secondary turn. Loop antenna have very high circulating currents, that equate to a low feed-point impedance. A neat idea!

Started Testing

I started testing the loops in a typical place – my cluttered shack. The smaller ML-20 loop antenna is around one metre in diameter when assembled, but the larger ML-40 is around 1.5m in diameter and rather more difficult to handle in restricted space.

The bars are held tightly together with a bolt and butterfly wing-nut. I found it best to put the shake-proof washer in between the aluminium bars for stability.

I hung the ML-20 loop from glass-fibre fishing rod supported between two wall lamps and used the **miniVNA** unit that I looked at in the December 2007 issue of *PW*. The composite s.w.r. curves are shown in **Fig. 4**. The ML-20 covered from about 12.5MHz up to over 30MHz. and could be adjusted to give an s.w.r. of around 1.5:1 within areas of each band.

How did they work?

You may ask "how did they work?" And the answer is that they worked well and would make a fine addition to any h.f. portable operation. They would be ideal for sticking into a suitcase when you go away.

The ML-40, covered 7-14MHz without problems making it suitable for the three bands of 7, 10 and 14MHz. But I also found that I could tune most of the 3.5MHz band with it too. Although the s.w.r. level

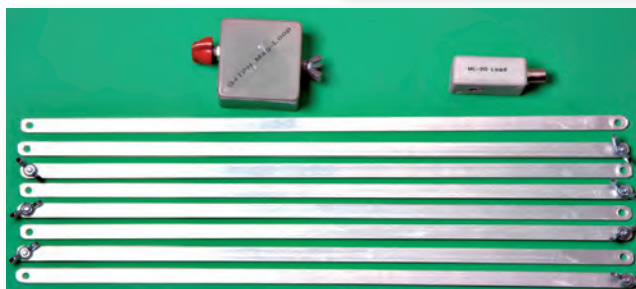


Fig. 1: The ML-20 14-28MHz kit laid out. The ML40 is similar with 12 bars, and slightly different units.

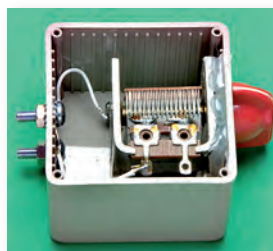


Fig. 2: The loop tuning capacitors are not suitable for high power, but suit the powers in use by Foundation Licencees or QRP enthusiasts.



Fig. 3: The unusual method of coupling into the loop winding.

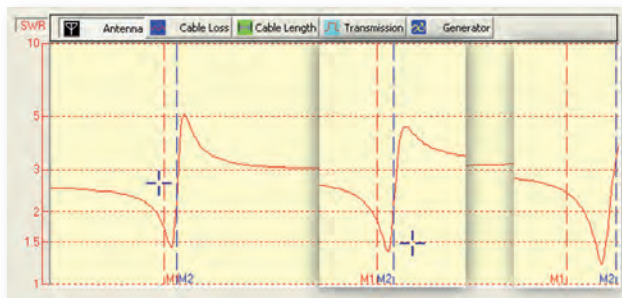


Fig. 4: The composite s.w.r. curves for the ML-20 unit, on the 14, 21 and 28MHz bands. The marks show the approximate limits of each band. The 18 and 24MHz bands are not shown for clarity.

on this band had risen over 2:1 minimum. These readings were confirmed by 'normal' s.w.r. meter and around 10-15W into the units. In use the loops were definitely quieter than my main outdoor antenna, but that is to be accepted. Highly commended!

Product Information

Product

G4TPH Mag-loop

Supplier

Tom Brockman G4TPH

Contact

1 Dalby crescent
Newbury, Berkshire
England
RG14 7JR

Pros

Both loops are easily carried and assembled and cover several bands with low s.w.r. values.

Cons

Not self-supporting, but are light enough to hang from curtain rails.

Web: www.g4tph.com

Prices:

ML-20	£59
ML-40	£64
Both	£110

My thanks got to **Tom Brockman G4TPH** for the loan of both units, I've enjoyed using them. Tom's website has on-line ordering to make it easier.

A Power Supply For Valves

Thoughts & Suggestions

There was a very interesting valve power supply project by **Stefan Niewiadomski** that appeared in the February 2007 edition of *PW*. It's really useful for powering valved projects but I'd like to make a few suggestions that I feel would increase its usefulness.

The original design (Fig. 1 on page 20 February 2007 *PW*) called for a single high tension (h.t.) winding on the main transformer, T1, followed by a bridge rectifier and smoothing. My first suggestion, uses a split winding transformer as shown here, **Fig. 1**, of let's say 150-0-150V.

With an additional switch, the main supply voltage could be switched between its full output or to approximately half that level. This arrangement works equally well if you need a 300 or 600V supply. This sort of arrangement also allows greater choice of transformer. High voltage transformers are getting harder to find so, any idea that widens the choice must be good!

My second suggestion is not connecting the negative lead of the supply directly to the chassis point. One side of the 6.3V heater winding could indeed be tied to the chassis, but there are occasions when, on older sets, a negative bias is needed. This may be obtained from the h.t. supply, if the negative lead is connected to chassis through a resistor. The current flowing, creates the negative bias supply.

Negative Bias

Though last year's article, provided a negative bias line, it's not always that accessible in the radio. My second suggested idea produces the bias

from the main h.t. line. The skeleton circuit, **Fig 2**, shows a typical system used to obtain the bias supply from a single supply line connection.

As all the h.t. current flows through the resistor marked R the point marked X is at a voltage that's negative with respect to the chassis line. This provides the negative grid bias needed by some older type sets, especially older battery-valved equipment.

The power supply components connected to the h.t. negative rail would need to be 'raised' and isolated from the chassis or earth potential. If using a printed circuit board as in the original design though this would be very easy with slight alteration to the layout. If using tag strips or the like then this is also an easy procedure

In addition, it might be worthwhile generating a 1.5V supply, then battery-powered valves could be used. Start by rectifying an isolated 5-9V winding. The resultant d.c. supply may be stabilised to a lower level using the versatile LM317 regulator chip.

The circuit of a suitable LM317 regulator is shown in **Fig. 3**, which can be used with various resistor combinations or potentiometer to give different output levels. Remember, of course, that the input must stay at least 2V about the output level to remain stable. A 5-6V winding should be adequate for up to 3V regulated output.

I've shown a few resistor combinations to give various output voltages in **Table 1**. These few addition would, I think, increase the range and use of the Stefan's excellent power supply project.

Table 1		
R1(Ω)	R2(Ω)	Output
100	1k	13.7V
100	860	12V
100	620	9V
100	390	6.1V
100	150	3.1V
100	20	1.5V

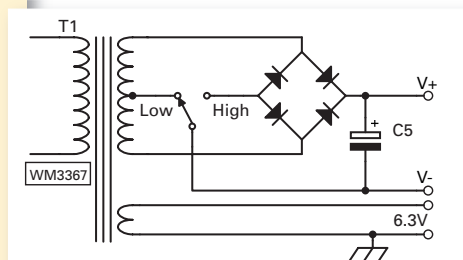


Fig. 1: A switch allows two rectified output voltage levels to be set from a centre-tapped transformer.

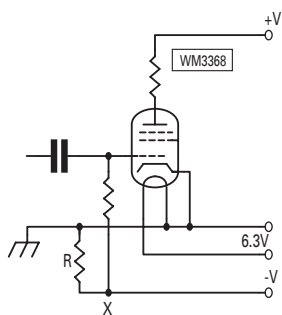


Fig. 2: Creating a negative bias supply from the main h.t. current flow.

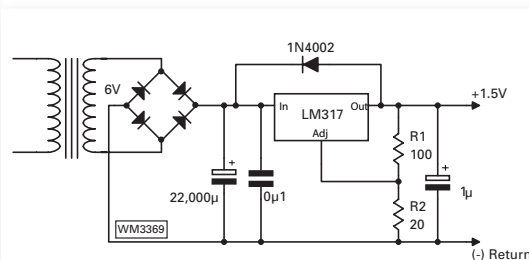


Fig. 3: Using a single LM317 integrated circuit, to create a simple low-voltage regulated supply.

Ben Nock G4BXD offers his thoughts and suggestions for improvements to a power supply project from last year.

PW PCB SERVICE

Colpitts Xtal Osc	WT2443	Sept 04	£3.00
PW 2 Tone Osc	WT2613	Feb 05	£3.75
HF Bands LPF	-	Feb 05	£10.00
Mosfet HF Amp	WT2662	Mar 05	£4.00
Mosfet VHF Amp	WT2664	Mar 05	£4.00
Mosfet Mixer	WT2741	May 05	£4.00
2 Diode Mixer	WT2801	July 05	£1.50
2 Transistor Mixer	WT2802	July 05	£3.00
DBD Mixer	WT2858	Sept 05	£1.50
SA602 Mixer	WT2859	Sept 05	£3.00
PW Mellstock TX	WT2840	Oct 05	£14.25
PW Mellstock	WT2903	Nov 05	£9.25
Active Filter	WST2902	Nov 05	£3.00
AF IC Amp	WT2958	Mar 06	£3.00
LS Fi ter	WT2959	Mar 06	£5.00
Portland VFO & buffer 2		Mar 06	£5.00
Portland VFO & Buffer 1		May 06	£5.00
Mixer - VFO	WT2907	May 06	£5.10
Mic Amp	WT3094	Sept 06	£4.00
Broadband Amp	WT3086	Oct 06	£6.25
Off-air Freq. Stand	WT3124-5	Nov 06	£16.25
Off-air Freq. Stand.	WT3123-5	Nov 06	£19.75
7MHz DSB TX	WT3122c	Nov 06	£6.00
7MHz DSB RX		Jan 07	£4.50

P&P 75p. Any quantity of boards.

Cheques payable to A.J. & J.R. Nailer

Component kits also available for all except HF Bands LPF.

Go to website www.spectrumcomms.co.uk

Spectrum Communications

12 Weatherbury Way, Dorchester, Dorset DT1 2EF

Tel 01305 262250

KENWOOD TK 350

UHF 70cm 120ch H/HELD

HIGH/LOW POWER, REPEATER REVERSE

FULLY SERVICED

FULLY PROGRAMMED

For the full frequency list go to WWW.TETRA.TV and click on TK 350. If there are any frequencies you wish changed then please send a list of those you require removing and those you require installing with your order. E-MAIL, FAX, POST OR CALL IN.

Radio comes with heavy duty battery (high capacity) and Aerial (long or stumpy) you choose.

FULL 12 month WARRANTY.

£29.99

NEW Speaker Mics £9.99

NEW Batteries £12.00

NEW Drpo in Chargers £12.00

NEW Ear Pieces £4.00

Belt Clips £2.00

P&P £7.50

Buy 6 TK 350 and get a FREE KENWOOD 6-way charger

TETRA

1 Victoria Road Northampton NN1 5EB
01604 234333 01908 261610

TETRACOM@AOL.COM

24hr 07836 600700 Gary G6 NYH

Authors required - Apply here!

- Have you an idea that could be turned into an article for *PW*?
- Have you chatted about it to friends on the air?
- Have you started sketching out the ideas on to paper yet?
- Have you got a project in mind – and built a prototype?
- Would you like to see your article published in *Practical Wireless*?
- Does the idea of earning money from you idea appeal to you?
- Do you relish the challenge offered by specialised technical publishing?

If the answer to any of the questions is – 'Yes' – the *PW* team **Tex G1TEX** and **Rob G3XFD** would very much like to hear from you!

Here's what you should do –

- Call Tex or Rob on **0845-803-1979** to discuss your idea.
- Or send an E-mail to either tex@pwpublishing.ltd.uk or rob@pwpublishing.ltd.uk so they can chat the idea over with you.
- Ask for the *PW* Authors Guide to be sent to you. It provides essential information to help you write and prepare ideas for us – so by working together we can bring your ideas to the World of Amateur Radio!

BOWOOD ELECTRONICS LTD

SUPPLIERS OF ELECTRONIC COMPONENTS

Visit our website and order on-line at

www.bowood-electronics.co.uk

or send 60p stamp for catalogue

E-mail: sales@bowood-electronics.co.uk

Contact name: Will Outram

Unit 1, McGregor's Way, Turnoaks Business Park,
Chesterfield S40 2WB

— Telephone 01246 200222 —

Sycom
P. O. Box 148, Leatherhead
Surrey KT22 9YW
Phone 01372 372587
Fax 01372 361421
Robin G3NFV

Toroids, Ferrites and Toko

Try us
for:

- Resistors
- Capacitors
- Switches
- Semiconductors
- Cable connectors
- and much more

COMPONENTS AND AMATEUR
RADIO EQUIPMENT PURCHASED

E-mail: robin@sycomcomp.co.uk
Web: www.sycomcomp.co.uk



David Butler's

vhf dxe

Share your news, views and reports with fellow readers. Reports to David by the last Saturday of each month please.

This month David Butler G4ASR reports that even in November there's still DX to be found on the v.h.f. and u.h.f. bands.

Only a very small number of ionospheric events were observed during November. Stations reported a total of four Sporadic-E (Sp-E) openings, two auroras (Au) and one Auroral-E (Au-E) event that all occurred on the 50MHz band.

Very little was reported on the 70MHz band apart from a few scheduled meteor scatter (m.s.) contacts. The Leonids meteor shower was encountered during November and this created an increase in DX activity especially on the 144MHz band. The dominant mode at the beginning of the month was tropospheric propagation with many c.w. and s.s.b. contacts being made on the 144MHz and 430MHz bands.

The 50MHz Band

A total of four Sporadic-E openings were reported on the 50MHz band during November. Unfortunately, many operators had stopped listening to the band after all the excitement of the summer Sp-E openings. There was therefore, little in the way of any real DX apart from hearing beacon stations. On November 1st between 1315-1400UTC the band was open to Italy (I), Portugal (CT), Slovenia (S5) and Spain (EA).

Operators in central and southern England reported making s.s.b. contacts with the stations of CT1HZE, EB5EIB, IZ1GCV, IW2FND, IZ7EUH and S51DI. A very short opening from Cornwall (IO70) to Portugal occurred around 1030UTC on November 5th with the station of **G2KF** working CT1HZE (IM57) and other stations in Portugal hearing GB3MCB, the Mid-Cornwall Beacon.

Joe Kraft CT1HZE seems to be in an ideal location for autumnal Sp-E as he reported hearing the beacons

GB3BAA (50.016MHz), GB3BUX (50.000MHz), GB3IOJ (50.065MHz), GB3MCB (50.042MHz) and GB3RAL (50.050MHz) between 1125-1145UTC on November 14th. An s.s.b. contact was made at 1148UTC with the station of GW8ASD (IO83).

Three openings were reported on November 23rd, between 0900-0915UTC by **OE5MPL** (Austria JN78) who heard the GB3BAA and GB3MCB beacons, between 1100-1110UTC.

Another report was from **Justin Johnson G0KSC** (Essex JO01) who worked I8MPO and heard the IOJX beacon (50.004MHz). Then between 1150-1220UTC, CT1HZE reported hearing the GB3BAA, GB3IOJ, GB3MCB and GB3RAL beacons and worked the station of G0KSC.

Justin reports that he is using a 7-element Yagi, designed by YU7EF, and is achieving outstanding results. The antenna is supported on a 9.5m long boom and has a forward gain of almost 11dBd. Take a look at the website: www.yu7ef.com and you will see numerous antenna designs for the 50, 70, 144 and 430MHz bands. These are thoroughly recommended.

There was a little bit of geomagnetic activity during the period November 20th-22nd, that was caused by an Earth facing coronal hole on the surface of the Sun. The event created some auroral back-scatter and auroral-E propagation on the 50MHz band. At 1535UTC on November 20th the station of **Gordon Curry G16ATZ** (Co. Down IO74) heard the OY6BEC beacon (Faroe Islands IP62) on 50.035MHz.

The signals were peaking 52A via auroral back-scatter. Later that night, between 2305-2335UTC, the station of **David Gillies MM0AMW** (Argyll IO75) copied the beacons of LA7SIX (Norway JP99) on 50.051MHz, OH9SIX (Finland KP36) on 50.067MHz and OX3VHF (Greenland GP60) on 50.045MHz. All signals were received with a pure tone, unlike that of aurora and were indicative of Auroral-Es propagation.

On the following evening, at 0018UTC, David MM0AMW heard the VE8BY beacon (Canada FP53) on 50.050MHz, again via Au-Es. Signals were peaking 429 over the not inconsiderable path of 3552km. At 1812UTC on November 22nd the TF3SIX (Iceland HP94) beacon on 50.057MHz was heard by MM0AMW via auroral back-scatter with 53A signals.

Moonbounce

The final leg of the ARRL e.m.e. (moon bounce) contest was held during the weekend of November 24th-25th. Only a few years ago, any thoughts of making 50MHz contacts via the Moon from a small garden plot would have been discounted. Nowadays, thanks to specialist signal processing software such as JT65A, any 'Six Metre' station with a good long Yagi (such as the YU7EF design) and a bit of power can make e.m.e. contacts.

Lance Collister W7GJ, reports that on November 24th he completed an e.m.e. contact with the DXpedition station of CN3A (Morocco IM52). That station was running 350W into a 5-element IOJXX Yagi, from the solid-state amplifier driven by a Yaesu FT-857 transceiver. Lance was also very pleased to complete a JT65A QSO with the station of HB9Q on November 30th.

The Swiss station was only running 50W output into a two and an half wavelength long Yagi antenna. This is the fourth e.m.e. contact Lance has completed with a computer-optimised single Yagi antenna station running less than 100W output.

During the ARRL contest the UK stations of G4IGO (IO80), G4PCI (IO91), G5WQ (IO91), GM4WJA (IO87) and MM0AMW (IO75) reported making 50MHz e.m.e. QSOs with JR6EXN (Japan), PE1BTX (Netherlands) see his antennas in the photograph, **Fig. 1**, W1JJ (USA), K6MYC, W7GJ and ZL3NW (New Zealand). It's great to see all this



Fig. 1: The 50MHz EME Station at PE1BTX. It consists of four 6M7JHV, 7-element Yagi antennas.

50MHz e.m.e. activity.

In many cases, it is simply a question of being active during periods of good moon bounce conditions. The planetary geomagnetic index (Kp) needs to be low and attempts should be scheduled during moonrise or moonset, when additional ground gain can be achieved.

Meteor Showers

Meteor showers appear at particular times of the year because the debris that causes them travels in fixed orbits around the Sun. The Earth annually intersects these orbits, due to its own orbit around the sun. On the other hand, sporadic or random meteors arrive all the time and from all directions.

The arrival of sporadic showers varies with the time of day and season of the year. Sporadic meteors are more plentiful at sunrise as the Earth sweeps them up as it orbits the

Sun and less plentiful at sunset as the Earth rotates away from them.

The meteor 'year' begins with the intense, but brief, **Quadrantid** shower with maximum activity around January 3rd and 4th. The month of January overall has good meteor rates but this diminishes somewhat during February and March. After the reduced rates of February and March, two major showers now appear. The first of the major showers is the **Lyrids** with a maximum around April 21st-22nd, this raises meteor rates for several nights.

Next comes the **Eta Aquarids** on May 5th-6th enrich late nights of May's first half, sometimes quite substantially. June to mid-July has fair meteor rates. The last half of July has rates increasing steadily as the **Delta Aquarids** (July 27th-28th) and **Alpha Capricornids** (July 30th-August 1st) have maxima. Overall, late July to mid-August is very rich in meteors. Even the **Perseids** are

David Butler G4ASR

Yew Tree Cottage
Lower Maescoed
Herefordshire HR2 0HP
Tel: (01873) 860679
E-mail: g4asr@btinternet.com

beginning to show a little activity.

The **Perseids** maximum, just before mid-August (August 12th-13th), is fairly prolonged and quite rich. High sporadic activity after midnight continues for the rest of the year, but especially in September and the first half of December. Mid-October to mid-December is a nearly continuous period of heavy meteor activity, consisting of:

The **Orionids** (October 21st-22nd) during the second half of October have a prolonged plateau maximum for several nights.

The **Taurids** (November 11th-12th), active for two months, are most numerous in November's first half and can be rather variable in strength.

The **Leonids** of mid-November (November 17th-19th) are quite unpredictable with rich displays occurring roughly every 33 years. The last Leonid storm period occurred from 1998 through to 2002.

The **Geminids** shower of mid-December (December 13th-14th) climax the year with many rich meteors. Finally, the oft-overlooked **Ursids** complete the year's activity, reaching maximum around December 21st-22nd.

The meteors associated with the Leonids shower are very fast moving, entering the Earth's atmosphere at speeds of over 250k.p.h. or greater. Besides being fast, the stream usually contain a large number of very bright meteors producing highly ionised trails. This shower occurs every year in the period November 15th-19th with peak activity this year during the night of November 18th-19th. In Europe the shower rises above the horizon around 2300UTC and sets the next day around 1230UTC giving nearly 12 hours of shower activity.

A number of 50MHz operators are now using the digital JT6M mode to make simple fairly automated meteor scatter contacts. Indeed it's so simple that I would hazard a guess that some operators don't even understand the basic orbital mechanics of m.s. propagation.



FREE
Carry Case
WORTH
£8.85

£39.95

C401FS Dual Charger

- 100 min/5 hour dual charge AA or AAA batteries
- Supplied with:
 - Four AA 2,700mAh NiMH batteries
 - 240V adapter • Car adaptor kit
 - Battery carrying case



BATTERIES
NOT INCLUDED £24.95

C490 Charger Bank

- Charge 4 x 9.6V NiMH batteries in just 2 hours.
- Car adapter charges 9.6V batteries to its full capability



BATTERIES
NOT INCLUDED £49.95

1090F Multi Bank PP3 battery charger

- Charge up to 10 x PP3 batteries at a time
- Capable of even reviving older 9V batteries which may no longer be accepting a charge



£69.95

C808M-U

- Recharge AA/AAA in one hour
- Recharge C/D in 1 to 5 hour
- Selectable Soft and Rapid Charge
- Cool charge
- Deep Battery Conditioning System



£59.95

C801D One Hour Charger

- Charge 1 - 8 AA or AAA batteries in any combination
- Charging status displayed on screen
- Battery conditioner
- Heavy Duty International AC Adaptor



£39.95

FNB-72 for the Yaesu FT-817

- Ultra high capacity 9.6V 1700mAh Rechargeable Battery

POWEREX

by MAHA

EDITORS' CHOICE
PCPhoto

imaging
resource

LetsGoDigital

The USA's FAVOURITE batteries and chargers

Founded in 1993, Maha Energy Corporation is a innovative global leader which designs and manufactures battery and charging technology. State-of-the-art products are tested individually by various automated testing systems ensuring Maha's reputation for reliability.



C777 Plus-II Universal Charger & Analyzer

The perfect companion for Amateur radio enthusiasts, charges nearly any Lithium Ion, NiMH, and NiCD battery pack. Ideal for almost all makes of Amateur radio equipment old and new. The C777 Plus may also be used for your mobile phone, camcorder, AA, AAA, C, or D battery cells using optional holders (available on-line).

£59.95

- Analysis and condition battery packs and display capacity
- Display digital voltage, time and capacity during both charge and discharge
- Support 1.2V to 14.4V (1 to 12 cells) for NiMH & NiCS and 3.6V to 14.4V for Lithium Ion
- Lightweight international 80-240V AC mains adaptor
- Car kit for charging from cigarette lighter
- Alligator clip lead pack
- Range of optional fittings for charging various battery sizes
- Optional Cell Holders £2.00 each
- **NEW in Version II** Analyze (Discharge only function) the battery pack to obtain the discharged capacity of a battery pack, which is retained on the screen until the reset button is pressed.
- **NEW in Version II** One-Touch Reset button allows the user to reset the charger without having to disconnect power from the charger

C204W+ Intelligent Rapid Charger

with
4 x 2700mAh Batteries

- Ultra Fast Recharging Time
Recharge 2 AA or 2 AAA batteries in 1 hour.
Recharge 4 AA / AAA batteries in 2 hours (approx)
- Conditioning:
Bring dead batteries back to life
- Unique four stage charging process:
Ramp-up, Rapid, Top-off & Maintenance Charging
- International power supply 100-240V 50/60Hz

£34.95

Powerex Rechargeable Batteries

Lasts up to twice as long as other rechargeable batteries. Can be recharged up to 1000 times! Memory free operation means you can charge PowerEX batteries before fully discharged.

2700mAh AA NiMH, pack of 4£14.95 R&P £3.75
2500mAh AA NiMH, pack of 4£10.95 R&P £3.75
2300mAh AA NiMH, pack of 4£9.95 R&P £3.75
900mAh AAA NiMH, pack of 2£5.95 R&P £2.75
PP3 9.6V 200mAh NiMH£9.95 R&P £3.75

Intelligent Rapid Charger



NEW! C9000 Wizard ONE The Ultimate Charger-Analyzer

Displays individual
Battery Capacity,
Voltage,
charge time
and current



C9000 Wizard One The Ultimate Charger-Analyzer

- Four independent slots for AA or AAA batteries
- Five modes of operation
- Displays capacity, voltage, time and current.
- Special forming charge and cycle mode
- 30 Selectable charging/discharging speeds
- Over 10,000 programmable possibilities
- 29 selectable charging and discharging rate.
- **CHARGE:**
Recharges the battery at the selected rate.

- **REFRESH:**
Refresh & Analyze: Charges the battery, rest for one hour, discharge, rest again, then recharges it. (Suitable for batteries stored showing poor performance).
- Battery Matching mode
- Large backlit LCD Display
- Worldwide 100-240V switching adapter - light weight and small.
- Batteries NOT included

£49.95

- **DC124**
Optional Cigar adapter plug/lead for 12V car use£5.00

nevada[®]radio

Unit 1 Fitzherbert Spur Farlington Portsmouth PO6 1TT

www.nevadaradio.co.uk

UK Importers & Distributors of Maha & Powerex

phone 023 9231 3090

email sales@nevada.co.uk

fax 023 9231 3091

During the Leonids shower a number of JT6M contacts were reported with the stations of DF6HT (Germany JO64), EA1UU (Spain IN83), EA2BCJ (IN91), EB1EHO (IN73), HA2RD (Hungary JN87), IW4ARD (Italy JN64), LA4ANA (Norway JO59), LA4LN (JP50), LA8NK (JO48), LA9UNA (JO49), OE5UAL (Austria JN68), OZ1DJJ (Denmark JO65), OZ1O (JO56), SO5AS (Poland KO02), SP9HWY (JO90), S59F (Slovenia JN65) and 5Q6M (Denmark JO55).

Last TV Station

On November 26th the last television broadcasting station in Switzerland to operate within the 50MHz band closed down. This was very good news for all Swiss Radio Amateurs as the 'Magic Band' is now usable for the very first time without suffering any interference from TV sidebands. To celebrate this event members of the **Burgdorf Amateur Radio Group** obtained permission to run a high power 50MHz station using the towers existing antenna array. The group, using the call sign HE6M, were active between November 30th to December 2nd and made many JT6M digital contacts via m.s. with UK stations and others throughout Europe.

Very little appears to have been worked via m.s. during November on the 70MHz band. A few UK stations reported contacts with IK1EGC, I3VVK, IK0IXI (Italy), OY3JE (Faroe Islands), OZ3ZW (Denmark), S51DI (Slovenia) and 9A1Z (Croatia).

Most DX activity during meteor showers is concentrated on the 144MHz band. On this band, where the use of high power and higher antenna gains can achieve far better results than at lower frequencies. Digital FSK441 contacts were reported during the Leonids meteor shower with Scandinavian stations that included LA4YJA/P (Norway JO39), OH2BYJ (Finland KP20), OH3AWW (KP11), OH3KLJ (KP21), OH6HFX (KP14), OH6PA (KP02), SM2CEW (Sweden KP15) and SM5CFS (JO99).

There was a fair bit of 144MHz activity from Russia and ex-Russian Republics with the stations of ES3RF (Estonia KO29), EU6MS (Belarus KO45), LY2BUU (Lithuania KO15), LY2R (KO15), RW1AY (Russia KO59), YL2GDA (Latvia KO06), YL2GJW (KO06), YL2HA (KO26), YL2OK (KO37) and YL3GDF (KO26). A little bit nearer to home were the central European stations of HA5CRX (Hungary JN97), HA6NN (JN98), HB0/HA4XG (Liechtenstein JN47), HB9QQ (Switzerland JN47), OE1SOW (Austria JN88), OK1UGA (Czech Republic JO80), OM7AC (Slovakia JN98), SP2CNW (Poland JO93), SP2IQW (JO94), SP2JYR (JO92), SP2MKO (JO93), SP6HED (JO80) and SP7VC/8 (KN19).

Stations active from southern Europe included EA6/DJ4UF (Balearic Islands JM08), EB2FJN (Spain IN83), I8MPO (Italy JN70), IW3HRT (JN55), IW4ARD (JN64), IZ5ILX (JN54), S51AT (Slovenia JN75), S54T (JN75), S57EA (JN76), S57O (JN86) and 9A4QV (Croatia JN75). Finally from south-eastern Europe were the stations of LZ2FO (Bulgaria KN13), SV2JL (Greece KN10), YT3I (Serbia KN05), YU1EV (KN04), YU1IO (KN04), YU1MS (KN04) and YU2DX (KN04).

Tropospheric Openings

The period between November 1st-5th and November 10th-12th were particularly good for tropospheric propagation. These are conditions when stations say "there's a bit of a lift on". During November 1st-2nd the best path from the UK was to the south with QSOs being made with French and Spanish stations on the 144MHz and 430MHz bands.

The s.s.b. contacts included the stations of F1BQX (France JN18), F1NZC (JN15), F1PKA (JN29), F4EZJ (JN05), F5DE (JN05), F6CBH (JN19), F6DRO (JN03), F8BON (IN96), F0FHU (JN06), EA1DAX (Spain IN53), EA1DDU (IN73), EA1FBF (IN73), EA1GCM (IN73), EA1MX (IN73), EA1UU (IN83), EB1BD (IN73), EB1BFS (IN73), EB1DM (IN73) and LX1FX (Luxembourg JN29).

Tropospheric propagation was still very good during the period November 3rd – 4th and as this coincided with the 144MHz Marconi Memorial c.w. contest there was a terrific amount of quality DX to be worked from the UK. Stations in England, Ireland, Scotland and Wales reported c.w. QSOs into Austria (OE), Croatia (9A), Czech Republic (OK), Germany (DL), Hungary (HA), Luxembourg (LX), Poland (SP), Slovakia (OM), Slovenia (S5), Spain (EA) and Switzerland (HB9).

The station of **Ray James GM4CXM** (Dunbartonshire IO75) made some very good contacts that included the stations of DK0BN (JN39) at 1048km, F6KIM (JN38) 1084km, DF0CI (JO51) 1091km, F8ALX (JN06) 1119km, DJ5IR (JN49) 1156km, DL6IAK (JN48) 1176km, DK9IP (JN48) 1183km, F2CTP (JN36) 1264km, OK2KKW (JO60) 1295km and OK2M (JN69) for his best DX of the contest at 1402km.

Other DX stations worked from the UK included EA2TO/1 (IN83), HB9CQL (JN37), HB9FAP (JN46), HG6Z (JN97), OE5D (JN68), OL3Z (JN79), OL8R (JN69), OM5M (JN88), OM8A (JN87), SN3O (JO71), S51ZO (JN86), S57O (JN86), 9A5Y (JN85) and hundreds more that I haven't got space to mention!

Deadlines

That's it for this month. Ionospheric propagation during January-February is normally quite subdued at this point in the Solar Cycle. There is however a possibility of some extended tropospheric propagation into Scandinavia and towards Eastern Europe. These openings will primarily be observed on the 144MHz band and higher frequencies. It won't be until May, that the 50MHz and 70MHz bands will start coming alive again.

If you hear any DX or have any other news to pass on then please send the details to me before the last Saturday of each month.

Happy New Year!

73 David G4ASR

David Butler G4ASR does most of his operating on the fascinating v.h.f./u.h.f. bands. He not only writes the *VHF DXer* column, he also has produced many suitable antenna projects for these bands. It's now during the darker days of the year when plans should be made for your antenna projects, to be started when the warmer days return. So, what better way than do this than to settle down with a great antenna book?

David has five suitable antennas, covering from 50MHz to microwaves for you to consider in the *Even More Out of Thin Air* publication. But that's not all that's in this excellent publication there are many more h.f. and practical ideas to do with antennas too!



Ben Nock's

valve & vintage

This month Ben looks at a receiver used in Zeppelin airships, a Russian aircraft transmitter and a Russian army set.

Well here we are again, another year gone by! A very happy new year to you all and I hope it was an enjoyable Christmas. Due to lead times in publishing I am writing this before the year has actually ended – but even up to now it's been a good year for the 'Kidderminster Kollektion'.

My trip to Germany in June realised several new additions and the latter half of the year saw five new Eddystone units added to the stock list as well as several Second World War military sets.

Looking Back To 1932

Let's start the new year with a look back to 1932 (no-one can accuse me of not being a child of the modern age!). An interesting E-mail arrived here in Kidderminster from **Martyn Spence G4SOH**. He told me that he had this rather old set, which was in need of restoration. He'd been waiting 20 years to start the job but realised he might never get around to it! He asked if I would like it for the Kollektion, he felt there was more chance of it receiving attention that way. Of course I said yes!

So, a meeting was arranged and over a very enjoyable pub lunch the set changed hands. The set in question is a Telefunken E381H four-

valved receiver, apparently made between 1932 and sometime in the early 1940s. This example would appear to be an early one, as later versions have a small panel meter fitted. Several web sources have the set described as being used by the German Navy and Air Force.

The really interesting thing though about the Telefunken set is that it's the type used aboard the Zeppelin airships of the time. Indeed, a web search found an actual photograph taken inside the radio room of the *Hindenburg* airship which clearly shows this type of set fitted. The radio room used two of these receivers and 100W long-wave and 100W short-wave transmitters. See www.garemaritime.com/gallery.php?s=46

The receiver, **Fig. 1**, used four valves, a RES094 as radio frequency (r.f.) amplifier and three RE084 as detector, audio and audio output. The set tunes an impressive 14.6kHz to 20MHz in 10 switched bands, the coils, on ceramic formers, are mounted on a large turret type tuner assembly. The set itself is housed in a very solid die-cast box with a large lid held on by four impressive bolts. Though large the set doesn't weigh that much, thanks to the light cast alloy, obviously a major plus in Zeppelin use!

Internally the unit has plenty of

room, **Fig. 2**. The set could have been housed in a much smaller enclosure but the extra space does mean working on it should be easy.

The Telefunken has at some time in the past acquired a British type slow motion dial on one of the controls along with a rather ugly paint job. I shall remove both of these and the set will be re-painted in a cream which appears here and there under the brown. I'll then enjoy the restoration of this set, it's always nice to work on something with such history and my thanks to Martyn for the opportunity.

Russian Aircraft transmitter

One of the other items brought back from my German trip in June was a Russian aircraft transmitter, **Fig. 3**. The designation of the set seems to be either R-805 or RSB-5. There's always a little confusion with Russian sets as some characters resemble English ones, P for R etc., and the difficulty in getting websites in Russian translated into English.

After some searching on the Internet I'm still unsure as to the date it was made, one website quoting 1941 to 45 while someone else suggested it was, in fact, a post Second World War set. Its mating with a receiver is also in question! The Russian version of the BC348, the US-9 is quoted as being used with the unit, I've found on one web site, while the Russian US-P set is also a contender.

Basically the transmitter, **Fig. 3**, is a 3-valved set, oscillator, buffer and power amplifier covering between 2 to 12MHz with two versions (this version covers 3.6 to 12MHz in two bands). Incidentally, there's a fourth valve in the set – but looking at the circuit diagram I can't fathom out its job, although it may be some form of monitor or indicator circuit.

I understand the modulator was an external unit along with the power supply and rotary generators for airborne use no doubt. There's also apparently an elaborate control box which also houses the Morse key. A panel meter and switch allow

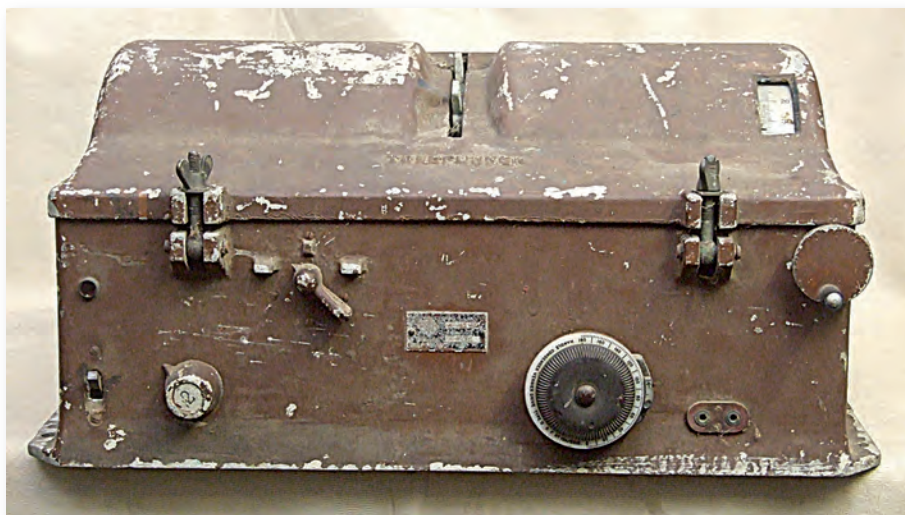
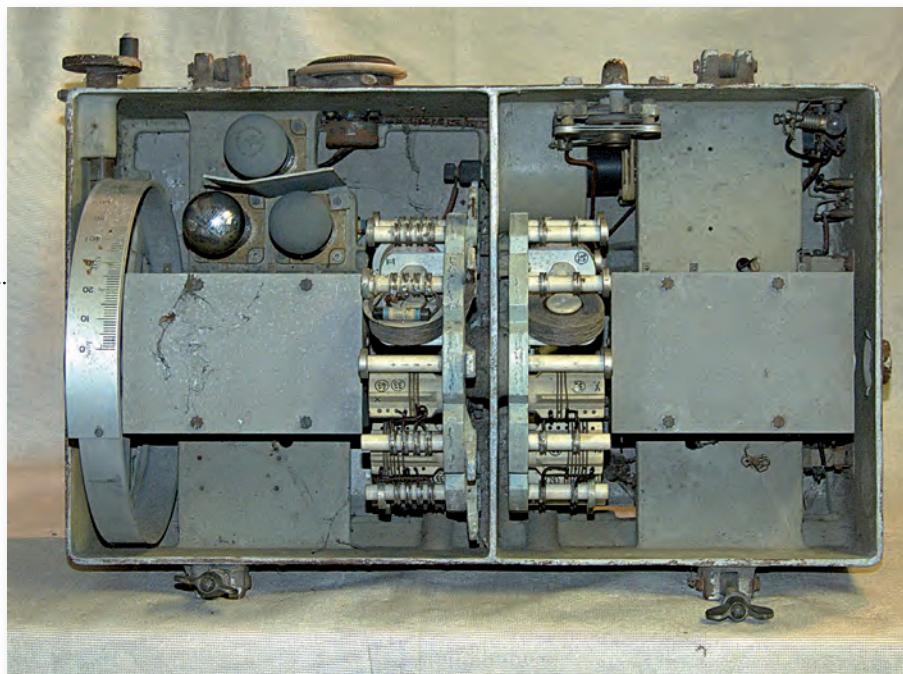


Fig. 1: The E381H receiver, the band switch is in the centre of the lid, with the tuning control at the top right.



Ben Nock G4BXD

62 Cobden Street
Kidderminster
Worcestershire DY11 6RP
E-mail: military1944@aol.com

Fig. 2: Inside the E381H, the coil turret is in the centre. (Note that there's plenty of ventilation space).

monitoring of various important points in the set.

However, the interesting thing about the unit is the output valve. This is a very large type, number GK-71, which can deliver between 200 and 300W output. It's a directly heated pentode, with heater (filament) needs of 20V at around 3.5A with an anode voltage of around 1500V or so – indeed, it appears to be a Russian version of the 813 type. I think it's going to be fun working on this set!

Russian Army set

Another June purchase was the cute Russian A7b transceiver, **Fig. 4**. This little set, first produced as the A7 and then the A7a, was made during the Second World War and even into the 1950s for use in the Czechoslovakian Army. Originally the transceiver set was housed in a wooden box, which also held the set, the batteries, the headphones, microphone and Morse key, leads, wire etc., it's something I think it's a little like the British Wireless Set 17 in looks.

Basically, the A7b set tunes 24 to 28MHz and use frequency modulation, with probably no more than 500mW output on transmit. The detail that the box contained a Morse key seems to imply a tone modulated system rather than on-off keying. The panel meter keeps a check on the heater voltage and a small neon lamp is illuminated when the transmitter is keyed.

The set was originally powered from two 1.2V NiCad cells, giving a 2.4V heater supply, and a 180V dry battery. The really nice thing was that



Fig. 3: The Russian transmitter RSB-5, the band switch is a push-pull switch mounted at the lower centre of the unit.

when I powered up this set on the bench power supply – it worked first time!

Considering its age, the transmitter was remarkably stable. Maybe when the 24 and 28MHz Amateur bands open up next I'll give it an airing. The two terminals on the upper front left of the front panel even allow the set to be used as a standard field telephone.

Of greater interest is this set's role in the Russian *Sputnik* satellite. The launch of the world's first man made satellite in 1957 was apparently preceded by many months of articles in Russian magazines telling their Amateurs how to modify the surplus A7 for reception on the 20MHz frequency. Why? The answer is because 20MHz was the frequency that *Sputnik* transmitted on, along with a 40MHz carrier as well.

The use of the Amateurs as unofficial space monitors seemed to have been acceptable to the authorities. Despite this news being available to the West, the USA and everyone else were still caught off guard and shocked by Russia's achievement, see <http://www.arrrl.org/news/features/2007/09/28/03/?nc=1>



Fig. 4: The A7b transceiver. This version came with a telephone type microphone-headset.

And Finally

Well that's about it for this stint at the V&V shop. I hope you've enjoyed the selection I've had on offer and there are more pictures at www.qsl.net/g4bxd

As always, I can be contacted directly at **62 Cobden Street, Kidderminster, Worcestershire DY11 6RP**, or via E-mail at military1944@aol.com

Cheerio for now.

THE PW PUBLISHING LTD

RADIO BOOKSTORE

mail order...huge range in stock...fast delivery...

VINTAGE RADIOS

This book tells the collector and the armchair wireless enthusiast everything there is to know about classic radios from the 1920s to the end of the 1960s. All the important makes and models are discussed and the author also covers buying and selling, care and restoration and many other topics, including foreign radios and radio-related ephemera. Illustrated with many colour photographs, this is the perfect collector's companion to the fascinating hobby. 208 pages. **£19.95**

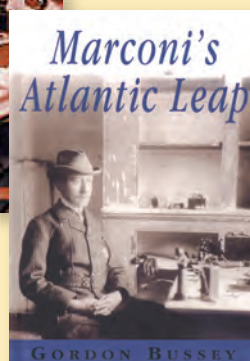
AMATEUR RADIO – A BEGINNERS GUIDE (1940 REPRINT)

Reprinted from 1940, this guide was dedicated to those who found it difficult to get started and it's still a very useful and interesting read today! 156 pages. **£7.70**

MARCONI'S ATLANTIC LEAP

A fascinating fully illustrated and documented description of the bridging of the Atlantic by wireless in 1901 by Marconi, who was only 27 at the time. 96 pages. **£6.99**

In Stock NOW!



See the bookstore on page 76 for ordering information

SPECTRUM COMMUNICATIONS



STATION PREAMPS for 2 or 4 or 6metres. RF & DC switched. Adjustable 0-26dB gain. 100W power handling. **RP2S, RP4S, RP6S, PCB & Hardware kit £29. Ready Built £47.**



POUNDBURY SSB IF UNIT
9 or 10.7MHz SSB generator & receive IF unit with receive front end mixer. Incorporates a speech processor, double balanced mixer and crystal filter. Crystal carrier Oscillator. Receive IF amplifier, balanced demodulator and AGC generator, and S meter circuitry. Also a 1W audio amp. Supplied with a 9MHz 6 pole crystal filter

and matching carrier crystal for USB generation. **PCB and component kit £82.50 including P&P.** Optional extras mic gain pot, volume control pot, £1.75 each, signal meter £9.00, 8ohm loudspeaker £2.00, P&P £1.50.



POUNDBURY 70MHz FRONT END as featured in this issue. Receive preamp and mixer, transmit mixer and three stage amplifier. Sensitivity 100nV on receive, output 250mW minimum on transmit. Works in conjunction with the POUNDBURY 9MHz SSB IF UNIT the PORTLAND VFO, and the MIXER-VFO board to create a tuneable 70MHz SSB transceiver. Also available

is a 250mW to 25W two stage amplifier type TA4S3 to complete the project. **PCB and parts kit with potentiometers £44.00**



TRANSVERTERS for 2 or 4 or 6 metres from a 10 metre rig, or 4 or 6 metre from a 2 metre rig. Includes new overtone local oscillator, and integral interface unit. 20dB receive gain, 25W transmit power. Low level drive dual IF versions **TRC2-10dL, TRC4-10dL & TRC6-10dL,**

high level drive single IF versions **TRC2-10sL, TRC4-10sL, TRC6-10sL, TRC4-2sL, TRC6-2sL.** Complete kit **£163.00. Built £244.00**

TRANSMIT AMPLIFIERS, for 2 or 4 or 6metres, single stage switched class AB linear. Diecast box with SO239 connectors. 1W to 5W drive, 8W to 30W output, Types **TA2SA, TA4SA, TA6SA.** Complete kit **£59.00, Ready Built £82.00.** 5W to 20W drive, 22W to 60W output, Types **TA2SB, TA4SB, TA6SB,** Complete kit **£65.00. Ready built £88.00.**

TRANSMIT AMPLIFIER & RECEIVE PREAMP, for 2 or 4 or 6metres. Receive gain adjustable 0-26dB gain. Switching for either part or straight through. RF & DC switched on transmit. Diecast box with SO239 connectors. 1W to 5W drive, 8W to 30W output, Types **TARP2SA, TARP4SA, TARP6SA.** Complete kit **£72.00, Ready Built £109.00.** 5W to 20W drive, 22W to 60W output, Types **TARP2SB, TARP4SB, TARP6SB,** Complete kit **£75.00. Ready built £112.00.**

3N201 MOSFET equiv. 40673 £2.25 each, P&P 75p any quantity.

Mail order only. Prices include postage unless stated. Cheques payable to A.J. & J.R. Nailer.
12 WEATHERBURY WAY, DORCHESTER, DORSET, DT1 2EF. Tel & Fax 01305 262250.
e-mail tony@spectrumcomms.co.uk Web site www.spectrumcomms.co.uk
Amateur, CB, Hospital Radio Links, OB Links.

WEB DIRECTORY

Nevada

E-mail: sales@nevada.co.uk
www.nevada.co.uk

Waters & Stanton

E-mail: sales@wsplc.com
www.wsplc.com

LAM Communications

E-mail: sales@lamcommunications.net
www.lamcommunications.net

To advertise here call
0845 803 1979

SHORTWAVE SHOP Ltd

[UNDER NEW MANAGEMENT]

18 FAIRMILE ROAD, CHRISTCHURCH, DORSET BH23 2LJ

Phone/Fax 01202 490099 Website: <http://www.shortwave.co.uk>

Amateur



Airband



Antennas



Marine



Shortwave



Security



Suppliers of Alinco, AOR, bhi, Butternut, Comet, Cushcraft, Diamond, GRE, Hustler, Hi-Gain, ICOM, Kent, KENWOOD, JRC, MAXON, MFJ, Mirage, MOTOROLA, Opto, Pro-Am, Radio Works, SSB Electronics, SGC, Tokyo, Tonna, Vectronics, Watson, Worldspace, YAESU, Yupiteru.

Latest list of used equipment available at www.shortwave.co.uk

Sole distributors for **Wellbrook** low noise antennas.
The world's best broadband LW/MW/SW loop antenna.



Active Loop Antenna	ALA1530 (Alum or Polythene).....	£159.00
Active Loop Antenna	ALA1530P (Alum or Polythene) ...	£180.00
Active Loop Antenna	ALA100 (Large aperture).....	£139.00
Active Loop Antenna	ALA330S (High gain SW).....	£189.00
Active Loop Antenna	LA5030 (Indoor).....	£159.00

All prices shown exculde delivery

Visit www.wellbrook.uk.com for complete specifications and price list.
Call **01202 490099** the Shortwave Shop or e-mail sales@shortwave.co.uk to order

4 MILES FROM BOURNEMOUTH INTERNATIONAL AIRPORT ON B3073
300 YARDS FROM CHRISTCHURCH RAILWAY STATION. FORECOURT PARKING FOR DISABLED



Carl Mason's

hf highlights

Share your news, views and reports with fellow readers. Reports to Carl by the 15th of each month please.

Carl Mason GWOVSW brings you news of the month's happenings and DX stations to be found on the h.f. bands.

It's hard to believe that, yet another year has flown by, and if the last 12 months are anything to go by, we're once again in for a variety of h.f. band conditions over the coming months. Propagation forecasts are of immense interest to both professional communicators and to the thousands of Amateurs around the world so, it was with interest I heard about the work of retired Meteorologist and Space Plasma Physicist **Thomas Giella KN4LF**.

Thomas produces a very comprehensive radio wave propagation forecast for the l.f., m.f. and h.f. bands. It's published, via an E-mail based mailing list, every Friday morning and covers the week ahead. If you are interested in this forecast take then it may well be worth you taking a look at his website www.kn4lf.com/kn4lf6.htm. It may well help you decide the times you operate to catch that rare entity or DXpedition!

The DX News

On to this month's DX news. First off this month, is a DXpedition using the call **J5C** from Babaque Island AS-020 in Guinea-Bissau. A large group of operators will be there until the 21st January, with up to five stations running 24 hours a day. Look for them on all bands from 1.8 to 28MHz.

Further details including the team's operating frequencies as well as an online log can be found at www.j5c.eu/ and you can QSL via **F5TVG** direct to **Salvoldi Franck, Box 92, 94223 Charenton Cedex, France** or via the bureau and E-mail requests can be sent to QSL@j5c.eu

In Saipan **Toro Koyanagi JI5USJ** and **Makoto Koyanagi JI5RPT** will be active as **AH0V** OC0086 until the January 14th. So, there is just enough time to catch them! They will be using s.s.b., c.w. and digital modes during

their stay and a website has been set up at www.ji5prt.com/ah0v/

The Iraqi government reopened their amateur radio service in mid-November and one operator who plans to hit the h.f. bands is **Scott Hedburg AD7MI** using the call **YI9MI** from Camp Taji until May 15th. Activity is s.s.b., c.w., PSK31 and RTTY on most h.f. bands from 3.5 to 28MHz with QSLs going to his homecall, **AD7MI**.

Touring South America at the moment is Norwegian Amateur **Svein Murberg LA6IKA** and he is expected to be on Juan Fernandez SA-005 for a week later this month, using the call **CE0Z/LA6IKA**. Svein has also obtained a licence for Easter Island and will use the call **CE0Y/LA6IKA**, though as I write the column no dates have been given. A QSL is good via **Sveiserveien 2, N-0683 Oslo, Norway**.

American Amateur, **Ed Steele K3IXD**, is heading for the Cayman Islands NA-016 and plans to operate as **ZF2XD** between February 6th and 11th, using both s.s.b. and digital modes on 3.5 to 28MHz.

The Special call **YB2IPY** will be aired on all bands until November celebrating the International Polar Year 2007-08 with QSLs going direct to **YB2TVJ**.

Jean Van Nieuwenhoven ON5JV will be closer to home on Tenerife AF-004, with **Georgette Abrams ON6AK** who will operate as **EA8/ON6AK** using both s.s.b. and c.w., mainly on the 7 and 14MHz bands until 26th January. If you work them and require a QSL card please request one via the bureau.

QSL Manager Updates

UK Manager **Geoff Dover G4AFJ** is still getting cards for the **VP8NO** operation from the Falkland Islands even though he was only the manager for activity between 1974 and 76. You can now QSL the call via the bureau or direct to **Michael Harris, Box 226, Stanley, Falkland Islands**. Logs are regularly uploaded to LoTW.

The **Bou-Saada Amateur Radio Club** uses the call **7X5VRK** and their direct address is **POB 300HB, Bou-Saada, Algeria** and the call **B7P** is good via **Weiwen Yang, POB 599, Foshan, Guangdong, 528000, China**.

The QSL Gallery

Collecting QSL cards is an interesting part of our hobby whether it is to apply for DXCC, an award or, just confirming a contact. You may then be interested in a collection that contains well over 4000 cards including Pre-1945 countries, rarer entities, obsolete



A QSL card from 1A0KM received by Martin Addison.



Carl Mason GW0VSW

c/o PW Publishing Ltd.,
 Arrowsmith Court,
 Station Approach,
 Broadstone,
 Dorset BH18 8PW
 E-mail: carl@gw0vsw.freereserve.co.uk

*A QSL card from GB1SPD received by
 Martin Addison.*

Panos Dadis SV1GRN with his new vertical antenna.

prefixes or even Antarctic Bases. The ten galleries on **Les Nouvelles DX's** website <http://LesNouvellesDX.free.fr> and is well worth a look and show many interesting designs. Some are still required to complete the collection and if you have the missing cards or have further information or just want to make a comment you can do so via E-mail to **LesNouvellesDX@free.fr**

Your Reports

On to your reports now and the log of **Leighton Smart GW0LBI** in Trelewis, Mid-Glamorgan, who has been operating on 'Top Band' (1.8MHz) once again using his Yaesu FT-100 at 100W into a 21m long wire antenna. Contacts here around 2359UTC included W8UVZ (USA) George in Battle Creek, Michigan, RL3FT (European Russia) and C52C (The Gambia) for a new country on the band with c.w. while s.s.b. found CN8FF (Morocco), TF3ZA (Iceland) EU-021, 4O3A (Montenegro), LY2IJ (Lithuania), AO0A (Canary Islands) AF-004, CU2A (Azores) EU-003 and P33W (Cyprus) AS-004 between 2200 and 0030UTC.

Leighton adds, "There have been a few 'pile-ups' on 1.8MHz lately, though I tend to call a few times before I QSY. I'm still trying to work out why some operators still insist on calling a DX station even when that station is transmitting and is working 'split' quite clearly. I can only deduce there must be a lot of deaf operators out there, or ones that just do not listen to the operating techniques of the DX station."

Also on the band was **Panos Dadis SV1GRN** in Athens, Greece, who

uses a 6-BTV vertical antenna only and is very happy with the results so far. Voice contacts making it into his log in the evenings included YU8/HB4FG and 9H1SP (Malta) EU-023. Moving down to 3.5MHz Panos found TA1CM (Turkey), SP4YPB (Poland), YK9SV (Syria) on AS-186 QSL via SV1JG, IS0SRT (Sardinia) EU-024, EK8PL (Armenia) and OM5ME (Slovak Republic). No times were given!

THE 7 & 14MHz Bands

The 7MHz band provided **Martin Addison 2E0MCA** in East Finchley, North London with some activity, though it was mostly within the UK. Using s.s.b. and his Yaesu FT-2000 with 10W to a folded half-size G5RV Martin logged DJ3HJ (Germany) 0713, GB50WDS (Worthing District Scouts) at 1139, PA8N/Jamboree (Netherlands) 1234 and US7TJ (Ukraine) at Neteshin Nuclear Power Plant at 1845UTC.

On to the 14MHz band now. The log of **Owen Williams G0PHT** in Biggleswade, Bedfordshire who worked s.s.b. stations 1A3A (Sovereign Military Order of Malta) 0755, HV50VR (Vatican) 0830, ZM4A (New Zealand) 0815, VP2MDG (Montserrat) NA-103 at 1253, P40A (Aruba) SA-036 at 1306 and V26B (Antigua & Barbuda) NA-103 at 1721UTC all with 100W from a Yaesu FT-747 into a dipole antenna.

Meanwhile in Stockton-on-Tees, **Lee Carberry M0HOK**, who used his Yaesu FT-817 at 5W into an half-sized G5RV tuned with a MFJ-941E had an MFSK QSO with Wes WZ7I in Pipersville, Philadelphia at 1450UTC. Lee said "I think the contact was made possible by the station run by Wes, which includes a Ten Tec Orion and its



excellent filters together with a large beam antenna.

"It was good to have a proper conversation for a change rather than the usual signal report and name". Interestingly, Lee also found the band open to Australia and Indonesia mid-afternoon, though the signals were suffering QSB, which was not ideal for his modest station.

Also on the 14MHz band were two new reporters. The first of these is **Ian Williams M3UFB** in Barnsley, South Yorkshire who uses a Kenwood TS-120V and 3-element TB3 Mk2 tri-bander with MFJ tuner. Using 10W s.s.b. he worked a string of USA stations including W1AUS Florida, AB1AI Connecticut, KB3BRT Pennsylvania and N1XY New Hampshire, SJ9WL (Sweden), OD5NH (Lebanon), YK9SV (Syria), 5N8NDP (Nigeria), JA2ZJW (Japan) though no times were given.

The second new reporter on 14MHz, is **Graham White 2E0XGA**, who lives in Liverpool and runs a Yaesu FT-840 at around 30W into a home-brew indoor dipole. His antenna worked well judging by the large number of calls in his log. He lists, 4O/DD5FZ (Montenegro) 0603, 7X5VRK (Algeria) 0702, SP9LJD (Poland) 1151, W1SRT (USA) in Connecticut at 1155, AF2C (USA) in Florida at 1341, UR4KWR (Ukraine) 1404, T77EB (San Marino) 1435, S58WW (Slovenia) 1450, SM0GYX (Sweden) 1455, Z36A (Macedonia) 1602, OH0/SP7VC (Aland Island) EU-022 at 1608, LA7YX (Norway) 1610, EW8AM (Belarus) 1616, TM2RWC (France) 1755 and CN8ZP (Morocco) at 1820UTC.



A QSL card from PT7CB – received by Martin Addison 2E0MCA.

Back in East Finchley, Martin 2E0MCA listed several QSOs, with the best being YK9SV (Syria) 0850, LZ1195IR (a special Bulgarian call for St. John of Rila) at 1002, 7W53N (Algeria) commemorating the 53rd anniversary of the Algerian revolution at 1019, S55T (Slovenia) 1129 HB9XR (Switzerland) 1511 and HV50VR (Vatican City) at 1557UTC.

The 18, 21 & 28MHz Bands

In Greece Panos SV1GRN listed 18MHz stations LX1HD (Luxemburg), ON4LBX/M (Belgium), PT7ZT (Brazil), ZD7X (St. Helena) AF-022, DK7TF (Germany) and LB9JE (Norway) all with s.s.b.

The 18MHz band was also tried by Ian M3UFB, who had one voice contact, 7W53N (Algeria), even though conditions were far from ideal! A switch to 21MHz proved more fruitful

with T56A (Somalia), CN3A (Morocco), 3DA0WW (Swaziland), CQ9K (Madeira Island) AF-014, C50C (The Gambia) and 6W1RY (Senegal) all making his log and by Owen G0PHT who found "fair conditions" and managed to catch A71BX (Qatar) 0931, 6V7G (Senegal) 1008, ZC4LI (UK Sovereign Bases on Cyprus) AS-004 at 1057, CX6VM (Uruguay) 1204, TU2CI (Ivory Coast) 1632 and J88DR (St Vincent) NA-109 at 1754UTC.

Finally, there was just one report for the 28MHz and that was from Ian M3UFB who logged LY2IC (Lithuania), SN2JPoland), EA4DAT (Spain), C91R (Mozambique) and UR5WJO Ukraine).

Signing Off

Once again thanks to all our reporters for their logs. All reports are welcome no matter what size, or however many contacts. But do please remember to include your full name and callsign, along with a contact number where possible, with any correspondence.

Reports should include the following: Your station details, the callsign worked, band, mode and time you made the QSO or heard the station and any other additional information you feel maybe of interest i.e. The IOTA number or reason for a special event etc. If listeners want to report stations heard then, of course no callsign is needed.

My thanks also to **Mauro Pregliasco I1JQJ/KB2TJM** editor of the 425 DX Newsletter for the DX information. Well that's it for this month. Until next time, have a good DX-filled month and I wish you all a very Happy New Year.

73, Carl GW0VSW



A QSL card from UE3LRG – received by Martin Addison 2E0MCA.

From down under



The Outbackers Are Here !

Terlin are established as manufacturers of quality mobile antennas, all designed to operate under the toughest of conditions.

Their various models have been optimised for different applications and they cover 160 to 2m. Our versions have been custom tuned to UK frequency allocations

JOEY For the backpacker
OB8 The original 8 band mobile
STEALTH For high vehicles
TRI-SPLIT The ultimate travel antenna
PERTH Excellent mobile performance
OUTREACH 3m long for ultimate performance on 160m to 10m, plus the
OUTREACH 500 for high power mobile

Adur Communications

01903 879526

outbacker@adurcomms.co.uk

J. BIRKETT

SUPPLIERS OF ELECTRONIC COMPONENTS

BC108 (BC109) @ 20 for £1, 2N3704 @ 20 for £1
10CV141 5359 MILITARY RCA2N3055 @ 3 for £1
WACOM PIN DIODE HIGH POWER 10 to 1000 MHz @ 3 for £2
WIMA WIRE ENDED CAPACITORS 0.1µF 400VW @ 25p
CRYSTALS 10 x AJ 1MHz @ £1.50, GLASS B7G 100KHz @ £1.50
VALVE HOLDERS B7G @ 50p, B9A @ 75p, B9G @ £1, B8A @ £1, B88 @ £1, MAZDA OCTAL @ £1, B9D CERAMIC @ £1
OCTAL P.C. TYPE @ 50p, B10B C.P. @ 50p, B9A C.P. @ 50p, VCR139A @ £1.50
MULLARD C281 WIRE ENDED CAPACITORS 0.047µF, 0.068µF, 0.22µF, 0.47µF all 250VW @ 20p each
R.F. POWER TRANSISTORS SD1487 100 WATT, 12 VOLT, £15
MATCHED PAIRS, 3 PAIRS £25, CTC12-18 UHF 10 WATT, 12 VOLT @ £3, 4 for £10, BLY92C @ 5 for £10, SD1144 @ 5 FOR £10, 2N4127 @ 5 for £10, 2N4429 @ 5 for £10, SPECIAL MATCHED PAIRS 711533 10 WATT 3 PAIRS £10, 711569 10 WATT 3 pairs for £10
CRYSTAL RADIO KIT With earpiece and instructions @ £3.50
GERMANIUM DIODES CG91 @ 20 for £1, OA10 @10 FOR £1
RELAYS 12VOLT 10AMP SDCO @ 10 for £3

25 The Strait
Lincoln LN2 1JF
Tel: 01522 520767
Partners J.H.Birkett
J.L.Birkett

UNMARKED 2N706 TRANSISTORS @ 30 for £1
ELECTROLYTICS 32-32UF 275VW @ £1.95, 50-50UF 275VW @ £1.95
AIR SPACED VARIABLE CAPACITORS 350 + 380pf @ £3.50, 4 for £10.
MAGNETIC DEVICES COAX RELAY 24VOLT COIL, 100 WATTS @ £5
TAG STRIPS 3 WAY PLUS EARTH @ 20 FOR £1, 6 way plus 2 earth @ 10 for £1
JACKSON C804 10pF VARIABLE AIR SPACED CAPACITORS @ £3.50
CLEVITE CERAMIC 10.7MHz FILTERS @ 8 for £1
50 ASSORTED WIRE WOUND RESISTORS 2 to 10Watt for £2.
LARGE 500pF POSTAGE STAMP TRIMMERS @ £1 each
TRIACS BT137 600PIU 8 AMP @ 8 for £1, TRIYSTORS (SCRS) 500PIV 8 AMP @ 8 for £1.

MASTERCARD, ACCESS, SWITCH, BARCLAYCARD accepted.
P&P £2 under £10. Over Free, unless otherwise stated.

www.zyra.org.uk/birkett.htm

KEEN ON KITS? THEN TRY KRC

KRC-1	4 BAND SUPERHET	£65.99
KRC-2	1-30MHZ REGEN RECEIVER	£54.99
KRC-4	BEGINNERS TRF RECEIVER	£24.99
KRC-5	80METER RECEIVER	£25.99
KRC-A-1	MORSE OSCILLATOR	£12.99
KRC-A-2	90VOLT HT BATTERY	£33.99
KRC-A-8	SPEAKER AMPLIFIER	£24.99
KRC-T-2	5 DIGIT FREQUENCY COUNTER	£65.99
KRC-X-1	7 - 14MHZ CW XMITTER	£69.99
KRC-X-2	80METER CW XMITTER	£33.99

visit our web site <http://hometown.aol.co.uk/kitradioco/uk.htm>

Or send SAE for full details. Mail order direct from:

Kit Radio Company, Unit 11 Marlborough Court, Westerham, Kent. TN16 1EU. Tel no 01959 563023. P&P £4.00

SELDEC PUBLISHING

"Atlantic Airline Routes" was first published in 1999: this 6th Edition will be published in **AUGUST 2007** With more airlines and more flights across both north and south Atlantic Oceans. Arranged in sections including 4 indices, which make finding information easier than ever. Flights are listed, with departure and arrival airports, together with any stop over, whether revenue or technical. A section is devoted to the company's listed together with two and three letter codes and radio call signs. A list of destinations appearing in the book is provided with three letter decodes and destination country.



Presented in A5 portrait format, 150 pages with laminated colour covers, spiral "lay-flat" bound. Price £12.95 Post & Packing £1.50



"AIRPORT & CITY CODES"

Compiled by Tony Dewsbury.

The 190 pages of this publication lists around 12000 cities and airports together with their airport names where known.

The airports listed are those where a scheduled passenger, cargo, or charter flights can be expected. The three separate sections of the volume are: - Alphabetical list of three letter codes with city or airport and country.

Alphabetically arranged list of cities and airports with three letter code and country. The final section lists four letter codes, city or airport and country.

Presented in A5 portrait format, 225 pages with laminated colour covers, spiral "lay-flat" bound. Price £14.95 Post & Packing £2.00

"THE UK & IRELAND AIRBAND FREQUENCY GUIDE"

NEW 12th Edition

Compiled by Tony Dewsbury.

Contents

Alphabetical Airfields & Airport Frequencies. - Numerical Frequency Listing. - ICAO Airfield Designator Decodes. - Airline & Company Frequencies. - 2 & 3 Letter airline Prefixes. - Civil Aircraft HF (SSB) Frequencies. - OACC HF (SSB) & VHF Frequencies. - Abbreviation List. - Phonetic Alphabet & Morse Code.



120 pages A5 spiral bound "Lay Flat" Colour Laminated Covers. Price £7.99 P & P £1.50

HF Airband Frequency List

Incorporating "Listen to the Birds"

Enhance the enjoyment in listening to civil, military & government aircraft on short wave throughout the world. In addition to an extensive frequency list, covering from 2Mhz to 30Mhz, the book includes sections on Antennae, Receivers, (including DX-Tuners) with guidance on decoding ACARS, HF DL, SELCALLS, FAX, RTTY & CW. Listings of Major World Air Route Areas (MWARA), Regional & Domestic Air Route Areas (RDARA), includes Long distance Operational Control (LDOC) stations.



The 225 pages are A5 "Lay-Flat" Spiral Wire bound with colour covers. Price £14.75 P&P £2.00



24 Hour Clocks, Choice of Colours £17.75 P&P £2.00

SELDEC PUBLISHING

27 Chichester Avenue, Kidderminster, Worcestershire. DY11 5JA

Tel: 01562 746620 www.seldec.com

Mail/Telephone Order. Cheques, PO or Credit/Debit Cards

Buy on line with credit/debit card www.seldec.com



Graham Hankin's

in vision

Graham Hankins G8EMX rounds up the happenings from the ATV scene, and introduces *CQ-ATV's* new editor.

"Is that just a 'Chris Smith' - or is it **the** Chris Smith?" asked **Trevor Brown G8CJS**, chairman of the **British Amateur Television Club (BATC)**, when that name came forward as a possible next editor of its magazine *CQ-TV*. The Club had been searching for a new person for this position after **Brian Kelly** had to give up the job.

Well, it was indeed **the Chris Smith G1FEF**, a past editor of *CQ-TV* anyway and a previous member of the club's committee. After a few more flurries of E-mails, Chris was invited to take over the magazine again.

So, with a bit more liaison between Trevor in Yorkshire, previous editor Brian Kelly in Wales and Chris, somewhere in middle England, the next edition of *CQ-TV* was under way.

The BATC apologised to any members who were beginning to wonder what was going on, even to the extent of thinking that the Club had 'died'. No, the emergency defibrillator has been used and the BATC lives on - for the time being anyway hi!

My mention of a new receiver last time prompted this comment from **Richard (Dick) G4BBH**: "Dear Graham, I picked up a copy of December PW and read with interest your column In Vision. I too have purchased G1MFJ type modules although mine

came from <http://stores.ebay.co.uk/MobiComm> I first bought the 1.2GHz transmitter several months ago and subsequently applied the well-known VE6ATV 'Platinum' mods and added a true CCIR pre-emphasis circuit.

"This worked well with my old modified manually tunable satellite receiver so I purchased the matching 1.2GHz receiver. I am about to commence fitting the 'Platinum' mods to the receiver and will later add the liquid crystal display (l.c.d.) display/controller. These really are a good entry level system and ideally suited to portable operation with just the addition of a small amplifier to the transmitter."

Richard continues: "I note your comments on the BATC of which I am also a member. I live in the valley in Dover, Kent and have no ATV repeaters or active ATV stations in range so can only venture out portable, preferably on warm summer evenings! Contact of any sort with other ATV operators rather died out after the demise of the BATC conventions, which were a great chance to meet others, see equipment or even get my own equipment tested.

"Occasionally there are ATV related stands at various rallies but these are not very well supported.

There is no longer any good way for us to communicate and discuss technicalities either on the air or in person. There is the UK_ATV group on yahoo groups but that is not used very much."

After some suggestions that the BATC could consider for the future, Richard concludes: "You also mention that 430MHz ATV is now dead (well not quite dead, but has much reduced activity. **GH**) I have long felt that had someone with the knowledge and equipment to develop a narrow band (less than 1MHz) digital system for ATV. We might then have had a lot of activity on the band, probably more simply than on the microwave bands and with greater range."

Well, a digital Amateur TV (DATV) system for 430MHz has been developed, Richard, but the cost is still quite high for Amateurs.

Dennis Morris GW6FNB is another *In Vision* reader 'spurred on' to write by the December issue: "Hello! Having read your page I was prompted to get in touch regarding antennas for ATV. If you have access to *CQ-TV* look at page 64 no 182 May 1998, but please note there is a mistake on page 68 the dimension 28mm should read 39mm. Failing that, have a look at <http://homepage.ntlworld.com/paul>.





'The Chris Smith' – the new editor of the CQ-TV, 'captured' while creating the latest issue of the ATV magazine.

melbourne.g8gml/index.html for more information". Dennis assures me that: "this antenna is not nearly as difficult to make as may appear; I have made about eight during the last 10 years – all worked with no problems when I lived in Cambridge, but unfortunately no there is no ATV activity around here in Wales". A suggestion Dennis – move closer to Brian Kelly hi!

South Coast News

I made a request at the Donington Rally for some news from the south coast. This produced an email from **Howard Chapman G3NZL**, who writes about the 'SCART' club: "We

have enjoyed two and a half years of uninterrupted service from GB3IV (Isle of Wight ATV repeater). Most of our users are not digitally equipped, so we intend to continue our primary service in PAL analogue for the foreseeable future.

"However we don't intend to stagnate, so plans are afoot, not only for a 'next generation' digital option, but also for a 10GHz (3cm) station to cover the main population centres". 'SCART' is the **Solent Club for Amateur Radio and Television**, so thank heavens for acronyms! Howard adds: "Our neighbour the **Bournemouth ATV Group**, has suffered from reluctance by an

Graham Hankins G8EMX

84 Shirley Road
Acocks Green
Birmingham B27 7NA
E-mail: g8emx@tiscali.co.uk

NHS official to issue a site clearance letter for the site from which they have carried out tests (for years)! for their proposed GB3SQ ATV repeater.

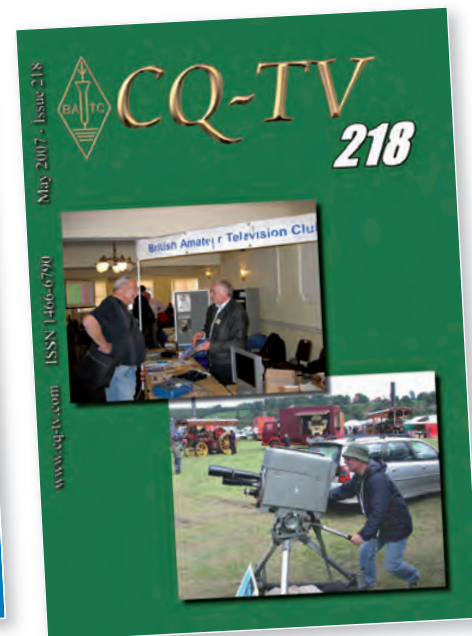
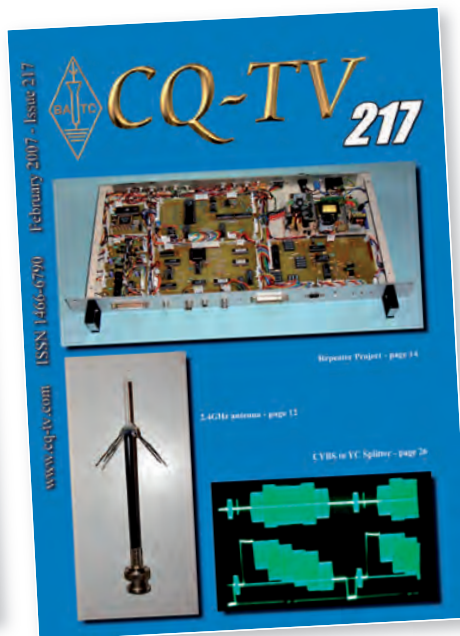
We are therefore also discussing feasibility with them for a 3cms link to an alternative site, so that Dorset stations currently shielded by hills can enjoy coverage as/when required."

Those with broadband can see GB3IV though Dave Mann's excellent site: www.satmann.demon.uk/docs/gb3hv/repeaters.htm or from the source <http://g7jtt.camstreams.com/> The Club Net is on Mondays at 8pm but there's intermittent activity during the week (including during the day).

Please exit as soon as you have finished viewing (because bandwidth limitations will cause freezes etc. if there are too many viewers).

A festive Christmas card was received from **Viv Green G1IXE**, chair of the very active **Severnside ATV Group** (GB3ZZ and others!) Viv tells me: "During the Christmas holiday it is planned to install 'ZZ' with the new PA which the group recently purchased which should help those in outlying areas receive a better picture". Thanks Viv, it's good to hear from Severnside again. See you all next time.

73 de Graham G8EMX



TRADERS TABLE

The equipment for sale on this page is secondhand or ex-demonstration

Disclaimer

Advertisements from traders for equipment that is illegal to possess, use or which cannot be licensed in the U.K, will not be accepted. While the publishers will give whatever assistance they can to readers or buyers having complaints, under no circumstance will the magazine accept liability for non-receipt of goods ordered, late delivery or faults in manufacture.

SHORTWAVE SHOP LTD

01202 490099

TRANCEIVERS

ICOM IC706 MkII	£599
ICOM IC718 Ex Demo	£399
KENWOOD TS 870 HF	£795
YAESU FT 8100	£195
ICOM IC F12 (PMR)	£99
KENWOOD TS 850S (AT)	£575
KENWOOD TR 751E	£225
YAESU FT 920	£599
ALINCO DJ-599 2m/70cm FM	£75

RECEIVERS

BEARCAT 278 BASE	£95
BPL CELESTE WORLD SPACE	£POA
KENWOOD R5000	£395

ICOM IC8500	£795	PALSTAR AA30 ACTIVE ANT	£45
YAESU FRG 9600	£125	GLOBAL AT200 ATU	£49
YUPITERU MVT 7100	£129	GLOBAL AT1000 ATU	£60
HEATHKIT SW7800 0-30MHz	£139	STARMASER KEYSER	£85
BEARCAT UBC 278 BASE EX DEM	£139	TONO MR1300E	£60
BEARCAT UBC 278 BASE	£90	HARRIER CB	£35
BEARCAT UBC 780	£135	EZMATCH	£49
BEARCAT UBC 92 EX DEM	£79	KPC-2 TNC	£85
AMI DIGI SAT RX ASR WS201	£129	PACCOMM TINY-2	£85
SANGEAN AT818	£85	YAESU SP 980	£59
HITACHI WORLD SPACE	£55	GARMIN GPS 48	£POA
YAESU VR120D	£120	TNC 320	£ POA
GRE PSR 225	£249	MFJ 432 VOICE KEYSER	£175
GRE PSR 216	£75	MFJ 1020C ACTIVE ANT	£69
RADIO SHACK PRO28	£55	KENWOOD MB11 MOUNT	£POA
PALSTAR R30	£395	YAESU SM6	£35
AOR EM8200 MEMORY	£35	DAIWA PS120M PSU	£35
RADIO SHACK PRO 63	£75	MFJ 931 ARTIFICIAL GROUND	£55
ALINCO DJX3	£70	MFJ 986 3k TUNER	£185

ACCESSORIES

ICOM SM6 BASE MIC	£49
ICOM AT180 ATU	£225

WELZ SP-220 SWR/PWR METER	£65
KENWOOD LF 30A LOW PASS FILTER	£30

NEVADA

023-9231 3090

TRANSCEIVERS

ALINCO DJ596 2/70CMS H/HELD	£95
ALINCO DJC7 HANDY TRANSCEIVER	£149
ICOM 756PROII HF/6 WITH DSP	£1399
MMT 144/28 10W TRANSCEIVER	£89
MFJ 9406 6M SSB TRANSCEIVER	£139
PALSTAR KH6 6M H/H TRANSCEIVER	£49
YAESU FT2800M 60W 2M MOBILE TX	£115
YAESU FT736R 2/6/70CMS BASE TX	£599
YAESU FT897 ALL MODE TX AS NEW	£549
YAESU FT1000MP BASE W/DSP & ATU	£949
YAESU FT1000MP FIELD BASE TX	£1149

RECEIVERS

AOR AR8600 Mk II COMMUNICATIONS RX	£399
GRUNDIG YB500 ALL MODE RECEIVER	£89
ICOM PCR1000 COMPUTER RECEIVER	£225

HANDHELD SCANNERS

ALINCO DJX7 AM/FM/WFM SLIM RADIO	£99
AOR AR1500 AM/FM/WFM SCANNER	£79
BEARCAT 120XLT 100MEM AM/FM	£79

BEARCAT 180XLT H/HELD SCANNER	£109	ZETAGI HP700 METER	£59
BEARCAT 3300XLT 25-1300MHZ (GAPS)	£159	ZETAGI V4 4 WAY ANT. SWITCH	£8
BEARCAT 3000XLT AM/FM/WFM	£110	ZETAGI M27 ANTENNA MATCHER	£20
BEARCAT 92XLT 200MEM AM/FM	£70		
YUPITERU MVT9000 MK II ALL MODE	£215		

BASE SCANNERS

BEARCAT 860XLT BASE SCANNING RX	£99
BEARCAT 3500XLT HANDHELD SCANNER	£130

CB RADIO

COMMTEL 40CH. BASE CB TRANSCVR	£89
MIDLAND 98+ MOBILE CB TRANSCVR	£69

ACCESSORIES

AMDAT ADC60 FREQ. STD CLOCK	£99
COMMUNICATIONS HEADPHONE SET	£15
ICOM AT160 COAXIAL AUTO ATU	£179
KENWOOD PS30M 20A POWER SUPPLY	£110
MFJ 784 DSP FILTER	£129
MFJ 784B DIGITAL NOISE FILTER	£149
PAKRATT 232 DATA TERMINAL/LEADS	£99
PALSTAR PS04 2-4A POWER SUPPLY	£14
PALSTAR PS30 30A POWER SUPPLY	£60
TIMESAVE 59+ NOISE FILTER	£159
TW232DX BASE MICROPHONE	£25
VCI PM30 2KW POWER METER	£59
YAESU CD24 CHARGER - UNUSED	£80
YAESU MH35A2B SPEAKER MIC	£19

B-GRADE ITEMS

ALINCO DJX10 ALL MODE/H SCANNER	£159
ALINCO DJ496 UHF HANDHELD TX	£69
BEARCAT 69XLT HANDHELD SCANNER	£49
BEARCAT 92XLT HANDHELD SCANNER	£89
BEARCAT 3500XLT CLOSE CALL SCANNER	£129
BEARCAT 230XLT SCANNER	£79
BEARCAT 72XLT CLOSE CALL SCANNER	£69
BPL CELESTE WORLDSPACE/FM RADIO	£29
ETON SOUND 102 DAB/FM W/iPod DOCK	£99
GENUS GEO DAB/ALARM RADIO	£49
GOODMANS GPS280 DAB/CD STEREO	£69
ITEC CUBE DAB CLOCK RADIO	£29
MAYCOM AR108 AIRBAND/MARINE H/H	£54
NEVADA ND210E DAB RADIO	£39
NEVADA SINFONIE DAB (BLACK)	£49
NEVADA SINFONIE DAB (WHITE)	£49
NEVADA SINFONIE DAB (BLUE)	£49
PERSTEL DR301 DAB/FM SD SLOT	£125
PERSTEL DR201 DAB/MP3 PERSONAL	£39
PERSTEL DR101 PERSONAL DAB	£49
PRESIDENT HARRY 80 CH CB RADIO	£69
PURE TEMPUS 1XT DAB RADIO	£49
YAESU VR120 AM/FM/WFM H/HELD	£99
YUPITERU MVT3300 WIDEBAND SCANNER	£99

WATERS & STANTON

01702 206835

Kantronics KAM Multimode Data TNC.....	£55
Icom PS-85 13.8V 20A (max) Matching PSU.....	£129
SEC 1212 13.8V Switch Mode Regulated 12A (max) PSU.....	£45
Alinco DJ-496E 70cm FM H/Held Transceiver with CTCSS, DTMF keypad, NiMH & charger.....	£99
Mirage RC-1 Linear Remote Control Unit for Power, Mode & Preamp with 25' of cable.....	£29
Icom IC-2100H 2m FM Mobile Transceiver 55W 113ch. + CTCSS.....	£149
Alinco DJ-X7 100kHz-1300MHz AM, FM, WFM Hand Held Receiver 1000Ch + 8.33kHz step.....	£79
Alinco DJ-4917 70cm FM H/Held Transceiver 40ch. + DTMF keypad & CTCSS.....	£115
Uniden UBC-68XLT 66-512MHz (with gaps) FM Receiver 80Ch. 4 x AA or 12V DC.....	£59
Uniden UBC-105XLT 25-960MHz (with gaps) AM,FM Receiver + 8.33Mhz step 100Ch. 4 x AA or 9V DC.....	£49
SSE PSU-101 Desk Stand with 2 x 12V DC outputs 240V AC.....	£29
Uniden UBC-3300XLT 25-1300MHz (with gaps) AM, FM, WFM 1000Ch. Alpha-tag + TrunkTrackerIII, CTCSS.....	£99
Realistic Pro-43 68-999MHz (with gaps) AM,FM Hand Held Receiver 200Ch.....	£69
Optoelectronics Digital Scout 60MHz-2.6GHz Digital Frequency Counter + Field Strength, Reactive Tuning & 1000 Memories.....	£259
Steepletone MBR-2000 Portable FM Stereo,MW & SW Radio 20ch.....	£14
Realistic Pro-43 68-999MHz (with gaps) AM,FM Hand Held Receiver 200Ch.....	£69
Icom PS-85 13.8V 20A (max) Matching PSU.....	£129
Oregon Scientific BA-312E Radio Controlled Clock with Temperature and Weather Forecast.....	£19
Garmin GPS-II plus 12Ch. 500 Waypoints,BackTrack.....	£79
Hora C-408 70cm FM Micro Transceiver via 2 x AA batteries (not supplied).....	£39
Icom IC-R10 500kHz-1300MHz All Mode Hand Held Receiver 1000Ch. + RS-232.....	£149
Icom IC-2000H 2m FM Mobile Transceiver 50W, 10W + Alphanumeric Memories.....	£119
Yaesu FT-11R 2m FM H/Held Transceiver + DTMF keypad.....	£79
Garmin StPilot 2620 12Ch In-Car GPS Navigator + Touch Screen Colour Display, Voice Prompt, Remote & Europe Map.....	£289
Garmin StPilot 2620 12Ch In-Car GPS Navigator + Touch Screen Colour Display, Voice Prompt, Remote & Europe Map.....	£289
Uniden UBC-60XLT 66-512MHz (with gaps) FM Hand Held Receiver 80Ch. 4 x AA cells.....	£55
Icom IC-A22E Airband Hand Held Transceiver + NAV/COM with Ni-Cd & charger.....	£249
Icom IC-2800H 2m,70cm FM Mobile Transceiver 50W,35W Full Duplex, CTCSS, DTMF, Remote Head + 3' colour LCD & Video In.....	£249
Kantronics KPC-3 Single Port VHF/UHF Packet TNC.....	£79
Maycom EM-27 Mobile CB radio.....	£55
Watson W-620 1.6-200, 118-530MHz SWR/PWR meter 200W.....	£69
Icom IC-MB12 Mobile Mounting Bracket for Receivers and Transceivers R71, R7000, IC-740, R8500, IC-745 etc.....	£20
Kenwood TH-K2E 2m FM SW Hand Held Transceiver 100ch.Alpha tag, CTCSS & DTMF.....	£99
Diamond SX-600 1.8-525MHz 200W SWR,PWR meter + 2 sensors.....	£99
Alinco EDX-2 1.6-30MHz Automatic 200W Weatherproof ATU for DX-70, DX-77.....	£199
Yaesu PA-10A Mobile Mount and 12V Regulated Power Adapter for Yaesu FT-11R, FT-41R, FT-51R.....	£25
Yaesu AT-1000 2m FM Mil. Spec. Hand Held Transceiver 5W + Full CTCSS & DTMF memories.....	£69
Alinco DR-605E 2m,70cm FM Mobile Transceiver 50W,35W + CTCSS.....	£149
Tokyo HX-240 HF Transverter 3.5-28MHz with 2m IF 40W.....	£125
Icom IC-R8500 100kHz-2GHz All Mode Communications Receiver 1000ch. 12V + PSU.....	£899
Lowe HF-225 30kHz-30MHz All Mode Receiver & Keypad 12V + psu.....	£249
Kenwood TH-28E 2m FM H/Held Transceiver with DTMF keypad 40ch.....	£69
Fairhaven RD-500VX 10kHz-1750MHz All Mode Receiver with PC Control, CD ROM, 13000+ Ch. 12V + PSU.....	£499
LDG AT-1000 1.8-54MHz Automatic ATU 6-800 ohm 1000W max (100W 6m) with X-Needle Meter 12V at 1A.....	£279
Yupiteru MVT-7300EU 521kHz-1320MHz All Mode Hand Held Receiver 1000Ch. + 8.33kHz step.....	£139
Icom IC-756pro HF + 6m All Mode Base Transceiver + ATU, DSP & Gen.Cov. 12V.....	£999
Uniden UBC-105XLT 25-960MHz (with gaps) AM,FM Receiver + 8.33Mhz step 100Ch. 4 x AA or 9V DC.....	£49
Yaesu VX-150 2m FM Mil. Spec. 5W Hand Held Transceiver + Full CTCSS & DTMF keypad.....	£79
Yaesu VR-500 100kHz-1300MHz All Mode Hand Held Receiver 1000Ch. Alpha.....	£119
Radio Shack Pro-528 25-1300MHz (with gaps) AM,FM Hand-Held Receiver + Trunk Traking 1000Ch.Alpha & PC input.....	£69
Garmin GPS-12XL Hand held 12Ch. GPS with 500 Waypoints, BackTrack + Mag Mount Ant, Case & DC lead.....	£80
Optoelectronics M-1 10Hz-2.4GHz Frequency Counter + AC Adapter.....	£119
Watson W-10SM 12V 10A (max) Switch-Mode PSU.....	£35
Alinco DX-77E HF All Mode Base Transceiver with Gen.Cov. 100W 12V.....	£299
Yaesu VR-500 0.1 MHZ - 1300 MHZ AM/FM WFM SSB Handheld receiver 1000 memory channels.....	£119
Yupiteru MVT-7100 100kHz-1650MHz All Mode Hand Held Receiver 1000Ch.....	£149
Yupiteru MVT-9000 MkII 0.5-2039MHz All Mode Hand Held Receiver 1000Ch. + voice inverter.....	£179
Yupiteru MVT-7100 100kHz-1650MHz All Mode Hand Held Receiver 1000Ch.....	£149
Icom IC-R8500 100kHz-2GHz All Mode Communications Receiver 1000ch. 12V + PSU.....	£899
Icom IC-7400 HF,6m,2m All Mode Base Transceiver + DSP, ATU & Gen.Cov. RX 12V.....	£895

WATERS & STANTON

01702 206835

Yupiteru MVT-7300EU 521kHz-1320MHz All Mode Hand Held Receiver 1000Ch. + 8.33kHz step.....	£139
Kenwood TH-K2ET 2m FM SW Hand Held Transceiver 100ch.Alpha tag, CTCSS and DTMF Keypad + KSC-24.....	£129
Alinco DJ-G5E 2m/70cm FM Transceiver + Wide RX, DTMF keypad & CTCSS.....	£129
Yaesu FC-30 1.8-30,50-54MHz Auto ATU for FT-897 100W 17-150ohm.....	£179
Icom IC-T90A 6m,2m,70cm FM + DTMF keypad CTCSS & wide RX.....	£149
Yupiteru MVT-7100 100kHz-1650MHz All Mode Hand Held Receiver 1000Ch.....	£149
Uniden UBC-785XLT 25-1300MHz AM, FM, WFM Desk/Mobile Receiver 1000Ch. 12V + psu.....	£129
Jesan SWR-25 HF PWR/SWR meter 10W.....	£9
Zetagi V2 2-Way Antenna Switch.....	£9
Icom IC-R5 150kHz-1300MHz AM,FM & WFM Hand Held Receiver 1000Ch. + Ni-MH.....	£109
Nissei DSP-300GL 12V variable 30A Regulated PSU with Twin Meters.....	£65
Watson W-10AM 12V Variable 10A PSU with meters.....	£39
Trident TRX-200 100kHz-2149MHz All Mode Hand Held Receiver + Bandscope 1000ch.....	£129
Yaesu VX-5R 6m,2m,70cm FM Micro Hand Held Transceiver 5W + Full CTCSS & Wide RX CD-15 & Mic.....	£129
Kenwood TH-671E 2m,70cm FM Palm Held Transceiver with CTCSS & Wide RX.....	£119
Icom IC-775DSP HF Base Transceiver + Gen.Cov. Twin RX, ATU & DSP filtering 200W mains.....	£1,299
SGC SG-235 1.8-30MHz Microprocessor controlled ATU 500W with SmartLock pro Controller.....	£499
Yaesu FT-847 HF,6m,2m,70cm All Mode Transceiver with Audio DSP & Gen.Cov. 12V.....	£699
MFJ MFJ-993 1.8-30MHz Auto ATU + meter, Balun & Display 300W.....	£129
Yaesu FP-30 13.5V 22A (max) Internal PSU for FT-897 110-240V AC.....	£119
Yaesu FC-30 1.8-30,50-54MHz Auto ATU for FT-897 100W 17-150ohm.....	£179
Yaesu FC-30 1.8-30,50-54MHz Auto ATU for FT-897 100W 17-150ohm.....	£179
MFJ MFJ-993RC Remote Control Unit for MFJ-993 Auto Tuner.....	£25
Yaesu FT-890 HF All Mode Transceiver with Gen.Cov. RX 100W 12V.....	£499
MFJ MFJ-1026 All Mode QRM Eliminator with Active Antenna.....	£115
Kenwood R-5000 150kHz-30MHz All Mode Communications Receiver + 118-174MHz Converter mains.....	£349
Yupiteru MVT-7100 100kHz-1650MHz All Mode Hand Held Receiver 1000Ch.....	£129
Icom IC-2725E 2m,70cm FM Mobile Transceiver 50W, 35W Full Duplex,CTCSS, DTMF mic + Remote Head.....	£199
M.Modules MML144/30-LS 2m 1-3W in, 30W out Linear with Preamp.....	£69
Watson WM-S-RW Mobile Boom Microphone + Control Box with cable for Yaesu Modular.....	£25
Yaesu FT-290R 2m All Mode Portable Transceiver 2.5W 12V or 9 x C cells.....	£99
President LINC-10 10m "Lincoln" All Mode Transceiver 10W (20W SSB) 12V.....	£129
Sony NV-U70T GPS Navigation System + Europe Map Database, Touch Screen, Traffic Info, 1GB memory.....	£199
Intek M-110 Plus 40ch 4w CEPT CB AM/FM Mobile Transceiver.....	£25
Heil SM-1 Shock Mount Assembly for 1" Mics.....	£25
AOR AR-8000 500kHz-1300MHz All Mode Hand Held Receiver1000Ch.....	£149
M.Modules MML144/100-S 2m 10W in, 100W out Linear with Preamp.....	£99
Kenwood TH-F7E TH-F7E 2m Dual Band Transceiver.....	£149
Palstar R-30 1KHz-30MHz AM, SSB Communications Receiver.....	£379
Icom IC-R71E 100kHz-30MHz All Mode communications Receiver Mains.....	£299
Realistic Pro-2006 25-520,760-1300MHz AM, FM, WFM Base Scanner 400Ch. Mains or 12V DC.....	£119
Hi-Mount Manipulator Morse Paddle Key.....	£39
Radio Shack DX-394 150kHz-30MHz AM,CW,SSB Receiver 160Ch. Mains/12V.....	£99
Alinco EDX-2 1.6-30MHz Automatic 200W Weatherproof ATU for DX-70, DX-77.....	£199
Kenwood TM-G707E 2m,70cm FM Mobile Transceiver 50W,35W + Full CTCSS & Remote Head feature.....	£149
MFJ MFJ-924 40MHz 300W ATU + meter.....	£49
AOR AR7030 0-32MHz All Mode Communications Receiver 12V + PSU.....	£449
MFJ MFJ-260CN DC-650MHz 300W max Dummy Load with N Type Connector.....	£29
Kenwood MC-90 Desk Mick for DSP Transceivers.....	£115
Kenwood AT-230 1.8-30MHz 200W Matching ATU.....	£139
Yaesu FT-7800E 2m,70cm FM Mobile Transceiver 50W,35W + DTMF mic, Remote Head.....	£125
Kenwood TS-950SDX Deluxe HF Base All Mode Transceiver with Gen.Cov. RX, Dual Receive, Auto ATU and DSP mains.....	£1,399
Yaesu FT-920AF HF,6m All Mode Base Transceiver + Auto ATU, Gen. Cov. FM option & AM Filter 100W 12V.....	£749
Yaesu FT-7100M 2m,70cm FM Mobile Transceiver 50W,35W Full Duplex + Remote Head.....	£119
Yaesu VR-500 100kHz-1300MHz All Mode Hand Held Receiver 1000Ch. Alpha.....	£119
MFJ MFJ-941E 1.8-30MHz 300W ATU with Dummy Load.....	£69
Yaesu FT-2800M 2m FM Mobile Transceiver 65W + CTCSS & DTMF mic.....	£99
MFJ MFJ-1026 All Mode QRM Eliminator with Active Antenna.....	£115
MFJ MFJ-956 Shortwave Preselector.....	£39
Alinco DJ-X3E 100kHz-1300MHz AM, FM, WFM Hand Held Receiver 700Ch + 8.33kHz step.....	£69
Daiwa LA-2035 2m 1-3W in,30W out + GaAsFET Pre-amp.....	£39
Alinco DJ-X2000 100kHz-2150MHz All Mode Hand Held Receiver + CTCSS, Alpha 2000Ch.....	£189
Icom IC-756proII HF + 6m All Mode Base Transceiver + ATU, DSP & Gen. Cov. 12V.....	£1,299
Kenwood TR-751E 2m All Mode Mobile/Base Transceiver 25W.....	£149
MFJ MFJ-969 160-6m 300W Roller Inductor ATU + Dummy Load & meter.....	£105
Tokyo HX-650 6m 50MHz Transverter with 28MHz IF 50W.....	£149
Daiwa PS-304 II 13.8V Variable 30A PSU with A/V meter.....	£79

RADIOWORLD

01922 414796

Icom IC-7800 Icom HF + 6m Trx.....	£4995
Tentec Orion II HF transceiver with ATU.....	£2795
Icom IC-R9000 all-mode, wideband receiver.....	£2495
Yaesu FT-2000 IN STOCK 100W with internal power supp.....	£1550
Icom IC-775DSP HF Base Transceiver.....	£1499
Yaesu FT-1000 "CLASSIC" HF Transceiver.....	£1399
Yaesu FT-1000MK V 200w.....	£1299
OptoElectronics X Sweeper.....	£1199
Yaesu FT-1000MP Mark -V Field.....	£1199
Icom IC-756Proll HF / 6m Transceiver.....	£1150
NEUMANN U 87 Ai condenser microphone.....	£1100
DISCOVERY-70 Linear Amp UK 700W 70cm Linear Amplifie.....	£1100
Icom IC-910HX 2 / 70 /23cms Base.....	£1099
Kenwood TS-950SD HF Transceiver.....	£1099
Linear Amp Challenger II amplifier.....	£1050
Kenwood TS-2000 HF, 6m, 2m & 70cm Transceiver.....	£999
DISCOVERY-2-31 Linear Amp UK 1.0kW 2m Linear Amplifi.....	£999
AR5000+3 is a 'feature loaded' version.....	£950
HL-1KFX Tokyo 500W Solid State HF Linear Amplifier.....	£949
Yaesu FT-736R Multi- Band Transceiver+6m+23cms.....	£899
Yaesu FT-990 /AC.....	£899
Yaesu FT-920AF HF / 6M Base.....	£899
EXPLORER 1200 Linear Amp UK 1200W HF Linear Amplifi.....	£899
Yaesu FT-920.....	£799
Icom IC-746 HF/6m Transceiver.....	£799
Kenwood TS-790E Dual-Band Base / Mobile Transceiver.....	£799
Yaesu FT-847 Multi-Band Transceiver.....	£749
Kenwood TS-870S HF Transceiver.....	£749
AOR AR-7030+ HF Receiver.....	£699
Kenwood TS-850S /AT.....	£699
Icom IC-736 HF 6.....	£699
Yaesu FT-736R 6m, 2m & 70cm Base.....	£699
Kenwood TS-570DG/E.....	£675
Icom IC-821H.....	£599
Yaesu FT-767GX HF, 6m & 2m & 70cms transceiver.....	£599
Kenwood TS-940SAT.....	£575
Icom IC-R7000 Mint Condition.....	£550
AOR AR-7030.....	£550
Kenwood TS850S HF.....	£550
Kenwood TS-690SAT HF -6m Transceiver.....	£549
TS-480S / AT.....	£549
Icom IC-821H Dual Band transceiver.....	£549
AOR AR8600MkII.....	£509.79
Icom IC-706MKIIg.....	£499
Yaesu FT-736R 2m/70cm Base Multimode.....	£499
Yaesu FT-8970 Multiband Portable Transceiver.....	£499
Yaesu FT-900/AT HF Transceiver.....	£475
Yaesu FTV-1000 200 W Transverter.....	£450
Kenwood R-5000 Communications Receiver HF.....	£450
Icom IC-R7000.....	£449
Yaesu FT-870D Multi-band Mobile.....	£425
Yaesu FT-857 Mobile Transceiver.....	£425
Icom IC-706MkII Mobile Transceiver.....	£425
Yaesu FT-980 HF Transceiver.....	£425
Drake R8E HF Receiver.....	£425
R-30CC HF PALSTAR HF Rx.....	£399.96
Yaesu FR-101 HF RX.....	£399
The Japan Radio Company JST-100 +PSU.....	£399
Kenwood TS-50.....	£399
Icom IC-706mk1.....	£399
Icom IC-R72 Receiver.....	£399
IC-275H - 2m Base Transceiver 100W.....	£399
Kenwood TS-680S HF / 6m.....	£399
Icom IC-740 HF Transceiver.....	£389
Icom IC-703 HF, 6m Portable.....	£379
Alinco DX-77E HF Transceiver.....	£379
Trio (Kenwood) TS-711E 2m Multi-mode.....	£375
Icom IC-718 HF Transceiver.....	£359
AOR AR-3030 HF Rx.....	£350
AOR AR-3000 Wide Band Receiver.....	£350
Yaesu FT-101ZDmkIII HF Transceiver with FM fitted.....	£350
IC-R71E HF Receiver.....	£349
Icom IC-R1500 Receiver.....	£349
Kenwood TS-830S HF Trx Base.....	£349
AOR AR-8600MK1 Wide Band Receiver.....	£349.00

Classified Ads

To advertise on this page see the booking form below.

DISCLAIMER 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.

Whilst prices of goods shown in advertisements are correct at the time of going to press, readers are advised to check both prices and availability of goods with the advertiser before ordering from non-current issues of the magazine.

Aerials

GAREX ELECTRONICS VHF/ UHF accessories and aerials, PMR equipment and spares. www.garex.co.uk Tel: 0771 4198 374 PO Box 52, Exeter EX4 5FD.

G2DYM/G4CFY AERIALS Custom made low noise, low TVI dipoles and trap dipoles. PVC covered stranded wire and 75 ohm feeder properly made-off. Epoxy potted traps. Centre piece and dog-bone insulators included. Spectrum Communications. Tel 01305 262 250. www.spectrumcomms.co.uk

Classified Advertisement Dept.

PW Publishing Ltd., Arrowsmith Court,

Station Approach, Broadstone,

Dorset BH18 8PW

For sale

Qtz x-tals 455kHz to 150MHz Std 10.106, 10.245, 10.7, 11.155MHz £1.00/unit. Callg 3.56, 7.030, 21.06, 28.06 £1.00/unit. 1.4MHz fltrs £14.00. 10.7MHz 10kHz fltrs £3.25 P&P £1.00 + VAT. IQ Electro 0208 391 0545. vincent@jakomin.fsnet.co.uk

QSL cards

FULL COLOUR QSL CARDS for all your QSL needs. Shirts and caps with call signs and also ham cartoons by GW3COI. For free samples contact Chris MODOL. E-mail: qslers@aol.com P.O. Box 184 Northampton NN3 9JH.

Repairs

REPAIRS TO ALL AMATEUR AND VINTAGE Rx/Tx Cost effective service. Phone or call in for details. Medway Aerials, Rear of 14 Luton Road, Chatham, Kent ME4 5AA. Tel: 01634 845073.

Valves

VALVES:- OVER 50000 STOCKED Ham, Vintage, Military, Audio. SAE for FREE list to: Wilson Valves, (Jim Fish G4MH), 28 Banks Ave., Golcar, Huddersfield, West Yorks HD7 4LZ. Tel: 01484 654650/649380/650725. Mobile:- 07733 283084. E-mail: wilsonv@zoo.co.uk Visa etc. Fast & personal service.

VALVES AND ALLIED COMPONENTS IN STOCK Ring for free list. Valves/ books/magazines wanted. Geoff Davies (Radio). Tel: 01788 574774.

TOP PRICES PAID

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

Langrex Supplies Ltd.

Unit 4, Daux Road, Billingshurst, W. Sussex RH14 9SJ

TEL: 01403 785600. FAX: 01403 785656.

ORDER FORM FOR CLASSIFIED ADS PLEASE WRITE IN BLOCK CAPITALS

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, Broadstone, Dorset BH18 8PW. Tel: 0845 803 1979, Fax: 01202 659950.

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/P.O. for £..... (42p per word, 12 minimum, please add 17.5% VAT to total).

Name:

Please photocopy this form or write on a separate sheet if you prefer

Address:

.....

.....

.....

Telephone No:

Box Number @ 70p: Tick if appropriate ☐

Category heading:

THE PW PUBLISHING RADIO BOOKSTORE

mail order...huge range in stock...fast delivery...

PASSPORT TO WORLD BAND RADIO 2008

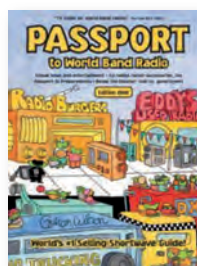
Passport to World Band Radio is a #1 seller. Each edition is welcomed by established and emerging readers alike, as Passport delivers in nearly 600 pages what world band listeners seek:

Three-way guide to what's on from stations in dozens of countries: news, entertainment and opinion in English and other languages. All three formats: country-by-country, channel-by-channel, hour-by-hour.

Award-winning reviews of world band radios and accessories, with ratings of dozens of models from Sony, Grundig and others. Radios for emergencies, too.

Wealth of helpful how-to articles, along with a directory of station contacts, webcasts and a glossary.

This annual title keeps readers coming back year after year, making it what one chain buyer hails as a quiet bestseller. 592 pages

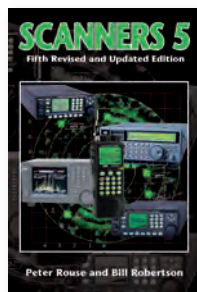


£17.50

NEW
IN
STOCK
NOW

SCANNERS 5

This latest edition continues the well-respected tradition of the Scanners series of books. Again being virtually re-written, it reflects the changing nature of radio communication and how, with readily available equipment, one can tune into all matter of two-way radio communications. All around us the airwaves are buzzing with messages, and this book provides useful and authoritative information on what equipment to choose, the importance of antenna type and siting, and how to get the very best from your system. Portable, mobile and base monitoring is detailed, and how to tune into a wide variety of users ranging from land-based walkie-talkies to orbiting space stations using simple receiving equipment. Monitoring trunked and encrypted transmissions is also detailed, showing how these can also be received and decoded. Finally, the use personal computers with scanners is covered in a comprehensive sections, showing how this combination can allow many types of radio signals to be decoded that would not be possible by using a receiver alone. 245 pages.



£9.95

IN
STOCK
NOW

The Pocket UK & Ireland VHF Marine Frequency Guide. 11th edition

This handy, small, ring-bound book lists the frequencies and channel numbers for marinas and ports all around the UK and Ireland. The list runs alphabetically by region, with separate lists for ports, marinas and inland waterways. There are also helpful sections on both the HM and Irish Coastguard, including when to listen to weather forecasts. At the back of the book is the complete list of channel numbers, their equivalent frequency and notes on their use, which means it doesn't matter whether you are using a scanner or a marine receiver you can find the stations you are looking for. 108 pages.



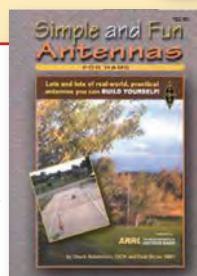
£4.99

IN
STOCK
NOW

NEW
IN
STOCK
NOW

SIMPLE & FUN ANTENNAS FOR HAMS

Simple & Fun Antennas for Hams is designed not only for newcomers to amateur radio, but also for anyone overwhelmed with the theory and technical details in most antenna "textbooks". This book contains 70 well tested and entirely useful projects - which work! Hundreds of photos and illustrations make sure you can actually build working antennas yourself. The designs include dipoles, verticals & wire antennas across both the VHF and HF bands.



£16.99

AIRBAND

DIRECTORY OF AIRCRAFT SELCALLS

8th edition. (Seldec).....205 PLUS CD £15.95

● HF AIRBAND FREQUENCY GUIDE (Seldec).....225 £14.75

● NORTH ATLANTIC WAYPOINT ATLAS (Seldec)50 £9.50

● SORRY, OUT OF STOCK AIRBAND RADIO GUIDE

6th Edition (abc)122 £8.99

● SORRY, OUT OF STOCK AIRBAND RADIO HANDBOOK

David Smith (Sutton)190 £12.99

● SORRY, OUT OF STOCK INTERNATIONAL AIRBAND RADIO

HANDBOOK David Smith (Sutton).....192 £9.99

● AIR TRAFFIC CONTROL 9th Edition (abc)112 £8.99

● AIRWAVES 2007 (Photavia)144 £10.95

● SORRY, OUT OF STOCK AIRWAVES SELCAL -

CIVIL & MILITARY DIRECTORY (Photavia).....176 £11.95

● CALLSIGN 2007. (Photavia)111 £10.95

● CIVIL AIRCRAFT MARKINGS 2007 Wright & Peel. (abc)368 £9.99

● FLIGHT ROUTINGS 2006. T.T. Williams & S.J. Williams200 £10.00

● MILITARY AIRCRAFT MARKINGS 2007 March & Curtis.

(abc)208 £9.99

● NEW BRITISH ISLES ATLANTIC TRANSITION CHART High

(AERAD) Now split in to two charts making it much easier to read!1020x520mm £13.00

● NEW BRITISH ISLES ATLANTIC TRANSITION CHART High/Low

(AERAD) Now split in to two charts making it much easier to read!1020x520mm £13.00

● BRITISH ISLES LOW ALTITUDE CHART (AERAD) .1020x520mm £13.00

● HIGH ALTITUDE ATLANTIC TRANSITION CHART

(AERAD)1020x520mm £13.00

Scanning & Frequency Guides

● NEW LISTENING TO LONGWAVE Kevin Carey.....100 £5.95

● THE POCKET UK & IRELAND AIRBAND GUIDE

12th Edition. (Seldec).....100 £4.99

● THE POCKET UK & IRELAND VHF MARINE

FREQUENCY GUIDE 11th edition. (Seldec)108 £4.99

● IN NOW SCANNERS 5 B. Robertson & P. Rouse245 £9.95

● BUYING A USED SHORT WAVE RECEIVER 4th Edition.

F. Osterman78 £4.95

● KLINGENFUSS GUIDE TO UTILITY STATIONS 2007604 £33.00

● NEW KLINGENFUSS SHORTWAVE FREQUENCY

GUIDE 2008478 £28.00

● NEW KLINGENFUSS SHORTWAVE FREQUENCIES CD 2008 £21.00

● KLINGENFUSS RADIO DATA CODE MANUAL 17th Edition..600 £30.00

● NEW PASSPORT TO WORLD BAND RADIO 2008 (IBS)592 £17.50

● OUT OF STOCK RADIO LISTENERS GUIDE 2007.....160 £5.45

● UK SCANNING DIRECTORY - 9th edition (PW Publishing) ...544 £19.75

● NEW WORLD RADIO TV HANDBOOK 2008

(WRTH)672 £23.00

Antennas/Transmission Lines/Propagation

● NEW EVEN MORE OUT OF THIN AIR (PW Publishing)80 £6.75

● NEW SIMPLE & FUN ANTENNAS FOR HAMS (ARRL)256 £16.99

● 25 SIMPLE INDOOR & WINDOW AERIALS E.M. Noll

(Babani).....50 £1.75

● 25 SIMPLE TROPICAL & MW BAND AERIALS E.M. Noll

(Babani).....54 £1.75

● AN INTRODUCTION TO RADIO WAVE PROPAGATION

J.G. Lee. (Babani).....116 £3.95

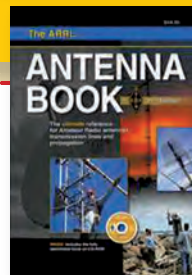
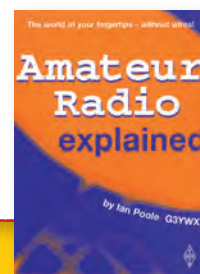
● ANTENNA FILE (RSGB)285 £18.99

You can see full descriptions of all these books & order securely on-line at www.mysubcare.com see the magazine's related products section. Also, see www.pwpublishing.ltd.uk/bookstore/books.html for full descriptions of all these books.

AMATEUR RADIO EXPLAINED

An ideal introduction to the exciting world of amateur radio. Setting up a station, what you are likely to hear on each band, how to receive and transmit, what's involved in getting a licence how signals propagate around the world, codes, equipment, construction and much more. 150 pages.

£9.90



ARRL ANTENNA BOOK 21ST EDITION

The ARRL Antenna Book as THE source of current antenna theory and a wealth of practical how-to construction projects. Use this book to discover even the most basic antenna designs, wire and loop antennas, verticals, and Yagis--and for advanced antenna theory and applications. Many of the antennas in this edition benefit directly from advances in sophisticated computer modeling.

This 21st edition has been extensively revised to include information you can use to build highly optimized or specialized antennas. The book includes new content on Near Vertical Incidence Skywave (NVIS) techniques, phased arrays, S-parameters as used in modern vector network analyzers (VNA), Beverage receiving antennas, mobile, screwdriver antennas, ionospheric area-coverage maps, and much, much more. A fully searchable CD-ROM is included containing The ARRL Antenna Book in its entirety, using the popular Adobe® Reader® software for Microsoft® Windows® and Macintosh® systems. View, search and print from the entire text, including images, photographs, drawings, everything!

The CD-ROM contains additional utility programs, including:

YW -- Yagi for Windows (view manual)
TLW -- Transmission Line for Windows (view manual)
HFTA -- HF Terrain Assessment for Windows (view manual)
Range-Bearing -- compute range/bearing or latitude/longitude
Arrayfeed1 -- designing phased-array feed systems
EZNEC-ARRL -- antenna modeling for Windows

Thousands of Propagation Tables

Propagation forecasts for more than 170 QTHs around the world for all portions of the solar cycle are included on the CD-ROM

944 pages, softcover book with CD-ROM.

**NEW
IN
STOCK
NOW**

£30.99

	Pages	Price
● ANTENNA TOOLKIT 2 (INC. CDROM) Joseph Carr.....	256	£28.99
● ANTENNA TOPICS Pat Hawker G3VA (RSGB)	384	£18.99
● BACKYARD ANTENNAS Peter Dodd G3LDO (RSGB)	200	£18.95
● NEW ARRL ANTENNA BOOK 21st edition, INC CD (ARRL).....	944	£30.99
● EXPERIMENTAL ANTENNA TOPICS H.C. Wright.....	72	£3.50
● HF ANTENNA COLLECTION Edited by Erwin David G4LQI. (RSGB)	233	£19.95
● HF ANTENNAS FOR ALL LOCATIONS 2nd edition. Les Moxon G6XN. (RSGB)	322	£19.99
● INTERNATIONAL ANTENNA COLLECTION G. Brown M5ACN. (RSGB).....	250	£12.95
● INTERNATIONAL ANTENNA COLLECTION 2. G. Brown M5ACN. (RSGB).....	200	£12.95
● PRACTICAL ANTENNAS FOR NOVICES John Heys	58	£7.99
● PRACTICAL WIRE ANTENNAS 2 Ian Poole G3YWX	172	£11.99
● RADIO PROPAGATION PRINCIPLES & PRACTICE Ian Poole G3YWX.....	102	£14.95
● SIMPLE AND FUN ANTENNAS FOR HAMS (ARRL).....	200	£16.99
● VHF UHF ANTENNAS Ian Poole G3YWX. (RSGB)	128	£13.99
● SORRY, OUT OF STOCK WIRE ANTENNA CLASSICS (ARRL) 200		£10.50
● MORE WIRE ANTENNA CLASSICS VOL 2. (ARRL)	200	£12.50

Beginners/Licence/Manuals

● NEW 3rd Edition ADVANCE! THE FULL LICENCE MANUAL Alan Betts G0HIQ & Steve Hartley G0FUW. (RSGB)	104	£11.99
● AMATEUR RADIO EXPLAINED Ian Poole G3YWX. (RSGB)...	150	£9.90
● AN INTRODUCTION TO AMATEUR RADIO I.D. Poole. (Babani) .	150	£4.99
● DISCOVER DXING. 3rd edition. J. Zondlo	96	£6.95
● NEW 5th edition FOUNDATION LICENCE NOW! Alan Betts G0HIQ. (RSGB).....	32	£4.99
● HF AMATEUR RADIO Ian Poole G3YWX. (RSGB)	128	£15.99
● NEW 4th Edition INTERMEDIATE LICENCE - BUILDING ON THE FOUNDATION Steve Hartley G0FUW. (RSGB)	76	£6.99
● NOVICE RADIO AMATEURS EXAMINATION HANDBOOK I.D. Poole. (Babani)	150	£4.95
● PRACTICAL RECEIVERS FOR BEGINNERS John Case GW4HWR (RSGB)	165	£14.99
● SECRET OF LEARNING MORSE CODE Mark Francis. (Spa)....	84	£6.95
● MORSE CODE FOR RADIO AMATEURS. (RSGB)	32 inc. CD	£7.99

Design & Construction

● OUT OF STOCK COIL DESIGN & CONSTRUCTION MANUAL (Babani).....	106	£3.99
● CIRCUIT OVERLOAD (RSGB)	504	£18.99
● PRACTICAL PROJECTS G. Brown M5ACN. (RSGB)	208	£13.95
● PROJECTS FOR RADIO AMATEURS & SWL R.A. Penfold. (Babani).....	92	£3.95
● RADIO & ELECTRONICS COOKBOOK (RSGB-Newnes).....	320	£19.99
● RF COMPONENTS & CIRCUITS Joe Carr. (RSGB-Newnes) ..	416	£25.99
● THE ART OF SOLDERING R. Brewster. (Babani)	84	£3.99
● THE SUPERHET RADIO HANDBOOK I.D. Poole. (Babani)	104	£4.95

Shack Essentials

● NEW ARRL HANDBOOK 85th edition inc CD. (ARRL).....	Huge!	£30.99
● DXPEDITIONING - BEHIND THE SCENES FOR RADIO AMATEURS WORLDWIDE N Cheadle & S Telenius Lowe	180	£6.95
● THE RIG GUIDE S W White. (RSGB).....	88	£3.99
● AMATEUR RADIO ESSENTIALS G. Brown. (RSGB)	288	£25.99

FOUNDATION LICENCE NOW!

A 32-page soft-covered book that takes you through the syllabus, reinforcing what you will learn on the foundation Course. The course has been designed and introduced for people of all ages and abilities. To take the course you need no formal qualifications. £4.99.

INTERMEDIATE LICENCE. BUILDING ON THE FOUNDATION.

The second course book in the RSGB's series, which is structured to progressively obtaining an Amateur Intermediate Licence, this book contains practical exercises, broken down into half-hour worksheets. The ideal companion book for all Amateur Radio Intermediate Licence students. £6.99.

ADVANCE! THE FULL LICENCE MANUAL.

This is the third course structured to obtain an Amateur Radio Licence. Advance is the final stage in gaining the full licence and has been updated to suit the new syllabus structure. Broken down into logical sections, it's presented in an easy-to-understand way, making it perfect for home study. £11.99.



CALLSEEKER PLUS 2008

The CD-ROM version of the RSGB Yearbook 2008, but with a lot more besides!

This CD contains all the information from both the Information section and Callsign listing the RSGB Yearbook in easily-searchable forms, plus Eurocall, the European callbook on CD. As well as the most up-to-date listings of United Kingdom and Republic of Ireland amateurs' callsigns, you will also find comprehensive coverage of prefixes 9A, DL, EA, ES, F, HA, HB9, I, LX, LY, OE, OH, ON, OZ, SM, SP, SV and Z3.

Callseeker Plus is easy to use and requires no installation. The easy to use software runs straight from the CD and it requires no hard disk space. You can easily search by callsign, name or location. Navigating through the search results is quick and easy and you can print the results in a variety of formats including straight to an address label.

All the pages of the RSGB Yearbook 2008 are also included (Information section) so you are missing nothing from the printed version. Acrobat Reader 8 program is included, so viewing the PDF pages has never been easier. Callseeker would be useful enough if it only offered this but you will also find lots of amateur radio software and additional information from across Europe packed onto this valuable CD.



**NEW
IN
STOCK
NOW**

£14.99

VINTAGE RADIOS

This book tells the collector and the armchair wireless enthusiast everything there is to know about classic radios from the 1920s to the end of the 1960s. All the important makes and models are discussed and the author also covers buying and selling, care and restoration and many other topics, including foreign radios and radio-related ephemera. Illustrated with many colour photographs, this is the perfect collector's companion to the fascinating hobby. 208 pages.



£19.95

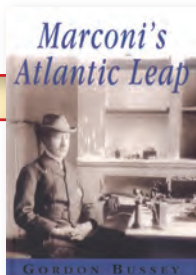
NEW
IN
STOCK
NOW



£7.70

AMATEUR RADIO - A BEGINNERS GUIDE (1940 REPRINT)

Reprinted from 1940, this guide was dedicated to those who found it difficult to get started and it's still a very useful and interesting read today! 156 pages.



MARCONI'S ATLANTIC LEAP

A fascinating fully illustrated and documented description of the bridging of the Atlantic by wireless in 1901 by Marconi, who was only 27 at the time. 96 pages.

£6.99

THE VHF/UHF HANDBOOK

THE guide to theory and practice in the VHF and UHF bands. The VHF/UHF Handbook is packed with content from around the world. This book provides the reader with a wide range of interesting operating modes and techniques alongside the VHF/UHF basics. There are many topics covered including getting started, antennas and constructing your own equipment. There is truly something for everyone, from rag chews on local nets or repeaters to specialist modes such as Amateur television (ATV). Satellite operation is covered, as is the thrill of DX via one of the rare propagation modes or EME. There is much more in this great book, with its contents offering the best practice in every field. Substantially updated from the previous edition the VHF/UHF Handbook is an invaluable source of information for the seasoned operator and the best introduction for newcomers to the bands. The VHF/UHF Handbook is the true 21st century reference book for this fascinating area of amateur radio. 320 pages.



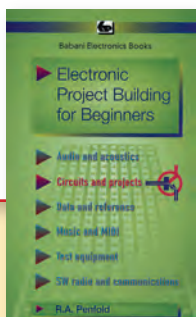
£14.99

NEW
IN
STOCK
NOW

ELECTRONIC PROJECT BUILDING FOR BEGINNERS

This book is for complete beginners to electronic project building. It provides a complete introduction to the practical side of this fascinating hobby. 110 pages.

£4.99



Binders

PRACTICAL WIRELESS OR RADIOUSER

£10.00

THE PW PUBLISHING LTD

RADIO BOOKSTORE

mail order...huge range in stock...fast delivery...

	Pages	Price
● AMATEUR RADIO ASTRONOMY J. Fielding. (RSGB).....	330	£16.99
● AMATEUR RADIO MOBILE HANDBOOK P. Dodd. (RSGB)	114	£14.99
● AMATEUR RADIO (VALUE) LOGBOOK (RSGB)	80	£4.95
● AMATEUR RADIO ON THE MOVE (ARRL)	170	£14.99
● ARRL OPERATING MANUAL 8th Edition. (WSL)	420	£19.99
● NEW CALLSEEKER PLUS 2008 - CALLSIGN LISTING CD & More		£14.99
● DIGITAL MODES FOR ALL OCCASIONS Murray Greenman (RSGB)	208	£16.95
● GREAT CIRCLE MAP (PWP)	400 x 400mm	£1.50
● LF TODAY - GUIDE TO SUCCESS 136kHz M Dennison. (RSGB)	128	£11.95
● NEW LOW PROFILE AMATEUR RADIO 2nd edition. (ARRL) ..	64	£14.99
● RADIO AMATEURS WORLD ATLAS (A4)	23	£12.00
● RSGB AMATEUR RADIO OPERATING MANUAL (RSGB)	224	£19.95
● RSGB PREFIX GUIDE. 8th edition. (RSGB)	34	£8.95
● NEW RSGB YEARBOOK 2008 edition. (RSGB)	512	£18.99
● NEW RSGB RADIO COMMUNICATIONS HANDBOOK + CD 9th Edition. (RSGB)	800	£29.99

QRP

● LOW POWER COMMUNICATIONS. 2nd edition. (ARRL).....	240	£14.99
● LOW POWER SCRAPBOOK (RSGB)	320	£12.99
● QRP BASICS. George Dobbs G3RJV. (RSGB)	204	£14.99

VHF & Higher

● ALL ABOUT VHF AMATEUR RADIO W. I. Orr W6SAI. (ARRL)163		£8.95
● GUIDE TO VHF/UHF AMATEUR RADIO Ian Poole G3YWX. (RSGB)	180	£9.99
● NEW VHF/UHF HANDBOOK Andy Barter G8ATD . (RSGB) ..	302	£14.99

Crystal Sets

● CRYSTAL RECEIVING SETS & HOW TO MAKE THEM (Lindsay) ...	124	£9.95
---	-----	-------

Historical

● NEW FJ CAMM - THE PRACTICAL MAN (RSGB)	110	£10.99
● NEW VINTAGE RADIOS (Crowood)	208	£19.95
● 1940s AMATEUR RADIO BOX SET (RSGB) 6 book set	450	£15.99
● AMATEUR RADIO - A BEGINNERS GUIDE (1940 REPRINT) (Lindsay Publications). Douglas Fortune W9UVC	156	£7.70
● OUT OF PRINT THE BIRTH OF BRITISH RADAR C. Latham & A. Stobbs	110	£9.99
● COMMUNICATIONS RECEIVERS - THE VACUUM TUBE ERA R.S. Moore.....	141	£17.95
● MARCONI'S ATLANTIC LEAP (H/B) Gordon Bussey. (Marconi)96		£6.99
● NEW LOW PRICE RADIO & RADIO OPERATORS FROM SPARKS TO SATELLITES (Package with Swedish hardback book, English spiral-bound translation and CD with printable PDF files) Birgitta Guftafsson.....	255	£15.00
● THE SAGA OF MARCONI OSRAM VALVE B. Vyse & G. Jessop	346	£25.00

Valves

● OUT OF PRINT HOW TO MAKE A NEUTRODYNE RECEIVER Webb	63	£5.95
--	----	-------

Electronics

● ELECTRONIC PROJECT BUILDING FOR BEGINNERS (Babani).....	110	£4.99
● GETTING THE MOST FROM YOUR MULTIMETER (Babani).....	102	£4.99
● HOW TO USE OSCILLOSCOPES & OTHER TEST EQUIPMENT (Babani).....	110	£4.99

You can order securely on-line at
www.mysubcare.com
 see the magazine's related products section.

HOW TO ORDER

Telephone: 0845 803 1979

Call the Book Store, Monday to Friday 9am to 4pm.

We can often send your book the very same day, if we can, or the very next day if we miss the post!

Outside these hours your order will be recorded on an answerphone.

Post: Write to the Book Store, remembering to include your name, address, daytime telephone number and payment details (Sterling please - cash not accepted), at: **Book Store, PW Publishing Ltd., Broadstone, Dorset BH18 8PW.**

Fax: If you wish to FAX your order to us please mark it for the attention of the Book Store and send it to: 01202 659950

E-mail: bookstore@pwpublishing.ltd.uk

Order Securely on-line: www.mysubcare.com

Photocopies & Back Issues: To order a back Issue, please call the Order Line to check availability. We can photocopy articles from issues that are not available - we have a Review List going back years!

	<i>Current Issue</i>	<i>Back Issues</i>
Practical Wireless	£3.50 (inc P&P)	£5.00 (inc P&P)
RadioUser	£3.50 (inc P&P)	£5.00 (inc P&P)
Radio Active	-	£5.00 (inc P&P)

Photocopies / Reprints (per article): £3.00 (inc P&P).

Overseas: Please add £1.00 to the above prices.

E&OE

order form

02/08

Photocopies are acceptable

Please try to order from an up-to-date magazine to ensure correct prices and availability.

..... Price (£)

..... Price (£)

..... Price (£)

..... Price (£)

..... Price (£)

..... Price (£)

..... Price (£)

..... Price (£)

Total cost of books ordered:..... **Price (£)**

Postage & Packing charges: Please remember to add P&P to your order. (£)

UK: £1.75 P&P for one item, £3.00 for two or more

Overseas Europe:
 £3.00 P&P for one, £5.00 for two, £2 extra per item for three or more

Overseas Rest of World:
 £5.00 P&P for one, £10.00 for two, £2 extra per item for three or more

Total cost of order including postage **Price (£)**

Send this completed form to:

Book Store, PW Publishing Ltd., Arrowsmith Court, Station Approach, Broadstone, Dorset BH18 8PW

Payment Details. Please note: For security purposes, you must include your house number and postcode.

Name.....

Address.....

.....

.....

Postcode

Telephone (Daytime)

I enclose my Cheque/Postal Order for £.....

Please note: Cheques **MUST** be made payable to PW Publishing Ltd. and please write your cheque guarantee card number on the reverse.



or please debit my Access/Visa/Amex

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Expiry Date Security No. ☐ ☐ ☐

or please debit my Maestro/Solo



☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Expiry Date Security No. ☐ ☐ ☐

Start date Issue No (if on card).....

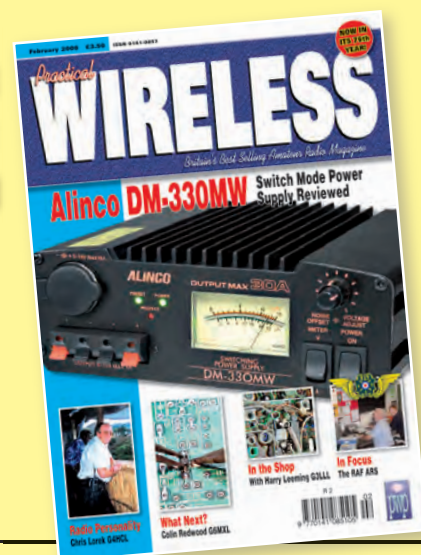
Signature.....

Orders are normally despatched by return of post but please allow 28 days for delivery. Prices correct at the time of going to press.
Please note: all payments must be made in Sterling, cash not accepted.

SUBSCRIBE

to *Practical Wireless*

- Never miss an issue
- Have it delivered to your door
- Subscribers get their copies before they reach the shops
- **PW** is Britain's best selling Amateur Radio magazine



To order a subscription please contact our subscription agency:

Practical Wireless Subscriptions
PO Box 464
Berkhamsted
Hertfordshire HP4 2UR. UK

Credit Card Orders taken on:

(01442) 879097

between 9am - 5pm. Outside these hours your order will be recorded on an answering machine.

FAX Orders taken on (01442) 872279

Internet orders can be placed at:

www.mysubcare.com

or via e-mail to: **pw@webscribe.co.uk**

Please note cheques should be made payable to PW PUBLISHING LTD and CASH is NOT accepted by ourselves or Webscribe.

Subscription Rates

PW 1 Year

UK	£37	<input type="checkbox"/>
Europe	£45	<input type="checkbox"/>
ROW	£55	<input type="checkbox"/>

PW 2 Year

UK	£70	<input type="checkbox"/>
Europe	£86	<input type="checkbox"/>
ROW	£104	<input type="checkbox"/>

PW 3 Year

UK	£100	<input type="checkbox"/>
Europe	£125	<input type="checkbox"/>
ROW	£155	<input type="checkbox"/>

Joint PW & RU 1 Year

UK	£70	<input type="checkbox"/>
Europe	£86	<input type="checkbox"/>
ROW	£104	<input type="checkbox"/>

2 Year

UK	£133	<input type="checkbox"/>
Europe	£163	<input type="checkbox"/>
ROW	£199	<input type="checkbox"/>

3 Year

UK	£190	<input type="checkbox"/>
Europe	£237	<input type="checkbox"/>
ROW	£295	<input type="checkbox"/>

Joint subscriptions
now available -
Save £££s



**SUBS
PRICES
HELD!**

On-line facilities
are available as
well as the usual
way to pay by
cheque, postal
order and credit
card.

Order a new subscription on-line

Simply pay with a credit card on-line using our secure server.

Check the status of a subscription on-line

Existing subscribers can now log in to their own accounts and see how many issues they have left to run.

Update your details on-line

If you move or change your personal details, you can now update them on-line without having to write in to let us know.

Renew an existing subscription on-line

We've made renewing easier too. Everything you need to renew is now available on-line as well as by regular mail.
(Subscribers still get a reminder in the post when it's time to renew).

I wish to order a one/two/three year subscription to **practical wireless** starting with the.....issue.

I wish to order a joint one/two/three year subscription to **practical wireless** and **radiouser** starting with the.....issue.

Payment Details

I enclose my Cheque/Postal Order* for £.....
made payable to PW Publishing Ltd.
or please debit my Access/Visa/Amex* card No.

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------

Security Number:



Expiry Date.....

or please debit my Switch card No.

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------



Security Number:

Start Date.....Switch Issue Number (if on card)

Switch Expiry Date.....

Signature

Name

Address

Postcode

Daytime Tel. No.....

Orders are normally despatched by return of post but please allow 28 days for delivery. Prices correct at time of going to press. E&OE.

Please note: All payments must be made in Sterling.

Cash not accepted.

Cheques made payable to PW Publishing Ltd.

Please note:
For security purposes,
you must include your
house number and
postcode.



Rob Mannion's

topical talk

This month's topical chat reflects on callsigns and techniques to reduce the effects of the interference carried by the mains.

When 'Peter' (letters pages) first contacted me to discuss the problems mentioned in his published letter – I was humbled at the resilience he showed towards his wife's dreadful illness. One of the problems that he mentioned in a subsequent telephone call was that his wife's agitation (one of the common symptoms of dementia) seems to be triggered by his voice. This had led him avoiding using 'phone on his rig.

Radio Amateurs are, by their very nature, innovative and determined. 'Peter' soon found a way round his difficulties and now listens to the Amateur bands, with one ear kept clear of the headphones so he can react immediately to his wife's needs. I can only admire the legions of full time carers we have in the UK – their dedication is remarkable and should be fully acknowledged by the government in some palpable fashion.

The main concern expressed by Peter is that he can often listen to a QSO and never find out where the stations involved are located. He also mentions how rarely some operators seem to give their callsigns now that the regulations have changed. Strangely – or so it might seem – we listen more than we transmit. Odd perhaps at first – but when you think about the statement it's obvious and this makes us all keen listeners!

Basically speaking, I agree with 'Peter' in that many Amateurs don't give their locations. And even if you do catch the callsign there's a high probability that their details are published as 'withheld' in the callbook.

The RSGB Yearbook

Personally speaking, I think that the RSGB's *Yearbook* is an incredibly useful reference source. Hardly an hour goes by in the *PW* office without it being used. A reader might telephone to ask about joining a local club, or I might have to check a postal address or the band plans. Most of the information I require is in this most useful book, although I'm dismayed at the growing numbers of columns with large numbers of 'details withheld' alongside callsigns.

The RSGB themselves have requested that the 'details withheld' Amateurs should consider having their general location

published. I applaud this request and I think it's worth alerting concerned readers that their local authorities are probably the most likely source of address data for junk mail senders. This is because – unless you request your details to be deleted – the Electoral Roll is sold commercially to junk mail companies and for other purposes. So, please remember – with your area published in the *Yearbook*, together with a little more information over the air you could help someone increase their enjoyment of our hobby.

Battery Power Idea

Andrew Brown (letters this month) has discovered the battery power idea for isolating receivers from the mains borne interference. It's a technique that many of us have used over the years and I've found it can provide superior results and easier listening for DX.

For a number of years, thanks to my friend **John Tait EI7BA** (Bad Apples as he calls himself) I was able to stay at the Power (pronounced as 'Poower') Head former coastguard cottages at the entrance to Cork Harbour and Cobh (pronounced as Cove). Amateur band operation from that QTH was superb, as it was perched near the edge of a 30m (100ft) or so cliff with wonderful sea views.

The **East Cork Contest Group (EI7M)** had their station just below the coastguard cottages, complete with a superb 7MHz vertical antenna that they kindly let me use. The DX potential was exhilarating and working VK and ZL on 40 metres was easy on QRP c.w.

The contest group had arranged for a 12V d.c. power supply via 'retired' telephone exchange 2V cells to provide a high current supply that, once charged, was independent of the mains. I had many wonderful holidays and great time on the bands from Power Head, operating as **EI5IW**, until the property changed hands. But the experience with the non-mains power source was so good that I recommend using battery power whenever it's possible. The reduction of the incoming mains borne interference can be very encouraging!

Happy New Year to you all from everyone on *PW*!

Rob Mannion G3XFD/EI5IW

coming next month



IN THE UK'S BEST AND ONLY INDEPENDENT AMATEUR RADIO MAGAZINE

Build the Knapp Receiver, designed by Tim Walford G3PJC.

Try Making Your Own Printed Circuit Boards Using Photography.

Amateur Radio Personality Martin Jue K5FLU – the man behind America's MFJ Amateur Radio Equipment Manufacturer – talks to *PW*.

What Next? Our new column for beginners with Colin Redwood G6MXL.

The Polish Amateur Radio Scene with Henryk Kotowski SM0JHF

**MARCH 2008 ISSUE
ON SALE 14 FEBRUARY AT ALL
GOOD NEWSAGENTS -
ASK FOR IT BY NAME - PRACTICAL
WIRELESS.**

PLACE YOUR ORDER TODAY!

**GREAT VALUE AT £3.50!
Also available direct for £3.50 by
calling 0845 803 1979**

YOUR SPECIALIST & LOCAL DEALERS

CORNWALL

WORSLEY COMMUNICATIONS

Robin C Worsley G0 MYR

'Onaru', Pennance Road,
Lanner, Redruth,
Cornwall TR16 5TQ

www.hamradiosales.co.uk

Tel: 01209 820118

DORSET

PW Publishing Ltd

have a wonderful selection of radio based
books and magazines

We can also supply a copy of most individual
reviews that you may have read in past editions
of *Radio Active*, *Short Wave Magazine* and
Practical Wireless magazine

Tel: 0845 803 1979

ESSEX

WATERS & STANTON PLC

Spa House, 22 Main Road, Hockley
Essex SS5 4QS

Tel: (01702) 206835/204965

Fax: (01702) 205843

Web: <http://www.waters-and-stanton.co.uk>

E-mail: sales@wsplc.demon.co.uk

Open 9am to 5.30pm Monday to Saturday inclusive.

MAIN AGENTS - ALL BRANDS

PHONE/FAX FOR FREE PRICE LIST

EAST YORKSHIRE

LINEAR AMP UK LTD

Field Head, Leconfield Road, Leconfield,
Beverley, East Yorks HU17 7LU

Tel/Fax: 01964 550921

E-mail: sales@linamp.co.uk www.linamp.co.uk

Manufacturers and suppliers of top
quality HF and VHF valve amplifiers and
antenna tuning units.

Repairs of most make of amplifier undertaken

MID GLAMORGAN

SANDPIPER AERIAL TECHNOLOGY

Unit 5, Enterprise House, Cwmfach Industrial
Estate, Aberdare,
Mid Glamorgan CF44 0AE

Tel: (01685) 870425 Fax: (01685) 876104

A full range of transmitting & receiving antennas
available for the amateur commercial market.

www.sandpiperaerials.co.uk

e-mail: sales@sandpiperaerials.co.uk

SCOTLAND

JAYCEE ELECTRONICS LTD

20 Woodside Way, Glenrothes, Fife KY7 5DF

Tel: (01592) 756962 (Day or Night)

Fax No. (01592) 610451

New opening hours: Tuesday-Friday 9am to 5pm.
Saturday 9am to 4pm. Closed Sunday & Monday.

KENWOOD, YAESU & ICOM APPROVED DEALERS

*A good stock of new and secondhand
equipment always in stock*

SCOTLAND

TENNAMAST SCOTLAND LTD

Masts from 25ft - 40ft

Adapt-A-Mast

(01505) 503824

81 Mains Road, Beith,
Ayrshire KA15 2HT

E-mail: nbrown@tennamast.com

Web site: www.tennamast.com

SOUTHWEST & WALES

QSL COMMUNICATIONS

• For all amateur radio and listener needs.

• New and secondhand equipment.

• Part exchange welcome.

Unit 6, Worle Industrial Centre, Coker Road,
Worle, Weston-Super-Mare BS22 6BX

Tel/Fax: (01934) 512757

SOUTH YORKSHIRE

LAM Communications

71 Hoyland Road, Hoyland Common
Barnsley, South Yorks S74 0LT
www.lamcommunications.net
E-mail: lamcommunications.net

Tel: 01226 361 700

Specialists in amateur radio equipment, new and second hand. Scanners,
receivers, C.B. radio, and taxi. We buy, sell and broker equipment and w/i
part exchange.

Opening times: Monday 12.00noon to 17.00hrs

Tuesday - Friday 10.00hrs to 17.00hrs. Saturday 10.00hrs to 15.00hrs

SPECIAL VIEWING TIMES CAN BE ARRANGED WITH LEE. We also accept Swtch Visa/Cash/Cheques

WEST SUSSEX

Adur Communications

PO Box 2047,
Steyning BN44 3XJ.

Tel: (01903) 879526

E-mail: service@durcomms.com

*Repairs and alignment to all amateur
and commercial radio equipment.*

YORKSHIRE

LEEDS AMATEUR RADIO LTD

SUPERSLAB CB CENTRE

The home of GB3YW operating on 145.7875MHz. CTCSS 82.5Hz

★ The complete radio suppliers ★

CONTACT STEVE POUNDER

BRADFORD ROAD, EAST ARDSLEY,
NR. WAKEFIELD WF3 2DN

Tel: 0113-252 4586 Fax: 0113-253 6621



Telephone

0845 803 1979

to advertise in

Practical Wireless

INDEX TO ADVERTISERS

Adur Communications.....	69
Bowood Electronics.....	57
Haydon Communications.....	30, 31
Icom (UK) Ltd.....	83
Kit Radio Company.....	69

LAM Communications.....	34
Martin Lynch & Sons.....	23, 24, 25
Moonraker.....	14, 15, 16
Nevada.....	44, 60
Practical Wireless.....	81
RadioUser.....	49
Radioworld.....	50, 51

Seldec Publishing.....	69
Spectrum Communications.....	57, 65
Sycom.....	57
Tetra Communications.....	57
The Shortwave Shop.....	65
Waters & Stanton.....	2, 3, 4
Yaesu UK Ltd.....	84

Just ask!

The best way to ensure
you receive every issue
of *Practical Wireless* and/
or *RadioUser* is to place
an order with your local
newsagent. Once set up,
your copy of *Practical
Wireless* and/or *RadioUser*

will be held for you to collect, saving you the time and
the frustration of having to search the newstand. Some
newsagents may even offer a home delivery service
making it even easier to obtain your copy. So don't miss
an issue, simply complete the form opposite and take to
your local newsagent today.

KEEP A LOOK OUT FOR THE LOGO AND NEXT TIME YOU VISIT
YOUR NEWSAGENT REMEMBER TO JUST ASK! ABOUT OBTAINING
COPIES OF YOUR CHOSEN MAGAZINES.

Please reserve/deliver* a copy of on a regular basis,

commencing with the issue. *delete as appropriate

Title/Mr/Mrs/Ms

First name Surname

Address

.....

..... Postcode

Daytime Telephone No:.....

IC-7700

It's What Every Discerning Amateur Wants For Christmas

By sparing no expense throughout the signal chain, ICOM has developed an Amateur rig to challenge the performance of any HF transceiver. Just like it's 'Big Brother' the IC-7800, HF bands on the IC-7700 boast +40dBm, a 3rd order intercept point and ultra-wide dynamic range. The IC-7700 incorporates many outstanding

features of the top-of-the-range IC-7800 including: strong receiver performance, bandscope functions, 200W RF output and DSP. Add ICOM's stylish, straightforward design and you have an ideal rig for Amateurs searching for a highly-sophisticated radio with top performance and an appealing price tag!



- +40dBm ultra-high intercept point
- 3kHz roofing filter
- Two 32-bit floating point units
- Automatic tracking pre-selector
- 200W output power at full duty
- Ultra high frequency stability
- 7-inch wide colour TFT LCD
- Multi-function spectrum scope
- RTTY/PSK31 operation without PC connection
- IF notch filter with adjustable notch filter characteristics
- Professional 6m receiver
- Digital voice recorder
- Two USB ports in the front panel
- Soft and sharp IF filter shapes for receiver

Everyone at Icom UK wishes you a Happy Christmas and Communicative New Year!

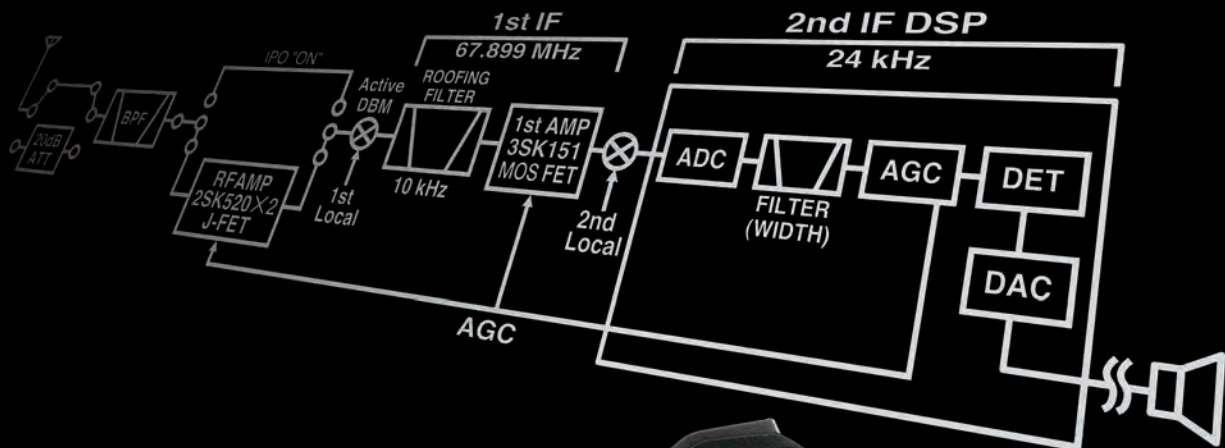
Icom UK Ltd. Sea Street, Herne Bay, Kent CT6 8LD.
 Telephone: 01227 741741. Fax: 01227 741742.
 e-mail: sales@icomuk.co.uk website: www.icomuk.co.uk

Count on us!

FT-450

HF/50MHz 100W All Mode Transceiver

World Class Performance in an easy to operate transceiver, with Yaesu's unique IF DSP



Available Now from £639.95 (inc VAT)

The FT-450 may be fitted with the optional automatic internal antenna tuner, the ATU-450.

The FT-450AT has the ATU-450 already installed.



YAESU

www.yaesu.co.uk