

PLUS
BREAKERS' BASICS
Pull-out guide to CB

AN ARGUS SPECIALIST PUBLICATION

JANUARY 1985

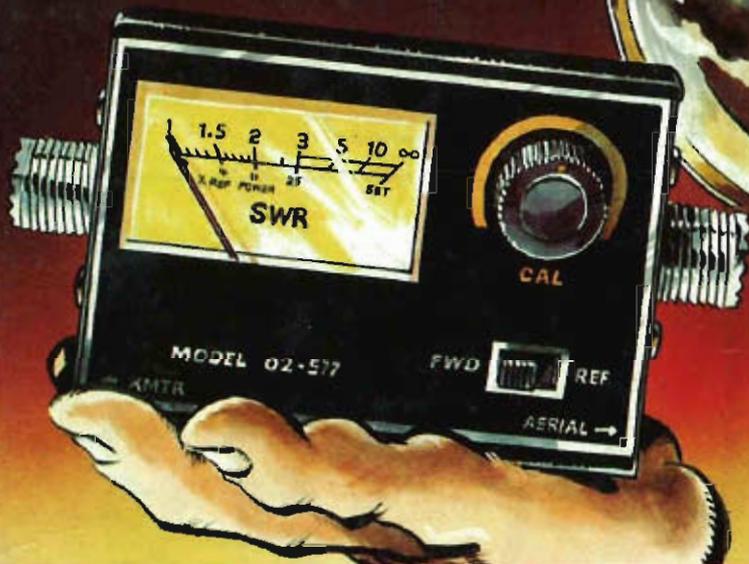
CB Citizens' Band

Britain's Leading Communications Magazine

99p

SWR METERS

We unravel the mysteries



SMALL SCREEN SKIP

TV DX explained

EYEBALL, EYEBALL

The off-air dangers



THUNDERPOLE III

- The Thunderpole III™ from the UK market leader of the fastest-selling high-performance legal base station antenna.
- New centre-loaded, helically wound coil with low radiation angle — shrink-wrapped for all-weather protection.
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- Pole mounting base to fit 1¼in. dia.
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£25 incl. V.A.T.

- Special kits to convert your Thunderpoles I and II into the latest Mk.III with new centre-loaded coil available.

THUNDERPOLE STRIKES AGAIN! "Citizens' Band" magazine on the fantastic Thunderpole range:

"A well constructed, easily assembled and erected, excellent performance legal antenna with the added bonus that it is pre-tuned. The Thunderpole was the best all-round base station antenna tested, looking and performing almost the same as the famous illegal Starduster." (on: the original Thunderpole).

"On test the Thunderpole Mk.III performed very well and contact was maintained even when the mobile test vehicle encountered a strong signal on the next channel in our notorious blackspot."

"In conclusion we consider the Thunderpole III to be a strong and well-constructed, top performance antenna and, priced at £25, it is no more expensive than the original Thunderpole, which must be good value."

THUNDERPOLE ANTENNA U.K. LTD.
a subsidiary of Freeman & Pardoe Ltd.
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Phone: Alcester (0789) 762 673.

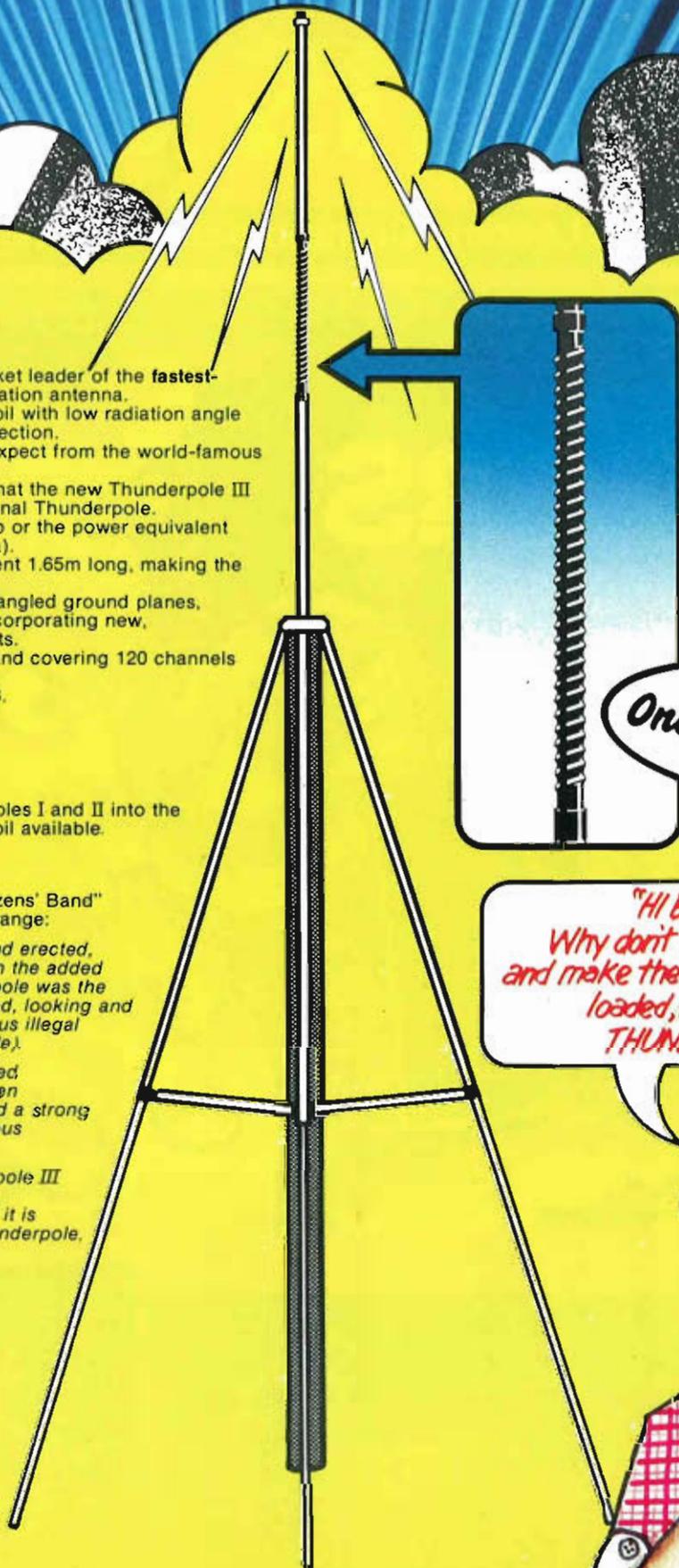
Ask for Thunderpole III™
at your local CB stockist now.

The Thunderpole design and
name are registered trade
marks of Freeman & Pardoe Ltd.
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WITH
HELICALLY
WOUND
CENTRE-
LOADED
COIL

The III-
One Step Ahead of
the Rest!

"HI BREAKERS!
Why don't you jump the skip
and make the trip with the centre-
loaded, helically wound
THUNDERPOLE III"



CB Citizens' Band

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JANUARY 1985 VOLUME 5 NUMBER 2



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Twong tries to get to grips with the intricacies and complexities of the SWR Meter. Keith Townsend explains inside.

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NEVADA 934 MHz PERSONAL RADIO

BASE ANTENNA

MODEL PA7-E

The PA7-E is a strong and highly efficient (7.14 dbi) omnidirectional stacked 5/8 colinear Base antenna. Manufactured from the highest quality chromed brass and steel, with fibreglass whip. The cable connection is via 'N' type connector, with the feed point completely waterproofed. The PA7-E is supplied with a fully comprehensive mounting kit with 'N' connector and waterproofing taps supplied. No VSWR adjustment is needed with this antenna.

PRICE £59
incl P&P



NEVADA SWR METER

This precise and extremely accurate meter has been especially designed for the UK 934 MHz range and features an illuminated scale and low-loss N-Type connector sockets. Twin meter SWR units have been popular for some time now, but this meter takes the process one step further to its logical conclusion - two needles on a single meter. Merely calibrate the forward power and the second needle is giving an automatic reflected reading. In addition to being an SWR meter, this unit measures power in two ranges; up to 10 watts and up to 60 watts, so it really is a must for any 934 MHz operator.

SPECIFICATION

Freq: 934 MHz; Impedance: 50 Ohms
Power: 10 W. Full scale, 60 W. Full scale

£89.95



NEVADA HRA-900 Mast Head Pre-amplifier

On 27 MHz the value of a preamp is debatable under certain conditions, but at the higher 934 MHz there is no argument. However, at this frequency the noise added by a preamp is of extreme importance, and this unit features an exceptionally low noise figure of 0.8 db and an impressive gain of 15 db. The exceptionally low noise figure is obtained by using the latest "state of the art" components and high quality low loss coaxial relays. Because of this low noise figure at 934 MHz the preamp can effectively double the range of received signals when placed at the masthead. The Mast Head Preamp, which is fully weatherproof, comes complete with remote on/off control unit and connecting cables for same, and is manufactured to the highest professional standards.

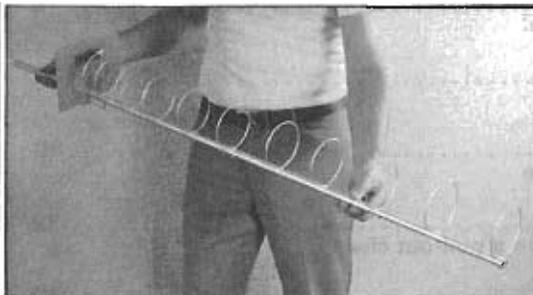
SPECIFICATIONS Gain: 15db min.;
Nominal Noise Figure: 0.8db max.

£149.95

NEVADA 934

Professional Series

HIGH GAIN 12-ELEMENT LOOP YAGI BASE ANTENNA



MODEL TC-12L

The TC-12L is a state of the art 12 element loop yagi designed specifically for optimum performance at 934 MHz by one of the Country's leading microwave Engineers (pat pend). The TC-12L is manufactured from high quality materials to ensure good performance and also good weather handling. The cable entry point is via a high quality 'N' socket with unique matching line, this allows for correct 50 ohm matching and low VSWR. The TC-12L produces a tested-genuine 18 dbi gain.

SPECIFICATIONS:

Gain: 18 dbi
3 dB Bandwidth: 20
Front-Back: -25 dB
1st side lobes: -14 dB
Weight: 1.1 kg
Overall Length: 53.6 inches

★ Designed by one of the UK's leading microwave engineers.

★ This antenna is more tolerant to nearby structures without distortion of radiation pattern.

★ Built-in coaxial low loss feed system. To 'N' socket. No wiring necessary.

★ Connection via a simple 'N' connector eliminates the need for complicated wiring and associated losses.

PRICE £39.95
Plus £5 P&P

MOBILE ANTENNAS

MOBILE ANTENNA

MODEL P714R-E

The P714R-E is a very strong gutter mounted antenna with tough fibreglass whip with a spring steel base section. The antenna produces a genuine 17.14 dbi gain. The antenna is supplied with good quality 'N' plug. The gutter mount is of the FOLD OVER type, which means that the antenna whip may be lowered without removing from the base, for entry into garages etc.

ALL MOBILE ANTENNAS

£39.95

(incl P&P)



MODELS P7M-E & P7-E

These mobile antennas are available as gutter mount (P7-E) or magnetic mount (P7M-E) with detachable base. The P7 antennas have a unique 1/4 wave stub section so that they produce a uniform radiation pattern wherever they are mounted on the vehicle. Both antennas produce a genuine gain of (7.14 dbi). The P7 antennas are supplied with 'N' connector fitted, metal waterproofing screw cap to seal the gutter mount socket if the whip is to be removed. The gutter mount is of the FOLD OVER type which means that the antenna whip may be lowered without removing from the base, for entry into garages etc.

934 Mhz ENTHUSIASTS LOOK!
SEND IN £1 NOW FOR OUR
SPECIAL 934 Mhz CATALOGUE
Contains Technical info
and full details of our
product range.

NEVADA PRODUCTS ARE AVAILABLE
ONLY FROM SPECIALLY APPOINTED
DEALERS THROUGHOUT THE UK
- OR DIRECT FROM TELECOMMS

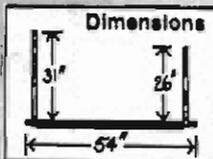


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At last, a high gain directional beam antenna which does not require lots of room to mount and which will not stick out like a sore thumb. Light, compact, easy to mount, and small enough even to mount in the loft, the Pulsar 27's unique loop design will give you a terrific 7dB of gain.



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WARNING

We have only a few sets left from our first shipment. Please check availability before ordering.

FEATURES

- ★ 5 Watt Output
- ★ VSWR Protection
- ★ 4 Watt audio output
- ★ Memory scan feature
- ★ Scan over 20 channels
- ★ Expandable to 40 channels (when approved)
- ★ External speaker socket
- ★ External 'S' meter socket

£325
+ £5 special delivery

NEVADA TC35 25 WATT RF AMPLIFIER

British Made High Quality Power Amplifier

- ★ Low Input SWR
- ★ On/Off Switch
- ★ Polarity Protection



25 watt
RF Amplifier

£19.95 each

RF Pre Amplifier

NEVADA

NEVADA TC27 RX PRE-AMP

British made high quality pre-amplifier

- ★ Super Low Noise
- ★ Adjustable Gain -6 to +18 Dbs
- ★ External Fuse
- ★ Unique TX Power Feature
- ★ Fully Guaranteed

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FASTEST
SELLERS

Professional Series

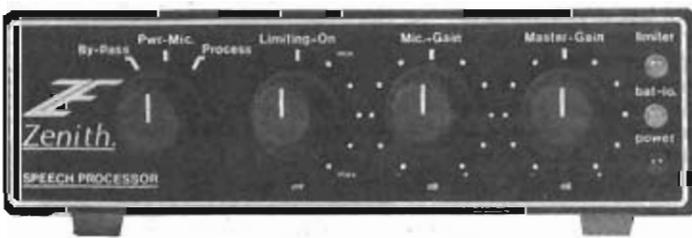


FULL-FEATURE
40 CHANNEL
HAND HELD



Half Watt Model £24.95
2 Watt Model £29.95

ZENITH SPEECH PROCESSOR P-202



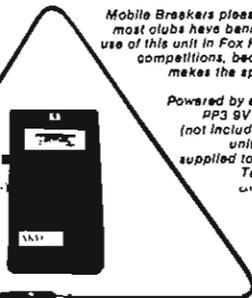
Designed and built in the UK, the Zenith Speech Processor will boost your "talk power" out of all recognition, increase your range, and improve the clarity of your speech. The P-202 works equally well in any mode - AM, FM or SSB - and is one of the most reliable products on the CB market today. Used with your existing microphone, it can be operated as a power microphone, speech processor, or simply switched out altogether. When ordering, please state the make and model of the rig with which you wish to use it, so that we may send it ready-wired for your transceiver.

£34.95

INTRODUCING . . . AN ENDANGERED SPECIES THE WALLY!

Now you can track down the source of unpleasant interference. The PDF-11M is guaranteed to find 99% of all household waffles. Better for cleaning up the airwaves than a thousand cans of polish!

£29.95



Mobile Breakers please note, most clubs have banned the use of this unit in Fox Hunting competitions, because it makes the sport too easy! Powered by a simple PP3 9V battery (not included) this unit is also supplied to British Telecom.

A.K.D. PRECISION DIRECTION FINDER

Designed specifically for pinpointing close-range signals and interference, the A.K.D. PDF-11M "Wally Hunter" has enjoyed great success since its introduction. It incorporates a 3-Meter and Audio Monitor (telephone supplied) and a variable RF Gain which, with practice, enables anyone to target EXACTLY where any signal is coming from. So long, waffles!

ECHO MASTER BASE MICROPHONE

This is the top of the Sadella range, and quite rightly so! We have tried just about every CB microphone, base and mobile, and can honestly say that there is nothing to compare with this beauty!

£57.56



Dear Breaker,

As we continue to grow, it gets more and more difficult to try to do justice to our vast range of radio equipment in a two-page advert. Our 1984 Mail Order Catalogue does the job much better, so why not send off £1 for your copy today, and in addition receive a £2 Telecomms voucher?

Thousands of Breakers have already discovered how surprisingly easy it is to shop with our Mail Order Service, as orders can be delivered within 48 hours (allow 10 days if paying by cheque). Every week we receive letters from customers who are astonished that we can live up to our claims, so why not write to us today and get on the Telecomms wavelength too?

Take professional care - it gets you results.



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UPDATE

NEWS FROM THE WORLD OF CB
NEWS FROM THE WORLD OF CB
NEWS FROM THE WORLD OF CB

Editorial

A big thank you to the hundreds of readers who went to the trouble of filling in and sending off the Readers Survey forms from our August issue. The information was fed into a computer and the results have now been compiled. Most comments were constructive and, to us, very informative.

We were heartened to hear that, compared with earlier issues, 41% of the people who answered this question thought the magazine was better, and a further 25% thought it was "much better". A minority — 4% to be exact — thought the magazine was worse. Sorry, 4% we'll try and do better in the future. Seriously, though, we have taken readers' comments and criticisms to heart and will endeavour to implement some new ideas gleaned from this survey.

On a more serious note, over the past couple of months we have received an alarmingly increasing number of letters from disgruntled readers who have ordered goods from various suppliers but who have not yet received anything in return for their money. Now, three years after legalisation, the initial

euphoria has died down and CB radio has, to a certain extent, levelled out. The majority of breakers take CB seriously nowadays — with the obvious notable exception — and the hobby has gained considerable respect recently. Why, then, don't the distributors in question take *their* business as seriously? The companies at fault are in the minority, but it is this minority that could put off a lot of first-time buyers by their reluctance to behave in a businesslike manner.

On to this issue. We feel we've packed quite a lot of interesting reading into it. As well as our usual regular features, there's a handy pull-out guide to CB basics — well, it's handy if you don't mind ripping the centre pages from your favourite magazine. There's also a very informative article on TV DXing. OK, purists, calm down. We know it doesn't relate *directly* to citizens' band radio, but if you want to learn more about signal propagation and tropospheric conditions, it's a must to read. Besides, there must be quite a few breakers who are fed up with *Sergeant Bilko* repeats!

Eamonn Percival

Charlie Oscar Tango

In Club News (November), we published a letter purporting to be from the Charlie Oscar Tango DX Group in which a special package deal was offered to new members. It appears that childishness and stupidity reigns off the air as well as on as it now transpires that the letter was not written by any member of the club. The group, in fact, has a limit of 50 members and a waiting list. We published the letter in all good faith and apologise for any misleading information it may have contained.

Sorry, ladies

In our October issue, *Graybeard* referred to Lyn White of Gravesend as "the only lady to run a CB shop". In fact, Lyn isn't unique, and we apologise to Joan Roberts of Chesham and Christine Adcock of Leamington Spa, both of whom also run CB outlets. There are probably lots more throughout the country and to these too we say sorry.

934MHz Competition Results

In August we announced a 934 MHz competition for UHF operators that was to take place over the August Bank Holiday weekend. We received a respectable number of entries considering the number of operators in the country and, subject to confirmation by QSL card, the provisional winners are:
Class A, the furthest distance copied; Bill of

Burnt Hope, Durham with a copy in Whitstable, Kent — 225 miles.

Class B, the most stations copied; Mr J F Bale with 35 stations on his log.
Class C, most points earned; A M Sagar of Solihull with 184 points.

As soon as we have confirmation, certificates and the SWR meter prize will be on their way.

Incidentally, the points system worked as follows;

1-4 miles	(1 point)
5-9 miles	(3 points)
10-14 miles	(5 points)

15-19 miles	(7 points)
20-29 miles	(10 points)
30-100 miles	(12 points)
over 100 miles	(15 points)

The person copying the most stations doesn't necessarily earn the most points, as they may all be relatively local stations. This in fact happened in the competition. A M Sagar didn't contact the most stations but many of them were over 30 miles away.

We feel the competition was a great success and hope to repeat it next August.

World Record Attempt

An Australian hospital technician now living in England is aiming to break the world record for non-stop bicycle riding. Len Campbell wants to smash the existing record of seven days 23 hours in an event dubbed 'The Suicide Ride'.

The project, to be staged at Battersea Park in July, is to be geared to raising funds for the Cancer Research Campaign under the title 'Pedalling and

Wheeling for Cancer'.

Len also wants to create a CB radio and ham network for the whole project — the first time that such a network will have been set up and used for this type of record-breaking attempt. Any groups or individuals who are interested in being part of this worthwhile project and working the first network of its kind in this category can write to: The Len Campbell Record Attempt Project, c/o The Albany Empire Centre, Douglas Way, Deptford, London SE8 4NS.



Grey Beard's Gleanings



Hello there, and a Happy New Year to you all. If you are one of the more fortunate breakers amongst us who got a new CB set for Christmas, how about donating your old rig to a local housebound/disabled person so that they can get out a bit — even if it is only on the air-waves?

If you don't know of anyone who fits the bill, your local CB club should be able to help you to find somebody. Failing that, your local council Social Services Department should be able to suggest a suitable recipient for you to help. You can always 'put the arm' on your friends at the local brown-bottle shop for help in raising funds for a twig, PSU, and coax! When you have got the new CBER set up, drop me a line and tell me all about it. I will give you a mention in my column and also send you one of my super exclusive QSL cards! If nothing else, it will make you feel good to be helping out some one who is probably quite a lot less able than yourself.

Have you had any experience of building CB

accessories from kits? If so, I would like to hear about it. This could be a cost-effective way of getting your station to work as well as possible. If you haven't but think that you would be interested, write and tell me; who knows, we might even get our new Editor to feature kits in future months.

In answer to the many of you writing to me about 934MHz CB, I am unable to answer your queries on this subject since I have not had the opportunity of working this frequency, so I would suggest that you address your letters to 'Mack the Hack' c/o Citizens' Band.

I am pleased to hear that the number of nets for OAP and the disabled continues to grow, despite the moronic fringe who love to air their unwelcome and unsavoury attentions on them! I sympathize with them and would ask all responsible CBers to help them

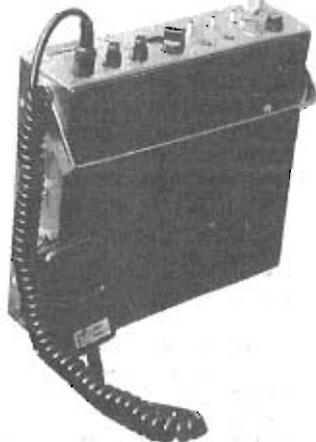


wherever possible, please. If you find that your favourite DXing channel is being occupied by a local 'granny-net', please try to find an alternative channel or, if that isn't practical, try to contact whoever is running the net to see if the net could perhaps be moved to another channel. Courtesy and patience will usually resolve the problem to everyone's satisfaction.

Well, that's it for another month, 73's,

The Grey Beard

WHAT MAKES THE WESTWARD PT THE BEST TRANSCEIVER MONEY CAN BUY?



BASE USE

No other base station offers an advanced, active power supply with very low noise, and automatic standby on the internal battery-when the mains has failed, you may need that emergency call!

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No other portable offers high capacity battery (3 working days use) and rapid integral charger (5 hours) with performance equal to a mobile when using s/s whip (op. extra). PL259 ant. socket.

Attractive & durable s/steel cabinet, selective calling can be built in, & custom mods to order.

Extras include s/s whips, mag. mounts, and hand crafted real leather case with custom carving of illustrations and handles if required.

Price less than many mains only sets. See your dealer, or SAE for full details to: Westward Electronics, The Mill House, Tuckenhay, Totnes, Devon TQ9 7EL. Tel: 080423 336/370. Trade enquiries welcome.

AKD

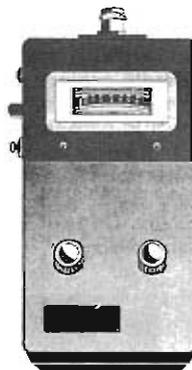
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CBPAI RF Pre-amp..... £14.37
CBA1 Vampier (RF attenuator)..... £14.37
Above combined in Vamplifier (VAI)
Usual Price £29.25 Special £24.00

PDF-11M Precision Direction Finder



The AKD Precision Direction Finder is used by British Telecom to track down illegal CB users at close proximity. Many clubs have used these to find "Wallies". The PDF is designed to take over when you are too close to the station to use standard direction finding techniques. The unit is hand-held; comes complete with special miniature aerial and requires only a PP3 battery.

Last Month at £35 — Usual £49.95
Prices inc. VAT & P&P

Trade Enquiries Welcome

Proprietor: J. W. Armstrong



ALLGON BOAT ANTENNA

- Radlator of stainless steel
- No ground plane radials needed
- Permits mounting on non-conductive surfaces
- Suitable both on glassfibre masts and metal masts
- Short radlator permits easy installation on either mast top of sailing boats or on deck of motor boats
- Pretuned from factory for CB band but admits field tuning by means of trimmer at antenna base

A CB radio out on the briny, for inshore boats, is as necessary as a life jacket and a box of flares. Not only could it come in very useful should your craft want to play submarines but 'out there' is one of the few areas where a little light conversation is both fun and informative. There are a great number of CB radios floating around our shores at the moment.

From Citizens' Band, July '84.

Suppliers of
Telephones, PMR,
Amateur, CB Radio

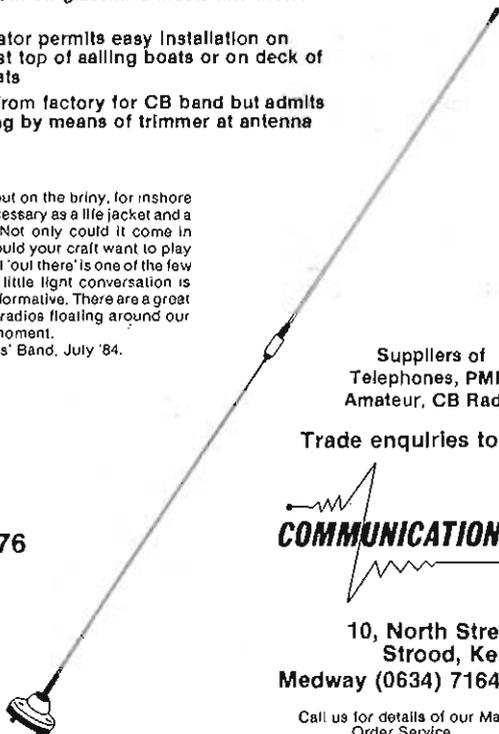
Trade enquiries to:



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Medway (0634) 716422

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£29.76



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G.A.P. Lofty..... £19.95
G.A.P. Skybreaker 11..... £21.95
G.A.P. Avenger 11..... £21.45
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Convert your Avenger, Lofty or Skybreaker to Mark 11 centre loaded Model. Kits available:

Lofty and Skybreaker kit which will also convert the Thunderpole I and III and the Channel Star..... £10.95
Avenger conversion kit..... £12.95
Kits comprise top element, centre coil and mount.

For further details see full page advertisement in this issue.

These prices include V.A.T. Please add £1.15 for postage and packing. All cheques and postal orders should be crossed and made payable to:

Gamma Aerial Products Ltd.

Gamma Aerial Products

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Phone your Access No for
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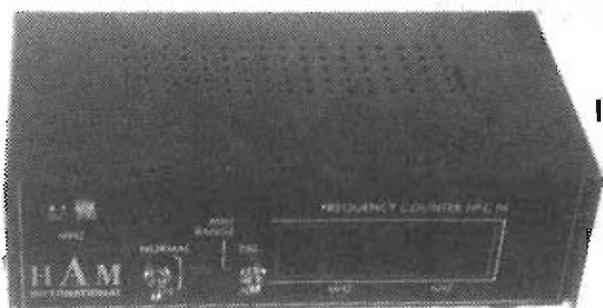
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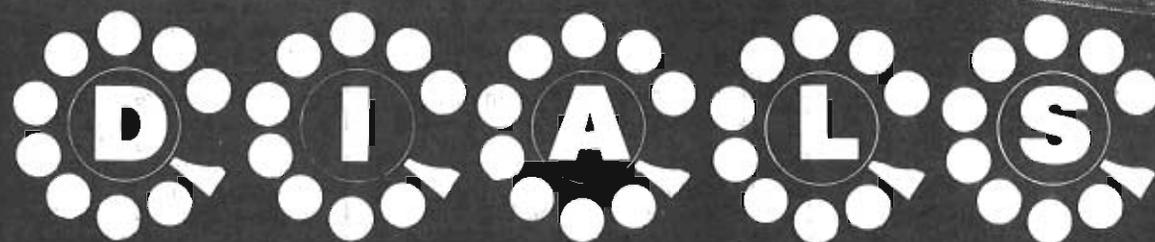
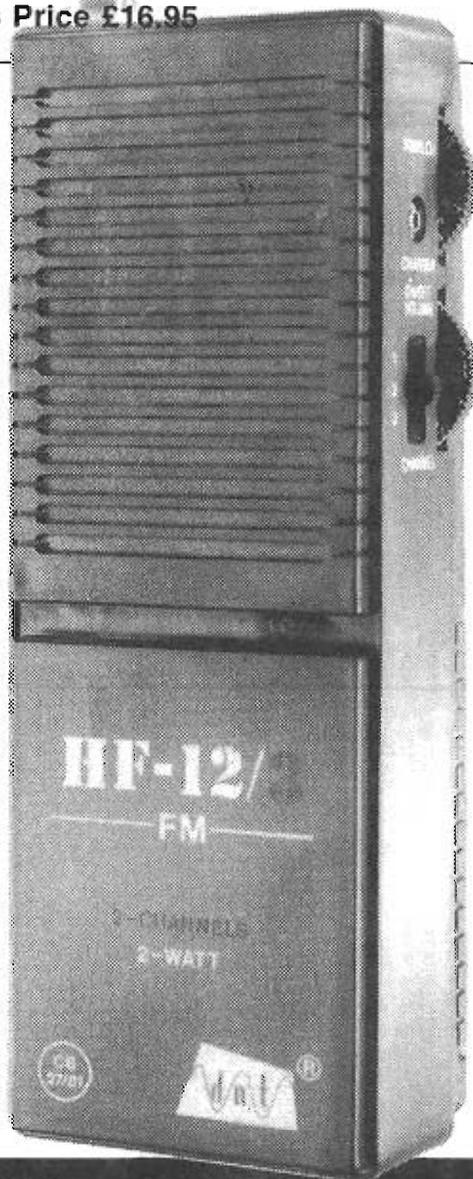
DIALS Special Xmas Price £99.50

**KATSUMI
M. C. 902
Speech
Processor**



The Katsumi 902 is the most sophisticated Speech Processor available. It enables the user to modulate the carrier of the Emitter in the most ideal way thus increasing the AM/FM Modulation Level to 40% and the S.S.B. Mode up to 100%. The Katsumi can be used with all kinds of transceivers and is a must for any D.X. Communication Fan.

DIALS Special Xmas Price £99.75



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Trade Enquiries Welcome



Another selection of news and views from our postbag

Sensible CB

Ed Barry of Woodford CB Centre is optimistic about the future of CB radio...

This is the first time I have written to the magazine although we have been selling it for over three years, and I am glad to see it still exists. I am just writing to say that I am also sick of people saying that CB is "washed up" or "never really caught on" etc etc. Before that, it was "10-4 good buddy" and "rubber duck" etc. If it was not for these people, and the sort of publicity the media gave CB when it started, CB radio would be much more acceptable to the general public and much more popular among ordinary people. After all, it is these ordinary people who are now starting to take an interest in a short range communication system that CB was (and still is) ideal for.

This year, for example, I have sold more radios to more lorry drivers, caravanners, reps and ordinary motorists than ever before. Hardly any have been bought by non-adults. That does not mean I am selling more sets, but does mean that the sets I sell will be used more sensibly. I do believe that I have noticed an improvement over the last six months. Although a lot of customers disagree, most of them were not around at the beginning.

I am hoping this trend will continue, as once the word gets out that CB works, we may have another boom on our hands, except this time it will be much more respectable (please don't tell any get-rich-quick merchants, otherwise all the shops with "CB" names will open up again).

One more thing before I shut up for another three years is that I must comment on your article about the new Telecoms Act.

I was busted by the Customs just over a year ago for "Possession of illegally imported CB radios". Some of these did not even transmit as they were in for repair to outputs which had

blown. Any radios, even VAT-paid ones which transmit, come under the CONTROL OF MANUFACTURE AND IMPORTATION ORDER 1982 MADE UNDER THE WIRELESS TELEGRAPHY ACT 1967. This is enforced by the Customs and Excise Management Act which states that it is illegal to keep any goods on which there is a prohibition order on the importation of such goods. You will find that this prohibition has been put into the Wireless Telegraphy Act 1967 (Amended 1982 to cover CB radios). I found this out to my cost, so it is in fact illegal to possess AM sets now — and has been since 1982.

It would appear then that the only difference now is that the RIS can bust people without being accompanied by a Customs man. This, of course, raises powers of entry problems, but that is another kettle of fish.

I hope this letter gets a few points across. Keep printing the magazine. We will stay as long as you do.

Horizontal Hold

Andy Emmerson (G9BUP) of Northampton offers some thoughts about polarisation...

I enjoyed reading Dave Hughes' "Confessions of a UHFanatic" (November issue) — there is not enough coverage of 934 MHz. I agree with much he says, though I thought the bit about starch in ham radio shows that he doesn't listen on the right bands!

On aerial polarisation, it may well be that interference is vertically polarised but there is little chance of detecting any QRM at 32cm. Also, conclusive tests show there is no advantage in either vertical or horizontal polarisation above 300MHz — only in circular polarisation. Therefore, while activity is still at current levels, I would advocate sticking to vertical — you stand more

chance of making new contacts that way!

I too have had a Reftec set for about the same length of time, though I have not made so many contacts. This is due in part to the poor receive performance of the Reftec, which uses a cheap VHF(I) transistor in its front end. However, I have fitted a Telecomms' Nevada masthead pre-amp. The price is high but it is fantastic — it brings the Reftec set to life. As soon as I fitted it, I heard a QSO which was totally inaudible without the pre-amp. The Reftec's performance is better on transmit than receive, so it is worth fitting this accessory.

PS. I support channel 10 for calling and agree that something must be done to rationalise call signs — mine was allocated for me as a Test and Development licence.

A Worthy Cause

Gummy, a most charitable breaker from Chesham, has a good suggestion for putting illegal sets to good use...

As an avid reader of CB every month, I would like to make a suggestion through your Back Chat column in connection with Guy Nicholletta, the French journalist, whose article you published in your October issue.

There must be lots of AM sets in this country which will soon be illegal, whereas it is legal in France to own these sets so, if these sets could be passed on to a French club and raffled off, they could help a worthy charity. I support the Spastics Society of Great Britain and I am sure there must be some French breakers who would like to help others.

So, if Guy Nicholletta would like to get in touch with me, I will start the ball rolling with my old AM set. He can reach me at 55 Upper Belmont Road, Chesham, Buckinghamshire.

Pick a Window

J.A. Taylor of Preston has a few novel ideas for channel changers...

I welcome the new column by Gismo, our HGV friend. The honeymoon period is over for CB and it is now time for CBers to settle down, accepting that there will always be people who do not have, and have no intention of, buying a licence. The 'what do we get for our money' controversy will continue. There will always be the ones who used AM and fought so hard for the government to legalise CB. We have a lot to thank them for; for their persistence and determination. They will continue to remind us of their efforts. They brought from AM the banal jargon devised to confuse the 'Busby' which, in reality, would not confuse even a retarded chimpanzee — for long, at any rate. I dread the 'Dukes of Hazzard' returning to our TV screens because it always brings an upsurge of people wishing to emulate their antics. And we are stuck with the bucketmouths (sorry, there I go with

the jargon), mike-keyers and music players.

Well, I can hear those who read aloud say, what point are you trying to make? CB is fantastic, and the problems can be easily solved — well, some of them. We seem to suffer from tunnel vision. Maybe we do need more channels but, before that, let's make the ones we have work better for us all. The CB Code of Practice — obtainable where Giro cheques are cashed — recommends, among other things, that channels 9, 14 and 19 be used as Emergency, General and Mobile channels respectively. Happily, 9 is respected for the most part, 14 serves its purpose, but 19 seems to be the most misunderstood — but is potentially the most beneficial. The United Kingdom is a densely-populated little island, and channel 19 is very congested — with Shepherds caster mobiles, bored housewives (who equate with World War II's Tokio Rose — God knows when they do any housework) and HGV drivers travelling together, character-assassinating the boss or discussing mundane matters to the complete and utter boredom of an unwilling audience of 300 - 400 mobiles.

I spend most of my working day in my car, and cover an area of North Lancashire, half of the Lake District and half the Yorkshire Dales. Tuned to 19, I occasionally benefit from deciphering a wally-jargon message put out on the channel but, for 90% of the time, I suffer rubbish.

Is the time now with us when we could better utilise all 40 channels? If aircraft were to fly mostly at 9,000, 14,000 and 19,000 feet, it would be chaos up there, and very dangerous.

Idea 1: There must be many mobiles, realising the value of such a reasonably priced communications system, who like to have one aboard but who prefer intelligent silence and intelligent conversation (if necessary). The simplest answer is to tune to the channel corresponding to the *date* except, of course, the 9th, 14th and 19th of the month when channels 32, 33 and 34 could be used. The traditionalists would stick to the channels now so popular, and I would be happy to leave the tipper drivers behind and others who did not adopt the new system. Local breakers would avoid the date-channel that day and the mobiles preferring silence for the most part and intelligent, jargon-free, accurate information the rest of the

time would then have it. It's well worth a try. A new era of CB could be opened up.

Idea 2: A little more complicated. Having a long stretch of motorway running through the country, it would make more sense for traffic information to be given out by mobiles with recent, accurate knowledge of the situation rather than 10-13s constantly being called for. Work on the assumption that 'no news is good news' and, since bad news travels fast, anything adverse would be known very quickly. Not many can keep a secret. Also, and this is the clever bit, when travelling northbound tune to the channel corresponding to the junction *just departed*. Travelling southbound, tune to the *next* junction number. For example, travelling from junction 32 to 33 northbound — tune to 32 and, in the opposite direction, tune to 32. This would mean all traffic between junctions would be on the same channel and therefore any information directly affects only that section. When a junction is passed, all that would be necessary would be to go up or down a channel, depending on whether travelling north or south.

Combine both ideas and, if Easter falls on 31st March one year, the result at Samlesbury on the M6 could be no worse than any day on 19! It couldn't possibly be any worse. I offer both ideas in an effort to get away from CBers who are a nuisance to all, and yet we can derive full benefit from what can only be described as a fantastic communications system. The fact that the date/channel system and the motorway junction/channels system requires some thought would leave a lot behind, and isn't that what most of us want? Engage brain before operating mouth.

Who knows? It could be something for your magazine to latch onto. Maybe a pull-out supplement and/or a car sticker 'DATE/CHANNEL OPERATOR' which would enable other mobiles to recognise another as a non-19 mobile. Those in doubt as to what it's all about would perhaps buy the magazine to become enlightened!

PS East-west motorway users would have to make their own arrangements!

A few inventive ideas there. What do other readers think? Would it bamboozle the wallies? Write in and let us know.

Could J A Taylor's ideas revolutionise our channels?



for an AM system. Write to The Secretary, Natcolcibar, 430 Westwood, Windmill Hill, Runcorn, Cheshire WA7 6LL. They are coordinating the campaign and will be able to give you more details and information on local clubs involved in the campaign.

As far as I am aware, any AM equipment still being imported tends to be of the multimode type rather than walkie talkies.

Automatic Squelch

Up in Crewe, Peter Telford, known occasionally as Badger, brings us an interesting receiver problem.

Q Until recently I have been using a Telecomm TC9000 mobile rig as part of my base station. However, it has an annoying fault which seems to get worse with time. The effect is like turning the squelch up slowly, so that after about three or four hours of use I have lost my long distance copies. I am able to see when the signal meter moves but am unable to hear any breaker whose signal is weaker than the noise from the unwanted "automatic" squelch.

I have now put the Telecomm rig into my car, though I would prefer to use it in the house because it has an extremely good transmitter. I now use a different rig in the house without any problems.

A Peter, your problem is a very easy one to diagnose and cure. It would appear that the receiver part of your rig is slightly out of alignment, so that the incoming signal is perfectly audible whilst the set is relatively cool but as it gets up to the more normal working temperatures it tends to drift slightly off frequency. The most likely cure is some slight adjustment to the intermediate frequency (IF) stages of the receiver, though I do not recommend that you attempt to do this yourself unless you have considerable experience of working with radios. You should take the rig to a competent radio engineer and explain the problem to him in the same way that you have explained it to me and he will make the necessary adjustments, which are not very complex and should not cost a great deal.

Preaching to the converted?

T.S. (no names, no pack drill) from Wigan wants to have his cake and eat it.

Q I have a Cobra 2000GTL, with frequency range from 26.51MHz to 27.855MHz and all modes, including AM, SSB and FM. Can the authorities confiscate the radio without actually catching me using it? Could I have the UK FM forty channels fitted to the radio without losing any of my original frequencies

or modes and if so, would this make it legal? Or would the rig still be liable to seizure?

A To make your radio legal, T.S., would probably cost more than the price of a new legal rig. Only by disabling the AM and SSB modes and restricting the frequency range to either that specified by MPT 1320 (27.60125MHz to 27.99125MHz) or, once it has been officially adopted, CEPT TR20-02 (26.965MHz to 27.405MHz) will the rig become legal. Until recently, only HM Customs and Excise had the right to confiscate your rig without the direct authority of a court but the Telecommunications Act (1984) changed all that. Under the terms of the new Act it will be illegal to own any transmitter prohibited on the grounds that it might cause interference and, since unlicensable CB sets will almost certainly be classified in this way, your set will automatically become liable to seizure for use as evidence in any possible prosecution, though it will be necessary for the authorities to apply to a magistrate for its permanent confiscation.

In short, T.S., about the only way I know to make your rig legal for sure is to drive a thirty-eight ton truck over it.

The problems of power

Mr S.R. Chilvers of Thetford has been making some peculiar noises ever since he acquired a power amplifier.

Q Since I acquired a linear amplifier, about six months ago, other breakers have complained of a humming noise over my transmissions. I have tried many ways of getting rid of the noise but so far without success. Please can you solve my problem?

A It sounds as though you are overloading your power supply. Mr.

Mr Chilvers may be overloading his power supply by using to run an amplifier and a rig.

Chilvers. The commonly available 5 and 7 amp p.s.u.s are fine for an ordinary rig developing only about 7 watts but something far more substantial is required when power is increased. By asking the p.s.u. to draw more current than it was designed for, you cause a large drop in the working voltage, which puts a heavy strain on the transistors in the rig and results in the humming noise complained of.

More SWR problems

R. Andrews of Norwich raises a query which I have not heard since long before legalisation.

Q I have a top-loaded "disguised" CB antenna which is connected to both my rig and a broadcast receiver by means of a splitter box. The splitter has an adjusting screw which doesn't seem to make much difference. Please can you tell me how I can get the SWR down to below 2.0 to 1?

A Dual frequency antennas were very popular in the days when it was not advisable to let all and sundry know that you were a breaker but they were never very efficient and I thought they had left the scene for ever. The adjusting screw to which you refer is actually a variable capacitor of very limited range and one way to improve the SWR might be to replace it with one suffering a wider variation, though I suspect that you will have difficulty in opening the splitter box.

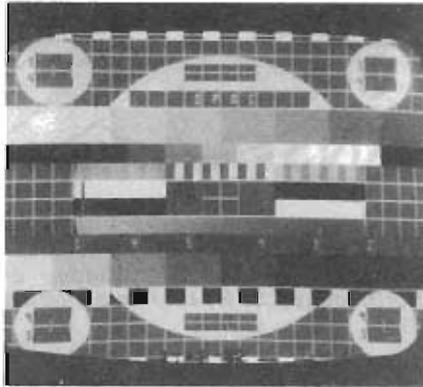
At best these antennas were a compromise, since they could not be tuned accurately for either CB or the broadcast bands and they were also inefficient because of the power losses caused by the coax joints and the splitter box. The best advice I can offer, Mr. Andrews, is to throw it away and buy an antenna designed specifically for 27MHz.



We've all seen Clive James' reports on foreign TV. Now we can see for ourselves. Roger Bunney tells us how.

We're all familiar with DX, the art of receiving signals over distances that are far in excess of the norm — in the summer it's the Scottish skip at 27 arriving in the South UK, or at 934 it's the signals during the fog over several hundreds of miles. Apart from DX in the CB bands there are enthusiasts exploiting the short wave bands, FM broadcast bands, amateur radio and even medium wave for the Stateside 'local' radio programmes in the winter nights.

There is also a growing band of TV-DX enthusiasts using relatively simple equipment and domestic TV aerials which during 'good' conditions, receive TV signals over hundreds and thousands of miles. This article will expand TV-DXing and, where possible, relate it to CB, describe the type of equipment and how, perhaps, a CBER



USSR channel R3 via Sporadic E in Holland.

would start in this demanding hobby. TV-DXing first started in the 1930s when 30-line test transmissions were being made from London using

medium wave transmitters with reception over several hundred miles, albeit of indifferent quality. Little is known of any distant reception once the all-electronic 405-line system started pre-war and immediately post-war, but with a growing BBC-TV network and receiver prices gradually falling, an increasing number of viewers became aware that distant reception was possible, particularly during the mid-summer months when BBC-TV was regularly obliterated by Continental interference. The late 1950s first saw established TV-DX enthusiasts which grew in number during the early 1960s, helped in part by several magazine articles and a DX-TV Club. In the 1970s, more enthusiasts became active attracted by the relative ease of which distant signals could be received — unlike the 1960s where a 405-line receiver would need modification to the appropriate 625-line standard. At the



Russian satellite 'Ekran' at 99° E transmits on ch 51 UHF to northern Russia/Siberia.



USSR TV 1st programme chain

SMALL SC

present time several magazines run DX-TV columns, equipment and aerials specifically for DXing are available from companies specialising in this field, and enthusiasts can usually be located in a given area for advice and assistance.

As TV viewers will be aware there are usually four channels available in a given UK area although, in the fringes, signals from an alternate channel group may be available. The viewer in the latter situation will have noticed that signal quality varies daily, fading with possibly interference from other transmitters present (co-channel interference). What is important however is that, at certain times, the weak signals rise to become of excellent quality, subject perhaps to high levels of interference and with signals from other transmitters occupying previously vacant channels. It's at these times that the 934 operator will hear distant breakers, perhaps several hundred miles distant.

The UK channel groupings are at UHF and, as such, will be affected directly by the prevailing weather situation. The predominant characteristic to look for is a stable *high pressure* system (anti-cyclone), either very slow-moving or stationary over the UK or Central Europe. This

type of weather will produce clear skies, warm days and a rapid cooling down at night. The air cools more rapidly than the earth's mass (storage heater effect) and a temperature inversion occurs (i.e. a form of temperature boundary is formed above the earth's surface) which allows VHF and UHF signals to be refracted over distances much greater than is normal and planned. A reverse effect occurs in the morning when the sun rises and heats the air which warms at a rate greater than the earth's mass which has by this time cooled down.

Fog may form which is a further sign of good signal reception during high pressure. An associated effect is *ducting* in which a trough or upper air boundary section forms and allows signals entering it to be 'channelled' over many hundreds of miles, emerging at a distant point with minimal transmission loss. Interesting to note that this often happens with the East German Brocken transmitter which is sited atop a mountain. Its signals are received in the UK with relative ease during this weather condition though transmitters sited on the same channel, but closer, are not seen — the duct passes over them!

The above types of reception are directly related to the weather. The

weather 'happens' in that part of the atmosphere between the earth's surface, rising to about 25,000 feet. This region is known as the *troposphere* and signal reception as *tropospheric propagation* (often abbreviated to 'trops' in DXing circles). Varying conditions in this region will affect 27MHz only slightly but will dramatically affect 934MHz — so watch the BBC-TV weather maps!

Good Trop conditions will directly affect UHF channels 21-68 (470-860MHz), Band 3 channels E5-12 (175-230MHz) — this is the elderly 405-line ITV band, and to a lesser extent Band 1 channels E2-4 (48-68MHz) — this is part of the BBC 405-line band. How to receive channels at VHF will be covered later. Trop signals tend to have slow fading and can be received to 1,000 miles or more.

CB comes alive at 27MHz during the summer months with skip over 400-plus miles. Band 1 TV comes alive with signals ranging to 1,500 miles distant and, if you're very lucky with double skip, perhaps 3,000-plus miles. You'd also receive these distances at 27 if African countries used our CB allocation! What's skip? High above the earth's surface is the ionosphere comprising electron layers, there's the D, E, F1 and F2 layers. All have different characteristics and you can

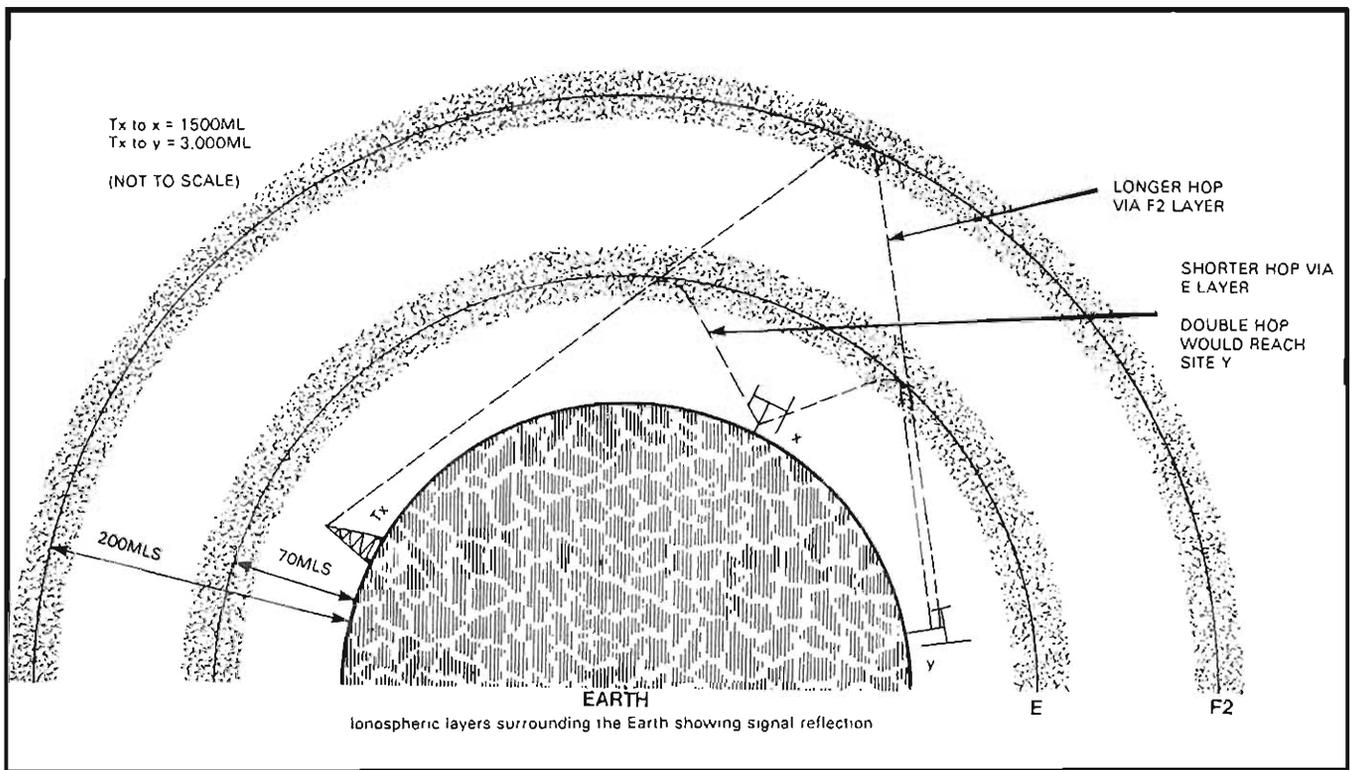


East German TV 2nd programme close-down



Syrian TV showing a sub-titled episode of Dallas!

GREEN SKIP



read about these in a Short Wave radio book (or try the RSGB 'Radio Communication Handbook'). What interests us is the E layer about 70 miles high during the daytime in summer. Normally, Short Wave signals and TV Band 1 signals (not forgetting 27MHz) pass straight through this layer. Medium Wave signals don't get this far, being absorbed in a lower D Layer at daytime — at night this D layer disperses and the E layer then reflects Medium Wave back to Earth and we then hear Radio Cairo or Radio Luxembourg! During the summer months and occasionally mid-winter the E layer becomes densely ionised and reflective to Short Wave and VHF signals. The ionisation isn't a blanket coverage — usually it's in patches which can move. These patches reflect back to earth Short Wave and low VHF signals not unlike the night-time Medium Wave coverage, although the minimum distance for VHF skip is around 450 miles.

We all know what 27 is like during one of these E Layer openings; lots of signals phasing in and out, co-channel interference and so on. The received signals are very strong at times, the same happens for TV in Band 1. It's possible to receive TV signals from, say, Spain for five minutes or five hours. E Layer openings are erratic, and difficult to forecast. Each one is different and can just 'switch off' in a minute or two. We call them *Sporadic E openings*, or in the TV-DXing trade *SpE*. Signal reception can be dramatic with the Middle East and the USSR at times being received in the UK with relatively simple equipment.

Multiple Skip can occur with double or even triple hop signals, taking a possible reception zone down

to Nigeria/Ghana or into the eastern USA/Canadian States. In the 1984 Sporadic E season, Canadian stations were received and identified on several occasions. To the east, Iran on ch.E2 was received as the furthest Arabic source, this latter reception near Norwich. Signal quality is variable, it can be excellent, can suffer severe ghosting (multiple imaging) or range in strength from very strong to weak with severe fading in but a few seconds. Sporadic E is unpredictable, uncertain and sporadic (as its name suggests) but is certainly exciting! We know that SpE occurs during the mid-May to early September period with an occasional opening during late December/early January — though odd openings can happen throughout the year. Due to the high strength of signals, relatively simple aeri-als can be used at low heights and it's the ideal introduction to TV-DXing. Channels that Sporadic E can affect are Band 1, extending in 'good openings' to Band 2 FM radio (ie 88-108MHz) but very rarely to higher frequencies. If 27MHz opens up, then there's every chance that Band 1 TV will follow soon after.

It's worth mentioning *F2 layer propagation* since, at the peak of the 11-year Solar Cycle when sunspot activity is high, TV-DX can occur over really long distances. The peak that has passed in the present cycle here in the UK produced regular (daily) distant USSR (+8 hours GMT); Middle East; USA and Canada, Australia on several occasions (the author received channel 1 New Zealand on one occasion!), and African signals (particularly Zimbabwe) were common. Unfortunately the quality of the pictures was appalling due to the multiple imaging. The F2 Layer is

about 200 miles above the earth's surface. The height varies between day and night (it merges with the F1 layer at night) has seasonal variations, and its electron density varies according to the Solar 11-year cycle and sunspot activity. The last peak was very high, so the electron density during the daytime was high and the Maximum Usable Frequency (MUF) rose to the low VHF bands — hence, real TV-DX! The last peak, and years immediately adjacent, were excellent for very long periods of North American CB on the FCC AM channels, as it was easy to work the States with a car-mounted loaded whip!

Now that sunspot activity is falling, so the MUF falls and low VHF and the higher Short Wave bands (and 27MHz) are less active. Best F2/MUF propagation occurs when the sun is midway between the receive and transmit sites. The night-time propagation is very poor. Winter-time is more active than summer for F2 activity with high signal levels but poor picture quality. When the sun sets, the F2 layer 'breaks up' and diffuses. At this time on north/south paths, it's possible to receive a scattered form of signal reflection at frequencies higher than the F2 daytime. This phenomena occurs over the equator and is known as Trans-Equatorial Skip (TE for short) and is most common at high sunspot periods.

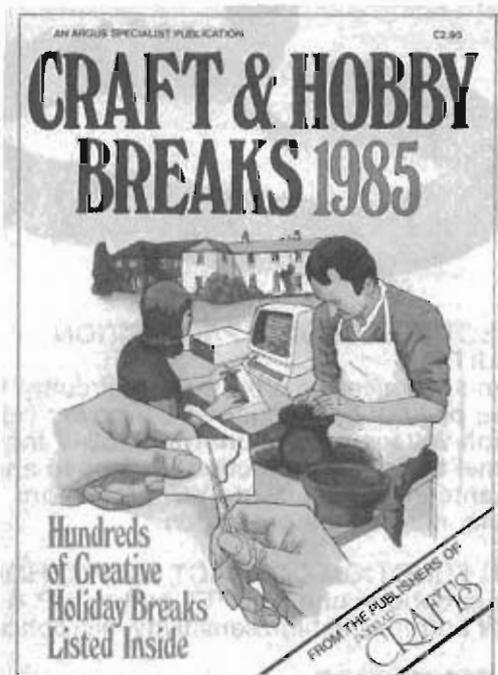
So, Tropospheric, Sporadic E and F2 layer propagation are those that mainly affect TV-DXing, 27MHz and 934MHz. I won't mention the more upmarket forms of propagation such as Auroral, Meteor Scatter, Lightning Scatter and the man-made Aircraft Scatter in this basic article.

Next month: Aerials and equipment.

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Filly gives some concrete evidence

Yes, it's finally happened. Civilisation has finally found its way to our little backwater here in the depths of the home counties. The local wildlife is diving for cover. The birds are on the wing. The local conservationists are on the march, and the local breakers are arming for war.

The superslab has arrived.

We've been watching the building of the monster for almost two years now. The sheer destructiveness of its Sinister machines cutting swathes through the farmland, the woodland, the hedgerows. Acres of mud and concrete girders. Local routes opened, closed and diverted at the seeming whim of a fickle, all-powerful and faceless mandarin.

LADY BREAKERS

Yes, we know it's needed to relieve pressure on the existing trunk roads. We've been assured the monster has been so cleverly landscaped we won't see so much as an exhaust fume, hear so much as a squeaky brake. We are perfectly well aware that we can consider ourselves lucky to have avoided being flattened in its remorseless path in the name of progress. But it all does nothing to relieve the chill running up the spine as Opening Day approaches...

It's been quite an education listening to the local chat on the airwaves whenever someone brings the monster into the conversation. The women's feelings, for example, are mixed. Honeybunch and her ilk display suppressed excitement, presumably at the thought of all those he-men who'll be roaring down the new motorway. Others, like Penelope (the librarian) and Mrs Peach (the grocer's wife) seem to fear above all the (assumed) increase in bad language. But on the whole, you might say the female breakers feel the advent of the superslab is a Good Thing, mostly because of the new voices and the increased conversational possibilities the road is likely to bring.

But the men are something else again. It took me some time to work out just why the men were almost unanimously hostile to the slab. Asked straight out what they expected, most of them were shifty, but I gathered that they were principally dubious about the influx of truckers on to the airwaves.

So what's so bad about the truckers, I asked. I have nothing against truckers. I'd take any one of them to tea with the vicar any day, and there is no one like a trucker for getting rid of a bucketmouth in five seconds flat. Did they fear competition for the women's favours?

They laughed hastily at that. What, they said, had they to fear from truckers who could have no possible interest in chatting up boring country women who could only think about knitting and nappies?

I know when I'm being provoked, so I let that pass. OK, I said, so why do I get the impression the local male breakers are gearing themselves up to their own personal D-Day? And finally, Channel 19 crept into the conversation.

All became clear. They were worried that the motorway users

would impose their own restrictions on channel usage in our previously free and easy neighbourhood. The truck drivers were bound to insist on hogging some local favourite, probably Channel 19, for their own use.

I chewed it over. I had to agree they were probably right — in a lot of areas, 19 is reserved for motorway users or truckers. We had never had any need for such a restriction. But there again, as I pointed out, 19 had never been a particularly favoured call-up channel hereabouts. Why not opt for a quiet life and leave 19 to the new motorway?

That's simplistic, they said. Typical woman's answer to a complex problem. No understanding of the realities. By which they meant that it wasn't so much the question of who should use Channel 19 as who had the right to tell who which channel to use and which not to use.

I did some more chewing over. Did they mean, then, that they were hostile to the idea of out-of-town heavies laying down the law on use of our channels? (They are unshakeably convinced, I'm afraid, that all the airwaves to a radius of four miles are 'ours', and strangers are at best tolerated.)

That's right, said Dynamo of the local garage belligerently, adding that they could see what they would get if they tried to enforce any Fascist ideas like that. "It's a free country", he said pompously, "and we can use any channel we like at any time. We've paid the licence. No wide-boy's going to impose any rules on us!"

I began to feel alarmed. Were we heading for some kind of Holocaust of the Airwaves? Gunfight at the Junction 6 Turn-off?

I made the obvious move, of course. I pointed out that exactly the same arguments had been put forward in the past by morons (Dynamo's own term) who had insisted on their right to use Channel 9 at will. The morons had been vanquished by the same sensible reasoning and pure logic I was now employing. A case could be made (I made it) for a similar restriction on use of 19, which we had never used much anyway. Grudgingly, they saw the point.

Well, it's now D-Day minus three. In 72 hours' time, the monster will be opened and the hordes will sweep across our cherished countryside. Let's hope the invasion will be bloodless...



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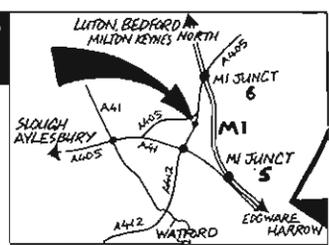
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XMAS OPENING HOURS — WE CLOSE FOR THE HOLIDAY 6.00 p.m. SATURDAY THE 22nd. OPEN AGAIN FOR OUR END OF YEAR SALE 9.00 a.m. THURSDAY 27th. OPEN FRIDAY 28th & SATURDAY 29th. CLOSED THEN UNTIL WEDNESDAY, JANUARY 2nd.

1. ONE HANDER AUDIOLINE 342
£58.50

The greatest security CB ever - you just unplug it and take it with you! Slim calculator-style hand unit has all the control features - LED Display, Up/Down Scan, Volume, Squelch, Hi-Low Power, Channel Lock-on Switch, Tone Control and Internal Speaker plus of course the usual excellent Uniden Circuitry which gives crisp, clear copies. The compact power box which leads the hand unit stays away out of sight under your seat or in the glove or dash. Beat the car thieves and still enjoy excellent CB performance. £58.50

2. DNT B40FM 40 CHANNEL BASE STATION
£57.50

Specification as for M40FM mobile unit but this compact unit, 229x155x64mm, is mains operational, complete with its own built in transformer. It is also upgraded with a crystal filter and has excellent image and adjacent channel rejection. Its size, performance and highly tunable PLL have already made it one of our best selling units. A quality base station at an unbeatable price.

ITEMS 5, 7, 12, 14, 15, 23, ARE SUPPLIED READY WIRED. QUOTE YOUR CB MAKE & MODEL WHEN ORDERING.

4. UNIACE 300 BASE STATION
£142.00

Whilst maybe not as flashy as some of the Base Units now long discontinued (the one's with an egg timer and built in teasmid!), this one's still around and in greater demand than ever. Without a doubt the finest Base Station made for the UK market it features Volume, Squelch, Tone Control, PA facility, 240 or 13.8 volt power feed, variable power and gain, but the crunch is in its excellent circuitry and filtering which kills bleedover and cross-mod without being deaf. Treat yourself to the ultimate. £142.00

3. AUDIOLINE 340
£46.00

This compact mobile Uniden Boarded Unit quite rightly enjoys a first class reputation. Features Volume, Squelch, Hi-Low Tone Control and variable power switch. Generally accepted as being one of the finest, most reliable units on the market with superior bleedover rejection the 340 has to be top of the list when choosing a mobile. £46.00

5. ES-880 ECHO BOX
£42.50

The most powerful echo unit available! Top quality Japanese unit features include LED level indicator for maximum performance, earpiece so you can check your speech quality. If you want to upgrade your 'talk power' don't miss the ultimate DX unit! Supplied ready wired. (Please quote your CB make and model when ordering).

6. MAXCDM 7E
£49.95

A really versatile hand held 40 channel 4 watt unit, complete with its own carrying case it can work off either its own 12v power load from a car cigar lighter or from standard or rechargeable 1.5v batteries (not supplied). Its telescopic antenna detaches to fit onto its own magnetic base for mobile use. Ideal for any form of outdoor activities, emergency mobile use and can be quickly and easily swapped between vehicles.

7. BREMI ROBOT VOICE
£27.00

Gives a variety of Robot 'Metal Mickey' voice effects. Requires 12 volt power feed, comes ready wired for your rig (quote CB make and model).

8. DNT M40FM RADIO
£36.50

This legal 40 channel mobile unit is also operational anywhere in the 26-28 MHz band with modification and can also recrystal for 10 metres! Features include 3 stage ceramic filter with adjacent channel rejection of 80db, channel freq indicator, DX-local switch and attenuator. Its compact size 165x155x50mm and versatile PLL chip make this a very attractive unit at a moderate price.

12. OM510 POWER MIKE
£9.50

A moderately priced hand held dynamic microphone to boost up quiet modulation featuring a rotary power control. Comes ready wired for your CB and complete with 1.5v battery. (Please quote your CB make and model when ordering).

13. BREMI SWR-POWER METER BRG22
£31.00

Gives SWR range from 3:1-50 MHz and 3 stages of power readings 0.10, 0.100, 0.1 kilowatt in the 26-30 MHz frequency range.

14. ASTATIC TEARDROP
£38.00

It's all been said about this USA manufactured mike. Without a doubt the finest mobile power microphone available for the cleanest sharpest modulation ever. Suitable for FM or SSB. Supplied with battery and ready wired (quote CB make and model).

15. ASTATIC SILVER EAGLE
£68.00

The base station equivalent of the Teardrop is undoubtedly the most efficient home base mike you'll ever use. We guarantee devastating DX modulation! All chrome finish with the distinctive Eagle engraved head. USA made and complete with battery and ready wired (quote CB make and model).

20. RP20 PREAMPLIFIER
£9.50

Boosts up to 20db on incoming signals. Its small metal case 80x45x55mm make this ideal for mobile DX. Features on/off through switch, requires 12v source for power. Excellent value.

21. BREMI MATCHER BRL 15
£7.95

This good quality unit is useful for safeguarding high SWR problems and has a power handling capacity of 100 watts. £7.95

22. BREMI LINEAR BRL40
£41.00

70 watt linear requires CB input of 5 watts. On/Off switch and AM-FM-SSB selection. (Ensure SWR is better than 1.5:1 before insertion).

23. REPLACEMENT MIKES
£7.50

Two first class replacement mikes which are supplied ready wired (please state CB make and model). The Aikai 'Coffin' mikes is the standard replacement model for York, Rota, Audioline, Uniden etc. but can be wired for any radio. The Japanese made A01 gives extremely clear, sharp speech and is especially recommended for curing 'woolly' or bassy problems on your modulation. £7.50

25. ALTAI MONO-STEREO HEADPHONES
£7.95

Good quality 'phones with padded earpieces and headband. Earpieces have a useful volume control on each side and a mono-stereo switch. Fitted with a large base station type 6.35mm jack but supplied with the more common 3.5mm adaptor so you can use for CB and Hi-Fi without chopping off plugs! £7.95

26. HANDHELD ACCESSORIES
£6.95
£1.15 each
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(Suitable for Maxcom 7E and all other types of handheld). a) Rubber duck. This replaces most telescopic hand held antennas by either slotting over existing antenna base or by screwing in directly to antenna stud. b) Rechargeable AA 1.25 volt Nicads - top brands (Fuji, Sunrise, Hirsch according to stock) c) Nicad charger plugs (direct between mains and hand held, suitable for Alba, Hanvard, Maxcom etc. State make and model when ordering).

27. BREMI BRL 210 MAINS LINEAR
£76.00

Gives 100 watts F1AM 200 watts SSB with power input of upto 10 watts or 20 SSB. Frequency range of 26-30 mhz, power and modulation meters and stand by facility. £76.00

28. FUNKMASTER EXTENSION SPEAKER
£11.50

Despite its price we sell more of this high quality speaker than any of the others. Features a noise suppressor switch, fully rotatable mounting and a high clarity loudspeaker with strong magnet, complete with plug and cable. Hearing is believing!

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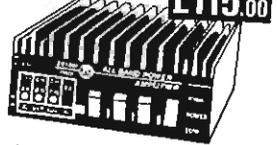
* IF YOU HAVE DIFFICULTY OBTAINING RADIOS LOCALLY, AT TIME OF GOING TO PRESS WE HAVE SUBSTANTIAL STOCKS OF THE FOLLOWING (THESE PRICES INCLUDE POST AND PACKING) SAPHIRE 4000X £48.00; UNIJACE 100 £52.00; UNIJACE 200 £72.00; MIOLANO 2001 £31.00; GRANDSTAND BLUEBIRD £36.00; FIDELITY 2001 £38.00; FIDELITY BASE £74.00; ICOM 1050 (LUCAS MODEL - TUNABLE) £46.00; DNT MOBILE M40 £36.50.

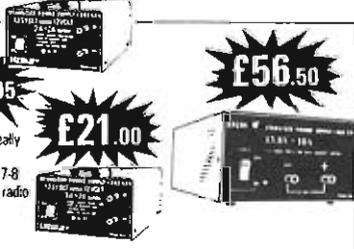
9. TRC-175 7 VOLT BATTERY £2.95

 The one no one ever seems to have in stock when your Turner or Cobra mike battery is on its last legs. We've got it! £2.95

10. DIGITAL FREQUENCY METER BREMI BR18150 £48.00

 Gives six digit display, requires 12 volt power source, frequency range 10-150 Mhz, Power handling upto 100 watts, excellent value at £48

16. ZETAGI B300 PS MOBILE LINEAR £115.00

 Gives six stage power output upto 250 watts FM with a power input of upto 10 watts plus a built in pre-amp, excellent Linears which we've found extremely reliable. £115.00

11. BREMI POWER SUPPLIES £29.95 £56.50 £21.00

 Three fine P.S. Units from Bremi. The 5-7 amp really is 5 to 7 and will enable the use of a standard AM/FM radio plus small linear £21.00. The new 7-8 amp will power around a 100 watt linear or SSB radio plus small linear £28.95. The 10 amp unit is unmatched for quality and price at £56.50.

24. SWR 176 SWR-POWER-MATCHER £16.95

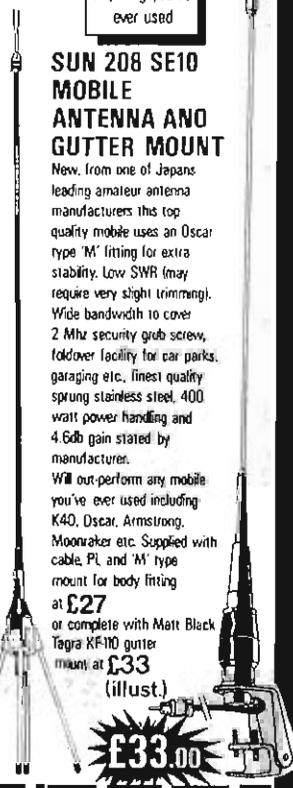
 Gives SWR readings for 28-30 mhz, power readings upto 50 watts plus a switchable antenna matcher. A first class piece of home base equipment at only £18.95. The 176 Model (not illustrated) gives a power reading upto 100 watts at £28.00. Please note each unit is tested and calibrated before despatch.

OVER 60 DIFFERENT ANTENNAS IN STOCK
17. MODULATOR EXPERT LEGAL HOME BASE ANTENNA £22.50

 1/2 wave dipole format utilising a 12" centre loaded coil makes this a tidy, well made and effective base station antenna.

18. AVANTI SIGMA 2 £49.95

 Every so often an Antenna comes along which by virtue of its quality and performance passes straight into the CB Hall of Fame, undoubtedly the Sigma 2 is one such Antenna (no one here is smart enough to make up such a statement so it must be true!) This is the one that has bred at least a dozen imitations but this is the original and we reckon its probably the best omni-directional ever made. Sadly, Avanti no longer manufacture but we've managed to turn up some old stock so get in quick.
5/8 WAVE COLINEAR
5.14 dB GAIN
TOP QUALITY PERFORMANCE

19. SUN 208 SE10 MOBILE ANTENNA AND GUTTER MOUNT £27

 Out-performs anything you've ever used
 New, from one of Japans leading amateur antenna manufacturers this top quality mobile uses an Oscar type 'M' fitting for extra stability. Low SWR (may require very slight trimming). Wide bandwidth to cover 2 Mhz security grub screw, foldover facility for car parks, garaging etc., finest quality sprung stainless steel, 400 watt power handling and 4.6db gain stated by manufacturer.
 Will out-perform any mobile you've ever used including K40, Oscar, Armstrong, Moonraker etc. Supplied with cable, PL and 'M' type mount for body fitting at £27 or complete with Matt Black Tagra KF-110 gutter mount at £33 (illus.)

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QTY	ITEM	£

29. LEMM MINI GP. £18.00

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C.B. magazine)

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Solway Pirates CB QSL Club

The Solway Pirates CB QSL Club has been in existence since November, 1983 and we have around 130 paid up members. Besides our DX and QSL activities we also provide functions and entertainment for members in the area and breakers on holiday in the district.

We hold two meetings every month. The first, a business meeting, takes place on the second Thursday, with a function on the fourth Thursday. Meetings are held in the Mayfield Hotel, Kircudbright and start at 7.30pm. At various times throughout the year we hold eyeball dances, which are well attended by both members and other breakers.

To become a life member send £6 if you live in the UK, or, from overseas, £7 in international money order and you will receive in return a personal unit number, membership certificate, ID card, 5 club QSL cards, 5 large DX certificates, 5 small DX certificates, 10 envelope seals, club pen, pin-on badge, car sticker, key fob and free membership for your XYL/M. A rubber stamp, club envelopes and a very attractive club log book are also available to members.

Dave, (ISP 002)
Solway Pirates CB QSL Club,
P.O. Box 15,
Castle Douglas,
DG7 1DL,
Scotland.

Weymouth Radio Group.

Could you please find some room in the magazine to give our new radio DX group a send off? We have only been in existence for a few weeks but already have 40 paid up members and have already received

our first enquiry from the West Indies.

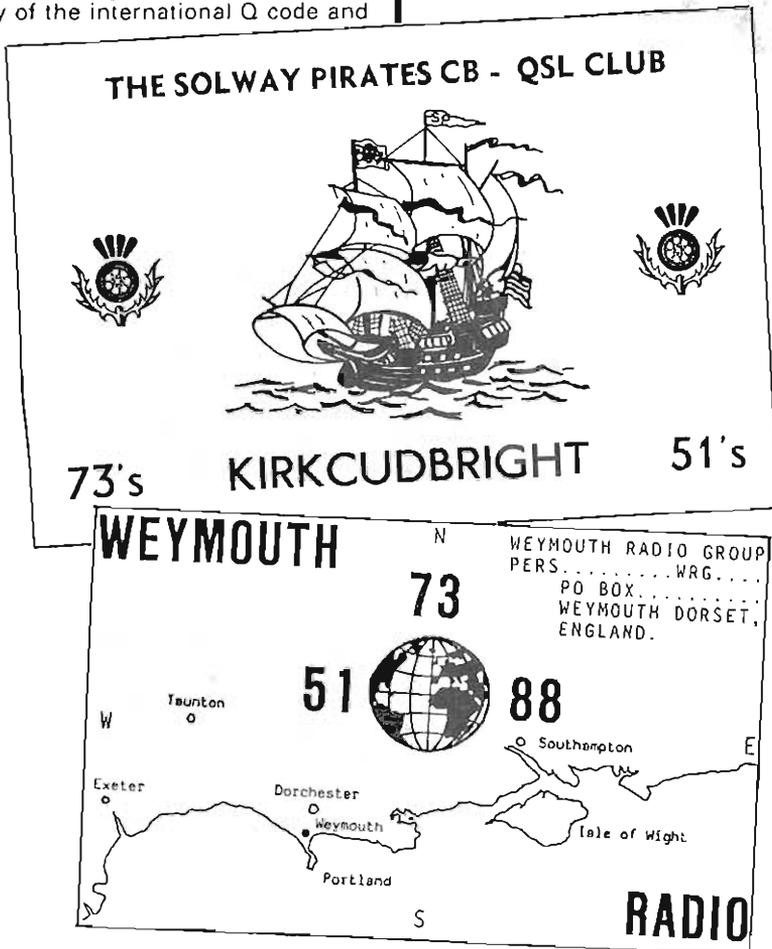
Membership applications have been coming in at a good rate. So much so that we now have a waiting list of 12 more stations wanting to join us, which should keep our committee busy for a while.

We are currently looking at the idea of a rubber stamp and hope to have an answer very soon. Until we do, our club package consists of a membership certificate, the unit number, five group QSL cards, a copy of the international Q code and

use of our P.O. Box in the UK, free for the first year. British life membership costs £3, with overseas stations being charged £1 extra, to cover increased postal costs.

Many thanks for a fine magazine. We look forward to many a QSO with your readers.

Mike, (WRG 01) President,
Weymouth Radio Group,
P.O. Box 18,
Weymouth,
Dorset.



CITIZENS' BAND CLUB DIRECTORY REGISTRATION FORM



CLUB NAME ()

CHAIRMAN ()

Secretary ()

PR Contact ()

Contact Address ()

..... (Tel No)

MEETING PLACE, DAY AND TIME ()

.....

No. of members ()

Position in club ()

Fee/sub etc (Committee members only please)

Please mark (*) information that may be published.



CLUB NEWS

More news from recently-formed and established clubs

Tango Charlie International

We would be grateful if you could give a little mention to our newly formed DX group. At the time of writing, we have already got 35 members and 18 international members in eight European countries; one of which is Poland. Not bad eh!

Membership to our group costs £2.00 and for this we issue a wall certificate, ID card and unit number. All other stationery is bought separately. Our aim is very simple — friendship and peace to all radio operators throughout the world through radio.

So far we have four divisions of our group. These are in Norway, America, Brazil and Switzerland. Each country has its own president and vice presidents.

We have been operational for only a month and things are going really well for us — lets hope it keeps up!

Mike, Jim and Brian,
Tango Charlie International,
P.O. Box. 21,
Omagh,
Co. Tyrone,
N. Ireland.
BT78 1AA.

Victory CB Garden Society

Victory CB Garden Society breakers' club is newly formed and already has 55 paid-up members whose ages range from 16 right through to retirement. We are also pleased to have a number of blind and disabled members.

Meetings are held every Friday at the Victory, Church St., Tovil, Maidstone, starting at 7.30pm. Membership costs £1 per year, with a 10p admission charge to meetings, though children under six are admitted free.

We welcome new members, especially the disabled and anyone wishing to know more should write to:

S. Young,
Secretary,
75, Worcester Rd.,
Maidstone,
Kent.

Three Counties CB Breakers Club

Please may we use Club News to advise old friends and members that our meeting times and venue have changed?

We now meet on alternate Wednesdays at Brackley Football Club and meetings begin at 8.00pm. We welcome new members and anyone who would like to join will receive a club badge, QSL cards and a car sticker in exchange for £2.50 and a stamped, addressed envelope.

Anyone wishing to come along to the club may join for just £1, in return for which they will receive a club badge and become entitled to the use of the club's P.O.Box. For further information please contact:

Pauline Stevens, (Pussycat)
Three Counties Breakers Club,
P.O. Box 3,
Brackley,
Northants.



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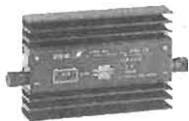
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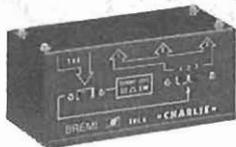
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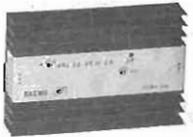
STABILIZED POWER SUPPLY MOD. BRS 36
Input voltage: 230 V a.c. 50 Hz. Output voltage: 158 V d.c. Current: 0.10 A. Stability: better than 3% with mains variations of $\pm 10\%$ and load variations from 0 to 10 A. Protection: electronic with current limiter. Ripple: 1 mV with 10 A load. Weight: 42 Kg. Dimensions: 168 x 105 x 300 mm. 2440 V a.c. supply available. RRP £83.56



CB ANTENNA SWITCH 3 OUTPUTS WITH DUMMY LOAD MOD. BRL 5 'CHARLIE'
Impedance: 50 Ohm. Frequency range: 0 - 50 MHz. Max power: 500 Watt AM. Insertion loss: 0.2 dB. SWR: better than 1:2. Connectors: SO 238. Dummy load: 50 Ohm, 5 W max. It connects by means of the front panel selector. Weight: 0.32 Kg. Size: 121 x 64 x 50 mm. RRP £10.95



ANTENNA MATCHER MODEL BRL 15
Frequency range: 25-40 MHz. RF power: 100 W max. Weight: 0.32 Kg. Dimensions: 120 x 95 x 55 mm. RF power class: under 0.2 db. RRP £8.80



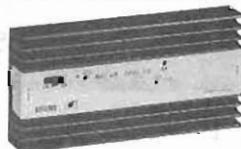
CB LINEAR AMPLIFIER MOD. BRL 35
Input voltage: 12 - 15 V d.c. Max current: 4.45 A. Input power: 0.2-5 W RF. Output power: maximum 50 W AM. Frequency: 26 - 30 MHz. Operation: AM - FM - SSB. Input SWR: better than 1:3, externally adjustable. Dimensions: 120 x 71 x 40 mm. Weight: 0.5 Kg. RRP £35.75



LINEAR AMPLIFIER MOD. BRL 500
Output power: 600 Watts AM maximum, depending on input power. Input power: 0.5 - 6 W AM. Input voltage: 220 V 50 Hz. Frequency: 26-30 MHz. Operation: AM - SSB - FM. Input SWR: better than 1:3, internally adjustable. Instrument: class 5 mobile coil instrument. Output and SWR indicator, internally lighted. Controls: STAND-BY, AM - SSB, output power switching 250/500 W, SWR reading, instrument switch (reflected, direct power, Watt - P rejection: mains with 5 A fuse). Vacuum tubes: 5 x E157b common grid connected. Cooling: by fan. Case: made of 10/10 sheet with two front handles and two handles on the upper cover. Dimensions: 400 x 370 x 210 mm. Weight: 20 Kg. 240 V a.c. supply available. RRP £328.85



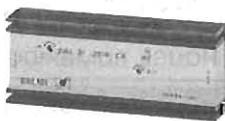
LINEAR AMPLIFIER MOD. BRL 210
Output power: 100 Watts AM maximum, depending on the input power. Input power: 0.5 - 10 Watt AM. 1 - 20 Watt PEP SSB. Input voltage: 220 V 50 Hz. Frequency: 26-30 MHz. Operation: AM - SSB - FM. Output impedance: 50 Ohm. Input impedance: 50 Ohm. Input SWR: better than 1:3, internally adjustable. Instruments: output power indicator and modulation percentage indicator. Control: stand-by, AM - SSB. Protection: mains with 2 A fuse contained inside. Vacuum tube: EL509. Dimensions: 174 x 103 x 287 mm. Weight: 4 Kg. It is advisable to use a RG 58 cable 70 cm long. RRP £95.55



CB LINEAR AMPLIFIER MOD. BRL 40
Input voltage: 12 - 15 V d.c. Max current: 7 A. Input power: 0.2-5 W RF. Output power: maximum 15 W AM. Frequency: 26 - 30 MHz. Operation: AM - FM - SSB. Input SWR: better than 1:3, externally adjustable. Dimensions: 160 x 79 x 40 mm. Weight: 0.28 Kg. RRP £40.65



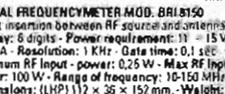
STABILIZED POWER SUPPLY MOD. BRG 37
Input voltage: 230 V a.c. 50 Hz. Output voltage: 13.8 V d.c. Current: 3 A max. Stability: better than 0.1% with mains variations of 10% or load variations from 0 to 3A. Protection: electronic with current limiter. Ripple: 1 mV at 3 A load. Dimensions: 155 x 135 x 85 mm. Weight: 1.5 Kg. 240 V a.c. supply available. RRP £14.25



CB LINEAR AMPLIFIER MOD. BRL 31
Input voltage: 12 - 15 V d.c. Max current: 2 - 2.8 A. Input power: 0.2-5 W RF. Output power: maximum 28 W AM. Frequency: 26 - 30 MHz. Operation: AM - FM - SSB. Input SWR: better than 1:3, externally adjustable. Dimensions: 126 x 60 x 40 mm. Weight: 0.2 Kg. RRP £18.15



DIGITAL FREQUENCY METER MOD. BR1 8195
Direct insertion between RF source and antenna. Display: 6 digits. Power requirement: 11 - 15 V d.c., 150 mA. Resolution: 0.1 KHz. Gate time: 1 sec. Minimum RF input power: 0.25 W. Max RF input power: 100 W. Range of frequency: 10-150 MHz. Dimensions: (LHP) 112 x 36 x 152 mm. Weight: 245 g. RRP £53.66



DIGITAL FREQUENCY METER MOD. BR1 8150
Direct insertion between RF source and antenna. Display: 6 digits. Power requirement: 11 - 15 V d.c., 150 mA. Resolution: 1 KHz. Gate time: 0.1 sec. Minimum RF input power: 0.25 W. Max RF input power: 100 W. Range of frequency: 10-150 MHz. Dimensions: (LHP) 112 x 36 x 152 mm. Weight: 245 g. RRP £59.00



SWR METER-WATTMETER MOD. BRG 22
Range of frequency: 3 MHz - 150 MHz. SWR meter, 26 - 30 MHz. Wattmeter. Input and output impedance: 50 Ohm. SWR and Watt indicating instruments: 1 of mobile coil, 50 μ A i.s. Connectors: SO 278. Measures of the R.F. up to 1000 W in 3 ranges 0 - 10.0 - 100.0 - 1000 W. Weight: 1 Kg. 1 Dimension: 212 x 118 x 83 mm. RRP £72.95

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David Shepherdson
reports on
communications from
home and abroad

COMMUNICATION THE QSL WAY

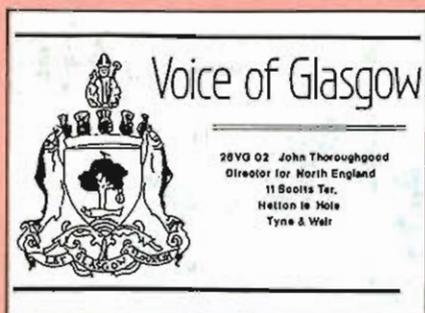
Well, I hope that everyone has had or is having a great Christmas, and that you are now looking forward to 1985, so a very happy and successful New Year to you all!

I'd like to start the New Year off with news of a couple of European clubs that I've been in touch with recently. First, the Norway Amateurs' Club. I had written to Andy (NAC 001) asking for information and the reply arrived about three weeks later. With this was an offer to join his club which I took up, and the massive package arrived 12 days later. I just want to point out that, at that time, Andy did not know I write this column; the offer was from one club to another. If you'd like to join this excellent and 100% genuine European club, the cost is \$18 (US) and 10 QSL Cards, or the equivalent in cash, but when sending cash abroad, I do suggest you invest in registration! Just to skim through the package you'll receive, there was the NAC No, ID card, certificate, rubber stamp, stickers, cards, newsletters, flag, keyring etc. If you'd like some info before joining, then two IRCs or \$1 (US) and a request will fetch info on the club and a selection of cards etc. The IRCs or International Reply Coupons are available from your local Post Office, current cost 35p each. One item that I would like to mention from the NAC package is the "Clubs to Avoid List". A few months ago, I asked for info on the Dutch Trucking Club on behalf of a friend. Several people wrote to me with similar problems i.e. £12 sent with no return! Well, I wrote to the DT Club with an IRC to cover their return postage and also to Andy (NAC) asking for any additional info. To date, the DT Club have *not* replied, but Andy informs me that the DT Club has been on the Avoid List for nearly two years as a rip-off club if none Dutch money is sent! This info is also

confirmed by the President of the Rhein Main Sidebanders, Jerry Willis, in New York.

A German Club which comes highly recommended is the European Radio Group of Witten. The club has several types of QSL cards available, from red-on-white 'CPE' cards at £3 per 100 including postage, to FCC POMAs. Membership costs £6 with 20 personal QSL cards each showing your name and *full* address. For this you get your EG Unit No. ID card, very nice colourful certificate, rubber stamp, roster, stickers, 10 club cards, pen, view cards, tourist info, exchange cards and invites to recommended clubs, etc. Someone who also recommends this club is the UK rep, my old mate John Throughgood of Tyne and Wear. John has been after me for over three months to give this club a mention!

If you wish to get any info on any club mentioned in these columns, write to the club in question enclosing a SASE (Self-Addressed Stamped Envelope) in the UK, or a couple of IRC's (from your local Post Office) for overseas clubs. This way you can also check that any club you may wish to join is still running, as many clubs all over the world have folded, without wasting money! To be safe, please do not forget to put a return address on the envelope so that your letter could be returned to you unopened. Slightly different from the usual QSL Club is the Color-Postcard-Express of Germany. Rather than a QSL or DX Club, this is a swap club specialising in colour view cards but also caters for QSLers. Membership is for £5 (cash) 10 viewcards and some of your personal QSL cards. In exchange you can expect your CPE No, ID card, certificate, club stamp, roster, tourist info, club offers, stickers, cards and info. Also view cards, QSL cards galore and a surprise! I have found these clubs to be 100% genuine and well worth joining unlike the DT club, I'm sorry to say.



The Rhein Main Sidebanders mentioned earlier can be contacted in either New York or Frankfurt. Membership is available for \$8 (US) in either cash or money order with 15 signed and dated QSL cards. In exchange you can look forward to your RMS No. ID card, certificate, choice of club stamp (oblong or round), roster, stickers, 30 QSL cards, etc. For air mail add \$4 (US). On the forms I have, the club offers Radar cards to members. I suggest that you check on stocks before you think about ordering as Radar closed down in June 1984!

Right, back home with the first names and addresses for 1985! A selection of the very popular Currie-cards from Peter (Grey Fox) of Essex, Andrew Crimlis (Alpha Charlie) of Scarborough, Margaret Robinson (Maggie May) of Stanley, Romeo II, also of Stanley, Robert (Roto Power) of Wales and Tim Essex (Chainsaw) of Kington. From Harry Hinds (Moon Eagle) of Leics comes some Ensign cards, an apology from John (Oakapple) of Hants who asks me to say sorry for the delay in his returning QSLs, but things have been piling up and so he is just catching up. John and George Shaw of Ripon (near neighbours of mine) would like a mention and do QSL 100% with personal and club cards. Dave (Deltic) of Wolves has a new card, as has James Woolnough (Coyote) of Essex. To end for now, a change of address, The Ninja (Chris) and Morning Glory (Shirley) have moved to 48-50

Atherley Road, Shirley, Southampton, Hants and want to let all their many friends know. Hope the 'flu has cleared up by now Shirley.

News here of a new club, well new to me anyway, in Birmingham. The Central City QSL Swap Club charges £2 plus five signed cards to join (£3 in Europe). For this you can expect your CC No, ID card, certificate, 10 colour cards, club stickers, exchange cards and invites, roster etc. A fully mounted club stamp is available for £3 (UK) post paid. The Skip Questers DX Club of Kent now has some colour 'Berlin-Cards' available at £7.50 (UK) per 100. For membership of this club, just send £6 with five or more personal cards. For your £6, you get your SQ No, ID card, mounted stamp, Q, 10 and other codes, plus much more in a bumper bundle.

A request from Brendan Gallagher of Ireland; he is the Director for Ireland of the International Springbok DX Group of South Africa. He can enrol you in the Springbok Group for £1 with one personal QSL card or view card. For this you get a Unit No and certificate. Extras available include a roster for £2, stickers at £2 for 15 and QSL cards at £2 for 30.

A letter from Martyn of the Ham International Owners Club asks for any members of the HIOC who have passed the RAE to get in touch with him as he wishes to compile a list of Hams. An update from the Roman City



QSL Addresses:-

- Romeo II
10 Prospect Terrace, New Kyo, Stanley, Co Durham, DH9 7TR
- John (Oakapple)
68 Northmore Road, Locks-hath, Nr. Southampton, Hants
PO Box 143, Wolverhampton West Midlands.
- Dave (Deltic)
PO Box 13, Grays, Essex. RM17 6BN.
- Peter (Grey Fox)
59 Hetwood Ct, Tenby, Dyfed Wales, SA70 8BS.
- Robert (Roto Power)
31 Ryefield C1, Eastfield, Scarborough, N. Yorks
- Andrew Crimlis (Alpha Charlie)
9 Prospect Terrace, New Kyo Stanley, Co Durham, DH9 7TR
- Margaret (Maggie May)
24 Green Farm End, Kington, Warks, CV35 0LD.
- Tim Essex (Chainsaw)
17 Ridgway Rd, Ashby-de-la-Zouch, Leics, LE6 5PL.
- Harry Hinds (Moon Eagle)
3 Clarke Rise, Latchingdon Rd Cold Norton, Chelmsford, Essex, CM3 6JL.
- James Woolnough (Coyote)
48-50 Atherley Road, Shirley, Southampton, Hants.
- Chris & Shirley (Ninja)
250 Telford Rd, East Kilbridge Glasgow, G75 0DL
- James Nimmo (Tomita)
PO Box 314, Braintree, Essex CM7 7ND.
- Barry (Black Swan)

Wendy (Swallowtail)

Ian Chambers (Alpha Mike)

Mick Miller (Greyhound)

David (118 TP 1)

Peter Law (Big Daddy)

John Thoroughgood (Jumbo Jet)

John & George Shaw

Jose Garcia (Arce Menor)

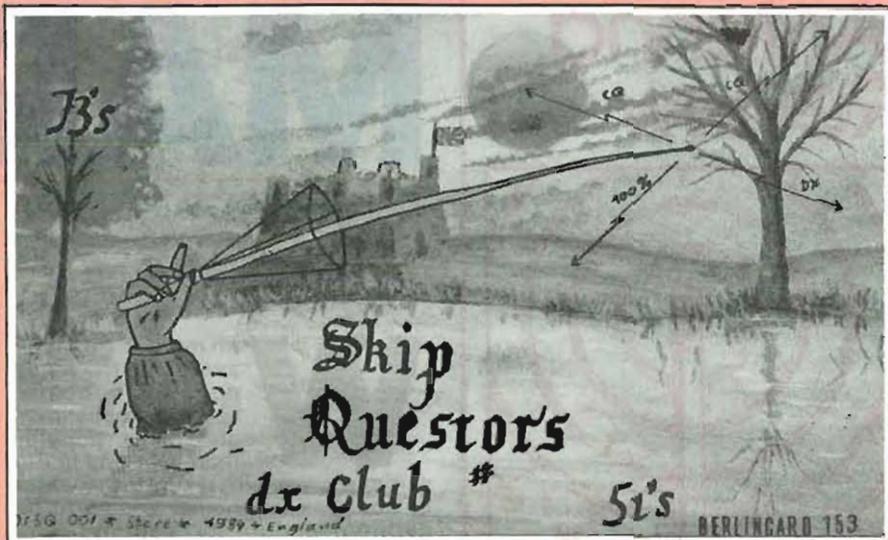
QSL Club Addresses

- 11 Albion Terrace, Broom, Alcester B50 4HG.
- 2 Towncastle Road, Strabane Co Tyrone, Northern Ireland
- 2 Epping Close, Eastwood, Leigh-on-Sea, Essex
PO Box EV 77, Douglas, Isle of Man.
- 27 St Cuthberts Ave, Blackhill Consett, Co Durham, DH8 0LS
- 11 Scots Terrace, Hetton-le-Hole, Tyne & Wear.
- 1 New Cottages, Markenfield Hall, Ripon, N. Yorks, HG4 3AD.
- Fernando VI-13, 1*, 39008 Santander, Cantabria, Spain
- Central City QSL Swap Club 62 Weston Lane, Tyseley, Birmingham, B11 3RU.
PO Box 141945, D-4100 Duisburg 14, W Germany.
- Colour-Postcard-Express 47 Gurdon Road, Charlton, London, SE7 7RP.
PO Box 1212, D-5810 Witten 1, F.R. Germany
- Cutty Sark QSL Club
- European Radio Group

DX-QSL Club of Chester-le-Street lets me know that membership has passed the 200 mark after eight months. In exchange for five personal cards and a large SASE you get your RC No, ID card, stickers, exchange cards and invites. Also, club cards are available.

The last club for this month is a young club in Ireland, only six months old, called the Lima International DX and QSL Group. Membership is for four plus cards and £4. For this you will receive your Lima No, ID card, 20 club cards, stickers, 'phrase sheets', tourist info, exchange cards and invites. Various extras are available, details of which are sent with your superb package.

A great package comes from James Nimmo (Tomita) who says thanks to everyone who QSLed him from a previous mention, and Barry (Black Swan) of Essex sends a very good pack out, with certificates of contact and eight or nine mixed cards. Wendy (Swallowtail) of Broom QSL's 100% and can design you a card if interested, while Ian Chambers (Alpha Mike) of Strabane sends a very well printed quality card out, well worth collecting. Mick Miller (Grey Hound) of Essex wants a mention. The regional QSL Manager of the GBQDC is Peter Law (Big Daddy), who sends a terrific pack out and is the ninth winner of a Currie Award Log Book in the recent Currie QSL Award Competition. Finally, Dave



(118 TP 1) of Douglas says he QSLs 100% and anyone sending him a QSL with SASE will get a reply.

Well, that's almost it for another month, just room for the Forthcoming Events list. First is the Ghost Rider Appeal Auction and Disco. This is being held at the Miner's Hall, South Moor, Stanley, Co Durham on Saturday 26th of January 1985 in the evening. All are welcome to come and after the auction, which is in aid of Leukaemia Research, there will be a Disco. The appeal is supported by many QSL and CB Clubs nationally including the GBQDC and Currie Card printers.

My thanks go to the Cutty Sark QSL Club (membership five cards and large SASE) who have been in contact with details of their first CS/POMA meet. This is a new venture for the Cutty Sark Club and, if the response is good, as I'm sure it will be, this will become an annual event. It is a two-day event, held on Saturday and Sunday the 13th and 14th of April 1985 at the Falcon Hotel, Margate. There is an entry fee of 25p per day, and a Disco will be held on the Saturday evening. Limited accommodation and parking space are available so for details on the meet please contact Dave Bradshaw, 16 Bradenham Avenue, Welling, Kent, DA16 2JG enclosing a SASE. Tony (CS 001) has told me that in excess of two coaches are expected from the Continent so there will be plenty of cards to swap and people to meet. Also, you are welcome to come whether or not you have a POMA Card.

That's it for this month again, just time to say if you want a mention, or run a club and think a mention would do some good, write to me: c/o the Dragonrider Club and I'll see what can be done. Similarly, if you've any praises or complaints, write and we'll see what happens. If you'd like a reply, then please enclose return postage. If you have, or know of, any club events which would appeal to QSLers nationally for the Forthcoming Events list, let me know, in good time please! One final request; can I ask you to send your old Christmas cards, used stamps and foreign coins to Ann, P O Box 5, Stornoway, Isle of Lewis, Scotland for the RNLI Fund Raising Appeal. Thanks.



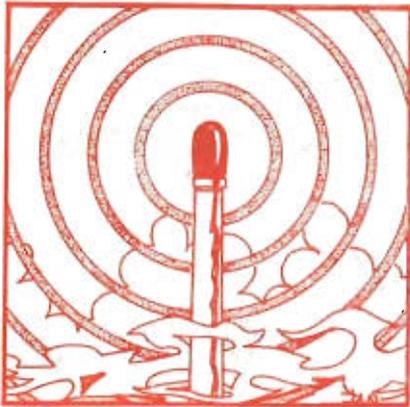
QSL Addresses

- Ham International Owners PO Box 8, Mirfield, West Yorkshire, WF14 0XA.
- International Springbok C/o Brendan, 155 Elaghmore Park, Galliagh, Derry, BT48 8DZ Northern Ireland
- Lima QSL DX Group 34 Parnell Street, Wexford, Ireland.
- Norway Amateurs' Club PO Box 3538, N-4001 Tjensvoll, Norway
- Rhein Main Sidebanders PO Box 4269, APO 09057, New York, USA.
- Roman City DX-QSL Club FMC TMP 1 Box 43, APO 09710, Frankfurt, West Germany
- Skip Questors DX Club 5 Ernest Terrace, Chester-le Street, Co Durham DH3 3HR
- Dragonrider Club/DR 1 PO Box 14, Sittingbourne Kent ME10 2RZ

Other Addresses

- Currie (Printers) 89 Derwent St, Blackhill, Consett, Co Durham DH8 8LT
- Vine Lodge (Labels) Butterwick, Boston, Lincs. PE 22 OEX.

Antenna Review



Brian Wright has a taste of life on the ocean wave with an antenna especially designed for use at sea

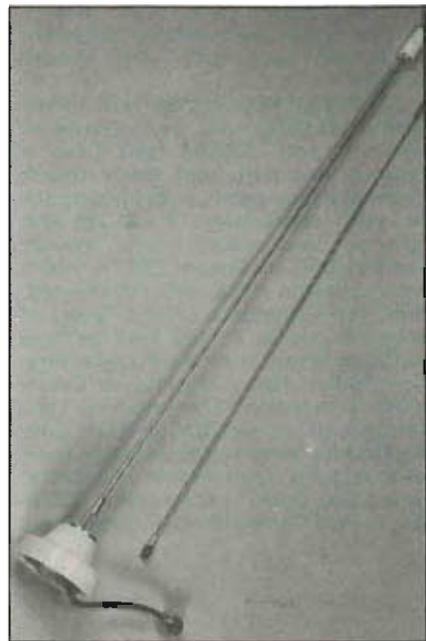
MARINE M

With more leisure time available to many people, hobbies, sports and pastimes are more popular than ever and in the summer especially, taking to the water in one way or another seems to be gaining popularity rapidly. The majority of the sailing boats or motor boats are usually quite small as finances have probably been a little stretched in purchasing the craft. Due to the lack of finance or the intention to only use the boat close to the shore, not many of these boats are equipped with marine radio which can of course be very useful in an emergency. Whilst being no substitute for a proper marine radio, a CB radio can be of great comfort when out there alone on the briny. In my experience, it is nice to feel that at least I am not cut off and can communicate with someone ashore in the event of a breakdown etc.

One of the main problems with CB at sea on a small wooden or fibreglass craft is the lack of groundplane for the antenna and for that reason I have often just used a handheld, as even a handheld has good range across a clear expanse of water. However, for those of you who would like to fit a permanent antenna either on top of a wooden or metal mast or to a wooden or fibreglass boat, we have this month tested the Allgon MA 466 01-01-01 antenna from Communications of Strood, Kent. This antenna is one of the few antennas that does not require a groundplane or to be mounted on a conductive surface and, as well as being useful for boats, could also be used on fibreglass vehicles.

Before describing this antenna, we will clarify the method of testing used to produce the test pattern shown. In view of the difficulty of measuring distance at sea and of the uses of this antenna on land and water, we tested the MA 466 as a base station on a 6-metre wooden mast. We considered that this would simulate mounting on the mast of a small boat, and testing to our mobile over the standard test route would allow realistic comparison with other antennas. A brief test at sea on a small motor boat showed a great increase in range over that shown on the test map.

The MA 466 01-01-01 is just over 1.2 metres long including its mounting base and has a small 40mm long, 15mm diameter centre-loading coil half way up the whip. The 2mm diameter top whip has a small screw fitting fixed to the lower end which screws into the white plastic coil



"...a useful little antenna especially for use at sea..."

housing, and a small hexagon is provided for tightening. The 4mm lower whip is supplied with the coil fitted to the upper end and is screwed into the mounting base with a screw fitting similar (but larger) to the fitting on the top whip. The white plastic mounting base has a large thick washer on the top to spread the load where the whip enters and both halves of the whip are stainless; all other metal parts are chromed.

The plastic mounting base houses the impedance matching circuit that enables the antenna to be used without a groundplane and this circuitry is encapsulated in a wax-like substance for protection from moisture. A soft plastic sealing ring or gasket is provided to seal the base to the mounting surface. The antenna is fixed to the mounting surface by means of 3-6mm set screws which pass through the base, sealing ring and mounting surface and secured by nuts on the underside. The screws nuts and washers are all stainless steel. A very short length of coax protrudes from the side of the base and has a PL259 fitted to it. Therefore, to connect further coax, it is necessary to either plug this into an inline SO 259

ANTENNA REVIEW DATA PANEL

SPECIFICATIONS

Model	ALLGON MA 466 01-01-01
Type	CENTRE LOADED MOBILE
Length	1.2 METRES OVERALL
Frequency Range	26.9 — 28 MHz
Max Power Handling	5 WATTS
Impedance	50 OHMS
Cable Supplied	100 MM (see text)
Mounting Details	3 x STAINLESS M6 SCREWS
Supplier	COMMUNICATIONS, KENT
Typical Price	£29.76

or to use a double SO 259 socket to connect two PL 259 plugs together.

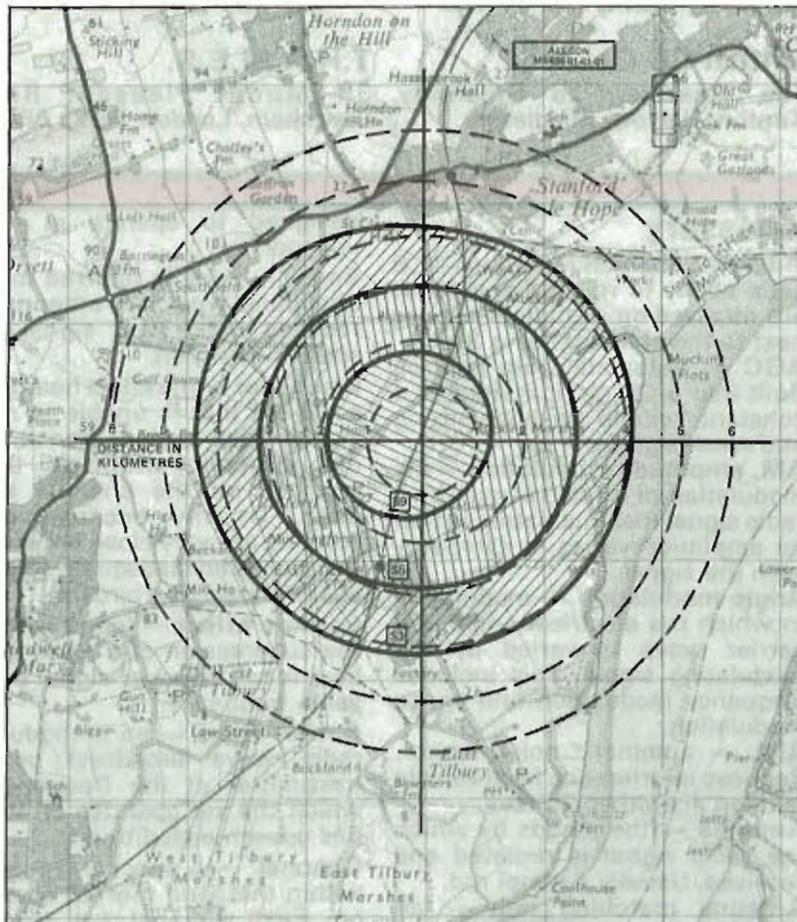
The MA 466 is claimed to be pre-tuned but the unit supplied was certainly not tuned to UK FM frequencies. The antenna is of Swedish manufacture and was probably tuned to their frequencies as the SWR was around 5:1 when tested as supplied. A means of tuning is provided, which at first appears a little stupid as it is by means of a trimmer capacitor on the underside of the base. It is therefore necessary to remove the antenna from its mounting surface to gain access, thereby making it impossible to tune the antenna whilst mounted. The trimmer screw is sealed with a mastic-like substance and this has to be carefully removed for tuning and then replaced afterwards. The actual tuning was, in fact, quite simple. The mast was taken down and propped one end about 1 metre from the ground and the antenna removed and simply tuned to 1.1:1 whilst held in the hand. When fitted and erected again, the SWR was surprisingly unaffected. The characteristics of this antenna are such that although 1.1:1 was obtained on 20 the SWR rose to around 1.8:1 at either end of the band.

On test, performance was reasonable but contact could not be maintained to the outer limits of the normal test route. This is not surprising, as the lack of groundplanes usually means that there is a loss in efficiency. An interesting point, however, is that when radiated power was checked with a field strength meter, it seemed to be very high compared to many other antennas.

In conclusion, we would consider the MA 466 01-01-01 to be a useful little antenna especially for use at sea, for which it is mainly intended, although it could solve the problems encountered with fibreglass vehicles. It is certainly very well constructed and of tidy and smart appearance. Priced at £29.76, it seems a little expensive, but there is quite a bit more work involved in the manufacture of the base assembly than normal antennas.

For those mariners who still prefer the convenience of a handheld, we briefly tested the Allgon RA 349 'hiflex' antenna which is only .65 metres long and very flexible. Performance was similar to the standard 1.5 metre telescopic (but much more convenient to use), and signals were generally around one 's' point better than the normal 'Rubber Duck'.

Our thanks to Communications of Strood, Kent for supplying both of the test samples.



REVIEW VERDICT

Performance XXX	Installation XXX
SWR Adjustment XXXX	Instructions —
Construction XXXX	Value XXX

We rate our samples on a scale of one to five. Five crosses is the highest rating, three and four stars are average to good and one and two crosses mean it's not doing so well.

The Tests

We have used our standard test procedure to assess the efficiency of this antenna. Just to bring new readers up to date this involves two tests; one static and one mobile. Our test sample is fitted to a stationary mobile and a second mobile follows a pre-arranged route that orbits the stationary test vehicle, sending and receiving signal reports at measured intervals. This is then repeated with the test antenna on the mobile test vehicle and the signals are sent and received between a stationary vehicle. A standard rig and antenna is used in all the tests. With the results obtained we are able to draw up the radiation pattern shown here. This is simplified to make the results more easily understood. The antenna is also subjected to a series of 'lab' tests to assess their durability, quality and construction, etc and finally we hand it over to a panel of Cbers for comment.

National CB Organisations

Natcolcibar

430 Westwood, Windmill Hill, Runcorn, Cheshire. WA7 6LL.

British CB Council

The Treasurer, 26 Greenway, Kenton, Harrow, Middlesex.

934 Club UK

PO Box 425, Chelmsford, Essex.

National Monitoring or Aid Organisations

T.H.A.M.E.S.

39 Mount Pleasant Road, Lewisham, London. SE13 6RD.

A.L.C.

c/o 3 Baker Street, Blackburn, Lancs.

M.S.G.B.

18 Shepherds Way, Selsdon, Croydon, Surrey.

REACT UK

PO Box 143, Warrington, Cheshire, WA5 3PT.

Glossary

Adjacent channel rejection — CB set's ability to reject signals that are received on a channel near or next to the channel being used.

AGC — automatic gain control. Built into a CB rig, it maintains a constant volume on both strong and weak signals.

AM, amplitude modulation — the modulation of a radio carrier by a radio signal that fluctuates, so that its amplitude varies in sympathy with the signal.

Angle modulation — modulation in which the electrical angle of a carrier wave is varied by the modulating signal. This includes frequency modulation and phase modulation.

ANL — automatic noise limiter. Reduces interference from vehicle ignition and other sources.

Antenna — the means by which the radio signal is radiated and received. Usually a metal rod.

Antenna matching unit — an accessory used to match the impedance of an antenna to the transceiver (CB set).

Angle of radiation — the plane at which the signals are radiated from the antenna. A high angle means that the signal is being beamed into the sky.

Attenuation — the reduction in the amount of signal being transmitted from the rig. Usually given as a ratio in decibels.

Band — part of the frequency spectrum allocated for a particular purpose.

Bandwidth — width of a frequency band, given in *Hertz*.

Base station — operating a CB station from home or fixed position location rather than mobile in a vehicle. Base station sets are often

designed to operate at mains voltage.

Beam — usually referred to as a directional type of CB antenna that radiates a stronger signal in a specific direction.

Bleedover — the effect heard from a CB set that is unable to reject signals from stations transmitting on adjacent channels being received on the channel being used. Usually because other stations are very close or because the set has an inadequate *adjacent channel rejection* circuit.

Capture effect — found with FM, the suppression of a weak signal by a much stronger signal on the same frequency.

Carrier wave — an unmodulated radio wave broadcast by the transmitter at the frequency at which the set operates at, which has speech added to it.

Channel — a specific frequency within the *band* that CB operates on. Each channel has its own specific frequency.

Coaxial cable or coax — the cable used to connect the CB set to the antenna and accessories. It has two conductors, an inner and an outer which are shielded from each other.

Decibel — a unit of sound which measures the ratio of two values of either electrical power, voltage or current. Usually used for expressing gain or loss within a radio system.

Deviation — the change in frequency of a *carrier wave* when it is frequency modulated.

Dipole — an antenna with a physical length equal to one half wavelength of the frequency being used.

Direction finding — DF. Determining the position of a transmitter by using a receiver and a directional antenna.

Dummy load — a device which is substituted for an antenna when testing a CB set. It absorbs the radio signals and allows the transmitter to be run without transmitting a signal and without harming the set.

DX — long distance communication.

Earth — the Earth as a conductor of electricity or the part of an electrical circuit which has zero potential. 'Ground' is also used as a similar term.

Effective radiated power — The amount of power actually transmitted from the antenna, in watts.

Fading — variations in signal strength as a result of propagation conditions.

Feeder — transmission line, connecting the transmitter and antenna.

Field strength — the strength of a transmitted radio signal. Measured with a field strength meter.

FM, frequency modulation — the modulation of a carrier which alters the frequency of the carrier in sympathy with the amplitude of the modulating signal.

Frequency — the number of cycles or Hertz per second of a signal.

Ground plane — a natural or artificial ground that connects the antenna to earth and influences the propagation of the transmitted signal.

Gain — an increase in or amplification of the power of the transmitted signal, usually due to the efficiency of the antenna used.

BREAKERS' BASICS

Pull-out guide to breakers' basics in handy, quick-reference form

Harmonic — a spurious signal that is twice, three or four times that of the frequency being used. The first harmonic of 27MHz. would be 54MHz. and so on.

Helically wound antenna — an antenna in which all of the conducting element is wound round a support.

Hertz — the unit of frequency, cycles per second.

Integrated circuit, I.C. — a device ('chip') containing a number of transistors, diodes, resistors, etc. to make a complete electrical circuit.

Interference — unwanted signal that is strong enough to spoil the reception of a wanted signal.

KiloHertz — 1000 cycles per second, 1000Hz. or 1kHz.

Linear amplifier — a radio frequency amplifier in which the output is magnified as the input signal is increased. In effect it gives a greater output power to the signal and is illegal.

Loading coil — a wire wound coil that increases the electrical length of the antenna without making it physically longer. A loaded antenna is an antenna shorter than the wavelength of the frequency being used with a loading coil.

Mic. or mike — microphone.

Microphone gain — adjusts the sensitivity of the microphone amplifier circuit.

MHz., megaHertz — A million cycles or Hertz per second.

Modulate or modulation — adding a voice signal onto the carrier wave.

Noise blanker — a more sophisticated version of an automatic noise limiter.

Omnidirectional — radiating the transmitted signal in all directions.

Output — the power generated by a transmitter or radio/audio device measured in watts.

Phase locked loop (PPL) — an *integrated circuit* — that synthesizes the frequencies needed for transmission.

Polarisation — the direction of the signal radiation from an antenna and the position of the antenna. A vertical antenna radiates vertically polarised waves.

Power supply — a transformer that steps down mains voltage to 12 volts and therefore suitable for a mobile CB set.

Push-to-talk switch (PTT) — a press switch, usually on the microphone, that switches the transmitter on when pressed and permits reception when released.

Radio frequency (RF) — frequencies above the audio or supersonic range which extends into a range covering millions of Hertz and segregated into specific bands such as low, medium, high, ultra high and super high.

Rig — CB set.

RF gain — a control that alters the reception sensitivity of a CB set.

RX — accepted abbreviation for receiver or receive section of a transceiver.

S Meter — a calibrated meter on a CB set to indicate the levels of received signals.

Selectivity — the ability of a receiver to differentiate between a wanted signal on the required frequency and unwanted signals on close frequencies.

Sensitivity — the ability of a CB set to respond to weak signals and to amplify them to a readable level.

Single Sideband (SSB) — a mode of operation in which only the upper or lower frequencies of a

modulated carrier frequency of an AM signal is transmitted.

Skip — the distance covered by a shortwave signal that has been reflected by the ionosphere.

Squelch — a squelch circuit mutes high level background noise due to the high gain of the receiving amplifier stages by only letting through signals of a certain strength.

Standing Wave Radio meter (SWR) — full term voltage standing wave ratio. An SWR meter measures the resonance of the transmitting antenna against the output of the transmitter and ensures that the antenna and rig are correctly matched.

Transceiver — a unit that combines both transmitter and receiver.

TVI — television interference. The interference to domestic TV reception by a radio transmitter on another frequency.

UHF (Ultra-high frequency) — frequencies above 300MHz. and below 1000MHz.

VHF (Very-high frequency) — frequencies between 30MHz. and 300MHz.

VOX (Voice operated transmitter) — a transmitter that is switched on when the operator speaks into the microphone.

VSWR — see standing wave ratio.

Waveband — a band of wavelengths or frequencies allocated to a particular service or function.

Wavelength — the distance in metres between the peaks of a wave at a given frequency. For 27MHz. the wavelength is approx 11 metres.

Whip antenna — a vertical flexible antenna, usually with a loading coil.

Frequency Lists

Ch. Frequency					
01 27.60125	21 27.80125	11 27.70125	31 27.90125	01 934.0125	11 934.5125
02 27.61125	22 27.81125	12 27.71125	32 27.91125	02 934.0625	12 934.5625
03 27.62125	23 27.82125	13 27.72125	33 27.92125	03 934.1125	13 934.6125
04 27.63125	24 27.83125	14 27.73125	34 27.93125	04 934.1625	14 934.6625
05 27.64125	25 27.84125	15 27.74125	35 27.94125	05 934.2125	15 934.7125
06 27.65125	26 27.85125	16 27.75125	36 27.95125	06 934.2625	16 934.7625
07 27.66125	27 27.86125	17 27.76125	37 27.96125	07 934.3125	17 934.8125
08 27.67125	28 27.87125	18 27.77125	38 27.97125	08 934.3625	18 934.8625
09 27.68125	29 27.88125	19 27.78125	39 27.98125	09 934.4125	19 934.9125
10 27.69125	30 27.89125	20 27.79125	40 27.99125	10 934.4625	20 934.9625

Method of fitting PL259 connectors

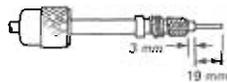
Method of fitting PL259 connector and reducer to RG-58/U, UR76 or similar 50mm diameter coaxial cables



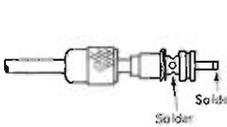
Cut end of cable clean. Remove outer covering 19 mm from the end.



Slide coupling ring and reducer onto cable.



Bare 16 mm of centre conductor. Fan braid slightly and fold back over reducer.



Screw plug body into reducer and tighten. Solder braid through holes and ensure that a good electrical contact is made. Solder centre conductor.



Screw coupling ring over plug body

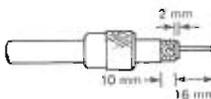


Final plug assembly with ring free to mate with socket.

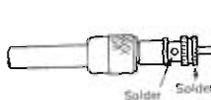
Method of fitting PL259 connector to RG-8/U, UR67, or similar 10mm diameter coaxial cables



Cut end of cable clean. Remove outer covering 28 mm from the end.



Bare 16 mm of centre conductor. Trim braid to 10 mm. Slide coupling ring onto the cable. Tin centre conductor.



Screw plug body onto the cable. Solder braid through holes and ensure that a good electrical connection is made. Solder centre conductor.

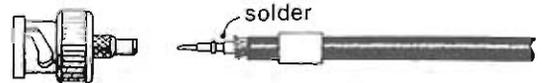
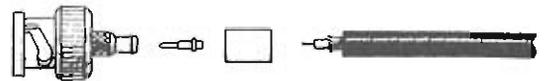


Screw coupling ring over plug body.

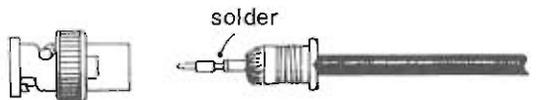


Final plug assembly with coupling ring free to mate with socket.

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EYEBALL, EYEBALL

Brandybird gives a word of warning...

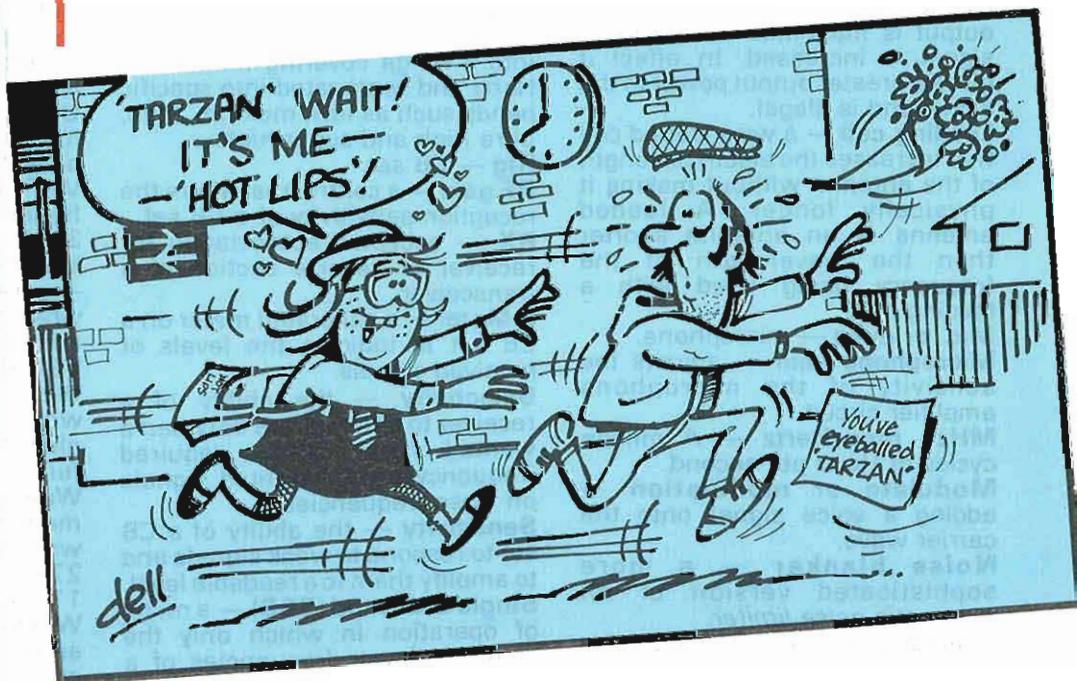
Everyone must, at some time or other, want to meet the people to whom they've been talking. I don't think I'm abnormal in this and if you are like me, you will eventually form a picture in your mind as to what the breaker looks like. It's usually wrong mind, but it's all good fun.

One thing about CB is that it's ideal for those people who, like me, feel that they were at the back of the queue when the looks and figures were handed out. You can win them over first with your fantastic charm and personality, by which time they are that desperate to meet you that they couldn't give a damn what you look like.

Unfortunately, there are lots of problems involved with 'eyeballs' and females in particular can get themselves into all sorts of hassle. Be it physical or gossip, it's still hassle. At first, being naive and innocent, I just wouldn't go out for an eyeball. Anyone who wanted to meet me was invited round to the house for coffee and to 'meet the family'. This worked quite well, until the one turns up that you don't really want to see again — then you have trouble getting rid of them. My very first eyeball was at the local CB Club. My parents knew the boy concerned, so it was arranged that they would point him out to me, and I would introduce myself by planting a big smacker on his cheek. This

happened, much to the amusement of his mates and the hundreds (literally) that had been listening in nightly over the previous three weeks to our 'over the air love affair'. We are still the best of mates after three years. That was one of the luckier ones!

I spend most of my time now monitoring channel 19, and talking to the truckers, who after listening to my 10-13s for months, all want to meet the lady breaker with the 'sexy voice' (God knows where they get that one from). I must admit I do love a good sexy wind-up. It's amazing just how rude one can get using double talk, so unless you've got a dirty mind, you'll be wondering what everyone's getting so excited about. But, under these conditions, it would be extremely unwise for me to dive into my wrapper and dash off up the M6 Corley Services alone. You never know, no matter how many times you've spoken to someone, whether they are okay. For that matter, you never know who is listening who could turn the situation to their own advantage. So, the first bit of advice is *NEVER* go out on an eyeball on your own, whatever your sex. It is downright dangerous. I always take either my mother (herself an avid CBER and winder-up) or my 20-year old brother (who usually falls asleep in the car). This in itself does a lot to put paid to the ideas that some of the breakers might get. I get a bit of stick about bringing a chaperone but, in the majority, the lads respect me, and it's





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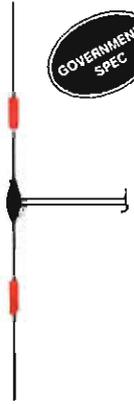
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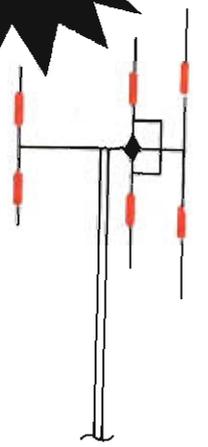


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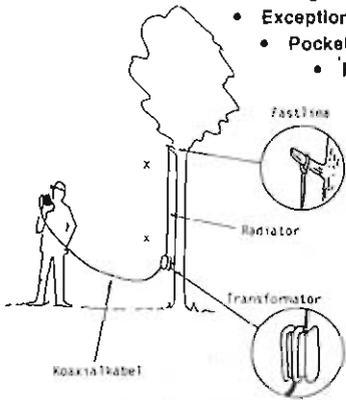


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Could Rockin' Donkey be the new Elvis? Gismo wonders...

I'd like to start this month's page by wishing you all a happy New Year and apologising for all the mistakes that crept into my column in the November issue, between my writing the piece and it finally appearing in print. Firstly, my handle was spelt incorrectly, the gate for the slab 6 for Green Goddess was wrong (I is Orange Control, it should have been 12) but the biggest blunder was that John (Hippy) Hill was killed in a head-on crash between two trucks, not a skate.

Singing Big Wheelers

Truckers are noted for many qualities, but I think that singing on the CB is one that would not exactly please most breakers. Especially when they do it on the one-nine! However, Rockin' Donkey, Caveman and Goose seem to be good (or bad) at it. Caveman from Cider Town (Attleborough) in Norfolk has raised about £1300 for the Guide Dogs for the Blind by sponsored singing on the chicken box. Rockin' Donkey, from Northampton, has also done well — his singing has got him as far as making a tape. Goose, from the Mendips, sings Worzel-type songs, mostly around the A303 as he holds everyone up in his eight-legger bucket (Tipper). Country and Western singers in the States have romanticised and immortalised the trucker over there. To date, the only successful British record about truckers in this country was the send-up "Convoy UK" by two Radio One DJs. Would any record company be interested in making a British truckers' song record? Rockin' Donkey's songs and singing are very good.

Truckstops

Truckstops are springing up all over the country — good for us, of course, but an asphalt area with a few Portakabins dotted around is not every trucker's idea of Paradise. I personally object to paying to park up on muddy areas, with poor facilities and sausage, egg and chips-type cooking. Newark and Doncaster corporations have installed shower/toilet blocks included free with the car park fee. Now that money is tight, companies and individuals are putting money into truckers' service areas instead of other temporarily-struggling, but long-term more profitable, ventures. Competition is good for us truckers. There is an amusing little battle going on in Liverpool at the moment. Most truckers avoid a night out in Bird City, but those who do tempt fate park along the dockfront, near a cafe. Further down the road, a truckstop has been opened by a former city councillor. This has had an effect on the cafe, which has since returned to 24-hour opening and now houses showers, pool tables and a TV lounge. Let's see a few more open up and the cafes all over the country will have to compete — all to the good of the trucker.

Monitors

Night Nurse is back on channel with Whisky Control. Night Nurse told me at the ECT fun-day in August that she would be back in the Autumn. I hope she overcomes her difficulties with local breakers and continues to monitor the Doncaster (A1M,M18) area. I would like to think that a recent article of mine is partially responsible for her return.

Letters

I recently received a letter signed by Travelling Man, who is Chairman of East Coast Truckers, along with 13 others, asking me why I haven't mentioned a particular monitor on the A17 in Lincolnshire. Bird Lady starts at about 4.30 am and often continues until 10pm. She receives telex reports from the Sleaford police to pass on, she has appeared in the local press for saving a trucker's life through quick assistance, she often gets her husband out to weld and repair breakdowns and she has even, on occasions, put up drivers in distress.

My apologies to Bird Lady (Mary) for not mentioning her up until now. She's a very devoted monitor from way back and, in my opinion, one of the best for 10-13s in the country. When you come off that Roman road and head along all those bends and muddy wheelers and picks and shovels that make the A17 what it is, give her a shout on 19 or 17 and you will get a report on the way to East Anglia. I expect after this, more truckers will probably write in, so if you would like to give a monitor a special mention, I will cover one each month so let's be hearing from you.

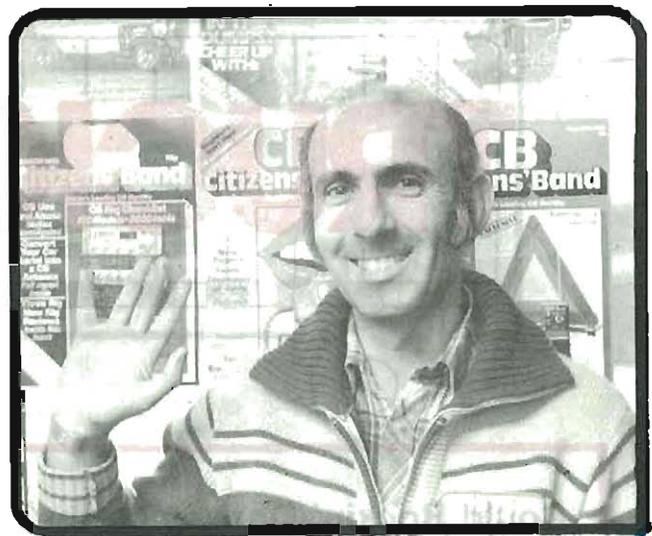
I received another letter from a Birmingham breaker, who has a valid point, following on from my first page where I blasted the 'Fairy Liquid' squadrons. Mike says that many truckers modulate continuously on the one-nine when running in close convoy, on full power. He suggests that they should find another window or switch to low power. When somebody does get in on the side, they usually get a load of verbal abuse to the effect that the truckers' channel is one-nine and they are on it to stay. Mike also mentions problems that inexperienced or rusty HGV drivers have in finding a job. My only answer to this is to do what I did when I first passed my test: work for agencies. They always ask for clean licences, and any trucker who covers any miles at all never has one for very long! Be prepared to drive anything — forklifts, vans, small trucks etc to get experience. Be prepared to travel at short notice, show a bit of keenness, clock up a few miles and, with any luck you will drop into a real big-wheelers' full-time job.

Keep the shiny side up and the greasy side down.
Breaker Break.

CB

Mack Chat

Mack the Hack poses some questions about the 934 scene



There seems to be some strange and mysterious goings on with the 934 scene at the present time. The rumours are flying around like the pigeons in Trafalgar Square. Why is it that for the last few weeks Reftec have not been answering their telephone? If one dials the Reftec number all you get is the recorded answer-phone message. Have they gone bust as some people are suggesting? If so, why is their phone still connected? Could they have gone into hiding awaiting the arrival of the Nevada/Cybernet 934 rig or are the brains of the Mildenhall company huddled together somewhere working on a new design rig to compete with the Telecomms wonder box. Who does the mysterious person represent that has been calling on some of the dealers with details of a 934 rig that is claimed to be revolutionary? Could this unnamed company be feeling out the market for 934 rigs and equipment?

What is happening with Grandstand? I hear that they have had staff changes and the rumour here is that they are pulling out of the 934 market, again are any of these rumours true? I also would like to find out why a well known distributor who advertised (in the October issue of this mag) a 934 rig that the distributor says will be available at the end of September. It is now November as I write this and there is still no sign of this rig.

Surely some people out there in the world of 934 radio technology must have some answers and I wish they would tell me what's going on so that I could pass on the information to you. I feel sure that quite a few people want to get on the 934 frequency and have the necessities burning a hole in their pockets, waiting to purchase some new 934 rigs and accessories, but can't because there ain't any rigs about — at least not the hi-tech equipment that the manufacturers have promised.

Amongst my fan mail there was a letter from a reader from the Wivenhoe, Essex 20. He asks, if he has two 27MHz rigs (such as a home base and a mobile) and then purchases a pair of 934 rigs, would it mean that with four rigs in his possession he would need to purchase two licences? Is the dual-bander classed as one or two rigs? My answer to this would be that if anyone could afford all those rigs he would surely not have to worry about spending an extra £10 for another licence. As for the dual-bander 934/27MHz rig, yeh, pigs will fly before they are about.

I had a chat with Mike Machin of Selectronics, Canvey Island. He's on the committee of the 934 Club UK and he told me that a recent meeting with the DTI, the club has been accepted as the official body for 934 users. Amongst the subjects discussed were increased channels, the lifting of antenna restrictions and repeaters for mobile users.

No promises were given by the DTI, although interest was shown about the frequency. It was noted by the members of the committee who attended that the DTI representative was rather ignorant of the workings of the 934 frequency. All was explained and the DTI was

impressed. When the question of more channels for the 934 band was discussed, it was stated that the demand for more channels must be shown by the number of users on the channels — which at present are not overcrowded. From recent calculations it would seem that there are 800 Reftecs and 150 Grandstands in circulation at the present time. Mike Devereux of Telecomms in Portsmouth told me that they are expecting 1,000 Nevada/Cybernet rigs in their first shipment and half of these are already spoken for; a second shipment of another 1,000 would follow soon after. Mike would not commit himself to when these rigs were due but they should be in this country as you read this. I hope so as I have promised myself one for Xmas even if it is an early present.

One evening recently I visited another friendly CBER whom I have known for quite some time. Whilst sorting through his 'junk' box looking for some odd radio bits I cam across a rig from the way back naughty days. Noticing my interest he let me borrow it for a few days. Of course it was not working, but a few minutes with screwdriver and soldering iron brought it back to life. On the old FCC 40 AM channels things were dead, not a single station was heard. The 40 high channels went into the legal part of the band, but most activity was heard on the low 40 channels. Only about four of these channels were in use and from the short period of time that I listened, I realised that the groups of people using the channels were local nets. All were using the FM mode in preference to the interference-causing AM. Interested to learn more of this activity, a couple of phone calls put me in touch with some of the users of the illegal bands. It seems that we on the legal frequency have all the wallies, and the other part of the 26-27MHz band is clear of them. As I heard for myself, the chat is interesting and intelligent and it was confirmed that only FM is used in local communications. The sideband DX is still very active, with the PO Box numbers of the DX clubs that are still in operation receiving QSL card confirmations from many parts of this world. The reply to the most obvious question of people getting caught and the heavy penalties? Yes, the users were scared of being busted so great care was taken when operating so that the transmissions were interference-free. It seems that the RRD employees only take action when interference is caused to emergency services or the general public whilst trying to receive national broadcasts.

Although I find it hard to believe I was told by one of these operators that the RRD know of the activities of the illegal breakers in his part of the country, yet they turn a blind eye as long as they keep a clean station. I can sympathise with the people who choose this mode of radio. Most of them know what they are doing and have taken the precautions to ensure that they don't interfere with others. They have found good CB but I would not take the chances that they do because I can still find some good CB on the legal bands.

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CB Magazine JUNE 1983

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From the mailbag

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SWR

MYSTERY METERS ?

SWR meters and SWRing is one of those subjects that has collected a reputation far outside its worth, says Kieth Townsend. He looks at the theory of standing wave ratio whilst we look at what's on the market.

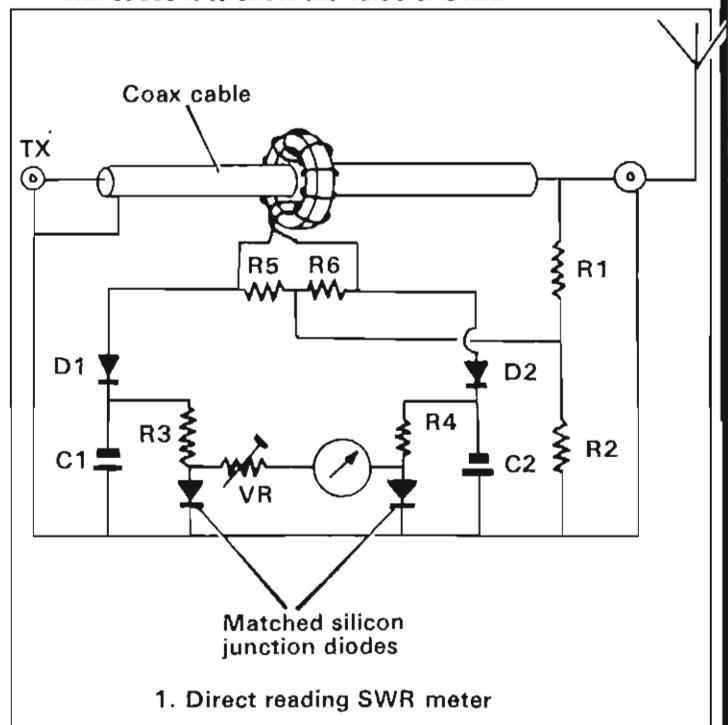
So you have treated yourself to your first CB rig. The guy in the shop was real nice and offered all sorts of hints on how to get started in your new hobby. The only trouble is that you have no experience whatsoever of dealing with radio transmitters. Sure, you fitted your own car radio but, so long as you put the wires in the right places there was not very much that could go wrong. Surely there must be more to fitting up a transmitter? There is, but if it is approached the right way it should prove no more difficult than an ordinary broadcast receiver.

Everybody knows that even an ordinary car radio needs an aerial but how many of us ever gave the aerial more than a passing thought before we became involved in CB? So, you need a car aerial, you just go out and buy one. See one and you've seen 'em all. As you discovered when you bought the rig, things are somewhat different with CB. That nice guy in the shop said something about SWR and tuning the aerial to the set. Was that before or after he showed you that amazing array of different sizes and types? What is this SWR thing anyway and why don't the manufacturers pre-tune the aerial so that you don't have to worry about it? That would have saved you the cost of that SWR meter gizmo he sold you as well. Whatever it does!

Despite the aura of magic with which many breakers seem to surround the term Standing Wave Ratio or, to give it its correct title, Voltage Standing Wave Ratio, there is no real mystique about it. The purpose in transmitting a signal is to deliver as much power as possible to the antenna. In practice, however, the physical and electrical properties of the feeder cable and the antenna you use will ensure that some small proportion of this power is "reflected" back along the line and the relationship between the amount of power delivered and that being reflected is all that the meter is measuring. Many manufacturers have produced pre-tuned aerials for CB, in an attempt to save the breaker the bother of setting up his own but, since the SWR which you ultimately achieve depends on a number of factors, such as where you place the antenna in relation to surrounding objects, its height above ground and even the presence of nearby metallic objects, it invariably pays to make your own adjustments.

Although the inner workings of an SWR meter (Fig. 1) appear somewhat complex, its function is pretty simple. By means of capacitive coupling it simply samples the voltage which the power amplifier is delivering along the

coaxial feeder to the antenna and then compares it with the amount being reflected in the opposite direction. The object of the exercise is to ensure that as much power as possible is radiated by the antenna and, since it is obvious that reflected power cannot be radiated, correct use of the SWR meter will help us to reduce the unwanted reflection. Of the common types of SWR meter available, those with dual dials are capable of displaying forward and reflected power simultaneously, whilst the ones with a single dial require switching from forward to reverse reading in order to display the value of SWR but they both perform exactly the same function and, in similar circumstances, should offer identical results. With the meter set to the forward position, keying the mike will cause the needle to move across the face of the dial. With the resistance of the meter adjusted so that the needle travels across the entire face of the dial during transmission, switching to reflected power will cause it to show the value of SWR.

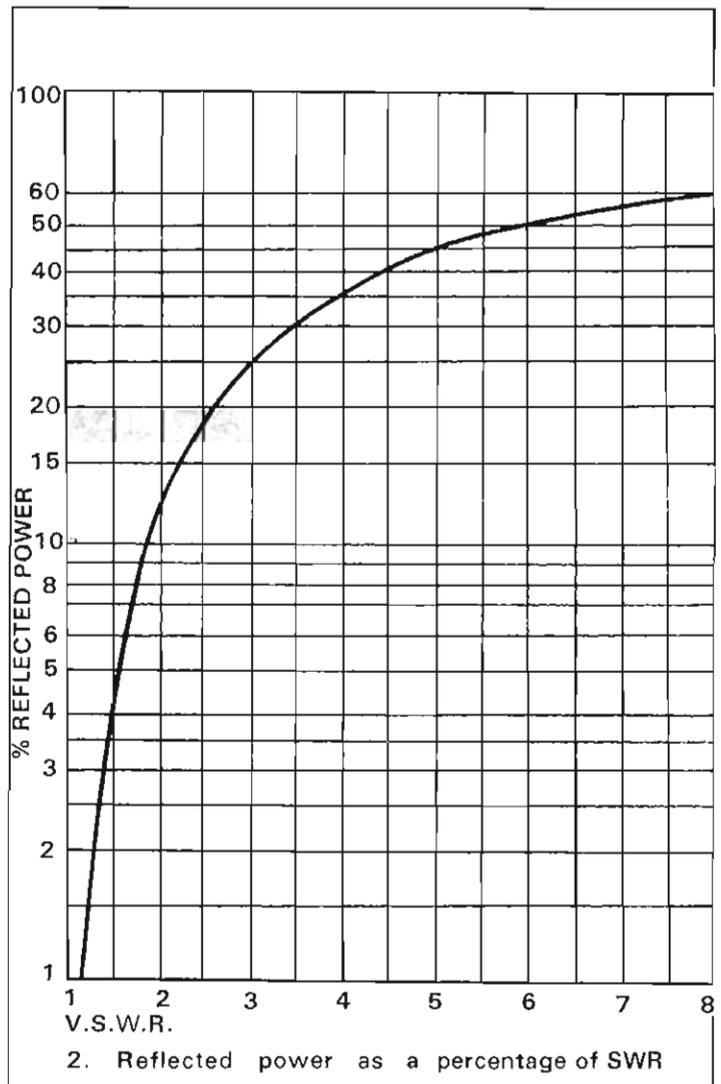


Adjusting for the best possible SWR is merely a matter of making slight adjustments to the length of the aerial. Every aerial has a resonant frequency. That is to say that it operates most effectively at the frequency to which it is tuned and even slight frequency variations, such as between one channel and the next, will have some slight effect on its efficiency, so our ideal must be to achieve the best possible SWR at the centre of the band of frequencies in use. In the case of CB, this is channel 20. The first step in obtaining the ideal reading is to compare the SWR at channels 1 and 20, remembering that the difference in frequency between these channels will necessitate a small adjustment in forward deflection before you attempt to read the degree of reflection. The higher the frequency in use, the shorter the aerial must be in order to achieve resonance. Conversely, a lower frequency requires a longer antenna, so that an unacceptably high SWR at channel 1 suggests that the antenna is slightly too short, whilst a similar result at channel 40 means that the aerial is slightly too long.

Once you have made the comparison between the two extreme channels, the next step is to switch to channel 20 and, remembering yet again to adjust the meter for full scale deflection in the forward mode, to take another reading. From the figures obtained by checking channels 1 and 40 you will now know whether the length of the aerial should be increased or decreased and slight adjustments in the required direction will reduce the value of SWR at channel 20. At this stage it is important to make all adjustments in small steps in order to reach the optimum value, especially if you have to cut the top of the antenna. It is far easier to remove part of its length than to replace it and if you take off too much you will simply send the SWR soaring again. You should continue to make small adjustments to the length until you reach the point at which the SWR starts to climb again and then to re-check the readings at both channel 1 and channel 40, where, if you have done the job properly, the values should be about equal and slightly higher than at channel 20. At this point you have made your antenna about as efficient as you will ever achieve with an SWR meter.

As with most other things, where SWR meters are concerned you get what you pay for and the cheaper models are likely to be somewhat less accurate than their more expensive counterparts, in which higher quality components have been used. Professional organisations spend many hundreds of pounds on a single SWR meter and though this is obviously not necessary in the case of CB, it does help to put the readings provided by cheaper equipment into perspective. Some of the very cheap models appear somewhat insensitive, with the result that you may appear to have a perfect SWR of 1.0 to 1 across the entire band. Since such a Utopian state of affairs is most unlikely you would be well advised to compare your readings with those obtainable by using a different meter. In fact a healthy degree of scepticism is a valuable ally when ready SWR values because of the inherent inaccuracies of this method of tuning. Even the length of the lead connecting the meter to the rig can sometimes induce variations in the reading and the best that can be said of many SWR meters is that they indicate whether the SWR is going up or down with each adjustment.

As we explained earlier, the value of SWR is the ratio between the amount of power delivered from the power amplifier and that reflected back along the transmission line and Fig. 2 shows the amount of reflected power for a given value of SWR. From this graph we can see that an SWR reading of 1.5 to 1 results in a reflection of only 4% of power, whilst an SWR of 2.0 to 1 results in the loss of some 12%, with a figure of 5.0 to 1 costing almost a third of the available power. From these figures it is easy to see that any improvement on an SWR of about 1.5 to 1 will offer little advantage and this should be regarded as an acceptable figure in nearly every circumstance, for even if your transmitter were 100% efficient, which it is



not, the loss of effective power in these circumstances would only be 160mW and, given that transistor circuitry is usually only about 50% efficient, your actual losses are likely to be nearer the region of 80mW, or .008W.

Many operators have noticed that if they check SWR at ground level they get an entirely different reading when the aerial is lifted into the air and the higher they go, the higher the SWR goes. This phenomenon is a result of the fact that the earth acts as a ground, so far as the aerial is concerned, and it makes a nonsense of most attempts at pre-tuning. Equally, there may be difficulties in attempting to resonate an antenna in the loft, or any other room in the house. The presence of a nearby TV antenna, not necessarily your own, or even a water tank, can seriously affect your SWR and dramatically impair your performance. For the best possible results it invariably pays to site the aerial out in the open and as far as possible from any large metallic structure.

It makes no difference whether you are setting up a rig in the home, a caravan, boat, or in the car. The principles remain the same. There are, however, one or two points worth bearing in mind when establishing a mobile station. The first is that your first choice of antenna site might not be ideal. Moving the antenna only a few inches along the body of the car can sometimes have a significant effect on the SWR reading, so it pays to take a couple of comparative readings before you decide on the final position of the aerial. It also pays to bear in mind the fact that a loosely mounted antenna, such as a mag mount, offers a less efficient earth than one which is mounted directly to the body of the car and this will

most likely lead to some slight variation in SWR. The modern trend for vinyl roof coverings is another factor which can affect the SWR, since the vinyl will render the aerial slightly more capacitive than would be the case were it mounted directly above an unadorned steel roof.

One last thought on the subject of SWR leads me to the fact that your radio has a characteristic impedance of 50 ohms and for the best possible results and minimum SWR value you should take care to choose an aerial with the same impedance. For example, the normal antenna specified by the terms of your licence has an impedance of 50 ohms but a half-wave dipole has a characteristic impedance of 75 ohms, with the result that the best SWR can only be achieved by means of a matching transformer.

In the final analysis, an SWR meter is a very useful piece of test equipment but it should never be treated with the degree of reverence which some breakers seem

to attach to it. It offers a useful indication of the relationship between rig, feeder cable and antenna but there are more efficient, though more costly and complicated, means of achieving real efficiency. The quality of the coaxial connecting lead supplied with many commercial SWR meters often leaves a lot to be desired and you would be well advised to invest in a short length of high quality, low-loss coaxial cable for use with an SWR meter. It is not necessary to run your station with the SWR meter permanently in-line. In fact this can lead to interference in some cases, as the diodes in the SWR meter constantly rectify direct current, which can have an adverse effect upon nearby TV receivers. Instead you should use an SWR meter to make periodic checks on the efficiency of your station and before long that nice, friendly guy in the local CB shop will no longer be able to blind you with science and, like him, you will be able to impart the fruits of your experience to others.

SWR METER ROUNDUP

Bremi (UK) Limited market a range of SWR-power meters including their Model BRG 201 which operates between 3 to 200 MHz at an impedance of 50 ohms. It is a strip line coupler type with a power loss figure of 0.05 dB. Maximum power is 2kW PEP and it is accurate to $\pm 5\%$. The 201 retails at £20.25.

The Bremi Model BRG 1010 is a combined SWR, power meter and modulation percentage meter. The SWR section operates between 3 to 200 MHz at an impedance of 50 ohms, and also has a power loss figure of 0.05 dB. Again, it is accurate to $\pm 5\%$ and has a

maximum power of 1kW AM, 2kW PEP. It sells for £23.50.

Their Model BRG 1000 is a combined SWR-power meter and impedance matcher, which operates between 26 and 28MHz. The power loss figure quoted for this 50 ohms unit is 0.2 dB and its maximum power is 500 watts AM or 1kW SSB. It costs £36.50.

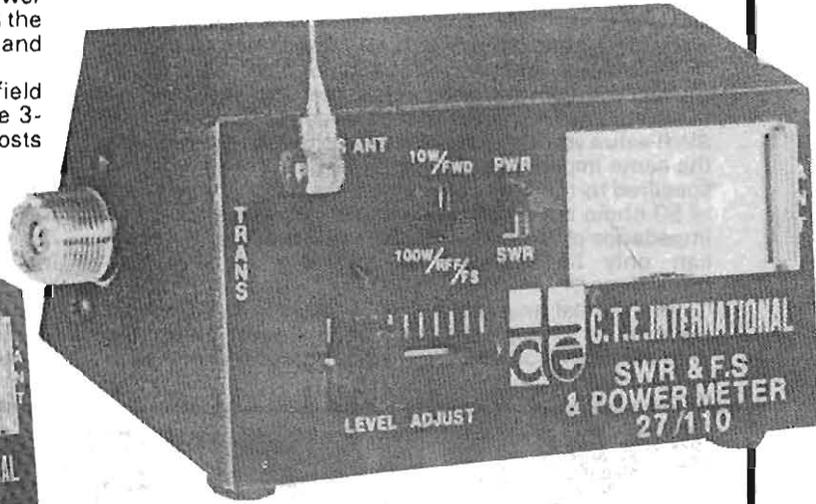
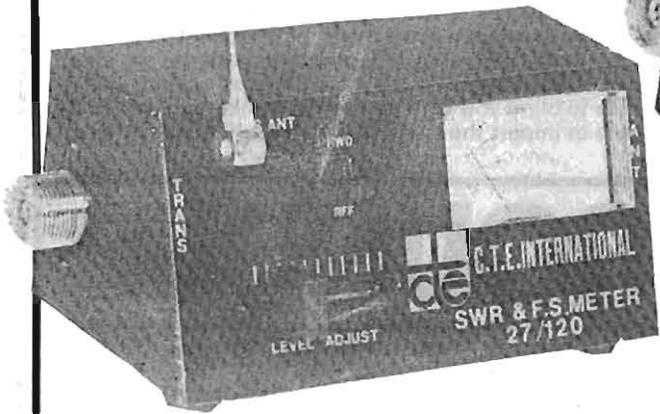
Bremi's BRG 22 SWR-watt meter has a frequency range of 3-150MHz (26-30 MHz watt meter) and an input/output impedance of 52 ohms. Power measurements are up to 1kW in three stages: 0-10; 0-100; 0-1000, and the unit costs £35.03.



BREMI

CTE International have a range of SWR meters which includes their Model 27/110. This covers frequencies in the range 1.5-144MHz and has power figures of 0-10w, 0-100w. It is accurate to $\pm 5\%$ and the whole unit, which also includes a field strength and power meter, costs £19.95.

The CTE 27/120 is a combined SWR and field strength meter and covers frequencies in the range 3-30MHz. It, too, has an accuracy figure of $\pm 5\%$ and costs £19.29.



CTE

The Zetagi range of SWR power meters includes the Model 201, which has a frequency range of 3-200 MHz and an impedance of 50 ohms. It is of the directional coupler type with an insertion loss of 0.05 dB. The 201 has a maximum power input of 2kW and costs £21.91.

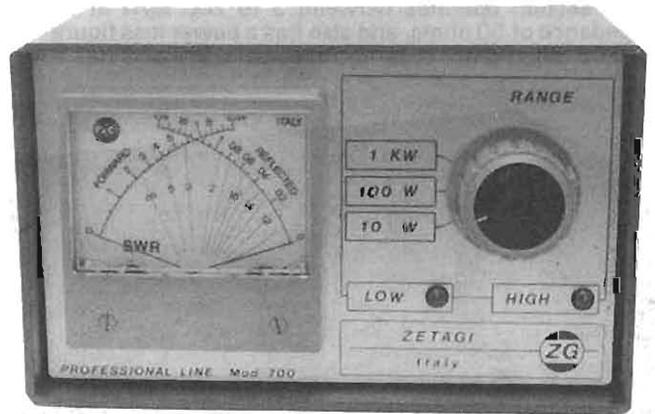
One step up in the range is the Model 202, which covers frequencies in the range 26-30MHz and has an impedance of 50 ohms. Its power range is in steps from 1-10-100-1kW FS, and it has a tolerance figure of $\pm 10\%$ of full scale. The 202 retails at £29.76.

The Zetagi 500 SWR watt meter has a frequency range of 3-200MHz and its impedance is switchable between 50/75 ohms. This directional coupler type has an insertion loss of 0.2dB, a maximum power input of 2kW PEP and costs £34.48.

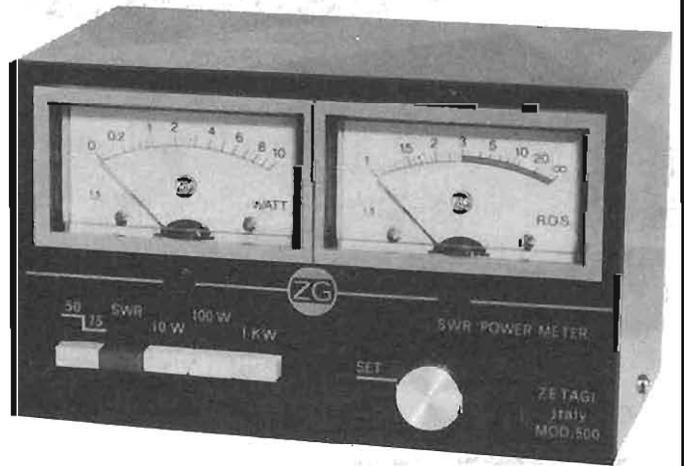
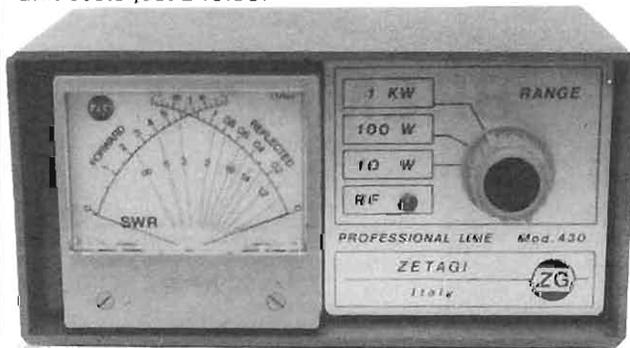
The Model 430 is a 50 ohm unit with a frequency range of 120-500 MHz. Its power range covers 10-100-1 kW FS and it retails at £49.95.

Zetagi's Model 700 is a low/high frequency unit, capable of being switched between 2-30MHz and 120-500MHz. Its impedance is 50 ohms and its power range covers 10-100-1kW FS. Not surprisingly, it costs £79.85.

The Zetagi TM 1000 is a very clever box of tricks. It comprises an antenna matcher, SWR meter, power meter and a switch for one or two antennas. The whole unit costs just £49.99.



ZETAGI



Finally, if you're looking for a simple, inexpensive, no-frills 26-30MHz meter, you could try checking out the CB Tron 2T or the Academy CB-34, both of which are basic SWR meters and both retail at £6.95.



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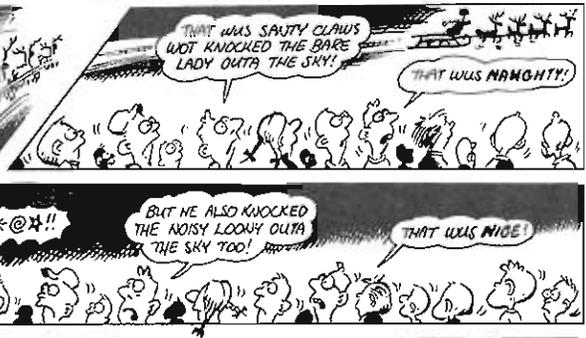
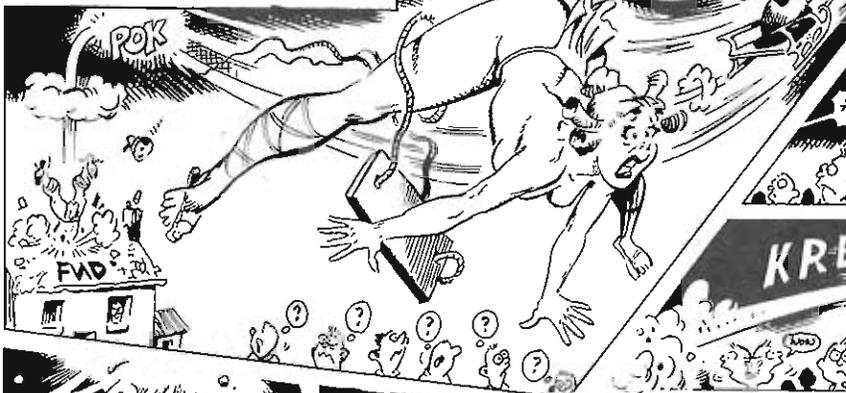
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Due to the popularity of back numbers of this magazine, the Back Numbers department have informed us that the following back numbers only are available at the moment; September, October and November 1983 and February 1984. It is hoped over the next months to build up a stock of back numbers for the previous year's issues i.e. the eleven months preceding the magazine currently available and we will keep you informed of the situation. To order a magazine, fill out the form below (photocopies and handwritten orders are acceptable). The form and your cheque or postal order should be sent to Citizens' Band, Infonet Ltd., Times House, 179 The Marlowes, Hemel Hempstead, Herts HP1 1BB

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We are always pleased to receive letters from readers, but at times it is impossible to answer them all. We do try to eventually get round to answering letters with an S.A.E. but this may take some time.

It is assumed that letters we receive are intended for publication unless they say otherwise. Letters for particular features like Back Chat, Q & A and Club News should have that marked on the envelope and the correspondent's full name and address, although this will not be published if requested. Readers who are hoping for publicity for events, competitions and 'other happenings' should bear in mind that the magazine goes to press at least two weeks before the magazine appears in the shops, and editorial copydates are usually a month before the 'press' date. Please remember this when sending any information in.

Writing for CB

We welcome readers contributions, especially if they cover a new aspect of CB or are D.I.Y. projects. Unless you are experienced in contributing to magazines you may not be aware of how work should be presented — if in doubt write for advice!

Telephoning

It is very difficult to deal with telephone queries, especially technical ones, as most of our energy has to go into putting the magazine together. If you can deal with it by letter, please do.

Back Numbers and Binders

See left for details of back numbers available and the ordering details. Binders for Citizens' Band magazine are also available from the same address at a price of £4.25, inclusive of postage and packing.

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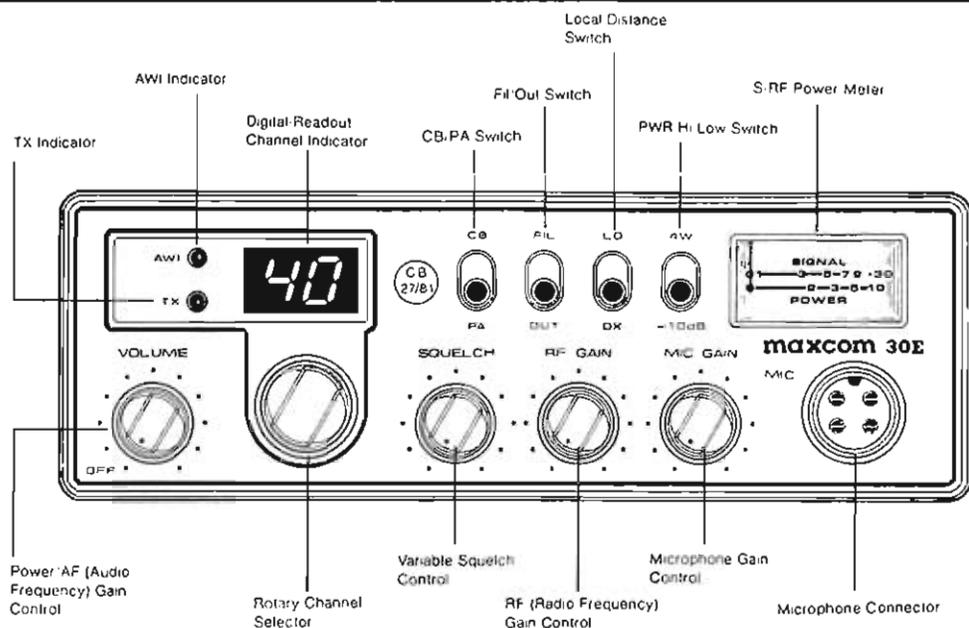
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Citizens' Band

REFERENCE SECTION



A CB SET AND ITS CONTROLS

VOLUME

Sometimes called *Audio Frequency Gain* control. Usually combined with the 'power on' switch. The volume control will only increase or decrease the loudness of the incoming signal — it won't alter the strength of it or affect the transmitted signal.

CHANNEL SELECTION

For choosing the channel you transmit and receive on.

CHANNEL INDICATOR

Displays, usually by LEDs, the channel you have selected. Some channel displays are of liquid crystal or fluorescent. The digits are normally bright red, green, orange or blue and visible in all but the most direct sunlight.

SQUELCH

The squelch control is used for quieting background hiss or the babble of distant signals. The control is turned **slowly, usually to the right**, until the background noise disappears. The squelch circuit will then only open to let through a stronger signal than those you have quieted out. As soon as the stronger signal goes, the circuit closes. Care must be taken not to turn the squelch control up too far, as then only a very strong signal will open it.

SIGNAL/RF METER

On most sets this is of the 'moving needle' type against an analogue background. Some sets do have a bar of LEDs that light up to show the strength of either the received signal or the transmission. It shows the *relative* strength, not a reading in dB or Watts. These meters cannot be 100% accurate and different rigs will give slightly different readings for signals of the same strength.

RF GAIN

This controls the reception sensitivity of the set. When decreased the set is less sensitive, and when increased the set is more sensitive to weaker signals. Reducing the gain helps prevent overloading when talking to someone who is very close.

Some sets, instead of having a suitable rotary control, have a flick two position switch marked *local and distant*. Full sensitivity is the distant position.

MIC. GAIN

Adjusts the sensitivity of the microphone amplifier circuit and controls the audio from the microphone that is used to modulate the signal.

CB/PA SWITCH

This switch turns your CB set into a low public address amplifier, when an external speaker is fitted into the socket on the back of the rig. Anything said into the microphone is amplified and broadcast through the speaker and not transmitted from the antenna.

tone or Filter Control

This can either be a rotary or flick switch. It controls the tonal quality of received signals in accordance with the user's preference.

POWER ANTENNA

Reduces the transmitter power from 4Watts to 0.4Watts. The attenuator should be used if your antenna is mounted more than 7 metres above the ground.

RX/TX INDICATORS

These light emitting diodes light up to show if you are receiving (RX) or transmitting (TX).

ANTENNA WARNING INDICATOR

This is a warning indicator which is activated by trouble in the antenna system e.g. a bad mismatch or damage to the antenna or cable. You should stop transmitting if this lights up, and correct the problem.

Your set may also have the following controls

CHANNEL 9 SWITCH

This is an 'over-ride' switch that will immediately select channel 9 without using the channel selector to find it. It is fitted to save time in an emergency.

DELTA TUNE

This is not a common feature on British sets, where frequency and stability are closely specified. It is a fine tuning device for tuning in stations that are operating slightly off frequency.

DIMMER

Works on the same principle as a domestic light dimmer, and reduces the amount of illumination on displays and dials on the CB set. A few sets have an automatic dimmer built in, which measures the lighting level through a photo-electric cell and adjusts the illumination accordingly.

ANL/NOISE BLANKER

The Automatic Noise Limiter or Noise Blanker is designed to reduce interference from a car's ignition system by desensitising the receiver slightly. If the ignition circuit is already adequately suppressed it will not make any difference.

CHANNEL BUSY/FREE INDICATOR

This is usually a LED that illuminates when a particular channel is in use or is free. This is gauged by the amount of 'traffic' on the channel which has to be at a certain level before the indicator is activated. Sets have either a 'free' or 'busy' indicator, not both.

FM RIG CHECKLIST



NAME	MODEL	RETAIL PRICE	NO. OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	STONE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAKER JACK
AMSTRAD	CB901	£40	40	13.8VDC	•			•	•		•	•	•	•	•
AUDIO LINE	341	£60	40	13.8VDC	•			•	•	•	•	•	•	•	•
AUDID LINE	340	£40	40	13.8VDC	•			•		•	•	•	•	•	•
AUDIO LINE	342	£115	40	13.8VDC	•					•	•	•	•	•	•
COLT	295	£49.99	40	13.8VDC	•			•		•	•	•	•	•	•
COMMTEL	GT858	£30	40	13.8VDC	•					•	•	•	•	•	•
COMMTEL	GT689	£35	40	13.8VDC	•			•		•	•	•	•	•	•
COMMTRON	CB40F	£70	40	13.8VDC	•					•	•	•	•	•	•
COMMTRON	CXX	£69.95	40	13.8VDC	•			•		•	•	•	•	•	•
COMMUNICATORS	NI-440DX	£50	40	13.8VDC	•			•	•	•	•	•	•	•	•
CYBERNET	BETA 1000	£70	40	13.8VDC	•						•	•	•	•	•
CYBERNET	BETA 2000	£85	40	13.8VDC	•			•	•	•	•	•	•	•	•
CYBERNET	BETA 3000	£100	40	13.8VDC	•			•	•	•	•	•	•	•	•
DNT	M40FM SPECIAL	£100	40	13.8VDC	•			•		•	•	•	•	•	•
FIDELITY	CB 1000M	£70	40	13.8VDC	•					•	•	•	•	•	•
FIDELITY	CB 2000M	£90	40	13.8VDC	•			•	•	•	•	•	•	•	•
FIDELITY	20001 FM	£70	40	13.8VDC	•			•	•	•	•	•	•	•	•
GRANDSTAND	BLUEBIRD	£50	40	13.8VDC	•					•	•	•	•	•	•
GRANDSTAND	HAWK	£30	40	13.8VDC	•					•	•	•	•	•	•
GRANDSTAND	GEMINI	£60	40	13.8VDC	•	•				•	•	•	•	•	•
GRANDSTAND	LA 83 934 MHz	£400	20	13.80VC	•					•	•	•	•	•	•
INTERCEPTOR	INTERCEPTOR	£80	40	13.8VDC	•				•	•	•	•	•	•	•
INTERCEPTOR	TC400	£95	40	13.8VDC	•		•	•	•	•	•	•	•	•	•
INTERCEPTOR	ONE HANDER	£100	40	13.8VDC	•			•	•	•	•	•	•	•	•
JOHNSON	JOHNSON	£50	40	13.8VDC	•				•	•	•	•	•	•	•
LAKE	MANXMAN 850	£32.50	40	13.8VDC	•					•	•	•	•	•	•
LAKE	MANXMAN 950	£37.50	40	13.8VDC	•				•	•	•	•	•	•	•
LOWE	TX 40	£50	40	13.8VDC	•				•	•	•	•	•	•	•
MAGPIE	AUTOSCAN 5000	£120	40	13.8VDC	•			•	•	•	•	•	•	•	•
MAXCOM	4E	£50	40	13.8VDC	•					•	•	•	•	•	•
MAXCOM	6E	£48	40	13.8VDC	•				•	•	•	•	•	•	•
MAXCOM	20E	£50	40	13.8VDC	•					•	•	•	•	•	•
MAXCOM	21E	£50	40	13.8VDC	•					•	•	•	•	•	•
MAXCOM	16E	£40	40	13.8VDC	•					•	•	•	•	•	•
MAXCOM	30E	£65	40	13.8VDC	•			•	•	•	•	•	•	•	•

This listing includes most of the rigs available for FM CB. Some rigs are still not on the market, but may be picked up second-hand or may be found in old stock at some shops. The prices quoted are recommended retail prices or typical price — they may vary considerably from shop to shop and area to area.

MOBILES

					ADDRESS	NAME
•	•	•	SL	Report Feb '82	Amstrad Consumer Electronics, 1-7 Garman Rd., London N17	AMSTRAD
•	•		SL		Telecomms, 189 London Rd, North End, Portsmouth	AUDIOLINE
•				Report Feb '82		AUDIOLINE
•	•					AUDIO LINE
•			FL		K B & Co Ltd., 202 Cheatham Hill Rd, Manchester	COLT
•			SL		Globe, 168 Brooker Road, Waltham Abbey, Essex	COMMTEL
•			SL	Dimmer Switch Features		MMTEL
•		•	FL		Roger D, 831 Mansfield Rd, Notts	COMMTRON
•			FL			COMMTRON
•	•	•	FL	Roger Beep Feature		
•			SL		Goodmans Loudspeaker Ltd., Downley Rd, Havant, Hants PO9 2NL	CYBERNET
•	•		FL	Report May '83		CYBERNET
•	•	•	FL	Report September '83		CYBERNET
•			FL	Report July '82		DNT
•			SL	Report December '81	Fidelity Radio Ltd., Victoria Rd, London NW10	FIDELITY
•		•	FL	Report March '82		FIDELITY
•		•		Report September '82		FIDELITY
•			SL		Bee-Ware Ltd., Ripon Way, Harrogate, N. Yorks.	GRANDSTAND
•	•		SL			GRANDSTAND
•			SL			GRANDSTAND
•				Features combined with Bluebird (Included)		GRANDSTAND
•	•		SL		Telecomms, 198 London Rd, North End, Portsmouth	INTERCEPTOR
•	•		FL			INTERCEPTOR
•	•		FL			INTERCEPTOR
•			FL	Great GT868 chassis	Ster Warehouse, Chalk Farm Rd, London	JOHNSON
•			FL		Roger D, 831 Mansfield Rd., Nottingham NG5 3GF	LAKE
•			FR	Report April '83		LAKE
•	•		FL	Report March '83	Lowe Electronics, Matlock, Derbyshire	LOWE
•		•	FL	Report November '82	Maggie Electronics, PO Box 35, Andover, Hants SP10 2LG	MAGPIE
•			FL		AM House, 9A Old's Approach, Tolpits Ln, Watford, Herts	MAXCOM
•		•	FL			MAXCOM
•		•	FL			MAXCOM
•		•	FL			MAXCOM
•			FL			MAXCOM
•			FL	Report Jan '84		MAXCOM

REFERENCE



NAME	MODEL	RETAIL PRICE	NO OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	STONE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAK
MERCURY	10 40	N/A	40	13.8VDC	•			•		•		•	•	•	
MURPHY	DS-602	£25	40	13.8VDC	•						•		•	•	
MUSTANG	CB1000	£49.95	40	13.8VDC	•					•			•	•	
MUSTANG	CB3000	£59.99	40	13.8VDC	•			•	•	•			•	•	
NATO	40M	£69.95	40	13.8VDC	•		•	•	•	•			•	•	
NATO	2000	£189.95	40	13.8VDC	•	•	•	•	•	•			•	•	
OSCAR	OSCAR I	£85	40	13.8VDC	•					•			•	•	
OSCAR	OSCAR II	£49	40	13.8VDC	•					•			•	•	
REFTEC	934	£300	20	13.8VDC	•					•					•
RDEL	RVC 220	£50	40	13.8VDC	•					•			•	•	
ROTEL	RVC 230	£70	40	13.8VDC	•			•	•	•			•	•	
ROTEL	RVC 240	£90	40	13.8VDC	•		•	•	•	•			•	•	
SIRTEL	SEARCHER	£40	40	13.8VDC	•					•			•	•	
TANDY	TRC2001	£80	40	13.8VDC	•					•			•	•	
TANDY	TRC2002	£70	40	13.8VDC	•					•			•	•	
TANDY	TRC2000	£100	40	13.8VDC	•		•	•		•			•	•	
TANDY	TRC1004	£79	40	12VDC	•					•			•	•	
TANDY	TRC2003	£130	40	13.8VDC	•					•			•	•	
UNIDEN	UNIACE 100	£69.95	40	13.8VDC	•					•			•	•	
UNIDEN	UNIACE 200	£89.95	40	13.8VDC	•		•	•	•	•			•	•	
WAGNER	9000	£59.96	40	13.8VDC	•			•		•	•		•	•	
WAGNER	COMPACT 40	£26	40	13.8VDC	•					•			•	•	
WESTERN	COMPACT 40	£34.50	40	13.8VDC	•					•			•	•	
WESTWARD	P.T.2	£159.95	40	13.8VDC 240V	•					•			•	•	



NAME	MODEL	RETAIL PRICE	NO OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	STONE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAK
AUDIOLINE	345	£139.95	40	240VAC	•			•	•	•			•	•	
COMMTEL		£65	40	240/12V	•					•					
DNT	B40	£TBA	40	240VAC	•					•			•	•	
DNT	B2740	£TBA	40	240VAC	•					•			•	•	
DNT		£TBA	40	240VAC	•				•	•			•	•	
FIDELITY	CB 3000M	£125	40	240VAC	•			•	•	•			•	•	
GRANDSTAND	BASE	£220	40	240VAC	•			•	•	•			•	•	
HAM INT.	JUMBO	£254	40	240VAC	•	•	•	•	•	•			•	•	
HAM INT.	CONCORDE II	£164	40	240VAC	•	•	•	•	•	•			•	•	
HARVARD	H401	£149.95	40	240VAC	•			•	•	•			•	•	
MIDLAND	76-200	£150	40	240VAC	•			•	•	•			•	•	
REFTEC	BS 934	£450	20	240V	•					•			•	•	
UNIQEN	UNIACE 300	£149.95	40	240VAC	•		•	•	•	•			•	•	
WAGNER	BASE	£150	40	240VAC	•	•		•	•	•			•	•	
WESTWARD	P.T.2	£159.95	40	240V/12V	•					•			•	•	

MOBILES

ER JACK	TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS
•	•			FR	Report July '83
•	•			FL	
•	•			FL	
•	•	•		FL	
•	•			FL	
•	•			SL	Report January '83
		•		FL	Cybernet 134 chassis rep. April '82
				FL	Report Oct '83
•	•			FL	
•	•			FL	Cybernet chassis
•	•	•		SL	Cybernet chassis
•	•			SL	Cybernet chassis
•	•			FL	
•	•			SL	
•	•			SL	
•	•			SL	
•	•			SL	Report Nov '82
•	•			SL	Report Sept '82
•	•			FL	Report Feb '83
•	•			FL	
•	•			FL	
•	•			FL	
•	•			SL	
				FL	Report Nov '83

ADDRESSES	NAME
E.M.S. Communications, Grove St, Wantage, Oxon LK21 7AD	MERCURY
Murphy Electronics, Wembley, Middx	MURPHY
K.B. & Co Ltd, 202 Cheetham Hill Rd, M/cr	MUSTANG
	MUSTANG
Roger D, 831 Mansfield Rd, Nottingham NG5 3GF	NATO
	NATO
S.M.C Runbridge St, Totton, Hants SO4 4OP	OSCAR
	OSCAR
RF Technology, Leyton Ave Ind Est, Mildenhall, Suffolk	REFTEC
Rotel Hi-Fi, 2-4 Erica Rd, Stacey Bushes, Milton Keynes	ROTEL
	ROTEL
	ROTEL
	ROTEL
	SIRTEL
Tame Way, Tower Bridge St, Walsall, Staffs	TANDY
	TANDY
	TANDY
	TANDY
	TANDY
Cravenminster Ltd, Unit 8, Ind Est, Llandudno Junct, Gwynedd	UNIDEN
	UNIDEN
Knight Communications Ltd, Unit 19, Britannia Est, Leagrave Rd,	WAGNER
Luton, Beds	WAGNER
Western Electronics, Fairfield Est, Louth, Notts	WESTERN
Westward Electronics, The Mill House, Westward Tuckenhay, Totnes, Devon 086423 336/370	WESTWARD

BASES

ER JACK	TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS
•					
				FR	Report December '83. Also comes with telescopic antenna
•				FL	Review May '82
•		•		FR	Report May '82
•		•		SR	Report May '82
		•		FL	
•				FL	
•				SL	
•	•	•		FL	
•	•			FL	
•	•			FL	
•	•			FR	See company for further features
•				FL	Reviewed August '83
•				FL	
				FL	Report Nov '83

ADDRESSES	NAME
Telecomms, Portsmouth and Globe, Essex	AUDIOLINE
	COMMTEL
	ONT
	DNT
	DNT
Fidelity Radio Ltd, Victoria Rd, Leiston NW10	FIDELITY
Bee Ware Ltd, Rippon Way, Harrogate, N Yorks	GRANDSTAND
	HAM INT.
	HAM INT.
	HARVARD
	MIDLAND
RF Technology, Leyton Ave. Ind. Est. Mildenhall, Suffolk	REFTEC
Cravenminster Ltd, Unit 8, Industrial Est, Llandudno Junction, Gwynedd	UNIDEN
Knight Communications Ltd, Unit 19 Britannia Est, Leagrave Rd, Luton LU3 1R2	WAGNER
Westward Electronics, The Mill House, Tuckenhay, Totnes, Devon, Totnes, Devon 080423 336/370	WESTWARD

REFERENCE



NAME	MODEL	RETAIL PRICE	NO. OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	TO NE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAKER
DNT	HF 12/3	£47.55	3	BATTERIES	•										
HARVARD	WT44		40	BATTERIES	•										
KAISER	CBX40	£80	40	BATTERY	•					•					•
MAXCOM	7E	£49.95	40	BATTERY	•										
MIDLAND	75-720	£59.95	40	12VDC	•										
TANDY	TRC1001	£119		BATTERY	•					•					•
WESTWARD	PT2	£169.95	40	Int. Batt.	•					•			•		•

PHONE CHECKLIST

Approved phones are marked ●

NAME	MODEL	PRICE	FREQUENCY	RANGE	RECHAR. BATT.	IN USE LAMP	INTERCOM	AUTO DIAL	EXTERNAL ANT.	SECURITY CODE	HANDS FREE
A-PHONE	TP125	£80	49MHz., 1.6-1.8MHz	230m	•	•		•			•
BT	HAWK ●	£155	47MHz., 1.7MHz	100m		•		•		•	
FIDELITY	WANDERER ●	£170	47MHz., 1.7MHz	200m	•	•	•	•		•	
FREEDOMPHONE	3500	£199	49MHz., 1.7MHz	200m	•	•	•	•			
HANDY PHONE	HP 1001	£199	49MHz., 35MHz		•	•	•	•	•	•	
MAXCALL		£115	49MHz., 1.7MHz	100m	•	•	•	•			•
MAXCOM	MCP150A	£89	49MHz., 1.6-1.8MHz	800m	•	•		•			
MAXCOM	MCP 120	£70	49MHz., 1.7MHz	700ft		•		•			
MAXCOM		£99	49MHz., 1.7MHz	200m	•	•	•	•			
PACER	7800	£149	49MHz., 1.7MHz	500m	•	•	•	•			
SUPERFONE	CT600	£115	49MHz., 1.7MHz	100m	•	•	•	•			
SUPERFONE	CT650	£199	49MHz., 1.7MHz	230m	•	•	•	•		•	•
SUPERFONE	CT505	£299	49MHz., 70MHz	1Km	•	•	•	•	•	•	

PORTABLES

TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS	ADDRESS	NAME
						DNT
				External antenna facility	Globe, 168 Brooker Road, Waltham Abbey, Essex	HARVARD
					Telecomms, 189 London Rd. North End, Portsmouth	KAISER
					A.T.M., AM House, 9A Old's Approach, Tolpits Ln, Watford Herts	MAXCOM
					Plustronix Ltd., Hempstalls Ln, Newcastle-under-Lyme, Staffs	MIDLAND
					Tame Way, Tower Bridge St, Walsall	TANDY
		FL		Report Nov '83	The Mill House, Tuckehay, Totnes, Devon 080423 336/370	WESTWARD

The range of telephones and communications accessories available to the consumer is increasing rapidly. Not all equipment is approved by British Telecom — so look for the tag with the green dot if you want 'BT Approved' accessories.

CORDLESS PHONE

STANDBY	BATT. IND	PRIVACY BUTTON	COMMENTS	ADDRESS	NAME
•			Report Feb '84		A-PHONE
•	•		Report July '84	Local BT Sales Offices	
•		•	Report July '83 BT Approved		FIDELITY
			Report May '83	Fidelity Ltd., Victoria Rd., London NW10	FREEDOMPHONE
•		•	Report Aug '83	Thonet Electronics Ltd., Reculver Rd., Baitinge, Kent	HANDY PHONE
			Report June '83		MAXCALL
	•		Report Oct '83	Maxon Group, AM House, 9A Old's Approach, Tolpits Ln., Watford, Herts	MAXCOM
•	•	•		Report May '84	
			Report May '83		MAXCOM
			Report May '83		PACER
		•	Report April '83	Superfone Communications, London NW2	SUPERFONE
		•	Report April '83		SUPERFONE
•			Report April '83		SUPERFONE

ANTENNA CHECKLIST

Name
Lists antennas by name and model number and gives you, where possible, the name and address of the manufacturer or distributor.

Construction
The majority of home base antennas are made of aluminium and mobile antennas from stainless steel, but fibre glass can be

The D.T.I. specs for CB antennas are now more liberal than those originally in force, with the base loading restriction removed to permit any type of loading as long as the antenna is 1.65m in length (or less) and no more than 55mm in diameter. This revised checklist now includes the many new antennas released after this change of heart.

NAME	ADDRESSES	MODEL	CONSTRUCTION	LENGTH	MAX POWER	TYPE	LOADING	MOUNT	PRICE RANGE
AERIAL SUPPLIES	Aerial Supplies (Redditch) Ltd. 6 Widney House, Bromsgrove Road, Redditch, Worcs. (0627 62620/60107)	Silver Star	AL	1.5	100	B	B	Pole	D
		Silver Arrow	AL	1.5	500	B	B	Pole	E
		Javelin	AL	1.54	500	B	C	Pole	E
		Javelin Dipole	AL	1.64	500	B	C	Pole	E
ARMSTRONG	Stateside Trading Ltd. Audley Avenue, Newport, Shropshire	SAM 10	SS	1.06	1000	M	B	Surface	F
		SAM 20	SS	1.06	1000	M	B	Spring Surface	F
		TAK 10	SS	1.06	1000	M	B	Boot lip	G
		TAK 20	SS	1.06	1000	M	B	Spring Boot lip	G
		MAG 10	SS	1.06	1000	M	B	Mag.	G
		MAG 20	SS	1.06	1000	M	B	Spring Mag.	G
		BDY 20	SS	1.06	1000	M	B	Side	G
		PEC 20	SS	1.06	1000	M	B	Side, Fold over & Quick Disconnect	G
ARCHER	Tandy Corp. Tameway Tower, Bridge Street, Walsall, West Mids.	21-904	SS	0.6	60	M	B	3/8" thread	D
AVANTI	CB Radio Centre Ltd., 337 Kenton Road, Harrow, Middlesex	AV 241	SS	1.22		M	B	Stud	D
		AV 241T	SS	1.22		M	B	Trunk	E
		AV 241M	SS	1.22		M	B	Mag.	E
		AV 241MM	SS	1.22		M	B	Mag.	G
BANDIT	Telecomms, 189 London Road, North End, Portsmouth	B10	SS	1.42		M	B	Mag.	G
		B15	SS	0.61		M	B	Mag.	F
		B16	SS	1.22		M	B	Mag.	F
		B20	SS	1.42		M	B	Mirror	F
		B30	SS	1.42		M	B	Drill Thru	F
		B30	SS	1.22		M	B	Drill Thru	F
		B40	SS	1.42		M	B	Various	D
		B40	SS	1.22		M	B	Various	D
		B50	SS	1.42		M	B	Various	D
		B60	SS	1.22		M	B	Various	D
BREMI UK LTD.	Unit 6, Innage Park, Holly Lane Industrial Estate, Atherstone, Warks.	B27S	SS	1.62	1000	M	B	3/8" thread	C
		C27S	SS	1.38	1000	M	C	3/8" thread	C
		HB27S	AL	1.65	1000	S	T	Pole	E
CB SERVICES	37 Crab Lane, Herrogate, North Yorks.	Bullwhip Knuckleduster	SS AL	1.6 1.6		M B	B B	Various	C D
COMMTEL	Near Thist Drive, Fengate, Peterborough	Rocket	SS	1.6		M	B	3/8" thread	
		Shuttle	FG	1.6		M	B	3/8" thread	
		Sterlight	SS	1.6		M	B	3/8" thread	
		Shuttle Ster		1.6		B	CW	Clamp	
		Signal searcher	AL	1.6		B	B	Pole	E
		Messenger	SS	1.6		B	B	Clamp	F
		Signal keeper	SS	1.6		B	B	Tripod	F
FREEMAN AND PARDOE	Tything Road, Arden Forest Ind. Est. Alcester, Warks.	Invader	AL	1.6	250	B	B	Pole	E
		Thunderpole II	AL	1.6	500	B	B	Pole	F
		Thunderpole III	A1	1.65	500	B	C	Pole	F
GAMMA AERIAL PRODUCTS	Lye, West Midlands. (0384 881132/891474)	Skybreaker	AL	1.6		B	B	Pole	D
		Avenger	AL	1.6		B	B	Brecket	C
		Lofty	AL	1.5		B	B	Brecket	C
		Skybreaker II	AL	1.66		B	C	Pole	E
		Avenger II	AL	1.66		B	C	Brecket	E
		Lofty II	AL	1.66		B	C	Brecket	E
Firefly	SS	1.65		M	C	3/8" thread	E		

na Checklist will give you the following information:

used in some models. The list tells you what material the antenna is manufactured from.

Length

The legal maximum length of an antenna is 1.65m, base or mobile.

Maximum Power

This is intended as a guide

only, as the law only permits an effective radiated power of two watts. The power rating will give some indication of sturdiness. Figure refers to watts.

Type

Indicates whether a mobile or base antenna.

Loading

Indicates the type of

electrical loading of the antenna; top, centre, bottom or continuously wound.

Mount

This gives some idea of the mount or type of mount appropriate for the antenna concerned. Home base antennas are usually pole

mounted, but can be house gutter mounted. Mobile antennas are either mag. mounted by a strong magnet, attached to the car gutter or boot lid edge whilst others are physically attached in the same way as a car radio antenna. Mobile antennas with 3/8" thread usually will fit a range of mounts.

KEY		
Construction	Loading	B - £5-£9.99
SS - Stainless Steel	T - Top	C - £10-£14.99
AL - Aluminium	C - Centre	D - £15-£19.99
FG - Fibreglass	B - Base	E - £20-£24.99
Type	CW - Continuously wound	F - £25-£29.99
B - Base	Price Bands	G - £30-£39.99
M - Mobile	A - £1-£4.99	H - £40 plus.

NAME	ADDRESSES	MODEL	CONSTRUCTION	LENGTH	MAX. POWER	TYPE	LOADING	MOUNT	PRICE RANGE
HAM	Dials Wholesale, Unit B, Block 2, Whitegate Indust. Est., Bathgate, West Lothian	Balcostar DV27 DV27TW	AL	1.2	200	B	C	Bracket	D B B
			FG	1.39	100	M	T		
			FG	1.19	100	M	T		
HOT ROD	Stateside Trading Ltd, Audley Avenue, Newport,	FM UK	SS	1.27		M	B	3/8" Thread	B
LES WALLEN MANF.	Pambroke Works, Ramsgate Road, Sandwich,	Modulator LC	SS	1.65	1000	M	B	3/8" Thread	C C C B B B D F
		M.D.X. Long	SS	2.00	1000	M	B	3/8" Thread	
		M.D.X Short	SS	1.55	1000	M	B	3/8" Thread	
		Mini M.D.X.	SS	1.10	100	M	B	3/8" Thread	
		Mini 27	SS	1.40	600	M	B	3/8" Thread	
		Thunderbolt	SS	0.83	200	M	B	3/8" Thread	
		Saturn	AL	1.00	500	B	CW	Pole/wall	
Exper	AL	1.00	1000	B	C	Pole/wall			
R.W. BADLAND LTD.	Roetan Trading Estate, Providence Street, Lye, Stourbridge, West Midlands (Lye 3160/5051)	Rebel 1	SS	1.5	500	M	B	3/8" Thread	
		Rebel II	SS	1.5	500	M	B	3/8" Thread	
		Rebel Raider	SS	1.5	500	M	C	3/8" Thread	
		Rabal Bullet	SS	0.61	50	M	B	3/8" Thread	
		Red Devil	SS	1.52	500	M	CW	3/8" Thread	
REVCO	Telecomms, 189 London Road, North End, Portsmouth,	Revco	SS	1.0	100	M	B	Various	B
SMC	Rumbridge Street, Totton Street, Hants	Oscar CBA 11GP	SS	1.6		B	B	Mag. Foldover Base Pull up Foldover Base	F T D C C C B
		Oscar 11V11S11	SS	1.5		B	B		
		Oscar 11CM	SS	1.2		M	B		
		Oscar 11CE	SS	1.2		M	B		
		Oscar 11NE	SS	1.2		M	B		
		Oscar 11SE	SS	1.5		M	B		
		Oscar 11ZE	SS	1.5		M	B		
TAGRA	CB Radio Centre, 337 Kenton Road, Middlesax.	T40	SS	1.4	500	M	B	Various	E
VALOR	W.T.A. Electronics Ltd, 111 Cromer Road, Halesdon, Norwich (0603 47694)	Warrlor 650	SS	1.52	1500	M	C	3/8" Thread	C C C C C C C C C C D D D D D D D D D D
		Half Breed 520	SS	1.52	1500	M	B	3/8" Thread	
		Half Breed 510	SS	1.2	1500	M	B	3/8" Thread	
		Half Breed 500	SS	0.9	1500	M	B	3/8" Thread	
		Dial-a-Match 640	SS	1.2	100	M	B	3/8" Thread	
		Dial-A-Match 630	SS	0.6	25	M	B	3/8" Thread	
		Rubber Duck 300	SS	0.35	25	M	CW	3/8" Thread	
		Pro Am PLB 27	SS	1.62	200	M	B	3/8" Thread	
		Road Hog 338	FG	0.9	1000	M	T	3/8" Thread	
		Road Hog 335	FG	1.2	1000	M	T	3/8" Thread	
		Road Hog 336	FG	1.62	1000	M	T	3/8" Thread	
		Road Hog 337	FG	1.76	1000	M	T	3/8" Thread	
		Road Hog B31	FG	0.6	500	M	T	3/8" Thread	
		Road Hog B38	FG	0.9	1000	M	T	3/8" Thread	
		Road Hog B35	FG	1.2	1000	M	T	3/8" Thread	
		Road Hog B36	FG	1.62	1000	M	T	3/8" Thread	
		Road Hog B33 1/2	FG	0.76	500	M	T	3/8" Thread	
		Black Magic 333	FG	1.2	500	M	T	3/8" Thread	
		Black Magic 332	FG	1.62	600	M	T	3/8" Thread	
		Black Magic 333 1/2	FG	0.76	500	M	T	3/8" Thread	
Black Magic 833	FG	1.2	500	M	T	3/8" Thread			
WTA	W.T.A. Electronics Ltd, 111 Cromer Road, Halesdon, Norwich. (0603 47694)	Wot Pole 1	AL	1.5	1000	B	B	Pole	B C A B
		Wot Pole II	AL	1.5	1000	B	B	Pole	
		Wot Stick 1	SS	1.5	1000	M	B	3/8" Thread	
		Wot Stick II	SS	1.5	1000	M	B	3/8" Thread	
VAN ORDT	Knight Communications, Unit 19 Britannia Estate, Leagrave Road.	Audio King	SS	1.6	2000	M	B	1/8" Thread	G

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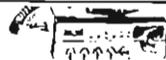
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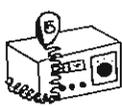
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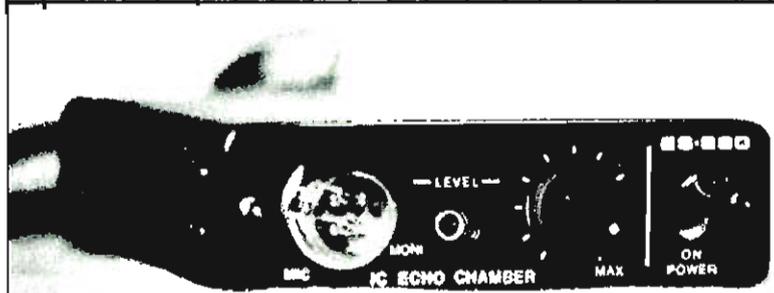
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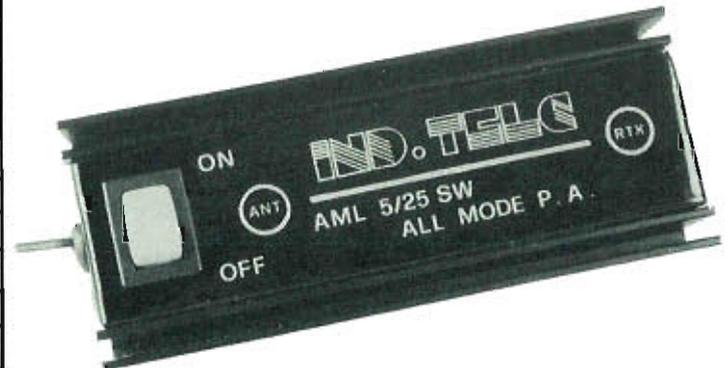
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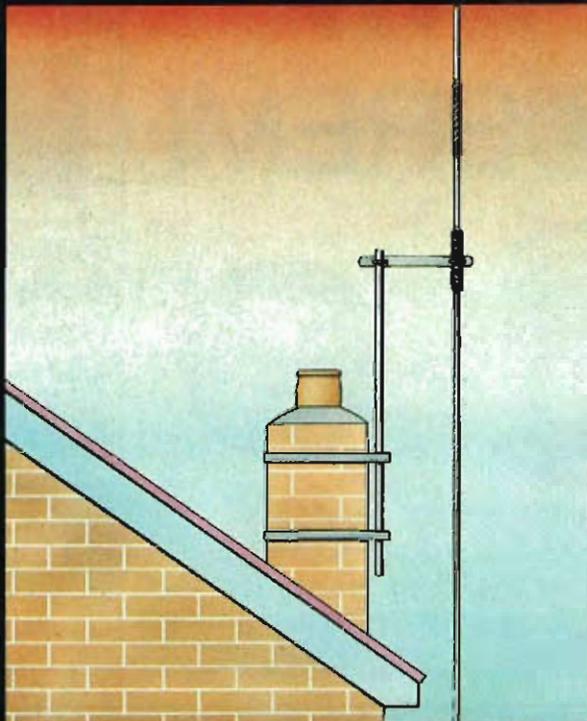
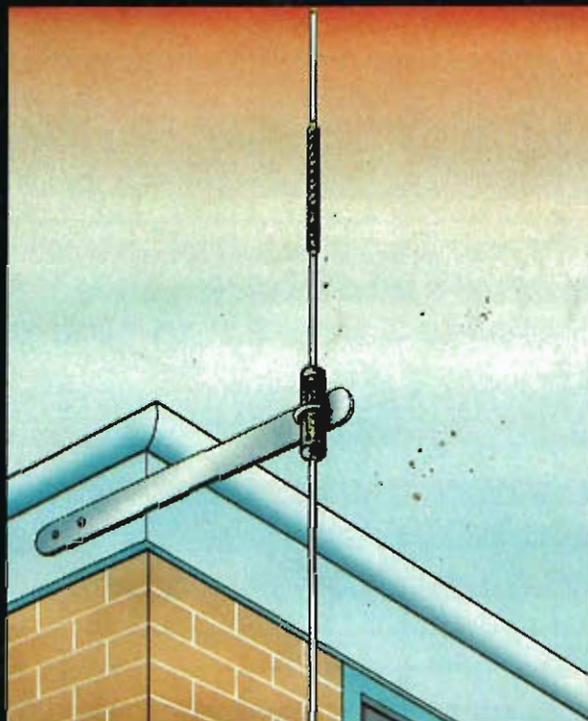
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