

AN ARGUS SPECIALIST PUBLICATION

APRIL 1985

# CB

# Citizens' Band

Britain's Leading Communications Magazine

99p



**TAKING STOCK**

—What's in the shops

**SOUP UP YOUR SET-UP**

—And keep it legal!



# THUNDERPOLE III

- The Thunderpole III™ from the UK market leader of the fastest-selling high-performance legal base station antenna.
- New centre-loaded, helically wound coil with low radiation angle — shrink-wrapped for all-weather protection.
- The amazing extra performance you expect from the world-famous Thunderpole range.
- "Citizens' Band's" own tests indicate that the new Thunderpole III is one full S-point better than the original Thunderpole. (Technical note: This can give you 6db or the power equivalent of running 16W into a 1/4 wave antenna).
- Beefy, bigger diameter radiating element 1.65m long, making the most of the new H.O. Specifications.
- Precision-machined alloy base with 3 angled ground planes, each 2.67m long, cross-braced and incorporating new, extra-strength, insulated nylon supports.
- Big power 500W — Wide frequency band covering 120 channels — Low SWR.
- Suitable for all modes — AM, FM, SSB.
- Pole mounting base to fit 1 1/4 in. dia.
- Price just

**£25** incl. V.A.T.

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

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

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

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

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

THUNDERPOLE ANTENNA U.K. LTD.,  
a subsidiary of Freeman & Pardoe Ltd.  
Tything Road,  
Arden Forest Industrial Estate,  
ALCESTER, Warks. B49 6ES.  
Phone: Alcester (0789) 762 673.

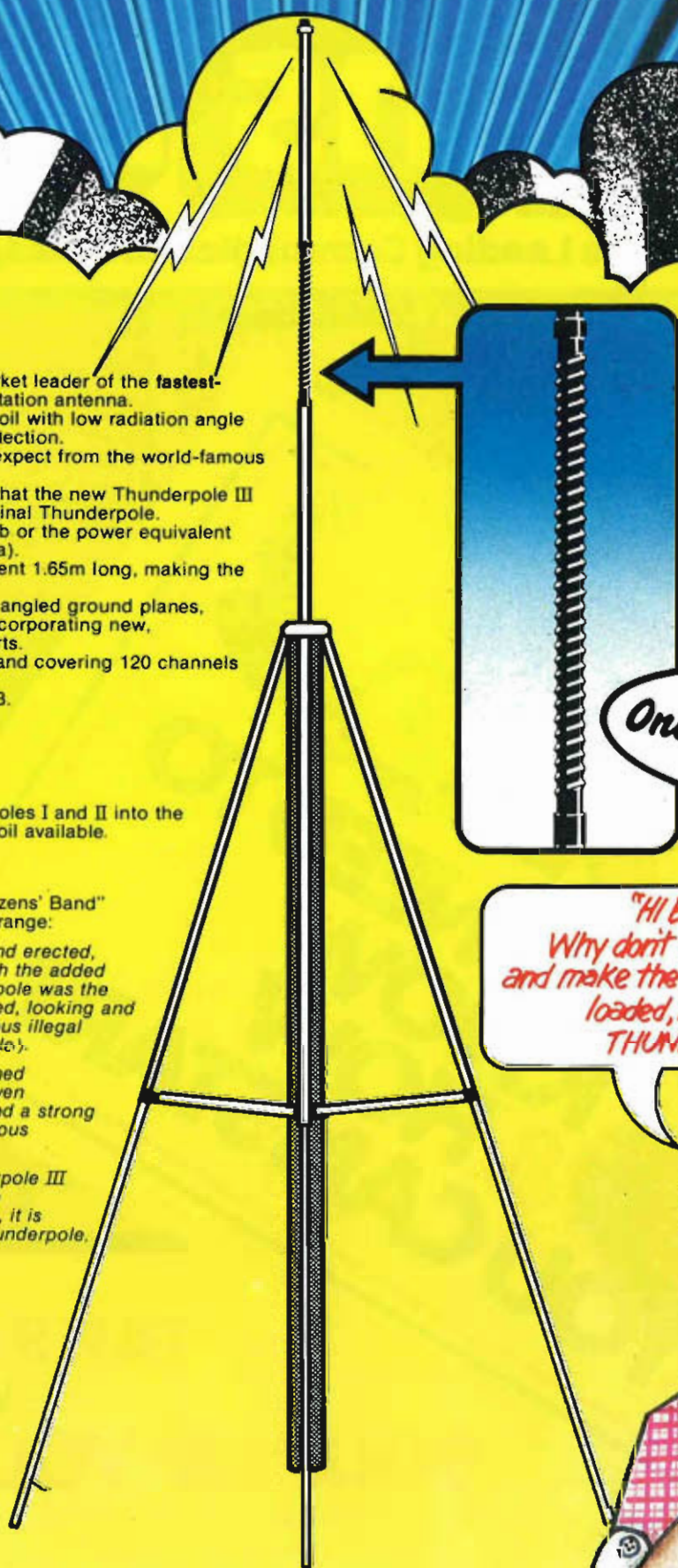
Ask for Thunderpole III™  
at your local CB stockist now.

The Thunderpole design and  
name are registered trade  
marks of Freeman & Pardoe Ltd.  
©Freeman & Pardoe 1984.

WITH  
HELICALLY  
WOUND  
CENTRE-  
LOADED  
COIL

The III-  
One Step Ahead of  
the Rest!

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





# CB Citizens' Band



## Inside this month

The hobby of QSLing — David Shepherdson explains what it is, how it started and how you can start.

**Editor** ..... Eamonn Percival  
**Group Editor** ..... Sue Sharp  
**Advertising** ..... George Kynicos  
**Designer** ..... Jeff Hamblin  
**Publisher** ..... Cliff Wilson  
**Publishing Director** ..... John Foster  
**Chairman** ..... Jim Connell

Normally published on the third Friday of the month preceding cover date.

Citizens' Band Magazine A.S.P. Ltd., 1, Golden Square, London W1R 3AB. Telephone 01-437 0626. Typesetting and origination by Characters (Reading) Ltd., Reading, Berkshire. Printed by Simpson Drewett and Co. Ltd., 70 Sheen Road, Richmond Surrey. Distribution by Argus Press Sales and Distribution Ltd., 12-18 Paul Street, London EC2A 4JS.

The contents of this publication including all articles, designs, plans, drawings and programs and all copyright and other intellectual property rights therein belong to Argus Specialist Publications Limited. All rights conferred by the Law of Copyright and other intellectual property rights and by virtue of international copyright conventions are specifically reserved to Argus Specialist Publications Limited and any reproduction requires the prior written consent of the Company. ©1985 Argus Specialist Publications Limited.

## Contents

**APRIL 1985 VOLUME 5 NUMBER 5**

<b>Update</b> .....	6
Grey Beard, new products and news	
<b>Back Chat</b> .....	8
The mailman cometh	
<b>Q &amp; A</b> .....	10
Problems, problems, problems	
<b>Card Games</b> .....	28
A history of the hobby and how you can start	
<b>Antenna Review</b> .....	26
The Nimrod hunted down	
<b>Understanding CB PLL Synthesizers</b> .....	32
Frequency generation explained	
<b>Soup Up Your Setup</b> .....	14
Make the most of your CB	
<b>Communication the QSL Way</b> .....	23
More collectors' copies	
<b>Mack Chat</b> .....	12
Chat from Mack	
<b>Ladybreakers</b> .....	21
Filly logs on	
<b>Truckstop</b> .....	17
Gismo's on the road again	
<b>Club News</b> .....	18
The latest from the clubs	
<b>Taking Stock</b> .....	34
A look at what's on the shelves	
<b>Twong</b> .....	43
The boozing birdman's latest scrapes	
<b>Free Readers' Ads</b> .....	42
Bargain basement	
<b>Reader Services</b> .....	44
Back numbers and subscriptions	
<b>Reference Section</b> .....	45
Buyers' Guide	



# TELECOMMS

## SAME DAY DESPATCH

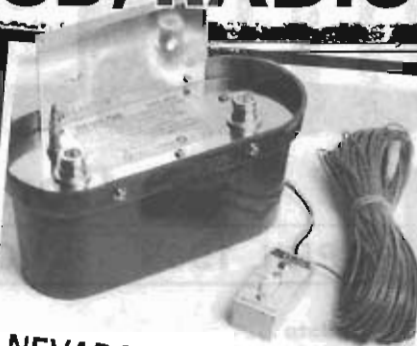
### NEVADA 934 MHz PERSONAL (CB) RADIO



#### NEVADA 934 MHz SWR/POWER METER

Power:  
10w Full Scale  
50w Full Scale.

**£89.95**



#### NEVADA HRA-900 934 MHz MAST HEAD PRE-AMPLIFIER

An extremely low noise high quality pre-amp that mounts at the top of your mast. Gain 15 dB. Noise figure 0.8 dB max. This unit will double the received range on many sets.

**£159.95**



#### CYBERNET BETA 3000 PROFESSIONAL

The most comprehensive 27 MHz Rig available in the UK.  
\* Selcall \* Up/down key on mic \* Ch 14 key on mic \* Ch 9 key on mic \* Roger beep \* Auto scan for busy channel  
\* Auto scan for free channel  
\* Skip/Lockout facilities on scan  
\* Ch 9 priority  
A truly professional unit.

**£169**

**KAISER CBX 40**  
40 Channel Hi-Spec hand held. This is the Rolls Royce of hand helds with crystal filters fitted as standard, and rugged construction uses handy rubber duck antenna.

**£98**



#### HF 13/40

40 Channel hand held transceiver.

**£34.95**

#### HF 12/13

3 Channel version of the above.

**£19.95**



#### HIGH GAIN 12 - ELEMENT LOOP YAGI BASE ANTENNA

\* Designed by one of the UK's leading microwave engineers.  
\* Built in coaxial low loss feeder system. To 'N' socket.

**SPECIFICATIONS:**  
Gain: 18 dBi Front - Back: -25dB  
Weight: 0.7kg Overall length: 53.5"  
No wiring necessary. (Patent pending)

**£49**

Plus £5 p & p



#### CYBERNET DELTA 1 934 MHz TRANSCEIVER

NOW AVAILABLE FOR IMMEDIATE DESPATCH!

- \* Highly Sensitive RX
- \* Auto Scan
- \* 16 ch. memory

**£355**

+ £5 SPECIAL DELIVERY

**H.P. AVAILABLE**  
(Subject to status)  
Just £35 deposit. Ring for details.  
(A.P.R. 36.8%)

#### NEVADA 934 MHz HIGH QUALITY ANTENNAS

**PA7 - E BASE ANTENNA**  
7.14 dBi omni stacked 5/8  
collinear

**£66** incl p & p

**P7M - E**  
Quality Mobile Mag mount  
(7.14 dBi)

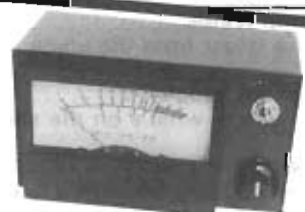
**£44** incl p & p

**P7R - E**  
Quality Mobile gutter mount  
(7.14 dBi)

**£44** incl p & p

#### 934 MHz ENTHUSIASTS CATALOGUE

Send in £1 for our special 934 MHz catalogue, and receive a £2 Telecomms voucher. Contains technical info + full details of our product range.



#### EXTENSION 'S' METER FOR CYBERNET DELTA 1

This meter is a 'must' for any 934 MHz enthusiast - just plugs straight into the back of the Delta 1 or can be used on any rig of your choice.

**£17.75**



#### RADIO TECHNIC NEW M40 FM TRANSCEIVER

We can honestly say that this is the highest performance rig that we have tested under £100. Not to be confused with the DNT this set has been individually supertuned and tested in the UK. Each set has fitted a special crystal filter and new J fet Bi-polar mixing transistor to cut cross modulation ("Bleed over") and minimise blocking.

**£59.95**

SAME DAY DESPATCH

# HOTLINE (0705) 662145

TELEX: 869107 TELCOM G



# THE U.K.'s LEADING C.B. DISTRIBUTOR

SERVING YOU NATIONWIDE THROUGH OVER 350 SELECTED DEALERS

**ZETAGI TM 1000**  
 A combined matcher, SWR & power meter, antenna switch rated up to 1000 watts.  
**£49.99**



**ZETAGI 1220S**  
 25 Amp  
**£119**  
 Variable Voltage Power Supply



**ZETAGI 202**  
 SWR/POWER METER  
**£29.76**  
 Unique cross pointer high accuracy meter. Reads power from 1 to 1000 watts.



**ZETAGI B150 POWER AMPLIFIER**  
 70 - 100 watt amplifier  
**£46**



**NAVADA TC35**  
 25 WATT RF AMPLIFIER  
**£19.95**  
 High quality 25 watt power amplifier



**NEVADA TC27 RX PRE-AMP**  
 British made high quality pre-amplifier  
 • Adjustable Gain -6 to +18 Dbs  
 • Unique TX Power Feature  
 • Fully Guaranteed  
**£19.95**



**A.K.D. PRECISION DIRECTOR FINDER**  
 Designed specifically for pin-pointing close-range signals and interference. It incorporates S-Meter and Audio Monitor (earphone supplied) and a variable RF Gain.  
 So long wallsies!  
**£29.95**



**PULSAR 27 MINI BEAM**  
 A compact Beam that will even fit in the loft. Gives approx 3 dB gain. This unique design will reduce 'bleed over' from close stations, with side rejection in excess of 20dB.  
**£39.95**



**TURNER EXPANDER 500 BASE MIC**  
 After a long absence we now have this superb base microphone back in stock.  
**£59.95**



**TURNER JM + 2U**  
 This is the CB power mike that has been used more than any other on the market. The mike delivers extra punch that ensures maximum range.  
**£34**



**SADELTA ECHO MASTER BASE MICROPHONE**  
 This is the top of the Sadelta range - with a mellow powerful echo that will make your rig sound like a million dollars. For one month only we will give you the chance to buy this superb microphone at this reduced price. Hurry before we sell out!  
**£49.95**



**DEALERS JOIN THE WINNING TEAM**  
 - we are Sole UK distributors for Zetagi, Sadelta, CTE, Tarren, Cybernet, Nevada, Zenith. Contact Bob Devereux or Phil Jefferies in our UK Trade Sales office NOW!

**ZENITH SPEECH PROCESSOR P202**  
 NEW MK 11 VERSION  
 The new improved Mk 11 version built in the UK will boost your 'Talk Power' out of all recognition, increase your range, and improve the clarity of your speech. Used with your existing microphone, it can be operated as a power microphone, speech processor, or simply switched out all together. When ordering, please state the make and model of the rig with which you wish to use it, so that we may send it ready-wired for your transceiver.  
**£34.95**



**RAMA MS70**  
 SPEAKER WITH NOISE FILTER  
 High quality extension speaker with switchable filter to cut out much of the unwanted background noise.  
**£7.95**



**SADELTA EC980 ECHO UNIT**  
 Now you can have the famous Sadelta high quality echo on any mic of your choice.  
**£49.95**

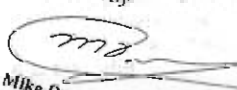




**THE NEW 1985 CATALOGUES**

Dear Breaker,  
 You will be pleased to know that our NEW 1985 27MHz CB catalogue is now available. This year it's even bigger and better than before - packed full of pictures and technical information and a must for any CB radio enthusiast. Why not send off £1 for your copy today and in addition receive a £2 Telecomms voucher?

Thousands of breakers have already discovered how surprisingly easy it is to shop with our Mail Order Service. Our Hotline team Helen, Shirley and John must hold the record for the fastest despatch in the country - one customer in Lancashire received his order within 12 hours of telephoning them!

We've become the biggest by being the best - so why not write to us today and get on the Telecomms Wavelength too?

Yours sincerely,  
  
 Mike Devereux  
 MANAGING DIRECTOR

USE YOUR CREDIT CARD FOR IMMEDIATE DESPATCH

TELECOMMS, 189 LONDON ROAD, PORTSMOUTH, HANTS PO2 9AE







# UPDATE

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

## Editorial

Well, we're on the move again. By the time you read this, we should be firmly ensconced back at our old headquarters in Golden Square, deep in the heart of London. Big city, bright lights... it should make a change from Hemel Hempstead, although, contrary to popular opinion, Hemel is not a sleepy little village. True, it isn't on the underground, but it *has* got a McDonalds! Anyway, as is usual with any move, it is bound to be a major upheaval so please bear with us if any correspondence temporarily goes astray. Normal service will be resumed as soon as possible. The main point is that all correspondence should now be addressed to Citizens' Band, 1, Golden Square, London W1R 3AB. All correspondence, that is, with the exception of back numbers and subscriptions which are available from the Hemel Hempstead address listed on the Reader Services page.

One point which was recently brought to my attention concerns the press coverage of the story about a clergyman from Powys

who was banned from broadcasting hymns on the local CB. At least one, if not more, of the nationals reported that, apart from the fact that music is prohibited from being broadcast, citizens' band radio was a "person to person" communications system. This could be interpreted as meaning that you are only allowed to talk to one person at a time which, of course, is nonsense. This would mean that, if one mobile was communicating with another mobile with a passenger, the unfortunate passenger would have to put his hands over his ears — or get out and walk! I can only assume that lines were crossed somewhere, and, by the time the story was printed, the phrase "personal communications" had been transformed to "person to person communications", changing the meaning completely.

Anyway, that's all for this month. I'm off to see the sights. Buckingham Palace, the Tower of London... it's all too much for a country boy like me.

**Eamonn Percival**

## The Sickest Wally?

While many people are doing their best to help others in need via CB radio, others are doing the opposite. In the Southend area, some brain-damaged wally who calls himself Dr Death is terrorising blind and disabled breakers. He apparently gets his kicks by

following breakers across the channels and threatening them. One of his victims was sent a hearse, police and fire engines, others have been told they have cancer. At the time of writing, he is still on the loose — let's hope it's not too long before he is traced.

## All in a Good Cause

Four breakers from Scotland will be carrying out a sponsored modulation on behalf of the Cystic Fibrosis Research Trust from midnight Thursday 18th April until midnight Saturday 20th April. The modulation will take place from the Green Lowther Hills, Dumfries.

Cystic Fibrosis is a disease

which attacks the lungs and digestive systems of the sufferers. Although research is helping to ease the crippling effect of the disease, there is still no known cure. All donations should be sent to: Cystic Fibrosis Research Trust, Account Number 256001, Royal Bank of Scotland, High Street, Dumfries, Scotland.

## Beat the Burglars

With the thousands of rigs in cars around the country and the thousands of light-fingered lawbreakers around, the chances are that a good many rigs will be stolen from time to time. Bearing this in mind, it's nice to hear of a new product from Berol of Norfolk which is designed to assist in the return of goods which have been recovered by the police.

The Berol Detective is a security kit comprising a fine-tipped pen and a broad-tipped marker, together with warning window stickers and a property check list. Both the pen and the marker contain transparent ink which can be used on most surfaces including metal and plastic. The mark that is made is visible when first applied but, when dry, can only be seen under ultra-violet light.

The police are also encouraging motorists to use Detective on the inside of their cars so that, if a car is stolen and even resprayed, the rightful owner can prove the vehicle is his.

The Berol Detective Kit retails at £1.60. The pen alone is 70p and the marker is also available separately for 90p. They are available from most branches of W.H. Smith.

## Rangers Fact Sheet

A.L.C./A.L.E.R.T. (UK) Operations, as we recently reported, have introduced a new section for junior members, called, "Rangers". They have also just produced the first Rangers Fact Sheet which is full of very useful information and tips on methods of communication including the phonetic alphabet, morse, semaphore and sign language. There is also a very informative section on message carrying, incident reporting and first aid. Their address is: 3, Baker Street, Blackburn, Lancashire BB1 1NZ.





Berol Detective (see left)

### World Record Attempt

In January, we carried a news item about Len Campbell, who is aiming to break the world record for non-stop bicycle riding, with the help of a CB and ham network for the project. Since then, some of the details have changed. The attempt has now been deferred until September with a number of lead-up rides prior to the event but, at the time of going to press, no details of the venue are available. The other major change is that Len will now be riding to raise funds for the British Association for Sporting and Recreational Activities for the Blind.

### Go Ahead for Community Radio

Although no specific details have been released, the Home Secretary, Leon Brittan, has indicated, in a written answer to a question in the House of Commons that he is keen to permit community radio to go ahead as soon as possible.

He anticipates that such radio stations will be self-funding (either through advertising revenue or community fundraising) and that they will not be replicas of either BBC or IBA local radio stations — that is they will cater to specific local or specialist needs and will not be general music stations.

The many (and some very successful) pirate radio stations are unlikely to see their dream of legitimacy come true though. At the moment many of them cater for wide musical tastes over quite a large area and are unlikely to come within the Government's definition of fulfilling a community need. Government departments can have long memories too and it seems doubtful that they would be prepared to

grant permits or licences to operators that they know have been involved in illegal broadcasting.

The implementation of community radio stations is the next success in a long line of 'broadcasting freedoms' that the Government have been under pressure to introduce. In many ways, it has been similar to the legalisation of CB, where people have been prepared to both break the law and lobby vigorously for the introduction of a service that they considered a fundamental right.

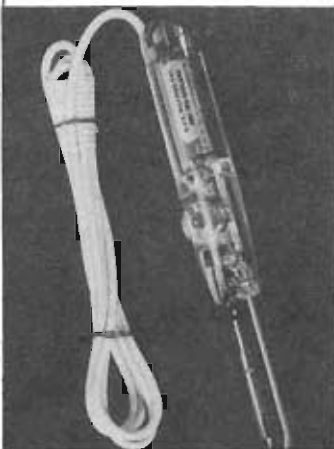
It will be interesting to see exactly what the Government decides the function of a community radio is — it seems likely that they will be most sympathetic to stations catering to the needs of ethnic minorities and very localised communities. I cannot see them showing the same tolerance to either stations with a strong political bias or, as the Australian authorities have allowed, 5000w of special interest music (usually rock and roll, soul or jazz etc, not aborigine tribal music!).

### Self-Feed Soldering Iron

The Grey Beard kindly passed some information to us about a new miniature soldering iron. The lightweight iron is designed for one-handed operation, so the benefits to disabled people are obvious.

The flux-cored solder is housed in its transparent handle and is fed through a stainless steel tube to the bit. The solder is applied directly to the joint by turning the serrated wheel (located in the handle) with the index finger of the hand holding the iron.

The iron costs £17.25 and is available from Gardner Precision Engineering, North Road, Woking, Surrey GU21 5DS.



### Grey Beard's Gleanings

Hello again. I hope that you are all well and not suffering from the ill-effects of the wintery weather. Most of my CBing has had to be carried on from indoors as my 'chariot' is no great shakes at keeping me warm! This has allowed me to do some tests on my two base station aerials. They are a Modulator Expert and a Thunderpole III.

I have been using the Modulator for several months now and find it to be very well constructed and easily tuned to a VSWR of better than 1.2:1, although this can be improved upon if you are a perfectionist! It is a good

all-round piece of equipment that is equally at home chasing the DX, or for local QSOs. The over-riding factor with this antenna is the fact that it can be fitted in restricted spaces, thus allowing you to fit an external antenna rather than a "loft-type".

The Mk III Thunderpole is a no-compromise external antenna, too. The ground-plane radials mean that it really needs to be fitted on a pole away from walls and so on. I have fitted the optional extra ground-plane kit so the antenna has been mounted on top of a pole, some 12ft away from the rear of the house, and at about 23ft above ground level. The extra ground-

plane kit is currently fitted with the legs in parallel to the standard ones. Later on I hope to re-fit the extra ground-plane kit splitting the existing angles to see what effect this has on performance. Some reasonable DX has been worked here recently, at 4 watts, on both of the antennae. Stow-on-the-Wold was worked, mid morning, with good signal reports being exchanged.

On the wheel-chair scene, many people are writing to ask me how to "feed" their CB rigs from the batteries on their 'chairs. This is definitely not recommended! In fact the wheelchair guarantee is invalidated by doing this!

You have been warned! I am looking for information on the suppression of 'chair-based electronic interference occurring whilst mobile, anyone got any ideas? Also news of self-constructed CB/SWL accessories, please? This last would seem to be the most popular request after pleas for info' on processor mikes!

Will all you armchair detectives that want one of my QSL cards please enclose a stamp for my reply, as my postage costs are going right through the roof!

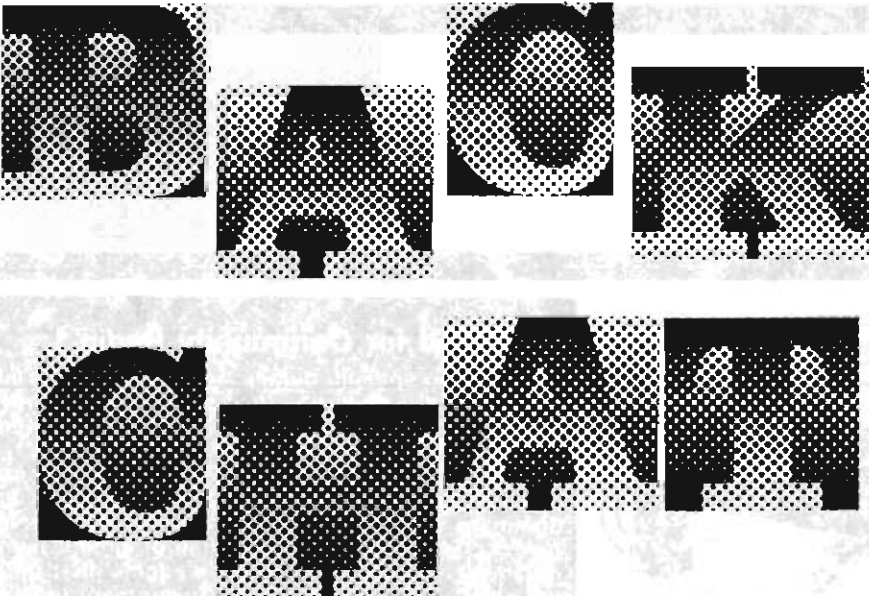
Well, once again I've run out of space, so 73's & 88's.

"The Grey Beard"





## More points of view from the postbag



### Power to the People

*Charlie Brown of Borehamwood has some ideas on current restrictions . . .*

After reading the many letters in your truly wondrous mag on the subject of laws which restrict the use of CB equipment in this country, I have finally decided to put pen to paper.

Firstly, a point about the effectiveness of these laws. Putting it simply, most of them aren't effective. Why? Because a law is only effective when most citizens take notice of it. It is patently obvious (just take a random sample of ten home-base antennas in use at the moment in any British town) that, in the case of CB restrictions, many people don't.

Similarly, laws and restrictions are useless if they can't be enforced. Let's face it, the DTI cannot be expected to enforce the ones governing the use of CB. They'd need a cast of thousands to tackle Hertfordshire alone! So what should be done? How about the following?

1. Lift all restrictions on antenna design. The current restrictions are totally ignored by many CBers anyway, including myself. What's the point in keeping the current restrictions if they can't be enforced? I can hear shrieks of "Bleedover!" and "More overcrowding of channels!". Well, yes, but perhaps:
2. Expand frequency allocation to 27-28MHz. Enough room for plenty of channels, less overcrowding and less bleedover. 27-28MHz is already the "citizens' band" in effect anyway. Any other service in this band might just as well forget it!
3. Keep the ban on the use of SSB and AM. Most CBers using these modes (and, compared with FMers, there aren't many anyway) only do so to escape the "rotten 40". I would hope that the majority of them might change their minds, faced with a possible 100 legal FM channels. Besides, we all

know what AM and SSB signals do to TVs. Ask my mum.!

4. Keep the power limit to 4 watts. Again, with 100 channels and decent antenna systems allowed, who'd need 1000 watts?

5. Forget the idea of introducing exams to be taken and passed before a licence will be allocated. In fact, you might as well forget the idea of licences altogether unless the DTI can realistically hope to prosecute all CBers who transmit without one. What did I hear you say? "You can't expect the DTI to do anything." Ah, precisely!

In conclusion then, we all want the chance to modulate, be it DX or door-to-door. These current laws and restrictions don't and will never allow us to do so properly. It's about time that the powers-that-be sussed this out and "gave the people what they want".

### Auto-Ident

*Ian Leslie, the president of the British Citizens' Band Council experiences déjà vu . . .*

History really does repeat itself! Black-jack's idea (Back Chat, February) of having CB rigs uniquely identified by a simple binary-coded sign-off (or sign-on) signal is excellent. But perhaps he, and many of your readers, are too new to CB to know that the Citizens' Band Association (CBA) was pushing this proposal from 1976 until CB was legalised. Indeed, it would be cheap and simple; it was reliably estimated at that time to add about 50p to the ex-works cost of a rig.

The idea was not taken up then because most breakers perceived the Big Brother aspect more clearly than the potential benefits!

The benefits *could* include — perhaps never on 27, but easily on 934 — the possibility of business agencies, or even the cellular phone companies coming into the business of accepting messages for CB users for onward

transmission for a fee (since the auto-ident could be registered when subscribing to the service, and would give a firm basis for billing the customer).

I would urge readers like Blackjack who want to *develop* the CB service to join the BCBC and help push their

it off". What is needed for the RRD to get together with an independent body to carry out a clean-up campaign on FM and maybe make use of the £10 licence fee. Meanwhile would the home-bases all over the country please clean up their act and move off channel 19,

The Home Office says CB radio is for a local service only and all who wish to have international contacts should qualify for a ham licence, but not everybody has the money to pay for fees and higher-priced equipment, which is probably why many use illegal equipment.

## To SSB or not to SSB . . .

*Chris of Caerphilly is cheesed off with FM CB and suggests a rather drastic solution . . .*

Having read some recent correspondence in *Citizens' Band*, I would like to say that, as an AM SSB operator, I would hate to see AM SSB legalised, as this is the only place where wallies are unknown.

Illegality keeps the wallies away, which means that we can talk to our hearts' content without being wallied. Also, as most of the operators use their radios after TV hours, we eliminate the chances of TVI and getting busted. I myself have had one radio confiscated due to operating in TV hours, and that is why we operate after TV close-down.

The only way to clear up the legal system is to fine the wallies very heavily. Either that, or make all CB illegal.



Automatic identification signals for 934 — would they help?

sensible proposals. There *are* receptive ears now in the DTI ready to listen to us.

## Let's Campaign

*Ranger 3 was in for a surprise when he returned from abroad . . .*

I have recently returned to the UK after a few years in West Germany. When I left, I was campaigning for CB and was active on the "FCC 40". We had our problems then — namely, trying to stay one step ahead of BT and going 10-7 as soon as the police came near us, but now! I've been back on the air again for about two months and I didn't think you could squeeze so many brainless prats within 40 channels.

I read J. A. Taylor's letter in your January issue and obviously he is someone who would like to see the airwaves cleaned up, but his ideas would never be adopted. Not when you consider the vast number of home-bases who insist on prattling on channel 19 when mobile traffic are doing their best to get access to the up-to-date 10-13s.

The RRD should spend more time cleaning up FM and leave AM alone. I find the truckers are by far the largest collection of CBers who use the system to its best advantage, but there are exceptions. The worst incident of mindless usage was an East Anglian trucker who I had the misfortune to be on the front door of for some miles up the A1. He insisted on hogging channel 19 for about half an hour with brainless foul language, followed by another half hour having a slanging match with another trucker. When I asked him to please move off channel 19 he told me "If you don't like it, turn

which is for mobile use.

I am not saying CB is no good, but I do feel that something which has great potential as a two-way radio system needs policing. I think that the "hams" of the UK should also stop looking down their noses at us. I think home-base aerial restrictions should be lifted and we could also do with the system expanding to 80 channels FM and 80 channels SSB — but *not pure AM*. But I know the answer to that will be "You cannot even use the existing system properly".

I spent a lot of time and money campaigning for CB in the past and I think it's time I started again to get what we've got cleaned up and expanded — in that order. A large number of good breakers have left CB because of the wallies who infest the system. Well, I hope that they and the 99% of good, existing CBers will campaign for a clean up — *now*.

## Freedom from Interference

*A reader from Kent, who wishes to remain anonymous, has a few words to say about restrictions . . .*

After reading Back Chat in your December issue and the letter from "Bored", I feel I must comment about the use of AM, FM and SSB. If we were given or allowed most or more of the bands being used (for example fire, police, lifeboat, TV, radio, taxis, buses etc), then we should be allowed to use them freely and if we do create interference, then the governing authority tells us to do something about it. If nothing is done, then we do not use it. I'm sure the users will co-operate on a strict non-interference basis.

## CB Against Racism

*Red Flying Kite offers food for thought on radio-racism . . .*

Recent mass media reports of racists attacks against Asian families in Britain prompt me to write to your magazine about a lesser-known aspect of racism in this country.

All over London, anonymous racists promote their hatred of foreigners, blacks and Asians over the citizens' band frequencies — making it almost impossible for any operator with a "foreign" accent to utilise this mode of communications. As soon as an Asian voice, for instance, is heard on any of the channels, he/she is abused and invited, among other things, to "Go back where you came from, you \*\*\*\*\*!" (Presumed nationality or race often added to the insult.)

It is my opinion that the specialist press (*Citizens' Band* magazine), CB clubs, CB pressure and monitoring groups and individual anti-racist breakers have the social responsibility to pressurise the Home Office and demand that an end is put to this depressing state of affairs which transcends in seriousness the habitual verbal pollution on CB by wallies and other bucketmouths.

Racism on CB has very grave social and political consequences which cannot be ignored or tolerated by any of us as long as people are being physically attacked in our own midst by organised racists!

My appeal to those concerned is: Together, let us clean our frequencies of this cancerous racism which deprives ethnic minorities of their right to use CB in Britain.





amplifier in conjunction with such a small psu. Although in theory, Ohms Law suggests that you can develop 25 watts at 13.8v for a current drain of under 3amps you have to take into account the current required to power both the rig and the amplifier, as well as the fact that almost all transistor driven equipment is only about 50% efficient. I would not contemplate using less than a 9amp psu, in order to allow a working margin.

The public address system has no connection with the transmitter output, which is automatically switched off when PA mode is selected.

There are a number of potential problems associated with both a power amplifier and a receiver pre-amp. For example, use of the RF amp may well lead to overdeviation, with the result that your signals will stray onto adjacent channels, whilst a pre-amp, unless it is extremely efficient, can have the effect of bringing in signals from channels either side of the one in use. You should also remember that a pre-amp will increase all of the incoming sound, unwanted noise included, and will not improve the signal to-noise ratio.

My honest opinion is that you have little to gain from such expense.

## Golden Oldie

From Plymouth, Mr. W. E. Harvey touches my heart. He obviously shares my passion for motoring days gone by...

**Q** I have an old but reliable motor car with a positive earth electrical system. I wish to equip the car with a Tandy emergency CB set, which I do not wish to use whilst in motion but which might prove most advantageous from many of the high spots on Dartmoor. I thought that I might be able to convert the car to negative earth by simply cutting off the cigar lighter and then connecting the leads to the positive and negative terminals of the battery but a salesman told me that this would not work because the magnetic base of the aerial would short-circuit the rig.

Put simply, my question is: Can I use the negative earth rig on my positive earth car, so long as the engine is not running?

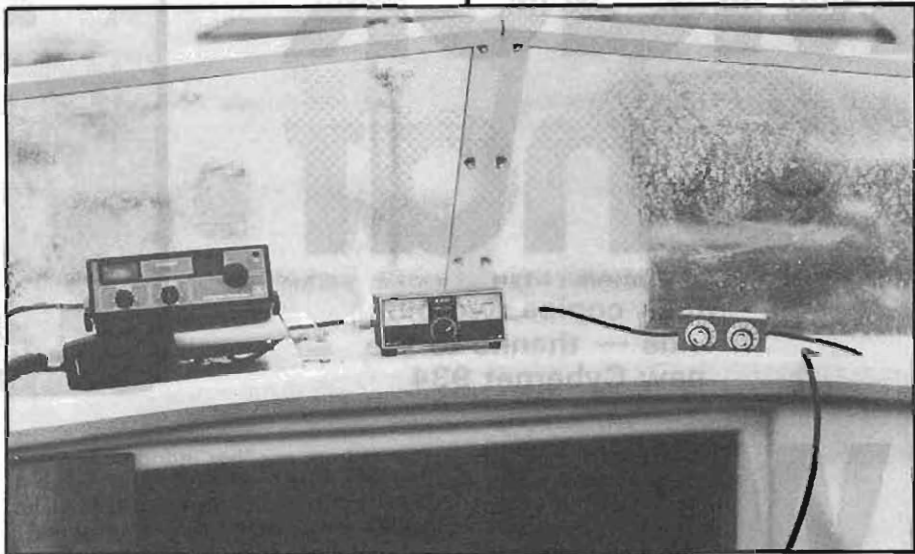
**A** You can use the rig in connection with the battery from your car, so long as it has first been disconnected from the car.

Alternatively, it is possible to reverse the polarity of your car's electrical system. To do this, you should remove the dynamo from the car, connect a single wire across both of its terminals, then holding the case of the dynamo against one of the battery terminals, flash the wire across the other terminal a couple of times. The next step is to transpose the wires to the switch and contact breaker terminals of the ignition coil and reverse the wiring supplying the indicator flasher switch. If the car is fitted with a broadcast receiver, you must also reverse its polarity. Many of the older type sets had a small plug in the back panel for this purpose. The battery

leads must also be reversed.

If you are at all unsure of this method, I suggest you consult your local garage, who will be able to carry out the work without any difficulty.

depends on whether the voltage input stage was diode protected, since the presence of such a diode may well have saved a number of components from destruction. Without such pro-



CB on a cruiser — see second letter

## Economical repairs

Mr M. Firth, Silver Arrow, from Cornwall, is facing the loss of an old and trusted friend...

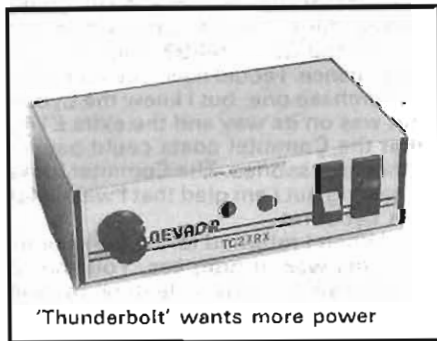
**Q** I recently suffered an accident in which my power supply unit's regulator failed and allowed the full 240 mains voltage straight through to my Hy-Gain V Mk.2. After I had got over the shock, I took it to the local rig doctor, who said he could not repair it as he had no circuit diagram and all of the internal components had been destroyed.

As the set originally cost me £70, I would be grateful if you could tell me if it would be worth rebuilding, or should I buy another set?

I would also appreciate it if you could supply me with a circuit diagram for the rig, or suggest where I might obtain one. I have about £50 to spare. Please can you tell me if this will cover the cost of repairs.

**A** A fault in the regulator of a psu would only subject the rig to about 24 Volts. Only a direct short between the primary and secondary windings would pass the full mains voltage to the rig, so I doubt whether the rig's components are quite as molten as they might have been.

Whether or not the rig is repairable



'Thunderbolt' wants more power

I am afraid you are faced with a total write-off, as the cost of spares, etc would exceed the cost of the rig, even if you could obtain them, and I doubt this would be easy.

You can reasonably expect all of the semi-conductors to have been destroyed, along with the majority of capacitors, most of which would show signs of explosion. There is, however, one test which you can carry out before giving up.

Replace the rig's in-line fuse and connect it to another psu, then switch on and measure the current drawn on receive. If this is between 20mA and 200mA the rig may not be as badly damaged as I fear. If, on the other hand, the rig either fails to come to life at all, or if the current drain is either significantly higher or lower than these figures then I can see little point in going much farther with your investigations.

I am afraid I cannot be of much help in locating a circuit diagram for the Hy-Gain V. It has been some years, now, since I kept a stock of diagrams for multi-mode rigs but I am pretty sure that even if I had one, it would not be much help in this case.

## Meter made

Geoff Fuller, Asterix, from Faversham, Kent, wants some advice on impedances...

**Q** I recently purchased a multi-meter. As one of its functions is an ohm meter, I would like to use it for wiring microphones to a number of different CB rigs. Could you please tell me how this is done?

**A** Sorry, Geoff, but it can't be done. A multi-meter will only read DC impedances and the characteristic impedance of a microphone refers to AC.



# Mack chat

Mack copies two old friends — thanks to the new Cybernet 934



**W**ednesday, as I am sure you are aware, is the middle of the week. For me it is not a particularly interesting day as it is as far from the weekend past as it is to the weekend to come, and just another working day. So on this cold and icy Wednesday, just to break the monotony, I decided that before going to work I would do some shopping at my local motor spares emporium to obtain some parts for my daughter's Mini. This I did and as I returned home with the motor spares I saw a post office van pulling away from my house. I did not give it much thought at the time as my wife is often receiving items from her catalogue club. On the kitchen table was a parcel. "It's for you," said my wife. "For me," "Who's sending me pressies" and as I looked at the parcel and saw the label the answer was revealed. Telecomms of Portsmouth had sent me one of their new Cybernet Delta One 934 rigs. Suddenly, this Wednesday seemed a little brighter and going to work would have to wait whilst I unpacked and tried out the rig.

After a quick check of the instructions to make sure that I had the right wires in the correct places, I switched on the rig. After adjusting the squelch and volume I keyed up the channels and instantly found two stations chatting and after a short listen I QSKed into the conversation between Jack of Clapham Common and Ted of Kentish Town. I had copied Jack way back when I had my Reftecs and he remembered me. I told him what I was using and he gave me a signal and audio report. I chatted for a few more minutes to both stations and took my leave of the channels as I realised that to pay for this superb new equipment I had to get out to work.

To say that the time dragged whilst working would be an understatement and by five o'clock I'd convinced myself that I was my own man and, if I wanted to finish early I could, so I told myself that I would make it up tomorrow or the next day by working later. Arriving home and ignoring the snide com-

ments from my "her indoors" such as "What's this, half-day?" and, when I went up to my radio room, "See you some time, don't forget to write".

I suppose that I had better tell you my views of the rig. Smashing, wonderful, super, terrific! I believe that, compared to the other 934 rigs that we have had in the past, the Cybernet Delta One is what I would expect to get for the sort of money we pay for 934 rigs. It is definitely what I class as a hi-tech piece of radio equipment. Apart from the volume and squelch rotary controls the other functions are by almost touch-sensitive buttons. The scanning feature is what I find most useful, for if there are no stations on when I switch on, a touch of the scan key and the 20 channels are scanned in 1½ seconds. If a station calls on any channel, the scan stops on that channel. As you can imagine it saves having to sit by the rig all the time twisting the channel selector knob listening for stations. I can now hear stations that I could not hear before with the Reftec, although I knew that they were there through the other stations that were working them, and I might add they can hear me now.

Yet another feature of the Delta One is its 16 channel memory storage. This function I have no use for at the present time because, with only 20 channels that we have now, I will not need to use it. If the rig had a hundred or so channels then maybe the memory function would be useful. If you are a regular reader of this mag you would have read Chris Peterson's review of the Cybernet Delta One a few months ago, so I won't bore you with a repeat of the other specifications. A few weeks before the Cybernet appeared on the scene, the Commtel 934 rig made its appearance. I could have been tempted to purchase one, but I knew the Cybernet was on its way and the extra £140 that the Commtel costs could pay for other accessories. The Commtel looks a nice rig but I am glad that I waited for the Cybernet.

When I returned to the 934 scene, a drama was in progress. You should have read by now a feature by Sue Sharp about the interference to the

934 frequency from cellular radio. Some of the owners of 934 equipment are hearing the telephone conversations of the users of this new radio phone and it was found that the operators of 934 rigs could also at times interfere with the telephone conversation. Racial, the producers of this equipment, are most concerned and it is claimed that they will try to solve the problem. They have even visited some of the owners of 934 rigs that have made complaints and inspected the rigs with, of course, the owners' permission. I also hear that Racial have purchased some 934 rigs for their own tests. Of course many of the 934 breakers are annoyed with the interference as they have spent hundreds of the green stuff for their stations. If it's any consolation, but I don't think it will be, people spend lots to obtain scanners and monitors so that they can earwig to the supposedly private telephone conversations. Well, whatever turns some people on.

In the February issue of this mag was a letter from Blackjack of Sussex who suggests that if and when we get more channels on the 27 the new rigs should incorporate a programmed EPROM or ident. chip. Way back when CB was in the motion of going legal, the Home Office published a sort of booklet or white paper that gave details of the proposed workings of the system. At the end of the booklet was an appeal for suggestions and ideas that could be of benefit to the proposed system. The incorporation of this ident. chip was suggested in a letter to the Home Office predicting the chaos that could be expected on the CB and giving, as an example, the way the American system had gone. As you all know, the advice was not heeded and I don't suppose that the powers-that-be would take any notice of the suggestion made by Blackjack. Already, it is too late as the adverts in this mag will show. Many people are fitting the expansion boards that will give the FCC channels on FM. As I mentioned a few months ago, who will make the new rigs? The only answer I can see is that we would have to convert our present rigs as it would be cheaper.

# WATCH OUT HERE COME THE T-BOLTS

## FROM THE MODULATOR PEOPLE

Two new antennas from the Modulator People are coming your way - fast!

Thanks to our careful research and design, Modulator now offer you the T-bolt and Super T-bolt antennas. Both are completely suitable for all mobile CB applications.

The 33" long T-bolt has a power handling of 500W, a power normally attributed to antennas twice its size.

Even more powerful is the 46" long, centre-loaded Super T-bolt, which will handle 1kW. The gain on both these antennas is fantastic.

Superior chromium-plated brass 3/8" UNF. thread mountings and stainless spring steel whips are standard on both T-bolt models.

enquiries to:

### LES WALLEN MANUFACTURING.

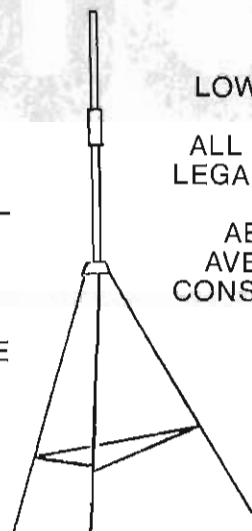
PEMBROKE WORKS, RAMSGATE ROAD,  
SANDWICH, KENT, CT13 9NW.  
TELEPHONE: (0304) 614598.

## THE GEMEC ANTENNA RANGE (GETTING READY FOR EUROPE)

THE GEMEC  
KAPPA

CENTRE  
LOADED COIL

FITS  
DIRECTLY  
ONTO A  
1 1/4" DIA POLE



LOW S.W.R.

ALL WITHIN  
LEGAL SPECS

ABOVE  
AVERAGE  
CONSTRUCTION

For further details of the GEMEC RANGE  
Write to:

**K. E. P. ROWE, FREEPOST,  
P.O. BOX 6, PERSHORE,  
WORCS WR10 1BR.**

Access and Barclaycard welcome.

See your dealer first, any problems, we will ship  
direct to you.

**TELEPHONE 0386 556655**

## HAM INTERNATIONAL MAIN DEALER FOR SOUTH WALES

# C B T

1 Prince of Wales Rd.,  
Swansea  
(0792) 463821

Ham Relax Power Mike.....	£19.95 (B)
Ham 232S Processor Base Mike.....	£44.99 (D)
Ham 232DX Processor Base Mike.....	£49.99 (D)
Ham Antenna Metcher with through switch.....	£10.99 (C)
Ham 10-12 amp Power Supply.....	£54.99 (E)
Ham Thunderbird Base Ant 5/8 wave.....	£29.95 (E)
Ham Sexy base antenna 68 wave.....	£55.00 (E)
Ham Big Mac Base Ant 7/8 Wave.....	£75.00 (E)
Ham Frequency Counter HFC01.....	£69.95 (C)
Frequency Counter 6 digits.....	£55.00 (C)
Ham extension speaker with filter.....	£8.99 (C)
Ham replacement mike (as originally supplied by Ham).....	£8.99 (B)
Ham LA 120 100 watt am/tm - 200 watts ssb variable with preamp.....	£159.00 (E)
Ham LA 60 50 watt am/fm - 100 watt ssb variable with preamp.....	£110.00 (E)
SEIF reverbator RA 201.....	£34.95 (D)
Ham ROS-90 SWR-FS-Antenna Matcher.....	£15.95 (B)
Ham ROS-4 SWR-Power-FS.....	£12.99 (B)
Ham Ros-6 SWR-Power modulation meter.....	£39.99 (B)
Fidelity 2000 80ch. FM.....	£89.99 (D)
York 863 40 channel FM.....	£69.99 (D)
York 863 80 channel FM.....	£89.99 (D)
York 863 160 channel FM.....	£99.99 (D)
York 861 40 channel FM.....	£49.99 (D)
York 861 80 channel FM.....	£69.99 (D)
Binatone 5 star 160 channel FM.....	£105.00 (D)
120 channel expansion boards (state rig) for FM rigs.....	£29.99 (C)
Avanti Moonraker 4 element beam.....	£135.00 (E)
Sunny 200s 100 watts AM/FM 200 watts SSB.....	£89.99 (D)
MM2 front fascia.....	£6.00 (B)
MM2 front fascia overlay.....	£6.00 (A)
Concorde 2 front fascia.....	£6.00 (B)
Cobra 148 original rig bracket.....	£4.99 (B)
Multimode II and Concorde II handbooks.....	£3.00 (A)
Multimode Two rig bracket.....	£4.99 (B)
Cordless Telephones.....	From £50.00

Spares available for Ham Models

POSTAGE RATES: (A) 50p (B) £1.00 (C) £2.00 (D) £3.00 (E) £5.00  
Please allow up to 28 days for delivery

To obtain our catalogue on C.B. equipment send £1.50 to  
C.B.T., 1 Prince of Wales Road, Swansea, Catalogue  
contains the MMIII CONCORDE III & JUMBO III

**ACCESS AND BARCLAYCARD ACCEPTED**



# SOUP UP YOUR

**B**ack in 1981, when CB became respectable for the first time, the specification was designed to offer an acceptable level of performance which would allow everyone a piece of the action. Are you getting yours?

Everyone knows that the real guarantee of performance from a CB station is to find yourself a home on top of a mountain, preferably with no neighbours for miles around and having a view to equal that from the top of the Empire State Building but, since only a handful can, or would wish to, live in these idyllic surroundings, the rest of us are obliged to operate in situations which vary from pretty good to downright unfriendly. Deep valleys abound and someone has to live in them. Most towns are strewn with tall buildings, large metallic objects and other oddities not conducive to radio transmissions. So, we are obliged to make the best of our surroundings when setting up CB equipment. There are a few odd places from where, no matter what you do, reasonable transmission ranges cannot be achieved but most of us can expect reasonable performance from properly set-up equipment.

Now all of this might seem obvious but a recent call for help from a new breaker set me wondering. It seems that he had decided to go into CB in a big way and, having invested in a good quality base station rig and just about every conceivable accessory, had been very disappointed with its performance. In sheer desperation he had treated himself to a 100 watt power amplifier but that had created a new set of problems all of its own. For the first time, he was now causing TVI and his signal reports were still nothing to get excited about. So, what was he to do?

A few minutes operation from his station and a few notes compared with local breakers showed that something was indeed amiss and my suspicions immediately pointed to the rig itself. Although most rigs claim a power output of 4 watts, they can vary dramatically. I have found brand new rigs offering as much as twice the permitted output, whilst others were showing less than 1 watt and a quick check with an accurate power meter soon showed that here we were developing only about 1.5 watts. Obviously we would have to delve into the workings of the rig. Resetting the power output stages was a relatively simple matter, though I did manage to resist the blandishments of its owner, who wanted "just a couple of extra watts. Only to give me an extra mile or two." The temptation to 'tweak' a rig is always a strong one but the advantages are so slight that it really is not worth

the bother and such minor modification always carries with it the danger that the rig will subsequently overdeviate, spilling its outgoing signal onto the adjacent channels, with consequent annoyance to other breakers, whilst the resultant extra strain is almost guaranteed to shorten the effective life of the power amplifier chip. Remember that most rigs were designed to a price and that whilst most components will happily give of their best so long as they are allowed to work within their design parameters, they will soon complain if they are pushed too far.

So long as we had the top off the rig, it seemed only reasonable to test the performance of its receiver, which,

the transmission line and antenna and here I found a number of problems. The first of these was a permanently installed SWR meter, the reading from which was now causing its owner considerable consternation. What had appeared to him eminently reasonable before my ministrations, at a healthy 1.5 to 1, was now showing a slightly alarming 2.7 to 1, which our intrepid breaker was all for reducing by means of an antenna tuning unit. "Not at all," says I, bravely prepared to risk the price of a pint on my conviction that matters could be improved by more natural methods. After all, antenna tuning units might tune out the apparent mis-match but they do so at considerable cost in terms of power output



**Leaving an SWR meter permanently in-line means reduced transmitted power**

due to our friend's insistence on buying the best, was of the double super-heterodyne type, with Intermediate Frequency stages at 10.7MHz and 465kHz. A quick check with the circuit diagram identified the relevant pots, and, tuning to a fairly feeble incoming signal, I made a few tiny adjustments, the net result of which was to improve our reception of the signal from a rough S2 to a quite impressive S5. IF tuning is a task which should be undertaken with a great deal of delicacy, since the difference between a good incoming signal and virtually no signal at all can be a mere fraction of a turn and any error can take quite a time to rectify, but careful resetting can be very rewarding to the listener.

Satisfied that the rig was now well up to standard, I turned my attention to

and hadn't we just spent fifteen minutes trying to improve that? At this stage I was far more concerned about the apparent permanence of the SWR meter, which seemed to puzzle my friend. An accurate SWR meter is a useful adjunct to any station but it really only should be used to make occasional checks on the relationship between rig, feeder cable and antenna. Leaving it permanently in line is bound to lead to some reduction in transmitted power, as each joint in a coax length is a potential source of RF leakage. It is also possible that you will cause TVI whilst using an SWR meter, when in all other respects your station is 'clean', as the meter's internal diodes rectify the RF passing through. However, for the moment I decided to leave the meter in line, as the next stage in

# R SETUP

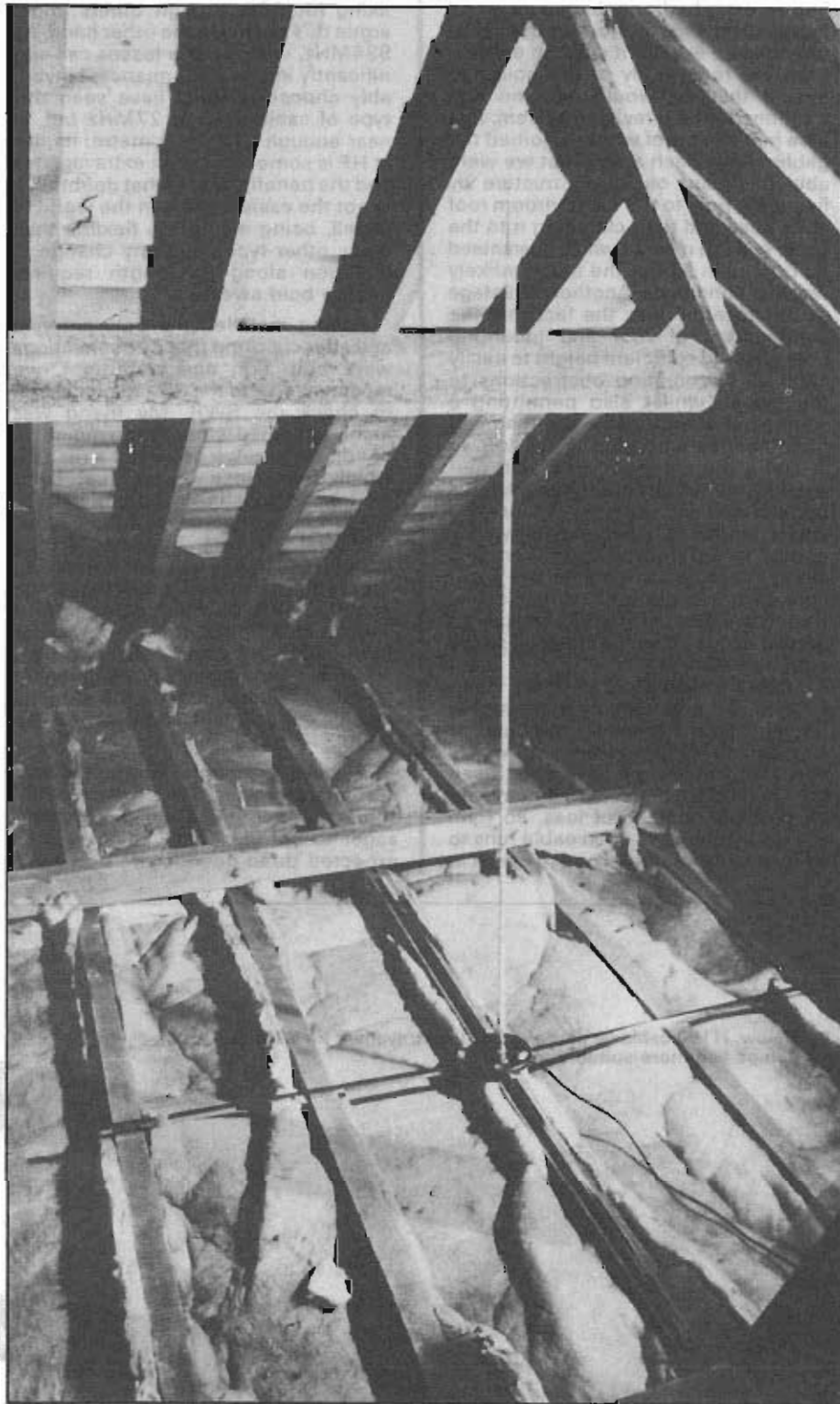
Keith Townsend tells how, with a little adjustment here and there, you can improve the performance of your setup

our investigation was to be the antenna, which I was informed, lived in the loft.

A short, but somewhat hairy climb on a rickety old step-ladder brought me face to face with yet another potential source of power loss. In measuring the length of coax needed to reach the antenna, my friend had neglected to allow for the various twists and turns required to feed it through the house and, being a thrifty sort of chap, had added the extra six or seven feet by means of a male to female coax connector. After all, it was a darned sight cheaper than forking out for a complete new length of cable. In this junction alone we had a potential loss factor of close on 3dB, or nearly half of the transmitted power and worse was to come.

As I looked round the loft I noticed that besides the CB antenna, it also acted as host to a television aerial and a couple of metallic water tanks. In any case, a loft is far from being the ideal situation for a transmitting antenna, which, when all is said and done, was designed to thrive on wide open spaces. In this particular case such a location offered a number of disadvantages. Firstly it meant that the antenna was sited a little too close to the TV aerial for comfort, with the result that the RF field was in danger of swamping the TV signal. In the final analysis it turned out that the only reason this had not happened was that the RF field had suffered considerable reduction as the result of the problems we were now rectifying. The second of our difficulties was those darned water tanks. Their presence, only about five or six feet from the antenna, was guaranteed to distort the radiation pattern, leading to a reduction of useable signal in their direction and contributing to the now unacceptable SWR. The third big disadvantage was that the overall height of the antenna was well below what was required to ensure that the signal cleared the surrounding topography.

Although I was easily able to persuade my friend that we should relocate the antenna out of doors he was not so easily convinced to forego the dipole in which he had invested a fair proportion of his ill-gottens. "Surely it must be more effective than a legal antenna," says he, "After all, it is a half-wave and nobody cares what size you use round here." Potentially, a dipole is capable of radiating a stronger signal than most legal antennae, but not when fastened directly to a length of 50ohm coax. The characteristic impedance of a half-wave dipole is in the region of 75ohms and before it can give optimum results with a 50ohm rig the impedance difference should be taken out by means of an impedance



A loft is far from being the ideal situation for a transmitting antenna. TV aeriels and water tanks can cause problems



transformer fitted between coax and antenna. Without such a transformer it was responsible for a high percentage of our SWR reading.

Selecting a good quality base station antenna was no problem and, armed with a suitable length of aluminium pole, we adjourned to the garden to pick our new location. Here we were in luck. My friend's garage had an extra bedroom built over it and it was clear that the roof at this point provided an excellent site. Far enough from the main body of the house to ensure that we would offer no distractions to the television system, this area had a flat roof which adjoined the gable end in such a way that we were able to mount our new structure by fixing the pole to the flat bedroom roof at its base and then clamping it to the gable end in a manner which guaranteed its rigidity in all but the most unlikely weather conditions. Another advantage of this location was the fact that the combination of roof and mounting pole ensured sufficient height to easily clear all surrounding obstructions to the signal, whilst also permitting a somewhat shorter cable run than had been needed when fed to the loft. In re-siting the antenna I had also persuaded my friend to throw out his original coaxial cable in favour of a single length of a better quality. The energy is transmitted to the antenna along the outer surface of the inner core of the cable and thicker cable, having a number of strands, will carry a greater current than the cheaper, single stranded stuff.

Cable losses at 27MHz are insignificant by comparison with higher frequencies and normally only become a problem in circumstances where very long cable runs have been used but I am a great believer in minimising all possible sources of loss, so I am always inclined to keep cable runs to a reasonable minimum and to invest in

good quality cable. Anyone who has been caught with a flat car battery on a wintry morning and found their cheapo set of jump leads inadequate, while the nice AA man's big hefty set did the trick admirably, will know just what I mean. I am often asked what type of cable is ideal for CB and the answer is very much open to the preferences of the individual. At 27MHz, I have a liking for RG8, though others might argue this point. On the other hand, for 934MHz, where cable losses can significantly impair performance, I invariably choose H100. I have seen this type of cable used at 27MHz but, at near enough £1.00 per metre, its use at HF is something of an extravagance and the benefits somewhat doubtful. It is not the easiest cable in the world to install, being much less flexible than many other types and any change in direction along its length requires quite a bold sweep.

Having installed the new antenna and after checking that its connections were both firm and watertight, we reconnected it to the rig and proceeded to check the SWR. My friend was highly delighted when, with a minimum of adjustment, we achieved a reading which was close to unity at band centre and which rose no further than 1.3 to 1 as we approached the ends of the band. He was, however, a little nonplussed by my insistence on taking the reading with the meter fitted at the antenna end of the cable, until I explained that this was the only point from which we could achieve a truly accurate reading, since any significant length of feeder between the antenna and the meter would lead to a distorted figure.

He was even more delighted when his first transmission was greeted with some surprise by a fellow breaker eager to tell him that instead of the expected three pounder he was now

getting him on a good seven pounder. and didn't he know it was antisocial to use a burner? Subsequent transmissions proved that he was now able to receive and transmit a most acceptable signal level over a very much wider radius and pretty soon I was faced with all sorts of questions as to the likely effects of fitting a pre-amp to the antenna.

"What the dickens for?" asked I, "You are already doing far better than ever before, so what do you hope to achieve with a pre-amp?"

"Louder signals?" he asked, somewhat quizzically.

It is true that a pre-amp would increase the volume of incoming signals but, since it would have precisely the same effect on the accompanying noise it is of limited value, especially since it might also lead to your hearing signals too distant for you to work, which can be most frustrating.

On the question of buying a power mike, I left him to his own judgement. Power mikes really come into their own on amplitude modulation, where by affecting the modulation depth they can effectively increase the power of the outgoing signal. With frequency modulation he was perhaps best advised to invest in a compressor mike, which would clip the higher and lower audio frequencies fed to it and result in somewhat punchier audio at the other end, though it pays not to overdo compression, since this can cause severe audio distortion.

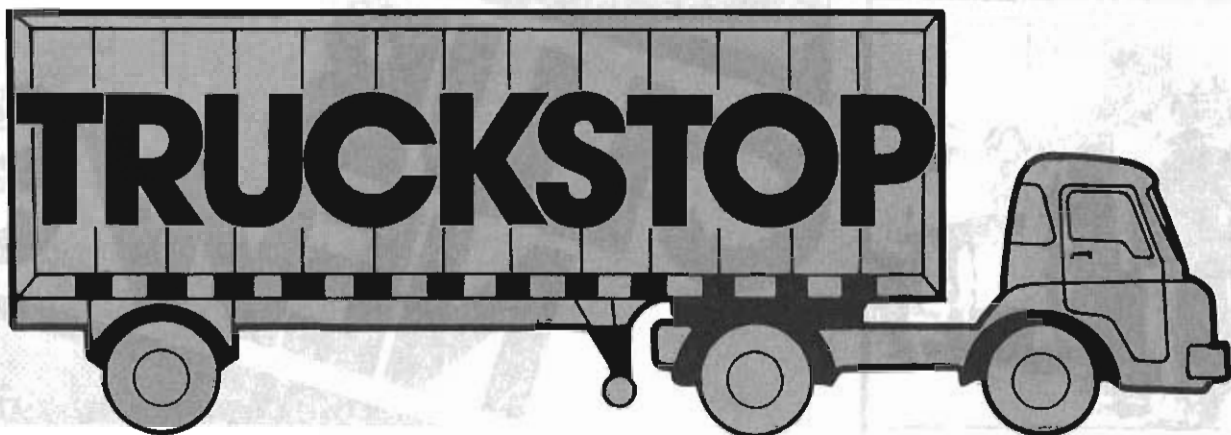
In the few short weeks since we spent a fruitful Saturday afternoon re-installing his CB rig my friend's horizons have broadened considerably and he has, perhaps only temporarily, joined the army of devotees prepared to sit through the small hours in search of just that little extra DX. Now he is thinking of fitting a rig to his car and I have no doubt at all that he will make an excellent job of it.

Below: H100 cable — perhaps a little extravagant for 27MHz setups and more suitable for 934



Above: RG8 is a popular cable with 27MHz enthusiasts





## Gismo is suspicious of official skulduggery

**M**ost of the uses of the Chicken Box were already possible before CB was introduced to this country. For example, we used to ask for directions at service stations etc and before we had channel 9 for emergency use, we used to drive like the clappers to the nearest telephone. Recently, however, an advantage only possible with CB was brought home to me.

I was driving eastwards along the Mike 62 from Bird City (Liverpool) towards Rainy City (Manchester) in thick, freezing fog. As fast as I cleared the mirror, it would freeze up again within 30 seconds. Speed restrictions were in force. I had my ears on and, in these conditions, my ears were well pinned back for 10-13s. I had passed the Mike 6 when I heard a 10-13 about a fender-bender near the Mike 63 junction, so I continued on, keeping a good ear out for further reports.

When nearing junction 11, I was told to leave the motorway as there was a four-mile tailback in front of me. I left the motorway and looked at a map — parked on the roundabout above, I should add. I decided to go back to the Mike 6 and travel south to the Mike 56, and then eastbound on to Rainy City. I listened on the CB and heard that the tailback was by this time seven miles long but I had missed it. Without the CB, there was no other way I could have been warned. Even if I had the radio on, I would have been past the junction before I received the warning, as there is a large gap between junction 11 and the M63. I must have saved hours by missing that holdup, all thanks to CB.

### Bad News

I recently received a piece of yellow printed matter sent out by the council, at Winchester to the effect that they are closing the coach park at Worthy Lane for trucks. The imminent opening of the M3 extension and the closure of a local cafe/hotel are the reasons listed. They go on to say that, while

they appreciate it is needed, they do not want trucks going through their streets from the new junctions. They feel the responsibility lies with the D.O.T. or the County Council. I quote: 'The Council is very concerned at the unnecessary use of the town's narrow streets by heavy lorries, and drivers are asked to make alternative arrangements, to use alternative facilities at Southampton or at a service area.' Nice, isn't it? They almost say, 'There isn't anywhere else, so you have to use Winchester, so we will ban it.' I feel so strongly about this that I feel like mounting a campaign to deprive Winchester of lorries or trucks by organising a blockade. No truck parking? Right, no deliveries either!

More bad news, this time from Liverpool. Remember a few months ago, I told you about the new truckstop opening in Liverpool? Well, there has been a further development, and a nasty one at that. Very few drivers have been staying at the truckstop, mainly because the owners do not let drivers sleep in their cabs and only want them to stay in the digs. Someone has found a way to stop trucks parking outside the two cafes along the dock front. Liverpool Council or the Dock Board have erected a superb eight-foot steel fence the distance where the trucks have been parking outside the cafes. The cost of this exercise must be enormous as the fence is good enough to keep out tanks. It looks good, in shiny, galvanised steel, but I would have thought that Liverpool, deprived as it is of essential services could have spent the money more wisely on its citizens than fencing in a dockfront area which was the safest place in Liverpool to park trucks. Next door to the cafes is a piece of empty land awaiting development. One cafe owner has tried hard to get the use of it for parking, but Liverpool Council say it is not available.

### Good News and Bad

Whitwood truckstop have been awarded a shield (on the wall, as you enter the place) for 'the best food for a

non-residential cafe' from a joint survey by the Routiers, Commercial Motors and Scania Trucks. The truckstop is still in its early days yet but, when Derv and a licensed bar are added later this year, it will take some beating. The food is superb, and showers, games, video and TV make the place really comfortable. It is about 400 yards off the M62 at Junction 31.

The owners, John and Stuart, have been trying to get permission for signs on the motorway to tell truckers of its existence. They have now a file, about a foot thick, of correspondence from the Department of Transport as to why they can't put up signs. Their local MP has taken it up with the Minister of State for Transport, but the excuses and reasons given are incredible. For instance, they say that no other truckstops are advertised on the motorways. Just down the road at Chesterfield (M1) there are signs up on the slab. There are also signs at Barton on the A1M near Scotch Corner. The real reason might be that Granada are building a service area on the M62/A1 junction, with facilities for 35 lorries. I suspect that civil servants are protecting them from good old fair competition!

### Monitor of the Month

My monitor on the one-nine this month is Mothercare on the M1 near Junction 38 up there in Yorkshire. Mothercare has five children, hence the handle, but she must be a glutton for work. As well as looking after the children, she monitors for 14 hours each weekday and, if that isn't enough, monitors channel 9 for the local React group at weekends! You can hear Mothercare from the A1, M62, over Woodhead on the A628, and down as far as Sheffield on the M1. I would really like to inspect her setup. I reckon she must be on the top of a hill, because she really cracks out. Keep up the good work, Mothercare. We truckers really appreciate your superb 10-13s.

Keep your twigs a-wiggling, the girls a-giggling and your seatcover happy! Breaker Break. . . Gismo. (P.S. See you at Truckfest 85. . .)





# CLUB NEWS

## News from clubs north, south, east and west

### Zone 18 Breakers Club

I wish to inform you that a 934 group has been formed in October 1984 with 25 members, to date. I am the group chairman for the 934 group, north-east division. The aim of this group is to encourage 934MHz not only in the north-east but all over the UK and to represent the users of this frequency. We would also like to be recognised by the various bodies of radio communication in the DTI.

We have our own PO Box number and hope to have our own QSL cards soon. I have other projects for 1985 and should any 934 enthusiasts like any further information on membership just drop me a line enclosing your full name and address plus 17p stamp please.

Membership for the 934 group north-east is free but, should you wish to use our Box number, the fee per year is £5 per person.

Warren Lancaster (chairman),  
2, Elizabeth Drive,  
Palmerstonville,  
Forest Hall,  
Newcastle,  
Tyne & Wear.

### Scottish Association of CB Clubs

The Scottish Association of CB Clubs was formed on November 6th 1982 with the basic aim of uniting CB clubs in Scotland and to promote all aspects of CB radio. At present we represent 20 of the major clubs in Scotland. We are also affiliated to Natcolcibar.

As the misuse of CB radio is reaching epidemic proportions, we feel something must be done about it. The good work that CB radio does is being overshadowed by the bad side.

According to the terms of the licence, it is an offence to play music, use foul language or cause deliberate interference. The Home Office is doing nothing to enforce the terms of the licence. Justice must be seen to be done, with offenders receiving heavy fines and maximum publicity.

This Association demands that the Home Office abides by the terms of its own licence and clears up the destroyers of CB. If this is done, the Association will use all lawful methods to make the strongest protests through various methods.

We fought long and hard to get CB radio legalised in Britain — the last thing we want is to have the service withdrawn because of serious misuse. We want CB radio to flourish in Britain, but it cannot do so while being choked with weeds — we demand that our licence fees be used to purchase weed-killer before CB is choked to death.

Rock A Jock (chairman),  
73, Springboig Road,  
Glasgow.

### Spartan CB Group

We are a recently formed CB pressure group. We believe that the majority of breakers are responsible and caring and also believe that breakers are due for a better deal. Our aims are to liaise with the DTI in the hope that they will realise that the majority of CB breakers are not a bunch of wallies.

In meeting with the DTI and talking over our mutual problems, we feel sure that much can be done to provide a CB service second to none. We want better conditions, less restrictions and, above all, value for licence revenue. At the same time we would like to see a tightening up of existing legislation regarding the Wireless and Telegraphy Act of 1949, including increased prosecution for licence evasion.

We invite other clubs throughout the country who have similar aims to ours to contact us.

F. Garrott (secretary),  
Spartan CB Group,  
P.O. Box 79,  
Gloucester.

### CB International Essex

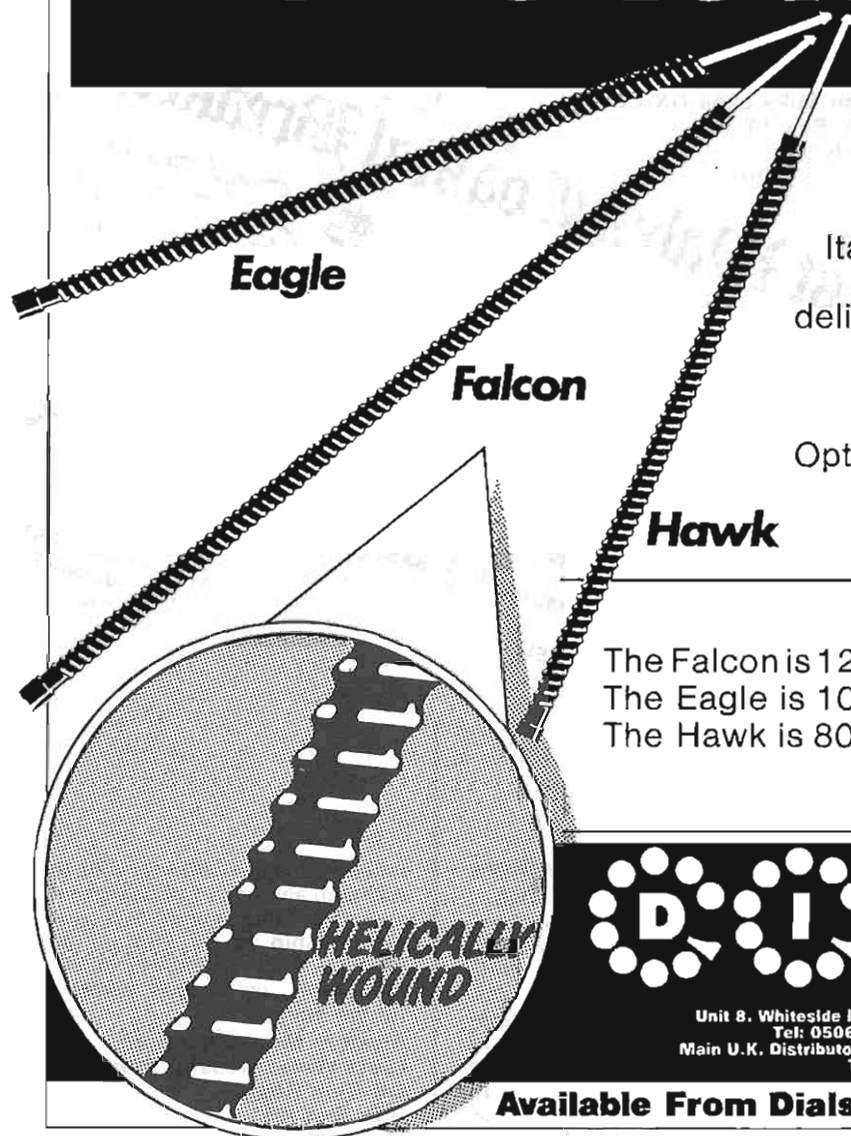
We are a new club formed on August 7th last year and have a nice, steady membership building up. The aim of the club is to promote goodwill to all other clubs and people on CB or not. We encourage anyone to come along to see us and have a chat. The club encourages disabled breakers as much as possible to take an active part in club interests and we are always ready to meet them and encourage them in any way.

The club has adopted a local home in the Clacton area with 22 handicapped children who visit the club on the last Tuesday of each month. We have recently started fund-raising for





# The Eagle, Falcon & Hawk have landed



These Superior Quality Italian Manufactured Antenna are in Three Sizes but each deliver superb Power.

All are Helically Wound and Top Loaded to achieve Optimum Range.

The Falcon is 120cm Long and Only	£3.95
The Eagle is 100cm Long and Only	£3.50
The Hawk is 80cm Long and Only	£2.95

**DIALS**

Unit 8, Whiteside Industrial Estate, BATHGATE, West Lothian.  
Tel: 0506 633386 Telex: 72165 ATT Dials.  
Main U.K. Distributors for BREMI-HAM INTERNATIONAL MAXON  
Trade Enquiries Welcome

**Available From Dials Or Most Good C.B. Shops**

# LADY BREAKERS



**In Filly's village, it's a case of chips with everything. Will she finally succumb?**

It's finally come, as I suppose it had to, eventually. Yes, the creeping modern plague has found its way up our lanes, stolen across the fields, poked its sinister tentacles into our front rooms and the bedrooms of the kids . . .

The first inkling I had was one lazy Sunday afternoon, skipping through the channels to find a voice I knew. There was a lot of activity on the airwaves, it seemed to me, quite unusual for a Sunday with nothing much happening locally. Lot of kids around,

too, but I thought nothing much of it until I heard the dreaded word — *computer*.

I must have misheard, I thought. No one would mention such a thing out here in the depths of the countryside, where the farmers still think wistfully of their ox-driven ploughs and automatic washing machines are an invention of the devil. I went back, trying to find the channel again.

There it was again. Computer. And, horrors, there was more. *Bytes*, I heard, *random access memory*, *serial interface*, *Centronics compatible* . . .

I put my hands over my ears, trying to block it out. Please don't let it be true. Computers had arrived, even here, just when I was beginning to think we were safe. And it was just as I had heard — it was the kids who were succumbing, starting to talk in a strange new language deliberately intended to sound like gibberish to the rest of us. Who was responsible for this outrage, I wondered. I listened to some more of that sinister conversation.

"... You can't swap the data because the ASCII is different", a young voice was explaining. "It's *incompatible*. You'll have to get your dad to buy one like mine, and mind it's got 32K *minimum*, OK?"

It's spreading like wildfire, I thought, appalled. Those already converted were now attempting to infect the innocent. I flicked through the channels and found some more voices, older voices this time.

"Well I thought I'd better take the plunge because we've got them at work now," said someone, sounding apologetic. And well you might, I thought. "I know, they're everywhere", said someone else, a woman. "I was beginning to feel like I lived on a different planet. You know? There they were, the kids and Sid, clustered round the thing, night after night. I'm going to take night classes, so I can join in too . . ."

I had a sudden terrible thought. Surely it was too much of a coincidence that all this had happened overnight, almost. New technology — witchcraft, they used to call this sort of thing, did you realise that? They knew a thing or two in those days — could hardly have afflicted everyone just like that, with no warning. I rushed out to the car, leapt in and drove down to the high street.

It was as I thought. There, standing

gaudy and arrogant where Mrs Bennett's Tea Shoppe had once been, was the source of the evil — a computer dealer. Innocent-looking machines lay in the window, so harmless. Alluring signs beckoned to the passerby — Don't Miss Out, Get Your 32K Model B Here, Unbeatable Prices. Had it spread to the other shops? I hurried into the newsagent next door and searched the magazine shelves. There they were! Computer magazine after computer magazine, computer games, computer hobbies, computers and electronics. And people were buying them! A tot aged no more than six actually picked one up while I stood there aghast, flicked through it knowingly, and took it to the counter.

"Does this cover asynchronous communications?" he asked the newsagent. The newsagent, a man I had always thought of the highest integrity, nodded briefly and refused to meet my eyes. I left the soiled premises, determined to go to his nearest rival for my newspapers in future.

I listened to the CB as I drove wearily home. Soon I realised why everyone was talking about — about *it* — today; someone had had the temerity to start up a local user group, and that someone was a prominent breaker. Every breaker in the district who used one of those *things* was now a member, it seemed. Every Sunday, I thought shuddering, channel 29 would be full of chips ASCII, ports and Assembly language and modems.

What an end for a good channel.

My husband was waiting for me when I got home. So he's heard the news too, I thought, climbing out of the car. I remembered everything he had ever said about computers and technology, and knew I had at least one ally.

"Filly, Filly!" he exclaimed, rushing to meet me. "Come and see what I bought yesterday. I didn't tell you, I wanted it to be a surprise. I've got it working, now, come and see . . ."

Yes, you've guessed. He, too, had succumbed. There was even a computer in my own home! But even as I stood there, looking at it bleeping, I thought Hey! Perhaps I can learn how to use it. Perhaps I'll be able to understand what they're all talking about. I won't be left out after all!

Tentatively, I said: "How much random access memory has it got . . .?"



# Your main Power Supply?

YOU'LL PAY A LITTLE MORE FOR ME - BUT YOU'D EXPECT THAT FOR BETTER PERFORMANCE!

## BREMI<sup>®</sup> of course!

Whether you are a complete beginner or into C.B. in a big way you can't buy better than BREMI. No longer do you have to worry about being wound up, as a BREMI product is all quality - exceptional performance and is built to last and last.

So make BREMI your main power supply and you'll be talking on air...

### VOLTAGE REDUCER, MODEL BRS 25

Input voltage: 24 V DC (20 V min - 28 V max) - Output voltage: 13.8 V - Output current: 2 A - Stability: 1%, with 20% 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 - 3D/10 Aluminium case RRP £14.15

### STABILIZED POWER SUPPLY MOD. BRS 26

Input voltage: 220 V a.c. 50 Hz - Output voltage: 13.8 V d.c. - Current: 0-10 A - Stability: better than 0.1% with mains variations of  $\pm 10\%$  and load variations from 0 to 10 A - Protection: electronic with current limiter - Ripple: 1 mV with 10 A load - Weight: 4.2 Kg - Dimensions: 180 x 105 x 300 mm (240 V a.c. supply available) RRP £63.55

### 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 239 - Dummy load: 50 Ohm, 5 W max. It connects by means of the front panel selector - Weight: 0.32 Kg - Size: 121 x 64 x 60 mm RRP £10.85

### 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 £8.80

### 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 1.2, externally adjustable - Dimensions: 128 x 79 x 40 mm - Weight: 0.3 Kg RRP £35.75

### 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 1.2, internally adjustable - Instrument: class 1.5 mobile coil instrument - Output and SWR indicator, externally lighted - Controls: STAND-BY, AM - SSB, output power switching 250/500 W, SWR reading, instanstment switch (reflected, direct power, Watt) - Protection: mains with 5 A fuse - Vacuum tube set: 5 x E1519 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 £326.85

### LINEAR AMPLIFIER MOD. BRL 210

Output power: 100 Watts AM maximum, depending on the input power - Input power: 0.5 - 10 Watt AM, 1 - 20 Watt PEP SSB - Input voltage: 220 V 50 Hz - Frequency: 26-30 MHz - Operation: AM - SSB - FM - Output impedance: 52 OHM - Input impedance: 52 OHM - Input SWR: better than 1.2, 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 £95.55

### CB LINEAR AMPLIFIER MOD. BRL 40

Input voltage: 12 - 15 V d.c. - Max current: 7 A - Input power: 0.2-5 W R.F. - Output power: maximum 75 W AM - Frequency: 26 - 30 MHz - Operation: AM - FM - SSB - Input SWR: better than 1.2, externally adjustable - Dimensions: 160 x 75 x 40 mm - Weight: 0.39 Kg RRP £40.65

### 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 65 mm - Weight: 1.5 Kg (240 V a.c. supply available) RRP £14.26

### 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 1.2, externally adjustable - Dimensions: 120 x 50 x 40 mm - Weight: 0.2 Kg RRP £18.15

### DIGITAL FREQUENCYMETER MOD. BR1 8100

Direct insertion between RF source and antenna - Display: 6 digits - Power requirement: 11 - 15 V d.c., 150 mA - Resolution: 0.1 KHz - Gate time: 1 sec - Minimum RF input - power: 0.25 W - Max RF input power: 100 W - Range of frequency: 10-150 MHz - Dimensions: (LHP) 112 x 38 x 152 mm - Weight: 245 g RRP £53.85

### DIGITAL FREQUENCYMETER MOD. BR1 8150

Direct insertion between RF source and antenna - Display: 6 digits - Power requirement: 11 - 15 V d.c., 150 mA - Resolution: 1 KHz - Gate time: 0.1 sec - Minimum RF input - power: 0.25 W - Max RF input power: 100 W - Range of frequency: 10-150 MHz - Dimensions: (LHP) 112 x 38 x 152 mm - Weight: 245 g RRP £68.00

### SWR METER-WATTMETER MOD. BRQ 22

Range of frequency: 3 MHz - 150 MHz SWR meter, 26 - 30 MHz Wattmeter - Input and output impedance: 50 Ohm - SWR and Watt indicating instrument, 1 st. section coil 50 mA f.s. - Connectors: SO 239 - Measures all 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 13 mm RRP £32.95

IN CASE OF DIFFICULTY ALL BREMI PRODUCTS ARE AVAILABLE DIRECT FROM BREMI AT THE RRP + £2.00 P & P. CHEQUE OR POSTAL ORDERS PAYABLE TO BREMI UK LIMITED. PLEASE ALLOW 28 DAYS DELIVERY.



# BREMI<sup>®</sup>

The Power Pushers  
BREMI (UK) LIMITED  
UNIT 6, INNAGE PARK  
HOLLY LANE INDUSTRIAL ESTATE  
ATHERSTONE, WARWICKSHIRE  
Tel: 08277 2147

SEND FOR FREE CATALOGUE - TRADE ENQUIRIES WELCOME  
PLEASE ATTACH YOUR LETTERHEAD FOR PROMPT ATTENTION

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

TEL No. \_\_\_\_\_





## David Shepherdson brings us more news from the QSL world

# COMMUNICATION THE QSL WAY

I'd like to start off this time by just trying to clear up one or two points over which some people seem to be a little confused. First of all, I have nothing whatsoever to do with the Club News column elsewhere in this mag, and secondly, I do wish people would stop writing to me and my XYL. I'm single (and available...!) Right, a few names and then some news which has come my way recently. First out of the bag comes Michael (The Condor) of Larne, NI, who writes asking for a mention and praising the Galaxy Club of Brighouse, a card and greetings from Tony (Mad Max) of Inverness who swaps 100% and can also supply info on a newish club, the Jacobite Warriors. I have no other info on this club except that Tony is the Director. Paul (Ant) drops a line from Exeter with a few Currie cards, as do Robert (Hot-Rod) and Teresa (Foxy Lady) of County Down with a note saying that they both QSL 100% all over the world and look forward to receiving yours. Jack Wells of Maldon writes with some info and a cry for help about a UK club. He sent off for a stamp from a club and so far (10 weeks) has not had his stamp, a reply to his letters or his money back. Well, Jack is not the only one to write about this club. I have written to this club myself to try to find out what is going on but, so far, no luck. If you're reading this Nige, how about a reply?

Okay, Club News time, a new address for the Tripe City Breakers of Burnley. Martin (TCB 001) has moved house and is now running the club by himself and asks if you have any TCB invites would you be kind enough to alter the address on them please. Earlier in the year, I quoted from a letter from Jorgen Hansen of the Toucan Club fame. Well, Jorgen will be here in the UK soon on his way through to Denmark, so if you wish to join his excellent club, allow a little extra time for the return of the package. Also, because of problems he has told me about, it is not advisable to send letters etc to him Surface Mail. If you send cash to join or for club items, for

your own sake, register it! I know this costs an extra £1.10, but otherwise you do risk losing your 15 dollars. For your money, you do get a very good package, which is sent by Airmail and includes your unit no, ID card, wall certificate, unmounted stamp, map post card of Venezuela, 10 exchange cards and invites, club stickers and a newsletter. Extras of this excellent and 100% genuine club include club cards and a cloth patch.

In these pages I have often mentioned QSL card printers like Des Currie of Consett, POMA of Belgium (contact via rep, Ray) and said that no other printer lets me know anything about themselves. Well, I've had a letter passed to me from Don (Vanguard) of "D'Zine of Preston" who has written to inform me of their services. What started as a cottage industry early last year has now turned into a full time job. In just over a year, Don and his wife have designed and printed over 400 different QSL and eyeball cards. For prices and sample etc, please contact Don direct enclosing the ever useful SASE. Also, I see that C.D. Jones now offers a QSL card printing service. Unfortunately, Chris is a one-man business who started with QSL stamps on a 48-hour turnaround basis, and trade has picked up so much that he is working from dawn to dusk to try to catch up, but it is taking him quite a while to fill all your orders and he does ask us to bear with him.

I've had a letter from Andy of the excellent Norway Amateurs Club with some rather surprising news. Who remembers the Big Ben Club when it was run by Jim (The Duke) who used to write a rival column? Well, Jim sold the club to Colin, and Colin has now decided to finish with the Big Ben. Well, I've had words with Colin, and I have taken over the Big Ben Club. I'll be looking at the package and items and will be giving full details of the new package in next month's column, so if you have any forms for this club, please alter them to my address (Dragonmaster One), thanks. Similar news from the Flower o' Scotland Club



which has decided to close. Staying with the NAC newsletter, I note that the Australian International QSL Swap Club has passed on to a new President with a new address. She is Chris Bird, so if you've any forms for this club, please alter the address on them. Membership of the NAC costs \$18(US) and five personal QSL cards. For this you receive, very quickly and securely packed, your NAC No, certificate, ID card, rubber stamp, stickers, exchange cards and invites, newsletters, pennant, keyring, the famous NAC Clubs to Avoid List, and lots more. Extras available include Sundown card, T-shirts, extra stickers and an excellent and very colourful cloth patch. A reputable Club over in Japan is the J.Q.S.C. Membership of this club costs only \$1(US), but for this you get just your JQ No and ID card. For an extra \$2(US) you can have a certificate and for a further \$3(US), a stamp is also available. All items are sent Surface Mail however, so allow quite a while for delivery.

Coming back to England, I've just received the results of the Atlantic Breakers QSL Club's 'Hand Coloured QSL Card' competition. The response to this competition was, to say the least, rather poor! There was a 25p

the winners are: joint third: Julie (Country Girl) of Cheshire and Alex (The Wizard) of Manchester, second: Diane (Roxanne) of Devon and first was Audrey (Twinkle Toes) of Surrey. The prizes were Premium Bonds of £10 (1st), £5 (2nd) and two third prizes of £2. Desert Fox of the Crazy Gang of South Wales has dropped me a line to let me know that they have started up an International DX Section. It is specifically for international clubs and QSLer's and membership is free. Joining is simply a case of sending four signed and dated personal QSL cards with four view cards of your area and a SASE. In return you can expect your Unit No, membership scroll, several exchange cards and scrolls, ID card and local info.

Okay, call CQ CQ Dennis (27 Bravo Lima Victor) of Leeds of Liverpool. I have a note from Stuart (The Merry Monk) of the NEL Group of Leeds who has been passed a card for you from the Post Office. Some local sorting offices have been closed down and Stuart got 'lumbered' with a pile of 'Lost QSL Mail'. Stuart has managed to pass on all except this one, so if you're out there Dennis, drop Stuart a line please.

swops spoons, post cards and key rings. Roger (Darkover One) of Stourbridge writes in with an apology for any delays that people may have had while waiting for a return from him and, as for the symbol on your card Roger, I haven't the foggiest! Whilst talking about delays, if you send letters or cards to me via the mag, it does take a while for me to get them.

News from Ray (Poma Rep for the UK) of the latest prices for Poma FCC cards. They are now £53 per 1000 for a new design, and £38 for 1000 reprints. If you are interested in a FCC card by Poma, then drop Ray a line, but don't forget a SASE for his reply.

A bit of news from the Firebird QSL Club of Brighton is that they have three different club stamps for the months of March and April only, at £2.50 each. Also, a full colour cloth patch is available for £2 as are Poma Club cards. Membership costs £8, for which you get a massive bundle which I haven't room to do justice to here, but runs to over 17 items! Or, if times are a little hard, then a mini-pack is available for £3 with the exception of a rubber stamp and the cloth patch.

As promised for several months,

## QSL Club Addresses:-

Atlantic Breakers Club  
 Australian Int'  
 Black Diamond (Meeting)  
 The Crazy Gang International  
 Cutty Sark QSL Club  
 Firebird QSL Swap Club  
 Galaxy Radio Group  
 Great British QSL DX Club  
 Japan QSL Swap Club (JQSC)  
 N.E.L. Group  
 Norway Amateurs' Club  
 Romeo Delta X-Ray  
 Sea Dragon DX QSL Club  
 'Toucan Int' QSL Club  
 Tripe City Breakers

14 Priory Road, Bowden,  
 Cheshire, WA14 3BP  
 \* 151 Wilson Street, Carrington  
 2294, N.S.W., Australia.  
 P.O. Box 16, Caerphilly, Mid-  
 Glam, S. Wales, CF8 2XF.  
 P.O. Box 10, Caerphilly, S.  
 Wales, CF8 1XX.  
 47 Gurdon Road, Charlton,  
 London, SE7 7RP.  
 P.O. Box 9, Brighton, Sussex.  
 P.O. Box 14, Brighouse, W.  
 Yorkshire, HD6 2SE.  
 P.O. Box 5, Consett, Co Durham,  
 DH8 8NG.  
 P.O. Box 46, Atami 413, Japan.  
 P.O. Box CR10, Leeds, West  
 Yorkshire, LS7 3DB.  
 Box 3538, N-4001 Tjensvoll,  
 Norway.  
 10 Wallace Street, Rutherglen,  
 Glasgow, Scotland.  
 P.O. Box 2, Sheringham,  
 Norfolk, NR26 8TY.  
 P.O. Box 1500, Caracas  
 1010-A, Venezuela, S. America.  
 \* 77 Whitegate Close, Paclia,  
 Burnley, Lancs, BB12 8TJ.

Zulu Whiskey Int'  
 Dragonrider 1 (Via Club)

\* Please note, new address for club

## QSLer Addresses:-

Hot Rod & Foxy Lady  
 Marvis Steele (Crazy Annie)  
 Robert (Happy Duck)  
 Bill (Gambler)  
 Tony (Mad Max)  
 Brian (Strongbow)  
 Roger (Darkover One)  
 Michael (The Condor)  
 Ian (Nighthawk)  
 Dave (Tennessee)  
 Wim ("Dolf")

P.O. Box 14, Brighouse, West  
 Yorkshire, HD6 2SE.  
 3 Tarn Villas, Cowpasture Rd,  
 Ilkley, W. Yorks, LS29 8RH.

P.O. Box 13, Newtownards,  
 Co Down, Northern Ireland.  
 1920 Avenue P, Lubbock,  
 Texas 79405, USA.  
 140 Branshill Park, Sauchie,  
 Alloa, Clack'shire, Scotland.  
 225 Harrowby Lane, Grantham,  
 NG31 9HG, UK.  
 P.O. Box 27, Inverness,  
 Scotland.  
 8 Mirfield Close, Halewood,  
 Liverpool, L26 9XP, UK.  
 1 Hungary Hill, Stambermill,  
 Stourbridge, West Midlands.  
 MW 11, P.O. Box 20, Larne,  
 Co Antrim, Northern Ireland.  
 2 Well Heads Lane,  
 Sedgewick, Nr Kendal,  
 Cumbria, LA8 0JS.  
 58 Clark Avenue, Hove,  
 Sussex, UK.  
 Remisestraat 35, NL-2225  
 TH Katwijk a/Zee, Holland.

entry fee which was donated to the Ghost Rider Appeal so it was in a good cause and the amazing number of entries resulted in £4.25 being donated! Yes, only 17 cards were entered, rather poor as all the people concerned with this competition would say. Anyway, even so, the judging of the cards was difficult as they were all very good, but

Okay, time now for some more names from the pile covering most of my desk, floor and shelves. If you would like to get a mention, then please drop me a line, with a card or two of yours and I'll see what can be done. If you want a reply, then please do enclose return postage. It will help. Right, Brian (Strongbow) of Liverpool is first up with a large colourful card, a pile from John (Cactus Man) of Stockton who not only QSLs but collects and

here's the update of the Club Poll. The top three UK clubs are, in third place, The Sea Dragon Club, in second place, the Cutty Sark of London, and just in front, in first place is the Zulu Whiskey Club of Brighouse. Well, I'm almost out of room once again, so I'll run through some last names and then list the forthcoming events which many clubs and QSLers have said how helpful they have found it to be. Starting off this section with Ian (Nighthawk) of Kendal, 'Dolf' of Holland, Jack (Whiskey Romeo 67) of New York and





Jack (Whiskey Romeo 67)  
 Paul (Ant)  
 Jack Wells  
 Audrey (Twinkle Toes)  
 Diane (Roxanne)

P.O. Box 417, Brentwood, L.I.  
 New York 11717-0417, USA.  
 "Dingley Dell", Sowton  
 Village, Exeter, Devon, EX5  
 2AE.  
 Oakleigh, Brickhouse Road,  
 Tolleshunt Major, Maldon,  
 CM9 8JZ, UK.  
 P.O. Box 9, Brighton, Surrey,  
 UK  
 29 Siddalls Gardens, Tiverton,  
 Devon, UK.

Alex (The Wizard)  
 Julie (Country Girl)  
 John (Cactus Man - NE 04)  
 Dave Bradshaw (Cutty Sark  
 Meeting)  
 (For details of CS meet, please  
 reply.)

1 Farnham Avenue, Higher  
 Blackley, Manchester, UK.  
 10 Cross Lane East, Partington,  
 Cheshire, M31 4ER, UK.  
 P.O. Box 44, Stockton,  
 Cleveland, TS18 4BS, UK.  
 16 Bradenham Avenue,  
 Welling, Kent, DA16 2JG, UK.

**Services for QSLers:-**

D Currie (Printer)  
 Ray (POMA FCC UK Rep)  
 D'Zine of Preston (Printer)  
 C D Jones (Stamps)

89 Derwent St, Blackhill,  
 Consett, Co Durham, DH8 8LT.  
 P.O. Box 106, Canterbury,  
 Kent, CT1 3YN.  
 36 Cannon Street, Preston,  
 Lancs.  
 St Ivy, North Rd, Queenborough,  
 Kent ME11 5ET.

When writing to any of the above, please try to enclose  
 return postage for their reply as it really does help.

tion Centre, Caerphilly, there is the  
 2nd Annual Eyeball of the Black  
 Diamond Radio Club. There is an entry  
 fee of 50p for a day ticket, or £2 for the  
 full day and night ticket. Times are 10  
 am until midnight, there will be a  
 dance band, bar stalls and raffles and  
 all proceeds are in aid of the blind.  
 Details and tickets from the chairman  
 of the club.

Next meeting is to be held on the  
 13th and 14th of April at the Falcon  
 Hotel, Ethelbert Road, Cliftonville, Mar-  
 gate, Kent. This is organised by the  
 Cutty Sark Club of London, and is  
 mainly a POMA card swop meeting,  
 but all QSLers are more than welcome  
 to come. There is an entry fee of 25p  
 per day, with a disco on the Saturday  
 evening. A raffle will be held, and  
 limited accommodation is available.  
 For details etc, please drop Dave Brad-  
 shaw a line with SASE for return.

And the final meeting for this time  
 is the "1985 CB/Radio BIG Meeting"  
 on Sunday 28th of April from 11 am  
 until 4 pm. It has been organised  
 jointly by the GBQDC and D Currie  
 (Printers) of Consett, Derwent Valley  
 Breakers and the RDX of Glasgow. It is  
 free and it's all about QSLing and radio  
 clubs (it says 'ere'). Sounds like fun, try  
 if you can to get to at least one of  
 these, give them your support and with  
 luck they will become regular events  
 on the QSL calendar!

Just one last point; with the passing  
 of the UK £1 note, it can be a little  
 difficult to send money safely through  
 the post as the £1 coin and 50ps are  
 quite likely to break through some  
 envelopes. May I suggest taping them  
 securely between a couple of cards, or  
 for small amounts, up to 50p or so,  
 send it in postage stamps. The Dragon-  
 riders will accept this, and I'm sure  
 many other clubs would. Okay, that's  
 it, drop me a line if you have news and  
 I'll catch you all again next month!

GREETINGS FROM

**Crazy Annie**  
**KBBX 6917**



DON'T WALK IN FRONT OF ME,  
 I MAY NOT FOLLOW;  
 DON'T WALK BEHIND ME,  
 I MAY NOT LEAD.  
 JUST WALK BESIDE ME  
 AND BE MY FRIEND.

1 QSL 100%

**252 JQ 2**



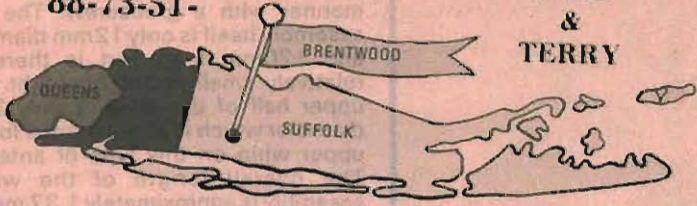
MICKEY M. MATSUO  
 P.O. BOX 48 ATAMI 413 JAPAN

<input type="checkbox"/> QPM	<input type="checkbox"/> QBO	<input type="checkbox"/> QPM	<input type="checkbox"/> RPT	<input type="checkbox"/> B	<input type="checkbox"/> SWAP	<input type="checkbox"/> C	<input type="checkbox"/> EYEBALL	<input type="checkbox"/> QBO	<input type="checkbox"/> QSL
DATE	JST	MHz	ZWAY	RS	PSE	2000			
RADIO	22.884								Dr.

**Q.S.L. from Long Island N.Y.**

88-73-51-

**JACK & TERRY**



**Whiskey Romeo 67**

Dave (Tennessee) of Hove with an  
 excellent little card. Robert (Happy  
 Duck of Alloa, Bill (Gambler) of  
 Grantham and a good friend of mine in  
 Texas, Marvis Steele (Crazy Annie).

Forthcoming events of interest to  
 QSLers up and down the country, at  
 least, those I know about, are, in date  
 order: Saturday 6th April at the Recrea-



# HUNTING DOWN NIMROD



Brian Wright finds a good performance antenna at a reasonable cost

**S**ince the UK antenna regulations have been relaxed allowing the use of centre-loaded antennas, the general performance of aerials that we have tested certainly seems to have improved. This therefore confirms, in practice, the theory that centre-loaded antennas are usually more efficient than their base-loaded counterparts. However, this is not always the case as a glance through your back issues of *Citizens' Band* will tell you. In fact, many breakers prefer base-loaded antennas for mobile use as the weight of a coil halfway up the whip can make the whip sway about considerably, especially when travelling over an uneven road. Most manufacturers have tried to overcome this problem by having a slightly thicker rod for the lower half of the whip, this certainly helps to overcome the problem but the weight of the coil can still cause the antenna to sway excessively unless the coil assembly is very light. It was therefore interesting to test the Hembro Nimrod Mk 1 this month as this has a very thick lower whip which hardly bends at all in use.

The Nimrod is supplied in the usual plastic sleeve with a cardboard backing and no instructions. The base mounting is a large hexagonal nut with the normal  $\frac{3}{8}$ " UNF thread protruding, which is intended to fit any of the popular methods of mounting including most magmounts. These vehicle mounts must be purchased separately if you don't already have one.

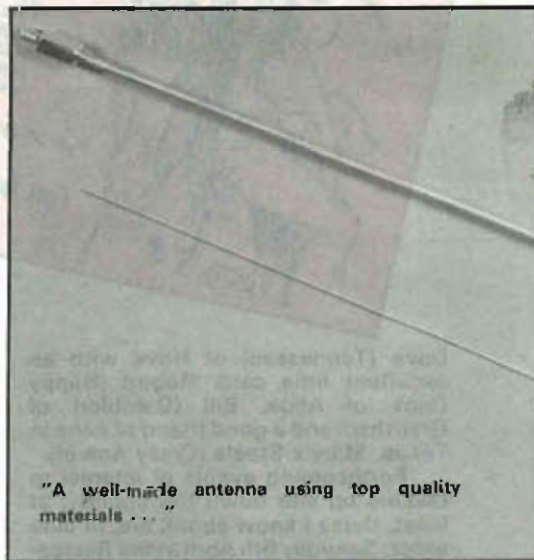
The lower whip, which is 6mm diameter, is threaded at both ends and screws into the hexagonal base fitting and into the lower half of the coil, instead of being held in the usual manner with a grub screw. The coil assembly itself is only 12mm diameter and 120mm long and is therefore relatively small and lightweight. The upper half of the whip is only 2mm diameter which is about normal for the upper whip on this type of antenna. The overall length of the whole assembly is approximately 1.37 metres long and the coil is central. Both whips are of ground stainless steel and the upper one has a small metal tip

pressed on the top and is fitted into a hole in the coil assembly and held by the normal grub screw.

When mounted securely on the vehicle, the Nimrod is very stable mechanically as it is only the 620mm long upper whip that bends noticeably when subjected to rough treatment. This, therefore, overcomes one of the main problems of centre-loaded mobile antennas. It could be argued that the additional weight of the 6mm diameter lower whip requires a firm mounting to the vehicle, but this should be no problem using one of the standard commercial mounts. We tested the Nimrod on one of these mounts and a large magmount with no problems.

The SWR on the Nimrod as supplied was 1.1:1 on channel 1 rising to 1.3:1 on channel 40 and therefore required shortening slightly. However, as the SWR was quite impressive as supplied, we decided to test the Nimrod without making any adjustment, as this antenna could genuinely be called pre-tuned, a feature that is sadly lacking with many antennas, especially mobiles.

Setting out on test, it soon became obvious that the Nimrod Mk1 was going to perform fairly well, as signals were well up in the top performance



"A well-made antenna using top quality materials ..."



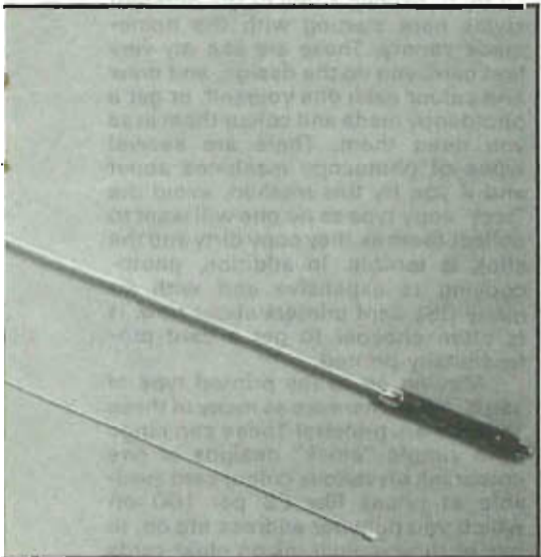
# OWN THE DOD

class right from the start. In fact, good signals were maintained throughout the test, with only momentary fading at the outer limits of the route when passing large obstructions. Copies were clear and readable in both directions and when, on two occasions, other breakers came on our channel, we had no problem in maintaining contact.

Summing up then, we consider the Nimrod Mk1 to be a well-made antenna using top quality materials. The 6mm diameter lower whip providing adequate strength to prevent excessive swaying when mobile and being pretuned is a pleasure to install. The Nimrod, being about 1.37 metres long, was tested on the vehicle boot as we normally test all medium-to-large antennas in this position, but being of medium length and robust construction is quite suitable for roof-mounting where it should perform even better.

A similar antenna for performance that we have tested would be the Rebel Raider.

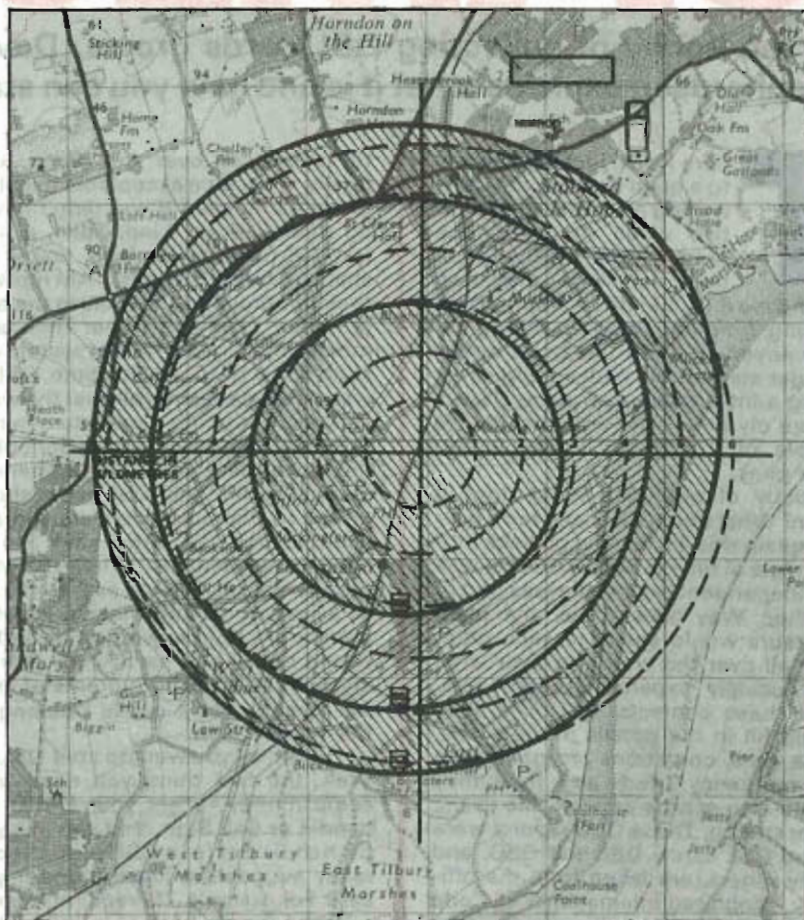
We would like to thank TV Radio Aerial Services of London Road, Apsley, Hemel Hempstead who supplied the test sample and who sell the Nimrod Mk1 for £8.95, which must be good value for one of the top antennas we have tested.



## ANTENNA REVIEW DATA PANEL

### SPECIFICATIONS

Model	NIMROD Mk1
Type	CENTRE LOADED MOBILE
Length	1.37 METRES
Frequency Range	27MHz
Max Power Handling	500 WATTS
Impedance	50 OHMS
Cable Supplied	NONE
Mounting Details	3/8 UNF
Supplier	—
Typical Price	£8.95



### REVIEW VERDICT

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

We rate our samples on a scale of one to five. Five stars is the highest rating, three and four stars are average to good and one and two stars 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 prearranged 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.



# CARD GAMES

As the hobby of collecting QSL cards grows, David Shepherdson explains what it is and how you can start

**T**here I was, looking forward to a quiet evening at home, writing an overdue letter or two when the telephone rang. It was the Editor of this excellent magazine asking me if I could do an article about QSLing, from how it began through to how anyone new to this great hobby can get started. So, with apologies for being a little vague over dates (it was before my time!) and with thanks to a couple of friends for their support, here goes.

Firstly of all, QSL. What does it mean? What does QSL stand for? To try to explain this, I'll have to go back into the mists of time to before QSLing was an independent hobby, but was part of another. Way back when, the radio amateurs would speak to each other from all over the world on their large (and usually expensive) radio sets. After these contacts, or QSO's, they would fill in the details in their logs, (date, time, conditions of signal, even the frequency used) and then they would also send a copy of this to the other station. These QSO reports were called QSL cards. QSL and QSO, and many others, are taken from the officially recognised International 'Q' Code list which was originally used by radio amateurs and other licensed radio operators. Nowadays, a few of these 'Q' codes are used by QSLers. Table 1 shows the 40 or so 'Q' codes that apply to radio useage, while Table 2 gives those used most often in QSLing. As you can see, each 'Q' Code is in fact capable of being either a question or answer depending on how you use it.

In these early days, the QSL card was simply a confirmation of contact with the sending station's callsign/number and address on it, with of course, all the details of the QSO. After a while, these cards changed to become more decorative, more than just confirmation of contacts, but items worth collecting for themselves! Then, with the growth of CB in America and Europe and the use of the high power "burners" (amplifiers) which increased the range of contacts for the AM Cber, the QSL cards of the radio amateurs were looked upon with envy. So, in time QSL cards grew to be part of the

CB scene all over the world, until finally, it became acceptable to collect these cards even if you didn't have a rig (radio) of any kind. Then, at long last, CB came to England, first in the shape of those "naughty" AM rigs with their hundreds of channels in the back of lorries' cabs and so on. Then, after much campaigning, an FM system was allowed by HMG. By this time, QSLing was well established all over the world and was gathering momentum here in the UK. There are two main schools of thought about CB QSL cards. There are those who feel that QSL cards should be left to the radio amateurs and only used as the 'Q' code says i.e. for confirming contacts. While the other groups classes QSLing as a hobby and as a way of making friends. Whether there is any right or wrong side to this I would not like to say. Surely there is enough room for both points of view. For myself, well I guess I belong on the second side.

Right, so you want to start QSLing. Well, the first thing you need, after some money to get your cards, is a handle or Call Sign. You can use your CB handle but for a QSL card it should really suggest an illustration for your card. For example, "Mirage" may sound great on the air, but how can you draw it? (I'll probably get a nasty letter from "Mirage" now, ah well.) Some ideas for your handle could come from your work, hobbies, or TV or pop favourites, the list is pretty well endless. So, you've picked your handle, what now? Now comes one of the hardest parts: can you draw it? If not, then you could ask a friend who can, or see an artist, or just contact a printer. The thing you don't do is nip down to you local photocopy shop and get some paper copies run off. Why? Well this hobby is QSL card swapping and collecting. Many people, especially overseas, will not accept paper QSLs. I am not knocking these, I just want to point this out to you. The thing is to get your design drawn up, and then consider what type of card you want. Before I list some of the different types available, let me just tell you of my own experiences when I started (many years ago). I'd picked my handle (I'm not saying what it was, I'm still trying to

live it down!), drawn a rough sketch, with my design in the centre of this card, placed my address clearly on it (very important!) and a few other details like a set of picture frames with the numbers and a car in them. The numbers? There are numbers and there are numbers. A few examples of the more common ones are 73's and 88's (or 3's and 8's) which mean "love and kisses", so watch who you say them to! 51's 55's and various others mean "best wishes" and the like. I then went to a local firm who quoted £6 for a hundred. After this I found another firm who did them at £40 a thousand. Just black on white card copies. Not printed mind you, only photocopied and at that price! At this time, you must remember that QSLing was in its infancy in the UK and there were very few firms who would specialise in QSL card work. Happily this has now changed as there are many QSL card printers, and I'll give examples a little later on. Finally, I managed to find a mail order firm who specialised in QSL cards. I contacted them and received my first printed card. Actually, this was a club card with my details printed on and I used it mainly as a "floater". Floaters are the additional cards you should use to send to people who will then pass them out with their swops and in this way, your cards start to circulate.

Since then, as many people will know, I started my own club and have had many thousands of cards from this printer. I've tried a couple of other printers for different cards but for the largest and most regular orders, I've stayed with this original printer. As I said earlier, if you don't feel too keen about designing your own card, then I do suggest asking the printer of your choice if he has an artist who can do it for you. Most printers do have at least one and can probably help arrange this.

## Variety

There are many different types of QSL cards about these days, ranging from the individual home-made variety, up to the full-colour collector series. I'll try to explain some of the different styles here starting with the home-made variety. These are like my very first card; you do the design, and draw and colour each one yourself, or get a photocopy made and colour them in as you need them. There are several types of photocopy machines about and if you try this method, avoid the "wet" copy type as no one will want to collect them as they copy dirty and the stink is terrible. In addition, photocopying is expensive and with so many QSL card printers about now, it is often cheaper to get a card professionally printed.

Moving on to the printed type of cards, again there are as many of these as there are printers! These can range from simple "stock" designs of one colour ink on various colour card available at prices like £2 per 100 on which you put your address etc on, to two or three-colour ink on gloss cards



at quite a bit more! Some printers use lithography machines, while others use a typewriter to set up a card and so on. Deciding on the type of design you want can help you to choose the printer. One way of getting some ideas of the different types of these is to look through the QSL cards shown most months in this magazine, or to ask a local QSLer where he gets his printed if his design and style appeals to you. If you are unsure if you have any local QSLers, you could try giving them a shout on a rig sometime. They will probably be very happy to help.

## Cartoon

Then, there are the "cartoon type" cards. Now, when I say cartoon type, I don't mean a Bugs Bunny effect or whatever, it's just that I'm not quite sure what category these would fall into. The designs are very well printed, but not as line drawings, nor are they eight or nine-colour types. As a rule, they are usually on gloss card, with one background colour and one or two other colours available for the sketch. There are so many printers in the States and Europe that do this type, it is impossible to even guess at the prices. Also, there is a Belgian printer who does the cartoon type in full colour, which some people feel rival POMA and the like: Next comes the "gold-blocked" type. Now, as far as I know these are printed only in the UK and by just a couple of firms. The last price I heard was in the region of £6 per hundred, but many of these card holders feel that the higher price is worth it. These cards come in several colours (of card) and with either gold or silver foil for the design. These cards are, I believe, made with a heat treatment of some kind. Highly collectable, especially the later designs.

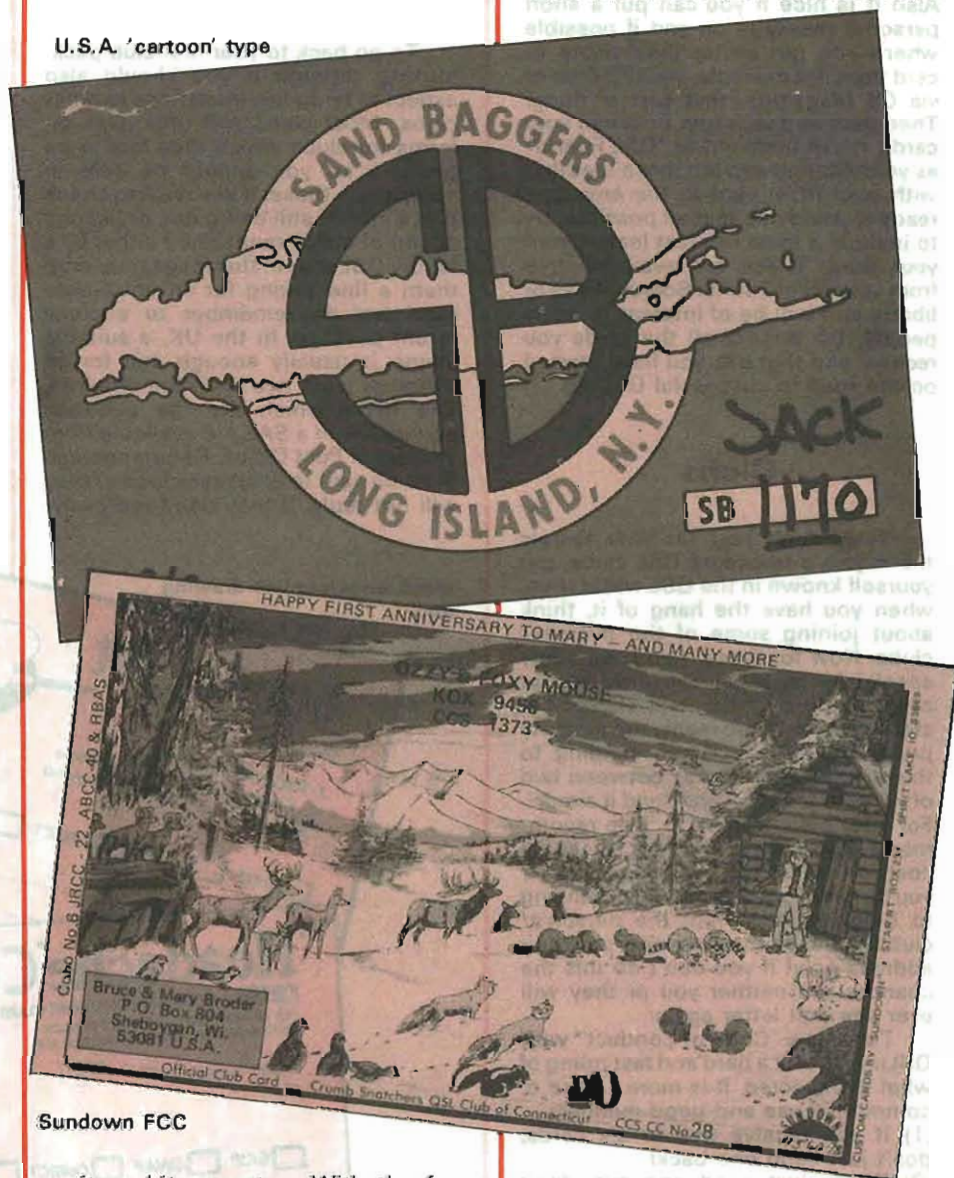
Finally in this roundup of card types, the FCC Cards, or Full Colour Collector Series. I think that most people agree that these are the top card that you can get, and there are many different series of these. In Europe there are POMA, DB, BBM etc. In America the main two seem to be Sundown and Little Queen series. The prices vary tremendously, but as an example, one thousand POMA cards printed and delivered here in the UK costs (at present) £53 for a new design. Now, collecting these cards is slightly different to other types of cards in that they are Collector Series and other holders of the same series will want several of our cards for their collections, usually blank, i.e. not signed or dated. If you should decide to go for one of these series at any time, be prepared to get letters like "Please send 25 (or 50) of your card number ./. . . . and I will send you 25 (50) of mine." They are part of a series which people collect, before they are QSL cards in the usual sense. As you see, a new design is highly desirable and sought after. Obviously, there are good printers and bad printers, just as there are good and bad QSL clubs. One source here in the UK of some of the recommendable

clubs and printers etc is to keep reading "Communication the QSL Way" elsewhere in this very magazine each month.

Okay, so you've now received your cards from the printer and you want to start to collect other people's cards and swopping with yours. How do you go about this? Well, to start with you should have a look through the QSL pages as I do try to give a mention only to clubs which are genuine, though of course I cannot list all of these at once. There are just too many! Looking through the lists you should have noticed that there are two main types of QSL club here in the UK; paying clubs and free membership clubs. With the first you pay for your membership number, but you also receive (as a rule) a club stamp, some club cards and

in the details asked for, usually your name, address and handle. You send the form with the correct amount of QSL cards asked for plus any money required by the club or, if it is a free membership, a suitable stamped addressed envelope for the return of your package. Now one very important point is that you cards are *your* cards and should *each* show *your* return address on them, otherwise how do you expect to get any replies? A few clubs do operate a "mail-forward" service, but as a rule, only when a supply of SAE's are provided by you! If you decided on stock cards, ie: those without your address and details printed on, then rather than write your address onto each, I do suggest you contact a label printing firm who can do a thousand labels for about £2.50. Much

U.S.A. 'cartoon' type



Sundown FCC

quite a bit more too. With the free membership clubs, your number is free for the cost of postage, but club cards and club stamps are usually available as optional extras.

To join any QSL club is usually quite simple but I'll run through it using, as an example only, the XYZ Club. As far as I know, there is not any club called XYZ! Right, you've either obtained a form for the club, or taken the details from the magazine, you fill

easier to read and much neater too.

One other point about joining a club: you should really use personal cards as against either stock cards or, even worse, another club's cards. Some clubs do not mind this practice, but others do specify personal cards and consider it an insult if you join using other clubs' cards to join them. Club cards are perfectly acceptable as



floaters or to fill out your QSL package when used with your own cards, as are indeed stock cards.

Until you get established and "get the hang of it", I do really recommend that you stick to joining a few of the UK clubs before trying for the overseas ones as they do have their own special requirements. Anyway, you've sent off your cards etc to a club, and after a short wait (which varies between clubs!) you finally get your first club package through the slot in the door, although many are too big for the average letter box! In it you should have found a bundle of mixed cards, or floaters. What you should do with these is, for each one, fill out an envelope with the address as on the card, fill out one of your cards to the name on the card, date and sign it. Also it is nice if you can put a short personal message on and if possible where you got either their name or card from, for example, via XYZ Club or via CB Magazine, that sort of thing. Then date and sign four or five of your cards, make them out to "QSL Friend" as your floaters and put these together with your main card in the envelope ready to send out. If at all possible, try to include a local interest leaflet from your area. These are available free from your local Tourist Board offices or library and will be of interest to many people. Do this for all the cards you receive and that's it; you have started on the road to successful QSLing.

## Clubs

Now, don't rest on your laurels there, join a few more QSL clubs, get yourself known in the QSL world then, when you have the hang of it, think about joining some of the overseas clubs. Now for these, I do have a few special hints. Most will only accept cash, some of these will accept UK sterling, but not too many, the majority prefer US dollars. When sending to these, pack your money between two of your cards safely, and send it airmail. For your own protection, I do recommend Registered Post for these, it costs an extra £1.10, but if it gets lost, you do have some comeback. If sending to Belgium, *never* put the person's/club's name on the envelope, use their address only! If you don't do this the chances are neither you or they will ever see that letter again:

There is a "Code of Conduct" with QSLing. It isn't a hard and fast ruling of what is expected, it is more a case of common sense and good manners.

- (1) If you receive five or six cards, don't just send one back!
- (2) If you just send one out, don't expect very much back!
- (3) If you use Surface Mail, don't expect a quick reply.
- (4) When QSLing, always try to put on the card where you received their name or card from.
- (5) Use your club stamp(s) on your cards, especially if the other person is also a member of that club.
- (6) When you receive some floaters from other people, put one or two of

them into your package, make it a package you would like to receive.

Now, while on the subject of packages, please do not forget that a first or second class stamp allows for 60 grams of weight! When you start sending large packages this is soon passed, so check your packet's weight before posting and add any extra postage needed. Otherwise your new friend will be rather upset when the postman insists on payment before delivery! The 60 grams mentioned of course only applies to the UK. For Europe, the present cost is 22p for 20 grams, and for Airmail the costs *start* at 29p for only 10 grams.

## Pack

To go back to your first club pack, looking through it you should also expect to find a few invitations to other clubs. Most clubs will only pass on forms for clubs which they feel to be genuine so you should be safe in applying to these. If you wish to check that a club is still being run, or like the sound of a club mentioned either by a fellow QSLer or in this magazine, drop them a line asking for an up-to-date form but do remember to enclose return postage. In the UK, a suitable stamp is usually enough, but for an overseas club, two IRC's are required. The IRC's which are the overseas equivalent of a SAE are available from your local Post Office. Return postage must be sent to overseas clubs or they will not reply. If they don't reply any-

way, you will have lost 70p or so, but that is much better than £10 to £15! In addition you will have a small bundle of application forms for the club you joined. With these you are asked to pass them along as you QSL as you will hopefully be willing to recommend it to others. Remember, you do have a few sources of information where you can ask about a club you may be thinking of joining. These are the club(s) you are already a member of, and of course you can write to me, either via this magazine or direct. (My address is given each month at the end of the QSL column.) Whichever method you choose, do enclose return postage to help get a reply back. One important thing I do ask you to do is make sure that each of your cards has your address on it, and also put your return address on the envelope! This is so that in case of problems like someone has moved, or the address is wrong anyway, the Post Office do not have to open your letter, thus risking loss of the contents to find out who it should go back to. I have a special sticky label with my details on which I put on to all my envelopes. It's well worth it, and in case of problems, that letter will come back much quicker!

## Friends

In addition to just joining QSL clubs as mentioned in this magazine, don't forget that the list of names are

Black on white line-drawing type



Dual-coloured gloss card



### TABLE 1

**QRA** What is the name of your station? The name of my station is . . . . .

**QRB** How far approximately are you from my station? I am approximately . . . Km

**QRG** Will you tell me my exact frequency? Your exact frequency is . . . kHz (or MHz)

**QRH** Does my frequency vary? Your frequency varies.

**QRI** How is the tone of my transmission? The tone of your transmission is . . .

**QRK** What is the intelligibility of my signals? Your intelligibility is . . .

**QRL** Are you busy? I am busy, please do not interfere.

**QRM** Are you being interfered with? I am being interfered with.

**QRN** Are you troubled by static? I am being troubled by static.

**QRO** Shall I increase transmitter power? Increase transmitter power.

**QRP** Shall I decrease transmitter power? Decrease transmitter power.

**QRQ** Shall I send faster? Send faster.

**QRR** Are you ready for automatic operation? I am ready for automatic operation.

**QRS** Shall I send more slowly? Send more slowly (. . . . . words per minute).

**QRT** Shall I stop sending? Stop sending.

**QRU** Have you anything for me? I have nothing for you.

**QRV** Are you ready? I am ready.

**QRW** Shall I inform . . . . . that you are calling on . . . kHz? Please inform . . . . . that I am calling on . . . kHz.

**QRX** When will you call me again? I will call again at . . . hours on . . . kHz.

**QRZ** Who is calling me? You are being called by . . . . . on . . . kHz.

**QSA** What is the strength of my signals? The strength of your signals is . . .

**QSB** Are my signals fading? Your signals are fading.

**QSD** Is my keying defective? Your keying is defective.

**QSI** I have been unable to break in on your transmission or Will you inform . . . . . that I have been unable to break in on his transmission on . . . kHz.

**QSK** Can you hear me between your signals and if so can I break in on your transmission? I can hear you between my signals, break in on my transmission.

**QSL** Can you acknowledge receipt? I am acknowledging receipt.

**QSN** Did you hear me on . . . kHz? I did hear you on . . . kHz.

**QSO** Can you communicate with . . . . . direct? I can communicate with . . . . . on . . . kHz.

**QSP** Will you relay to . . . . . I will relay to . . . . .

**QSR** Shall I repeat the call? Repeat your call.

**QSS** What working frequency will you use? I will use the working frequency . . . kHz.

**QSU** Shall I send a reply on this frequency or . . . kHz? Send on this or . . . kHz.

**QSV** Shall I send a series of V's on this frequency? Send a series of V's.

**QSW** Will you send on this frequency with emissions of class . . . ? I am going to send on this frequency with emissions of class . . . . .

**QSX** Will you listen to . . . . . on . . . kHz? I am listening to . . . . . on . . . kHz.

**QSY** Shall I change to transmission on another frequency? Change to another frequency.

**QSZ** Shall I send each word or group more than once? Send each word or group more than once.

**QTH** What is your location? My location is . . . . .

**QTQ** Can you communicate by means of the International Code of Signals? I am going to communicate by means of the ICS.

**QTR** What is the correct time? The correct time is . . . . . hours.

**QTS** Will you send your call sign for tuning purposes? I will send my call sign for tuning purposes.

**QTV** Shall I stand guard for you on . . . kHz. Stand guard for me on . . . kHz.

**QTX** Will you keep your station open for further communication with me? I will keep my station open for further communication with you.

**QUA** Have you news of . . . ? Here is news of . . . . .

**QUM** May I resume normal working? Normal working may be resumed.

### TABLE 2 (Most often used 'Q' Codes and other abbreviations)

**QRT** Closed down or Closing down.

**QSK** Station standing by.

**QSL** Verification card, confirm contact.

**QSO** Radio contact.

**QTH** Location (10-20)

**IRC** International Reply Coupon

**OP** Operator

**PSE** Please (QSL)

**SASE** Self Addressed Stamped Envelope

**TNX** Thanks (QSL)

1 - 4 - 1 means that you will swop

the same number of cards as you receive.

### QSL Card Printers

D. Curries, 89 Derwent Street, Blackhill, Consett, Co. Durham, DH8 8LT.

POMA (Belgium) contact via UK Rep, Ray, P. O. Box 106, Canterbury, Kent, CT1 3YN.

D'Zine of Preston, 36 Cannon Street, Preston, Lancs.

C. D. Jones, St. Ivy, North Road, Queensborough, Kent, ME11 5ET.

QSLers who would like to see your new card, so drop them a line and a few cards and ask for some of theirs.

Above all, QSLing is all about the swopping and collecting of cards, and making new friends all over the world. It is not cheap, especially when it comes to posting your many envelopes out, but it is *fun!* Happy QSLing!



Gold block example



European BBM 'cartoon' type FCC



# UNDERSTAND PLL SYNTHESIZ

**T**here are many electronic methods of generating the operating frequencies for radio communications equipment. Amateur radio, taxis, police, aircraft, marine and CB radios use various techniques that are ultimately determined by the end use of the equipment.

For example, amateur operators are allowed the use of a continuous band of frequencies, so for this reason ham equipment generally makes use of a single main tuning dial for frequency control. Police, taxis, or business band users are limited to a handful of assigned channels; a simple front panel switch can be used to switch among specific crystal-controlled oscillators. In the middle 1970s, with the great boom in CB popularity, new techniques were required because of the large number of channels involved. A method was needed which could generate a great number of frequencies with a minimum of parts, physical space, circuit complexity, and of course, cost. Thus the PLL or "Phase-Locked-Loop" Frequency Synthesizer was developed. To "synthesize" simply means to combine many parts into a whole to perform some function.

The PLL has attracted a great mystique and there is often an 'information gap' between the CBER's interest in the technical aspects of radio and the available information, so basic operation of the PLL Frequency Synthesizer will be described in the most non-technical manner possible. A thorough understanding of this subject is essential to the CB serviceman or hobbyist who seeks the maximum performance and operating flexibility from his equipment. By using examples from the American CB service (as I am most familiar with it), the reader will learn how the basic principles are applied to the UK CB service.

## Brief History & Development

A major pressure for developing the PLL synthesizer was the American CB expansion from 23 to 40 channels in 1976. Until then, American radios used a method of frequency generation called "crystal synthesis" or "crystal-plexing." By combining a minimum number of quartz crystals in a common oscillator and the proper switch arrangement, all the required frequencies could be obtained by using only 12 or 14 crystals on AM (with only a few more for AM/SSB). This is a tremendous saving when one considers that otherwise at least 46 crystals would be required, one pair for each channel.

By the time the American FCC announced its CB expansion from 23 to 40 channels, the technology for digital frequency synthesizers was well along, and in fact the last generation of 23-channel U.S. equipment had already begun to use PLL techniques in place of crystal synthesizers. Those first designs were very complex because the use of many integrated circuits (ICs) was required, and early PLLs contained as many as 10 separate IC devices. As technology advanced, it became possible to build more and more electronic functions into a single IC "chip"; today's PLL-synthesized CB radio performs all the needed functions of channel selection and generation using only a single LSI (Large-Scale-Integration) PLL chip and a handful of external parts.

Due to the huge number of CB hobbyists all competing for a limited number of channels, the use of illegal and unauthorised frequencies in the U.S. is very common. It was discovered quite early on that the PLL circuit could be easily modified to include many more than the "legal" 40 channels. The American FCC therefore required CB manufacturers to employ special PLLs which could not be easily modified, and we'll return to this subject later. The Home Office took a lesson from America and skipped the intermediate step to modifiable PLL ICs, going directly to the tamper-proof designs. Because of the great number of illegal American and European-made CBs already in the U.K. using the simpler PLL methods, and because these devices are basic to understanding more sophisticated PLLs, they will be emphasised here. Later we'll discuss the most recent PLL technology.

## The Basic Circuit

The PLL Frequency Synthesizer as used in CB radios is actually very simple in principle. The biggest stumbling block in describing the PLL is, "Where in the loop does one begin?" It's a little like the old chicken-vs.-the-egg question. The PLL is a closed system similar to a merry-go-round, with no beginning or end, but regardless of where you jumped on, you'll go around the loop and return to your particular starting point. If one understands how each major building block in the PLL relates to the rest, it will eventually be quite easy to view any PLL circuit as a sort of "black box" within the larger radio box. With the newest PLLs containing more and more on-chip functions, this is the only proper way to consider it because any PLL repair means replacing the whole IC anyway. Keep in mind the primary objective of the PLL is to create a large number of frequencies with a minimum of parts and complexity. It's all made possible by the use of digital techniques exactly like those used in any digital computer. In fact the PLL IC is a special function computer. The word "digital" as used here refers to an electronic device which can only recognize two distinct states. These states may be called "On" or "Off", "High" or "Low", "1" or "0", etc.

Figure 1 illustrates the basic elements of any PLL system. Arrows indicate the direction of signal flow. It can be seen that the flow simply revolves in a big circle or loop such that we can "jump on" anywhere, for the purposes of our discussion. The major components shown are:

1. Reference Oscillator & Divider;
2. Programmable Divider;
3. Phase Detector & Loop Filter;
4. Voltage-Controlled-Oscillator (VCO).

## Reference Oscillator & Divider:

This sub-circuit is connected to the outside world through an ordinary crystal oscillator. The oscillator operates almost universally at a frequency of 10.240MHz. The reason is because with digital techniques, it's very easy to divide a signal of 10.240MHz by the number 1,024. If this is done, the result is a signal of 10KHz, which just happens to be the required channel spacing for CB use. (All countries using CB allocate channels at



# ING CB ZERS

Lou Franklin  
("Supersparks")  
explains how  
frequencies are  
generated via a  
Phase Locked Loop

10KHz spacings, including the British system. The fact that the British frequencies have been given "odd" assignments relative to other countries has no effect on PLL operation and the final operating frequency can be easily adjusted as required). The Reference Oscillator & Divider provide a very stable comparison standard against which all other frequencies will be synthesized.

## Programmable Divider:

This is really the heart of the PLL synthesizer and is what makes it unique. By connecting it to the outside world through the Channel Selector switch, the operator is in effect commanding the Programmable Divider to divide its received signal by a specific number, called an "N-code." The N-codes are numbers derived from the digital or "binary" number system (Base 2) rather than the common decimal system (Base 10) used by people. Each position of the Channel Selector changes the N-code by connecting either a positive DC voltage or earth to the appropriate pins on the PLL's Programmable Divider. Sometimes a special variation of the N-code, called "BCD" or "Binary-Coded-Decimal" is used because there is already a great deal of support hardware available which uses BCD, such as the 7-segment LEDs which display the channel numbers. Most PLL chips contain from 6 to 9 programming pins and the number of available program pins has a direct effect upon the number of channels which can be synthesized. A specific example will be shown shortly.

## Phase Detector & Loop Filter:

This circuit receives the two signals from the Reference Divider and the Programmable Divider and compares them, trying to make an exact match. We've already seen that one input signal (the Reference Divider) will always be exactly 10KHz ( $10.240\text{MHz} \div 1,024$ ). However, the input signal from the Programmable Divider may not necessarily be exactly 10KHz, in which case an error exists. If this happens, the loop is said to be "out of lock" or "searching." The purpose of the Phase Detector is to bring the loop into lock through an appropriate command. The command it uses is a DC correction voltage, (+) or (-) as required, that is applied to the next PLL element, the VCO. Most Phase Detectors also contain a second output terminal, called a Lock Detector. If the error between the two incoming signals is vastly different, the Lock Detector produces a signal which will shut down the transmitter to prevent off-frequency operation.

Immediately following the Phase Detector is a circuit called a Loop Filter. Its purpose is to smooth out any sharp variations or transients coming from the Phase Detector which might otherwise be perceived as false commands. Digital signals require a high degree of purity to operate correctly. The Loop Filter may consist of a few external parts such as resistors and capacitors, or an actual on-chip circuit within the PLL device.

## Voltage-Controlled-Oscillator (VCO):

The VCO is a unique circuit having many electronic uses besides CB, such as TV Automatic Fine Tuning or AFC on an FM stereo receiver. Basically it's an oscillator whose frequency is determined not by a quartz crystal or

discrete coils/capacitors, but rather by a special voltage-sensitive device called a "varactor" diode. Changing the DC voltage applied to a varactor changes its capacitance, which in turn shifts the oscillator frequency. The VCO's output is fed back to the Programmable Divider section, where the Phase Detector then decides whether or not a 10KHz signal exists. If so, the loop is locked up on the correct frequency. If not, the Phase Detector senses this error and sends a DC correction voltage to the VCO. This drives the VCO up or down in frequency until a match occurs and the loop locks. Although it may take many such comparison cycles before an exact match is found, the entire process occurs in a fraction of a second.

This brings us full circle around the loop and completes the basic PLL theory. Additional functions which are usually included in the PLL circuit are intended to increase its flexibility and to provide other convenient signal sources which are used elsewhere.

## Frequency Mixing

It's essential to understand another basic radio principle closely associated with PLL synthesis; namely, the principle of "heterodyning" or mixing together two different signals to produce a third. Whenever two frequencies are mixed together, the result is two new frequencies in addition to the originals. These two new frequencies are simply the sum and difference of the originals. For example, by mixing a 10MHz and a 15MHz signal together, the result will be 10MHz, 15MHz, 5MHz ( $15\text{MHz} - 10\text{MHz}$ ), and 25MHz ( $15\text{MHz} + 10\text{MHz}$ ). By then passing these components through selectively-tuned circuits, only one of the mixing products will be retained and the other rejected. The mixing process is important to PLL circuits because it provides other needed signals that operate radio sections having nothing to do with channel generation. Of course these other signals could be generated by the use of individual crystal oscillators or variable oscillators but this would add cost and complexity to the radio. CB mixer circuits may be designed using only a single transistor or IC and a handful of other parts so the logic is to use whatever is already available.

## Intermediate Frequencies (IF)

The reason that mixing is even required at all is because signals at 27MHz are much too difficult to process directly. This is considered a rather high frequency and it is much more desirable to convert such a signal to some other frequency, usually lower. By doing this we gain the best possible stability, receiver sensitivity and selectivity. In addition there is a vast amount of existing electronic hardware using certain standard values; this also saves on manufacturing costs.

Since the PLL circuit is already generating several kinds of signals, it's easy to borrow these existing signals for other uses within the radio. Such uses centre around the production of the "Intermediate Frequencies" (IF) which operate the receiver section of the CB transceiver. The signals are mixed or "injected" into the 27MHz signal chain to produce the more workable IF frequencies.

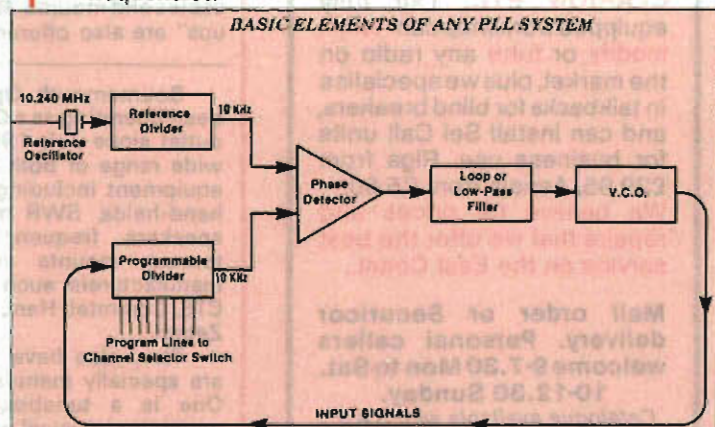


Fig. 1 Next month, Lou Looks at a real PLL synthesizer to see how an on-channel signal is generated.



# TAKING

What exactly can CB dealers offer customers? W

## TV RADIO SERVICES

106 London Road, Apsley,  
Hemel Hempstead

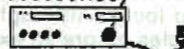


All makes  
of telephone  
plus fitting  
service

from  
£11.95

C.B.

C.B.'s  
Aerials  
Accessories



Repairs done on all C.B. and  
Telephone Equipment

Call us on H/H 56107

## ROGER DEE

20 LONDON ROAD  
DUNTON GREEN  
SEVENOAKS, KENT

934MHz specialist  
27MHz FM

Phone 0732-73-813

## TREADORS

DAVID BULL G6PJE

Tel: (0582) 391233

213 High Town Road,  
Luton, Beds LU2 0BZ

934 STOCKISTS

Open: 9-5.30 Mon-Sat. Closed Weds.

C.B. Specialists, full service facilities.

Large range of CBs and equipment including  
Uniface, Oscar, DNT, LCL, Transcom, SOS, Maxcom,  
Harry Moss, Grandstand, Audioline, Fidelity, Murphy.

## 934 EQUIPMENT

Cybernet Delta One and Commetel NPR rigs.  
Suppliers of the full range of NEVADA Products.

## COASTAL C.B. & TROPHY CO.

127 Old Road, Clacton-on-Sea,  
Essex. (0255) 74292

We stock a full range of C.B.  
and in-car entertainment equip-  
ment including **UNIACE,**  
**AUDIOLINE, HARVARD,**  
**CYBERNET, PANASONIC,**  
**CLARION ETC.** Our fully  
equipped workshop can **repair,**  
**modify** or **tune** any radio on  
the market, plus we specialise  
in talkbacks for blind breakers,  
and can install Sel Call units  
for business use. Rigs from  
£29.95, Aerials from £5.50.

**We believe for prices and  
repairs that we offer the best  
service on the East Coast.**

**Mail order or Securicor  
delivery. Personal callers  
welcome 9-7.30 Mon to Sat.  
10-12.30 Sunday.**

Catalogue available with S.A.E.

TV Radio Aerial Services of London Road, Hemel Hempstead handle most makes of CB equipment, in addition to cordless phones and aerials. The proprietor, Nick Gee, has been in the aerial business since 1969, and branched out to cover CB four years ago. The shop has a reputation for excellent after-sales service and first-class repairs. The shop covers two floors and repairs are done on site. These repairs include CB, TV, hi-fi and video.

Treadors, of High Town Road, Luton, offer a large range of CBs and accessories including equipment by Uniace, Oscar, DNT, LCL, Transcom, Harry Moss, Maxcom, Audioline, Cybernet and Commetel. Proprietor David Bull is a radio amateur with 9 years RAF electronics experience and a further 10 years in computers. He is also founder member of the Romeo Lima Mad Hatters QSL and DX Club. There are usually special offers to be had, as well as a range of second-hand equipment. Dave also offers a speedy repair service with a basic service charge of only £4.60 for a complete "set-up" to Home Office standards.

CB Radio and Model Hobbies are a little off the beaten track, tucked away at the bottom of Parndon Mill Lane in a garden-type setting. They specialise in the leisure/hobby business and stock CB, radio controlled equipment, in-car radio, in-car phones and answering machines. They stock many makes and models including mobiles from £25 to £200, bases from £55 to £250, power mikes (mobile and base) from £7.50 to £80 and hand-helds (3 to 40 channels) from £19 to £49. Accessories include SWR/power meters, echoes, pre-amps, filters, antennae, cables and mounts. Repairs and "tune-ups" are also offered.

Bournemouth Open Channel has been operating as a CB radio specialist outlet since July 1981. They stock a wide range of both 27 and 934MHz equipment including mobiles, bases, hand-helds, SWR meters, extension speakers, frequency counters, antennae, mounts and cables from manufacturers such as Altai, Bremi, CTE, Commetel, Ham, Lemm, Sirtel and Zetagi.

They also have two items which are specially manufactured for them. One is a tunebox/sequential tone generator (musical or multi-tone roger bleep) which will fit into any type of

transceiver. Equally popular is their channel 9 priority scanner which alerts the user when a signal appears on channel 9. The shop recently expanded and is now three times the original size. The range of goods, too, has expanded and now includes in-car entertainment, telephones, radios and cassettes and various audio accessories. As well as their own workshop, they also sell service aids and tools. For the DXer, Open Channel run their own DX club with more than 150 members.

Ratchet Shack of Bells Arcade, Newbury, have been operating for five years and sell a very comprehensive range of CB rigs and accessories. There is a very heavy accent on the repairs and servicing side of the business and proprietor David Stamp spends a lot of time organising modifications and customising rigs for motorcycle use, selective calling for local farms etc. They have a fully kitted-up workshop and the shop is open from Monday to Saturday 9am until 6pm.

Up in Manchester, CB Centre Base 1 can offer a wide range of CB equipment. Although they mainly concentrate on the wholesale side, their retail outlet is well worth a visit. It is a family business and they aim on pleasing the customer. They offer the usual guarantees and also sell via mail order. Special offers can usually be found most of the time and, with long experience in the world of CB, they can also offer servicing, repairs and modifications.

Truck King of Watford, Hertfordshire, have been trading since 1979 and provide a wide range of equipment for CBers and truckers. A look at any of their advertisements in this magazine will give you an idea of the kind of equipment they stock. They also run a mail order service, whereby all items are individually checked, tested and guaranteed. They recently published their latest catalogue, with over 300 items listed and described. Part-exchange and, naturally, secondhand equipment are also available.

One of the growing number of CB shops specialising in 934 is Breakers' World in Bordon, Hants. The shop has much to commend it. Unlike many



# STOCK

look at just a few to see what's on the shelves



others, who have diversified into phones and answering machines, Breakers' World deals only with CB. The business started out as a hobby four years ago and just snowballed from there. Such is the owners' love for CB that they claim profit-making is secondary. They are totally committed to CB, have discovered what works and what doesn't, and will not sell anything they don't believe in. You won't find anything "cheap and nasty"

there — even their mountings and co-ax are top-quality only. They have a fully-equipped workshop and are soon to expand into the marine world. Definitely a shop for the enthusiast.

Roger Dee of Thyra Court, Nottingham have been in the business for five years and stock a very large range of 27 and 934 equipment. They specialise in all aspects of 934, in-



**BREAKERS  
WORLD**  
2 High St.,  
Bordon, Hants.  
Tel: (04203)  
4684

**JAPANESE 934 SYSTEMS**  
(they really work), available for  
demonstrations.

See ad in Breaker Bases  
Page 56 for opening times.



## CB WORLD

2 Market Way, Portsmouth,  
Hants. PO1 4BX  
Tel: (0705) 732234

Large selection of rigs,  
twigs, microphones, power  
supplies, SWR plus Power  
meters and accessories.

For price list  
send S.A.E.



## MITIER TELECOMMUNICATIONS

The Parade, Cherry Willingham,  
Lincoln. Tel: (0522) 754279  
Full range of 27MHz & 934MHz  
equipment.

Lincolnshire agent for Nevada  
934MHz

Also

Telephones and associated devices

Well equipped workshop.  
24 hr answering service.

Free parking for up to 50 vehicles

## CB1 Centre Base 1

433 Wilmslow Road,  
Withington (opp. Library)  
Manchester M20 9AF  
061-445 8918 & 061-434 5701

Pama & Co started dealing in CB  
and accessories about 5 years  
ago. As Pama & Co we wholesale  
to other outlets within a 200 mile  
radius (approx.).

We are the leading retail shop in  
Manchester, better known as  
**Centre Base 1 (CB1)** and we  
cover the largest range of rigs,  
aerials and accessories.

Main agents for all the leading  
brands as shown in this magazine.

We do an exclusive 40 channel  
scanner on our mail order service  
— please 'phone with your  
requirements.





**IMAGEFREE COMMUNICATIONS**  
 1-3 Station Road, Rainham, Kent  
 Tel: Medway (0634) 373960 Ext. 2  
 Open 7 days a week, also Mail Order  
**27MHz 934MHz**  
 P.M.R. Cellular  
 Radio, Telephones, Answer Machines,  
 Pagers and Intercoms.  
 Secondhand units in 27MHz and  
**934MHz** available.  
 Agents for Nevada, Crest, Comtel,  
 Les Wallen. Fitting service.  
**Communications our speciality**  
 Visa and Finance available.

**Lincs & South Humberside CB Centre**  
 201 Freeman Street, Grimsby,  
 South Humberside DN32 7AS  
 Tel 0472 360037  
 Agents for  
**Cybernet, Nevada 934MHz**  
 equipment  
 Full range of components available  
 for all your CB requirements  
 (Wholesale and retail)  
 Mail order welcome 

**CIVIC**  
 We have the best stocks in  
 the area of CB equipment  
 \* Repairs \* Aerial Erection  
**44 Mill Street, Bedford**  
**Tel: 68174**  
 AGENTS FOR NEVADA 934

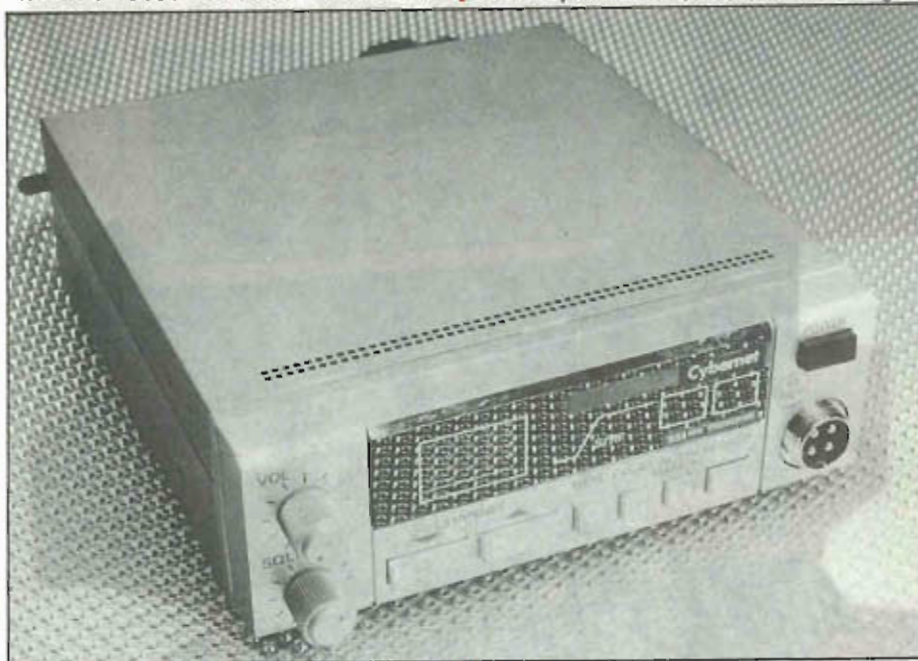
  
**Unit 6, 8 Bells Arcade,**  
**Newbury, Berks.**  
**Tel: (0635) 31451**  
 Complete range of all C.B.  
 products including selective  
 calling and modifications.  
**Repairs to all equipment.**  
 Mail order. Credit facilities available.  
 Open 9am-6pm  
 Monday-Saturday Inc. 

cluding repairs, modifications and accessories. As many readers will know, they have an excellent reputation for their repair service and it's very much a labour of love for proprietor Lloyd Fuller. The shop is soon to expand by moving into the premises next door, thus enlarging it to four times its original size.

Down in sunny Clacton-on-Sea, Coastal CB and Trophy are celebrating six months in the CB business. They stock a full range of radios, antennae, car cassettes and speakers. Apart from famous names like Uniace, Audioline, Harvard and Commtel, they can also supply "talking rigs" for the blind, which are specially adapted rigs on which a robot-like voice informs the

retailers. Equipment covered includes names like Nevada, Cybernet, Zenith and AKD and the ranges include rigs, meters, echo units, speech processors, pre-amps, extension speakers and amateur radio equipment. Their mail order business can offer same day despatch and they recently published their latest catalogues for 27 and 934MHz equipment, available for £1 each.

Lincs and South Humberside CB Centre is in the main shopping centre of Grimsby and has been trading since March 1981. They stock as wide a range of CB equipment as they can get their hands on and offer a full backup and repair service, thanks to their large



operator that they have selected channel 19. They are also hoping to break into the 934 market and have an extensive workshop, where repairs are carried out by an ex-Marconi engineer.

Telecomms of London Road, Portsmouth, are now firmly established in the CB world, both as distributors and





stock of components. As well as retailing components, they also wholesale, under the trade name of Tower Components. In addition to CB equipment, their huge premises also houses cordless phones, computer software and audio and TV equipment.

Communications of Rainham, Kent, opened in November 1981 and, as well as stocking a wide range of CB equipment such as Bremi, Les Wallen, Nevada, Cybernet etc, they also deal in cordless phones, answering machines and video equipment. They specialise in 934 and believe that communi-

man in charge and, with over 18 years' experience as an electronics engineer as well as being a licenced radio amateur, he knows a bit about communications, to say the least! Repairs, modifications and conversions are all carried out in a fully-equipped workshop and Mike carries out all tune-ups himself.

CB World down in Portsmouth have been trading for three years and stock most makes of CB equipment, along with cordless phones. They also offer servicing, repairs and mail order. The accent is on friendly service at CB



cations in general will be the thing of the future. Favouring a "go-ahead" approach, Communications also offer servicing, repairs and installations.

Mitier Telecommunications are situated just over three miles to the east of Lincoln and, for the last three years, their immense showrooms have housed what is claimed to be the widest range of CB equipment in Lincolnshire — everything from Maxcom to Shogun, in fact. Mike Cutler is the

World and, to this end, they have an "eyeball room" where breakers can meet and chat — and drink free coffee on Saturdays. They say all breakers are welcome for eyeballs or QSL swaps and they even offer a PO Box number free of charge.

Civic of Bedford have been dealing with CB since 1979. As well as covering 27 and 934MHz, they also sell cordless phones and TVs. Their range of stock includes "virtually everything that's available" and they also offer a mail order service. Having been involved with CB since its inception, they also offer servicing, repairs and aerial erections.

## C.B. RADIO & MODEL HOBBIES

PARNDON MILL, PARNDON MILL LANE  
ELIZABETH WAY, HARLOW, ESSEX.  
(0279) 418817

Mobile FM RIGS from £20 to £80  
Base FM RIGS from £55 to £250  
AM-FM-SSB RIGS (for export) obtainable

### WE HAVE A MASSIVE RANGE OF ACCESSORIES

Echos, Reverbs, Mikes, Burners, Pre-amps, SWR Meters, Aerials, Power Supplies, Co-ax, Ducks, etc, etc.

### TELEPHONES

In-car phones, Cordless, Computer Desk Top, Alarm Clock/Radio/Telephones (cordless and corded), Handsfree, Kitchen, Fancy, Memory Phones.

Answerphones from £59 to £300. Autodiallers, Automatic Indexers, Pagers, Call Cost Machines, Auto Recorders, etc, Accessories.

### IN CAR STEREO RADIO

Many models from £29.  
Speakers, Aerials, Accessories, etc.

### RADIO CONTROLLED MODELLING EQUIPMENT

Aircraft, Boats, Cars, Helicopters, etc.

VISA - ACCESS - UNICREDIT  
For Mail Orders just phone in number.  
PART EXCHANGES

WRITE OR PHONE  
**TODAY**  
FOR OUR  
**FREE**

Catalogue of  
27 and 934 rigs  
and accessories

We can also supply copies of service manuals, circuit diagrams. We have a wide range of components and service aids etc.

All major credit cards accepted  
Credit facilities available.

0202 518766

Bournemouth Open Channel  
335/7 Charminster Road  
Bournemouth  
Dorset BH8 9QR



# ES 880 ECHO CHAMBER

**Importers  
and Distributors**



# SHARMAN'S WHOLESALE

**DISTRIBUTORS FOR:**

**HARVARD<sup>®</sup>**

**maxcom**

**DNT**



**BREMI<sup>®</sup>**



Extensive ranges  
of CB equipment in  
stock at the best prices for you!

**STRICTLY TRADE ONLY**



**IND. TELC**

**Quality Power Supplies and Linear  
Sole Importers and Distributors.  
Power Supplies 3amp·5amp·10amp  
Linears.**

**25 WATT SWITCHABLE 70WATT SWITCHABLE  
100WATT SWITCHABLE 200WATT SWITCHABLE**

**3 BURY NEW ROAD, MANCHESTER M8 8FW  
TEL 061-834 9571 TELEX 665446 Sharma G**

**RING NOW FOR OUR SECURICOR DELIVERY DETAILS!**





# AERIAL SUPPLIES (Redditch) LIMITED

6 Widney House, Bromsgrove Road  
Redditch, Worcestershire B97 4SP

Telephone: Redditch 62620 & 60107

## THE NEW JAVELIN RANGE

### All with centre loaded radiator elements



Available Now! The new Javelin whip centre loaded made from 17 7/8 Pin stainless steel wire (Government Spec)

JAVELIN WHIP



#### JAVELIN C2

##### Features:-

- Reduced length with better performance.
- Pole & bracket mountings.
- Pre SWR'd 1.3 to 1.
- Total length less than 11'.
- Power 500 watts.
- Spare parts available on all models.
- Prices on application.

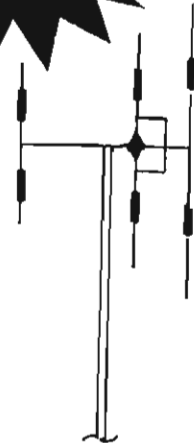


JAVELIN 'High Gain'

#### HIGH GAIN

##### Features:-

- Rigid construction using finest turned parts and welded tube.
- Inter-changeable centre loaded coils, and outer elements.
- Light weight, only 1 kg.
- Power handling 500 watts.
- Gain better than 3.5 Db.
- SWR. 1.2 Nom +/- .2 to 1.
- Total height - 11'.
- Mounting - 1 1/4" Dia Pole.



JAVELIN 'Mini Beam'

JAVELIN 'Super D' Dipole



### ECHO MIKE

With adjustable echo  
With adjustable power  
£21.95 including postage

Tell us your rig — we'll wire it free of charge

GREAT ON FMI

#### WE ALSO OFFER:

Ham Master 4200 Base Mike	£31.95
Thunderpole 3 Base Antenna	£23.50
Sadelta Echo Master Base Mike	£52.50
Zenith Speech Processor P202 MK 2	£34.95
Densal 7000 Base Mike with Graphic Equaliser	£68.00
Sadelta ES980 Echo Chamber	£48.95
Original Sigma 2 Base Antenna	£45.00
Warrior Centre Load Mobile	£12.95
Inrange Mini GP (LEMM)	£14.95
Zetagi TM1000 Meter	£47.95
CTE Topaz Antenna complete with Gutter Mount.	
Plugs and Cable	£22.95
Audioline 342 Hideaway Rig	£59.95
DM510 Power Mike	£8.95
Targa Mini Beam	£41.85
Densal Base Echo/Roger Mike	£49.95
934 MHZ Equipment	P.O.A.

Phone for details — we are now main stockists of "Nevada" equipment.

**CYBERNET DELTA 1 NOW IN STOCK**

**CEEBEE ELECTRICAL**

9 Gloucester Parade, Blackfen, Sidcup, Kent.

Tel: 01-859 5017/18. Send SAE for price list. Quote Access or Visa card number. Goods sent by return. All including postage. All mikes wired free of charge if you advise rig details.

## It's easy to complain about an advertisement. Once you know how.

One of the ways we keep a check on the advertising that appears in the press, on posters and in the cinema is by responding to consumers' complaints.

Any complaint sent to us is considered carefully and, if there's a case to answer, a full investigation is made.

If you think you've got good reason to complain about an advertisement, send off for a copy of our free leaflet.

It will tell you all you need to know to help us process your complaint as quickly as possible.

The Advertising Standards Authority. ✓  
If an advertisement is wrong, we're here to put it right.

ASA Ltd, Dept 1 Brook House,  
Torrington Place, London WC1E 7HN

This space is donated in the interests of high standards of advertising.



For the largest range of CB equipment  
in the North contact:

**G. G. ELECTRONICS**  
585 Harehills Lane, Leeds LS9 6NQ

Wholesale Distributors and stockists of

**Modulator**  
**Audioline**  
**Altai**  
**Valor**  
**DNT**  
**Armco**  
**Commtel**  
**Maxcom**  
**Midland**  
**Bremi**  
**Zetagi**  
**Thorobred**  
**Nevada**  
**Zenith**  
**Hembro**  
**Thunderpole**

For further details phone John or Paul on  
**Leeds (0532) 483691**

# THE C.B. SHOP

Radio Communication Specialists

5 Odeon Arcade,  
Hallgate,  
Doncaster,  
South Yorkshire,  
DN1 3LZ

Access & Barclaycard welcome  
Part Exchange welcome

Tel: Doncaster (0302) 66352

## EXTRA CHANNELS ON MOST LEGAL 40 CHANNEL FM RIGS

This is your chance to get away from the wallys, mike keyers, music players etc.

Join the growing number of breakers enjoying the peace and quiet on our extra channels. Ideal for clubs, business circles etc. Available in easy fit module from only £10.95 each (inc. p&p) or fitted by us, fully guaranteed only £19.95 (inc. p&p and insurance).

We now offer a fast Mail Order Service on ALL CB equipment. Probably the lowest prices anywhere. Also we have a fast rig repair service, phone TODAY.

Please write enclosing S.A.E. for our latest catalogue. And for personal attention to any rig problems or questions about CB in general, phone Doncaster 0302 69007 weekdays between 6pm-7pm and ask for Andy.

★ THIS MONTH'S SPECIAL ★  
**COMMTTEL 934 CB**  
only £420 inc VAT

**GRENADA HOME BASE CABINETS**  
with Power Supply and SWR Meter built in.  
A BARGAIN AT ONLY £19.95+£3.00 p&p



## SPECIAL OFFER



## BRITISH MADE SCANNERS 40 CHANNEL SCAN WITH MEMORY

Fits most rigs — Easy fitting instructions

**SPECIAL PRICE £24.95** inc VAT & P&P

Please send name and address with cheque made payable to  
**PAMA & CO.**  
or telephone your order — Access or Visa.



433 WILMSLOW ROAD, WITHINGTON, MANCHESTER M20 9AF 061-445 8918

Please mention **CB** when replying to all Adverts  
**Citizens' Band**





# U.K.'S No. 1 TRUCK

# TRUCK KING & CB STORE



AS ONE OF THE UK'S OLDEST ESTABLISHED CB SPECIALISTS (TRADING SINCE 1979) WE HAVE THE WIDEST RANGE OF CB'S AND ACCESSORIES IN THE COUNTRY ALL MAIL ORDER ITEMS ARE CHECKED & TESTED BEFORE DESPATCH AND FULLY GUARANTEED.

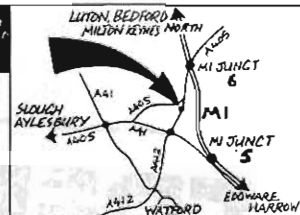
THE TRUCKERS SHOP

50-60 RADIOS ALWAYS IN STOCK NEW & USED.

PERSONAL CALLERS PART-EX WELCOME

Tel: (0923) 661673

We are open Monday to Saturday 9 to 6.00. We are 1 min. Junc 6 M1. Take A406 to Watford, left at Horseshoes crossroads and we're 100 yards on the right - no parking problems or yellow lines.



All Prices quoted Include Post & Packing.

THESE FOUR RADIOS ARE NOW AVAILABLE WITH OUR 160 CHANNEL CONVERSION WHICH GIVES 40 LEGAL UK CHANNELS PLUS LOW, MID AND HIGH BAND, FCC FREQUENCY, FM

**1. AUDIOLINE 340**  **★**  
**£46.00**

This compact mobile Uniden Boarded Unit quite rightly enjoys a first class reputation. Features Volume, Squelch, Hi-Low Tone Control and variable power switch. Generally accepted as being one of the finest, most reliable units on the market with superior bleedover rejection the 340 has to be top of the list when choosing a mobile. 40 ch. £48.00 160 ch. £88.00

**2. UNIACE 300 BASE STATION**  **★**  
**£159.00**

Whilst maybe not as flashy as some of the Base Units now long discontinued (the one's with an egg timer and built in teamaid). This one's still around and in greater demand than ever. Without a doubt the finest Base Station made for the UK market it features Volume, Squelch, Tone Control, PA facility, 240 or 13.8 volt power feed, variable power and mike gain, but the crunch is in its excellent circuitry and filtering which kills bleedover and cross-mod without being deaf. Treat yourself to the ultimate. 40 ch. £159.00 160 ch. £199.00

**3. MAXCOM 30E**  **★**  
**£56.00**

This top of the range radio features crystal filtering, RF & mike gain, PA facility, DX switch, tone switch and high SWR indicator. (This radio is featured in this magazine's reference section). Excellent value and performance. 40 ch. £56.00 160 ch. £96.00

**4. OSCAR**  **★**  
**£48.00**

A high quality Cybernet boarded radio which gives excellent performance, designed for gimmick free mobile use, it features volume, squelch, ch. 9 switch, detune and attenuator. Its performance is on a par to similar boarded Yorks, Rotels, Harriers etc. Highly recommended. 40 ch. £48.00 160 ch. £88.00

**5. BREMI BRG27 PRE-AMP**   
**£18.00**

High quality preamp especially suited for base station use, gives high Db gain. Suitable for AM-FM-SSB. Requires 12 volt power. Very Good Value at £18.00

Uniace  
100 40 ch. £52, 160 ch. £92.  
Uniace 200 40 ch. £78, 160 ch. £118.

**BEST UK PRICES ON 934 - PHONE NOW!**

**6. BREMI BRG201 SWR-POWER METER**   
**POWER UPTO 1KW!**

A very reasonably priced SWR Meter which covers 3-200 Mhz. With a power handling capacity of 2000 watts. Power Meter covers 26-30 Mhz in stages of 1, 10, 100, 1000 watts. Economy Priced at £18.00

**7. DM 101A AND DM 106ALC**   
**£13.00** **£15.00**

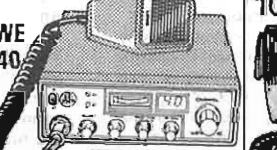
New to these shores from quality Japanese mike manufacturer ADI. These two excellent power meters are both 9 volt PP3 powered (supplied) with a slider power control, the 106ALC also features a limiter control which reduces overmodulation. Both are supplied ready wired quote CB make & model.

OUR NEW 1985 CB AND TRUCKING CATALOGUE FEATURES AND ILLUSTRATES 300 CB ITEMS. THE UK'S MOST COMPREHENSIVE EVER LISTING. ALL REGULAR STOCK LINES PLUS OUR FULL RANGE OF TRUCKING STOCK - DISCOUNT VOUCHERS WORTH UPTO £10.00 INCLUDED. TO GET YOUR COPY NOW SEND £1.00 CHEQUE/P.O. - DON'T MISS OUT.


THESE FIVE RADIOS ALL FROM STOCK - ALL UNDER £30!

**8. MAXCOM 6E**  **★**  
**£27.50**

Bulk purchases means we can offer this mid range radio at a giveaway price. Features volume, squelch, RF gain, ch. 9 switch and a detuner.

**9. LOWE TX40**  **★**  
**£29.00**


Another good mid range radio which has all the facilities of the 6E plus detune and PA function.

**10. GRANDSTAND BLUEBIRD**  **★**  
**£28.00**

Blanket stock purchase enables us to offer this crystal filtered unit which features volume, squelch, LED 'S' meter, and channel 9 switch at a budget price.

**14. BREMI ROBOT VOICE**  **★**  
**£27.00**

Gives a variety of Robot 'Metal Micky' voice effects. Requires 12 volt power feed. Comes ready wired for your rig quote CB make and model.

**11. MAXCOM 4E**  **★**  
**£28.00**

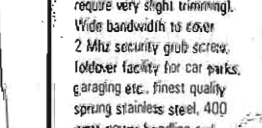
An extremely rugged little basic mobile, features same as Midland 2001 plus power attenuator. Good 'starter' radio or where a cheap reliable mobile is required.

**12. MIDLAND 2001**  **★**  
**£29.00**

Very popular basic model from this famous CB name features volume, squelch and PA facility - a good basic mobile. Last few units in stock to clear at

**13. ES-880 ECHO BOX**  **★**  
**£42.50**

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

**16. SUN 208 SE10 MOBILE ANTENNA AND GUTTER MOUNT**  **★**

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

**MAIL ORDER** To: TRUCK KING, Dept. CB 4/85, 867 ST. ALBANS ROAD, GARSTON, WATFORD, HERTS.

Enquiries VISA ACCESS orders phone 0923-661673. All prices quoted include post & packing (Overseas orders add 20% (£ Sterling only please))

QTY	ITEM	IC

Name \_\_\_\_\_ I enclose Cheque/P.O. for £ \_\_\_\_\_ payable to Truck King  
Address \_\_\_\_\_ I wish to pay by ACCESS  VISA  (Tick) Card No. \_\_\_\_\_  
ACCESS/VISA orders phone 0923-661673

**15. LEMM MINI GP. £18.00**

Over 60 different antennas in stock. The perfect indoor antenna for flats, lofts etc. If you can't mount an outside twig this has to be the right alternative. 3 short loaded radials, helically wound top loaded whip. Quality 1/2 wave performance and it stands just 6" high. Can also be easily mounted for external use if a discreet antenna is required.

PLEASE USE A SEPARATE SHEET OF PAPER IF YOU NEED MORE ROOM OR DO NOT WISH TO CUT YOUR MAGAZINE.

**£33.00**





JOHN RICHARDSON  
**TWONG**

SUDDENLY, OUR HERO PICKS UP A CALL FROM A C.B. CAR RALLY...  
HAVE RECEIVED YOUR LAST CLUE AND AM PROCEEDING TO LOOK FOR THE TREASURE

A TREASURE HUNT! A C.B. RALLY! HOW INTREKING... INT... INTRODUC... ER... GREAT!

HE WILL TAKE PART IN RALLY AN' IMPRESS THESE MORTALS! HA!



AS AM GOING AROUND HERE, ME HAVE TO HAVE TOP-FLIGHT ASSISTANT, RAGDOLL, BY UM SIDE!



CLAPPITY-CLAP



MEANWHILE...

I LOVE THESE C.B. RALLYS, CECIL! SPECIALLY AS YOU ALWAYS SEEM TO WIN EVERY YEAR!



HEY! THAT'S CECIL'S CAR IN THE DITCH! AREN'T YOU GOING TO STOP AND HELP HIM!

NO WAY...



...I'M SICK OF COMIN' SECOND! THIS YEAR I WILL BE THE WINNER!



HAH... MORTAL LADY HAS BEEN TOOK SHORT!

HAH! HERE COMES THE LAST CLUE

...CALLING ALL YOU RALLY PEOPLE... LOOK FOR THE CHURCH WITH THE TWISTED STEEPLE...



... NEARBY YOU WILL SEE A SIGN... THEN GIVE US A CALL... WE'LL KEEP YOU IN LINE... OUT!

CLEVER...



...AND THERE'S THE SIGN! THAT'S THE CLUE! THEY WANT US TO CALL THEM ON CHANNEL 15!

HAH! THERE'S THE CHURCH WITH THE BEAT ROOF!

HIM RIGHT!

TO THE CHANNEL 15 MILES



HOKAY! YOU KEEP DRIVING AN' I WILL CALL EM UP WITH MY HEAD...



COO! HIM TOOK SHORT AS WELL! HIM SHOULD'VE GONE BEFORE HIM SET OFF!



HOY! DON' DO IT IN THE NETTLES! THERE'S A LOO QUS' DOWN THE ROAD!

RALLY H.Q.



GANSH! LOOKS LIKE ME HAVE WON THE JOLLY HANDSOME FIRST PRIZE!

WONDER WHO GOT SECOND PRIZE!

CECIL DID!



# CB Citizens' Band

## READER SERVICES

### Back Issues

The following issues of Citizens' Band are still available as back numbers. The cost of each magazine is £1.50. This includes packing and posting. Please allow 28 days for delivery.

Issue	Major feature
February 1984	Maxcom 30E
March 1984	Consam 1320
April 1984	Grandstand 27/934MHz. transverter
May 1984	Grandstand 27/934MHz. transverter
June 1984	Scanning and Telephone supplement
July 1984	Walkie talkie round-up
August 1984	Audioline 341
September 1984	AR2001 scanner
October 1984	Cybernet 934MHz.
November 1984	CTE antennas
December 1984	Panoramic CB scanner
January 1985	SWR survey and Breaker's Basics
February 1985	Understanding CB specs.

### Binders

To keep your copies of Citizen's Band neat and tidy, binders are available to hold 12 copies of the magazine. Each binder costs £5.00 and this price includes packing and postage.

### Subscriptions

Citizens' Band is available on subscription at the following prices;

UK and BFPO	£15.00
Overseas (excluding U.S.A.)	£17.00
Accelerated Surface Post	
U.S.A.	\$21.00
Accelerated Surface Post	
Airmail	£42.00

Each subscription lasts for twelve issues of the magazine.

Infonet Ltd, Times House, 179 The Marlowes, Hemel Hempstead, Herts. HP1 1BB. Tel: 0442 48435.

Please send the following back numbers of Citizens' Band, price £1.50 inclusive.

.....  
 .....  
 .....  
 .....

Please send ..... Citizens' Band Binders price £5 each inclusive.

Please start my annual subscription to Citizens' Band with the ..... (month) issue I enclose ..... for a year's subscription.

All cheques payable to A.S.P. Ltd.

Total cost of Order £ .....

Please allow 28 days for delivery

I enclose my cheque/postal order for above amount payable to A.S.P. Ltd.

Please debit my Access/Barclaycard (delete as necessary)

Card

No.

Name .....

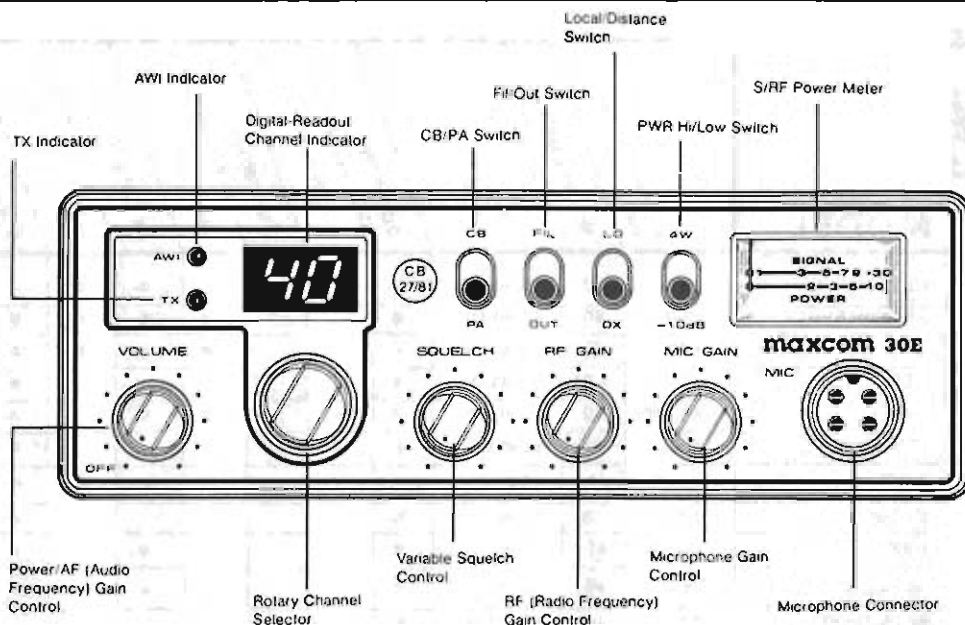
Address .....

Post Code ..... Date .....

Signature .....

# Citizens' Band

## REFERENCE SECTION



### A CB SET AND ITS CONTROLS

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

**CHANNEL SELECTION**  
For choosing the channel you transmit and receive on.

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

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

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

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

Some sets, instead of having a suitable rotary control, have a flick two position switch marked *local* and *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 is a warning indicator which is activated by trouble in the antenna system e.g. a bad mismatch or damage to the antenna or cable. You should stop transmitting if this lights up, and correct the problem.

Your set may also have the following controls . . .

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

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

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

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

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





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

TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS	ADDRESS	NAME
•	•		SL	Report Feb '82	Amstrad Consumer Electronics, 1-7 Garman Rd., London N17	AMSTRAD
•	•		SL		Telecomms, 189 London Rd., North End, Portsmouth	AUDIOLINE
•				Report Feb '82		AUDIOLINE
•	•					AUDIO LINE
			FL		K B & Co Ltd., 202 Cheetham Hill Rd., Manchester	COLT
			SL		Globe, 168 Brooker Road, Waltham Abbey, Essex	COMMTEL
			SL	Dimmer Switch Features		MMTEL
	•		FL		Roger D, 831 Mansfield Rd, Notts	COMMTRON
			FL			COMMTRON
•	•		FL	Roger Beep Feature		
			SL		Goodmans Loudspeaker Ltd., Downley Rd, Havant, Hants PO0 2NL	CYBERNET
•	•		FL	Report May '83		CYBERNET
•	•		FL	Report September '83		CYBERNET
			FL	Report July '82		DNT
			SL	Report December '81	Fidelity Radio Ltd., Victoria Rd, London NW10	FIDELITY
	•		FL	Report March '82		FIOELITY
	•			Report September '82		FIDELITY
			SL		Bee-Ware Ltd., Ripon Way, Harrogate, N. Yorks.	GRANDSTAND
•			SL			GRANDSTAND
			SL			GRANDSTAND
				Features combined with Bluebird (Included)		GRANDSTAND
•			SL		Telecomms, 198 London Rd., North End, Portsmouth	INTERCEPTOR
•			FL			INTERCEPTOR
•			FL			INTERCEPTOR
			FL	Great GT868 chassis	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	Low Electronics, Matlock, Derbyshire	LOWE
•	•		FL	Report November '82	Maggie Electronics, PO Box 35, Andover, Hants SP10 2LG	MAGPIE
			FL		AM House, 9A Old's Approach, Tolpits Ln, Watford, Herts	MAXCOM
	•		FL			MAXCOM
	•		FL			MAXCOM
	•		FL			MAXCOM
	•		FL			MAXCOM
			FL	Report Jan '84		MAXCOM



# REFERENCE



NAME	MODEL														
		RETAIL PRICE	NO OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	tone CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAK
MERCURY	10 40	N/A	40	13.8VDC	•				•		•		•	•	
MURPHY	DS-602	£25	40	13.8VDC	•						•		•	•	
MUSTANG	CB1000	£49.95	40	13.8VDC	•					•			•	•	
MUSTANG	CB3000	£59.99	40	13.8VDC	•				•	•	•		•	•	
NATO	40M	£69.95	40	13.8VDC	•			•	•	•			•	•	
NATO	2000	£189.95	40	13.8VDC	•	•	•		•	•			•	•	
OSCAR	OSCAR I	£85	40	13.8VDC	•					•			•	•	
OSCAR	OSCAR II	£49	40	13.8VDC	•					•			•	•	
REFTEC	934	£300	20	13.8VDC	•					•			•	•	
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	£89.96	40	13.8VDC	•			•	•	•			•	•	
WAGNER	9000	£59.95	40	13.8VDC	•				•		•		•	•	
WAGNER	COMPACT 40	£26	40	13.8VDC	•					•			•	•	
WESTERN	COMPACT 40	£34.50	40	13.8VDC	•					•			•	•	
WESTWARD	P.T.2	£159.95	40	13.8VDC 240V	•					•			•	•	



NAME	MODEL														
		RETAIL PRICE	NO OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	tone CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAK
AUDIOLINE	345	£139.95	40	240VAC	•			•	•	•			•	•	
COMMTEL		£65	40	240/12V	•					•			•	•	
DNT	B40	£TBA	40	240VAC	•					•			•	•	
DNT	B2740	£TBA	40	240VAC	•					•			•	•	
DNT		£TBA	40	240VAC	•				•	•			•	•	
FIDELITY	CB 3000M	£125	40	240VAC	•				•	•			•	•	
GRANDSTAND	BASE	£220	40	240VAC	•				•	•			•	•	
HAM INT.	JUMBO	£254	40	240VAC	•		•	•	•	•			•	•	
HAM INT	CONCORDE II	£164	40	240VAC	•	•	•		•	•			•	•	
HARVARD	H401	£149.95	40	240VAC	•			•	•	•			•	•	
MIDLAND	76-200	£150	40	240VAC	•					•			•	•	
REFTEC	IS 934	£460	20	240V	•					•			•	•	
UNIDEN	UNIACE 300	£149.95	40	240VAC	•			•	•	•			•	•	
WAGNER	BASE	£150	40	240VAC	•		•		•	•			•	•	
WESTWARD	P.T.2	£159.95	40	240V/12V	•					•			•	•	

# MOBILES

CR 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 LX21 7AD	MERCURY
•	•			FL		Murphy Electronics, Wernby, Middx	MURPHY
•	•			FL		K.B. & Co Ltd, 202 Cheetham Hill Rd, M/cr.	MUSTANG
•	•	•		FL			MUSTANG
•				FL		Roger D, 831 Mansfield 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 4QP	OSCAR
				FL	Report Oct '83		OSCAR
•				FL		RF Technology, Leyton Ave Ind Est, Mildenhall, Suffolk	REFTEC
•				FL	Cybarnet 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
•				SL			TANDY
•				SL	Report Nov '82		TANDY
•				SL	Report Sept '82	Cravenminster Ltd, Unit 8, Ind Est, Llandudno Junct, Gwynedd	UNIDEN
•	•			FL	Report Feb '83		UNIDEN
•	•			FL		Knight Communications Ltd, Unit 19, Britannia Est, Leagrave Rd,	WAGNER
•	•			FL		Luton, Beds	WAGNER
•	•			SL		Western Electronics, Fairfield Est, Louth, Notts	WESTERN
				FL	Report Nov '83	Westward Electronics, The Mill House, Westward Tuckenhay, Totnes, Devon O86423 336/370	WESTWARD

# BASES

CR JACK	TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS	ADDRESSES	NAME
•						Telecomms, Portsmouth and Globe, Essex	AUDIOLINE
				FR	Report December '83. Also comes with telescopic antenna		COMMTEL
•				FL	Rewiew May '82		DNT
•		•		FR	Report May '82		DNT
•		•		SIR	Report May '82		DNT
		•		FL		Fidelity Radio Ltd, Victoria Rd, London NW16	FIDELITY
•				FL		Bee Ware Ltd, Rippon Way, Harrogate, N. Yorks	GRANDSTAND
•				SL			HAM INT.
•	•	•		FL			HAM INT.
•	•			FL			HARVARD
•	•			FL			MIDLAND
•	•			FR	See company for further features	RF Technology, Leyton Ave. ind. Est, Mildenhall, Suffolk	REFTEC
•				FL	Reviewed August '83	Cravenminster Ltd, Unit 8, Industrial Est, Llandudno Junction, Gwynedd	UNIDEN
•				FL		Knight Communications Ltd, Unit 19 Britannia Est, Leagrave Rd, Luton LU3 1RJ	WAGNER
				FL	Report Nov '83	Westward Electronics, The Mill House, Tuckenhay, Totnes, Devon, Totnes, Devon O80423 336/379	WESTWARD



# 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
DNT	HF 12/3	£47.55	3	BATTERIES	•										
HARVARD	WT44		40	BATTERIES	•								•		
KAISER	CBX40	£80	40	BATTERY	•						•		•		•
MAXCOM	7E	£49.95	40	BATTERY	•								•		
MIDLAND	75 720	£59.95	40	12VDC	•								•		
TANDY	TRC1001	£119		BATTERY	•						•		•		•
WESTWARD	PT2	£159.95	40	Int. Batt.	•						•		•	•	•

# PHONE CHECKLIST

Approved phones are marked •

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	•	•		•			•
BT	HAWK •	£165	47MHz., 1.7MHz.	100m		•		•		•	
FIDELITY	WANDERER •	£170	47MHz., 1.7MHz	200m	•	•	•	•	•	•	
FREEDOMPHONE	3500	£199	49MHz., 1.7MHz	200m	•	•	•	•			
HANDY PHONE	HP 1001	£199	49MHz., 35MHz		•	•	•	•	•	•	
MAXCALL		£116	49MHz., 1.7MHz	100m	•	•	•	•			•
MAXCOM	MCP150A	£89	49MHz., 1.6-1.8MHz	800m	•	•		•			
MAXCOM	MCP 120	£70	49MHz., 1.7MHz	700ft		•		•			
MAXCOM		£99	49MHz., 1.7MHz	200m	•	•	•	•			
PACER	7800	£149	49MHz., 1.7MHz	500m	•	•	•	•			
SUPERPHONE	CT600	£115	49MHz., 1.7MHz	100m	•	•	•	•			
SUPERPHONE	CT650	£199	49MHz., 1.7MHz	230m	•	•	•	•		•	•
SUPERPHONE	CT505	£299	49MHz., 70MHz	1Km	•	•	•	•	•	•	

# PORTABLES

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

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

# CORDLESS PHONE

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



# ANTENNA CHECKLIST

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

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

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

NAME	ADDRESSES	MODEL	CONSTRUCTION	LENGTH	MAX POWER	TYPE	LOADING	MOUNT	PRICE RANGE
AERIAL SUPPLIES	Aerial Supplies (Redditch) Ltd. 6 Widney House, Bromsgrove Road, Redditch, Worcs. (0527 62620/ 80107)	Silver Star	AL	1.5	100	B	B	Pole	D
		Silver Arrow	AL	1.5	500	B	B	Pole	E
		Javelin	AL	1.64	500	B	B	Pole	F
		Javelin Dipole	AL	1.64	500	B	C	Pole	C
ALLGON	Communications, 10 North Street, Strood, Kent.	Various	FG SS AL	Various	Various	B M	T C B CW	Various	A-H inc.
ARMSTRONG	Stateside Trading Ltd. Audley Avenue, Newport, Shropshire	SAM 10	SS	1.05	1000	M	B	Surface	F
		SAM 20	SS	1.06	1000	M	B	Spring Surface	F
		TAK 10	SS	1.06	1000	M	B	Boot lip	F
		TAK 20	SS	1.06	1000	M	B	Spring Boot lip	G
		MAG 10	SS	1.06	1000	M	B	Mag.	G
		MAG 20	SS	1.06	1000	M	B	Spring Mag.	G
		BDY 20 PEC 20	SS	1.06 1.06	1000 1000	M M	B B	Side Side, Fold over & Quick Disconnect	G G
ARCHER	Tandy Corp. Tamesway Tower, Bridge Street, Walsall, West Mids.	21-904	SS	0.6	50	M	B	3/8" thread	D
AVANTI	CB Radio Centre Ltd., 337 Kenton Road, Harrow, Middlesex	AV 241	SS	1.22		M	B	Stud	D
		AV 241T	SS	1.22		M	B	Trunk	E
		AV 241M	SS	1.22		M	B	Mag.	E
		AV 241MM	SS	1.22		M	B	Mag.	G
BANDIT	Telecomms, 189 London Road, North End, Portsmouth	B10	SS	1.42		M	B	Mag.	G
		B15	SS	0.81		M	B	Mag.	F
		B15	SS	1.22		M	B	Mag.	F
		B20	SS	1.42		M	B	Mirror	F
		B30	SS	1.42		M	B	Drill Thru	E
		B30	SS	1.22		M	B	Drill Thru	E
		B40	SS	1.42		M	B	Various	D
		B40	SS	1.22		M	B	Various	D
		B60	SS	1.42		M	B	Various	D
		B60	SS	1.22		M	B	Various	D
BREMI UK LTD.	Unit 5, Innage Park, Holly Lane Industrial Estate, Atherstone, Worcs.	B27S	SS	1.62	1000	M	B	3/8" thread	C
		C27S	SS	1.38	1000	M	C	3/8" thread	C
		HB27S	AL	1.65	1000	B	T	Pole	E
CB SERVICES	97 Crab Lane, Harragat, North Yorks.	Bullwhip Knuckleduster	SS AL	1.5 1.5		M B	B B	Various	C D
COMMTEL	Near Third Drove, Fengate, Peterborough	Rocket	SS	1.6		M	B	3/8" thread	
		Shuttle	FG	1.5		M	B	3/8" thread	
		Starlight	SS	1.5		M	B	3/8" thread	
		Shuttle Star	B	1.6		B	CW	Clamp	
		Signal searcher	AL	1.6		B	B	Pole	
		Messenger Signal keeper	SS SS	1.5 1.5		B B	B B	Clamp Tripod	E F
FREEMAN AND PARDEE	Tything Road, Ardan Forest Ind. Est. Alcester, Worcs.	Invader	AL	1.5	250	B	B	Pole	E
		Thunderpole II	AL	1.5	500	B	B	Pole	F
		Thunderpole III	AL	1.65	500	B	C	Pole	F
GAMMA AERIAL PRODUCTS	Lye, West Midlands. (0384 891132/891474)	Skybreaker	AL	1.6		B	B	Pole	D
		Avenger	AL	1.5		B	B	Bracket	C
		Lofty	AL	1.5		B	B	Bracket	D
		Skybreaker II	AL	1.66		B	C	Pole	E
		Avenger II	AL	1.86		B	C	Bracket	E
		Lofty II Firefly	AL SS	1.85 1.66		B M	C C	3/8" thread	E E

## na Checklist will give you the following information:

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

### Length

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

### Maximum Power

This is intended as a guide

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

### Type

Indicates whether a mobile or base antenna.

### Loading

Indicates the type of

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

### Mount

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

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



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

NAME	ADDRESSES	MODEL	CONSTRUCTION	LENGTH	MAX POWER	TYPE	LOADING	MOUNT	PRICE RANGE	
HAM	Dials Wholesale, Unit 8, Block 2, Whitegate Indust. Est., Bathgate, West Lothian	Balcastor OV27 DV27TW	AL	1.2	200	B	C	Bracket	D	
			FG	1.39	100	M	T			B
			FG	1.19	100	M	T			B
HOT ROD	Stateside Trading Ltd, Audley Avenue, Newport.	FM UK	SS	1.27		M	B	3/8" Thread	B	
LES WALLEN MANF.	Pembroke Works, Ramsgate Road, Sandwich.	Modulator LC M.O.X. Long M.O.X. Short Mini M.O.X. Mini 27 T-Bolt Saturn Exper	SS	1.65	1000	M	B	3/8" Thread	C	
			SS	2.00	1000	M	B	3/8" Thread		
			SS	1.65	1000	M	B	3/8" Thread		
			SS	1.10	100	M	B	3/8" Thread		
			SS	1.40	500	M	B	3/8" Thread		
			SS	0.83	200	M	B	3/8" Thread		
			AL	1.00	500	B	CW	Pole/well		
			AL	1.00	1000	B	CW	Pole/well		
R.W. BADLAND LTD.	Roetan Trading Estate, Providence Street, Lye, Stourbridge, West Midlands (Lye 3160/5051)	Rebel 1 Rebel II Rebel Reider Rebel Bullet Red Oevii	SS	1.5	500	M	B	3/8" Thread	E	
			SS	1.5	500	M	B	3/8" Thread		
			SS	1.6	500	M	C	3/8" Thread		
			SS	0.61	50	M	B	3/8" Thread		
			SS	1.62	500	M	CW	3/8" Thread		
REVCO	Telecomms, 189 London Road, North End, Portsmouth.	Revco	SS	1.0	100	M	B	Various	B	
SMC	Rumbridge Street, Totton Street, Hants	Oscar CBA 11GP Oscar 11V11S11 Oscar 11CM Oscar 11CE Oscar 11NE Oscar 11SE Oscar 11ZE	SS	1.5		B	B	Mag. Foldover Base Pull op Foldover Base	F	
			SS	1.5		B	B			
			SS	1.2		M	B			
			SS	1.2		M	B			
			SS	1.6		M	B			
			SS	1.5		M	B			
			SS	1.6		M	B			
TAGRA	CB Radio Centre, 337 Kenton Road, Middlesex.	T40	SS	1.4	500	M	B	Various	E	
THORO'BRED	Pixtron UK Ltd, 10 Victoria Street, Newark, Notts. (0636 74688 Telex: 377627)	Z 27 Z Mag 251 C 27 C Mag HQ	SS	1.52	1700	M	B	3/8" Thread	B	
			SS	1.62	1700	M	B	2" Dia Magnet		
			SS	1.60	100	M	B	6" Dia Magnet		
			SS	1.50	1700	M	C	3/8" Thread		
			SS	1.60	1700	M	C	3/8" Thread		
			PVC	1.5B	1000	B	T	6" Dia Magnet Pole		
VALOR	W.T.A. Electronics Ltd, 111 Cromer Road, Hellesdon, Norwich (0603 47694)	Warrior 650 Half Breed 620 Half Breed 610 Half Breed 600 Dial-a-Match 640 Dial-A-Match 530 Rubber Duck 300 Pro Am PLB 27 Road Hog 338 Road Hog 335 Road Hog 336 Road Hog 337 Road Hog B31 Road Hog B38 Road Hog B35 Road Hog B38 Black Magic 333 1/2 Black Magic 333 Black Magic 332 Black Magic 333 1/2 Black Magic 833	SS	1.52	1500	M	C	3/8" Thread	C	
			SS	1.52	1500	M	B	3/8" Thread		
			SS	1.2	1500	M	B	3/8" Thread		
			SS	0.9	1500	M	B	3/8" Thread		
			SS	1.2	100	M	B	3/8" Thread		
			SS	0.6	25	M	B	3/8" Thread		
			SS	0.36	25	M	CW	3/8" Thread		
			SS	1.52	200	M	B	3/8" Thread		
			FG	0.9	1000	M	T	3/8" Thread		
			FG	1.2	1000	M	T	3/8" Thread		
			FG	1.52	1000	M	T	3/8" Thread		
			FG	1.76	1000	M	T	3/8" Thread		
			FG	0.6	500	M	T	3/8" Thread		
			FG	0.9	1000	M	T	3/8" Thread		
			FG	1.2	1000	M	T	3/8" Thread		
			FG	1.52	1000	M	T	3/8" Thread		
			FG	0.76	500	M	T	3/8" Thread		
			FG	1.2	500	M	T	3/8" Thread		
			FG	1.52	500	M	T	3/8" Thread		
FG	0.76	500	M	T	3/8" Thread					
FG	1.2	500	M	T	3/8" Thread					
WTA	W.T.A. Electronics Ltd, 111 Cromer Road, Hellesdon, Norwich, (0603 47694)	Wot Pole I Wot Pole II Wot Stick I Wot Stick II	AL	1.5	1000	B	B	Pole	B	
			AL	1.5	1000	B	B	Pole		
			SS	1.5	1000	M	B	3/8" Thread		
			SS	1.5	1000	M	B	3/8" Thread		
VAN OROT	Knight Communications, Unit 19 Britannia Estate, Leagrave Road.	Audio King	SS	1.5	2000	M	B	3/8" Thread	G	



# CITIZENS' BAND

## Lineage:

35p per word (minimum 15 words)    
**Semi display:** £7.00 per single column centimetre.  
 Ring for information on series bookings/discounts.



## 01 - 437 0699

All advertisements in this section must be prepaid.  
 Advertisements are accepted subject to the terms and conditions printed on the advertisement rate card (available on request).

Send your requirements to:  
**Citizens Band Classified,**  
**ASP LTD., 1 Golden Square, London W1**

## CARDS, STICKERS & BADGES

### RUBBER STAMPS

Personalise your QSL, special designs no problem. Discounts for quantity. Two day service. SAE for catalogue.  
**BEN NEVIS, 42-44 Princes Road, Hull.**  
**Tel: (0482) 48134.**

**PERSONALIZED** embroidered badges. Circular 3 3/4 in. dia. or rectangular 4 in x 2 in. Black or white background. Thread colours red, white, blue, yellow, orange, green or black. (No pictures or logos). Club name, league, team, etc. + your name, handle, etc. Suitable for any sport. Top quality. Washable. No minimum quantity. Send £1.50 per badge. Cheques, PO's, Barclaycard or Access. Black American style peak caps, £3.50 each. Binder Sewing Centre, 3 Fairfax Way, Deepingate, Peterboro. 0733 40449.



**PERSONALISED QSLs** 1,000 £15, Handcards £9.50. (DIY QSLs 100 £2.50. Handcards £1.10: 100 of each £3.00 C.W.O. only). SASE for catalogue. Currie QSL's, Room 2, 89 Derwent St., Consett, Co. Durham DH8 8LT.

**GLOSSY EYEBALL CARDS** many colours with Gold/silver/coloured lettering. £3.70/100 including P&P. SAE order form and samples. Sharp Graphics, PO Box 3, Grangemouth FK3 9BD (0324) 473432.

**PRINTING** for Breakers. Artwork provided if required. SAE for price list: P. J. Printing, PO Box 1, Burnham-on-Sea.

**EYEBALL CARDS** with matching motif QSLs to your own design. Done in metallic hot foil on coloured gloss card. Tonbridge For details ring 0732 354026. (Tango Polocast).

**LOW COST** Rubber Stamps and printing. Free catalogue. Jones, St. Ivy, North Road, Queenborough, Kent. (0795) 665789.

## FOR SALE

**40 CHANNEL CB Radios** £19.99. Sapphire £89.00. 934 £279. Guildford CB. Mail Order. Ring 0483 574434.

**BATTERIES.** Rechargeable batteries. 12 volt. 2.6 Amp Hour £19.00. 6 Amp Hour £22.00 including VAT and postage. Other voltages and capacities available. Allen Electrical, Pen y Bont, Waunfawr, Caernarfon, Gwynedd. Tel: (0286 85) 540.

## CLUB CARDS

**RAYMAC** Do you run a club? Send for club sample pack. Plastic club cards, QSL cards, stickers, badges, wallets, pens etc. Suppliers to CB clubs for 6 years. Send 25p (Stamps). Raymac, PO Box 75, Hounslow, Middlesex, TW3 2HZ.

## GENERAL

# SUPER DEALS!

### PACKAGE A

Mobile 27MHz Transceiver  
 40 Channel legal FM Rig  
**SUPERB QUALITY**  
 Aerial — with Plug supplied  
 SWR Meter  
 Patch lead

### PACKAGE B

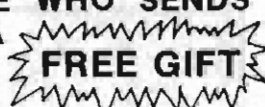
Home Base  
 3-5 amp power supply —  
**GOOD QUALITY** (safety approved)  
 40 Channel 27MHz transceiver  
 Legal case station aerial  
**(GOOD QUALITY)**  
 At least 15m good quality, low-loss cable  
 SWR Meter Patch lead

**ALL THIS FOR JUST £63.00**  
 + £5 P&P

**ALL FOR ONLY £99.00** + £6 P&P

## WIDE RANGE OF EXTRA GOODIES AVAILABLE!

★ **SEND SAE FOR "GOODIES" LIST** (including Trade Prices + VAT).

★ **EVERYONE WHO SENDS SAE WILL RECEIVE A**  **FROM US!**

**FREE GIFT**

★ **RTC, 148/9 Manchester Road, Ext. 9, Swindon, Wilts. Tel: (0793) 34136**

## PLANS

**SURVEILLANCE DEVICES,** Bug Detectors, Voice, Scrambler, Directional Microphone, Many others. SAE for list, Plan Centre, Old String Works, Vye St., Ledbury HR8 2AA.

## CLUBS

**LIMA TANGO DX Group** life membership £2. Cards, stickers and lots more. PO Box 17, Lowestoft, Suffolk NR32 5ET.

## ACCESSORIES

**NATO 2000 OWNERS.** Getting bleed over, cross mod images? Our custom crystal filter provides dramatic improvement in selectivity. Simple to fit instructions provided. (Also fits Superstar 2000, Tristar 777). £9.95 inclusive. Golf Communications, P.O. Box 60, Rickmansworth, Herts WD3 3PZ.

**EXPANSION BOARDS** for SSB & UK FM Rigs. Expand legal rigs by up to 120 extra channels FCC £22.50. Add UK channels and extra bands to SSB/FM rigs. From £9.50. Crystals supplied. SAE details: 16 Bainbridge Close, Grange Park, Swindon, Wilts SN5 6BD.

## MINIATURE SURVEILLANCE TRANSMITTERS

FROM **£19.95**

**FULL RANGE** including Telephone Monitors and High Power Microphones. (listens through 1 foot solid concrete). Professional Quality. Listen to conversations up to 3,000 meters away! Send S.A.E. for Brochure **KNIGHT COMMUNICATIONS LTD.** Unit 19, Britannia Estate, Leagrave Road, Luton LU3 1RJ Telephone: (0582) 453002

## WHOLESALE

Giant vans with unrivalled giant range of CB accessories. At your shop's doorstep regularly. (200 miles radius)



**TRADERS** contact us, reverse the charges and **MAKE MONEY!**

Pama House, 433 Wilmslow Road, Manchester M20 9AF  
Tel: 061-445-8918  
061-434-5701

### MIDNIGHT BOARD

Channel Expansion System  
Easily fitted to: uniden, audio line, maxcom, cybernet, rotel, Harrier, Harvard & many more.  
Prices inc carriage & VAT  
T-9 £11 each, 10-24 £7.50 each, 25-99 £6.25 each, 100 + £5 each

Send P.O. or Cheque to:

**K. T. V.**  
Stonehouse St.,  
Middlesbrough, Cleveland.  
Tel: 0642 829238

### WANTED

**CRYSTAL FILTERS** 10.695 MHz, 7 kHz BAND WIDTH, 1k impedance, HC-18/U, 3-lead. Direct replacement for old ceramic filter in most rigs £3.80 inc. VAT/post. **CRYSTALS**. Many common frequencies in stock at £4.50. Ordered frequencies not in stock will be made in 8-10 weeks. Faster delivery available. Trade quotes for quantities. Many other types of crystals and filters. SAE lists. Gollered Electronics, Merriott, Somerset TA16 5NS. Tel: (0460) 73718.

### COMPONENTS

**FOR FREE LISTS!** of more than 300 **LOW COST** high quality components write or phone today to **BOURNE-MOUTH OPEN CHANNEL**, 335/7 Charminster Rd, B'm'th, Dorset BH8 9QR. Tel (0202) 518766.

**TA 7205 £1.50**, MB 3712 £1.99, 2SC 1307 £1.50, 2SC 1306 99p, MC 3357 £2.99, LC 7137 £2.99, LA 1230 £1.99, LA 4422 £1.99, ECT Autosquelch £9.99, Bleedover Filter £2.50, Mike Screws. Power Supply Components. Tel: (0603) 46294.

**GCB LTD**, 22 Maxted Road, London SE15. 01-639-3424. Trade components. Best prices, eg:- 2SC495-36p; 945-10p; 1306-69p; 1307-£1.25; 2078-69p; HA1366-£1.28; 1388-£3.06; TA 7205-75p; 7217-90p; KRA7205-90p; TDA2002-£1.20; LA4422-£1.25. Hundreds of components for CB and car radio S.A.E. for catalogue.

**QUALITY I.C.'s**, transistors etc. CB Guide Book, originally £2.95, now 75p. Orders over £5 post free, other 50p. S.A.E. for lists. Cybernet—Nevada 934MHz equipment. CB patches 10p. Tower Components, 201 Freeman Street, Grimsby, Sth Humberside. (0472-360037)

IC's  
Transistors

**Roger D**

S.A.E. for prices of component

7, Thyra Court,  
Nottingham,  
NG3 5GT.

### BOOKS & PUBLICATIONS

## CB PLL DATA BOOK NEW INT'L EDITION

How they work and how to modify them. Complete specs on every PLL device including all U.K. chips. Easy non-technical reading!

### "SCREWDRIVER EXPERTS' GUIDE

The bible of DIY CB repairs! Each book or both for

£11.95

**Roger D**

£21.50

7 Thyra Court, Nottingham NG3 5GT

### RIGS & TWIGS

#### GOLDFINGER CB

Turner mics and base mics. Quads from £69.99. Densi base mics with graphic equaliser. Avanti antennas.

32 Canmore Street,  
DUNFIRMLINE, SCOTLAND  
Tel: (0383) 739110

**FREE CATALOGUE!** Available NOW write or phone for your copy today to **BOURNE-MOUTH OPEN CHANNEL**, 335/7 Charminster Rd, B'M'th, Dorset BH8 9QR. Tel (0202) 518766.

### SERVICE MANUALS

Ham Concorde 2, Ham multi-mode 2, Ham Jumbo 2, Ham Viking, Ham Puma, Cobra 148 GTL DX, PC 879 and PB010, Colt 1600 DX, Tristar 777, York 863, York 861.

All above at £8.00 + £1.00 p&p each.

Other rigs and spare parts available.

#### CBT

1 Prince of Wales Road,  
Swansea. (Tel: (0792) 463821.

### D.I.Y.

#### EXTRA CHANNELS FROM £1.00

Info/Diagrams £10. Midnight crystals £5.25. Midnight board £10.50. Oric-1 Eprom Programmer plans £8.50. Send SAE for details of our Roger bleeps, K-tones, Musicals tones etc. GISO.

40 Baker Close, Southgate,  
Crawley, Sussex.  
TEL: 0293-543899

### PARKSIDE CB CENTRE

"Cybernet 934MHz £325.00". Modulator Expert Home Base £19.95, Super Modulator II c/load £10.95, Modulator Thunderbolt £7.95, ES880 Echo Chamber £39.95, Ind. Telc. 25w linears £14.95, CTE 70 Watt linears £36.95, Zetagi BV131 £77.95, Maxcom 20E £29.95, Oscar (Cybernet Chassis) £42.95, Rotel RVC 240 £67.95, Harvard 420m £54.95, Cybernet Beta 3000 £63.95, Harvard 410T hand-held £39.95, Maxcom MX 7E £39.95, Maxcom 30E £49.95, DNTB40 FM Home-Base £43.50.

Full range of CB Mobile and Home Base Antennas and Accessories. Telephone orders available + P&P.

Thursford, Fakenham, Norfolk. Tel: (0328) 77402

### VIDEO

#### XXX VIDEO

Telephone (day or night)  
0373 - 830563

#### FOR DETAILS

Glossy list from: XXX Video Club,  
2 Streeham High Road,  
London SW16  
(You must be over 16 to ask for details)

### RIG DOCTORS

"LIVEWIRE" fed up with bleedover/cross modulation. Have a bleedover filter fitted. Turn your rig into something special!!! Send your rig and £10 plus £2.50 p+p to: 11 Northgate, Haverfordwest, Dyfed.

#### POWER SUPPLY REPAIRS

We offer a fast repair service on most makes of D.C. power supplies in the 1 to 30 amp range, crowbar circuits, etc also fitted.

For full details please ring  
0536 743496

TO FILL  
THIS SPACE  
'phone Jason on  
01-437 0699  
**NOW!**



## AVON

### PATCHWAY CARS CB CENTRE

Gloucester Road, Patchway,  
Bristol. Tel: (0272) 694331.  
Mon-Fri 8-5.30pm. Sat 8-4pm.  
Sun 10-2pm

Retail dealer stocking all types of  
CB and communications equip-  
ment.

## BUCKINGHAMSHIRE

### VANNER C.B. CENTRES

3 Croft Court,  
Stony Stratford,  
Milton Keynes MK5 5981  
34 Gloucester Avenue,  
Northampton NN6 704  
9.30-5.30 Closed Thursdays



Mail Order  
Access/Barclaycard

## DURHAM

### IAN FISHER

Communications of Stanhope  
CB Works  
Bondisle Way, Stanhope,  
Bishop Auckland: Co. Durham  
DL13 2YT  
(0388) 528464

Distributors of 934MHz rigs also 27MHz  
rigs and repairs. Coaxial cable. Base station  
antennas + mobile antennas + all accessories.  
OPEN MON-SAT 10.30am-6.30pm

## OSCAR BRANCHES

South Midlands Communications Ltd

SCOTLAND Tel: 031 6572340  
LEEDS Tel: 0532 782326  
CHESTERFIELD Tel: 0246 453346  
BUCKLEY Tel: 0244 649563  
STOKE Tel: 07616 72644  
GRIMSBY Tel: 0472 59388  
JERSEY Tel: 0934 77067

## BEDFORDSHIRE

### TREADORS

DAVID BULL G6 PJE

Tel: (0582) 391233

213 High Town Road, Luton LU2 0BZ.  
934 MHz STOCKISTS

OPEN: 9-5.30 Mon-Sat, closed Wed.

CB Specialists, full service facilities.  
large range of CB's and equipment

## CAMBS.

### Tower Communication

Everything for the 27MHz &  
934MHz CBER, Radio Amateur  
or SWL.

★ First Class Sales & Service ★  
59 High Street,  
Haddenham, Cambs.  
Tel: Ely (0353) 740308



## ESSEX

### CB RADIO & MODEL HOBBIES

Parndon Mill, Parndon Mill Lane  
(next to rugby club), Harlow.  
TELEPHONE: 0279 418817

Open: Mon-Sat 9.30am-6pm  
Sundays 10am-12am

## TELECOMMS

189 London Rd., Northend,  
Portsmouth, Hants.  
Tel: (0705) 662145.

The UK's largest manufacturer,  
importer, distributor and retailer  
of CB equipment. Open Mon-Sat  
9.30-5.30 (Wed. closed 12.30).  
Callers welcome, also mail order.  
see adverts elsewhere in mag.

## DERBYSHIRE

### DERBY ELECTRONICS

41 St. Thomas Rd, Derby  
Tel: (0332) 774825

CB SPARES, SALES & SERVICE  
TAXI RADIO SALES & SERVICE

OPEN MONDAY-SATURDAY  
9 am-6 pm

### WOODFORD CB CENTRE

528 Chigwell Road, Woodford,  
Bridge, Woodford Green.

Tel: 01-504 9652

Open Mon-Sat 10-6pm  
Large range of CB equipment -  
27MHz & 934MHz in stock.

**BREAKERS  
WORLD**  
2 High St.  
Bordon, Hants  
Tel: (04203) 4684

Open 7 days a week  
Fully equipped work-  
shop

MON-FRI - 10.30-8.30pm.  
SAT - 10-8pm, SUN - 10.30-1.30pm

## CIVIC

We have the best stocks in  
the area of CB equipment  
\* Repairs \* Aerial Erection

44 Mill Street, Bedford  
Tel: 88174

AGENTS FOR NEVADA 934

## HERTFORDSHIRE

### RICKMANSWORTH COMMUNICATIONS CENTRE

37/39 Station Road, Rickmansworth.  
Tel: 0923 770634

Open 7 days a week. Mon-Sat 9-6.30  
Sun 10-12, 2-4

Largest selection of CB Radio equip-  
ment in the country.

## BERKSHIRE

### Ritcher Shack

Unit 6, 8 Bells Arcade,  
Newbury, Berks.  
Tel: (0635) 31451

## DEVON

### AGRIMOTORS

Merton CB & Radio Centre  
Merton Garage & Post Office, Merton,  
Nr Oakhampton EX20 3DZ

Open 6 days 9-6  
(Sundays by appointment)

Specialists in 934MHz  
Suppliers of all 27MHz and 934MHz  
equipment

### COASTAL CB AND TROPHY COMPANY

127 Old Rd., Clacton-on-Sea,  
essex. (0255) 74292

Open 7 days a week 9-5pm.  
Sundays 9-12pm.

Possible the cheapest in East  
Anglia.

Mail order or Securicor delivery.

## HAMPSHIRE

### CB WORLD



2 Marzel Way, Portsmouth,  
Hampshire PO1 4BX.

Wholesale and Retail SAE for price  
list

PORTSMOUTH 732234

9am-5.30pm 1pm Wednesday

## HUMBERSIDE - SOUTH

### Cleethorpes CB Centre

(Corrigans)

15 Grimsby Road, Cleethorpes.

Tel: 0472 40703

OPEN:

Monday-Saturday 9.30 am - 6 pm

### INTERCOMMS CB & TELEPHONES

Rigs, Aerials & Accessories.  
Repairs and conversions -  
crystal filters, K-tones etc.

Ascot TV Centre, Silwood Road,  
Ascot, Berks.

Tel: (0990) 20234

Agents for 934 MHz

### BOURNEMOUTH OPEN CHANNEL

335/7 Charminster Road,  
Bournemouth, Dorset BH8 9OR  
Tel: (0202) 518766

Open 6 days 9-5.30  
Instant credit & full service  
facilities

Free Mail Order Catalogue available.



# CB Citizens' Band

# BREAKER BASES

## KENT

### IMAGEFREE

#### COMMUNICATIONS

1-3 Station Road, Rainham, Kent  
Tel: Medway (0634) 373960 Ext. 2

Open 7 days a week.  
Stockists of 27MHz 934MHz and P.M.R. Reflec. Nevada, Cresbyte. Mail Order Available.

### FABULOUS PHONES

CB & Telephone equip. suppliers  
72 High Street, Orpington  
Tel: (0689) 74051

Open: Mon - Sat 9am - 5.30 pm

**Amtronics for all radio communications.** 8 Tollgate Buildings, Hadlow Rd. Tonbridge, Kent. Tel (0732) 361850. F.D.K., Azden Yaesu, Jay-beam, Fortop, Datong, Audioline, Uniace, Modulator.

### ONE STOP ELECTRONICS

126A Maldstone Road, Rochester.

Tel: 0634 400179

The shop for the sale & servicing of all radio communication equipment. Components available. Open 7 days a week.

**COMMUNICATIONS** 10, North Street, Strood, Kent.  
Medway (0634) 716422

OPEN 6 DAYS

For All Communications Equipment including CB, Amateur/Commercial and Marine

Call us for details of our Mail Order Service

## LEICESTERSHIRE

### EVERITE COMMUNICATIONS 934 SPECIALISTS

Agents for Comstel, UNIACE, Wallen. Radios and equipment always in stock. Low mileage Reflects available. Send S.A.E. for lists. Equipment delivered within 50 miles.

OPEN SIX DAYS  
MAIL ORDER A SPECIALITY  
5 Coventry Road, Hinckley, Leics.  
Tel: Hinckley 611569 Evenings 637431

## LINCOLNSHIRE

27/934MHz cb  
LINCOLNSHIRE  
AGENTS FOR  
NEVADA 934



Come and see us at  
Mitier Telecommunications  
The Parade, Cherry Willingham,  
Lincoln. Tel: (0622) 754279

(24 hour answering service.  
Free parking for up to 50 cars)

## LONDON

### PROTEL AERIALS AND COMMUNICATIONS

Manufacturers and suppliers of CB equipment and aerials, DXTV equipment and aerials, also other specialist aerials. Large range of bracketry and masts also available.

295-297 Ballards Lane, N12  
Tel: 01-445 4441

TRADE ENQUIRIES WELCOME

### CB CORNER

19 Trinity Street,  
Gainsborough

Tel: (0427) 611199

Open 10-6 Mon-Sat (closed  
Wed) Agent for Trent Valley  
Electronics.

**City Communications**  
**The BIGGEST & BEST**  
**RANGE of all the**  
**latest CB Equipment**  
**& Accessories**

OPEN Mon. Sat. 10am-6pm  
City Communications Ltd.  
112 Pitfield Street, London E1.  
Telephone 01-739 9991.2

### ALPHA'S CB CENTRES

224 Balaam Street, London E13  
Tel: 01-471 5589

Open: Mon - Sat 9am - 7pm  
Sunday 10am - 2pm

ALSO

EX ZULU/ONE/FOUR,  
132 Leytonstone High Road, E15.  
Tel: 01-555 8045. Open: Mon-Sat  
9am-5.30pm.  
T/A Balaam St. Motors

### X.L. RADIO C.B. CENTRE

133-135 ASKEW ROAD, W12  
Tel: 01-743 2795

**YOU'VE BEEN TO THE BEST**  
**NOW TRY THE BEST**

London's largest stockists of  
27MHz and 934MHz equipment  
Repairs/installations  
Cordless phones and car alarms  
Mail Order Service

OPEN MON-SAT 9-6 THURS 9-1

## GCB LTD

22 Maxted Road,  
London SE15

TEL: 01-639 3424

Open 6 days 9am-6pm

SPECIALISTS IN COMMUNICATIONS  
AND IN-CAR HI-FI

## MANCHESTER

### Centre Base 1

Full range of CB accessories  
and equipment in stock.

433 Wilmslow Road,  
Withington  
(opp. Library)

**CBI** Tel: 061-445-8918  
061-434-5701

## MERSEYSIDE



PHONE US FIRST OPEN 7 DAYS  
Speedy Repair Service. All leading  
brands in stock. The Mobil Garage  
(opp the Grafton Rooms), West Derby  
Road, Liverpool 6. Tel: 051-283 2010

### VANNER C.B. CENTRES

34 Gloucester Avenue,  
Northampton 66704

3 Croft Court,  
Stony Stratford.

Milton Keynes 665981  
9.30-5.30 Closed Thursdays

Mail Order

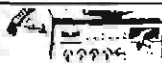
## NORFOLK

### B A YEOMANS & SON

65 North Walsham Rd.,  
Norwich, Norfolk Tel: 46294

Discount CB/Anything electrical.  
Savings just a phone call away.  
Used CB bought and sold.  
CB REPAIR SPECIALISTS

### CB CB SEE ME!



Wlasye Valley CB Centre,  
West Dereham Road,  
Wretton, Kings Lynn

East Anglias leading CB retailer  
Open 7 days a week 9-9pm.  
Tel: Stoke Ferry 500513

### PARKSIDE CB CENTRE Fakenham.



Tel: Thursford 402

Open: 6 days 9 - 6  
27MHz and 934MHz

Large Stocks & Mail Order Available

## OXFORDSHIRE

### MODULATIONS COMMUNICATIONS

62 Woolton Road,  
Abingdon, Oxon.

Tel: 0235 - 21400  
Open: 7 days Mon-Sat  
9-5.30pm Sun 9-12

Instant credit facilities. Agents for 934  
MHz. Wholesale, Retail and Mail  
Order. Send £1.00 for catalogue.

## SCOTLAND

### JRD EQUIPMENT

83 Station Road, Ellon,  
Aberdeenshire. Tel (0358)  
20294.

We stock everything for the CB  
enthusiast. Open every day of  
the week.

**Johnston Communications**  
63 Barclay Street,  
Stonehaven. Tel: 0569  
64618. Mon-Sat, 9am-5pm

Scottlands largest retail distributor  
Trade enquiries invited. Import-  
Export-Wholesale-Retail-Mail Order  
Send 50p Postal Order for huge list.  
Official order for Trade List  
Agent for all major UK manufacturers



# CB citizens' Band

# BREAKER BASES

## AXDON

32 Atholl Street, Perth.  
Tel: 0738 23753. Open 6 days.  
CYBERNET, MIDLAND, HARVARD,  
FIDELITY. Mail order service  
available. Everything for your CB at  
AXDON. Send for price list quoting  
reference CB.



154 London Road, Heckbridge, Surrey.  
Tel: 01 - 647 4758  
Open 7 days a week. Mon-Sat 9-7,  
Sun 9-1. Repair facilities carried out on  
the premises by our technicians.

## TYNE & WEAR

### T & G SINGH

58 a&b Green Mkt,  
Eldon Square,  
Newcastle-Upon-Tyne,  
Tel: (0632) 324048  
Open 9.30-5.30 Mon-Sat  
WE SPECIALISE IN CB  
RADIO & ACCESSORIES

## WEST MIDLANDS

### CB WORLD

37 Colehill Rd., Birmingham  
B36 80P. Tel: 021-784 4523  
SAE for price list. 10-6pm Mon-Sat  
10.30-12.30 Sun  
FOR THE CHEAPEST AERIAL  
PRICES IN THE MIDLANDS

## SOMERSET

### YOUR SOMERSET BASE STATION

The Triangle, Castle Cary,  
Somerset (0963) 50433  
Large selection of rigs, cordless  
phones, extension phones and  
accessories. the best and cheap-  
est in the West! Open 6 days. Easy  
parking. 9am-1pm, 2pm-5.30pm.

### CB CENTRE

20C Seledon Road, 5th Croydon.  
Tel: 01 - 680 4503  
All CB equipment available.  
Good repair service. Telephone  
equipment and answer phones.  
OPEN:  
9.30am-6pm Monday-Saturday.

### DIXON ELECTRONICS

44 Newton St., Bensham,  
Gateshead, Tyne & Wear.  
Tel: (0632) 782065  
CB Radio specialist, quick repair  
service Open 9.30-5.30 Mon-Sat.  
Wed 1-5.30pm

### HEWARD'S HOME STORES LTD (Established 1963)

822/4 Kingstanding Road,  
Birmingham B44 9RT.  
Tel: 021-354 2083  
G4RJM with 38 years in The Radio  
Trade. Ham Equipment urgently  
wanted Open: Mon-Sat 9-6  
WE WELCOME ALL CB'ers

## SUFFOLK

MARSHION ELECTRONICS  
366 Spring Road, Ipswich, Suffolk.  
TEL: Ipswich (0473) 75476

Open: 9.30-5.30 Tues-Sat  
CB 934 and electronic  
components

WHY NOT TRY US FIRST?

## SUSSEX

### The C.B. Centre



Inrange Ltd, 8 Marine Court,  
St. Leonards on Sea.  
Tel: Hastings (0424) 443185/442025  
Open: 7 days. Mon-Sat 9.30-6.30  
Sun 10-2.30. Retail & Wholesale.

## WALES

### CAERPHELLY CB CENTRE

CB Rigs 55 Van Road, Caerphilly,  
Mid Glamorgan.  
Tel: 0222 882450  
Twigs  
Easy parking. 10am-1pm, 2-15pm-6pm  
6 days Keen prices. All accessories,  
Good service by Rig Doctor.

## CB WORLD

37 Colehill Rd., Birmingham  
B36 80P. Tel: 021-784 4523  
10-6pm Mon-Sat  
10.30-12.30 Sun  
FOR THE CHEAPEST AERIAL  
PRICES IN THE MIDLANDS

## YORKSHIRE

• RADIO AMATEURS AND CB PEOPLE TALK TO •  
NEW BRIGGATE LEEDS LET BUY  
COMMUNICATIONS CENTRE  
ELECTRONIC COMPONENTS - TELEPHONES  
VIDEO - AUDIO LEADS - STYLISH  
LEEDS 42007 THE PROFESSIONALS!  
unilocal  
TRIO ICOM YAESU  
LARGE RANGE OF ACCESSORIES

## STAFFORDSHIRE

### STAFFORD COMMUNICATION & CAR CENTRE

C.B. & Telephone equipment  
plus full range of car spares and  
accessories.

3A Bridge Street, Stafford.  
TEL: Stafford 212574

### G.W.M. RADIO LTD.

Long established stockist of  
Ham & CB equipment. Repairs  
undertaken. Wide range of  
accessories.

40/42 Portland Rd., Worthing  
Tel: 0903 34897

## WEST MIDLANDS

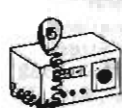
### BUFFALO BILL

CB Radio & Accessories  
100 Walford Rd., Sparkbrook  
Birmingham 11 021-772 2066  
"We can make you  
Radio Active"  
OPEN 6 DAYS 10-6

### LEN BERRY ELECTRONICS LTD.

We monitor channel  
0723-373914  
or eyeball at:  
147 VICTORIA ROAD,  
SCARBOROUGH,  
YORKSHIRE

## SURREY



### GUILDFORD CB

Surrey's biggest  
stockists of CB  
equipment and  
accessories

Low prices. Technical know-how  
Repairs. 936 and Amateur  
Classes and YAESU wanted  
34 Aldershot Rd., Guildford GU4434

### TECHNICENTRE

CB, telephones & accessories  
91 Bohemia Road,  
St. Leonards, Hastings.  
TEL: 425-951

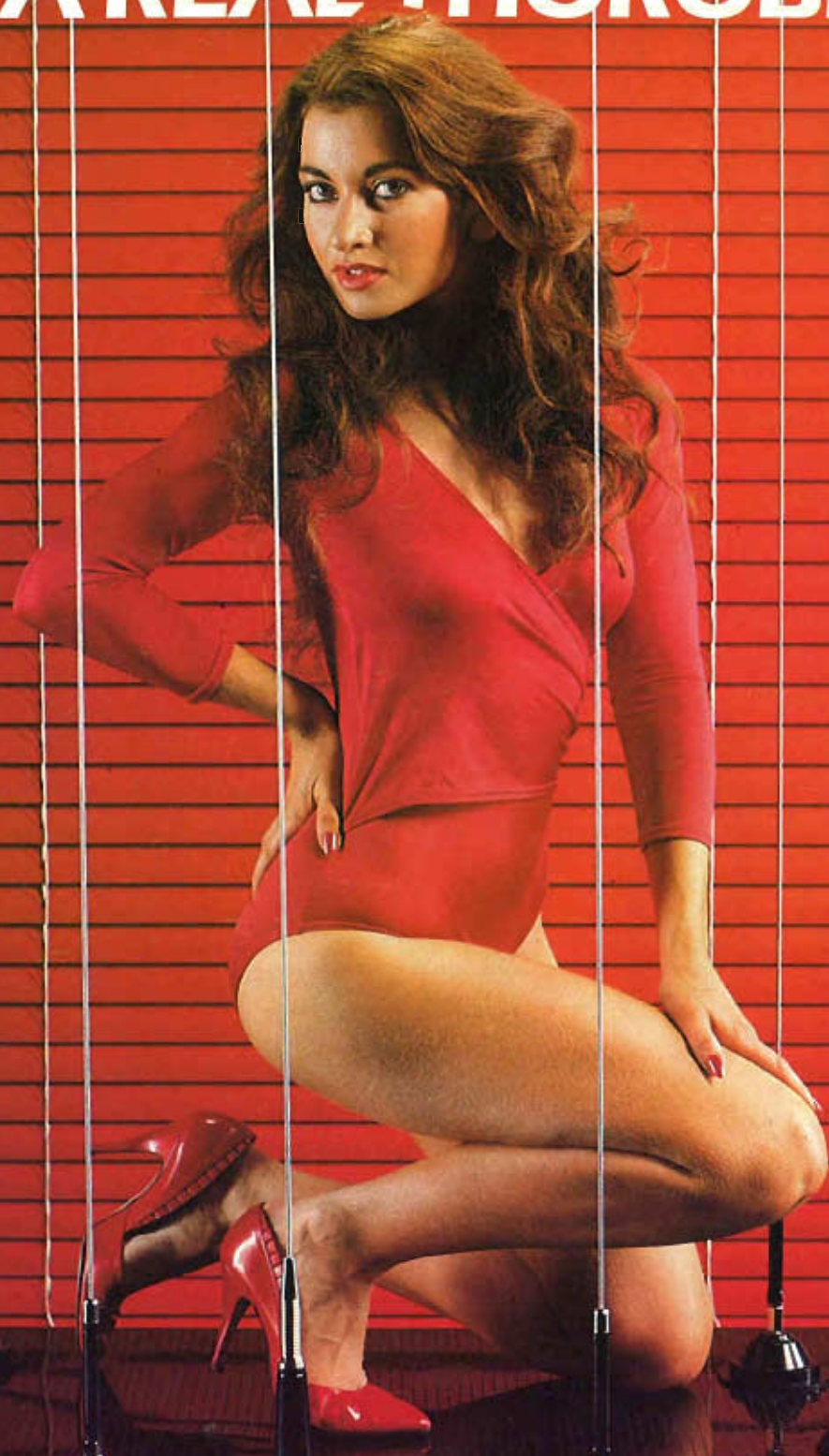
ALSO  
Ashford Market, Saturday.  
Haywards Heath, Sunday.

Don't leave it to chance!  
Give your business a boost  
by advertising in

## CB MAGAZINE

Ring Jason on 01-437 0699 for details

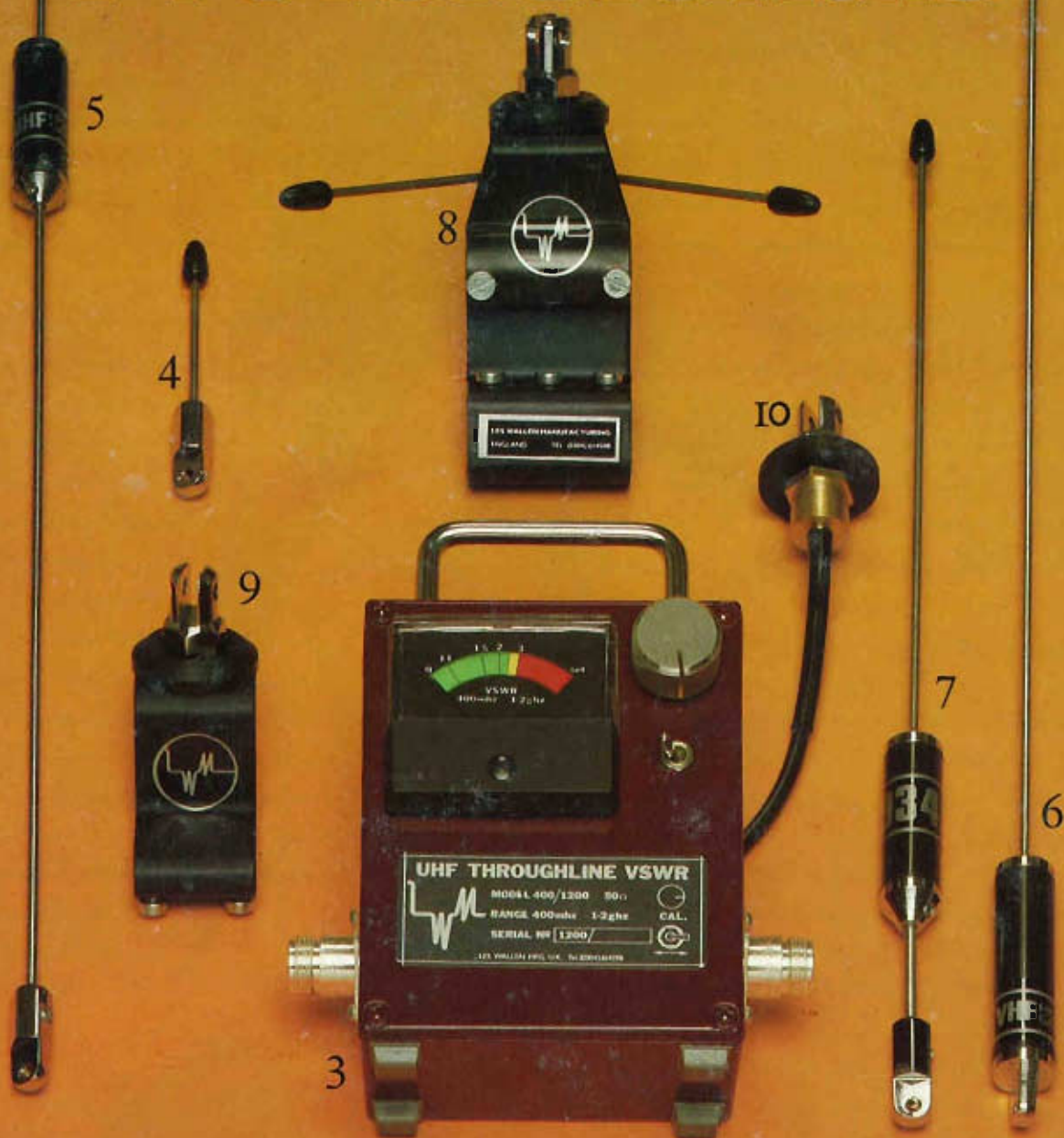
# HIGH PERFORMANCE FROM A REAL THOROBRED



10 VICTORIA STREET, NEWARK, NOTTINGHAMSHIRE. TEL: 0636 74688. TELEX: 377627 SALLY B



# The Professionals



Professional, is the only word needed to sum up this new range of 934 MHz antennae and accessories from Les Wallen. Problems that are normally associated with this frequency have been completely overcome, bringing to you a range of 934 equipment that is both highly efficient and competitively priced. Items from the Les Wallen Professional Range include:-

- |   |          |  |        |
|---|----------|--|--------|
| 1. 934 MHz base colinear (8 x 1/2 wave + 1 x 1/4 wave elements) .....                   | £55.35   | 8. Gutter mount bracket complete with ground-plane assembly for 934 MHz/Cellular .....   | £7.75  |
| 2. 934 MHz mobile colinear, gutter mounted, trunk-lip mounted, (elements as item 1) ... | £37.50   | Gutter mount only .....  | £4.35  |
| 3. VSWR Throughline meter 400/1200 MHz...   | £67.00   | 9. Hatch/trunk-lip mount c/w ground-plane assembly for 934 MHz/Cellular .....            | £7.15  |
| 4. 1/4 wave mobile antenna for 934 MHz / Cellular radio (state which) .....             | £20.05 ● | Hatch/trunk-lip mount only .....   | £3.95  |
| 5. 3/8 over 3/8 UHF mobile, 420-480 MHz .....   | £24.65   | 10. Low loss antenna mount c/w 4m coax for up to 1.3 GHz as supplied with items 4 & 7... | £12.90 |
| 6. VHF 3/8 wave mobile 140-180 MHz .....  | £24.00   |  |        |
| 7. 934 MHz or Cellular 3/8 over 1/4 wave mobile (state which) .....                     | £24.55 ● | ● Price on antenna includes the low-loss mount, if required separately deduct .....      | £12.90 |

All prices shown are RRP, inc. VAT.

All enquiries to:



**LES WALLEN MANUFACTURING**  
 PEMBROKE WORKS, RAMSGATE ROAD, SANDWICH, KENT CT13 9NW.  
 TELEPHONE: (0304) 614598.