

# CB

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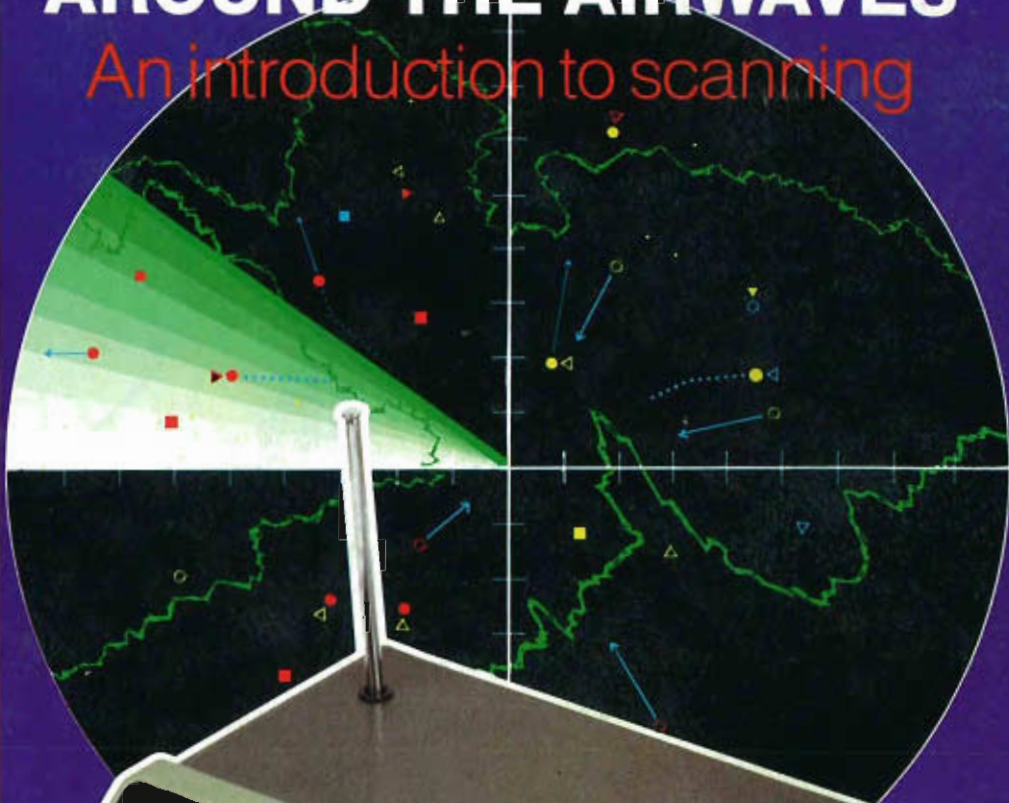
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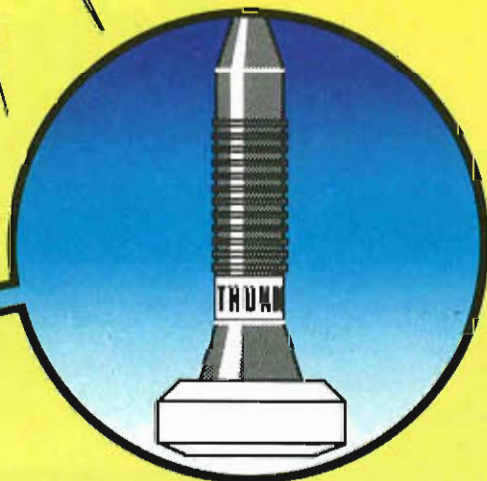
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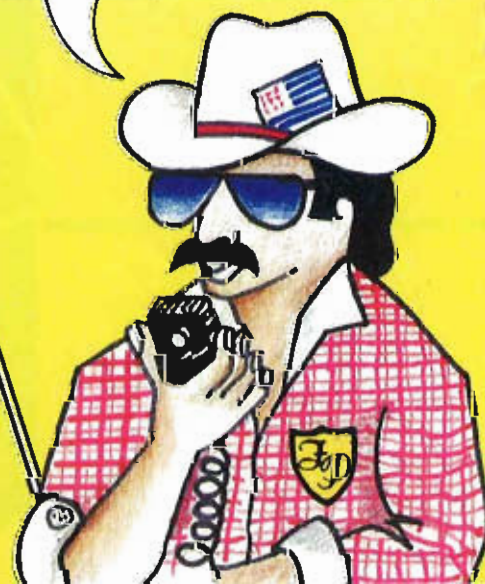
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# CB

# Citizens' Band

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### Cover This Month

An introduction to the world of scanning with the Bearcat 20/20 scanner. Many thanks to Radio Shack of 188 Broadhurst Gardens, London, NW6 for trusting us with the Bearcat for photography.

Do you know what its like, sitting here month after month, trying to think of something witty, sophisticated, amusing, pithy and entertaining and month after month coming up with the same old corny jokes? No, I bet you don't — you probably don't even stop to read it. You just turn over the page to Update and all this effort goes to waste. I could do better than this you know, I could have worked on the Financial Times writing expert assessments of the world's monetary problems. Instead I'm stuck on page 3 (and that doesn't mean as much as it does on *some* papers, let me tell you). Well, that's it. I'm going to strike. Think up your own jokes and see if you can do better. It's all very well to sneer, you try to do better — and see how much they pay you for doing it. That will make you change your tune. Peanuts, that's all they pay. I keep on telling them, 'pay peanuts and all you'll get is monkeys' but they don't listen to me. I'm off to the Financial Times, I bet they pay better. . . .

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# UPDATE

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

It is very intimidating to sit with a blank sheet of paper in the typewriter without an idea in your head of how to fill it. It's even more worrying when you know that the article has to be off to the typesetters in an hour or two and unless you get a sudden flash of brilliance from somewhere, the paper is likely to stay blank.

The trouble is, I can't put it off any longer. I've opened my post, had my cup of coffee, swapped insults with a few other journalists around the office, complained about the heating being off when my feet are frozen and discussed my weekend with the person in the office next door — and whilst all this stops me confronting the blank piece of paper, it also brings that deadline nearer and nearer. Sooner or later I'll have to think of something. . . .

First off I'll say that I hope you like the telephone supplement that you have found in this month's issue. If you haven't got one, then go back and have a look on the newsagents' floor and pick it up out of all the other subscription forms, leaflets and torn bits of newspapers and flick through it. As you can see, we have tried to show both the current legislation concerning telephones and to show the sort of equipment that is now available. This supplement has been included free of charge, making your magazine better value than ever.

Looking through other things that are in this month's magazine, the scanning article is in 'by popular request'. This is a fast growing hobby in this country and we have had many letters asking for more information on the hobby and equipment.

We hope to follow up with some equipment reviews in the near future.

As you will also see on the front cover, we have changed our heading to read 'Britain's Leading

Communications Magazine'. I hope that none of you have gone into panic over this and have thought that the magazine was moving away from CB, as this is far from the truth. But CB has had a great effect on people's knowledge of communications. People who started using CB as a novelty have found that they have gained an interest in communications and want to know more about the theory and application, and the different spheres within communications itself. So in the next few months you will be seeing articles on the history of radio, one breaker's view of going for the amateur radio licence and a few technical articles explaining speech processing and lift conditions on UHF CB. I hope that you all agree that this complements CB rather than detracts from it.

Readers may have heard that 'On the Side' is no longer available which, as far as I know, makes us the only British CB magazine still publishing. I am not as pleased about this as you might think. For a start, as someone who makes their living through journalism, I hate to hear of a magazine going down. It's also a sad reflection on CB in this country that it cannot support two magazines, especially two that differed so much in their presentation and contents. Two magazines present two views and interpretations and give readers the choice

to buy what suits them. At Citizens' Band, we wouldn't be so smug to think that we can please all the CBers all the time — no magazine can hope to do that, although we like to think that the vast majority of breakers will find something of interest in each issue.

It also gives us an awesome responsibility. This magazine is now the published, public face of CB, a hobby that encompasses many thousands of people, and we have the responsibility of presenting the hobby and the people to the country at large, as well as trying to meet the diverse interests of all those thousands of people.

This is your magazine and we need your help to make it work. We need your news, views, opinions and suggestions to get the balance and depth to satisfy all breakers and to interest new readers. The people who work on the magazine can't afford to sit back and think 'that's it, we've seen the rest off' and become complacent. Nor can you. So remember, when you think to yourself 'I don't like this article' or 'I wish they would write about so-and-so', don't keep it to yourself, let US know.

Well, after all that I seem to have finished my bit, and with twenty minutes to go before the final deadline. Close thing though!

Sue Sharp

### Squelch Unit Rides Again!

More in the ongoing saga of the Squelch Unit Project in the March edition of Citizens' Band.

Hobby Electronics magazine, who shares the same photocopier, have pointed out that components R6 and C3 have been transposed on the overlay diagram and that the circuit diagram is the right one to follow. Hope that sorts out a few problems that some of you have been having.

### 93Forum — April 1984

Many apologies to Reftec for suggesting that their 934MHz. equipment was more expensive than the currently available Grandstand. The 93Forum feature in the April magazine had a comparison of UHF rigs and a 'pro' and 'con' listing. The 'price' con slipped into the pro column and misled readers into thinking that the Reftec was more expensive than it actually was.

## Book Review

**The Beginner's Guide to Radio (Ninth Edition)**  
Gordon King  
Newnes Technical Books  
ISBN 408014563

If you've just got interested in CB or radio, either broadcast or communications and are beginning to think "I wonder how that works" or "Why do signals fade in and out," this book would be ideal for you.

The first edition of the *Beginner's Guide to Radio* was published in 1955 and has been regularly updated in the intervening years. The most recent edition includes a section on CB and aerials, but beware, it was printed before the licence changes were introduced in March, so it has a few accidental inaccuracies.

The author assumes that the reader has virtually no background knowledge of the principles of radio technology, so the book starts at square one with the electron and works through to radio reception of both communications and broadcast radio. Chapter headings include 'Signal Propagation and Reception', 'Radio Components', 'Receiver Principles', 'Transmitter Principles' and

'Integrated Circuits' and although the explanations are basic, readers studying for the R.A.E. could find it helpful.

The main virtue of this book is its completeness. Not a text book, it is readable and maintains

interest for the attentive but not dedicated reader, but it doesn't have frustrating gaps where the author assumes that you already know, or wouldn't be interested in, specific details or principles. A really good beginner's book.



## GREY BEARD'S GLEANINGS

Hello there, I am the Grey Beard. I live just on the outskirts of Saddle Town here in the West Midlands and I have been involved with CB for about 10 years now, either from my bed or from my wheel-chair (yes, I'm a 'chair jockey'!!!)

I hope (with our esteemed editor's permission, creep! creep!) to bring to the attention of disabled/bed-ridden CB users, the many and varied "goodies" that will be of assistance in helping them gain more freedom and enjoyment on the band.

If you have a particular problem that you can't seem to get around drop me a line c/o Citizens' Band, etc, etc. NOT forgetting the self addressed stamped envelope for a reply. Equally important, if you are a manufacturer/stockist of specific aids for the disabled CBer, then please let me have fullest details for inclusion in a list of aids that we hope to assemble.

Does anyone know of a good antenna for mounting on a powered wheel chair? I have already decided to use a mirror mount on the frame, it is just the matter of a 'twig' now!

Because I am virtually one handed, I use a headset and boom mic, with a control box that needs the minimum amount of pressure to operate it as a PTT switch. I am hopeful of fitting a homebrew voice activated switch and also a speech-compressor.

Well, that's it for this issue, so get the letters/cassettes pouring in with your queries or ideas for our mutual benefit. If you like (or dislike!) the idea of this column, do write to the editor and tell her your point of view.

The Grey Beard

## Active Line Council

Derick Metcalfe of the Active Line Council and ALERT has written asking readers who write for more information to include a stamped, self addressed envelope for the return of the details. Like many other groups in their infancy and trying to grow, money is very tight and they would appreciate help in this quarter.

Derick also says that badges are now available at a minimal charge of 20p. Details on the group from 3 Baker Street, Blackburn, Lancs BB1 1NZ.

## M.S.G.B.

Details from both the organisational office and a team in Norfolk on a new monitoring group, the Monitoring Service of Great Britain.

It is hoped that this will be a national service and the officers of the group have had a great deal of experience with monitoring and organising a voluntary emergency service.

The aims of the M.S.G.B. are

1. To provide 24 hour coverage of the emergency channel, channel 9.
2. To assist in searches for missing persons at the

request of the police or coastguard.

3. To assist motorists and other breakers who need help with breakdowns and other incidents.

The Norfolk County team started in January this year and is organised by senior controller Brian Snowie. Training schemes are run for monitors, and these include first aid, correct radio procedure and proper liaison with emergency services. There is a one month trial for new monitors.

The Norfolk group's plans include the conversion of a 56 seater bus into a mobile display centre.

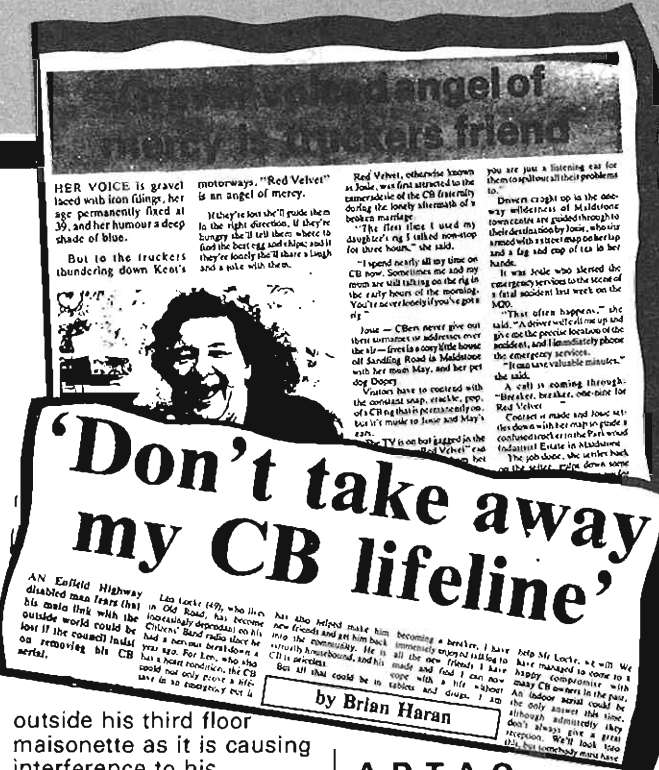
## Read All About It

Two newspaper clippings of a very different nature that have been sent in by readers.

We'll start with the good news. Chris Stimpson in Ashford, Kent sent in a copy of a local paper with a feature on 'Red Velvet'. Josie, as she is called by her family, spends nearly all her time on her rig giving directions to lost drivers, either professional drivers or confused visitors trying to find their way around Maidstone. She can tell you where to eat or call the emergency services for accidents on the M20.

She has become well known in the area for her sense of humour and distinctive gravelly voice, but with her tea and cigarette balanced in one hand and the mic in the other, she is, as the paper says, an 'angel of mercy' to Kent's travellers.

On a sadder note, Kingfisher in Edmonton passed on a newspaper story about Len Locke, who is in danger of losing his CB antenna. The local council are insisting that the antenna is taken down from



outside his third floor maisonette as it is causing interference to his neighbours. Len suffers from a heart condition and also went through a nervous breakdown a year ago. He has found his CB invaluable for both security if he is taken ill and for gaining friends and confidence.

Although the outlook was dim, the council are trying to come to a compromise and permit perhaps an internal antenna.

**A.R.T.A.C. International**  
That rather long list of initials stands for Amateur Radio Third Party Action Committee International, an Australian organisation. They can explain their aims better than I, so here is their press release almost exactly as I received it.  
'A.R.T.A.C. International is a group of Australian radio amateurs who consider it is about time that a number of

## British CB Council News

More pieces of paper from B.C.B.C. have arrived on the editorial desk. At the moment, they are particularly concerned by two major issues that will affect CBers in general, not just members of the council.

First of these is the disbanding of the present Radio Investigation Service. At the moment the R.I.S. is run by British Telecom who have had the responsibility of dealing with interference to radio stations with a small staff and limited budget. BT are to discontinue this service and after some initial apprehension when it seemed that the facility would disappear completely, it seems that the

Department of Trade and Industry will take over where BT leaves off.

The B.C.B.C. has written to the leaders of the principal political parties asking for their support in strengthening the resources of the R.I.S. In their letter the Council point out that:

'With over 280,000 licensed CB users . . . and more than 50,000 radio amateurs . . . radio communication currently generates some £3.5 million in revenue. We suggest that a proportion of this sum could be used to finance the expansion (of the R.I.S.).

. . . the alternative would appear to be the loss of licence revenue as CB users and Radio Amateurs, distressed by the lack of protection for their

hobby, either give it up or cease to pay their licence fees in the belief that they are not receiving value for money and are unlikely, given the lack of enforcement, to be prosecuted for unlicensed operation.'

The second issue is the need for planning permission for the erection of an outside CB antenna. Many councils require planning permission for this and breakers are often not aware of this requirement. The Department of the Environment are currently considering changes to the General Development Order to permit, for example, the erection of dishes for satellite TV and are looking at a proposal to exempt amateur radio antennas from the need for

permission, especially Commonwealth countries, were encouraged to follow Australia's lead in allowing members of their amateur radio service to use a third party operation, thereby removing a longstanding, most unnecessary and highly political strangle-hold on the amateur radio service.

In some countries the third party restrictions are so severe that it is illegal for radio users who are operating within a legal radio network to relay messages or even signal reports to other radio stations.

'These restrictions are not only unnecessary but are a direct insult to the amateur radio service. Operators are always ready and willing to provide their skills and equipment for the benefit of the whole community. Internationally the amateur radio fraternity provides one of the most stabilizing factors for world peace by breaking the political, racial and prejudicial barriers.'

More information is available from Mr. A. D. Tregale, 38 Wattle Drive, Watsonia 3087, Australia.

The B.C.B.C. have also submitted a proposal that CB antennas should also be included in this hoped-for exemption and rightly point out that:

'A particular benefit, which is not strictly the concern of the planning authority, but is often considered, is that a legal antenna erected on the outside of a building is less likely to interfere with television reception than one which is concealed in a loft to avoid the need for planning permission and the interaction of loft antennas with pipes and TV feeders often causes interference.'

More from the British Citizens' Band Council, 26 Greenway Kenton, Middlesex, HA3 0TT.



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The usual diverse section for Smart Alec to deal with; mikes, burners; interference; circuits; cables etc, etc . . .

# QUESTIONS & ANSWERS • QUESTIONS & ANSWERS • QUESTIONS & ANSWERS • QUESTIONS & ANSWERS • QUESTIONS & ANSWERS

## Maxcom Mike

A letter from Ireland to start off this month's proceedings, from Thomas Ewing (no relation, I suppose) . . .

**Q** I have a problem with my mike. When I bought my CB (which is a Maxcom 20E) the mike was O.K. I bought the set from a friend, who has been using it regularly.

I used the rig very little at first but as I have got more confident I have used it more. Suddenly the mike has started to go funny and the needle jumps about. Sometimes I am sending out a dead carrier and at other times breakers said it is like a rush of wind coming in at the start of my modulation.

I have opened the mike several times and found nothing obviously wrong with it and I have looked inside the rig too. It may be a loose connection or something but I cannot find it.

Please could you put me in touch with someone who has the instruction manual as my friend has lost the one that came with the set.

**A** There doesn't seem to be anything obviously loose or you would have found it by now. Check the plug and soldering out too, as this may be the root of the problem.

*Otherwise I suggest that you pass the rig onto a competent 'rig doctor' for further investigation.*

*If you want to follow the circuit through yourself, the handbook should be available from Maxcom Europe, 9A Old's Approach, Tolpits Lane, Watford, Herts.*

SA

## Lack of Muscle

John Stevenson of Baillieston in Scotland wants a bit more muscle. Will a burner do the job? . . .

**Q** I am very new to the world of SSB and therefore the extent of my knowledge is limited. I use a Ham Major which pushes out 12 Watts.

But when DXing I don't really transmit a good signal. Many of my friends on SSB use small burners and I wonder whether an extra 25 Watts would be beneficial and how much I would gain from it.

**A** Apart from the fact that you are adding to your illegal operation, the short answer is not much.

The power of the SSB rig depends on the depth of the 'modulation envelope' so transmitted power will vary between 4 and 12 Watts during the course of short sentences - it won't be putting out a solid 12 Watts all the time.

As 'The Burning Question' pointed out in April's magazine, 25 Watts is an insignificant increase, especially for long distance work.

You might find that the antenna site is a better place to look for improvement. Ensure that the antenna is well clear of buildings, trees and metal objects. Living in a valley will give different (and not so good) results as living on a hill. A good antenna on a good site will increase the range far better than a small burner.

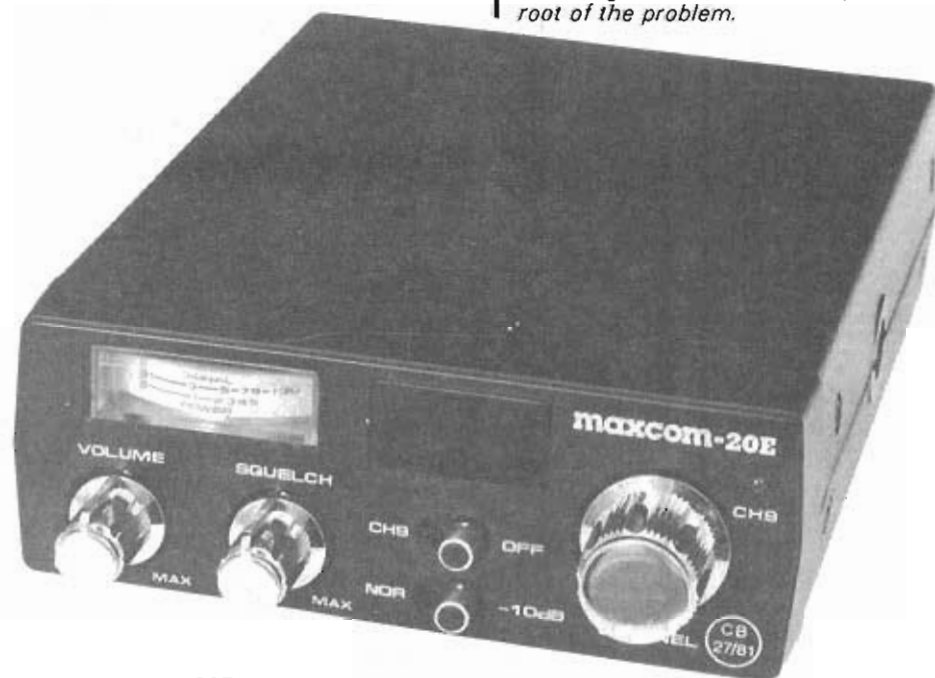
Incidentally, the 27MHz sunspot cycle is low at the moment, as far down as the DX goes, so results are not good anyway.

SA

## Escort Escapades

My heart bleeds for Shaun Fitzpatrick of Nailsea - I know his problem only too well . . .

**Q** Please could you advise me on the old chestnut of interference from my



The Maxcom 20E



car engine. Car; Ford Escort 1600, rig; Cybernet Beta 1000 with extension speaker, twig; T40.

The problem is ignition interference which rises and falls with engine speed. The interference is less when I use the mag. mount as opposed to a tail gate mount.

Power supply is direct to the battery (I've also tried from a cigar lighter but that's worse). I have a seven amp in line choke and I've tried a hot line choke, dual line filter etc. Ford say the car is fully suppressed but I have put a suppressor on the coil plus suppression leads to the plugs.

I travel extensively so I monitor a good deal, therefore my DX Superkrunch is a godsend.

Is the interference line borne, picked up by the rig or twig? I realise that the 1000 is sensitive but unless I'm hit spot on, modulation is difficult. Getting out is really no problem I've DXed 40 miles when stationary and no engine running with an SWR of 1.2 - 1.3:1 throughout the forty channels.

Am I asking too much? If so, what rig to you recommend for mobile use or should I wrap my present rig in rubber?

**A** Oh, Mr. Fitzpatrick, I do sympathise. I have had exactly the same problem with my Escort and at the risk of upsetting Mr. Ford, it is a particularly severe problem in both Escorts and other Ford cars.

You should try disconnecting the antenna by disconnecting it at the rig, switching the set on (DON'T PRESS THE TRANSMIT BUTTON) and listening to the set with the engine running. If the noise and interference is still present, then it is coming up the power lead. If the noise goes when the antenna is disconnected then the interference is being picked up by the antenna or possibly the lead. If the outer braid connection of the co-ax is badly connected at either end.

If the interference is coming up the power lead then the noise must be suppressed at source. Apart from the suppression you have already fitted, try suppressed spark plugs, suppressed dynamo/alternator, fit bonding straps between the bonnet and bodywork, bootlid and bodywork, and the doors and bodywork, engine and bodywork.

Check the bonding strap between the battery and the bodywork. If any corrosion is present, clean it all off until the metal is bright and shiny, reassemble and cover with Vaseline. Check the connections to the battery and treat in the same way if there is any corrosion.

Finally, site the antenna as far away from the engine as possible. As a last resort, do some overtime and buy a new car!

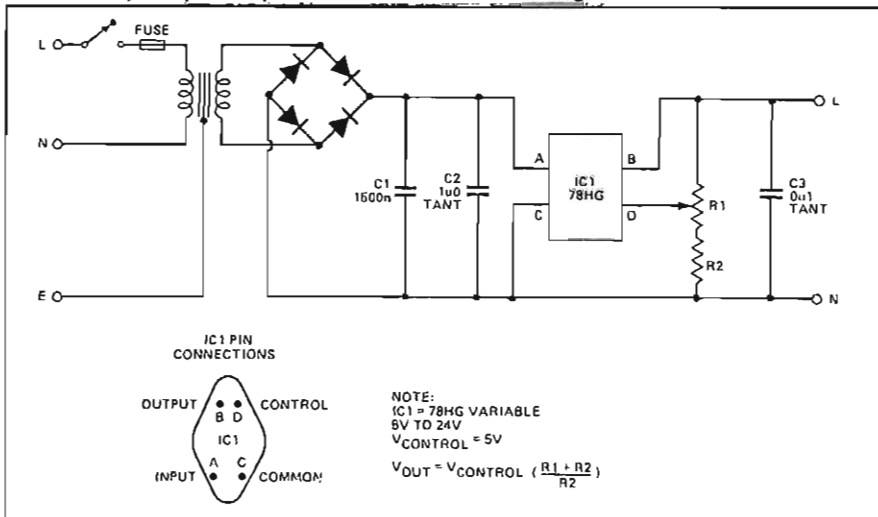
SA

## Power Mad

T. Daws down there in Plymouth wants to do some construction and needs a circuit . . .



Above. The Cybernet 1000, see Escort Escapades  
Below. The principles of power transformer circuit design



**Q** I am writing to you in the hope that you can help me.

I have tried everywhere in my area to obtain a circuit diagram for a variable power pack 0-16 Volts D.C., five amps.

The transformer I shall use is from a 5-7.5 amp power supply.

Please could you supply me with a circuit or let me know where I could get one.

**A** The circuit diagram given will show the principles of the design of the circuit. The 78HG chip can be obtained from Radio Spares (cat. no. 307/339) current price £6.63.

There seems little point in varying down to 0V, so this unit is variable over 5v to 24V.

If this doesn't give enough detail, books on electronics and constructional magazines like Hobby Electronics and ETI will feature power supplies in current issues or back numbers. 'CB Projects' by R. A. Penfold, published by Babani Books also includes a power supply.

SA

## Cable Quiz

The next letter comes from Birmingham, Chelmsley Wood to be exact. In amongst all his other comments about the magazine, its staff and life in general, Mr. V. C. Cresswell asks . . .

**Q** My question is on co-ax length, or maybe lack of it. I've always

assumed that the shorter the better, but when I bought my last rig and twig the shop told me that I had to tune the co-ax as well as the antenna and sold me 18 feet of cable, to equal a quarter wavelength. Before I set my new equipment up, can you tell me if this is the case?

**A** I reckon they were either pulling your leg or were badly misinformed, V. C.

Your assumption that the shorter the better is quite right. Cable length should be the minimum needed to connect the rig to twig without any tight bends or turns. What you don't need is a length of cable that corresponds in any way to the wavelength of the frequency. (Incidentally, 18 feet is roughly a half wavelength). If you hit on a cable length that does, by accident or design, meet the frequency wavelength, then the cable itself resonates, standing waves are set up in the cable and acts as a load on the rig.

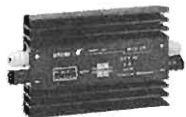
If you have to use long cable runs it is worth investing in RG8 cable to reduce the signal losses in the co-ax run.

SA

Problems should be sent to  
CB Q & A, Citizens' Band  
No. 1, Golden Square,  
London W1R 3AB

# The best thing to happen to CB in the UK since the Rig

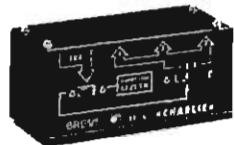
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Input voltage: 24 V DC (20 V min - 28 V max) - Output voltage: 13.8 V - Output current: 2 A - Stability: 1%, with rated voltage and current - Protection: current limiter, thermal overload block - Possibility of connection in parallel to multiply the available current - Dimensions: 155 x 80 x 25 mm - Weight: 250 gr. - 30/10 Aluminium case. RRP £12.95



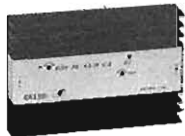
**STABILIZED POWER SUPPLY MOD. BRS 27**  
Input voltage: 220 V a.c. 50 Hz - Output voltage: 13.8 V d.c. - Current: 3 A max. - Stability: better than 0.1% with mains variations of 10% or load variations from 0 to 3A - Protection: electronic with current limiter - Ripple: 1 mV at 3 A load - Dimensions: 155 x 135 x 85 mm - Weight: 1.5 Kg. (240 V a.c. supply available). RRP £12.75



**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 84 x 60 mm. RRP £9.95



**ANTENNA MATCHER MODEL BRL 15**  
Frequency range: 25-40 MHz - RF power: 100 W max. - Weight: 0.32 Kg. - Dimensions: 120 x 55 x 55 mm. - RF power loss: under 5% 0.2 db. RRP £7.59



**CB LINEAR AMPLIFIER MOD. BRL 35**  
Input voltage: 12 - 15 V d.c. - Max current: 4-4.5 A - Input power: 0.2-5 W R.F. - 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 79 x 40 mm - Weight: 0.2 Kg. RRP £32.50



**LINEAR AMPLIFIER MOD. BRL 500**  
Output power: 600 Watts AM maximum, depending on the 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 1.5 mobile coil instrument - Output and SWR indicator, Internally lighted - Controls: STAND-BY, AM - SSB, output power switching 250/500 W, SWR reading, instrument switch (trafficed, direct power, Watt) - Protection: mains with 5 A fuse - Vacuum tube set: 5 x EL19 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 220 x 210 mm. - Weight: 20 Kg. (240 V a.c. supply available). RRP £296.95



**STABILIZED POWER SUPPLY MOD. BRS 35**  
Input voltage: 220 V a.c. 50 Hz - Output voltage: 13.8 V d.c. - Current: 0-10 A - Stability: better than 0.5% with mains variations of ± 10% and load variations from 0 to 10 A - Protection: electronic with current limiter - Ripple: 1 mV with 10 A load - Weight: 4.2 Kg. - Dimensions: 180 x 105 x 300 mm. (240 V a.c. supply available). RRP £57.75



**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 R.F. - Output power: maximum 28 W AM - Frequency: 26 - 30 MHz - Operation: AM - FM - SSB - Input SWR: better than 1.3, externally adjustable - Dimensions: 120 x 50 x 40 mm - Weight: 0.2 Kg. RRP £16.50

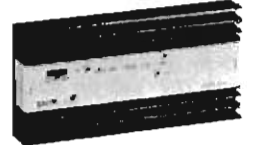


**DIGITAL FREQUENCY METER MOD. BRL 8100**  
Direct insertion between RF source and antenna - Display: 8 digits - Power requirement: 11 + 15 V d.c., 150 mA - Resolution: 0.1 KHz - Gate time: 1 sec. - Minimum RF input - power: 0.25 W - Max RF input power: 100 W - Range of frequency: 10-150 MHz - Dimensions: (LHP) 112 x 36 x 152 mm. - Weight: 245 g. RRP £33.95

**DIGITAL FREQUENCY METER MOD. BRL 8150**  
Direct insertion between RF source and antenna - Display: 8 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 38 x 152 mm. - Weight: 245 g. RRP £33.95



**LINEAR AMPLIFIER MOD. BRL 210**  
Output power: 10 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: 52 OHM - Input impedance: 52 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 100 x 257 mm. - Weight: 4 KG. - It is advisable to use a RG 58 cable 70 cm. long. RRP £86.95



**CB LINEAR AMPLIFIER MOD. BRL 46**  
Input voltage: 12 - 15 V d.c. - Max current: 7 A - Input power: 0.2-5 W R.F. - Output power: maximum 75 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: 0.35 Kg. RRP £36.95



**SWR METER-WATTMETER MOD. BRQ 32**  
Range of frequency: 3 MHz - 150 MHz - SWR meter, 26 + 30 MHz - Wattmeter - Input and output impedance: 52 Ohm - SWR and Watt Indicating Instrument: 1 cl. mobile coil, 50 µA f.s. - Connectors: SO 238 - Measures of the R.F.: up to 1000 W in 3 ranges 0 - 10, 0 - 100, 0 - 1000 W - Weight: Kg. 1 - Dimension: 212 x 118 x 83 mm. RRP £28.95

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# The best thing to happen to the Rig since BREMI arrived

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Everyone knows how good BREMI are, having set the standards worldwide with their quality electronic products. Now is your chance to set standards of your own with the fabulous BREMI B27S CB Antenna – the final step in the search for perfection. The BreMI Antenna doesn't just look good, it's simply an engineering master piece.

- **ENCAPSULATED COPPER COIL GUARANTEED FOR LIFE**
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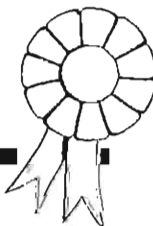
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- **MILITARY SPEC. TAPERED WHIP**
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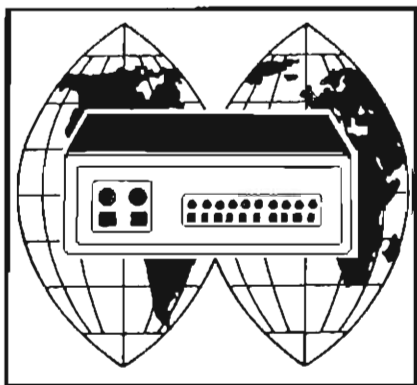
If for any reason this product fails to live up to your requirements in any way whatsoever then please return to BREMI UK for full and instant refund.

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# SCANNER UPDATE

Our mailbag indicates that there is a growing interest in scanning, so this month Andy R Giles fills in some of the background to this fascinating hobby.



**W**ay back in the March 1981 issue of *Citizens' Band* I wrote an article on scanners that produced a massive response from readers who wanted to buy one. Since these machines have changed quite dramatically and the scanners that are coming onto the market can do far more than their predecessors, but before detailing some of the recent advances, perhaps I should fill in some of the background for those of you who missed the original article.

Scanning really started in America, where they have funny laws. Here in Britain we are so used to The Official Secrets Act, D-Notices and other Government restrictions that we often find it hard to understand Americans' pre-occupation with the freedom of the individual. Where our lawmakers seem to adopt the attitude that we should only be told things that we can prove that we need to know, the American Freedom of Information Act gives their citizens the right to know anything that does not endanger national security. This means that they can not only listen in on their local police frequencies, or the local airport, bus depot, taxi firm, ambulance depot, fire brigade or any other service that uses radios, they can also buy a selection of books that list the frequencies that these people use. There are even books that list the

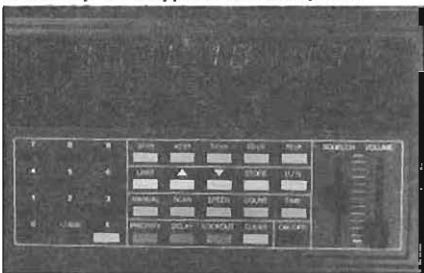
frequencies used by the CIA, FBI and the Secret Service. Because this information is now readily available, some of the more secretive of these agencies have started to use scramblers on their transmissions. That's why most American electronics magazines now carry masses of advertisements for unscramblers, gadgets that will decode scrambled messages — and it's all legal.

Americans quickly realised the pleasure that was to be had from eavesdropping on interesting transmissions and as soon as an enterprising manufacturer invented a receiver that automatically moved from channel to channel, stopping only when a signal was present, scanning was born. That's all that a scanner is — a radio receiver that sequentially checks on pre-programmed channels and only stops whenever it hears a signal. Imagine living in the country, in an area where hardly anyone uses CB. If you wanted to know if there was anyone about, you would have to manually turn the knob to check on all forty channels. Whenever the squelch opened, you could stop and listen and then, when the conversation stopped, you would have to start twiddling again. This is what a scanner does automatically, but not just on CB frequencies. Modern scanners can often cover from 26 to 512MHz, far too big a chunk of the spectrum to be able to monitor manually.

Before going on to make your mouths water with details of some of the machinery that is now available, I must point out that this is not America. Our laws are quite clear. You are not allowed to listen to anything that you do not have a licence for. Needless to say, you can't get a licence for most things. All that the average citizen is licenced to receive is covered by his television licence and the Act that did away with the necessity for a separate radio licence. Without quoting chapter and verse of the relevant Acts, I can summarise by saying that you are allowed to receive transmissions from authorised broadcasting stations (BBC, IBA etc), radio amateurs and, if you have a CB licence, licenced CBers AND NOTHING ELSE. It is a popular misconception that you are allowed to listen to other transmissions as long as you do not divulge the contents of any message that you may hear. This is not true. The bit in the Act about not divulging information only applies to signals that you pick up accidentally.

You may have noticed that lots of interesting things can be heard on an ordinary FM broadcast band receiver. These public services transmissions are at the top end of the internationally agreed broadcast band and they have now decided to move. Before they do, you may inadvertently tune into one of them while you are looking for Radio 1, and it is then that you are obliged to retune immediately and not tell anyone what you have heard. These legal restrictions mean that scanners cannot be used to their full in this country, but they are still nice toys to play with.

Close up of a typical control panel



Originally, scanners were crystal controlled. This meant that an appropriate crystal had to be bought for each channel that was to be scanned. As crystals cost £2-£8 each, it could cost up to £80 to crystal up a 10 channel scanner, which is why these are now almost extinct.

The first scanners were also very basic. The cheapest just checked each channel in turn, stopping whenever a signal was heard. This meant that the receiver kept on stopping on the channels that were always busy and had to be manually restarted to make them scan the other channels. To overcome this, manufacturers started to incorporate a lockout facility. This allowed the user to miss out pre-selected channels at the flick of a switch. The scanner would totally ignore all the channels that were locked out.

The really big jump in scanner



technology was the introduction of microprocessor controlled receivers. These use a frequency synthesizer instead of crystals so that any frequency in their range can be received just by entering it via the calculator style keypad. Instead of channels, they have memories. Frequencies are chosen and entered into the memories with the keypad and then the memories can be scanned just like the channels of a crystal controlled scanner. The advantage of this system is that the frequencies in the memories can be changed at any time without having to buy more crystals.

As synthesized scanners are controlled by microprocessors, they can do a lot more than their predecessors. All modern scanners now have the lockout facility and most of them will also search. This is not the same as scan. Scanning means sequentially checking on a set of pre-programmed channels until a signal is heard. This is fine if you know which frequencies to enter into the memories, but what if you don't? This is where we use the search facility. If we wanted to scan some frequencies in the 2m amateur band, we would have to know which ones are likely to be busy enough to warrant entering them into the memories. To find out, we could enter 145MHz as a lower limit and 146MHz as an upper limit and then search between them. A modern scanner would then start listening on the lowest frequency and then work its way up the band in small steps, usually 5kHz, until it reached the upper frequency. It would then start

again. As with scanning, the receiver would stop whenever it encountered a signal and this frequency could be entered into a memory for scanning later. When all of the memories have been filled, you know that they contain frequencies that have proved to have activity on them. They can then be scanned in the normal way.

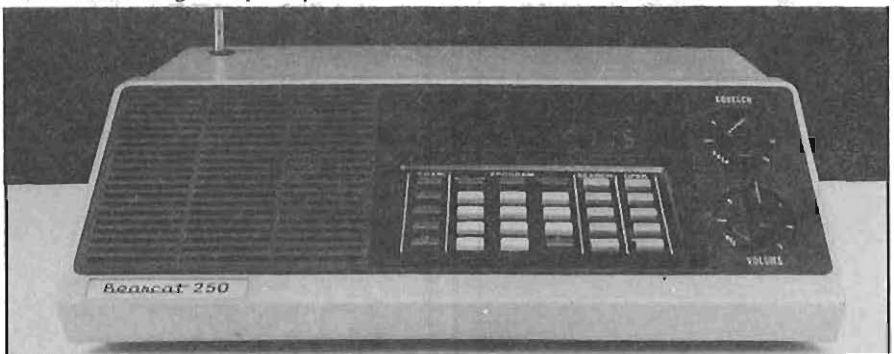
Searching can be carried out on any portion of the band that the scanner is capable of covering, which is usually several hundred megahertz. The SX-200N, a typical modern scanner, covers 26 to 514MHz in four bands (26-58, 58-88, 108-180, 380-514), so you can see that being able to search is all important if you want to be able to find hidden signals.

Another feature that is extremely useful is delay. Scanners without this feature will resume scanning as soon as the carrier disappears but models that have a delay button can be made to pause for approximately 2 seconds after the signal has dropped. This gives the other station time to respond. Without this delay, you could miss this second transmission because the scanner has moved on to check the other channels.

Other features that now appear on most scanners include priority, a separate channel that is checked every 2 seconds or so and which will override all other incoming signals, one button selection for the aircraft or marine bands, switchable AM or FM and two speed scan or search.

Some of the more expensive ones have even more features. For instance, the Bearcat 250FB has a built-in clock; a count facility that will

The Bearcat range are perhaps the best known in the scanner world



count the number of times that the set stops on any channel and a store button that allows you to leave the set searching while you go out for a pint. When you come back, a press of the recall button displays all of the frequencies that were active while you were away. These can then be entered into the memories for scanning. There are also outlets on the back that will automatically turn a tape recorder on and off whenever the squelch opens.

With all of these features, you need never miss anything.

Now that microprocessors have become cheaper and more complex, scanner manufacturers are starting to incorporate even more features. There is one that has just arrived in this country that has continuous coverage from 25 to 550MHz — there are no gaps at all! It's called the AOF 2001 and as soon as the importers, Lowe Electronics, stop selling them as fast as they import them, I hope to be able to get hold of one for review.

There is another scanner that has not yet been released that has continuous coverage, but this one is a hand-held. More news of this in future

**The Standard C800.**  
A typical crystal —  
controlled amateur band  
portable scanner



The Regency name  
is very well known in  
the USA and equipment is also  
available over here.

issues. Yet another breakthrough has come from Bearcat. In America they have just started selling the Compu-Scan 2100. This is a box that has just two controls — a volume and a squelch. To make it work, you have to plug it into your microcomputer. All scanning and searching is then done via the computer keyboard with 200 channels for scanning. It has far too many features for me to list them here, but one that I think is worth mentioning is the memo facility. This enables the user to attach notes to any frequency so that whenever the squelch opens, up on the screen pops whatever information you may have entered about it. For instance, if the squelch opened on 145.650MHz, the screen would display "2m AMATEUR BAND REPEATER LOCATED AT

CRYSTAL PALACE. CALLSIGN GB-3SL. INPUT 145.050MHz. REPEATER KEEPER PETER \*\*\*\*\* TELEPHONE 01- \*\*\*-\*\*\*\*" (I've left bits out on purpose). This is like having an automatic card index that can store inside the computer. This would also be heaven for me because I am surrounded by notebooks, cards and scraps of paper with frequencies written on them. Perhaps when I get paid a bit more for writing this thrilling stuff I'll be able to afford a Compu-Scan 2100! I seem to have run out of space for this month, so maybe in coming issues I'll examine in more detail some of the scanners that are currently available. If scanning interests you and you would like us to cover it in more detail, please let us know and we will endeavour to devote more space to it.



The Bearcat 220

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# SUPER MODULATOR II

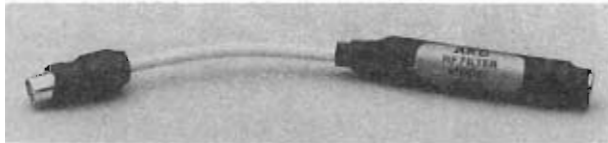
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Model TNF2 Tuned Notch Filters (Braid & Inner) for CB and Amateur Bands at 2, 10, 15, 20 Metres (state which) £7.50



The TNF2 range have a very low insertion loss and very high rejection over the band for which they are supplied. They are the best possible answer for aerial borne interference from a single known frequency or frequency band.

**Model BB1 Braid Breaker** £6.32  
Also available, 3 High Pass models and a "Radar Blip" filter for VCRs. Please send large stamped addressed envelope for filters data sheet and price list.

**RF Filters Diagnostic Kit** £38.40  
A complete set of the 11 AKD standard RF Filters may be purchased as a Diagnostic Kit. Includes Data Sheet.

**CB In-line Pre-Amp Model CBPA1** £14.50  
RF Switched. Fixed or Mobile use. Minimum gain 15db. Can be left in line without applying power. Requires 12-15 VDC at 100mA. Max through power, 10 Watts.

### SPECIAL OFFERS ONLY TO READERS OF CITIZENS BAND!

**CB Vamplifier Model VA1** (Pre-Amplifier & RF Attenuator)  
The CB Vamplifier combines a pre-amplifier and variable RF attenuator which can be used separately or together. Used by itself the attenuator section can help to reduce the effects of bleedover. When used in conjunction with the pre-amp it can control the RF amplification for optimum signal.

£24 Incl p&p and VAT (Usual price £29.95)

**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.

Special Offer Price £35 (usual price £49.95!)

All AKD products carry a two year guarantee. Delivery is usually within three days of receipt of order. All items are on 14 days approval and if returned within that time in good condition a full refund will be made by return.

**TRADE ENQUIRIES WELCOME**

This is Les Wallens answer to the new specifications. A superb new antenna from the Modulator breed. The Super Modulator 2 offers Quality engineering coupled with a performance that will really satisfy all serious CB enthusiasts.

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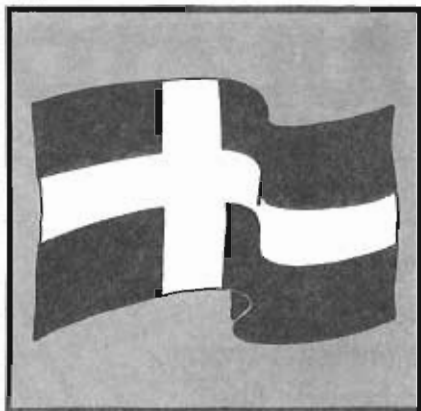
- Low S.W.R.
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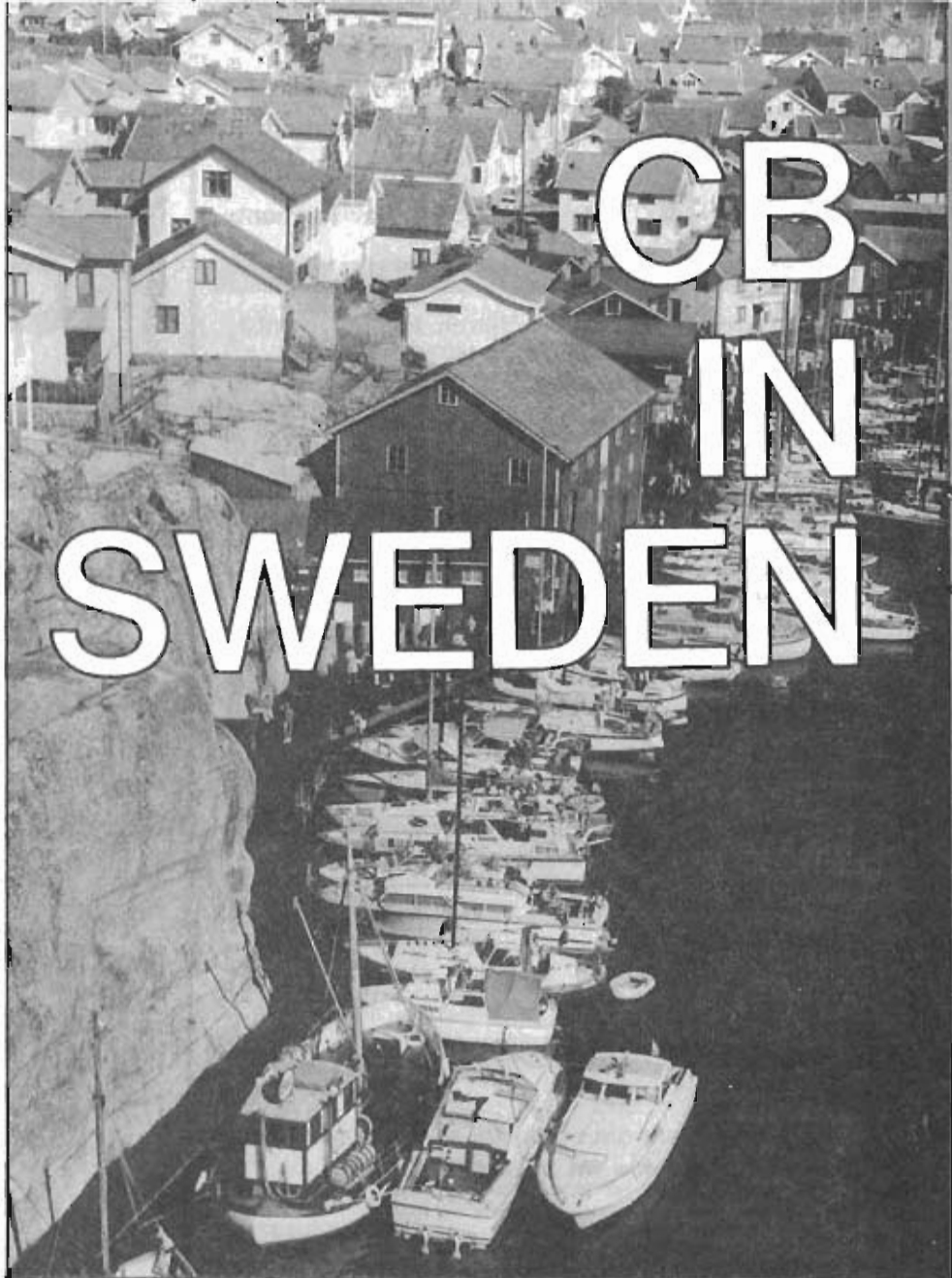
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# Feature



Sweden has always had a reputation for being (amongst other things!) a very responsible country. This attitude extends to their CB system which is closely regulated. But, asks Sue Sharp, is it fun?



# CB IN SWEDEN

**T**here has been a Private Radio service in Sweden since the early 1960s. With its reputation for personal freedom, Sweden was one of the first countries in Europe to see the need for a citizens radio system but the national character of the Swedish has meant that their interpretation of the uses and requirements of such a service are quite individual and perhaps far removed from what we regard as CB.

The Swedish Telecommunications Administration definition of CB seems familiar though,

'CB radio comprises a mobile radio communication facility that provides collective use of a group of frequency channels at low transmitter power for the purpose of exchanging short messages between individuals within relatively short distances.'

The STA regard this 'relatively short distance' as somewhere around 30km, or 19 miles.

This definition has a lot in common with many other countries but there are some distinctive features of the Swedish System.

## The System

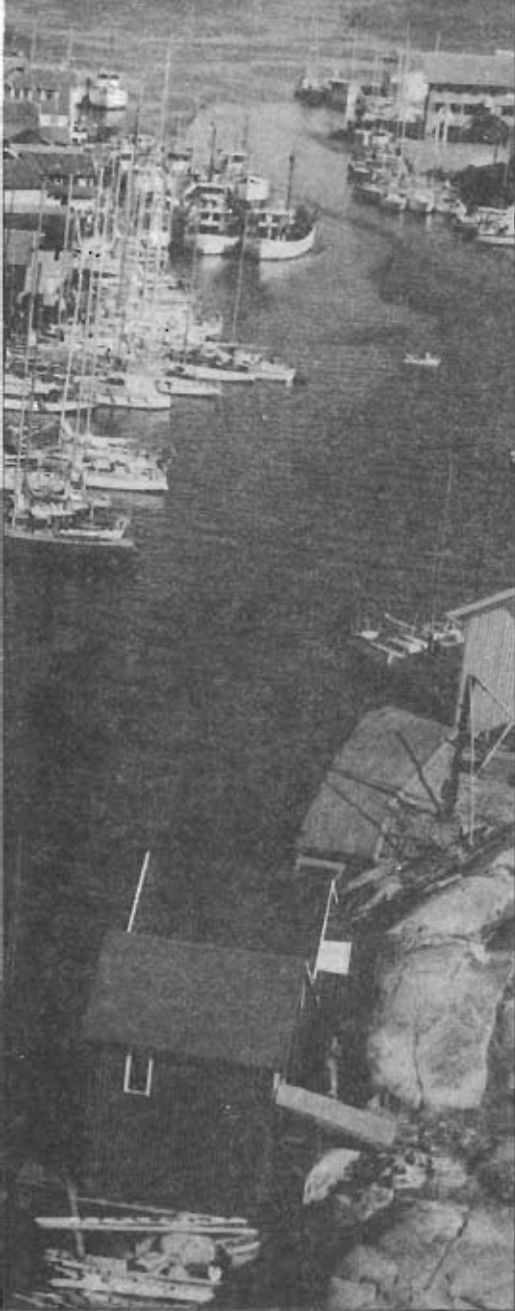
In common with virtually everyone else, the STA allocated a frequency in the 27MHz band. Channel 1 is at 26.965 and the allocation ends at 27.235MHz, giving a total of 25 channels which are numbered from 1-24 with a channel 11A tucked in after 11.

The permitted modes may cause some surprise. AM is allowed on all channels (except 24, which is used for SSB and is the only channel that SSB can be used on) and FM is permitted on all channels but 11A, 16, 18 and 24. As channels 11A, 16 and 18 are part of the emergency structure, people on watch on these channels must use AM.

This is quite a complicated arrangement, but I was unable to find anyone who could explain the thinking behind these decisions!

Licences are certainly cheaper than the British equivalent at approx £3.50 for the year. Operators must have a licence and some of the conditions are very strict indeed, although I suspect that more than one fed up British breaker wouldn't mind





some of them being imported over here.

For a start you must have a licence to buy a CB and this must be shown on making the purchase. The seller, whether private or trader must check that you have one. To have a licence in the first place you must be over 18 and considered 'suitable', and dealers must have a test and demonstration licence.

Once you have one it is not transferable and it can be taken away for serious infringement of the restrictions.

### Licence Restrictions

When you get your licence you also get your Private Radio call sign number. This has to be used all the time and names are not permitted.

This call sign, plus the licensee's name has to be clearly marked on the CB set, with the type and model of set and the STA type approval mark.

Equipment must meet the relevant specifications and technical deficiencies must be repaired immediately. But woe betide you if you get adventurous when the lid is off the set,

as mechanical and electrical intervention is limited to repairs and maintenance only. No adding extra channels or tweaking up the performance!

In common with other countries, power amplifiers are forbidden and it is against the regulations to even *have* one in your possession. To guard against an increase in power it is also expressly forbidden to run the CB equipment at an operating voltage of more than 10% above normal.

And, incidentally, you can't use your CB in the event of an alert or war — during this time the licence only covers the holding, not the use, of CBs. National defense personnel can use it though.

All this sounds pretty restrictive. Is there anything in the Swedish system we Brits should envy?

### Antennas

Well, antennas with up to 3dB gain are allowed, and quarter wave and  $\frac{5}{8}$  wave ground plane antennas are considered to fall inside this requirement. They can also be mounted as high as you want within safety limits, but they are expensive to buy. The popular ones in Sweden are the  $\frac{5}{8}$  Penetrator at £60 and the Super Magnum at £55. The Big Mac can cost up to £86.

Although these antennas offer very good performance, DXing is not allowed and the operational restrictions state that communications must only be exchanged within short distances and not for crossing national boundaries.

Because of the possibilities of interference you cannot put your antenna on a balcony, outside a window or within the roof space of flats, linked and terraced houses.

Conversely, it is pointed out that the CBER must accept the possibility of

interference from industrial, medical and scientific use of the 27MHz. band.

### Channel Use

The actual use you put your 3.5W to is controlled. Channel use is segregated as you can see:

- Channel 1 — Association channel
- Channel 2 to
- Channel 8 — Ordinary channels
- Channel 9 — Association channel
- Channel 10 — Ordinary channel
- Channel 11 — Ordinary channel
- Channel 11A — Boat channel
- Channel 12 — Ordinary channel
- Channel 13 — Calling channel
- Channel 14 — Ordinary channel
- Channel 15 — Ordinary channel
- Channel 16 — Boat channel
- Channel 17 — Handicapped channel
- Channel 18 — Road channel
- Channel 19 to
- Channel 21 — Ordinary channels
- Channel 22 — Association channel
- Channel 23 — Association channel
- Channel 24 — SSB channel

To explain these more fully:

11A and 16 are used for the safety and navigation of pleasure boats or in mountain areas for ski and walking tours etc.

18 is for the safety of mobile road users.

17 is for calls for assistance or help from the handicapped, medical personnel on stand by duty and road first aiders.

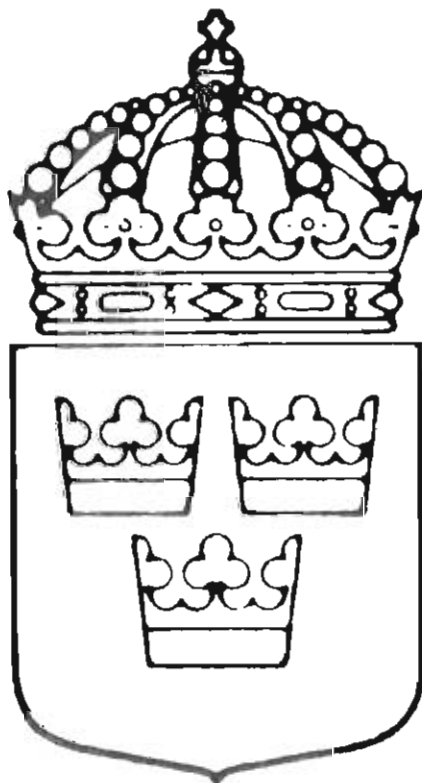
1, 9, 22 and 23 are for use by non profit associations, community groups hunting parties and organised leisure time facilities.

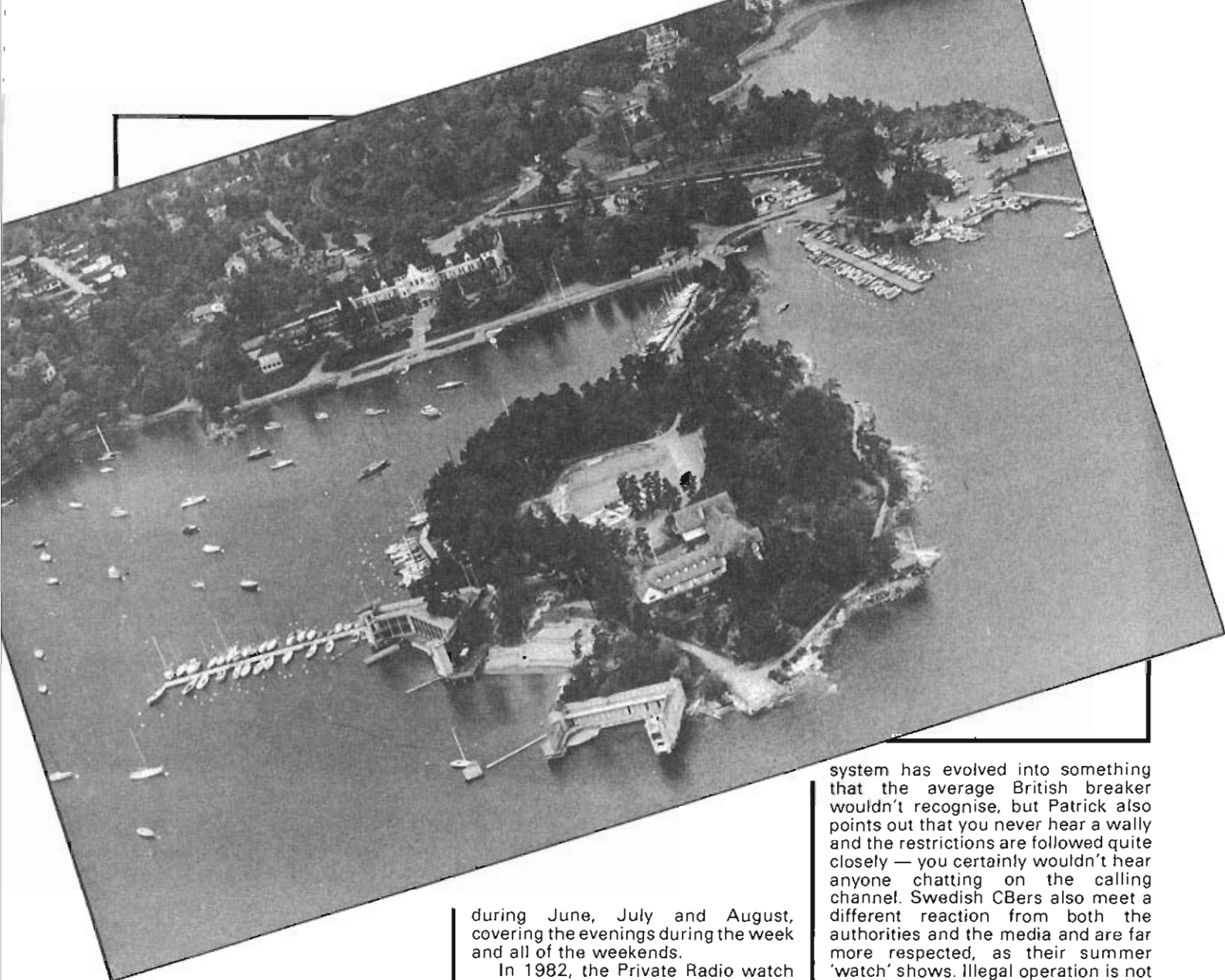
The other free channels are used for 'messages' and it is clear from the conditions that these are expected to be short and to be made between people who already know each other and, in fact, general calls are not permitted, except in an emergency!

### Clubs

All of this seems very strict in comparison with the free and easy system that we are used to. But, as in all walks of life, practice is not quite so restrictive as theory. There is a selection of CB clubs throughout Sweden that are mainly organised for the various 'watches' — more on that later, and although there can be an 'isolationist' attitude between different clubs, CBERs get to know each other and discover who to call for. Club members use their club call sign for identification on channel.

And in actual fact there are more CBs than you would think. The STA tell me that there are 145,000 licenced CBERs, many of whom belong to clubs and help with the organisation of radios and cars for sports like car and cycle rallies. About twenty clubs co-operate through the summer to provide an emergency service for





boaters, and clubs are also used in emergencies like forest fires and accidents.

CB equipment itself is also rather expensive compared to other countries; mobile sets cost about £175 and base stations £260. Base to base communications are not permitted, only mobile to mobile (including portables) and mobile/base.

One of the very different aspects of the Swedish system is that truck drivers have a communications service all of their own, on 29MHz, and it is illegal for a private person to have one of these sets. This hasn't stopped the formation of a Cowboy Club amongst truckers who use channel 21 of the 27MHz. service. Estimates of members of this club hover around the 3,000 mark.

### CB Radio Watch

The most impressive area of Swedish CB is the degree of co-operation between CBers and the authorities during the summer months and the height of the boating season. With a large coastal area, boating and marine hobbies are very popular, with the associated risk of accidents and emergencies. Many of the clubs provide a voluntary monitoring service

during June, July and August, covering the evenings during the week and all of the weekends.

In 1982, the Private Radio watch handled 200 sea rescue calls and 500 messages that avoided the use of the emergency service.

The Swedish Lifeboat association works closely with the CB groups and provides regulations for the volunteers to work to. Radio 'watchers' are instructed how to act in order to co-ordinate help and services.

Inspector Captain Anders Willgren reports that,

'It is the opinion of the Swedish Lifeboat Institution that this radio service is of great preventative value and maintains and strengthens interest in safety at sea among radio personnel.'

It is estimated that over 50,000 CB sets are in use in boats around the Swedish coast and on the big lakes during the summer.

One other thing that we might envy. Although it is the responsibility of the CB radio user to maintain his equipment so that it doesn't cause interference the authorities are very co-operative. Patrick Kincaid, a British CB user in Sweden, told me that when he reported he was causing interference to neighbour's telephones, the telephones were adapted with coils and filters almost immediately, without charge to anyone.

It would seem that the Swedish

system has evolved into something that the average British breaker wouldn't recognise, but Patrick also points out that you never hear a wally and the restrictions are followed quite closely — you certainly wouldn't hear anyone chatting on the calling channel. Swedish CBers also meet a different reaction from both the authorities and the media and are far more respected, as their summer 'watch' shows. Illegal operation is not widespread, although Sweden's fair share of DX pirates can be heard!

Whether CB in Sweden is fun is difficult to gauge unless you have been over there and used the system. It's different from what we know and expect but there are compensations. We might find the rules are a bit hard to swallow but the rules also say,

'radio installations must not be used in such a way that the personal integrity of any individual is threatened'.

Now that does bear thinking about!

*Thanks are due to Patrick Kincaid of *Monstera* for supplying much of the information used in this article. Thanks also to Mrs. Gun-Britt Carlstrom of the STA for supplying information and statistics and the Swedish Lifeboat Institution for the same co-operation.*

*Mrs. Carlstrom would like to point out that she can arrange for British holidaymakers in Sweden to bring their CB equipment with them and provide a temporary licence, as long as the equipment meets the British specification. Mrs. Carlstrom can be contacted at the Swedish Telecommunications Administration, Radio Services, Licencing Office, S-123 86, Farsta, Sweden.*

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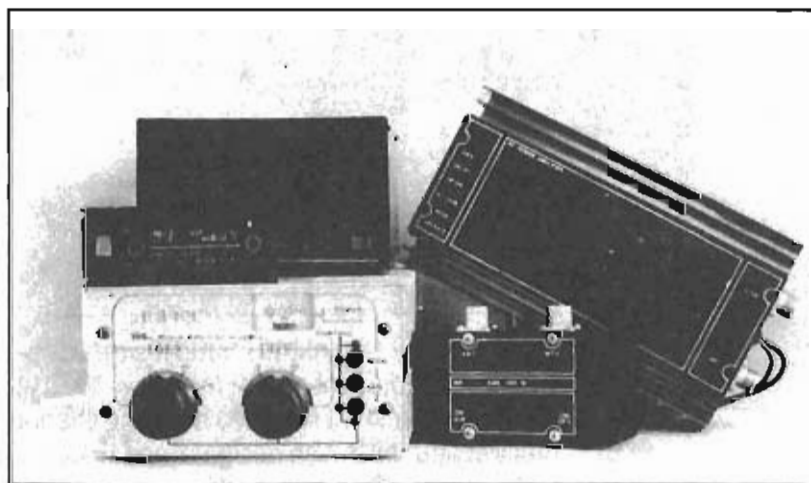


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CB Magazine JUNE 1983

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All in all, we have to say that this is the best rig we have tested to date.

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Inside, you will find the kind of construction normally found in computers and professional equipment. A marked contrast to imported rigs.

The performance has been a revelation compared to anything we have seen before, and what's more it's BRITISH!

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The designers of the Maggie Autoscan 5000 have got it right and during our tests we could detect no signs of desensing, bleed-over or any other misbehaviour despite severe provocation.

### From the mailbag

J.W. from Sheffield

"... I must congratulate you on your Maggie. I did not think it possible to obtain anything of this standard. It has cut out bleed-over which here in Sheffield is one big problem..."

S.A.M. from Suffolk

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# TWONG

JOHN RICHARDSON

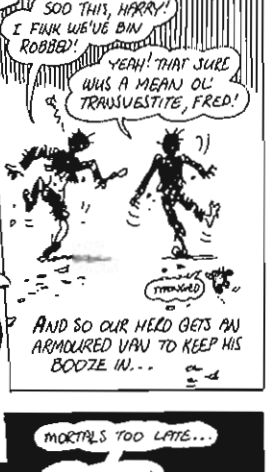
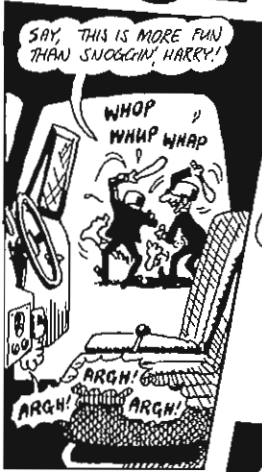
LOOKIT OUR HERO, TWONG! HE HAVIN' SOME NAP! LOOKIT HIS DEVOTED FAN, RAG-DOLL! SHE GONNA SNEAK A LIL' KISS! SHE COOL, SHE PURTY.....



ACK! I SHOULD A KUDWIN BETTER THAN TO CREEP UP ON A GUY WHO SLEEPS WITH HIS NECKBATTLE BROWN! ...RASH ALSO!!



NYAH! TWONG FULLA WRATH! GROWL! SOMEONE TRYIN' TO LIBERATE TWONG'S SUPPLY OF NEWCASTLE NECTAR! MORTALS IS WAZZOCKS!



# TELECOMMS



# CHATTERBOX

**STILL No.1**

**THE COUNTRY'S LEADING IMPORTER AND SUPPLIER OF CB EQUIPMENT**

It's about six months now since we started the Chatterbox and I would like to thank the people who have written in to say how much they enjoy it. It hope you both feel better soon!

Seriously, it is always nice to hear from you, and we always try our best to answer all the questions asked of us. Apologies if the letters aren't always answered immediately, but we seem to be getting more mail than Boy George's Fan Club.

This month we have decided to publish our "Chart" — our Top Ten selling items, excluding antennas and power supplies. As you can see, the Beta 3000 has climbed straight to the top, just pipping the Sadelta Echomaster microphone. In at No. 3, an excellent performance for a brand new line, is the Nevada TC35 Amplifier.

It is satisfying to see from this chart that most of you are now going for quality rigs and accessories. Two more rigs in the chart, the Audioline 341 mobile (£59.95) and at No. 5 the Uniace 300 Base Station (£149.95) at joint No. 7 with the "Wally Hunter", are rigs which are daily enhancing an already impressive reputation.

A couple of months back I mentioned the SWR 500/SWR Meter, and word must be spreading, as this meter makes its first ever appearance in the top sellers. Just out of the Top Ten is the Uniace Communications Receiver (£159) which very nearly made the chart at the expense of the SSE Extension "S" Meter, which is fast becoming a favourite add-on.

Perhaps the most notable item in the chart is the Zenith Speech Processor. It has not been out of our Top Ten in more than a year, and at £32.95 is still proving popular value for money.

By the time you read this column we should have a pretty extensive range of 934MHz equipment ready for the UHF enthusiasts, and it will be interesting to see how the new gear makes its impact felt on the chart.

Don't forget, if you haven't already got your copy of our 1984 Catalogue, send off your pound note today. And if you have, just send 50p, telling us the date you received your copy, and we will send you all the latest update sheets. See you again next month.

**RETAILERS—JOIN THE TOP TEAM  
RING OUR TRADE DEPT TODAY**

## TELECOMMS TOP TEN

- 1 Cybernet Beta 3000
- 2 Sadelta Echomaster
- 3 Nevada T.C.35 [25w Amp]
- 4 Zenith Speech Processor
- 5 Audioline 341
- 6 Zetagi BV 131 Mains Linear
- 7 Uniace Base Station
- 7 AKD Direction Finder
- 9 Zetagi SWR 500
- 10 SSE Extension 'S' Meter

## TELECOMMS 189 LONDON ROAD, NORTH END PORTSMOUTH

Dear Breaker,  
As you probably know by now, Telecomms is the largest CB Distributor in the UK, and as such it would take us the whole of this magazine to tell you about all the products we offer via our Mail Order Service.

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*Bob Jenkins*



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David Shepherdson  
tries a run down on  
the Belgian QSL clubs,  
without much luck . . .

# COMMUNICATION THE QSL WAY

**A** great big welcome to the QSL pages to you all! I'll get right down to business with a few names from this month's postbag.

James "Coyote" Woolnough who comes in with a colourful Currie card, Geoffrey "1-AC-176" McBride of Northern Ireland with a nice selection of club cards (a very nice young man who QSLs 100%), Joy "Aunt Sally" Davy of Norfolk, a very mixed set of cards comes from Colin, "Black Label" of Aylesbury and from Florida comes a card from Warren, LDB 157. Warren QSLs mainly with club cards from the Long Distance Broadcasters Club of Florida, but personalises each one.

A bit of information on the Tie Fighter DX Group of Scotland now. For £5 and five signed QSL cards you get a package consisting of a TF Unit number, certificate, rubber stamp, 10 club cards, roster, exchange cards and invites. Nick, who runs the 'TF' from his home, also recommends the Cutty Sark QSL Club of London. The Cutty Sark is a free membership club run by Tony, the Nighthawk and costs only a S.A.S.E. and five personalised QSL cards to join. The Cutty Sark can also offer some very nice personalised POMA Club Cards at £23 for 500. These are in full colour and show the Cutty Sark Tea Clipper ship in heavy seas.

Another Scottish club is the Firth of Clyde. This is run by Robert and for £2 plus six signed and dated QSL cards you receive your FC Unit number, ID card, certificate, club cards, tips, tourist information, exchange cards and invites.

Back in the April issue I said I would do a rundown on the Dutch and Belgian QSL clubs this time round. To this end I wrote off to about sixty clubs in Holland and Belgium. The response, to be polite, has been terrible! Only seven have replied, with three others returned by the Post Office marked not known at this address! I was hoping to

be able to give a comprehensive list of clubs in time for the holiday season, but as it is, I'll just run through the ten that I know anything about.

Okay, first is the Belgian International DX Group. Membership is \$5 (US) only. For this you receive your 'BI' Unit number, certificate, ID card, recent roster, a few extras and a twenty page brochure on antennas etc. This club is more for the DXers out there but it came through within three weeks.

Next on the list is the Bravo Whiskey International DX Club. For \$18 (US) and ten or more signed QSL cards, you receive your 'BW' Unit number, parchment certificate, rubber stamp, ID card, sticker, 'Blazer' patch, 15 exchange cards and invites. This excellent package arrived within four weeks of my writing. The club cards are very colourful and very well printed.

The Orient Pirate Radio Group offers number and ID card only for \$2 (US) and many extras are available, eg. certificate \$2, club stamp \$6 (US).

One package I didn't like, and my postman wasn't very keen either, came from the QSL Club Borinage of Belgium. After six weeks of waiting a ripped and very flimsy envelope arrived. In it was a sticker, a poor quality photocopied ID card, a mounted stamp, a creased and ripped certificate, a large pile of unsigned and unaddressed cards and a framed print of a mineshaft, upon which the club cards are based. It was so badly packed the glass was totally shattered and had pierced the very poor quality envelope making it a danger to anyone who came near it! There were no forms or letters enclosed, so even if I was to recommend this club (which I do NOT), I couldn't give any prices.

Just to digress a moment, anyone who knows me knows my views of unsigned QSL cards. If someone cannot even be bothered to sign a card, what sort of package, if any, are they likely to send?



Early Bird. QSL



EARLYBIRD-PIERROT LADY  
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QSL 100% 516 724

MARK No 5

EARLY BIRD DESIGNS

If you are interested in swapping spoons, then the next one is for you, if not, read on anyway! Frans likes QSLers as members too. The VW 16 Spoon Collectors Club of Holland costs \$9 (US) plus a souvenir spoon or 10 QSL cards. In exchange you receive your VW unit number, club stamp, certificate, spoon (or exchange cards), postcards, roster, stickers and exchange invites. A nice package from a well run club. The last club on which I have some information is the Wizard of Belgium. For £5 and six QSL cards you receive your unit number, ID card, certificate, unmounted rubber stamp, roster, exchange cards and invites. The Wizard Club was the quickest to reply by taking just over a fortnight to

send their package. Some English clubs could do well to take note there!

To finish this list off, I'll mention three Dutch clubs that I know of as being respectable and I'm sure a QSL card sent asking for information will fetch a quick reply. The Seahorse QSL Club puts out a reasonable package, the De Snelpost Club does likewise and the DX QSL Club — Future has a great line in certificates etc. Look out for the travel voucher!! One thing I would recommend however, from personal experience, when sending money abroad is to register it! That way, if anything goes wrong, you will have a chance of getting it back!

To return to England for a while, just received a letter from Bob Durrant to let me know that the

Mermaid DX QSL Club of Denmark now has a UK agent. Bob, quite naturally, recommends the club which for £3 plus 10-15 of your signed, dated and addressed cards doesn't look bad value. For your £3 you get your Mermaid Unit Number, certificate, ID card, 10 club cards, tips on DXing and QSLing, key ring, Danish souvenirs, exchange cards and invites and a surprise item. The club cards, while colourful, are not, in my personal view, printed as well as they could have been, but see what you think. There are also quite a few club items available. Drop Bob a line (with S.A.S.E. if not joining) for information.

There's a lot of Scottish clubs about these days. In addition to the two I've already mentioned this month and the Scottish Thistle last month, two more have sent information through. The first is the Outer Hebrides DX QSL Swap Club and the application form is a computer printout. For £3 plus five cards you receive 10 log sheets, a key ring, a sew on badge, 10 club cards, ID card, certificate, roster and exchange cards.

The other is the Rocky Mountain Breakers (DX Section), and for £5 plus 10 signed and dated QSL cards you receive your RMB Unit number, ID card, certificate, rubber stamp, 10 club cards, tourist information and a piece of tartan ribbon.

From a young and prolific little club comes the information that they now offer gloss club cards with a gold dust logo for £5.50 per 100 post paid UK. This is in addition to the two previous types of cards. Drop the Boomerang Radio DX QSL Club a line with an S.A.S.E. for price and full details. Also available are club stickers, pen/key fobs, log books and envelopes. A roster is now available for 50p plus an S.A.S.E. To join send 10 signed and dated QSL cards and £6 for your BR Unit number, ID card, rubbers stamps, 20 club cards, roster, certificate, etc, etc. May I just slip a note in here to remind everyone that when writing to any QSL club, please enclose an S.A.S.E. for the reply. This applies especially to the free membership clubs as these are run by QSLers for QSLing and their finances are often very tight.

A new club started in Brighton last month, this is the Firebirds QSL Swap Club. For £3, 10 signed personal QSL cards and an S.A.S.E. you receive your FB Unit number, ID card, certificate, 10 club cards, 20 other cards, stickers, tourist information, a patch, exchange invites and information on cards and stamp designing service that Mark offers.

A letter comes from Russ "Man Machine" Chandler to say that he has moved and would I pass his new address on. A pleasure Russ, also congratulations are in order to Russ and his new wife. Best of luck mate!

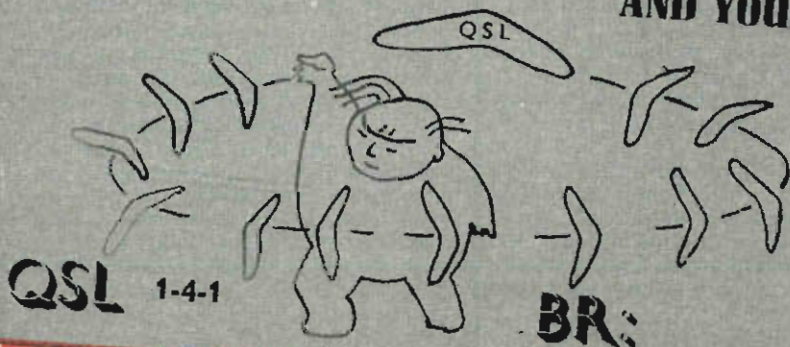
A tremendous package arrived from the Great Gonzo, Pete, VE 01, of Pershore. Pete complains about the "100% QSL". As he says, you either

## BOOMERANG RADIO

DX QSL CLUB

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WV69DX U.K.

TO YOU  
AND YOURS





QSL of you don't. Anyway, Pete will return your QSLs 1-4-1 at least, and some at 2-4-1 depending on the quality and quantity of yours.

A couple of Irish clubs to appear this time are the Dayglo and the Antrim County International Radio Group. The Dayglo is a free membership club, just send 3 QSL cards, a local viewcard and an S.A.S.E. In return, you will receive your Dayglo Unit number, exchange cards and invites and postcards.

The Antrim County costs range from \$2 (US) for an 'AC' Unit number and ID card only to \$12 for a very good package. They send the package back very quickly and for full details of what they do offer, just send an S.A.S.E. and ask for membership details. A little word from the Zulu Whiskey Club to complain about people who use a personal P.O. box as an address when DXing. This particular Box is Gordon's, NOT the Club's. Please note that when joining any QSL club, if they have a box number, check if use of it is available to members. Some charge so much a year for this extra service, so please do check on this before using one in this way. The free clubs cannot afford to forward post to people who do not put their addresses on their cards.

If you wish to QSL to unaddressed cards via a club, please enclose a stamped envelope with the cards you wish forwarding.

Just before I close this month a couple of German clubs who have contacted me with information. The first is the Funk Club Hassen which bases itself on the free membership clubs. For \$1 (US) or 2 IRC's (from your local Post Office) and five cards, you receive your FCH Unit number, tourist information, postcards, a souvenir of the area, exchange cards and invites. The other is the Memmingen Mau. For ten QSL cards and \$10 (US) you



receive your MM Unit number, certificate, ID card, rubber stamp, postcards, exchange cards and invites. This club does take quite a time to send the package through.

The final name for this month comes from the States. Chuck Lawton of Pennsylvania, promises to QSL back 100% to all cards received so drop him a line and say Hi! Finally, if you have any moans, praises, comments or just want a mention, drop me a line and I'll see what can be done. If you'd like to vote for your favourite QSL clubs jot down your top three UK ones, one overseas and one that you wouldn't want to recommend and send them to me. To forestall any cries of "cheat" etc, the Dragonriders are exempt. Any votes received after the 20th will once again go forward to the next poll. If you should want a reply then PLEASE enclose return postage, or if you'd like to join the Dragonriders QSL Club then please enclose an S.A.S.E. and five signed personal QSL cards. Whichever it is, please mark the envelope or letter clearly. This will help me reply as quickly as possible to everyone. I do try to reply by return of post and most of the time I manage it! So, until next time, take care, 'cos I care.



### QSL Addresses:-

**James Woolnough Coyote** 3 Clarke Rise, Latchington Road, Cold Norton, Chelmsford, Essex CM3 6JL

**Geoffrey McBride 1-AC-176** 2 Travers Place, Dervock, Ballymoney, Co. Antrim, Northern Ireland.

**Joy Davy Aunt Sally** 1 St Mary's Walk, Newton Flotman, Norwich, Norfolk, NR15 1PH

**Colin Black Label** R T 02, PO Box 206 Aylesbury, Bucks.

**Warren LDB 157** PO Box 1331, West Palm Beach, FL 33402, USA.

**Russ Chandler Man Machine** 7 Montrose Street, Darlington, Co Durham DL1 1JU

**Pete The Great Gonzo** PO Box 6, Pershore, Worcs, WR10 1HE

**Chuck Lawton 44 PA** 2744 Wharton Street, Phila., PA 19146, USA

**De Snelpost Club** Ratelaarsträatt 40, NL-6832 DK Arnhem, Holland

**DX QSL Club — Future** C/o Jozef Israelslaan 46, NL-2596 AR 's-Gravenhage, Holland

**Mermaid DX QSL Club** PO Box 77, 8500 Grenaa, Denmark

**Mermaid UK Agent** Bob, 20 Beresford Street, Shildon, Co Durham DL4 2JH

**Scottish Thistle QSL** 51 Hathaway Lane, Maryhill, Glasgow, G20 8NG, Scotland

**Outer Hebrides DX QSL** PO Box 11, Stornoway, Isle of Lewis, Scotland PA87 2AA (DX Section), PO Box 10, Dingwall, Ross-shire, Scotland

**Rocky Mountain Breakers** PO Box 156, Wolverhampton, WV6 9DX

**Boomerang Radio DX QSL** 43 Chiddingly Close, Brighton, Sussex BN2 5GZ

**Firebirds QSL Swap Club** 13 Syenite Place, Rostrevor, Co Down, N. Ireland BT34 3EP

**Dayglo International QSL** PO Box 27, Ballymena, N. Ireland BT43 6BG

**Antrim Country Int Radio** PO Box 14, Brighouse, West Yorkshire HD6 2SE

**Zulu Whiskey Int.** PO Box 90 12 54, D-6450 Hanau 9, West Germany

**Funk Club Hessen** PO Box 1927, D-8940 Memmingen/Allgäu, South Germany

**Memminge Mau QSL Club** 3 Tarn Villas, Cowpasture Road, Ilkley, West Yorkshire, LS29 8RH

**Dragonrider QSL Club** Dragonrider One/David Shepherdson, Card of the Club, please enclose an S.A.S.E. for reply.

### QSL Club Addresses:

**Tie Fighter DX Group UK** 31 Strathburn Gardens, Inverurie, Scotland AB5 9RY

**Cutty Sark QSL Club** 47 Gurdon Road, Charlton, London SE7 7RP

**Firth of Clyde Int'l QSL** PO Box 8, Kilwinning, Ayrshire, Scotland

**\*Belgium International DX** PO Box 31, B-1990 Hoeilaart, Belgium

**\*Bravo Whiskey Int DX** BP 242, B-5000 Namur 1, Belgium

**\*Orient Pirate Radio Group** PO Box 1, B-2160, Brecht, Belgium

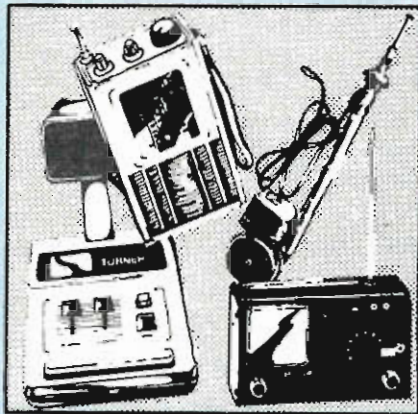
**V W 16 Spoon Swap Club** PO Box 2243, NL-5600 NA Eindhoven, Holland

**\*The Wizard Int Swap Club** PO Box 65, B-2120 Schooten 1, Belgium

**Seahorse QSL Club** PO Box 522, NL-2280 AM Rijswijk, Holland

\*Remember don't use names on envelopes when sending to Belgium!

# Equipment Review



David Wright has a look at an accessory which, he reckons, is one of the few really worth having.

# LEAVE YOUR MESSAGE AFTER

**A**s with any hobby, sport or pastime, manufacturers are bringing out new gadgets to make CB more useful or enjoyable. Some of these CB could well do without as they cause interference or annoyance to others and very often the signal or modulation is worse than without the accessory. Many of us have been of the opinion that, if the equipment is correctly designed and manufactured, all you need to talk to another person by radio is a decent rig and twig.

Despite this, I am sure that even the breakers who are of the above opinion have often thought how nice it

Squelch Unit from Datong Electronics Ltd.

This is a very neat little unit, the front panel measuring only 60mm x 33mm and it is only 140mm deep. It can be fixed onto the rig or vehicle with the adhesive pads provided.

Electrical connections to the rig however may be a bit too complicated for the average breaker and should not be attempted unless you are sure of what you are doing, otherwise damage to both the rig and the calling unit could occur. Connection is

would be if, sometimes, they could cut out all the other chatter and wallying whilst the rig is on waiting for a call from a friend. The accessory that is required to do this, as many of you will know, is a selective calling unit, of which there are several on the market. Not all of these units operate in exactly the same way and it is a matter of personal preference and finance as to the one you choose. To help in your choice we are featuring a model this month, the compact PTS-1 Tone

quite simple for a competent rig doctor and should take no more than half an hour. It is necessary however to drill a small hole through the back of the rig, unless there is already one there, to

bring the thin cable out to the selective calling unit. The connections are to the positive and negative power inside the rig (taking care to connect the positive to the correct side of the on/off switch) so that the unit is switched on and off with the rig) then to the mic. audio input and the transmit line on the mic socket.

Finally the audio output to the speaker has to be disconnected and two connections made to the

more than enough for any location.

One point worth clearing up at this stage is that a selective calling unit only stops other calls getting through to you and it is no more possible to use the channel if it is in use than it is without a selective calling unit. It is also not possible for two groups on different calling codes to speak on the same channel at the same time. Once the other caller has unlocked your calling unit all the other

We have been using a pair of these units for over a month now and they work perfectly. The rig can be left on all day, even on 14, and it sits there silently until a call comes through from the other unit. The squelch on the rig can still be set so as to exclude the signal if weak, but we usually turn it right back and leave the volume well up to hear the call if we are some distance from the rig. Tests showed that even an S1 signal unlocked the PTS-1 with no problem.

A very useful feature we found during the test was that even when the breaking channel was so busy that it was almost impossible to hear the other breakers, providing a reasonable signal strength was present the PTS-1 unlocked, indicating that a call was there. If a pre-arranged channel was selected it was then possible to make contact. Very occasionally the PTS-1 would unlock for a split second if someone's voice just hit the correct note of the coded signal and this is mentioned in the instructions but is not much of a problem.

The PTS-1 functions by sending out a tone of a certain frequency along with the speech during transmission. When the tone of the correct frequency is received by the second unit it switches the rig speaker on. Whilst other breakers without a PTS-1 can hear what is said, the speech is accompanied by a continuous audio tone which is very unpleasant. The receiver with the PTS-1 doesn't hear this however, as the tone is filtered out by the unit. Once contact has been made the unit can be switched off if desired as audio quality is slightly better with it off. The 64 codes are selected by an 8 selection dual-in-line switch under a pop-off cover in the underside of the unit. All of the units in the same group must of course have their switches in the same position.

## Commercial Use

The uses to which these units can be put are many, apart from the group of breakers who just want to chat to each other. The most obvious use is for small businesses with several vehicles. CB can be virtually useless for this normally as the base station and vehicles have to put up with the endless racket all day on busy channels as the squelch keeps opening. Not with the Datong Squelch Unit as things are quiet until a call is made. But as one unit is required for each rig in the group the price may well restrict the use mainly to commercial users anyway. Priced at £45.99 each, they are not cheap, dearer than many rigs now in fact, but if you leave the rig on a great deal waiting for a specific call and you and your fellow breakers have the greenshields, the Datong PTS-1 Tone Squelch unit could well be worth the money. You will probably wonder how you managed without it. These are well designed and constructed little units and they function very well indeed.

# THE TONE...

separated wires (i.e. the calling unit is in series with the audio output). When connecting the two wires into the audio output, it is important to break into the circuit before the extension speaker socket, otherwise the unit will not operate when an extension speaker is used (this is something that can be easily overlooked).

The Datong PTS-1 selective calling unit has sixty four different calling codes or tones. It is therefore possible for any one of sixty four groups of people to operate on one CB channel without disturbing the other sixty three, providing of course no one in the other sixty three groups is transmitting at the time. The theoretical maximum number of groups that could then use the 39 CB channels (excluding channel 9) would be 2496,

signals that are on channel come through as normal. Neither is the channel private — others can still hear what you say so don't go talking about all those intimate details with your friend of the opposite sex (or the same sex if applicable). This should clear up a lot of questions that we are often asked about these units.

In operation the Datong PTS-1 Tone Squelch is really a pleasure to use and once set according to the instructions, no adjustment needed to be made. The controls are a squelch or level adjustment, an on/off switch and a monitor button. The controls that are normally used are the on/off button and the monitor button. When the unit is switched off the rig operates normally but when on, only breakers on the same code setting come through, the non-locking monitor button allowing the user to listen to see if the channel is clear before he transmits. There is a small LED indicator on the front panel to show when the unit is on, which is very useful with push button switches.





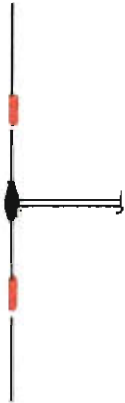
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- Pre SWR'd 1.3 to 1.
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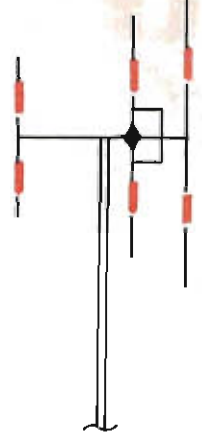


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100TU27	Antenna tuner unit.....	£7.30
PL36PL	Jumper 3 RG58, PL259's.....	£1.85
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UR67	Superior RGB per metre.....	£0.67
PL259	UHF plug fits RG8/U.....	£0.55
UG176	Reducer fits PL259 to RG58/U..	£0.15
SMC 478-267	Din plug 5 pin 180°.....	£0.35
SMC 586	Microphone clip magnetic.....	£0.60
SMC 585	Microphone clip adhesive.....	£0.30
FSP1	Extension speaker.....	£11.15
SMCP8	3.5mm Mono jack plug.....	£0.15



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**Our normally healthy Filly succumbs to flu and finds an aspect of CB she never knew existed.**

# LADY BREAKERS

I had never realized before how important CB must be to housebound people as a link to the outside world. Really important, I mean, not just a pleasant diversion or a congenial way to while away the odd hour.

Well, I realize now, because I was recently housebound myself for a short time — four days to be precise, and that was four days too many, let me tell you.

I am one of those irritatingly healthy people who have never had a day's illness in their lives and seem able to avoid every bug that periodically strikes down everyone about them. At least, I was. A week ago I went down with this 'flu for the first time in my life.

I couldn't understand what was wrong with me when I woke up that morning with hot, aching head and sore throat. What on earth had I drunk the night before? I knew I couldn't possibly be ill, I was never ill.

I got out of bed, weaved around the room and walked into the wall.

"Oh, go back to bed", said my husband crossly. "You're in no state to go anywhere, you must have picked up your mother's 'flu. I suppose you'll give it to me next. Your family's got no consideration." Nothing like a spot of husbandly comfort when you're feeling like death warmed up.

I crawled back into bed and lay there, aching, sweating and shivering and certain I was dying. 'Flu! I thought indignantly. Rubbish. Everyone had 'flu and they certainly never felt like this. My considerate spouse brought me two aspirins, and a hot water bottle then disappeared for the day.

Robust, healthy people make the very worst patients when they are ill themselves. Ask my husband. I tossed and turned, whimpered, complained, threw off all the bedclothes and was lying there shivering with cold when he came back that evening. Every time he replaced the quilt I flung it off again. Every time he put his head round the door I demanded that he wipe my fevered brow with a wet cloth. If he left me for more than ten minutes I called — or rather croaked — for him and whined he was neglecting me.

In the end, to humour me, he called the doctor who told me not to be a baby, left me a bottle of nasty-looking capsules and told me sternly to stay in

bed for another three days.

The worst of it was over by noon the next day, leaving me weak and irritable and, above all, bored stiff. I began to fancy that the bedroom walls were starting to close in on me.

I couldn't read because of my headache, so that evening I got my husband to rig up my base station next to the bed. All I meant to do was call up a few people the next morning to get some sympathy, but I soon became quite absorbed just listening.

I had never used CB much in the morning, unless I was out on the road somewhere, certainly not locally. I had always imagined it to be the off-peak time of day where Citizens Band was concerned. In fact, I had never heard the airwaves so lively, except perhaps for Saturday nights.

There were cheerful housewives frankly discussing their husbands (whose hair would have stood on end if they could have heard), a group of local shopkeepers were playing Chinese Chequers over the air, and a couple of girls from a local blind school were discussing politics with an elderly man in an old folk's home, who I gathered was confined to a wheelchair.

Every so often a passing lorry or van driver would chip in with an earthy comment on the state of the traffic or the morning news, even the occasional blue joke which offended nobody.

It was all very entertaining and I completely forgot I was ill and feeling sorry for myself. I simply had not realized how many people for whatever reason relied on their radio during the day to stop feeling cut off. Not a wally to be heard either.

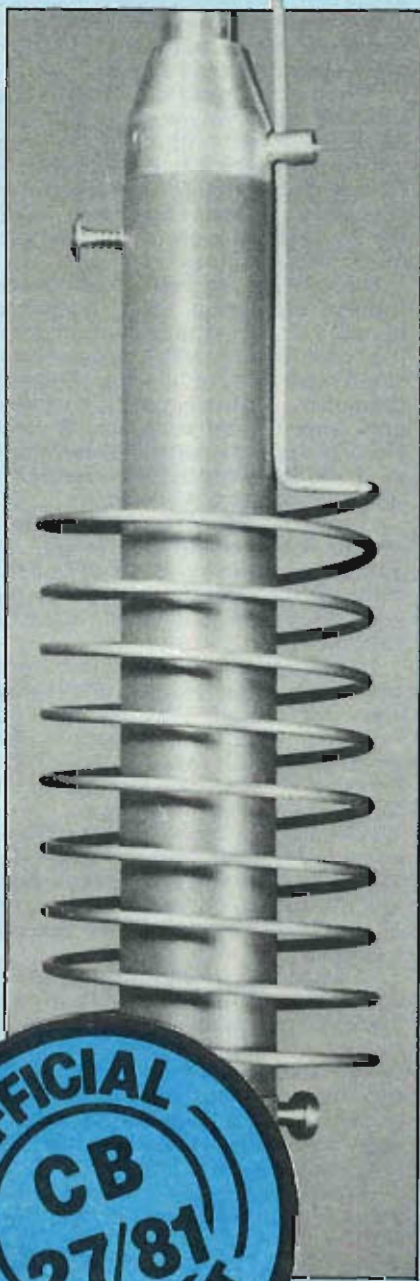
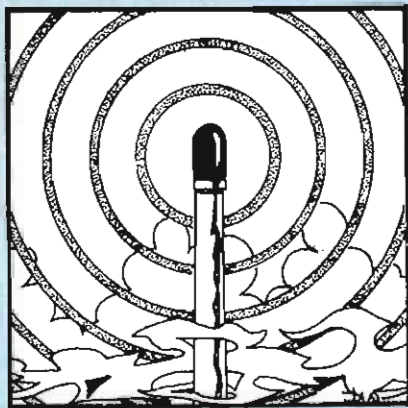
The day was gone almost before I knew it. I had reached that miserable stage when you feel weak, washed out and depressed, but suddenly the rest of my brief convalescence seemed bearable.

As soon as I was up and about again, and generally back to my old lively self (much to everyone's relief) I rushed off and donated to a local charity that specialized in buying CB rigs for the blind, the elderly, the disabled and the housebound and was only sorry that I hadn't had the imagination to do it before.

When I got home that evening, it was to find my husband in bed. With the 'flu.

**CB**

# Antenna Review



# REACH FOR THE SKY

**A**lthough CB is generally thought of as being a means of mobile to mobile communication — possibly due to the 'American trucker image' — there are probably as many, if not more, base stations in the UK than mobiles. If you think about it, most mobile breakers usually set up a base station fairly soon after going on channel, so that they can modulate in the comfort of their home when not mobile. This is very often after being frozen in winter and baked in summer, modulating whilst 'square wheels'. Add to these breakers the many who, whilst not having a vehicle, are interested in CB and set up a base station right away, then this amounts to a large number of base stations. Apart from the normal everyday use such as chatting to friends etc., base stations also tend to be used for long distance copies, with each breaker trying to get long distance contacts similar to amateur radio enthusiasts. This type of activity, naturally, not only requires a good rig and microphone, but most of all a good antenna.

The Home Office as you know were not too kind in this respect, therefore the recent slight change in the regulations is most welcome. As top or centre loaded antennas are generally more effective than base loaded ones, a centre or top loaded antenna would appear to be an especially good choice for a base station, bearing in mind the type of usage described above. One manufacturer who has not been slow to take advantage of this fact is Gamma Aerial Products Ltd., a well known antenna company. We at Citizens' Band being equally keen to keep our readers informed of the latest developments, have this month tested G.A.P.'s centre loaded Skybreaker II to see what sort of improvements, if any, we can expect from this type of antenna.

The Skybreaker II is yet another of the 'tripod' type of antennas, with 3

angled groundplane elements that have proved so popular among breakers. The 2.5 metre groundplane elements each comprise of the usual two pieces of aluminium tube, one piece sliding into a larger piece and being secured with a self tapping screw. These elements screw into the central aluminium mounting boss and are supported part way down their length by radial arms fitted to a plastic moulding which slides over the mounting pole. This groundplane assembly is well made and fairly standard for this type of antenna.

The part of the Skybreaker II which is different to other antennas that we have previously tested is the centre loaded radiating element or whip. The lower tube of this element fits into a large cylindrical black plastic insulator and is secured by a grub screw in a metal ferrule fitted to the top of the insulator. In the centre of the 1.6 metre whip is the unusual loading coil. The centre of this coil assembly consists of a 25mm diameter, 150mm long plastic insulator into which are fitted the two aluminium tubes that make up the whip. It is around the outside of this insulator that the 55mm diameter, 120mm loading coil is wound. As you can see the diameter of the coil is much larger than the insulator and therefore the coil looks like a big open spring with its coil well clear of the surface of the insulator. In fact the 2mm diameter stainless wire used does make the coil feel like a spring when handled and this brings me to the method of SWR adjustment.

The instructions indicate that the length should be initially set to 120mm and be adjusted if the SWR is high. Adjustment is quite simply done by loosening a clamping screw with an allen key and then moving the clamped straight portion at the end of the coil up or down, thus stretching or compressing the coil slightly and modifying its inductance. Having to tune a homebase antenna is always a pain

but is necessary with this type of construction as the coil could be distorted in transit and being factory set.

The advantages of the open construction appears to be that it allows a larger more efficient coil to be manufactured at a reasonable price therefore the inconvenience of tuning could be justified.

The instructions are quite adequate having several useful diagrams included with the step by step text. A paragraph is included on tuning which is helpful — if the antenna indicates that it is too short when tested, the coil has to be shortened to increase inductance and vice versa, the opposite of what is required when tuning by adjusting a whip length.

The Skybreaker 2 is mounted in the normal way for this type of antenna, by passing the coax and PL259 plug through the centre of a 1 1/4 inch tube and into the SO259 socket on the underside of the mounting boss. The mounting pole is passed through the groundplane support moulding and then into the mounting boss where it is clamped with a grub screw.

Construction is of a good standard and should give the antenna a long reliable life.

## Blackspot

When we had the Skybreaker II mounted on our pole, the SWR was over 2.5:1 but after lowering the antenna twice for adjustment of the coil, the SWR came down to around 1.3:1 and could probably have been improved still further if we had wished. On test the Skybreaker II outperformed all previous homebase antennas that we have tested. At ranges up to about 3 kilometres signal strengths were good but no better than other good antennas, but at greater distance signal strengths were consistently higher than usual. The supreme test comes as we have mentioned before on the stretch of road that is our test route that is a proverbial signal blackspot. This is where lesser antennas fade away to nothing and good ones give an S2-S3 signal. The Skybreaker II maintained a strength between S4-S5.

In conclusion, we consider the Skybreaker II to be a well constructed, high performance, base station antenna. Instructions are quite adequate with diagrams where necessary. Assembly and installation are relatively simple and straight forward, but lowering the antenna several times for tuning can present some problems, depending on the type of installation. Priced at £21.95 this antenna represents good value for money.

Our thanks to Gamma Aerial Products Ltd., for supplying the test sample.

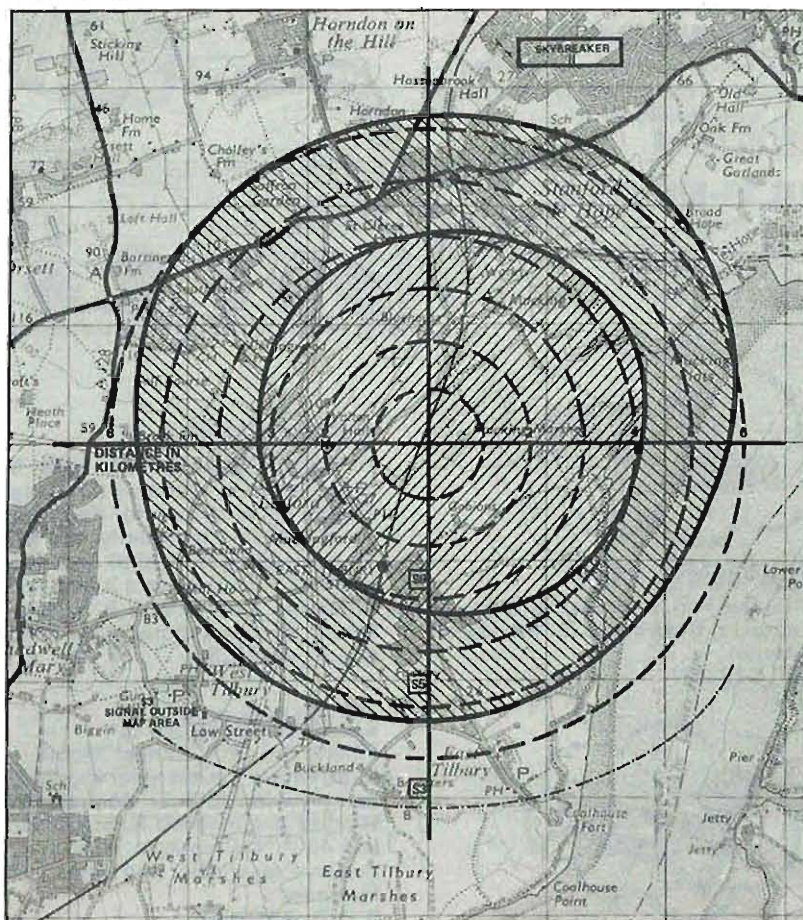
Readers may also be interested to know that G.A.P. also market a 'conversion kit' that will adapt the old base loaded Skybreaker to the centre loaded Mark II. This costs £10.95 and is available from Gamma.

# ANTENNA REVIEW DATA PANEL

## SPECIFICATIONS

### Model Skybreaker II

Type Centre loaded Homebase  
Length 1.6 metre plus 2.5 metre groundplanes  
Frequency Range 27-28MHz  
Max Power Handling —  
Impedance 50 ohms  
Cable Supplied None  
Mounting Details 1 1/4 inch mast  
Supplier Gamma Aerial Products Ltd  
Typical Price £21.95



## REVIEW VERDICT

Performance XXXXX  
SWR Adjustment XXXX  
Construction XXXX

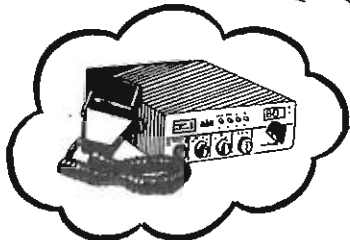
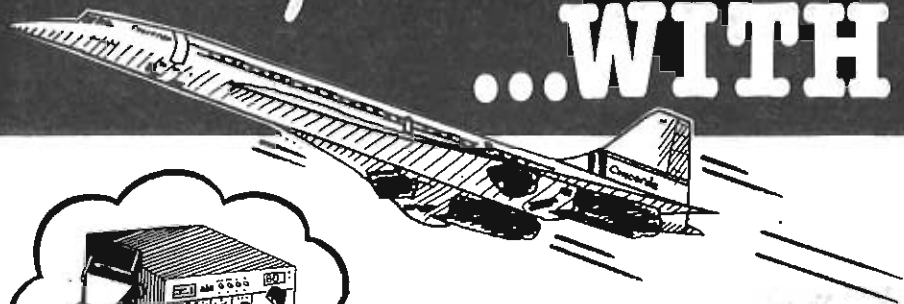
Installation XXXX  
Instructions XXXX  
Value XXXX

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.

# UP, UP AND AWAY... ...WITH DIALS

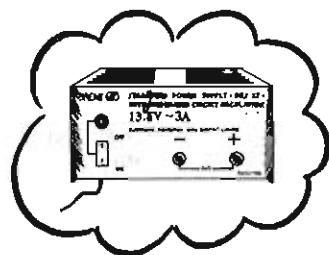
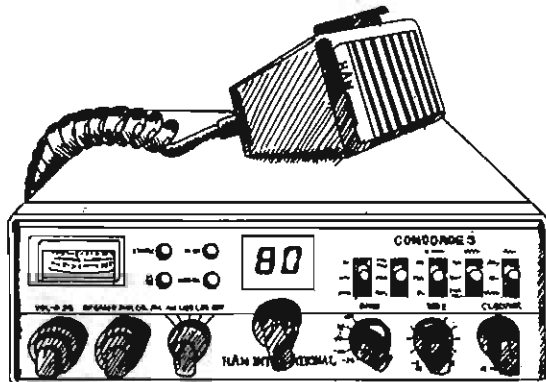


## MULTI-MODE 3

This full feature 200 Channel Mobile Multi-Mode Transceiver is converted to U.K. specifications.  
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## JUMBO 3

This 227 Channel Base Stations Multi-Mode Transceiver probably the finest CB in the world has now been modified to comply with MPT 13 20 making it legal to own and use in the U.K. In this form it has 40 F.M. Channels, Built-in S.W.R. meter, Power Mic. and many other features.  
**R.R.P. £379.95**



## M.C.P. 150

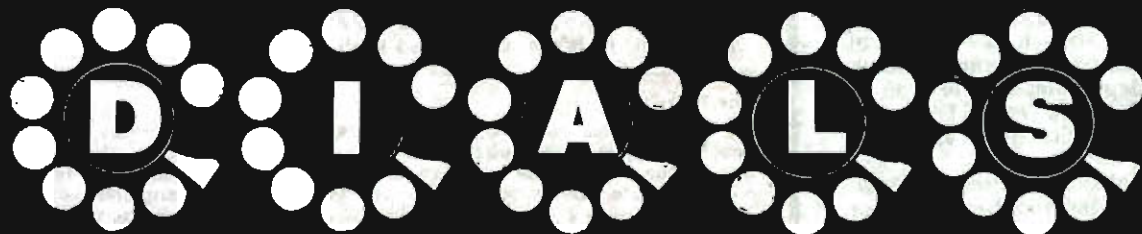
Cordless Telephone up to 700 feet Range. Last number redial. Mute. Not BT Approved.  
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## JUMBO 2

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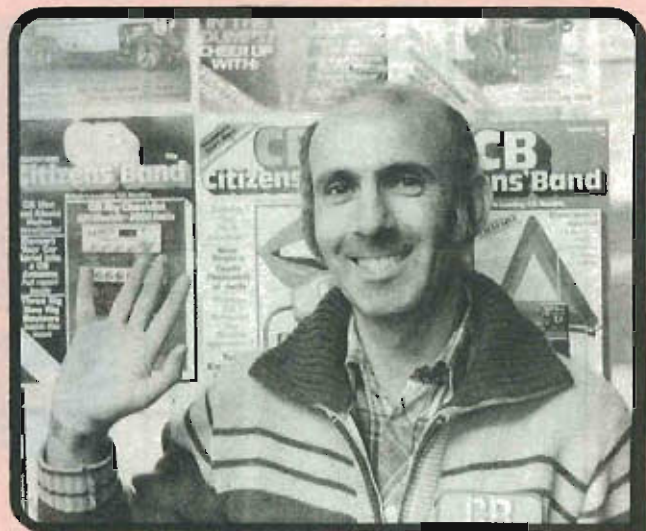


# Mack Chat

**Mack, our resident storyteller, has a cautionary tale to tell about 'friendly' ham radio.**

I want to tell you about 'friendly' amateur radio. "Oh no, not more ham radio", you may cry. 'Fraid so, but you will like this story I am sure. The victim of this tale is a happy go lucky sort of chap. Trying not to take life too seriously and enjoy the few pleasures that might come his way. As an avid CBer it was only natural to follow the trend of many others and progress to amateur radio. For some the hobby of CB or ham radio can be enjoyed during the working day. Many have rigs installed in their workshops, and the ladies can have rigs installed in their kitchens. For the motorist, we all know any form of communications can be an asset. Van and truck drivers, the rep or travelling salesman and service engineers can all enjoy CB or ham radio. Coach and mini cab drivers, even some licenced taxi drivers, can enjoy the company of radio. Licenced London taxi drivers can't. Well, at least, not officially they can't. You may well ask "why not, for goodness sake?" The many thousands that choose to spend up to £12,000 to purchase their own vehicle can't do what they want with it. Even the body colour has to conform and it's only recently that they have been allowed to install broadcast band receivers, mono only, no cassette players or any equipment that has not been 'approved'. CB or amateur radio are definitely out.

But our happy go lucky sort of chap thought that it was worth bending a few regulations for the advantages of CB or ham radio. If he had stuck to CB I doubt if the following incident would have taken place but alas he chose to carry a 2 metre rig. Now our happy go lucky sort of chap was also keen and eager to help other 'friendly' amateurs during the course of his working day, and many amateurs owed thanks to him as time and again when the cry for help was heard by lost amateurs in the great London metropolis, our chappie would point a foreign or London traveller in the right direction. Even at times when other amateurs suffered slight mishaps such as a flat battery or fuel all gone, our cabby appeared on the scene with jump leads or a spare can of petrol. So the ITD, as he was also known, had many thankful friends, but alas somewhere out there out there in amateur radio land was a spoil sport who didn't like the ITD. Maybe he was jealous because the ITD had so many friends, but alas somewhere out there in amateur radio (he treated it more like real friendly CB and didn't like too much discussion of antennas, rigs, and their workings.) Whatever the reason this spoil sport grassed, split, fingered, or call it what you will — anyway he reported to the cab authorities that the ITD was using 2 metre radio in his cab (all together now boo, hiss, shame). So the ITD was requested to make his presence at Scotland Yard. None of your 2½p local nick but the place of highest authority where he, the ITD, had his wrists slapped, and was told 'don't do it again' and he won't because his livelihood is more important than a hobby. So what does he think of 'friendly' ham radio now? I'm afraid that his reply would be unprintable.



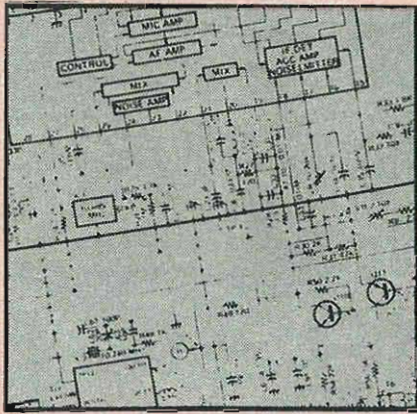
There is no sign of the 'Warlock' 934 rig at the time of writing. But our wonderful editor loaned me the Grandstand for a little while, and I'll give you my views at a later date as I have only had the rig for a few days. When I look at the 934 antennas I can't shake the feeling that the small size of them seems inadequate for the job. Yet I know they work. The 10 or 12 element yagi beam antennas that are advertised, although illegal, seem tempting and already many are in use with the 934. As the people that use them say, when mounted on a pole it's almost impossible to differentiate between them and TV antennas and if no interference is caused to users of other frequencies then maybe the RRD will look the other way. I have heard that one company is contemplating manufacturing and marketing 'boots' for 934. If this is true, what with illegal antennas, could this be the thin edge of the wedge in the decline of the discipline that at present resides on 934. The people that I have spoken to so far on the frequency seem intelligent and responsible and are trying to keep the frequency civilised, particularly as the present system is in a sort of probationary period.

10, 14, 20? Just 3 of the 20 channels on 934 but which one is the breaking channel? I have called on all 3 at different times and had replies from stations that monitor 10, 14 or 20 believing or hoping that they are on the breaking channel. People, especially new 934 users, are writing asking what is the national breaking channel, I don't know, but many others have written suggesting channel 10. So may I propose that users of 934 seeking contacts with other stations call on channel 10. Seconded by Les Wallen. Right, all we need now is a show of hands for the proposition to be carried.

And now the continuing saga of the 934 DX record. The Banbury to Lowestoft 135 mile record has fallen by the wayside as I have now received claims of double that distance. From MJ 555 QTH Hastings to Okehampton, Devon 210 miles. Bridgewater, Somerset 160 miles, Brixham, Devon 190 miles. TB 25 QTH Chasetown, Staffordshire sent a long list of contacts, his best is to Gurnsey approx 225 miles. From Paper Lady BW00 and Paper Man BW02 QTH Somerset, DXed to Hastings 160 miles. But the record holder at the moment is Brian BM45 QTH Okehampton, Devon to Rayleigh, Essex, 227 miles, Southend on Sea 225 miles and Tra La La (trumpet fanfare) Belfast 288 miles. Brian points out that his home QTH is 900 ft. ASL. So 288 miles-is that the record? Perhaps you know better?

You may have heard that Switzerland went legal on 934 with 40 channels 1st January 1984. Our 20 channels are compatible with theirs, but our 20 have a 50Khz spacing, they have a 25Khz spacing. So our channels are every other one of their's. So who will be the first in this country to work a Swiss station? It could be done. Our editor Sue says we will give a prize to the first QSL confirmed QSO.

# Project



**Chris Peterson presents a deviation meter project for constructionalists and explains how to make it and why you need one.**

# TALK POWER

In many of our rig reviews and modification articles we have stressed the importance of correct deviation in narrow band FM systems. Aside from the legal niceties, deviation is in essence 'Talk-power'. Too little deviation will make you whisper quietly and difficult to copy under noisy conditions. Conversely, too much deviation will cause splatter into adjacent channels and distortion on highly selective receivers.

Indeed, many of you who have fitted our crystal filter modifications may have found that stations that used to boom in are now sounding distinctly rough around the edges! They are simply over-deviating. Obviously for best results, the correct deviation should be used. For best results this should be about  $\pm 1.5$  KHz, or 3 KHz peak to peak. For the 10 KHz channels spacing used on 27 MHz CB, the deviation should never be allowed to exceed  $\pm 2.5$  KHz, or 5 KHz peak to peak.

For those more familiar with AM systems, deviation is analogous to modulation depth. Putting it simplistically,  $\pm 1.5$  KHz is equivalent to about 90 to 95% mod, and  $\pm 2.5$  KHz is about 105%

All this is very well, but how do you measure deviation? Many of the more sophisticated SWR meters have modulation meters for AM systems, but very few have deviation measurement circuits. The simple answer is the Citizens' Band Deviation Meter. This is a small calibrated wideband receiver. It covers the whole 27MHz CB band without retuning. When placed in the proximity of a CB transmitter, it will 'lock-on' to the transmitted signal and read the peak deviation. No direct connection to the rig is necessary, simply placing the meter nearby will be sufficient.

## Peak, Mean and RMS

Sounds like a biscuit manufacturing operation, doesn't it? In fact these terms are vital for the understanding of modulation levels.

A speech signal in a CB system consists of an audio signal with a

bandwidth of 300 Hz to 3000 Hz. Many of you will be familiar with the VU meters found on some tape recorders. These are used to measure the level of sound being recorded on the tape. Like many simple AC meters, these measure the RMS value of the audio signal. RMS stands for Root Mean Square, and is a mathematical trick for calculating the average power content of an AC signal. If we consider only pure sine waves, then there is a very precise relationship between the RMS value of the signal and its peak level. Unfortunately, the same does not hold true of a speech signal. The human voice produces a very spikey waveform in which the RMS value is very small compared to the peak value. Also it is quite possible for a speech signal to be asymmetric. This means that the positive going half cycles may be much greater or smaller than the negative going half cycles.

The upshot of all this is that an RMS metering circuit is almost totally unsuitable for measuring speech signals. A true peak metering circuit is required. Furthermore it must measure both positive and negative going peaks accurately. Needless to say, this makes the circuit rather more complex, but well worth the effort!

## Circuit Details

Referring to the circuit diagram, IC1 is an S041 limiting amp and quadrature detector. Originally designed for pocket paging systems, its low current consumption and excellent performance made it very popular with the radio control brigade. Although designed for use at IFs of 455 KHz or 10.7 MHz, it has a design bandwidth of 35 MHz. This means that we can use it directly at 27 MHz without need for mixers or RF amplifiers. L1 and L2 are Toko 27 MHz coils, again intended for radio control applications, but ideal also for our purposes. The coils specified in the parts list have internal tuning capacitors. However in case you have access to the equivalent coils without integral capacitors, space has been left on the board for external 56 pF capacitors.

The audio bandwidth of a CB signal should not exceed 3 KHz.

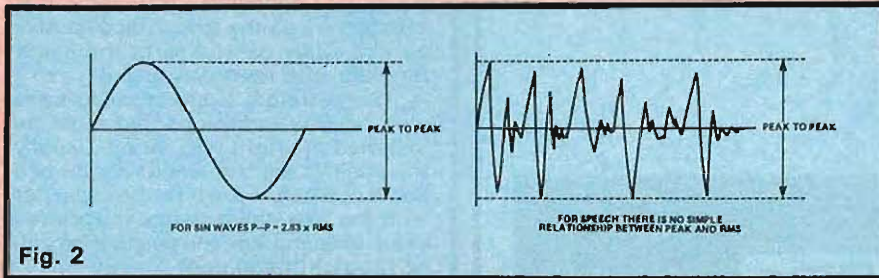


Fig. 2

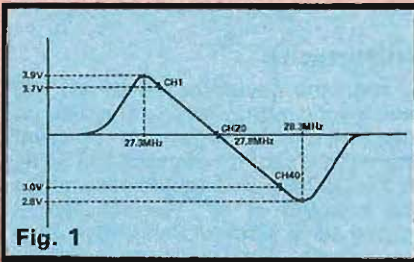


Fig. 1

Above. For a sine wave, there is a very precise relationship between the RMS value of the signal and its peak level. Centre. The 'S' curve of the detector. Below. The circuit diagram for the Citizens' Band deviation meter.

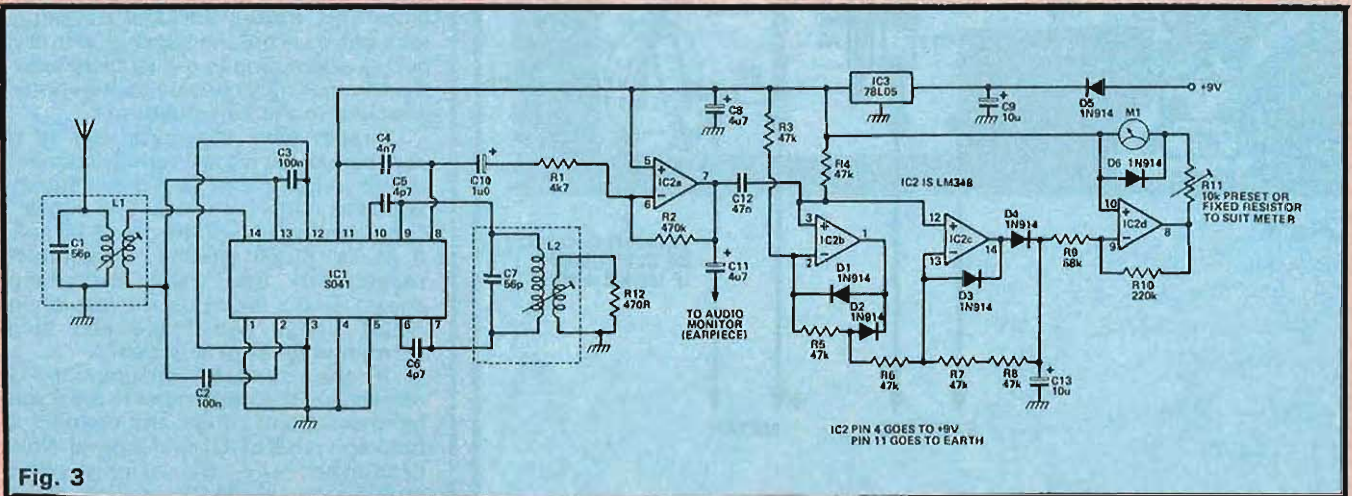


Fig. 3

However, just in case it does we will design our meter for a bandwidth of 10 KHz. This bit of elbow room will ensure that we measure everything present in the transmitted signal. C4 provides filtering of the recovered audio signal to reduce components above 10 KHz.

Using the S041 i.c. direct at 27 MHz provides coverage of the entire 27 MHz CB band without the need of tuning other than initial alignment. The 'S' curve of the detector is shown on Fig. 1. As always, there is a snag to this approach. Studying the curve shows that a 1MHz swing between 27.37 MHz and 28.37 MHz will produce an output voltage swing of about 1.2 volts. From this we can deduce that the 3 KHz swing of a typical CB signal will produce a voltage swing of about 3.6 mV. Not very big, is it? In fact this figure doesn't allow for the rounding effects at the end of the 'S' curve, and the true figure is about 2.6 mV.

IC2 is an LM 348 operational amplifier chip. It contains four discrete high op. amps that we will use to build our peak metering circuit.

For the technically minded, the 348 op. amps have a gain bandwidth product of 1 MHz. This means that to comply with our 10 KHz bandwidth requirement, the maximum AC gain that

we can extract will be  $100.(100 \times 10 \times 10^3 \pm 10^6)$ .

IC2a is therefore configured as an amplifier with a gain of 100 which raises the signal level to 260 mV p-p. At this point we can tap off a feed to a high impedance monitor if desired. This will allow the signal being measured to be heard. The monitor should have an input impedance of at least 2 k. A crystal earpiece will do (NOT the low impedance type supplied with transistor radios!) but a small audio amplifier of some sort would be better.

IC2b and 2c form the peak detecting circuit. By including the detector diodes in the feedback loops around the op amps, the 0.6 volt drop across the diodes can be countered. The op. amps will have virtually infinite gain until the diodes start to switch on, at which point it will fall to the value set by the feedback resistors.

IC2b has unity gain on positive half cycles, but a gain of 2 during the negative half cycle. This is subtracted from the original signal in IC2c in a process that results in a full wave rectified version of the original signal at the output of IC2c. C13 charges up very quickly through the relatively low impedance path of IC2c and D4. However D4 prevents it discharging

through this path, and it is forced to discharge through the relatively high impedance of R9. This fast charge/slow discharge provides the peak reading effect. Due to some inevitable losses in the process, the peak voltage at C13 with respect to the 5 volt stabilized supply is about 0.145 volts. This is a bit low to drive a meter, so IC2d is configured as a DC amplifier providing a gain of 3.2 times.

No great originality is claimed for this circuit. The peak metering circuit is loosely based on a PPM (Peak Program Meter) circuit that appeared in the December '82 issue of Radio & Electronics World.

D6 protects the meter movement against over voltage, and R11 provides the calibration adjustment for the meter. Those buying the kit for this project from Bonex will be provided with a fixed value resistor which in conjunction with the meter movement

supplied will provide correct readiness within about 10%. Those of you scratch building or using a different meter movement should install a 10 K preset at this point. This will be suitable for meter movements of around 200 uA. For other movements, you may have to play with the value of R10 to get in the ball-park, before using R11 as a final adjustment.

D5 protects the circuit against accidental reverse polarity connection, and the 5 volt regulator provides a stable voltage for the S041 ic and the approximately 1/2 supply volts required by the LM 348.

## Construction

This should present no great difficulty provided a degree of common sense is applied. You will need a smallish soldering iron of about 15 watts rating with a fine bit. With care you can use as much as 25 watts, but solder guns and blowtorches are most certainly NOT suitable. The ICs used are not static sensitive and will stand a certain amount of rough handling, but keep the heat to a minimum consistent with a good soldered joint.

Some of the components are polarity sensitive and must be installed the correct way round. IC1

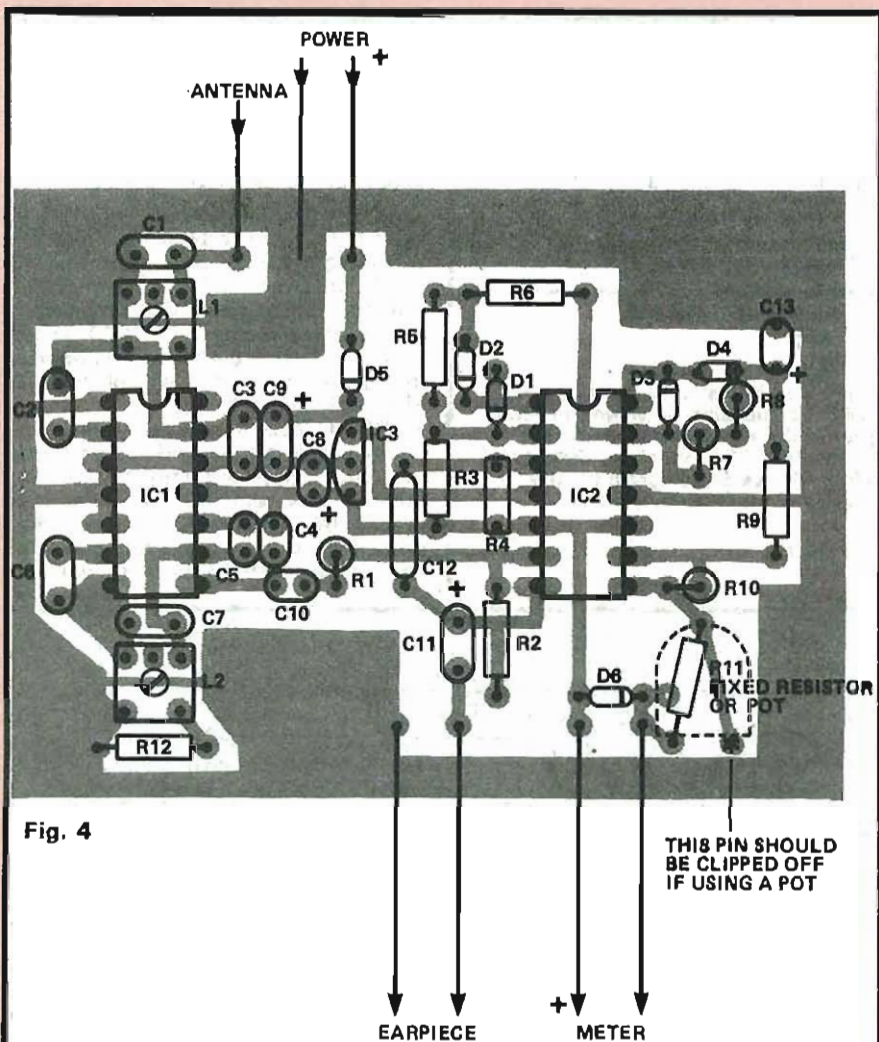
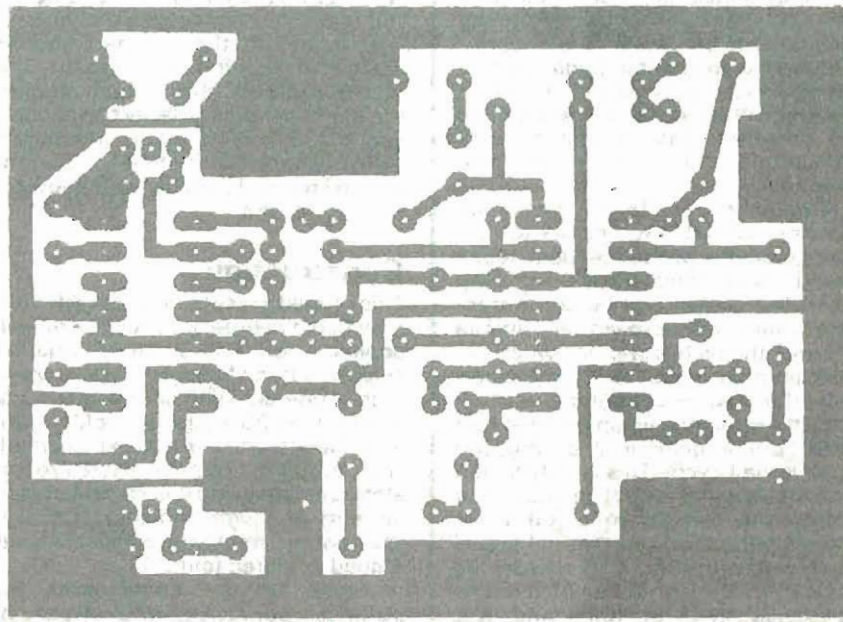


Fig. 4

Above. Component layout diagram

Below. Copper side of p.c. board

Fig. 5



and IC2 obviously fall into this category as do the silicon diodes. Also be extremely careful to fit the 5 volt regulator the right way round!

The tantalum beam capacitors are also polarity conscious and must be installed the right way round. Usually the positive leg is marked with a + or a dot. If in doubt, if you hold the capacitor with the legs down so that the printed value is facing you, the positive leg will be the right hand one!

### Alignment

To align the deviation meter you will need a good multimeter; ie one with an impedance of 20 K per volt. You will also need a tool for aligning the coils. This must be non-metallic in nature. I use a piece of 1/8" wooden dowel shaped to a screwdriver end with a sharp knife. The blade end can be toughened up a bit with a dab of super glue. This makes an ideal trimming tool, but do allow the super glue to dry before attempting to use it! Otherwise the trimmer may become permanently attached to the coil slug!!!

Firstly, with the meter set to a range of about 50 mA, briefly connect the deviation meter to a 9 volt supply with the meter in series. The current consumption should be about 10 mA. If it is much greater, disconnect immediately and check everything again! Don't worry if the deviation meter bangs against the end stop momentarily! This is normal.

If the current consumption is correct, set the multimeter to the 6 volt (or thereabout) range and connect it between pin 8 of IC1 and ground. Now reconnect the 9V supply. The multimeter should be reading about 3.5 volts. You will now need a CB rig. A hand held is ideal, but an ordinary rig running into a dummy load (to avoid annoying anyone!) will do as well. Key up on channel 20 and adjust L2 slightly. Small adjustments of L2 should cause quite a sharp swing in voltage. Adjust L2 until the DC voltage on pin 8 of IC1 is exactly 3.4 volts. Switching the rig to Ch 1 should now produce a reading of about 3.7 volts, and Ch 40 should produce about 3 volts. If you don't get readings of this sort of order then you have probably set the detector on the outside of the 'S' curve rather than on the inside! Try again! It shouldn't be necessary to adjust the core by more than a turn in either direction to get in the right place. When you are on the correct part of the 'S' curve the tuning is very sharp.

### White Noise

Like any FM receiver, in the absence of any significant signal the detector produces white noise. This will result in a meter reading probably of between 1 and 4 in the absence of a signal. We will make use of this to align L1. Key the rig on channel 20 and wait for the meter reading to fall back to zero. Back away with the deviation

meter until the meter reading starts to rise. At this point stop, and tune L1 for MINIMUM reading on the deviation meter. Then again, back away from the rig until again the meter reading starts to rise. Adjust L1 again for minimum reading. As with L2, the correct tuning point should be very sharp.

## Calibration

That concludes the alignment of the RF section. If you have been building the meter from a kit, then you should now have a fully functioning deviation meter. If you have been building from scratch and have used a 10 K preset for R11, then you still have to calibrate the meter. This is best done using either a calibrated signal generator, or by comparison with a known accurate meter. You may have to obtain assistance from a friendly amateur or rig doctor to get access to one of these! Failing either of these, then your only hope is to calibrate it against a known good rig. Using either a tone generator, or whistling as constantly as possible (!) increase the modulation level until no further increase in meter reading can be obtained, ie when the mic amp is limiting. Now adjust R11 until the meter reads 3. (3 KHz peak to peak or +/- 1.5 KHz.) This method assumes that your rig is correctly aligned in the first place, and really only allows you to say whether another rig has more or less deviation than your "standard" one!

## Conclusions

In practice you will find that the deviation meter frequently bangs against the end stop when the transmitter is keyed. This is quite normal and is no cause for concern. D6 will protect the meter movement against severe overload. The banging is caused by the sudden change in the DC level on the output of IC1 when the transmitter is keyed. This may be of the order of .5 of a volt or so, compared to

the millivolts generated by a modulated signal. It will take the meter a second or so to recover from this when the meter will fall to zero. Speaking into the mic will now cause the meter to read the true peak level of deviation.

The current consumption is of the order of 10 mA, making the meter quite suitable for battery operation. A PP3 is perfectly adequate for intermittent operation, and should provide about three hours of continuous use.

## Parts List

<b>ICs</b>		C12 .....	.047 uF
IC1 .....	S041		Polyester
IC2 .....	LM348	C2, C3 .....	.1 uF
IC3 .....	78L05		Ceramic
	(5 volt regulator)	C4 .....	4.7nF
			Ceramic
<b>Coils</b>		C1, C7 .....	.56pF
2 x 199CCA127EK (Toko).			(not required with 127
Alternatives include:			type coils)
113CN2K159DZ		C5, C6 .....	4.7 pF
113CN2K796A			Ceramic
Note: These alternatives need external			
56 pF tuning capacitors.		<b>Resistors</b>	
<b>Diodes</b>		R2 .....	470 K
6 x 1N914 or equivalents		R10 .....	220 K
		R9 .....	68K
<b>Capacitors</b>		R3, R4, R5	
C9, C13 .....	10 uF	R7, R7, R8 .....	47 K
	Tantalum Bead	R1 .....	4.7 K
C8, C11 .....	4.7 uF	R12 .....	470 ohms
	Tantalum Bead	R11 .....	10 K
C10 .....	1 uF		Preset or fixed resistor
	Tantalum Bead		to suit supplied meter

## ORDER FORM

A complete kit of parts for building this meter can be obtained from Bonex Ltd. The kit includes all components, the p.c. board, meter, IC sockets and battery terminals and costs £9.95, plus 30p for packing and posting.

The p.c. board is also available as a separate item at a cost of £2.45 (plus 30p for packing and posting).

Please fill in the form and send to Citizens' Band Deviation Meter Kit, Bonex Ltd., 102 Churchfield Road, London W3 6DH.

Please supply . . . . . kits at £10.25 each

Please supply . . . . . p.c. boards at £2.75 each

I enclose a cheque/postal order for the full value

NAME (please print) .....

ADDRESS (please print) .....

CB Deviation Meter Kit

Please allow 28 days for delivery

THE NEW GAP RANGE OF AERIALS TO COMPLY  
WITH THE NEW REGULATIONS.

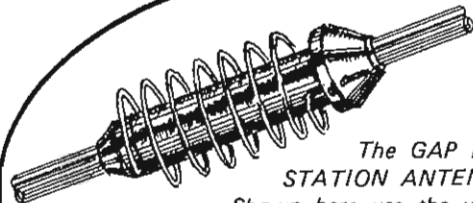
The GAP LOFTY II  
Centre loaded for  
lower angle of  
radiation.

The GAP SKYBREAKER II  
Low Angle of  
Radiation, putting  
the signal where  
you want it!

The GAP II  
AVENGER II  
Base Station  
Antenna  
Redesigned  
Centre loaded,  
with 1:1 Balun  
matching at  
feed point to  
eliminate SWR  
problems

The GAP FIREFLY  
mobile Antenna  
Centre loaded  
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radiation  
Max. Efficiency  
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3/8 UNF x 24  
Standard  
fixing.

We also manufacture  
the GAP 1/2 wave,  
GAP 5/8 wave  
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STATION ANTENNAS  
Shown here use the unique  
"ADJUSTACOIL" for easy SWR  
adjustment without altering radiator  
length

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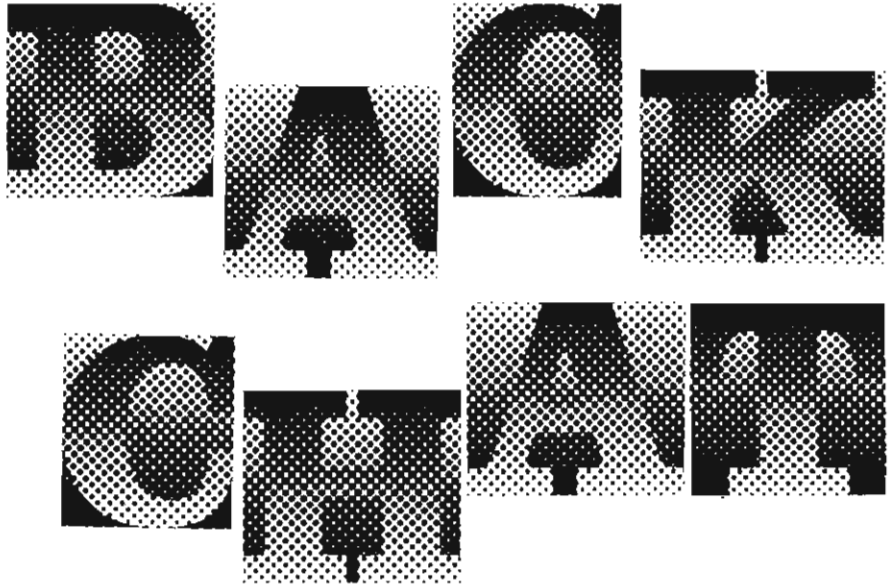
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MANUFACTURERS OF AMATEUR RADIO & C.B. ANTENNAS

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**One of our readers picks up Mack's point last month about 100% QSLers whilst channel use rears its head again.**

### Collectors Only?

*Golf Oscar 78 or 'Jock Scot' in Waddesdon Manor picks up on a now often heard gripe . . .*

The airways seem to be a bit crowded these days with DXers calling out their P.O. Box numbers and claiming to QSL 100%. What a lot of them really mean is that they collect your cards 100% but have no intention of sending one back.

Surely I can't be the only one experiencing this. I do QSL, over specific distances, 100%, which means that I send my card the same day as the QSO takes place, or certainly by the first available post. If the breaker I contact sends to me first, he gets my card back within a few days — providing he or she has given their address.

Obviously I don't expect a speedy return from club P.O. boxes but I do think that there is no excuse for taking months to return and I have only contempt for the breaker that asks you to QSL and then does not return at all. This has happened to me all too frequently, to the extent that I will now give up QSLing altogether or only do so with breakers who send me a card first.

All praise to my many friends in Wales and the West Country and in Scotland — I have 100% returns from these areas. North Midlands and Leicester breakers are almost as good. So what is wrong with the east, where's all the cards I should have received from East Anglia, from Cambridge, from Essex and Kent? All of you who asked me to QSL, I didn't ask you!

I have had one or two cards without addresses, so if I owe you a card let me know and if CHI17 Central Scotland reads this and sends his AD I will get one off to him.

*This seems to be a growing problem in the QSL world and there certainly appears to be a band of people building*

*up their card collection at other people's expenses. Are there some areas of the country that are worse than others? Write and let us know.*

### What's Wrong With A Chat?

*Kelly's Eye in Blaenau Ffestiniog wants to say that the majority of breakers don't need to be told how to use their CB . . .*

In answer to Trevor (Citizens' Band March 1984), who I gather is new to CB, channel 19 is not a breaking channel, it is for mobile use. It should be kept clear in areas of high activity, such as busy motorways and monitor control areas. Otherwise what's wrong with a chat?

Most genuine road users are nice friendly people who will always let you in when you call on the side. They will be helpful when they can. They don't need to be told how to use their CBs, that's for sure. They will pass on information if they have it and allow you to call for someone if you wish, though do use a guard channel (18 or 20) until 19 is clear again when you make your contact.

I learned years ago that to leave channel 19 when mobile meant that other people's conversations were broken up when I drove between them, much to their annoyance and my regret. Trying to find another channel without losing my contact or control of my vehicle was difficult if not impossible. So you see, there is method in what may seem to be madness.

A little understanding and politeness goes a long way. The system works, don't knock it and if in doubt use channel 14.

### Helping Hand

*Peter Jaffrey is asking for a favour, but not for himself . . .*

I am a regular reader of Citizens' Band and on this point I am asking for a little

help. Not for myself but for a lady pensioner who has arthritis and who is a beginner with CB.

Unfortunately, this lady lives nearly 300 miles away from me as she lives in Milton Keynes and I help by writing to her. However, I would like to ask if there is a pensioner in that area who would like to call Blue Velvet on channel 14.

I have written to her and told her to get Citizens' Band so she should be getting to know about CB.

*If there is anyone out there who fits the bill, perhaps they would like to give Blue Velvet a shout.*

## CB is dead?

**B. A. Yeoman runs a CB shop in Norwich and wonders if he has heard right . . .**

I run a CB shop in Norwich and recently when in my local post office, I was told by the chap behind the counter that CB is dead and didn't last long. I thought I'd better ask 'how come' when I'm driven mad 60 hours a week coping with CB sales and repairs.

Apparently, no one is buying licences and after talking to my customers it seems that less than one in ten has a licence — plus very often with three CBs to each licence. I reckon that there is about one licence to 30-50 CBs. I'm only glad that I don't have to fill in forms as I do for TV to notify the authorities. I would be lynched!

We might as well scrap the 27MHz. licence and strictly licence 934MHz. at a price they can afford to enforce. They will never catch the present amount of evaders at £10 and it is not fair on the few who do buy a licence.

*I can understand Mr. Yeoman's thinking, but is it right just to licence (and charge) 934MHz. users? This seems just as unfair on the as-yet small minority that uses UHF. The F.C.C. in America suggested scrapping CB licences and were amazed at the criticism they received for suggesting it. Let's hear your view on this.*

## L.I.M.A.

**Star Gazer or R. G. Roper, chair person of L.I.M.A. would like to tell you about the group . . .**

Through your magazine, we would like to announce that in the town of Luton, Bedfordshire, an alternative monitoring team has been organised.

We have called ourselves Luton Independent Monitoring Association and we have been steadily growing in numbers over the past six months.

We try to monitor channels 09 and 19 to the best of our ability. We have training nights and provide all our members with a manual giving details on how to handle various calls.

We have also met with all the emergency services in Luton and have their approval. In return they have



given us sound advice concerning the handling of emergencies. Also, two representatives of the St. John's Ambulance Brigade have visited and gave an interesting lecture on first aid and its application.

For those members who are not on the phone, we ask them to concentrate on monitoring channel 19, dealing with calls for directions, relaying information required on channel 09 and to act as back ups for the monitors on channel 09 with telephones.

We do not charge a membership fee and our paperwork is met by various members of the team. We would like to say thank you to the South East Kent Coast Monitors, who have been most helpful in giving us advice and warm and friendly correspondence.

If any person is interested in organising a monitoring team with their town, we will try to help them in this endeavour.

Please contact us at: The Chairperson, L.I.M.A., P.O. Box 72, Luton, Beds.

## Mr. Average

**Reg Woodhouse or Jerboa in Telford, Shropshire takes up the comments of Bottle Basher . . .**

I would like to reply to Bottle Basher in the April edition of the magazine.

It would seem that he is not very well informed on the antenna situation or he would not have made the remarks about 'pieces of tin with a sardine can'. What about the new specs?

I for one do not think that Busby, or anyone else for that matter, are all that interested in what type of antenna you put up, providing you are not causing TVI or whatever. This certainly seems to be the case in this area anyway.

I heartily agree on a few of the things he said. Why not SSB, 12 Watts and beam antennas — and extra channels. As he remarks, France and Germany, Italy and Australia have it so why can't we?

As for myself, 934MHz. is too expensive for Mr. Average. Maybe that was the idea behind it to keep the

idiots off it.

I would not mind playing the same licence fee as amateurs, providing we get a decent service out of it. Maybe things will improve with time, who knows.

*I think Reg has still missed the point. Not all the countries he refers to have the system he mentions legally — at least not directly in the form he refers to. We aren't the CB world's poor relation by any means.*

## Wallies fight back!

**David 'Dingbat', otherwise known as Wally One in Belper wants to defend himself from the accusations made . . .**

We wallies are fed up with the way our name is misused in the magazine, so I enclose a few facts about we wallies. I also include my QSL card as proof of my status in the wally world.

We wallies are daft and we are stupid, We wallies never conform.

But don't mix us up with morons and misfits,

Mic. keyers and lower life forms.

As for music and verbal, we hate it In all of its cretinous forms.

We wallies are loveable breakers, We may be as mad as March hares,

But just like you normal breakers, We wallies treat CB with care.

*Well, I'm not going to try to follow that! Are wallies misunderstood creatures or monsters?*



**Letters intended for publication should be addressed to: Backchat, Citizens' Band, No. 1 Golden Square, London, W1R 3AB.**



# SCOTTISH



# BREAKERS

ARE YOU HAVING DIFFICULTY IN OBTAINING EQUIPMENT?

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We have a massive supply stock of CB radio equipment. If you cannot obtain supplies locally, send 50p PO for list, instant despatch if Access, cash or postal orders. Full details on our retail mail order price list.



# SCOTLAND



**More from up and down the country on the club scene as we open the post bag on Club News for this month.**

# CLUB NEWS

First off we'll start with a request from Scotland from Rock-a-Jock and Bunny . . .

## Club Listing

Rock-a-Jock and I, Bunny, are compiling a list of names and addresses of Scottish CB Clubs. This list will be made available to the clubs that want it.

Can we appeal through your columns for all clubs concerned to send details to Rock-a-Jock, P.O. Box 1, Glasgow, Scotland, G69 6EF.

Now back to the clubs . . .

## Turbo CB Club

Please could you give our club a mention in your Club News section.

The Turbo CB Club meet on Monday evenings at The Happy Wanderer, Arnison Avenue, High Wycombe, Bucks. We are a small group of breakers who have been meeting since August 1981, are happy and friendly and enjoy many social outings, as well as raising money for local charities, taking part in local fetes and carnivals and generally enjoying ourselves.

We have our own QSL cards and for a small fee each year, members can have the use of our P.O. Box. Anyone over the age of 16 will be made very welcome, so if you

happen to be at a loose end on a Monday night, pop in and see us, have a chat and meet new friends.

For further details write to:

Guinevere,  
Turbo Club Chairman,  
P.O. Box 163,  
High Wycombe,  
Bucks,  
HP13 7UH.

## Cree Valley Breakers Club


I am writing to tell you that our club is now over two years old and is still going strong.

We have installed CB radios for two handicapped breakers and one for a handicapped class and have helped a few charities.

We had a 24 hour sponsored modulation last autumn and over 600 copies were logged. With help from other clubs, £400 in donations were received.

We are organising a Mass Eyeball on Friday 11th May to Sunday 13th May at Auchenlarie Holiday Farm, Gatehouse-of-Fleet, Kirkcudbrightshire and caravans are available. Write for more details with a stamped, addressed envelope to Eyeball, C.V.1 at the address given below.

Saltfire, C.V.07  
P.O. Box 1,  
Wigtown,  
Scotland,  
DG8 9HA.



**QSL**

P.O. BOX 163  
HP13 7UH  
HIGH WYCOMBE

**73s**

**88s**

## Godiva DX Group

I am writing on behalf of the Godiva DX Club in Coventry, West Midlands. Our club was formed in November 1982 by Bermuda Triangle, alias Ian Sweetman, aged 15. At present we have 62 members.

The club is free to join with just one rule — QSL 100%. Our aim was to provide a box number for the local DXers and to help any new breakers in the DX field.

Use of the P.O. box is just £1.50 for a year if you supply a couple of large S.A.Es. QSL cards are £3.00 per hundred for black and white or £4.50 per hundred for colour.

We monitor channel 24 UK FM every weekend and AM and SSB. We welcome anyone who would like to join our DX group.

Godiva DX Group,  
P.O. Box 57,  
Coventry,  
West Midlands,  
CV5 7QQ



## Charlie Tango DX Club

I would like to tell you a little about our club from Wales. It was formed in January 1983 with a membership of over 60 and growing. The membership fee is £1.00 a year.

In May last year we twinned with the Charlie Tango Club from Belper, Derbyshire and to join the two clubs together in friendship we did a bike ride from Belper to Montgomery (about 100 miles). Between us we raised £1000 for various charities.

We have a twin QSL card for both clubs which is very popular with QSL collectors.

We hold our club meetings on alternate Sundays at 8.00pm at the Chequers Hotel, Montgomery. Everyone welcome.

Bedwarmer (Chairman),  
Charlie Tango DX Club,  
P.O. Box 6,  
Welshpool,  
Mid. Wales.

## North Star Club

I would like you to hear about our club which started in May 1983. We have at the present 50 members, who are picked for their good behaviour on the airwaves and for 100% QSLing.

We also have a good junior section that has its own committee and they are therefore able to organise their own functions, although they must have the backing of the main committee.

Our past events have included entertaining children from Dr. Barnardo's to a Christmas party.

I am the president of the North Star and will QSL anyone who cares to QSL me. I will also pass on their address to the other members.  
Billy Smylie (Red Fox N.S.04)  
North Star Club,  
P.O. Box 35,  
Ballymena,  
Northern Ireland,  
BT43 4BN.

## Farnborough DX Group

I am chairman of the Farnborough DX Group, formed in March 1983.

We now have 120 members within a twenty mile radius of Farnborough.

We provide weekly mail delivery direct to our members and Currie QSL cards, rubber stamp and various stickers. Membership is open to any breaker over 18 within the twenty mile radius. It is hoped that a

junior section may be started this year.

Anyone wanting further details or a membership form should write enclosing a large S.A.E. to the secretary, Jenny (Hellhound) at the following address.

Tony Stevenson,  
Farnborough DX Group,  
P.O. Box 20,  
Farnborough,  
Hants.

## 1TT DX Group

Just a note to say that we have started a DX club. We have approximately 60 members in the U.K. and a few outside.

We are the 1 Time Travellers DX Group (1 Tango Tango) — not to be confused with the many Tango Tango clubs in the south of the U.K.

The membership of our club is £2.00 for a life time membership, which includes QSLs, charts, codes and use of the P.O. box for the first year and £1.00 a year after for use of the P.O. box.

We are mostly interested in DX contacts but we also have a few members who also swap QSLs around the world. Most of the groups have their own personal QSL too.

John (1TT 02)  
1TT DX Group,  
P.O. Box 10,  
Westbury,  
Wilts.  
BA13 3TS



## FARNBOROUGH DX GROUP

F.D. .... Handle:

P.O. BOX 20, FARNBOROUGH  
HANTS, GU14 9AT, England, U.K.



SKIP  SWAP  DIRECT  EYEBALL

TO STATION .....

S ..... R .....

DATE ..... TIME .....

CHANNEL ..... MODE .....

REMARKS:



D. Currie, Printer - Contact: 595191

# AUTO-SQUELCH

- ★ Cuts out FM fizz and SSB signals between transmissions
- ★ Works independently of signal strength or noise levels - so requires no adjustment
- ★ Does not effect weak signals.
- ★ Can be overridden by normal sq control if desired
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- ★ Fully guaranteed.

Suitable for most popular FM CB rigs and multi-mode rigs (FM section). Full fitting instructions etc. and technical back up available.  
Now available from good CB shops or order direct (state model of rig).

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TEL: Brailes 432



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G.A.P. 27 MHZ 5/8 wave . . . . .	£16.95
Gamma SupaMag. . . . .	£ 7.50
G.A.P. Avenger . . . . .	£19.95
G.A.P. Lofty . . . . .	£19.95
G.A.P. Skybreaker 11. . . . .	£21.95
G.A.P. Avenger 11 with Balun . . . . .	£23.95
G.A.P. Lofty 11 . . . . .	£21.95

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**

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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.**

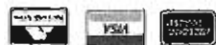
## Gamma Aerial Products

MANUFACTURERS OF AMATEUR RADIO & CB ANTENNAS  
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1.5 kW Power Rating. 3/8 Stud Mounting.

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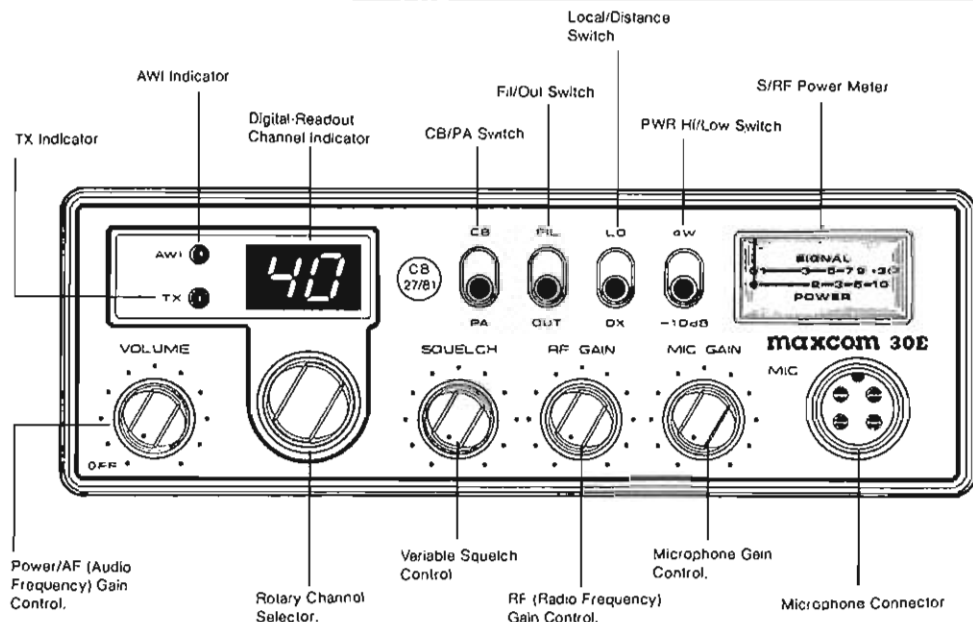
Available from your local C.B. Store or Mail Order direct from us.

BARCLAYCARD

ACCESS

# 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 detant 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 *distance*. 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.

**TOPE OR FILTER CONTROL**  
This can either be a rotary or flick switch. It controls the tonal quality of received signals in accordance with the users 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 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/NDISE 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	TOPE 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	•			•	•	•	•	•	•	•	
AUDIO LINE	340	£40	40	13.8VDC	•			•		•	•	•	•	•	
AUDIO LINE	342	£115	40	13.8VDC	•					•	•	•	•	•	
COLT	295	£49.99	40	13.8VDC	•				•		•	•	•	•	
COMMTRON	CB40F	£70	40	13.8VDC	•				•		•	•	•	•	
COMMTRON	CXX	£69.95	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	•	•			•		•	•	•	•	
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, 198 London Rd, North End, Portsmouth	AUDIOLINE
•				Report Feb '82		AUDIOLINE
•	•					AUDIO LINE
•			FL		K B & Co Ltd., 202 Cheetham Hill Rd, Manchester	COLT
•	•	•	FL		Roger D, 831 Mansfield Rd, Notts	COMMTRON
•			FL			COMMTRON
•			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 Oecember '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
•	•		SL		Telecomms, 198 London Rd, North End, Portsmouth	INTERCEPTOR
•	•		FL			INTERCEPTOR
•	•		FL			INTERCEPTOR
			FL	Great GT868 chassis	Star 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			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. SPEAKER
MERCURY	10 40	N/A	40	13.8VDC	•			•		•		•	•	•	
MURPHY	DS-802	£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	£86	40	13.8VDC	•					•			•	•	
OSCAR	OSCAR II	£49	40	13.8VDC	•					•			•	•	
REFTEC	934	£300	20	13.8VDC	•					•			•	•	
ROTEL	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	£59.95	40	13.8VDC	•				•	•	•		•	•	
WAGNER	COMPACT 40	£25	40	13.8VDC	•					•			•	•	
WESTERN	COMPACT 40	£34.50	40	13.8VDC	•					•			•	•	



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
AUDIOLINE	345	£139.95	40	240VAC	•			•	•	•	•		•	•	
COMMTEL		£65	40	240/12V	•					•			•		
DNT	B40	£T8A	40	240VAC	•					•			•	•	
ONT	B2740	£T8A	40	240VAC	•					•			•	•	
DNT		£T8A	40	240VAC	•					•			•	•	
FIDELITY	CB 3000M	£125	40	240VAC	•				•	•	•		•	•	
GRANDSTAND	BASE	£220	40	240VAC	•					•			•	•	
HAM INT.	JUMBO	£264	40	240VAC	•			•	•	•	•		•	•	
HAM INT.	CONCORDE II	£164	40	240VAC	•	•	•	•	•	•	•		•	•	
HARVARD	H401	£149.95	40	240VAC	•			•	•	•	•		•	•	
JOHNSON	XK2000	£99	40	240VAC	•				•	•	•		•	•	
MIDLAND	76-200	£150	40	240VAC	•					•			•	•	
UNIDEN	UNIACE 300	£149.95	40	240VAC	•			•	•	•	•		•	•	
WAGNER	BASE	£150	40	240VAC	•			•	•	•	•		•	•	



# MOBILES

TX JACK	TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS	ADDRESSES	NAME
•	•			FR	Report July '83	E.M.S. Communications, Grove St, Wantage, Oxon OX21 7AD	MERCURY
•	•			FL		Murphy Electronics, Wembley, Middx	MURPHY
•	•			FL		K.B. & Co Ltd, 202 Choetham Hill Rd, M/cr.	MUSTANG
•	•	•		FL			MUSTANG
•				FL		Roger D, 831 Mansheld Rd, Nottingham NG5 3GF	NATO
•				SL	Report January '83		NATO
		•		FL	Cybernet 134 chassis rep. April '82	S.M.C. Runbridge St, Totton, Hants SO4 4OP	OSCAR
				FL	Report Oct '83		OSCAR
•				FL		RF Technology, Layton Ave Ind Est, Mildenhall, Suffolk	REFTEC
•				FL	Cybernet chassis	Rotel Hi-Fi, 2-4 Erica Rd, Stacey Bushes, Milton Keynes	ROTEL
•	•	•		SL	Cybernet chassis		ROTEL
•				SL	Cybernet chassis		ROTEL
•				FL			SIRTEL
•	•			SL		Tame Way, Tower Bridge St, Walsall, Staffs	TANDY
•				SL			TANDY
•				SL			TANDY
•				—			TANDY
				SL	Report Nov '82		TANDY
•				SL	Report Sept '82	Crevenminster Ltd, Unit 8, Ind Est, Llandudno Junct, Gwynedd	UNIDEN
•	•			FL	Report Feb '83		UNIDEN
•	•			FL		Knight Communications Ltd, Unit 19, Britania Est, Leagrave Rd,	WAGNER
•	•			FL		Luton, Beds	WAGNER
•	•			SL		Western Electronics, Fairfield Est, Louth, Notts	WESTERN

# BASES

TX JACK	TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS	ADDRESSES	NAME
•						Telecomms, 189 London Rd, North End, Portsmouth, Hants	AUDIOLINE
				FR	Report December '83. Also comes with telescopic antenna		COMMTEL
•				FL			DNT
•		•		FR	Report May '82		DNT
•		•		SR	Report May '82		DNT
			•	FL		Fidelity Radio Ltd., Victoria Rd, London NW10	FIDELITY
•				FL		Bee-Ware Ltd., Ripon Way, Harrogate, N. Yorks	GRANDSTAND
•				SL		Telecomms, 189 London Rd, North End, Portsmouth, Hants	HAM INT.
•	•	•		FL			HAM INT.
•				FL			HARVARD
•				FL		Star Warehouse, Chalk Farm Rd, London	JOHNSON
•	•			FL			MIDLAND
•				FL	Reviewed August '83	Crevenminster Ltd., Unit B, Industrial Est, Llandudno Junction, Gwynedd	UNIDEN
•				FL		Knight Communications Ltd, Unit 19 Britania Est, Leagrave Rd, Luton LU3 1RJ	WAGNER

# REFERENCE



NAME	MODEL	RETAIL PRICE	NO. OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	TOPE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAKERS
DNT	HF 12/3	£47.55	3	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	£130	40	240/12V	•						•		•	•	•

# PHONE CHECKLIST

NAME	MODEL	PRICE	FREQUENCY	RANGE	RECHARG. BATT.	IN USE LAMP	INTERCOM	AUTO DIAL	EXTERNAL ANT.	SECURITY CODE	HANDS FREE
A-PHONE	TP125	£80	49MHz., 1.6-1.8MHz	230m	•	•		•			•
FIDELITY	WANDERER	£170	47MHz., 1.7MHz	200m	•	•	•	•	•	•	
FREEDOMPHONE	3500	£199	49MHz., 1.7MHz	200m	•	•	•	•			
HANDY PHONE	HP 1001	£199	49MHz., 35MHz		•	•	•	•	•	•	
MAXCALL		£116	49MHz., 1.7MHz	100m	•	•	•	•			•
MAXCOM	MCP150A	£89	49MHz., 1.6-1.8MHz	800m	•	•		•			
MAXCOM		£99	49MHz., 1.7MHz	200m	•	•	•	•			
PACER	7800	£149	49MHz., 1.7MHz	500m	•	•	•	•			
SUPERFONE	CT600	£116	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
					Solid State Electronics (UK), 41 Twyford Ave. Shirley, Southampton (Tel: 0703 7803 780336)	DNT
					A.T.M., AM House, 9A Old's Approach, Tolpits Ln, Watford Herts	KAISER
					Plustronix Ltd., Hempstalls Ln, Newcastle-under-Lyme, Staffs	MAXCOM
					Terre Way, Tower Bridge St, Walsall	MIDLAND
					The Mill House, Tuckenhay, Totnes, Devon	TANDY
			FL	Report Nov '83		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 '83 BT Approved	Fidelity Ltd., Victoria Rd., London NW10	FIDELITY
			Report May '83		FREEDOMPHONE
			Report Aug '83	Thenet Electronics Ltd., Reculver Rd., Beltinge, 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 '83		MAXCOM
			Report May '83		PACER
			Report April '83	Superfone Communications, London NW2	SUPERFONE
			Report April '83		SUPERFONE
			Report April '83		SUPERFONE

# ANTENNA CHECKLIST

## Here's a brief intro

### Name

All antennas have a number or name. Or both. Here we tell you what it is.

### Construction

Most mobile antennas are made of stainless steel and most home based ones are made of aluminium. This is not always the case though. There are fibre glass mobiles

The Home Office specs for CB antennas are lean and bordering on the mean. Still within that basic framework manufacturers have come up with some good designs. This newly laid out antenna checklist should help you

NAME	ADDRESSES	MODEL	CONSTRUCTION		MAX POWER	TYPE	MOUNT	PRICE RANGE
			AL	SS				
AERIAL SUPPLIES	Aerial Supplies, 5 Widney House, Bromsgrove Rd, Redditch, Worcs. (Tel 0527 42620)	Silver Star	AL	1.5	100	B	Pole	D
		Silver Arrow	AL	1.5	300	B	Pole	R
		CBA 1500	SS		-		Various	C
ANTENNA INC.		12510 Telecomm	SS	0.9		M	3/4ths	D
		Super Persuader	SS	1.5		M	Mag	T
		MR611	SS	1.2		M	Mag	P
		M710	SS	1.5		M	3/4ths	G
		AS M125	SS	1.14	150	M	1/2"	C
		AS M 128	SS	1.14	150	M	1/2"	C
ANTENNA SPECIALISTS	Antiference Ltd, Aylesbury, Bucks HP19 3BZ	AS M131	SS	1.14	150	M	gutter	D
		AS MR440	SS	1.2	100	M	mag	D
		AS M117B	SS	1.2	150	M	mag	D
		AS M510	SS	1.2	200	M	1/2"	D
		AS M2000	SS	1.5	150	M	1/2"	D
		AS 9812	SS	1.2	150	M	mag	D
		IC 85	SS	1M		M	mag	D
		IC 80	SS	1M		M	spring-based mag	E
		IC 15	SS	1		trunk	C	
ANTLER	Shakespeare, Performance Antennas, Besson Rd., Market Drayton, Shrop	IC 20	SS	1 1/2		M	roof	D
		IC 30	SS	1		M	gutter	E
		IC 40	SS	1 1/2		M	mirror	E
		IC 80	SS	1 1/2		M	mag	C
ARCHER	Tandy Corp, Tama Way, Tower Bridge St, Walsall, W. Mid	21-904	SS	0.5	50	M	3/4" snap	D
ARMSTRONG	Stateside Trading Ltd, Aulley Ave, Newport, Shropshire	SAM 10	SS	1.06	1,000	M	Surface	F
		SAM 20	SS	1.06	1,000	M	Surface with Spring	F
		TAK 10	SS	1.06	1,000	M	boot lip	F
		TAK 20	SS	1.06	1,000	M	boot lip with Spring	G
		MAG 10	SS	1.06	1,000	M	magnetic	G
		MAG 20	SS	1.06	1,000	M	magnetic with spring	G
		8DY 20	SS	1.06	1,000	M	side	G
		PEC 20	SS	1.06	1,000	M	side & fold over & quick disconnect	G
		TAK 101	SS	1.06	1,000	M	boot lip illuminator	G
AVANTI	CB Radio Centre Ltd, 337 Kenton Rd, Harrow	AV 241 (Moonraker)	SS	1.22		M	stud	D
		AV241 T	SS	1.22		M	trunk	E
		AV241 M	SS	1.22		M	mag	E
		AV241 MM	SS	1.22		M	super mag	G
BADLAND	Badland, Roeten Ind. Est, Providence St, Lye, Stourbridge	B 10	SS	1.22		mag	G	
BANDIT	Telecomms Ltd, 189 London Road, North End, Portsmouth, Hants.	B10	SS	1.42		M	mag	G
		B15	SS	0.61		M	mag	F
		B15	SS	1.22		M	mag	F
		B20	SS	1.42		M	mirror	F
		B30	SS	1.42		M	drill thru	E
		B30	SS	1.22		M	drill thru	E
		B40	SS	1.42		M	various	D
		B40	SS	1.22		M	various	D
		B50	SS	1.42		M	various	D
		B50	SS	1.22		M	various	D
C. BRIT	C Brit, Unit 2, 5 East Lane, Wembley, Middx	Stingray Whiplash	AL	1.5	500	B	pole	G
			SS	1.5	25	M	1/2"	C
CT INTERNATIONAL	CT International, CTE (UK) Ltd, Unit 3, Mitcham Ind. Est, 88 Streatam Rd, Mitcham, Surrey	MG27	SS	0.91		M	mag	C
DIAL-A-MATCH	WTA Electronics Ltd, 111 Cromer Rd, Halesden, Norwich, (Tel 0506 47694)	Rubber Duck -	R	0.3		M	1/2"	C
		530 (Chorokue)	SS	0.61		M	1/2"	C
		531 HBF	SS	0.61		M	1/2"	C
		531 SMF	SS	0.61		M	1/2"	C
		540	SS	1.22		M	1/2"	C
		541 HBF	SS	1.22		M	1/2"	C
		541 SMF	SS	1.22		M	1/2"	C
		520 (Halfbreed)	SS	1.27		M	1/2"	C
DIGITEK UK LTD	179-181 Streatam Rd, Mitcham, Surrey	Falcon 27	SS	1.5		M	various	D

## duction to the world of antennas and what we tell you in our checklist.

and stainless steel home based antennas.

### Length

The longer the better is always my motto. As long as it's not over 1.5 m. Otherwise it's illegal. We tell you the exact length.

### Maximum power

This is given as a guide only. The law allows for a maximum

two watts. However, the higher the maximum power figure given the sturdier the antenna will be.

### Type

It's no use buying a home base antenna if you want to use your rig from the car. We tell you which are which Mobile or Base. At the moment the number of mobile

antennas far outweigh the number of home based ones. But there are more and more home base antennas coming onto the market.

### Mount

The majority of mobile antennas are held in place by a magnet — these are called mag mounts. Others are at-

to the boot or edge of the roof. Some are drill-through antennas which are just the same as normal car radio aerials.

Home based antennas are poles, tripods or gutter mounts. Tripods are free standing and gutter mounts are attached in a way similar to trunk or bootmounts.

Key:	C: £10 — £14.99	G: £30 — £39.99	AL — Aluminium	B — Base
Price Bands	D: £16 — £19.99	H: £40 Plus	FG — Fibreglass	
A: £1 — £4.99	E: £20 — £24.99	Construction	Application	Note: Prices are given as a guide only.
B: £5 — £9.99	F: £25 — £29.99	SS — Stainless Steel	M — Mobile	

CONSTRUCTION	LENGTH	MAX POWER	TYPE	MOUNT	PRICE RANGE
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NAME	ADDRESSES	MODEL	CONSTRUCTION	LENGTH	MAX POWER	TYPE	MOUNT	PRICE RANGE
DIXONS	Dixons Photographic	Harrier	SS	0.9	—	M	Mag	D
HOT ROD 200	Hot Rod 200, Stateside Trading Ltd, Audley Ave, Newport, Shropshire	FM UK	SS	1.27	—	M	Mag	B
FREEMAN & PARDOW	Freeman & Pardow, Tything Rd, Arden Forest Ind Est, Alcester, Warwick	The Invader The Thunderpole	AL AL	1.5 1.5	250 500	B B	pole pole	E F
CB SERVICES	97, Crab Lane, Harrogate, N Yorks HG1 3BO	Bullwhip Knuckleduster	SS AL	1.5 1.5	—	M B	various —	C O
MIDWEST		Dial-a-tune Dial-a-tune	SS SS	0.61 1.22	500 2	M M	various various	C D
MODULATORS	140 Waller Manufacturing, Pembroke Works, Sandwich Rd, Sandwich, Kent	MOBILE LC MOBILE SC MDX LC MOX SC 934 BASE 934 MOBILE VHF MOBILE VHF BASE 27 L/C BASE 27 DX BASE	SS SS SS SS FG FG SS SS AL AL	1.3 1.3 1.6 1.6 1.5 1.3 1.3 1.5 1.6 1.6	1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000	M M M M B B B B B B	Mag Gutter Pole Pole Wall Pole	C C C C H G C C D D D D
MOTOROLA	Motorola, Taylors Rd, Stotford, Hitchin, Herts	EC106M	—	—	—	M	—	F
OCT.	Unit 1 Earlsfield Lane Ind Estate, Grantham, Lincs	K40 227	SS SS	1.4 1.46	500 200	M M	various various	G B
PANORAMA	Panorama, 73 Wadhams Rd, London SW15 2LS	CB27	SS	1.22	—	M	mag	B
PRIQOW		KT40	—	1.5	—	M	trunk	C
REVCO	Telacoms, 189 London Road, North End, Portsmouth, Hants	Revco	SS	1	100	M	various	B
SHIRA		SYS 206M SYS 203C MA 62	SS FG	1 0.75 0.91	—	M M M	mag trunk —	C C C
SIRTEL	Unit 24 Allric Sq, Off Matwell Rd, Woodston Ind Est, Peterborough	GP Messenger GP Signal Keeper	SS SS	1.5 1.5	—	B B	clamp tripod	E F
SMC	5 M C, Runbridge Street, Totton, Hants SO4 4DP	Oscar Base C0A 110P Oscar Base IIVHS Oscar IICM Oscar IICE Oscar IINE Oscar IISE Oscar TMCAS	SS SS SS SS SS SS SS	1.5 1.6 1.2 1.2 1.6 1.5 1	—	B B M M M M M	mag foldover base 'pull-up' 'locking-coller' foldover trunk	F D B C C B
SPYDER		Spyder	AL	1.6	—	B	pole	B
TAGRA	CB Radio Centre Ltd, 317 Kenyon Rd, Harlow	T40	SS	1.4	500	M	various	E
THOROBRED	Unit 1, Earlsfield Lane, Grantham	261 227 locktune	SS SS SS	1.6 1.6 1.5	—	M M M	various various	C B C
WITCHSTICK	GM Motor Factors, 168 Park Ave, Weybridge, Watford, Herts WD22 7JG	Witchstick homebase	AL	1.5	—	B	—	E
WTA ELECTRONICS	111 Cromer Rd, Halesden, Norwich, Norfolk	Wot Pole Wot Mag	AL SS	1.6 1.5	—	B M	pole mag	
VAN OROT	Van Orot, Knight C/B Specialist, 304 Dunstable Rd, Luton, Beds	Audio King AKO-100	SS	1.5	2,000	M	Mag	G

# CB Citizens' Band

## READER SERVICES

### BACK NUMBERS

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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### Letters

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 copy dates 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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### TINSMANN CB

3-9 Wembley Commercial Centre, East Lane, Wembley, Middx. Tel: 01-904 3507

## COMPONENTS

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7, Thyra Court,  
Nottingham,  
NG3 5GT.

REFTEC 934 MHz. Contact South of England agents — 934 Communications. See "Mack-Chat" August issue of Citizens Band. Tel: 01-859 0933.

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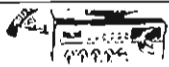


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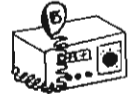
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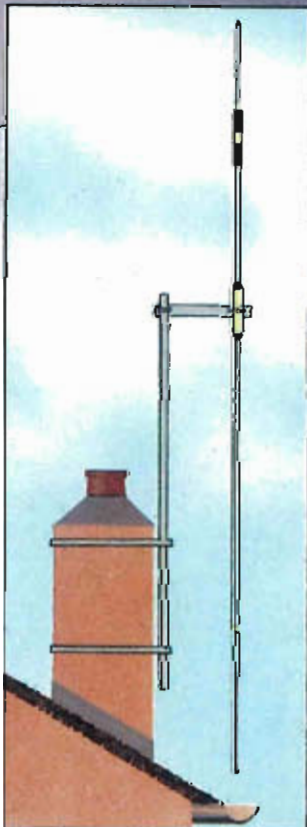
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