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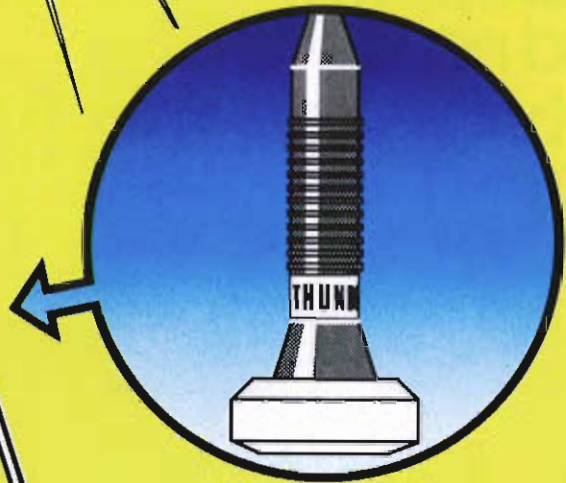
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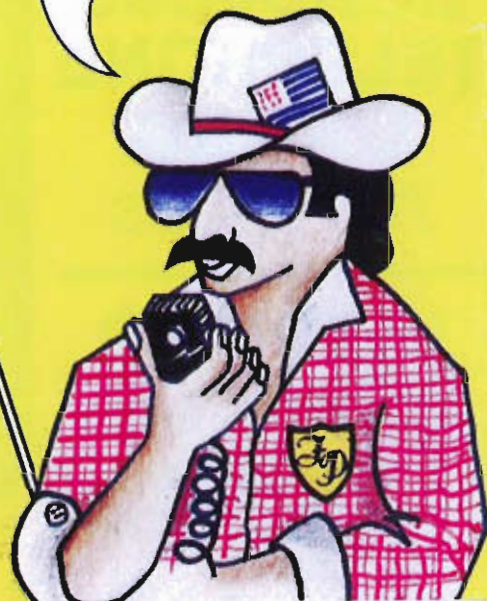
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and twig shop
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Typesetting & Origination
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Sue Sharp

Publisher:
Alec Gee

CB Citizens' Band

CONTENTS

Cover This Month

The Grandstand LA 83 27MHz. to 934MHz. transverter is featured on the front cover, with a Grandstand Bluebird 27MHz. rig. Expect to pay in the region of £399.

... Did you hear about Walter? You know, lead singer with Walter and the Wailers. He has this obsession with pink. When he first started making money, he moved into a beautiful 18th century mansion and had it painted pink. Pink Rolls Royce, pink Ferrari, pink swimming pool, whatever he had it had to be ... pink!

After playing around with several sports; golf, windsurfing, ski-ing, (with pink clubs, boards and skis), he decided to take up riding. He paid a fortune for a magnificent chestnut horse which was eventually delivered to his mansion. Walter looked over the horse with his groom and said "It's a fine horse, but it's not quite right — I want it dyed pink".

In the stables preparations were underway to dye the horse, but as soon as the horse saw the stable lads coming towards him with brooms laden with pink dye, he bolted and was last seen disappearing over the horizon, running like a Grand National winner. Which all goes to show that ...
YOU CAN LEAD A HORSE TO WALTER BUT YOU CAN'T MAKE IT PINK.

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APRIL 1984

VOLUME 4 NUMBER 5

Update	4
Read all about it	
CB Q & A	8
The master mind of CB	
Good News Week?	10
What the antenna regulations mean	
The Burning Question	14
Something's burning	
Great Bremi Competition	16
Prizes galore!	
Mack Chat	18
Taxi!	
Twong	21
A reformed character?	
QSL	23
The new boy's first day of term	
The Grandstand View	26
934 transverter on test	
Antenna Review	30
Searching for a signal	
Snap, crackle and pop	32
Vehicle interference to CB	
Lady Breaker	35
Forlorn Filly	
93Forum	36
Forum or againstum?	
Back Chat	39
Yakkety Yak	
Club News	43
On the spot	
Reference Section	45
New cordless telephone listing	



UPDATE

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

In January, one of the biggest events in Consumer Electronics takes place in Las Vegas, only rivalled by the summer Consumer Electronics Show in Chicago. It is a forum for a huge selection of electronics from communications to video, hi-fi to T.V., computers to cameras and companies from all over the world demonstrate their range of goods and new developments. (For all that they still won't let me go — something to do with doubting how much work I'll do!)

Over the years since I have been interested in CB, I have read the publication that is put out daily during CES, which has details on market trends, new products and personalities at the show. It makes valuable reading as it is a good indication on what will be in the shops in six months time and how the market is behaving.

I have watched CB fall from the biggest market at CES to the smallest, and over the past two years it has barely got a mention — in fact I'd go so far as to say none at all. But guess what? This year, in amongst the cordless telephones and computer games, is a paragraph on the newest portable CB emergency unit from General Electric which, in addition to the usual features has static and background noise reduction and weighs in at three pounds.

Not much of an event in itself, but by coincidence I received a letter the day after reading that from a friend involved in CB in Arizona. His letter said,

'The CB business in the U.S. has turned quite brisk again and all sorts of people are buying all sorts of CB equipment on a grand scale. I went to the recent CES show in Las Vegas and the large manufacturers such as Cobra and Uniden say their distributors are buying radios in large quantities

again. My own CB specialities are selling very well also.

'Interestingly, we are seeing a lot of the 'export' 120 channel AM/FM/SSB showing up in the country now, as everybody wants them!'

I wouldn't want to suggest that this country follows every American trend — in fact, thank heavens that we don't, but the CB scene in America is healthier than it has been for years. Put that together with some of the comments I have from both readers and trades people in this country, that 'CB is looking up' and I wonder if some so-called experts (me included if you want) aren't going to have to eat their words. Perhaps CB, along with Mark Twain, will be able to say 'Reports of my death have been greatly exaggerated!'

For those who pride themselves on being the first with a new craze, I have picked out a few items from the CES report so you can get your order in early at the local shop. How about:

A digital bedside alarm clock with built-in telephone. It doesn't say whether the speaking clock wakes you up if you oversleep!

The Bearcat CompuScan scanner that serves as a peripheral for a personal computer. The scanner turns a computer into a real time news terminal by monitoring police and fire calls as they happen. It has an automatic video display and each channel can be programmed to display the source of the transmission.

The new MX 3000 scanner from Regency, a compact computer touch entry unit that has six band coverage.

A security listening device that enables the user to conduct a security check at home or business with one phone call. You can also monitor data processing operations or

verification of emergencies at remote sites.

Surprisingly, the American trend for very ornate styling seems to be dying out, apart from the wooden casing on some of the new television sets. 'Colonial' in design, it doesn't seem to have occurred to the designers that the T.V. wasn't invented during colonial times!

Sideways looks at American society aside, I am getting very excited by developments close to home. I don't want to do 934MHz. to death, especially to the detriment of the system that the vast majority of us use, but the UHF CB scene does seem to be opening up. The Warlock soon to be on the market, the Reftec base station nearly out from under wraps and a Uniden range that should be on the market very shortly, and really seems worth waiting for.

I must confess that until recently I hadn't used 934MHz. and most of my enthusiasm was caught from other people, but now I've had a set to play with for a while and I'm convinced.

We must be careful to remember not to leave 27MHz. behind in all this eagerness for a new frequency though. At the moment, any CB development seems to be going into 934 and it would be a great shame if 27MHz. became a poor relation. It is still, and likely to remain, the most accessible CB system for the majority of people and there are possibilities for strides forward. We haven't given up on European harmonisation — this could bring further 27MHz. channels and the possibility of legal foreign contacts. We could do with some more developments on 27MHz. CB to give us some faith in it's future.

Sue Sharp

Breaker Bleep

Martello Computer Services have come up with a programme that should satisfy a growing band of breakers who share their leisure time with computers and CB.

'Breaker' is available on cassette for the 16K and 48K Sinclair Spectrum and the 16K ZX81.

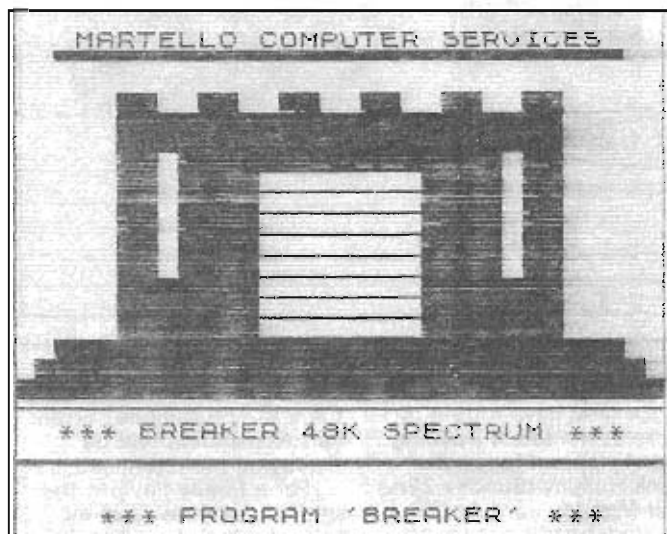
Side A loads the program, side B a working example of the program and how to use it. It works as a data base for listening upto 300 CB contacts by name, handle, address, date and distance of contacts and can locate individual breakers according to name, distance etc.

Files can be listed, searched, updated and even printed if you have a

Sinclair printer or an interface to an Epson type printer.

Martello rightly point out that if you have your CB and computer too close you are in danger of wiping out your files, but apart from that, the program was remarkably easy to use. It loaded straight into my 48K Spectrum without difficulty and even allowing for my at times banana-like fingers and what has been politely termed by more-expert friends as 'lack of computer sympathy' I couldn't crash it.

The tape costs £5.50 (including post and packing) or is available as a listing for £3.50. More details from Martello Computer Services, 235 Downes Road, Folkstone, Kent.



QSL Awards

The Great British QSL DX Club has been running a competition in conjunction with the Currie printing company. QSLers have had to collect 100 Currie QSL cards to qualify for a 2,500 entry log book, with an additional award of 1,000 Rainbow QSL cards and a 5,000 entry log book for the two people who collect 200 Currie QSL or Eyeball cards.

To make life more difficult, all the cards have

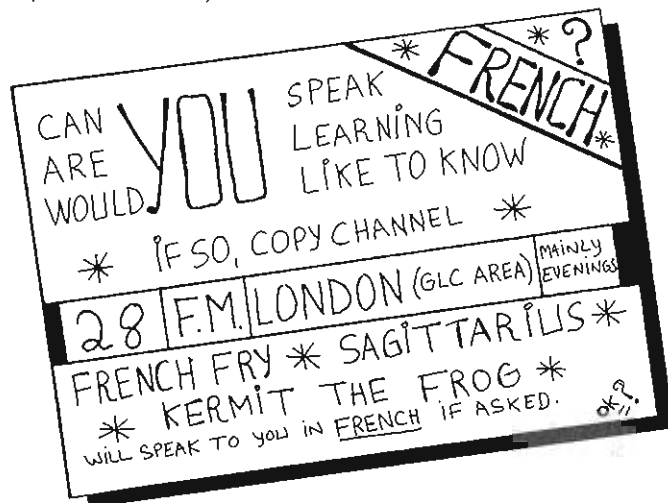
to be different and cannot include 'stock cards' more than once, even if collected from different people. Sample cards don't count either.

The first winner of a standard log book is Martin Edwards (Barnabee Bear), president of Bravo Bravo International QSL Club, of Carrowdore in Northern Ireland. He sent his 100 Currie Cards to Des in January and is now on his way to the '200' award. Congratulations Martin.

Parlez Vous Francais?

For those of you coming up to exam time and struggling with your French or planning this summer's holiday, Londoners amongst you might like to give channel 28 a try. French Fry, Kermit the Frog and Sagittarius will be available to speak French to you and

give some linguistic tips in the Hampstead, Oxford Street and Kilburn Park areas of London. Claude (French Fry) assures me that, although they have had an adverse reaction from a few breakers, most of the people that they have spoken too are all for the idea.



Meteoric Rise

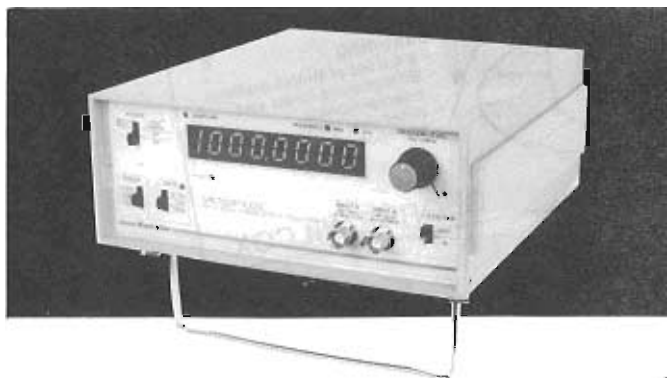
Some months ago we reviewed the Black Star Meteor 1000 frequency counter. The Meteor range are designed and manufactured in Britain by Black Star in Cambridgeshire, who have just added an extra facility to the three counters available.

This is a Temperature Compensated Crystal Oscillator which gives extra accuracy and temperature stability. This extra precision means that the 1000X will measure typically from 2Hz. to 1.2GHz. and a

temperature stability of $\pm 0.5\text{ppm}$ from -10°C to $+40^{\circ}\text{C}$.

In common with the other models (which are also available with the T.X.C.O.) the Meteor 1000X comes complete with mains adaptor/charger. Comprehensive instruction manual and a year's guarantee. There is also a wide range of optional accessories available.

The Meteor 1000X costs £225 and can be obtained from Black Star Ltd., 9A Crown Street, St. Ives, Huntingdon, Cambs. PE17 4ED.



Dial-Search 1984

Broadcast radio enthusiasts will welcome the third edition of Dial-Search 1984, a listener's guide to European broadcasting. Enlarged and re-written, it provides essential information for the listener using a portable radio and its own aerial.

The medium and long wave bands are covered in a frequency list of Europe and a separate listing for the British Isles. Information includes an index by language, hours of broadcasting and approximate hours of transmission and reception in the U.K. plus transmitter data.

Apart from a complete VHF list for the British Isles there is a new short wave section which is a useful guide for a beginner in this field. A selection of broadcasts in English, including DX programmes, is also provided.

Two articles and maps help you make the best of your portable, helping you pin point the 300 or more transmitter sites listed in the text.

The publication costs £2.75 (15 IRCs for overseas purchasers) which includes postage. It is available from George Wilcox, 9 Thurrock Close, Eastbourne, East Sussex. BN20 9NF, or ordered through booksellers, ISBN number 0 9508575 1 3

Do You Deviate?

Our old friends at Bonex, of 102 Churchfield Road, Acton, West London, have just sent us a sample of their 27MHz. Deviation Meter Kit.

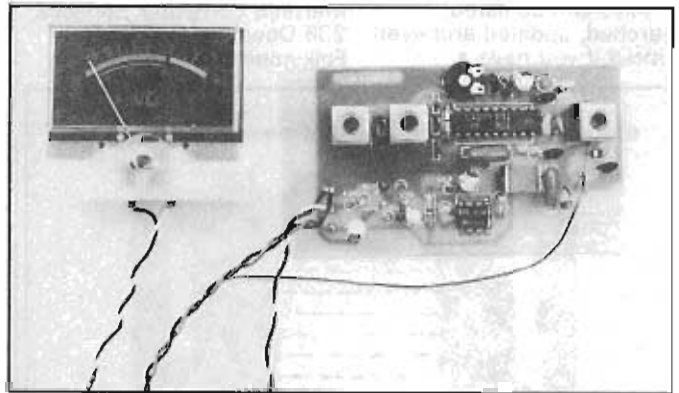
This is a device that enables the deviation of a 27MHz. FM transmitter to be accurately set with a minimum of fuss. It is a wideband device and needs no tuning to individual CB channels. All that is necessary is to place the meter in proximity of the transmitter, and when transmitting the deviation can be read off the meter. No connection to the CB is necessary.

In practice the device

needs a 12 volt supply, battery or otherwise. As it consumes around 60 mA of current, it is likely to be fairly heavy on dry batteries. The unit needs to be calibrated against a source of known deviation. Also the metering circuit reads RMS rather than peak levels. This means that although accurate on test tone signals, it will under read dramatically on speech signals.

The Deviation Meter is a valuable piece of test equipment, and no 'Rig-Doctor' should be without one.

Bonex can be contacted on 01-992 7748. The deviation meter kit costs £8.26 + VAT + 60p P&P.



Truckfest '84

Truck fans have a treat in store at the latest trucking event planned for Easter Bank Holiday (Sunday 22nd and Monday 23rd April).

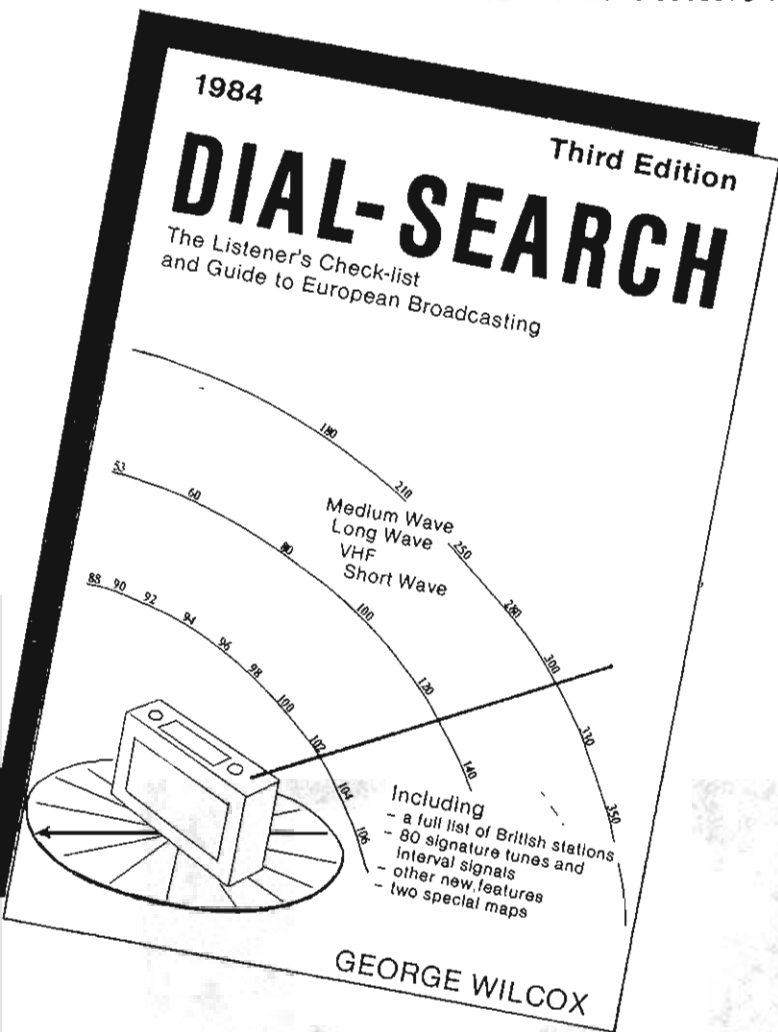
Now heading to be an annual event, this year's attractions include an expected 1,000 trucks in the 'Best Kept Truck' competition. Prizes will be given for the best Owner Driver and the best Fleet Owner Truck. A giant Circus big top will feature a wide variety of entertainment including disco's, bands and wrestling and for the braver among you there will be a Bucking Bronco to risk your neck on!

Both vintage and custom trucks will be getting a look in, plus some vintage

military vehicles from the T.A.V.R. The National Street Van Association will be displaying their vehicles.

For a family flavour, the site will also have hot air balloons, marching bands, crazy clowns and fun fair. As last year, radio presenter Sheila Tracy will be in attendance to open the 'fest.

Prices are £2.50 for adults with children and senior citizens free. The event is being held at the East of England Showground at Peterborough and further information is available from Truckfest '84, The Organisers, Live Promotions, The Millstone, St. Thomas's Road, Spalding, Lincs.



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

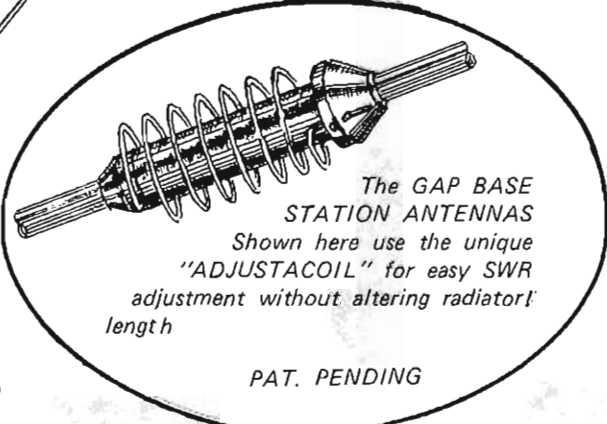
The GAP LOFTY II
Centre loaded for
lower angle of
radiation.

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

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

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open wound
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3/8 UNF x 24
Standard
fixing.

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length

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Audio Check

Bakerman from Dorking wants to know what his signal sounds like . . .

Q Please can you tell me if there is any device on the market that would enable me to check the audio of my transmission through either an ear piece or external speaker?

A I'm not altogether sure what you want, James. There is obviously laboratory equipment for measuring the type of signal that you are transmitting, but that is very expensive and won't necessarily let you listen in on your transmission.

When the PTT button is depressed and you are transmitting, the receive section of the rig is bypassed so you either need to 'tap into' the rig, which is going to be some pretty specialised electronics, or you can try to get a CB monitor. These were very popular in

this country before legalisation for those who were interested in CB but didn't want to break the law. I haven't seen any about in my local shops for some time but I expect they are still available if you hunt about a bit. If you do use a monitor receiver you may run into trouble with it being switched on whilst you are transmitting. It may set up an audio feedback loop and howl!

SA

Loaded

The Ghost, up in Leamington Spa, wants to do some antenna designing . .

Q Can you help? I have been trying to find out how to calculate the length of an antenna when used with a loading coil i.e. if you use a legal 1.5 m antenna, how do you calculate the amount of inductance to add to make it work at this frequency. If this stumps you, can you recommend a book on the subject.

A I don't want to be negative straight away but you really are better off in finding a book on the subject or discussing it in depth with a qualified person. There is a formula and it can be calculated, but it is a very complex subject, taking into account impedance, frequency, reactance and inductance. People who can work it out draw big salaries from antenna design companies!

There is a lot of higher maths involved in calculating loading coils, but once you understand the principles, there are tables that will act as a starting point in working out the formula.

If you want to experiment, then you can wind coils on a polythene tube and decrease or increase the number of coils to get the best result from an SWR meter and a rig on LOW power, but even this isn't recommended unless you have some idea of what you are doing.

I strongly suggest that you look in your library in the radio section for a book on antenna design. That will at least give you a starting point and the reference books should include a bibliography that will tell you other publications you can read.

SA

Cable Quiz

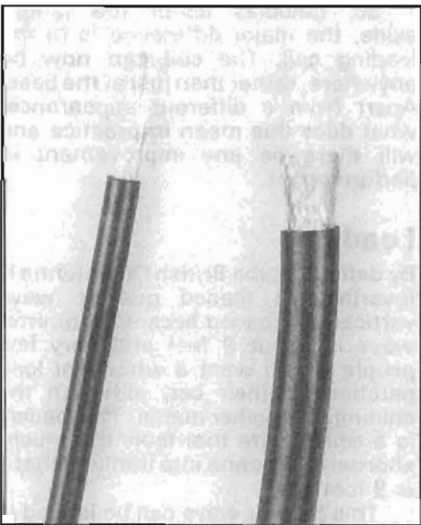
N. Jenkins of Twyford in Berkshire wants to know if he can mix and match

Q I have a question which I am hoping you can clarify. Is it alright to mix RG8 and RG58 cable in the same antenna line? I have been told that this might damage the rig over a period of time.

An theory and practise, there is nothing to say that you can't mix the two cables in one antenna line, as they both have the same impedance and are both intended for HF use.

Having said that, and that it won't do any damage to your equipment, I'd like to add that it rather devalues the point of using RG8 cable if it is mixed. RG8 is used for either handling more power than the less-robust RG58 or to reduce cable loss (the amount of signal that 'leaks' away through the co-ax.) Using both in the same line reduces the effectiveness of the cable to the lowest denominator - the RG58. In having an extra connector in line, you are also increasing the likelihood of cable loss, as some will leak away through the connector.

SA



RG8 and RG58 can be mixed in the same antenna line.

Solid Ground

A nautical type, John in Elderslie, needs some help with antennas . . .

Q I intend to fit a CB unit to my boat, an Amstrad 901, which will be fitted inside the boat.

There are two possible positions for the antenna. The first is on the stern rail, which is about five feet above sea level and made of stainless steel tube. The second is on top of the mast, which is about 35 feet high and made of aluminium.

If I put the antenna on the rail it is easily maintained and adjusted, but would lack height. On the mast, the antenna would have height but would be continually moving through a 10 degree arc, so the inertia loads



would be high. I am reluctant to fit an ordinary 1.5m antenna as the mast isn't very accessible.

I wondered if a 'rubber duck' or a similar maintenance free antenna would be more efficient than an ordinary antenna fitted on the stern rail.

I would also like to use the same antenna for my broadcast radio, which is an ordinary car radio, using a junction box with trimmers.

A Your first major problem is with the lack of ground plane, rather than the mounting position. CB antennas of conventional design rely on ground plane to reflect the transmitted signal - this is, for practical purposes, a large area of metal like car bodywork. As I guess that your boat is mostly likely fibre glass, you won't have this handy ground plane.

You have two options. The best is to find an antenna that has been designed to operate without a ground plane, but, as you may have guessed, this isn't the easiest.

There were some antennas around in the early days of CB that were designed for this purpose, but these are difficult to find now. Antenna Specialists marketed one (Antiference Ltd., Aylesbury, Bucks HP19 2BJ) but I have been unable to find out if this is still available.

The other option is to buy an antenna that will operate with very little ground plane, like the Dial-a-Match, and make a mounting plate for the antenna. This will be slightly more difficult to install on the mast.

The last option is to mount an aerial on the hull of the boat, with a commercial ground plane kit.

Obviously, the higher the antenna, the more efficiently it will perform and the mast offers the best location. As you point out, it will be more difficult to install and maintain, but is quite definitely the best position.

A 'rubber duck' is cheap and easy to install, especially if you opt for the mast, but you pay the penalty in that the antenna design is rather inefficient.

Any of the antennas referred to will pick up broadcast radio with a splitter box.

The optimum is a conventional design antenna, designed to operate without a ground plane, mounted on the mast, but you may well have to make some compromises.

A marine radio company may also be able to help. They are experts in radio installations and know what problems to expect with antennas and ground planes etc. Some of them also fit CB.

SA

Socket To Me

Antony Daniels in Cleveland is confused by plugs and sockets . . .

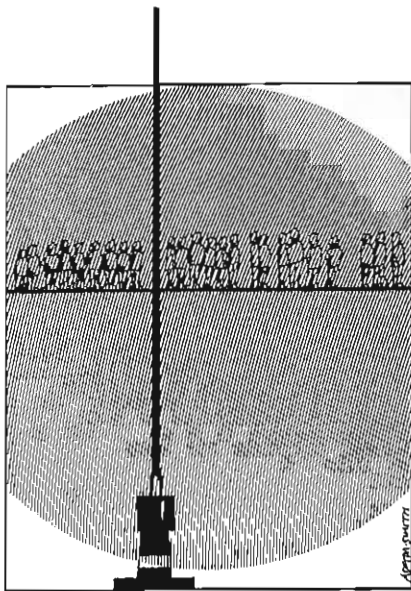
Q In recent adverts, in the magazine, it says that the G.A.P. Lofty takes a SO 239 coax. fitting but my CB only has a PL259. Would I be able to fit a SO 239 on one end of the coax. and a PL 259 on the other.

I've been getting Citizens' Band magazine for a while now and always read Q&A first.

A Well, you've got one of the starring roles this month Antony! You have nothing to worry about with your plug and socket problem - the SO239 is the socket designed to take the PL259 plug so that they are compatible.

SA

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



The new licencing regulations on antennas could make a big difference to the selection available in your CB shop. Sue Sharp looks at the possibilities.

GOOD NEWS WEEK?

The original announcement that the only permitted types of antenna were those that were base loaded with a single element of 1.5 metres was met with hoots of derision from the humblest breaker to the biggest antenna manufacturer.

The dust has never settled from this initial reaction as breakers have put forward the arguments for relaxing or extending the regulations. Manufacturers, in their turn, have been as inventive as possible, but the Radio Regulatory Division shot down further flights of fancy by issuing 'guidelines' that defined rather more closely what they meant by loading coil and the size it should be.

Since then, a CB aerial has been immediately identifiable by the basic design and anything that looks different has been a handy hint to BT and the Radio Interference Service that the letter of the law was not being followed.

This will now be changing as the new licence comes into force, bringing with it a more relaxed view on antennas. To be more exact, paragraph 3 of the schedule reads:

'27MHz. apparatus with provision for connection of an external antenna shall only be connected to an antenna which does not exceed 1.65 metres in length or 55 millimetres in diameter, including any loading coils and associated circuitry and casings, but excluding any ground plane'.

The power reduction for antennas mounted over seven metres high is still in force.

The Department of Trade and industry feels that this change will not affect the potential for interference and will give more freedom in antenna construction. This is obviously the case, but a length restriction still remains.

However much we disagree, it is easy to see the reasoning behind this insistence. The RRD and the govern-

ment have always firmly regarded CB as a short range service and, in their view, very efficient antennas increase the chance of interference (a moot point, but never mind) and give an advantage that the system was never meant to have.

So, quibbles about the length aside, the major difference is in the loading coil. The coil can now be anywhere, rather than just at the base. Apart from a different appearance, what does this mean in practice and will there be any improvement in performance?

Loading

By definition, the British CB antenna is invariably a loaded quarter wave vertical. It's loaded because a quarter wave is about 9 feet and very few people would want a whip that long perched on their car, although the chimney is another matter. The loading is a coil of wire that fools the much-shortened antenna into thinking that it is 9 foot long.

This quarter wave can be loaded at the base, centre, top or continuously loaded along the length of the antenna. There are disadvantages and advantages to each type of loading:

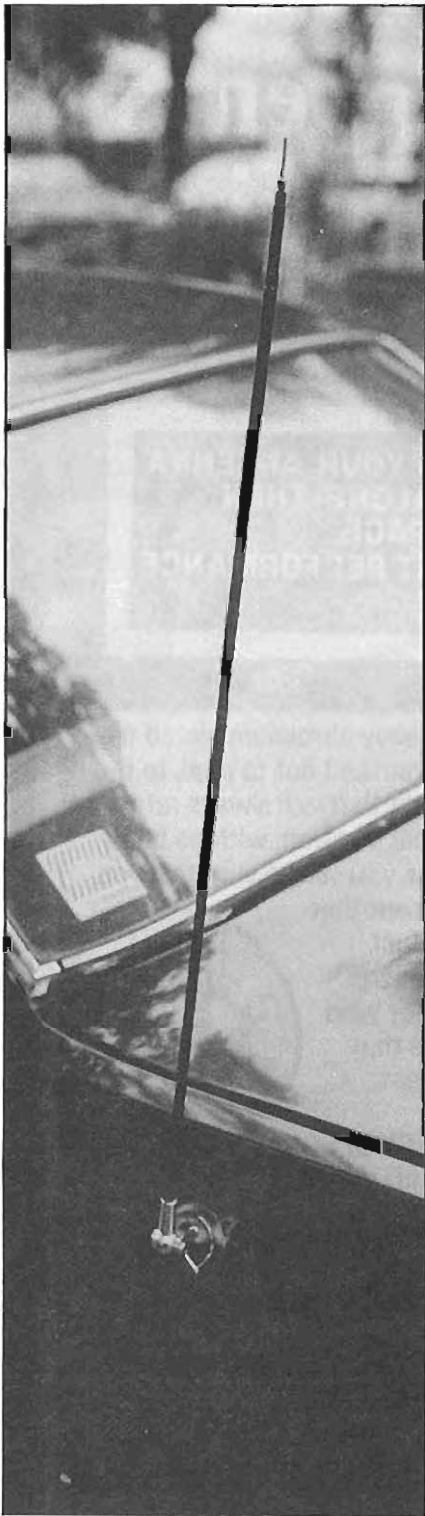
continuously loaded antennas are very easy to install but are less critically tuned and sometimes difficult to SWR.

top loaded antennas are efficient, but harder to match. As the weight is at the top, the antenna can sway badly, which can change the radiation characteristics. The most fragile part of the antenna is at the most vulnerable spot,

centre loading is very efficient but is also liable to sway,

base loaded aerials are not likely to sway and the coil is less vulnerable. They are also less susceptible to interference from passing vehicles if mounted on a car. One of the least efficient designs.

No loaded antenna is as efficient as



Will this again become a familiar sight?

a greater wave version, but a centre loading is generally regarded as a good all-round compromise.

Products

This compromise on a centre loaded antenna is confirmed by a quick 'straw poll' around the manufacturing companies.

The Les Wallen range will all be legal as of the 5th March, although one of the antennas that previously

just scraped in will have to be modified slightly to get it under the new length restrictions. At the moment the company are considering a scheme to exchange the coil on antennas already bought and they will offer help to customers who have problems.

Les Wallen are now developing a centre loaded Modulator, which they feel will have improved performance. This will join the rest of the Modulator range, suitably modified to comply with the new requirements — without loss in performance.

The company voiced the same criticism as all the companies I spoke to — they were disappointed that the changes were 'sprung' on manufacturers without consultation or warning — or without any form of official notification.

Aerial Suppliers in Redditch made the same comment — they didn't know about the changes until I rang them up and asked for their opinion. Ray Summers thinks that the range and choice of antennas should now improve and they will be planning new products. He expressed a worry that also occurred to me — will previously highly recommended products be left on the shelf as the 'fashion' changes? — but we can only wait and see how the new products measure up against the old.

John Lines at Gamma Aerial Products welcomed the changes as far more sensible than the existing regulations and was pleased that the manufacturer now has greater scope to produce efficient designs. They now have a new product under development which should be available almost as you read this article.

Like many other companies, Gamma will be burning the midnight oil to have new products available. Freeman and Pardoe, of Thunderpole fame, had been planning a new antenna which will now fall outside the regulations, so they have had to stop the work on this Thunderpole 'mark 3' and reconsider.

In their view, the regulations in general are beneficial to breakers and the specific prohibition of some types of activity may discourage the worst behaviour.

Like their competitors, they are looking at centre loaded antennas as offering the best results. They certainly feel that this type will offer a better 'pre SWRed' result and an improvement in bandwidth, with a slight gain in performance. They have made prototypes of the three main possibilities and have decided that they will probably stay with the centre loaded variety. Ground plane arrangements are likely to stay the same. Freeman and Pardoe still plan to stay with base antennas, but are leaving their options open for the mobile market.

So we can expect some tempting new products on the shelves soon, and we hope to have a centre loaded antenna on test in the near future.

Whatever else the results of the licence changes and antenna ones in particular, it is a minor triumph for

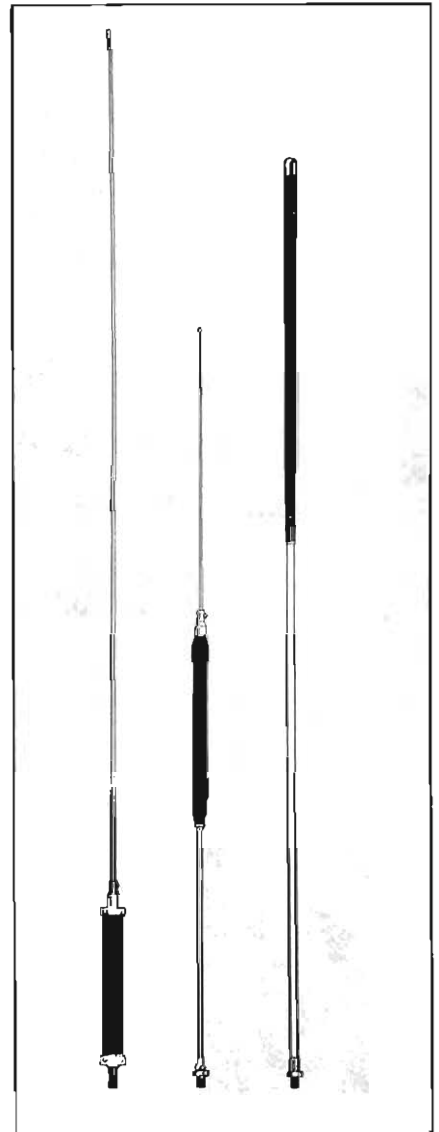
common sense that the RRD has gone ahead with these alterations and have consulted users — even if they have left out the manufacturers.

Apart from the new products to come out of our home grown antenna industry, will we see the return of the DV 27 and the Firestik? Very popular antennas in their day, their day seemed to go with legislation and the obvious profile of a legal antenna. A legal Firestik, in the range of primary colours that they were previously available could be really popular — especially as there are a lot of people who have fond memories of the Firestik.

The DV 27 and its variations were also very popular in their hey day, and their performance record was very high, even allowing for the inferior copies that flooded the market. DV 27 exponents would also be pleased to see their old favourite in the legal stakes.

The next few months will tell, as the word filters through and the goods start appearing. On balance, it seems like good news, but time will tell.

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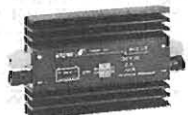
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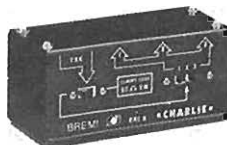
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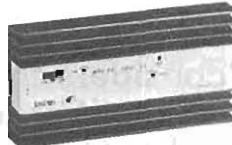


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RRP £33.95

DIGITAL FREQUENCYMETER MOD. BRL 6150
Direct insertion between RF source and antenna - Display: 6 digits - Power requirement: 11 + 15 V d.c., 150 mA - Resolution: 1 KHz - Gate time: 0.1 sec. - Minimum RF input - power: 0.25 W - Max RF input power: 100 W - Range of frequency: 10-150 MHz - Dimensions: (LHP) 112 x 36 x 152 mm. - Weight: 245 g.
RRP £33.95



LINEAR AMPLIFIER MOD. BRL 210
Output power: 10 Watts AM maximum, depending on the input power - Input power: 0.5 - 10 Watt AM, 1 - 20 Watt PEP SSB - Input voltage: 220 V 50 Hz - Frequency: 26-30 MHz - Operation: AM - SSB - FM - Output impedance: 50 Ohm - Input impedance: 50 Ohm - Input SWR: better than 1.3, internally adjustable - Instruments: output power indicator and modulation percentage indicator - Control: stand-by, AM - SSB - Protection: mains with 2 A fuse contained inside - Vacuum tube: EL509 - Dimensions: 174 x 100 x 257 mm - Weight: 4 KG. - It is advisable to use a RG 58 cable 70 cm long.
RRP £26.95



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 1.3, externally adjustable - Dimensions: 160 x 75 x 40 mm - Weight: 0.92 Kg.
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THE BURNING QUESTION

Keith Townsend considers the linear amplifier, burner, 'boots', call them what you will and discovers more hazards than the obvious.

Looking back over the entire CB campaign in this country I wonder how many of those who spoke so fervently in favour of 27MHz. would do so today? Just how much of their pressure resulted from the fact that the height of the campaign in the late seventies and early eighties coincided with a period of maximum sunspot activity?

Not that they were suffering from sunstroke. They were merely taking advantage of a set of circumstances which will not recur for a few years yet. Circumstances which showed 27MHz. along with other frequencies in that part of the band, to have distinct advantages which few suspected would soon disappear.

But disappear they would. For, with every period of high sunspot activity the HF bands, of which 27MHz. is a small part, become subject to a degree of skip propagation which enables long distance contact with the most modest equipment. As the degree of sunspot activity recedes so the frequency at which such contacts are available becomes lower and the likelihood of an exotic copy on 27MHz. fades until at the point of minimum activity, which, in terms of the present eleven year cycle we are rapidly approaching, 27MHz. and the nearby amateur band between 28 and 30MHz. become capable of no more than local communication.

Neither is there any great value in increasing the transmitted power. It is true that an increase in power will increase the range of the transmitted

signal but the increase in range which can be achieved is very much less than the extra power might suggest. For instance a transmitter developing 4 watts might be heard as an S4 signal but an increase to forty watts could be most unlikely to send the needle beyond S6 and it might then require a further increase to 400 watts to increase the signal strength to S8.

Before resorting to the use of a linear amplifier it is perhaps only fair that you consider its effects upon other breakers in your neighbourhood. The average CB rig works fairly well under the circumstances for which it was designed but its receiver was neither intended nor engineered to withstand the presence of a very strong RF field on a close frequency. Thus occurs the phenomenon to which most breakers refer to as broadbanding. Although this effect can occur where two stations, each using legal power, are sited close together its effects become far more widespread once burners come into play. At 10KHz spacing CB channels are a little too close to offer much protection from strong signals on other channels and it would require some pretty fancy filtering, at some pretty fancy prices, to overcome the problems of high power breakthrough.

Although the possible effects on the CB band itself can be quite dramatic they are by no means as potentially serious as their possible counterparts outside the band. For instance it is not at all uncommon for a station which has been causing no TVI whatsoever whilst it was being run at legal power to create problems over a

fairly large area as soon as a burner is introduced. Again the problem is that of the intensity of the field being radiated from the antenna and the inability of the television set to completely reject such a strong unwanted signal. This also holds true for other forms of domestic apparatus such as hi-fi and even the humble old tranny.

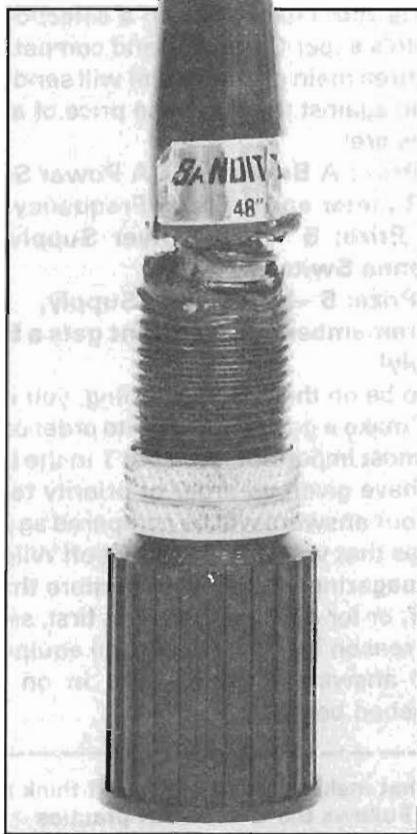
Harmonics

Another factor which has to be taken into account is harmonics. Every radio transmission is a potential source of radiation on frequencies which are harmonically related to, that is to say direct multiples of, the basic frequency for which the transmitter is designed. So if you are transmitting on 27.6MHz. there is a better than even chance that some small amount of signal will be detectable at 55.2MHz., 82.8MHz., 110.4MHz. and so on, up the band. Some rigs are better in this respect than others but it is never safe to assume that your rig is totally clean.

Given that your basic power is only 4 watts any amount of harmonic radiation is likely to be very small indeed and will probably only be detectable over a very short range. The problem really only becomes significant when a power amplifier is brought into use.

The second harmonic at 55.2MHz is not likely to cause much offence these days, since that frequency falls within the band used to transmit black and white 405 line television signals, which hardly anyone uses these days and which are due to be phased out before very long, anyway. The trouble within this sector of the band will begin after the closure of the TV services, when these frequencies are re-allocated to services such as Land Mobile Radio and I think we can expect the authorities to feel rather protective towards the new services. The third harmonic, at 82.8MHz., lands right on top of an existing communication band and any appreciable incursion into this band might easily result in a visit from the Radio Interference Service but it is the fourth harmonic which can lead to some really impressive problems. Frequencies between 110 and 112MHz. are used at every major airport for their Instrument Landing Systems.

A quick check with the communications engineers at one major airport revealed that it was, in fact, possible for CB transmissions to break through onto their equipment and that they had, at one time, expended considerable time and effort in monitoring 27MHz. in order to identify specific problems. Their systems are, of course, protected to a far greater degree than your average radio station but I was assured that even their level of protection can be overloaded. Given the obvious importance of the safety of aircraft, especially on a landing approach, I was also assured that any complaint of interference made by an airport is investigated pretty rapidly



What can happen when too much power is used.

and I sure would not like to be the breaker faced with a visit because he was causing such problems.

In general it is unlikely that running a burner will damage your rig. Unlikely but by no means impossible. In order to perform its basic function of increasing the power delivered to the antenna, the amplifier must switch from its inactive receive mode to its active transmit mode as you key the mike and it uses the RF energy delivered to it by the rig to do so. This is all well and good so long as the switching is instantaneous. If, however, it is not, and many of the burners on the market are somewhat lacking in this respect, then a quite substantial impedance occurs during the time taken for the switchover. Such a mismatch will rarely be sufficient to instantly put your rig out of action but the energy which the mismatch prevents from being radiated in the normal manner must go somewhere and in such circumstances is dissipated in the form of heat, usually in the region of the final stages of the transmitter. The power amplifier transistor in the rig will most likely cope with the effect for a while but it will be weakened and its usable life reduced by each subsequent application of the mismatch.

There is, of course, the related problem that many of the common types of CB antenna were not designed to handle high levels of power and it is not at all uncommon to find the loading coil burned out as the result of asking the antenna to dissipate more energy than it was designed to handle.

Another phenomenon with which

some operators have been plagued when using a burner is that of interference from adjacent channels. Most linear amplifiers are fitted with a receiver pre-amplifier in order to match the strength of incoming signals to their transmitting ability and many such pre-amps leave a great deal to be desired in respect of selectivity. They not only bring in the wanted signal better, they also amplify the product of any stray signals immediately adjacent to your frequency, as well as increasing the rig's susceptibility to intermodulation. This might even result in your hearing signals which originate far outside the CB band.

Aircraft and televisions notwithstanding, the biggest potential hazard when dealing with linear amplifier has nothing whatsoever to do with interference. As in the transference of any form of electronic energy one of the biggest difficulties facing the manufacturers of burners is the dissipation of the heat energy which inevitably accompanies the RF being generated. The big difficulty is the fact that most substances which are good conductors of heat are also good conductors of electricity and, conversely poor heat conductors are usually poor electrical conductors.

One substance which does not follow the pattern is barilia and, for this reason, it is commonly used as a heat sink in burners. So far, no problem because barilia is a common form of heat sink in industrial applications and, as long as it is treated with the utmost respect it will not harm a fly. The problem occurs if a piece of barilia gets broken, when repairing a burner for instance, because the net result of such carelessness is to produce barilium oxide. So what? I hear you ask. Simply this: barilium oxide can kill. Just one single inhalation can lead to a slow and painful death. Not tomorrow. Not next year but in maybe ten to twelve years' time, from cancer.

I cannot say that all linear amps contain barilia but certainly those I have examined whilst working on this article contained it and the fact that, in industrial applications, used barilia should be returned to the manufacturer for disposal must be seen as a mark of the concern with which it is treated. Certainly, from what I have seen recently I would be most reluctant to take the lid off a burner without first ensuring that it did not contain barilia which is, in my humble opinion, a substance best left to those competent to handle it.

There is a great deal of pleasure to be gained from working DX but there are far more reliable frequencies for this purpose than 27MHz. and far easier ways to achieve the desired result than by means of a power amplifier feeding a relatively inefficient antenna. If you are at all serious about DX you could perhaps consider the amateur bands. Take my word for it, the exam is nowhere near as hard as many breakers seem to believe.

CB

COMPETITION

This is your chance to win a selection of Breml CB accessories in this month's super Citizens' Band competition. Even if you can't win one of the three main prizes, Breml will send you a **50p voucher** which you can spend against the purchase price of a Breml 5 — 7A power supply. The prizes are:

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To be on the way to winning, you need to put the following qualities that 'make a good breaker' into order of importance. If you think that item C is most important, then put 1 in the box by the side of it and so on until you have given an order of priority to all eight.

Your answers will be compared against the list agreed by the panel of judges that will include Mr. Geoff Wilding of Breml UK and the editor of the magazine. In the event of more than one winner getting the correct order, or for deciding between first, second and third prize winners, the best reason for choosing Breml equipment will be used to differentiate.

All answers must be sent in on the competition coupon that is published below.

What makes a good breaker? I think a good breaker:

- a) Follows the CB code of practice
- b) Belongs to a CB club
- c) Knows the licence conditions and follows them
- d) Respects the traditions and customs of CB
- e) Gives a good example, especially to younger breakers
- f) Belongs to one of the emergency or traffic help organisations
- g) Has a good understanding of his/her rig and how it works
- h) Knows all the 10 codes, Q codes and the lingo

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I have read the rules and agree to abide by them

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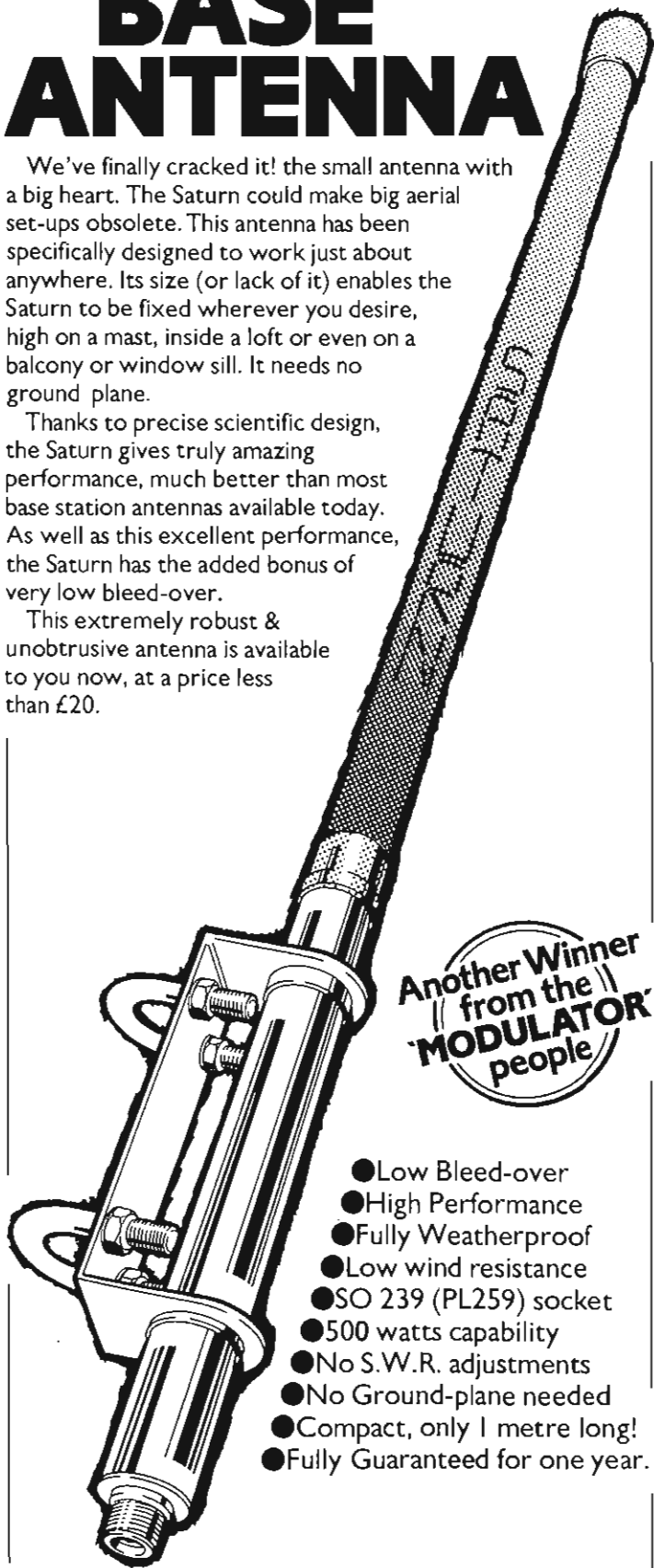
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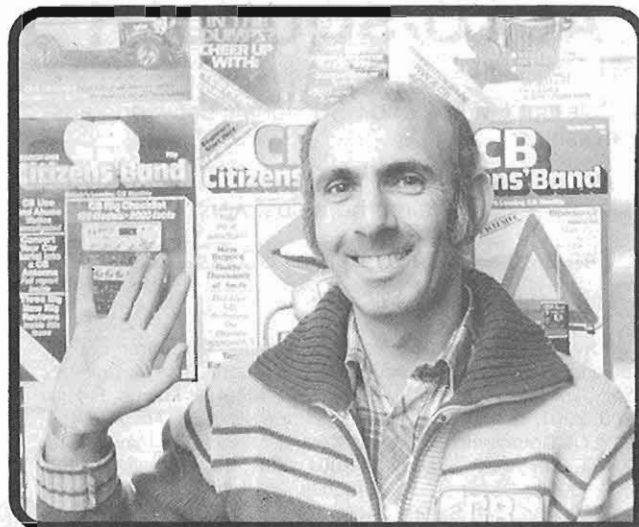
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Lucky Numbers



Mack Chat

**Mack rediscovers the joys of CB
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Confusion is the only way I can describe some of the new laws that are expected to come into force shortly in relation to the Wireless Telegraphy Act. Many people are confused and concerned about what radio transmitting equipment they can own. In simple, easy, understandable English, the new laws state you can't own a transmitter if you do not hold a current DTI issued licence to operate it. Years ago when CB was in use illegally on the AM and SSB mode, many of the 'criminals' thought that they could be prosecuted only if they were caught transmitting. It did not take long for these people to realise that they could also be 'done' for being in possession of illegally imported equipment. When, some time later, loopholes in the law were found and rigs were legally imported into this country, the offence of being caught whilst transmitting was once more the greatest fear. Many people escaped prosecution because of the uncertainties of the law, yet some that were taken to court were charged and found guilty of having equipment installed and capable of transmitting. One well known story is of the CBer that ended up in front of the magistrate even though a rig was not found when the authorities searched his home, because antennas and other equipment was found and the authorities had evidence that illegal RF was being produced from the said party's home.

A short time before CB went legal one could purchase legally, and still can, CB radios that contain the legal FM frequencies and other illegal channels and yet these rigs have the official CB 27/81 mark. Of course when one purchases these rigs they are not able to transmit on the illegal frequencies, but a quick wire change (and most rigs come with instructions of how to do this) soon enables them to do so. The new laws, when they come into force, mean that all this equipment will become illegal to own. Even if you never use the illegal channels you can still be prosecuted for owning a rig that is capable of transmitting.

Now how does this leave you if you own, say a 934 rig that is capable of transmitting on the new and old 934 frequencies. At the end of 1987 the old 934 frequency will become redundant, so it will become illegal to use these channels and if your rig is capable of transmitting then you could be prosecuted and your gear confiscated. What about the licenced amateurs? I own a 2 metre rig. When I purchased it new, boxed, from an amateur equipment emporium, I found (not to my surprise) that it was capable of transmitting over 4 Megs although I am only licenced to use 2 of these Megs (144-145). HF amateur equipment can transmit from 1.8 to 30 Megs, and yet the 'A' licenced amateur is only allowed to use a small part of these frequencies. Now there are many such rigs in use, so does that mean that all these people could be prosecuted if and when this law comes into force?

In the past I have mentioned many times wallies or channel abusers, and as you may recall I was prepared to throw my CB equipment into the nearest river. Many of the letters that were sent urged me to be patient as things can only get better, the writers said. When I came home from work I would sometimes sit just looking at my rig not daring to turn it on because I knew that if I did I would hear the noise and abuse that the hobby that I loved was getting and I would end up getting wound up. So for a while I started watching more of the tele box or even switching on my amateur rig. Then someone made a remark that set me thinking. 'Wallies have to sleep sometimes'. True, I thought, so I worked out a time table and found the best times to go on air. I expect that most areas could be different but early mornings it seems are best where I live. Sundays in the early hours are good for the nets of DX stations with good distances being worked at times. I have even found nets of breakers having interesting discussions in these early hours. Have you switched on your rig and checked the noise level on the 'S' meter? I have regularly and don't you know, at times some evenings the level is getting lower. So, as many people said in their letters to me 'have patience' things are, it seems, getting better.

Last month I told you about the 'Warlock' 934 Meg rig. There have been a few jealous mumbles in places of doubt of its existence or that it is not practical or even possible to combine 27 and 934 into one box. Hopefully by the time you read this they should be available, as I have regularly been in touch with George Cole of Everite the manufacturers of Warlock, for progress reports of the rig. I believe that I have already told you that the two CB modes will be contained in an Audioline 341, but to achieve this there has to be some sacrifice and this is the removal of the speaker and an extension speaker will be needed, this will be plugged into the usual rear socket of the rig. Two of the existing controls on the front panel will be multi-functional for selection of the modes without any loss of controls for the 27mode. That's the latest position on the Warlock to date, but I expect any day now the postman to deliver a parcel containing one of the first Warlocks available, as George Cole has promised to let me have one to play with. (See, crawling and flattery does get me somewhere.) I believe that 934 CB is at last making headway as I hear that at least two other dealers/importers are contemplating entry into the 934 market with imported modified Jap rigs. Many people believe that it's difficult to build and expensive to purchase accessories for 934. Not so says my mate 'Barbarian' from Wickford, he has in his possession circuits and designs for SWR meters and a range of antennas that hopefully in the future he will allow this mag to publish. So the future looks bright for 934.

CB

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TWONG



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HOW! TWONG SPOT TUVY MORTALS AT CITIZENS BAND CONTEST! ME WILL ZOOOP DOWN AN' BE ADORED!

MEDBE ME BETTER SPOT A KHAZI AN' ZOOOP DOWN AN' BE RELIEVED FIRST!

OH, YOU'RE GOING OUT! WHERE ARE YOU GOING?
CAN I COME, HUH?

HOKRAY! ME TAKE YOU ALONG TOO!

ME HEARD ABOUT A CITIZENS BAND CONTEST SO ME AM GOIN' TO ATTEND AN' LET MORTALS ADORE ME!

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PHAROOGAH



WELL THISH LOOKSH LIKE A BROADCASTIN' DEVICE T'ME!

GOOD-LOOKIN' TOO!



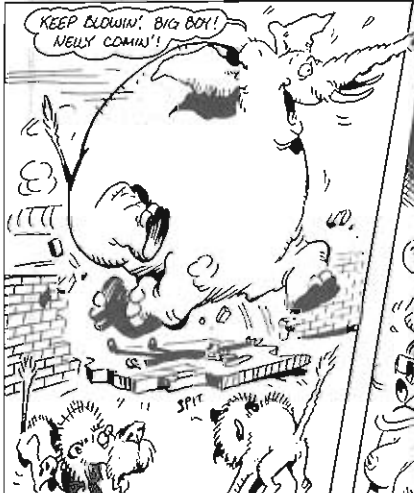
ME GIVE IT A WHIZZ!



PHAROO-PHAROO-PHAROOGAH!

JOY

MATE FOR NECTAR!



KEEP BLOWIN', BIG BOY! NECTAR COMIN'!



Y'SEE? ME CAN HEAR DRUMS TRYIN' TO COMMUNICATE WITH ME! THATHS PROOF THAT THISH ISH A (M) BROADCASTIN' DOOHICKY!



ME WONDER WHUT DRUMS SAYIN'...



DRUMPA-DRUMPA-DRUM

WHERE YOU AT, BIG-BOY!

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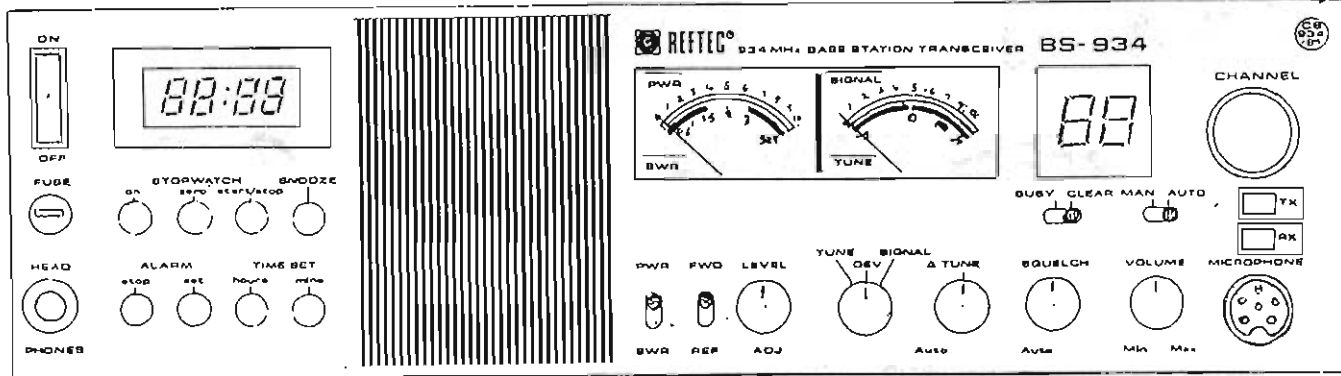


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Welcome to our new QSL expert, David Shepherdson, who takes over this month.

COMMUNICATION THE

QSL

WAY

Hello and welcome to this, the first in a new series of QSL columns. First, I would just like to say thanks to Mike Newbold for the way he's done this column in the past and to wish him good luck in the future. So, please note that there is a new address to send anything to, care of myself, David Shepherdson, at 3, Tarn Villas, Cowpasture Road, Ilkley, West Yorks, LS29 8RH. I'll be leaving the format of the column mainly as it was with Mike and mention as many QSLer's as I can, but there will be a couple of small changes here and there. For instance, all addresses of QSLers and Clubs mentioned will be at the end of the text, so you can find them easily afterwards.

Right, let's get down to business with one of my regular moans! When sending out your QSL packages, don't forget than an ordinary first or second class postage stamp only covers the first 60 grams. (That's about 2oz.) If you send one out heavier than this, without an extra stamp on, then your new friend is going to be rather upset with you when the Post Office sting him, or her, for double the difference! This applies for the UK only, don't forget that for overseas, it differs widely.

Had a great letter from an old friend yesterday, Art Brodeur of Rhode Island, New York, saying how much he enjoys receiving and sending QSL's but complains of some real 'nice' cards (Art's favourite word is nice) with "Please QSL" on, and NO return address on either the cards or the envelope! So come on friends, let's make sure that all our cards have the full address on, and also the envelopes. This will also help the various Post Offices around the world in case of returns. Art is semi-retired but has a part-time job as Security Guard for Tupperware in the States. Art is a great guy and will QSL 100% plus as

long as he gets the return address. By the way, if 'John' is reading this, Art asks for you to send your address so he can reply to you!

A few of the UK QSL Clubs to get a mention this time round include the Zulu Whiskey of Brighouse, the Great British QSL DX Club of Consett, the Cutty Sark of London, the Dayglo of Northern Ireland and the Bravo Oscar Breakers of Newcastle.

The Zulu Whiskey is run by Gordon, ZW484. He is a great friend of mine and I can highly recommend his club (I don't get any choice!). His pack consists of Unit number, ID card, Mini Certificate, exchange cards and invites. All this comes for five of your signed and dated cards plus a minimum of a 17p stamped, addressed envelope (SAE). Club cards and a mounted stamp are available.

In case you are wondering, Gordon took over the club a couple of years ago from the original founder in New Zealand which explains his 484 number. He tells me that his membership has topped the 3000 mark now! Not bad Gordon, keep up the good work.

Before I go any further, I'd just like to say don't forget to sign all your cards, even floaters, after all, a blank card can be considered an insult by many QSLers who take the time to do theirs.

Going on to the GBQDC which is run by Des in Consett. This club costs £6 in cash plus 2 first class stamps to join. For this and 10 of your signed cards you get your Unit number, ID card, Certificate, exchange cards and invites, a copy of the 'Q' and '10' codes, stickers, mounted Club Stamp and 40 Club QSL cards. Des tells me he hopes to hold prices stable for two to three years yet, but why delay?

Also, the GBDQC in conjunction with Currie Printers, runs a QSLing Competition. At the moment the competition is to collect 100 "Currie"



QSL cards or Eyeball cards to qualify for a free gift. For full details send a 9 by 4 inch SAE to either address.

The **Cutty Sark QSL Club** was founded and is run by **Tony Tatman** last year and is a well run club and worth joining. Tony tells me that it was the first postal QSL Club based in London. In exchange for a Unit number, ID Card, view card of the Cutty Sark, exchange cards and invites, all he asks for is five of your cards (signed and dated, don't forget!) and a large SAE. A club stamp made in England is available.

The **Dayglo QSL Club** of Northern Ireland is run by **Sean McNulty**. I once asked **Sean** why **Dayglo**? He said he didn't know, just seemed like a good idea at the time! Anyway, he runs it well and for the cost of an SAE and five to ten of your signed cards will send a nice package back. Club cards are available.

Going up north a bit to **Newcastle**, is the **Bravo Oscar Breakers Club**, "**BOB**" to me and you! **Ann Oliver** runs this one, she offers a club number, 1-4-1 swop of cards (six or more) and tourist information. She can also offer club cards, all for six of your cards plus the ever useful SAE.

While on the subject of cards, if you are thinking about getting a printer to do you a batch of colour ones, ask for a proof first. You will normally have to pay for this, but it will be well worth it in the long run, after all, what use are 100's of cards you can cannot stand the sight of?

If you are new to QSLing, then why not consider some "Currie" cards? They cost less than photocopying scraps of paper or making your own from plain white post cards and are of high quality. Currie Printers offer an excellent service at very reasonable cost with a rapid turnaround. Drop them a line with a SAE for further details and prices etc.

If you already have some club cards, or for some reason your printer has missed your address off your



cards, then instead of scribbling your name and address on to each card and ending up with writer's cramp, why not give Steepleprint a try? For about £2.50 a thousand you can have six lines of print, black on white stickers, or black on gold for around £3.25 per thousand stickers. SAE for full details and current prices of the stickers available.

There have been a lot of QSL clubs springing up since the **Zulu Whiskey** (the first free one, I believe) and the **Dragonriders** started, several of which

have disappeared from sight now. I will give some more a mention next time, so if any Club Presidents of Clubs of which I am not a member (hint, hint) would like a mention and would like to get in touch with me for information of their clubs I would be obliged. I'll do my best to give all a mention with details.

Stepping over the water for a moment or two, just had a card from **PLUTO**. No, not that Pluto! This one lives in **Austria**. He writes a little English so why not drop him a line? His name's **Gerald Muckenhammer** and he QSL's 100%.

Also just received a nice package from a couple of Belgian clubs, the first from the **Tango Oscar QSL Club**. The **Tango Oscar** package includes a Club Stamp, ID card and Unit number, Certificate, exchange cards and invites, stickers and also a blazer patch! Costs \$15 (US) or 30 DM. I don't know if they would accept sterling, but you could write and ask.

The '**Le Lion**' DX Club sends a great package out for £7 and 20 of your QSL cards. You get your Unit number, certificate, ID Card, Club Stamp, Roster, other invites and I quote, "a great assortment of different QSL cards", unquote. It's true, they send a massive pile of cards, unfortunately not all have an address on, but both these clubs do offer a very rapid return of your package. But don't forget, when writing to Belgium, do not use their names on the envelopes, only their address. This is because the Belgian Post Office are pretty peculiar about this and any letters with the addressee's name on will not be delivered, in fact, they won't even return them!

I hope to be able to cover quite a few of the Belgium and Dutch QSL Clubs in this column, perhaps the June one, so make a date for that. I'll give addresses, costs and what they offer.

Another problem I've heard about is that we shouldn't use call signs on envelopes sent to Spain as the eleven metre band is illegal there and any letters with any call sign on are considered undeliverable.



Citizens' Band Magazine List of QSL Contacts

Art Brodeur	6 Mt St Charles Ave, Woonsocket, RI 02895, USA	Isabella Jackson	Church Cottage, Thurning, East Dereham, Norfolk NR20 5QX
Gerald Muckenhammer	4770 Andorf, Hauptstrasse 42, Austria	Anne James <i>BB 03</i>	PO Box 154, Wolverhampton, West Midlands, WV10 9RT
Rob Roy <i>TM 07</i>	PO Box 70, Ipswich, IP3 0PP	Clive Corser	15 Market Street, Steeton, Nr. Keighley, West Yorkshire, BD20 6NN
Peter & Christine Conway	97 Aldwick Road, Denton Burn, Newcastle-upon-Tyne, Tyne and Wear, NE15 6EX	John Thoroughgood	11 Scots Terrace, Hetton-le- Hole, Tyne and Wear DH5 9HZ
Anne Sperduti	3 Molyneux Place, Stoke, Plymouth, Devon, PL1 4RE	Anne Davidson	107 Redhill Road, Northfield, Birmingham, West Midlands, B31 3ND
Patrick Markham	13 Massey Road, Lincoln, LN2 4BN	David Shepherdson	3 Tarn Villas, Cowpasture Road, Ilkley, West Yorkshire LS29 8RH
Brian	15 Broadfield Road, Fern Gore, Accrington, Lancashire BB5 0NL		Send postage for reply
Kenny (Heather Islands)	44 Barony Square, Storno- way, Isle of Lewis, PA872TQ, Scotland		

Okay, here's a few QSLer's to get a mention this time round, Rob Roy of Ipswich, Ann James of Wolverhampton, Peter and Christine Conway of Newcastle, Anne Sperduti of Plymouth, Patrick Markham of Lincoln, Brian of Accrington, Kenny of the Heather Islands DX Club. Don't know much about that one, only that Currie printers do their club cards for them. Also Isabella Jackson of Norfolk and have had a great card from John Thoroughgood of Hetton-le-Hole. He has had a very nice two colour gloss card done by Curries, and I know that John QSL's 100% plus, so if you drop him a line, I'm sure that he will send you one or two (dozen!).

Had a short letter from Clive Corser of Steeton. He QSLs 100% and really enjoys his QSLing. Why not drop him a line and say Hi? He will be very happy to hear from you. Another 100% QSLer is Anne Davidson of Birmingham, she is always happy to get QSLs and she also collects beer mats, so if you have any to spare, drop her a line and send her a few!

There are a couple of clubs to get a mention just before I close this time, both run by some lovely ladies. First is the Metro City QSL Club, this one is very well run indeed by Jackie Cooper and membership is for a SAE and five of your cards, club cards and stamp available. The other is the Scottish Thistle QSL Swap Club. This one is fairly new but it is gaining members rapidly. Just send five or more of your cards and a large SAE and you will get your Unit Number, ID Card, exchange cards and invites and also tourist extras as available. Don't forget the 60 gram weight limit for one stamp when sending 'large' SAE's will you? Anyway, keep up the good work, Evelyn!

One extra item just arrived tells me that there is to be an International Radio Convention held on Easter Sunday (22nd April) at the INGRAM

Votes only accepted on this form, not a copy!

First Club _____

Second Club _____

Third Club _____

Overseas _____

Booby Prize _____

Name/Handle _____

Send to David Shepherdson

HOTEL, INGRAM STREET, GLASGOW. Cost is £3 per head but includes buffet and there is a bar. All profits will go to charities. The doors open at 4pm and there will be many representatives from various QSL & DX Clubs from the UK and abroad in attendance. The organisation is being done by the RDX Club of Scotland. I will be trying to get there myself so maybe we will meet up there. Try to get there and give your support, the charities can only benefit from it!

Well, that looks like that's it for this

month. If you'd like a mention, then drop me a line and just ask for one. If you want a reply, then *please* enclose return postage and if you'd like to join the Dragonrider QSL Club, then enclose five signed and addressed QSL cards and return postage or SAE. Please mark your envelope for either the club or the QSL column and that will help me to reply as quickly as possible.

So until next time, this is DRAGONRIDER ONE, saying We Down, We Grateful, We Gone, Bye, Bye.

Vote, Vote, Vote!

Vote for your favourite QSL/DX Clubs! Just fill in your top three UK Clubs and one Club from overseas. I will collate the results and print them each month. Any votes received after the 20th will be put forward to the next month's poll. Also, put down the name and address of the club you won't recommend to anyone, I will NOT print that winner, but I might just send the President of it a nice little certificate!



Citizens' Band List of QSL Clubs

Zulu Whiskey International PO Box 14, Brighouse, West Yorkshire HD6 2SE
 Great British QSL DX Club PO Box 5, Consett, Co Durham DH8 8NG
 Cutty Sark QSL Club 47 Gurdon Road, Charlton, London SE7 7FP
 Bravo Oscar Breakers 2 Elington Gardens, Fenham, Newcastle-upon-Tyne NE5 2HP
 Dayglo QSL Club 13 Syenite Place, Rostrevor, Co Down, BT34 3EP, Northern Ireland
 Metro City QSL Club 95 Greenoak Crescent, Stinchley, Birmingham, West Midlands B130 2TD

Scottish Thistle QSL Club 51 Hathaway Lane, Maryhill, Glasgow, Scotland G20 8NG
 Dragonrider QSL Club 3 Tarn Villas, Cowpasture Road, Ilkley, West Yorkshire LS29 8RH
 Tango Oscar QSL Club * Weg naar Zwartberg 118, B-3660 OPGLABBEEK, Belgium
 Le Lion DX QSL Club * 45 rue du Brouck, B-4551 Lixhe, Belgium

* Remember, do not use names on envelopes to Belgium.

Romeo Delta X-Ray QSL 10 Wallace St, Rutherglen, Glasgow, Scotland G73 2SA
 Currie Printers 89 Derwent Street, Blackhill, Consett, Co Durham DH8 8LT
 Steepleprint Ltd Earls Barton, Northampton NN6 0LS

Rig Review



Chris Peterson takes a look at a novel approach to 934MHz. CB — the Grandstand LS83 Transverter

THE GRANDSTAND VIEW

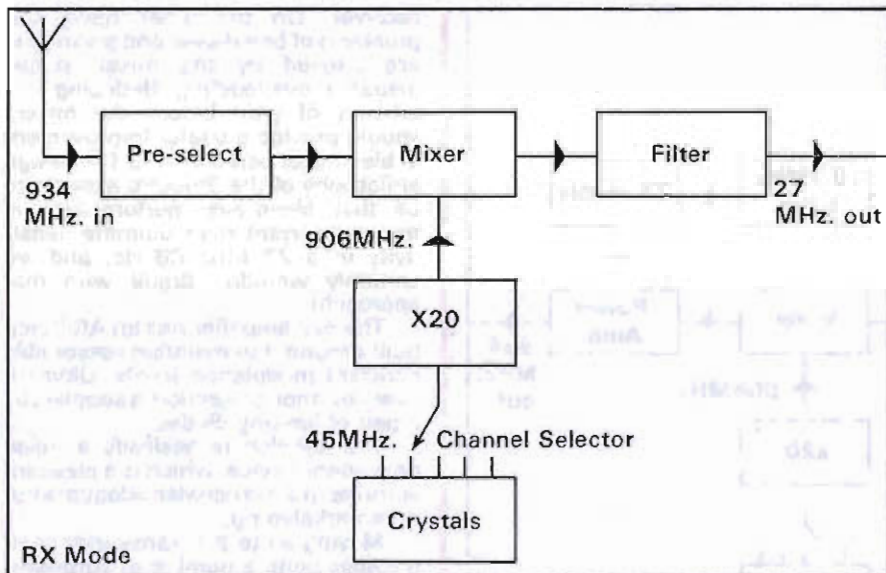
The 934MHz. CB band has been a lot slower getting off the ground than its 27MHz. counterpart. However, it appears that at last the band is beginning to snow-ball. The latest evidence came in the form of a huge box of goodies arriving from Grandstand containing samples of their UHF offerings.

Grandstand have adopted a radically different approach to the UHF band compared to their rivals at Reftec. Rather than produce a purpose made dedicated UHF rig, they have

developed a device that converts a conventional 27 MHz CB rig into a UHF rig.

The original intention was to sell the transverter on its own for use with any UK specification 27MHz rig. However, to guarantee compliance with the CB 934/81 specifications, it follows that the 27 MHz rig must meet and indeed be better than the basic 27 MHz specification. Unfortunately, many 27 MHz rigs are very quickly doctored after purchase to "improve their performance". Whilst undoubtedly there are some competent 'rig-





doctors' around, many are just compulsive tweekers. Also some rigs are pretty marginal in their compliance with the CB 27/81 specs to start with. The upshot of which is that Grandstand have more or less abandoned their original plans to sell the transverter separately, and it will usually only be sold with a matching Grandstand Bluebird 27MHz transceiver.

In practice this is not the disadvantage it might seem. For a start the transverter has been styled to match the Bluebird rig, and a very pretty couple they make, as well! Even aside from the aesthetic appeal, the identical width dimensions mean that they can be assembled into a tidy, if somewhat bulky, single unit using the mounting hardware supplied. Also, in the unlikely event of you purchasing a faulty unit, there can be no arguments as to which manufacturer is to blame!

Grandstand also supplied a sample of their range of antennas for review. These comprised of a four element beam, a half wave mobile mag mount, and a quarter wave ground-plane base antenna. This latter is all of three inches high! Despite its stunted appearance, this does actually work quite well! One of the stations contacted during our field trials was using a similar antenna to very good effect for relatively local communications.

Japanese Style

The first impression on examining the equipment was of the very good 'build quality'. There is little doubt that the Japanese have really mastered the art of making a product look and feel extremely well made. The instruction manuals are nicely produced glossy items and all the necessary mounting hardware and cabling is supplied in the transverter box.

The Bluebird rig is a pleasantly compact little unit, measuring some 6" wide, 1 3/4" high and 6 3/4" deep. On the front panel are volume and squelch controls and the channel selector knob. The channel display is a red LED

device, and a row of LEDs indicates received signal strength and transmitted power. This latter row of LEDs is quite novel, being green in the receive mode, but turning red when transmitting. The mic is connected to the rig via a nicely tight fitting DIN connector on the front panel.

Moving to the rear of the rig, we again find some slightly novel features. The power connector for example is one of the those little coaxial types commonly used on calculators and similar low power devices. It pulls out rather too easily for our liking. The fuse is contained in a screw-in connector on the rear panel, rather than the more conventional in-line variety. Also on the rear panel is an extension speaker socket, and

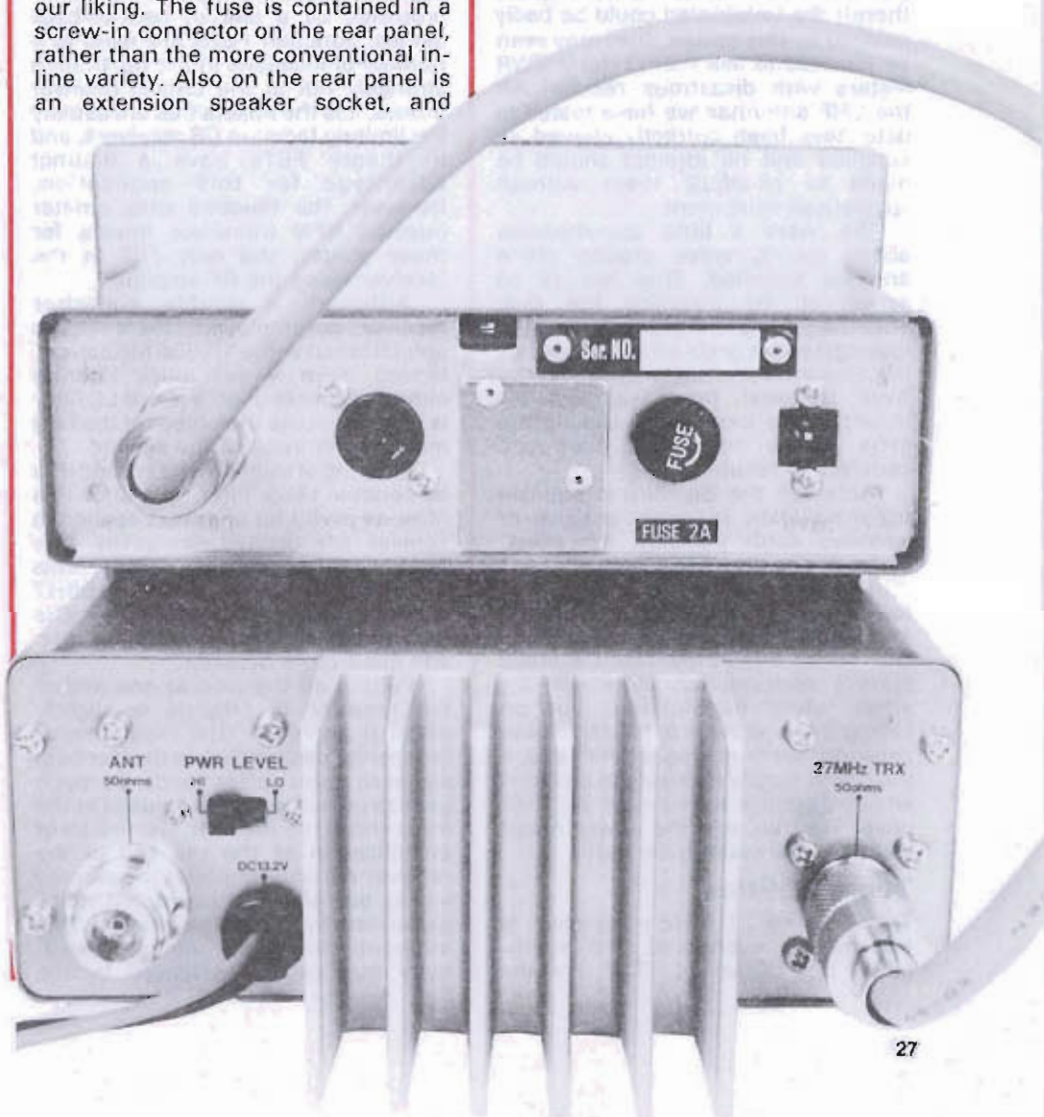
again this is unusual being a DIN type connector. It is also unusual in being a reversible type that allows the option of having both external and internal speakers operating simultaneously! The antenna connector is a conventional SO-259.

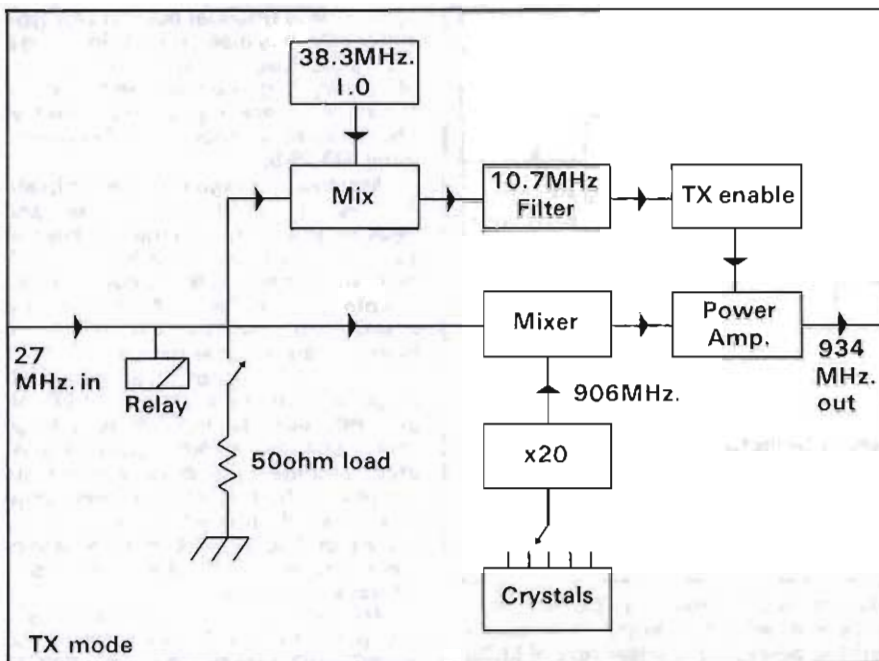
Moving on to the transverter itself, this is an altogether bulkier and heavier unit. Although the width is the same as the Bluebird at 6", it is 2 3/8" high and a massive 9 1/2" deep. The last couple of inches of this being accounted for by the massive heatsink on the rear panel!

On the front panel is a power on/off toggle switch and a small red LED 'on air' indicator. To the left is a large rotary channel selector with illuminated channel numbers around its periphery. To the left is a nice large illuminated power meter. It is calibrated 0 to 10 watts and has a very clear black pointer and scale against a white background.

The rear panel is dominated by a massive heatsink. To the right of it is an SO-259 socket for connection to the 27 MHz transceiver. To the left is an 'N' type connector for connection to the UHF antenna. There is a Hi-Lo power switch next to the antenna socket. The power lead is permanently attached to the rig and contains an in line fuse holder.

Separate instruction manuals are provided for the Bluebird and transverter. The Bluebird manual is reasonably comprehensive and con-





tains a circuit diagram. The UHF manual does NOT contain a circuit diagram (surprise, surprise!).

Chunks of the UHF manual appear to have been copied from the 27 MHz manual. This wouldn't be too bad were it not for the repeated and emphasised warnings about high SWR and the need to avoid it. Since at the time of writing there are no readily available SWR meters available for 934 MHz, (come on, manufacturers, wake up out there!) the uninitiated could be badly misled by this advice. They may even be tempted to use their 27MHz SWR meters with disastrous results! All the UHF antennas we have tested to date have been correctly aligned as supplied and no attempt should be made to re-adjust them without specialised equipment.

We were a little apprehensive about the $\frac{1}{4}$ wave ground plane antenna supplied. This has to be assembled by inserting the stub antenna through the ground plane and locking it with a grub-screw. Obviously the amount it protrudes will affect the SWR. However, there was a visible indent in the casing and locking the grub screw into this produced satisfactory results.

Although the Bluebird is suitable for installation in either positive or negative earth vehicles, the transverter is negative earth only.

The manual states that when running off 13 volt power supplies, a minimum of 4 amps must be available. Our bench supply indicated a static current consumption of about $2\frac{1}{2}$ amps when transmitting, but on keying there appears to be a transient consumption much higher than this. If the power supply is unable to deliver 4 amps, then the transmitter will just never start up, and the power meter will stay depressingly zeroed!

Technicalities

The Bluebird 27 MHz transceiver is extremely conventional. The synthesizer is a Sanyo LC 7137, and the

transmit chain consists of three NPN transistors. The only slightly unusual feature is the use of a relay to switch the power to the Tx strip when transmitting. There is no 10dB attenuator on the Bluebird.

The Bluebird does not take advantage of the presence of the relay to switch the antenna feed to the receiver. The receiver feed is tapped off the Tx filter chain by a small value capacitor, and the FET RF amplifier protected by a pair of back-to-back diodes. Junction FETs are used at a number of locations in the rig, though strangely not at the critical receiver mixers. It is the mixers that are usually the limiting factor in CB receivers, and in theory FETs have a distinct advantage for this application. However, the Bluebird uses emitter injected NPN transistor mixers for these stages, the only FET in the receiver being the RF amplifier.

Although a double superhet receiver is employed, there is no amplification at the 10.695 MHz stage. Indeed there is not much filtering either! A simple double tuned LC filter is used to couple the output of the first mixer to the input of the second.

Filtering of the 445 KHz second IF is by ceramic block filter, and after this filter an awful lot of gain is applied to achieve the desired sensitivity. The filter used is an SRF 455H. This appears to be a CFW 455HT equivalent. A TA7060 IF amplifier IC is followed by a TA 7303 limiting amp and quadrature detector.

Putting all the gain at one end of the receiver IF strip is a slightly unusual approach. The mathematics of receiver design dictate that for best signal to noise performance, as much gain as possible should be used at the front end of the receiver. Using a lot of amplification at the tail end of the receiver not only amplifies the wanted signal but also the unwanted noise generated by the mixer stages. This inherently limits the ultimate sensitivity that can be achieved by the

receiver. On the other hand, the problems of bleed-over and swamping are caused by the mixer stages (usually) overloading. Reducing the amount of gain before the mixers should provide a useful improvement in bleed-over performance. The design philosophy of the Bluebird appears to be that bleed-over performance is more important than ultimate sensitivity in a 27 MHz CB rig, and we certainly wouldn't argue with that approach!

The mic amplifier has an AGC loop built around it to maintain reasonably constant modulation levels. Ultimate over deviation protection is supplied by a pair of limiting diodes.

The squelch is basically a noise dependent device, which is a pleasant surprise in an otherwise adequate but unremarkable rig.

Moving on to the transverter itself provides quite a number of surprises. The first thing we find on opening up the box is a bank of no less than 20 crystals! Could this be why the launch of the Grandstand transverter was delayed following the EEC ruling on the change of frequencies? In these days when we expect everything in CB radios to be synthesized, it comes as something of a shock to be confronted with a huge row of crystals and trimmers, one for each channel no less!

Frequency Mix

The principles of operation of the Transverter are relatively straight forward. In the receiver mode, the incoming 934 MHz signal is filtered and then mixed with a signal 27.6 MHz lower in frequency. This produces a difference signal of 27.6 MHz which is then amplified and filtered before being passed on to the 27 MHz output socket. From here the signal is passed on to a 27 MHz CB rig tuned to channel 1 which detects the signal. Sounds simple doesn't it?

Let's put a few more accurate numbers into it. Channel 1 UHF is 934.0125 MHz. Dialling up channel 1 on the transverter selects a crystal with a frequency of 45.320562 MHz. This is passed through a number of multiplier stages to achieve a total frequency multiplication of 20 times.

$$\text{Now } 45.320562 \text{ MHz} \times 20 = 906.41124 \text{ MHz}$$

$$\text{And } 934.0125 \text{ MHz} - 906.41124 \text{ MHz} = 27.60126 \text{ MHz}$$

Which is, of course, Ch 1 on the 27 MHz band!

The transmit function is slightly complicated by the need to ensure a valid 27 MHz input before enabling the transverter to transmit. In this instance a valid input consists of a 4 watt input of Ch1 of the UK 27 MHz band.

An RF detector detects the presence of a significant amount of RF power at the 27 MHz socket and energizes a relay. This connects a 50

ohm resistor across the 27 MHz socket to provide a suitable load for the 27 MHz transmitter. A small amount of the 27 MHz signal is passed on to the main transverter where it under goes two separate processes.

In the first instance it is mixed with the output from a local crystal oscillator running at 38.3012 MHz. The difference frequency is passed on to a 10.7 MHz crystal filter.

$$\text{Now } 38.3012 \text{ MHz} - 10.7 \text{ MHz} = 27.6012 \text{ MHz}$$

Which is, of course, Ch1 on 27 MHz. If, for example, the 27 MHz rig had been left on Ch 2 by mistake,

$$\text{Then } 38.3012 \text{ MHz} - 27.61125 \text{ MHz} = 10.69 \text{ MHz}$$

This is 10 KHz away from 10.7 MHz and will be rejected by the very selective crystal filter. In other words, there will only be an output from the crystal filter when the input is on Ch 1 of the UK 27 MHz band.

The output from this filter is used to enable the transmit side of the transverter. Thus the transverter will only transmit in the presence of a valid signal on UK Ch 1.

The second portion of the input 27 MHz signal is used to generate the 934 MHz output signal. One of the 20 local crystals is selected by the front panel switch. Assume for example that we want Ch 1 on UHF. This selects a crystal on 45.320562 MHz. This is

multiplied by a total of 20 times upto 906.41124 MHz where it is mixed with the 27.60125 MHz signal to produce an output of 934.1025 MHz. This is of course Ch 1 on UHF. Notice how exactly the same crystal and amount of multiplication is used for both transmit and receive functions with this technique.

Now obviously with all this mixing and multiplication going on the opportunities for spurious outputs to occur are myriad. Hardly surprising then that the transverter is full of filtering tuned circuits. Of course, at these frequencies a tuned circuit doesn't look like a coil and a capacitor. The Grandstand appears to make great use of trough-line inter-digital filters. These consist of rods about $\frac{1}{4}$ wave long forming the inductors (coils) with the capacitive elements provided by screws almost, but not quite, touching their top ends. The whole filter is enclosed in a metal box. Any of you who have opened one of these transverters up and decided that there were a few screws loose and tightened them has completely destroyed the alignment of the rig and any chance of successful operation!

The transverter is assembled as a series of discrete modules, in a manner not unlike the Reftec. This approach allows the various individual elements to be updated without a total redesign being necessary. For example, the crystal bank and oscillator are on

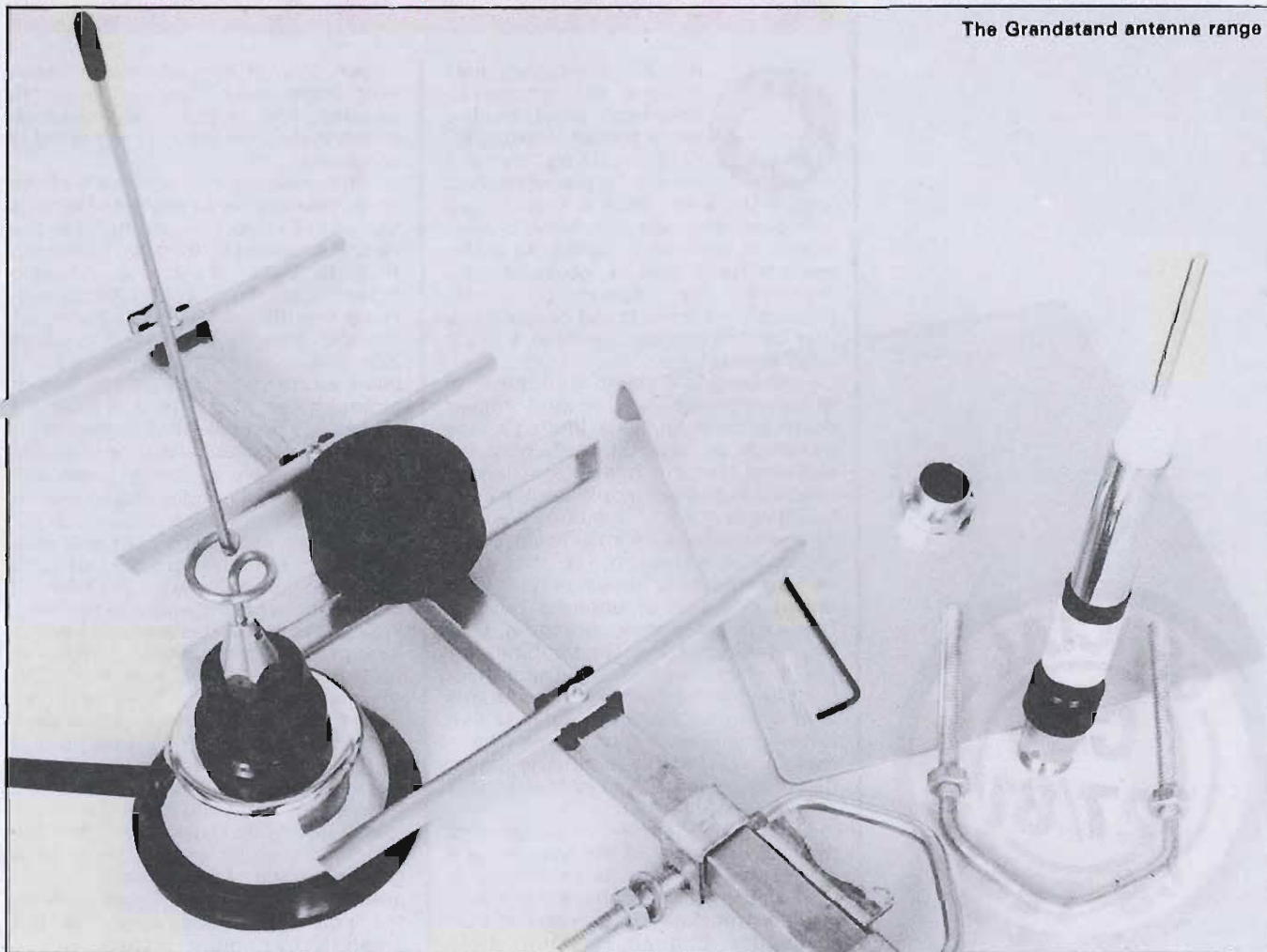
one printed circuit board, so it may be that at some future date a synthesizer circuit could be substituted.

A number of the critical elements of the transverter were contained in shielded boxes. We were loath to open these for fear of disturbing the alignment of the transverter, and hence this summary of its operation is rather more cursory than we would have wished. However, the principles are clear, even if the precise detail is not, and must be sufficient for our purposes.

The RF output strip contains three transistors, the driver and output devices being fairly massive and heavily heat sunked! The driver transistor is a C 2831 and the output a C 2832. The maker's trade mark on these devices appears to be Mitsubishi, though it is too tiny to be sure! The output strip is similar in layout to that used in the Reftec UHF rig. This constraint in layout is primarily a function of the extremely high frequency and the need to keep interconnections as short as possible.

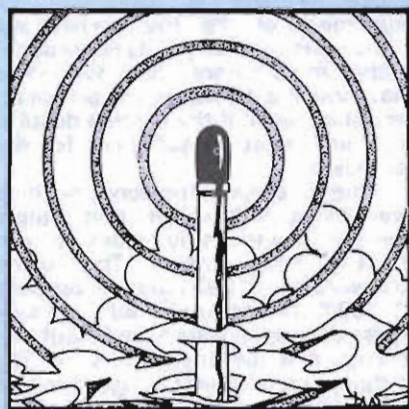
The internal build quality certainly seemed to be as high as the external appearance. All the soldering was extremely neat, and we were quite impressed with the standard of construction.

We return to the Grandstand LA83 next month, when we look at test results and performance.



The Grandstand antenna range

Antenna Review



Brian Wright casts his expert eye over another budget antenna — this time the Signal Searcher at £14.



SEARCHING FOR A SIGNAL



One of the most popular shapes for homebase antennas must be the three legged 'starduster' type, judging by the amount of manufacturers who make a variation of this design. This type of antenna certainly always seems to work well regardless of the manufacturer and is obviously the reason for their apparent popularity, although we have found on our tests that certain models can have a slight edge over others.

The biggest problem with this type of antenna with its three long, angled down groundplanes, is finding space in which to erect it. Although the radiating element has a legal length restriction, the groundplanes can be of full length (nearly 3 metres), which obviously takes up a lot of room, but is probably the reason for the good performance. For those of you who favour this sort of antenna but are restricted for space, Commtel U.K. have produced the Signal Searcher which has loaded groundplanes, thereby making them shorter. As this shortening of the groundplanes can lower the performance, we have therefore tested this month the Signal Searcher to see if this is true in this case.

The Signal Searcher is supplied as the usual bundle of aluminium rods and packaged in a printed rectangular box. The instructions have been very roughly translated to something that resembles English, making them

rather difficult to understand. However there is an exploded diagram, besides the written instructions, which makes the method of assembly quite clear.

The main part to which all of the other elements are assembled is, as is typical with this type of antenna, the central boss and loading coil assembly. This consists of a coil housing mounted on top of a cast aluminium piece that has three, threaded holes for the groundplanes and a large 32mm hole for the mounting pole. A point worth mentioning here is that although the 32mm hole is over 1¼ inches it is just too small to take the 1 inch bore water barrel that can be used to mount many of these antennas. Inside of the large mounting hole is an SO 259 socket for connection of the coax feeder cable. The coax and plug are fed up the inside of the mounting pole and the plug connected before fitting the antennas to the pole. We always prefer this arrangement as it keeps the plug connection completely protected from the weather. The central part of the SO 259 socket is not split in the normal way and therefore does not give a spring grip to the central plug pin. This has been noted on several other antennas that we have tested. To ensure good connection in this type of socket it is advisable to deform the plug pin slightly so as to get a good tight fit, especially as any problems here could mean getting the pole down and removing the antenna. The pole is secured by two

slot headed grubscrews.

The groundplane legs on the Signal Searcher are only 1.7 metres long, much shorter than is normal for this type of aerial. The reason that they are shorter is that they are loaded with a coil in a similar manner to the whip. The difference being that the loading coil, which is contained in a thin black plastic moulding on each 'leg' is not near the central boss but 410mm from the lower end. The groundplanes are supplied in one piece and screw into the underside of the central boss and project outwards at a slight angle.

The 1.5 metre whip is in two parts, the lower part screws into the top of the loading coil. A small plastic moulding is then pushed or tapped onto the top of the tube until the screw hole in the side is level with the top of the tube. The shorter and thinner tube is then slid into the lower tube and secured with a pointed self-tapping screw through the hole in the plastic moulding. This upper sliding tube allows adjustment for tuning (a job that is not easy with the antenna on top of a pole and should not be necessary on homebase antennas). Plastic end caps are supplied for the ends of all tubes, keeping out the rain and giving a professional finish.

For those of you with limited space, the overall size of the Signal Searcher is 2.67 metres high and .9 metres between the widest part of the groundplanes.

Ground planes

Homebase antennas that require tuning are always a problem as they have to be tried in their final position and if the SWR is then high, the antenna usually has to be taken down each time for adjustment. The Signal Searcher was no exception in this respect, after erecting and taking it down quite a few times the best SWR obtainable was 1.9:1 on channel 1 and 1.6:1 on channel 40, with the adjustment at its limit.

On test the Signal Searcher did surprisingly well considering the size of the groundplanes. The performance was not quite up to that of many of the larger antennas of this type but was quite usable and practical. Contact was just possible at the limits of our test route and the signal was 1 or 2 S-points down on the larger types. It should be pointed out however that in many quite distant areas the Signal Searcher compared favourably with the larger antennas, indicating perhaps a different radiation pattern.

Summing up then, we consider the Signal Searcher to be a very useful medium performance antenna, especially if you are a bit short of space or require a medium size antenna. Reasonably priced at around £14, it is good value for a homebase aerial when in order to reduce the size, the manufacturer has had the added complication of fitting a loading coil in each of the three groundplanes.

Our thanks to Lucky Numbers of Hayes for supplying the test sample.

ANTENNA REVIEW DATA PANEL

SPECIFICATIONS

Model Signal Searcher

Type Homebase

Length 1.5 metre whip 2.67m overall

Frequency Range 27MHz

Max Power Handling —

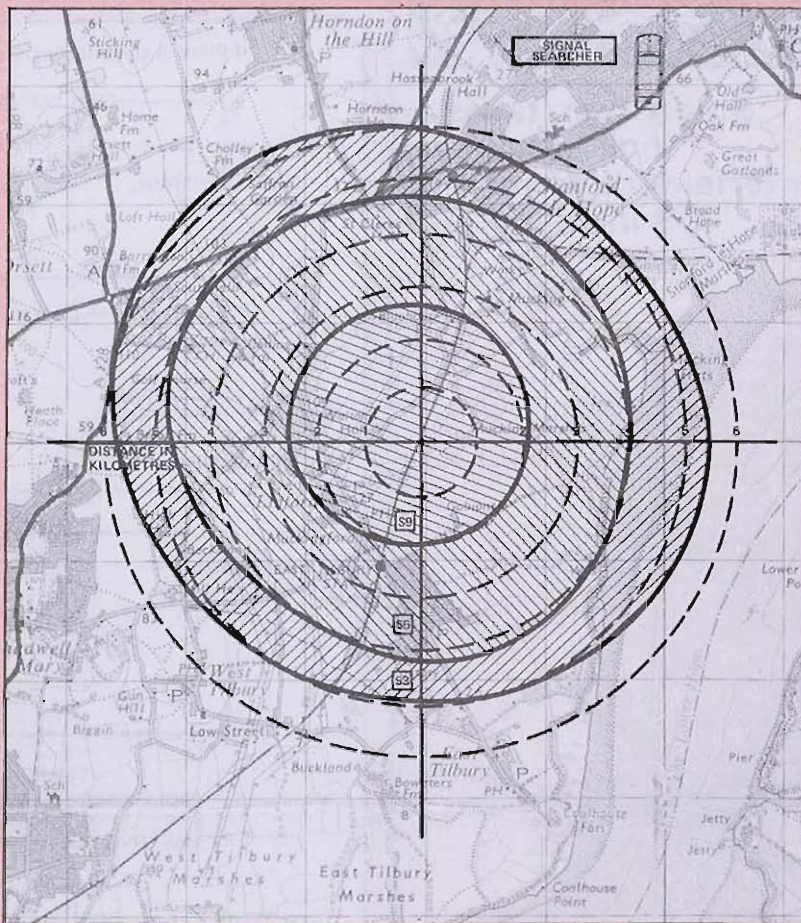
Impedance 50ohm

Cable Supplied None

Mounting Details 1/4 O/D pole

Supplier Commtel, Peterborough

Typical Price. £14



REVIEW VERDICT

Performance XXX
SWR Adjustment XXX
Construction XXX

Installation XXXX
Instructions XX
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 pre-arranged route that orbits the stationary test vehicle, sending and receiving signal reports at measured intervals. This is then repeated with the test antenna on the mobile test vehicle and the signals are sent and received between a stationary vehicle. A standard rig and antenna is used in all the tests. With the results obtained we are able to draw up the radiation pattern shown here. This is simplified to make the results more easily understood. The antenna is also subjected to a series of 'lab' tests to assess their durability, quality and construction, etc and finally we hand it over to a panel of CBers for comment.



Smart Alec takes a look at vehicle interference to mobile CB installations.

SNAP, CRACKLE AND POP.

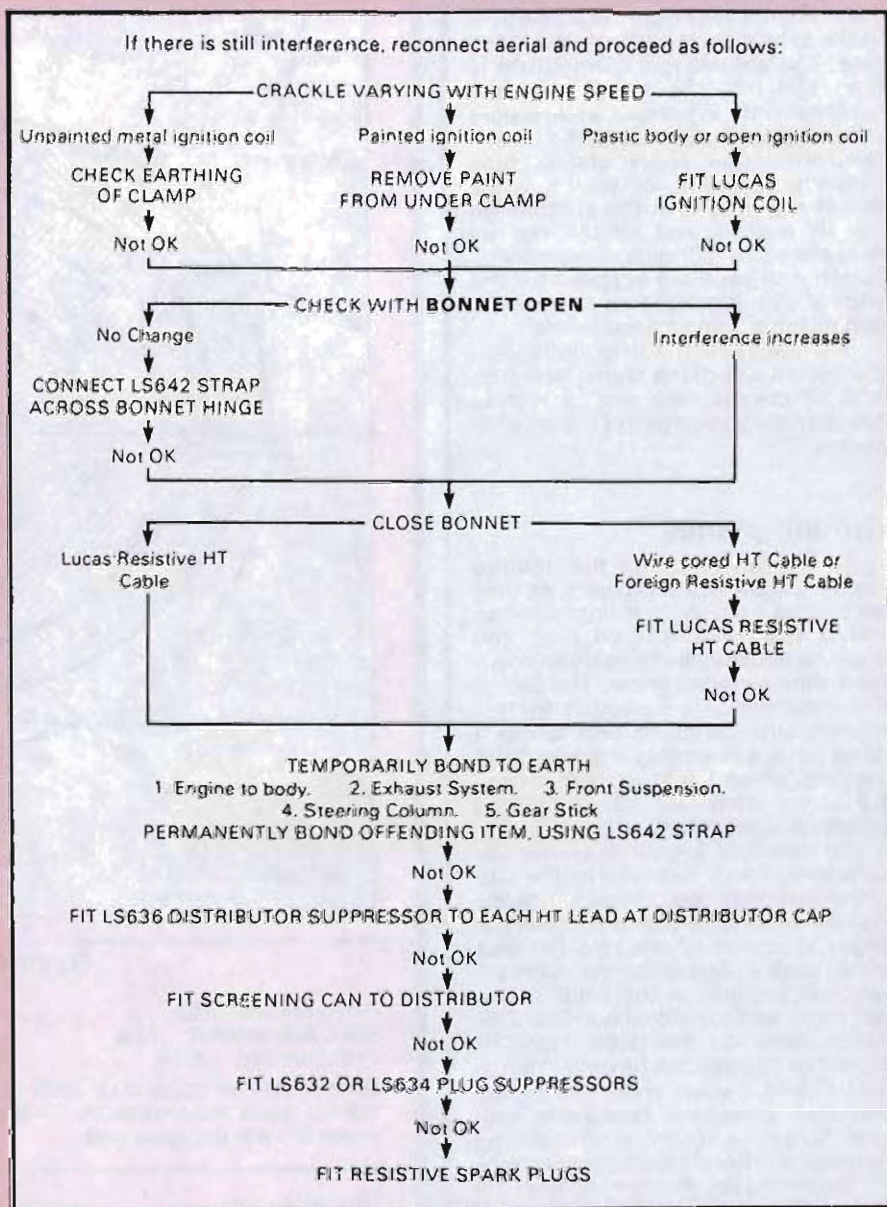


Chart 1. For stubborn cases of interference, work through the chart.

Cbers are often on the receiving end of interference complaints but, going by my post bag, many breakers are coming up against one of the most difficult forms of interference to trace and cure; electrical interference from vehicles to audio and communi-

cations equipment.

Lucas Electrical Ltd publish a booklet dealing with radio interference suppression and most of the information for this article comes from this very handy publication.

Electrical interference, in general, not only in vehicles, is caused by the interruption of the flow of electrical

current. Any electrical conductor connected into that circuit will conduct this interference to another part of the vehicle. Radio interference at high frequencies (including VHS and UHF) can be caused even by slow changes of current flow.

However all vehicles made in the UK have to meet high standards of interference suppression. These regulations are formulated to ensure that vehicles cause as little interference as possible to domestic radio and television and radio communications. The problem with CB and similar equipment is that it is nearly always located close to the source of electrical interference, particularly the ignition system.

Unfortunately, there is no way of curing interference or indeed, finding out how bad it is likely to be before the installation of the radio is completed and identical vehicles may well have different interference patterns.

Start by ensuring the rig, external speaker (if used) and antenna are correctly installed. It is essential that the antenna base has a good earth connection; that is, there is a good metal-to-metal contact between the antenna base and the vehicle body. This may mean scraping away any paint, primer or underseal.

Fused Supply Lead

It's also a good idea to take the supply voltage for the rig directly from the battery with a separate power supply instead of a convenient point inside the vehicle. The separate power lead will help eliminate ignition noise. This supply lead *must* have a suitable fuse fitted.

Disconnect the antenna from the set. Either insert a dummy load into the antenna socket or make sure that you don't key the microphone whilst there is no antenna connected. Tune through the channels with the set switched on. Operate, one at a time, windscreen wipers (ensuring that the screen is wet), washers, heater blower, indicators and stop lamps. If there is any interference from these sources then connect a choke into the supply lead. For audio equipment an LS 630 choke is suitable, but this is not always sufficient for the heavier current required when transmitting through a CB. If this is the case, then it is best to consult the equipment manufacturer for recommendations on a suitable choke/filter.

Some rigs may not have particularly effective internal decoupling and they may also need a 100mF 16 volt electrolytic capacitor between the rig side of the choke and the rig chassis.

Reconnect the set to the antenna and, with the engine running, retune through the channels and electrical accessories. If interference is still present, fit an LS 627 capacitor between the switch terminal of the ignition coil and earth. This is a good step to take in any case, even if there isn't any obvious interference, as interference may show up when in

Additional Suppression
Deal with the remaining interference as follows.

ELECTRONIC TACHOMETER
Ignition cracks still present after normal suppression — confirmed by disconnecting tach lead.
Connect LS640 choke in series with tach take-off wire at coil-distributor end.

INSTRUMENT STABILISER
Intermittent burst of crackle — can be provoked by tapping the dashboard.
Fit LS640 choke in the feed to the stabiliser, and if necessary, connect LS627 capacitor across B and E terminals (or B and earth) and LS640 in series with the feed to instruments.
NOTE: When the stabiliser is mounted on a printed circuit board, it will be necessary to make up short flying leads to facilitate suppression. Alternative mounting arrangements may have to be devised. Solder all connections to stabiliser.

GENERATOR OUTPUT
Whine varying with engine speed.
Fit capacitor between generator output terminal and earth.
Lucas 15-16-17-18 ACR Alternators LS629
Lucas 20 ACR Alternators LS682
Lucas 23-25 ACR Alternators LS673
Other alternators LS720
Dynamos LS626

FUEL PUMP
Whine, crackle or ticking, when ignition is switched on.
Connect LS627 capacitor between feed for fuel pump and earth.
If necessary, fit LS639 choke in series with feed.

FLASHERS
Clicking when flashers are operated.
Connect LS627 capacitor between the B terminal on the flasher unit and earth.

STOP LAMPS
Clicking when brakes are operated.
Connect LS627 capacitor between feed terminal of stop lamp switch and earth.

VOLTAGE REGULATOR
Whine or crackle only apparent some moments after starting disappears when headlamps and heated rear screen are switched on. Generally not apparent at idling speed.
Lucas ACR Alternators (including Delco, Bosch and Femsa equivalents). Fit LS627 capacitor between IND terminal and earth.
Other Alternators
Fit LS627 capacitor between regulator positive terminal and earth. Never connect a capacitor to the field terminal.
DC Charging Systems
Connect LS627 capacitor between control base D terminal and earth.

WIPER MOTOR
Crackling when wipers operated.
Connect wiper body to earth using LS642 bonding strap. If necessary connect LS639 choke in each lead to the wiper motor. For Lucas permanent magnet wipers, use LS641 choke assembly.

ELECTRIC CLOCK
Regular ticking with ignition off.
Connect LS627 capacitor between clock feed and earth. If necessary, fit LS640 choke in feed lead.

SCREEN WASHER MOTOR
Whine when washers operate.
Connect LS627 capacitor between washer feed terminal and earth.
It is occasionally necessary to fit in addition an LS639 choke in each feed lead.

HEATER MOTOR
Whine or crackle, when heater motor operated.
Connect LS639 choke in series with each feed wire to heater motor. If necessary, fit LS627 capacitor between each feed and earth.

Chart 2. This will indicate where to look for the problem and how to cure it.

areas of weak signal.

Some type of electrical ignition can be difficult to suppress and if interference still continues after fitting the LS 627, it might be necessary to replace it with an LS 720 3mF capacitor. If a separate ignition amplifier is used check that the case is bonded to earth. The interconnecting leads should be wrapped with aluminium foil and connected to earth by a braided cable.

The earth bonding strap between the engine and the vehicle chassis should make good contact and damaged braiding should be replaced.

If any ignition interference remains then follow the stages in chart 1.

Not all cars meet the British standards of interference suppression. There are several steps that can be taken to overcome more difficult problems.

Replace HT leads with the resistive type.

Remove paint from contact points on the ignition coil can so the saddle clamp makes a good metal-to-metal contact. If the coil has a plastic or open body, replace with a Lucas type coil.

On some European cars, the gear stick and steering wheel can radiate interference. Braided cable should be used to bond the offending component to earth.

For more stubborn cases, refer to Chart 2 for additional advice.

The Lucas booklet and further help on tracking down interference sources is available from Lucas Electrical Ltd, Parts and Service Division, Audio Department, Great Hampton Street, Birmingham. B18 6AU.

The booklet also has details of the full range of suppression equipment available from Lucas Electrical.



AERIAL SUPPLIES (Redditch) Ltd

SILVER ARROW

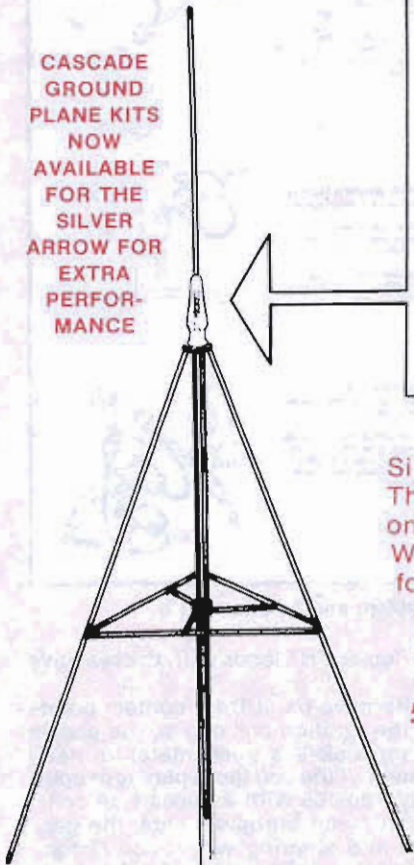
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Devon TQ9 7EL

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Filly wakes up to an unpleasant surprise and she is stalked by Fate . . .

LADY BREAKERS

You know, it's true what they say. You never know how much you depend on something (or someone) until you haven't got it any more. It's like going on a diet and never realizing until then how big a part sticky jam doughnuts played in your life.

Yes, another pearl of wisdom from *Citizens' Band's* very own philosopher. But how did I arrive at this masterly conclusion? The result of a profound thought in the still watches of the night? A flash of insight brought on while sitting trapped in the Lotus position?

No, this morsel of fundamental and unanswerable Truth was revealed to me when I actually lost something I had always thought I could easily do without — only I couldn't.

It happened like this. I came out of the house one crisp, cold dawn, bleary-eyed and only half awake, to find a blank stretch of road where the Mini should have been. I rubbed my eyes and looked again. Still no Mini. It had undeniably gone, and I had been robbed.

It was of course infuriating and highly inconvenient but (I thought) no big deal. The car would turn up sooner or later, and in the meantime I could hire a car.

But of course, no red Mini also meant no CB radio, and I hadn't quite bargained for the calamitous effect on my life this was to have. Other people manage without CB, didn't they? I had, myself, in my pre-CB days got by perfectly well without it, and anyway, the peace and quiet might be a pleasant change . . .

And so the next day I set forth in my hired Ford Escort, heading for the motorway for a nice quick run down to Bristol. Half an hour down the M4, I ran straight into a tailback that disappeared ominously into the horizon. I pulled up and sat there fuming. Why had no-one warned me, I demanded of the inoffensive steering wheel . . . and then I remembered. Naturally, no one could warn me.

Still, I thought optimistically, as the traffic picked up speed, doubling its pace, in fact, from one mile an hour to two, you don't run into this sort of thing every day — which should teach me not to go around making provocative statements like that when Fate might be listening in. Because,

needless to say, the very next day the wretched Escort broke down. In the middle of Dartmoor.

This is only the sort of behaviour to be expected of hired cars, but all the same I was annoyed. In the Mini, there would have been no problem, I would simply have called for help. As it was, I waited three quarters of an hour before aid appeared on the horizon, and then it came in the shape of a battered old Beetle whose driver talked incessantly all the way to the garage while I got smothered in slobbery kisses from a friendly Great Dane.

But believe it or not, I was still optimistic. Fate had kicked me in the teeth enough for one week, I told myself, and indeed on the journey back to London next day nothing untoward occurred. I was so confident that I even turned down the offer of a temporary rig from a breaker friend. Which was, of course, all that Fate had been waiting for, because on the fourth day, on my way to visit a newly married friend, I got hopelessly lost in a town I thought I knew, but which they had completely rearranged as soon as they knew I was coming.

So hopeless is the average man-in-the-street at giving instructions to disorientated motorists that I was actually reduced to that old-fashioned last resort — I asked a policeman.

My optimism was by now waning fast, in fact hanging on for dear life. I could and I would live without CB radio, I told myself sternly. I would not be addicted to an electronic box of tricks. I simply would not be lonely on long drives. I would find my way without any breaker's help, I would get myself out of any mess I might find myself in, I would . . . I would . . . Yes, I would take up that offer of a temporary rig.

And there you have it. I caved in, I can't deny it. I had not realized how much I had come to depend on that radio, not just for help but mostly for company.

The Mini turned up eventually, it was fished out of a river and would obviously never hit the roads again. I bought another like it with the insurance money, but not, I'm afraid, before making a beeline for the nearest Citizens Band dealer . . .



We return to the world of UHF CB to see what's new and what's happening for enthusiasts and those who are not yet convinced.

934

Many apologies to all those people who have been sitting patiently waiting for the next in what we promised would be a regular series. The first 93Forum appeared in the December edition of the magazine but it has taken this long to collect together enough news and views to fill another few pages.

We'll start with the letters — and there has been plenty of them! First out of the hat is *Malcolm Newman* of *Rainham* in *Essex*. He says . . .

As a long serving 27MHz. FM breaker and a regular buyer of your magazine, I decided I would take the plunge and acquire a 934MHz. rig. I was amazed at the ease with which I copied stations up to 30 miles away, and how clear and sharp most stations sounded. One question I'm always asked is 'what's your longest copy' and this is why I am writing this letter.

It seems that the ideal time for 934MHz. is when the telly starts to go loopy (with atmospheric). One evening I was flicking around the twenty channels when I came across two stations in deep conversation. Knowing the local stations, I knew that I'd never spoken to these stations before, so armed with my Reftec 934, four element co-linear I went into battle. After saying QSK once they let me in. I gave my call sign (Mike November 535) and to my astonishment, and theirs, I was talking to Golf Tango Mike in Torbay, Devon! Not believing my ears I told them to standby and quickly went up a couple of channels and found Gordon (unit 318) and Ray (unit 626) in Rayleigh.

After telling them my tale we all went down to the channel, and they too copied the Devon breakers. We estimated the distance to be at least 220 miles, give or take the odd mile.

That evening we also copied Oxfordshire, Yeovil and Bridgewater in Somerset, Hastings and Cambridge. All these and other copies that we received on that and other evenings were very audible and we had no trouble in keeping them, they never

faded at all. I have now copied over fifty stations since I first came up on this great frequency.

Malcolm was able to shed a little light on the distances that can be obtained. *P. J. Collins* of *Chiswick, London* wants to add some comments to the controversial discussion of businesses using 934MHz. and the 'gentleman's agreement' . . .

I must disagree with your recent correspondent. Those wishing to use CB to pass messages (either business or domestic) will only occupy the channel for two or three minutes, and thus require channels with a 'fast turnaround'. They are obviously incompatible with breakers wishing to engage in long conversations or networks. Therefore some kind of voluntary segregation of different types of users is desirable — not only on 934MHz. but, I dare say, on 27 too.

E. McDonald in *Gerrards Cross* in *Buckinghamshire* refers back to the first 93Forum and has some ideas to band UHF users together . . .

As you said in your article, about a thousand 934 users are scattered all over the country. Some will have formed clubs, others will be out on their own. So I think that all 934 users should now get together and form, shall we say, the '934 Club' or 'Club 934'. The first thing is to have a central register of users of 934. This will enable newcomers and enthusiastic users to find local and county users and thereby bring them all together. (If you would like to register with me, please state the serial number and type of set. If you wish a reply please include a stamped S.A.E.)

All persons interested in forming a club should send their comments and suggestions (and offers of help!) to get the club started would be very welcome. Please write to my address.

Of course, we will pass all information on to the magazine.

Mr. McDonald can be contacted at *33 Criss Grove, Gerrards Cross, Bucks. SL9 9HQ. Bravo Sierra 495* or *Brian* in *Biggleswade* also suggests watching the television. Not as an alternative to CB but to spot the times

FORUM

when conditions are best . . .

I have been using a Reftec 934 radio since October and can assure anybody thinking of buying a 934 set that it is money well spent.

On the 2nd, 3rd and 4th of December I worked no less than fourteen other stations. I live out in a village about 45 miles from London and have worked stations up in Stoke on Trent, Norfolk and Birmingham and down in Kent and Southend. Audio was very clear, using an extension

speaker. No lights showing on the radio but this doesn't matter as long as you can hear the station you want.

The weather plays a great part in DX work. As soon as there is interference on the T.V. then that is the best time to use the set.

My equipment is a Reftec 934, a Reftec co-linear antenna and RG 213 cable. The antenna is mounted on a six foot aluminium pole strapped to the chimney stack.

Catch me on channel 10!

Brian picks up an interesting point here. Is there an established calling channel, or do users flick around the channels until they find someone? Newcomers could be perplexed by this, so let us know. *Harry*, or *T.S. 30* in *Banbury* also has some comments on the 'gentleman's agreement' . . .

I and other friends on 934 totally reject the idea regarding using this frequency for business, gentleman's agreement or not. We have paid a high price to purchase our equipment, with

This switchable microphone extension from SSE is compatible with Reftec sets.



only twenty channels. We treat this frequency with respect so in my opinion, anyone who is in business should use the correct equipment for it, not clutter up twenty channels on the cheap.

In Banbury we have, apart from myself, T.S. 03 Mike, T.S. 36 John, T.S. 32 Terry and P.O. 1 John. We can be contacted through P.O. Box 70, Banbury, Oxon.

Terry has had a confirmed copy of 105 miles and we copy Leighton Buzzard no problem (45 miles), we also reach Hinckley in Leicestershire.

I think the problem is arranging a time to be on frequency in all areas. We use channel 10, so if any 934 stations are really interested, please drop me a line and maybe we could arrange a time and date to really put 934 to the test and get a good link-up going.

What's New?

From letters we go to products. As you will see from this month's test, the Grandstand is now available with a selection of antennas. It has, in fact been available for a few months, but the terrible weather that the northern part of this country had this winter meant that the wagon train couldn't get through to Golden Square and we had to wait to get it on test. For full details, read the review.

James Finch of Solid State Electronics wrote to me to say, amongst other things, that he has spoken to Reftec with reference to the extension 'S' meter that SSE produces. The meter is suitable for use with the Reftec 934 unit and makes testing of aerials much easier than the LED display on the set. The SSE 2 way switchable microphone extension (TW-ME-04C) is also directly compatible with the Reftec set. More details on these accessories are available from Solid State Electronics, 6 The Orchard, Bassett Green Village, Southampton, Hants.

Newest and possibly biggest development at the moment is the Warlock, under development at Everites in Hinckley. We have mentioned this a couple of times in the magazine and Mack the Hack is particularly anxious to get his hands on one, as are lots of other breakers who have contacted us asking for more details and a review of the rig.

Reftec Vs Grandstand

These technical reviews are all very well, but what you all really want to know is which rig is best, isn't it? Just suppose that you had three or four hundred quid to spare, which would be the best buy?

Unfortunately, there is no easy choice, as it depends entirely on what your requirements are. Neither rig is perfect, (what is?) and which one would suit your purposes best depends on what you want. Let's summarise the pros and cons of each rig to help you make the choice.

REFTEC

PRO
Size
Expandable to 40 channels

CON
Poor power line filtering
Poor internal speaker
Build quality

GRANDSTAND

PRO
Full 8 watts
Price
Power metering
10dB attenuator
Build quality

CON
Size
Not expandable to 40 channels
Too selective

Those in essence have the fundamental advantages and disadvantages of each rig. The choice is not easy. If you are only operating from a home base and are not worried about future expandability from a home base and are not worried about future channels are so free that certainly expandability is not a current problem. However for mobile work it really is too bulky to be practical in most cars.

Don't underestimate the susceptibility of the Reftec to power line noise in mobile applications. One user we know has had to resort to an entirely separate battery to feed his Reftec to overcome this problem. Also it is essential to use an external speaker with the Reftec as the internal one is very poor! This partly offsets the size advantage against the Reftec. However, it can be tidily installed in a car, much like an ordinary rig, which gives it a considerable edge over the Grandstand if you travel around a lot. Also, you will be able to receive Grandstand rigs clearly on a Reftec, but may have problems receiving Reftecs on the Grandstand rig!

Again, that old devil copy date has got in the way before we have anything concrete (or metal!) in our hands but we can let you have the information that George Cole of Everite has let us have.

The company are using an Audioline 341 transceiver for the 27MHz. 'bit' of the rig and are still retaining the case. The addition of the 934 board is going to take up all available space, so the internal speaker is being sacrificed and the case dimensions will be altered slightly from the Audioline original to fit three encapsulated PCBs — which will form the 934 part of the set.

The Warlock will have the standard 27MHz. channels, the current 934MHz. channels and the new channels that were announced by the government after the legislation of the system. This will obviously mean re-using some of the original control

knobs and making them dual purpose, but the set has also been designed to be easily converted should the government ever permit a further frequency and channel allocation.

The estimated price at the moment is just under £250, which goes a long way towards explaining the eager anticipation that many breakers are feeling. We will bring more details on the Warlock 934 T.C.I. as soon as we have them.

934 is still new enough for there to be very few people who are experienced in either the frequency or equipment. Chris Peterson, who reviews the Grandstand this month, is one of those few people who has used both sets currently on the market and who has also thoroughly tested both of them. We asked him to compare the two as a mini consumer guide for those of you who may be trying to choose between the two.





Some long and thoughtful letters this month, particularly in reply to J. D. Hirst and his comments in 'Channel Control' in January's Citizens' Band.

More Channel Chat

B. R. Wilson in Sittingbourne, Kent was prompted to write by the January Back Chat...

Trying to keep this as brief as possible, I would like to comment on a couple of letters published recently in your magazine.

Roger Large in 'More on Monitoring' and channel 36 emergencies. Here in the Swale area there is a voluntary monitoring of channel 35 which is unofficially designated the local emergency channel. Monitoring is not over 24 hours and I am pleased to say that I have not had cause to use the service. The system adopted is, I believe, that breakers are not warned away from this channel but merely asked to go QRT for long enough to enable an emergency caller to make contact with the monitor. As far as I am aware, the system works satisfactorily.

With 'Channel Control' Mr. Hirst has, I'm afraid, an old complaint, invariably raised from time to time by truckers.

As both a base station and a mobile, I find it rather a selfish attitude, bearing in mind the overcrowding experienced by us all on the forty channels available. I say forty channels, but let's check: Channel 9 — Emergency; 14 — Breaking Channel; 19 — Breaking/Mobile Channel (difference of opinion accepted); 1, 20, 40 — frequency 'keyed' due to SWR adjustment and checking, especially at weekends; 13, 15, 18 and 20 — all next to breaking/mobile channels and often subjected to bleedover/desensing, particularly when over-zealous breakers use 'assistance' trying to copy distant breakers.

That leaves thirty channels effectively free for modulation, barring wallies, keyers and music players.

I'm sorry Mr. Hirst, I'm afraid you can't win on this one. I accept that CB originated as a relief from boredom for the long distance trucker, but CB has come a long way since then, so I'm

sorry to say that you will have to take your chance like the rest of us.

As a matter of interest, you being a trucker, aren't you rather pleased to obtain assistance or street directions from a base station when entering a strange town or city? Do you expect us simply to sit quietly monitoring 'your' 19 waiting for your cry for help? No way — life is much too short!

No doubt numerous truckers will put pen to paper in support of Mr. Hirst's claims so I imagine the topic will be kept alive for some time yet.

Computer Answer?

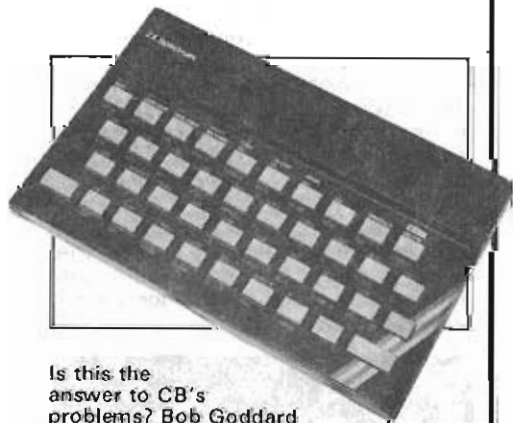
Bob Goddard in Luton also wants to direct his comments in Mr. Hirst's direction...

Although I sympathise with Mr. Hirst's point of view that channel 19 should be reserved entirely for mobile use, I regret that, as always, life is just not that simple.

In our neck of the woods, channel 14 is jammed solid virtually 24 hours a day with keyers, disc jockeys and bucket mouths. We can only hope that matters will improve as 1982's Christmas gifts of CB rigs start collecting dust while 1983's computers come into use.

In the meantime, those breakers who are not prepared to do battle on channel 14 are forced to use 19 as a breaking channel. Provided the various users of this channel behave sensibly, no problem should arise.

Most of my copies are made whilst mobile, commuting on the M1, but I have no objection to home based stations calling briefly on 19 to make contact before taking to another channel. The home based breaker who does annoy me is the one who calls out for his mate every three seconds, sometimes for literally hours on end, when it is obvious that the station he is calling is a) not there or b) not going to indulge in conversation with such a moron.



Is this the answer to CB's problems? Bob Goddard thinks so.

Extended conversations between mobile units on channel 19 show a similar lack of consideration for other users of the channel. It's reasonable to exchange a few remarks, but if the conversation is likely to ramble on then the decent thing to do is to find another channel. There have been occasions when I have been sandwiched between mobile units on the motorway and have been totally unable to get traffic information or contact my mates for the whole of my run, due to the 30+ non-stop chatter.

Mr. Hirst states that he is 'incensed' by the use of 19 by home base stations. I think this is really the root of the problem — too many breakers getting too uptight about how the channels should be used instead of getting on with it in a sensible and courteous manner. There is nothing more infuriating than trying to get out on channel 19 (whether home based or mobile) while some over-amplified breaker is noisily arguing the case for his particular use of the channel.

I wonder what Mr. Hirst would have made of the powered hang-glider pilot I picked up on 19 in Yorkshire? Strictly illegal and very confusing, but more conventional mobile units on the A1 did manage to direct him to an airfield before his fuel ran out!

Your point about breakers getting uptight about channel use rather than getting on with using the channel as sensibly as possible is very valid. Although it can be very frustrating meeting congestion and confusion on a channel you use for business, the idea of CB is that it is an informal service for all, not just a few.

Quick REACTions

Ken Howard, chairman of High Wycombe REACT has a couple of requests for breakers in his area . . .

Very shortly we will be starting a REACT monitoring service on 0-9 in the High Wycombe area and through your magazine I would ask all breakers to assist in keeping 0-9 clear for emergencies.

I have been a REACT monitor for nearly a year now and have taken a lot of abuse. I sat for hours over Christmas on channel 9, so if there are any other breakers in this area who would like to join REACT and the High Wycombe team, we would be only too pleased to hear from them.

At the moment our team is only 5 strong and, of course, we will only be able to give a limited amount of monitoring time, but REACT will be there to assist.

I have also noticed that a lot of breakers are using 0-9 for a calling channel. However, normally these breakers will clear the channel if asked. We are very lucky in this area as the emergency channel is respected, and I thank all High Wycombe breakers for this.

I have read your magazine since you started and I do not miss any articles or adverts — it makes good reading.

Thank you for that, Ken, and good luck to the High Wycombe team. I hope you get plenty of local support.

Fighting Talk

Bottle Basher from Rugeley in South Staffordshire comes hurtling out of the red corner ready for a fight . . .

I have been on CB now for just over three years, since I was twelve. I am now 16, if only just.

I have run many stations: mobile on a push bike; home base; hilltop from 26-28 MHz., 4-25W. I was fairly well thought of in my old home twenty (Bicester) and tried to be considerate on channel. I found that a lot of people didn't have the same consideration and the majority of misuse and swearing came from the older region of my age group.

Now, I believe the reason that we have 1.5m base loaded pieces of tin instead of proper gain aerials or beams on the other end of real rigs is because everyone thought that legal FM on a sardine tin was the battle won. Sure, and a rubber duck's a 12dB gain 5/8

omni directional antenna. This would kill some of the aggro and the stations would be happy as they would not get any signal bleedover and wouldn't have all 40 (bah!) or 80 (pleas!) or even 120 (beg!) channels blown out the window and unusable.

4) How about provision for more channels. The existing 1-40 can stay the same (27.60125-27.99125) whilst 41-80 could be 26.965-27.405, the FCC frequencies, or something similar.

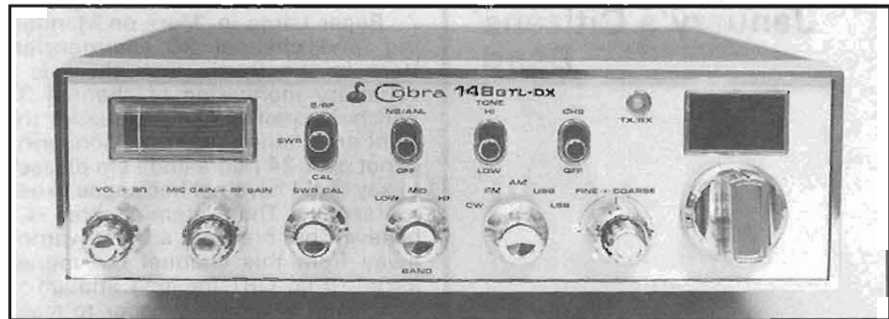
5) The French, Americans, Australians, Italians and Germans have all got this and more and they manage well, so why can't we have it.

6) UHF units are expensive for the average citizen, so 934MHz. is not suitable for CB.

7) The money spent by us on licence fees could go on improving and monitoring the service.

8) Any relatively cheap form of raising help in an emergency is useful. How about a channel 9 law and monitoring by the police? What's the cost of one rig per town service compared to human life?

Well, I could carry on for a page or two myself, answering some of the comments that Kingsley has made, but since this is your page I'll leave it up to you. There are a few misconceptions in my view. What do you think?



Why no Cobras!

wave. In other words, the battle ain't over yet.

What happened to SSB, AM, usable power? Comparing old style CB with the legal version is like comparing paper cups to the telephone. Write to your MP when you write to CB magazines, get petitions signed, marches even. If women can get the vote (no disrespect, just admiration) then why can't we use our Tristar 747's, Cobra 148's etc. We have all gone soft. When you complain, point out the following:

1) Why can't we have AM when the government is spending vast amounts of money on convincing the police to change to such a mode.

2) Why can't we have 12W output as it would cut interference. People would not be tempted to use 25W upwards, as 25W is the smallest linear available.

3) Directional beams would enable people twenty miles away to talk on say, channel 12 and leave it free for others in near-by areas, as the beam would take up less air space than an

Overcoming Wallies

The editorial in Update, January, has struck a chord with Golden Eagle, or Dave, in Stourport on Severn . . .

May I take this opportunity to compliment you on your article in the January 1984 edition. I quite agree with what you said regarding 'wallies'. I am a new breaker on the air waves but already I have encountered the local wallies. I am determined not to let these 'heroes' overcome and get the better of me.

In this area there are some really keen CBers (old hands) who I am really getting to know. I have yet to join the local CB club. On the whole, in this district, I think the decent guys outnumber the wallies.

If I may go back to your magazine for a minute, the January issue is the first I have seen but I am awaiting the next edition. Keep up the good work between the covers!

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



TELECOMMS

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Another month has slipped by, and here we are again, fired by the enthusiasm of Spring, with a bunch of new goodies to match the mood of the season. Cast your eyes right to the photograph at the top of this page, and you are looking at the newest, most exciting event in the history of British C.B.!

This is the first item in what will be a comprehensive range of transceivers and accessories from Nevada Communications, and despite the American state name, it's Best of British, having been designed and manufactured entirely in this country.



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Take care,

Bob Jenkins

What you are looking at here is the TC35 Linear, which is designed to be used anywhere in the frequency range from 26MHz to 30MHz. Selling at the same price as the Zetagi B35 (£19.95), it gives you a few new extras. Not only is it switchable, but it incorporates the switch in the front panel, together with an On-Off Warning LED. It's fuse is easily accessible in a holder on the power lead, and with the latest Space-Age glass epoxy board it is far tougher than any of its competitors.

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Talking of British success brings me to the AKD Precision Direction Finder, better known as the "Wally Hunter". So many people have been buying them that we have been able

to negotiate a better deal, so the price is now a tenner less at £39.95. By the end of the year there probably won't be any wallies left. Probably the best known rig chassis in this country is the Cybernet, which is used by more manufacturers than any other. The Cybernet rigs themselves have not been too easy to get hold of though, and for months I've been pestering the Guvnor to get us a few. The other day, lo and behold, up draws this lorry pulling a dirty great container, full of guess what?

Cybernet Beta 3000's — hundreds of 'em. We've bedded them down on nice comfortable straw in all the dark corners,



then all the not-so-dark corners, and finally the light corners, until every corner of the place was full up. I reckon the Guvnor's breeding them on the quiet. In future I'll keep my big mouth shut!

Anyway, if you can give a good home to a Cybernet Beta 3000, please send a letter of recommendation from your Vicar and Doctor, together

with a cheque for £49.95. They are already house trained and require only daily feeding with a 12 volt power source. And unlike Cabbage Patch Dolls they talk back to you. We were beginning to wonder why we were selling so many Thunderpole II base antennas lately, even given the fact that they are without doubt the most powerful legal antenna on the market. And then we compared our price (£19.95) with everybody else's. Mystery solved.

So we got another container full of Thunderpoles, and now we can't find all the Cybernet rigs. I suppose that means more overtime.

Talking of which, the way you have all been responding to all our special offers has meant that the Hotline Girls, Helen and Shirley, have had to go on a crash keep-fit course so they can keep pace. They asked me to apologise for any delays in answering the phone around lunchtime, due to that being the time they do their work-out with "Mad Jenny". I'm thinking of trying

it myself if anyone can find me a second-hand truss. And thanks to everyone who has been writing and phoning with

compliments about the 1984 Catalogue and the speed of our delivery service. Joking apart, it is terrific to know that you do appreciate what we are doing.

So until next month, take care, 'cos it's time for me to go. Now where did the Guvnor leave the pawn ticket for the Roller?



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For further details see full page advertisement in this issue.

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AD INDEX

Aerial Supplies	34	Magpie Electronics	OBC
Bremi	12, 13	Ottis Electronics	19
Bury Electronics	17	Peterson Publishing	42
Cavalier Base 20	20	Reftec	22
Ceebee Electrical	20	Sharmans Wholesale	IBC
Freeman & Pardoe	IFC	South Midland Communications	22
Gamma Aerial Products	7, 20, 42	Telecomms	41
Globe	34	Tower Communications	19
Les Wallen	17, 19	Westward Electronics	34
Lucky No's	17	W.T.A. Electronics	42

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After last month's bumper club listing, we have a lot of news and letters to catch up with.

Bradford District DX QSL Club

The Bradford District DX QSL Club is a democratic, non profit making Citizen's Radio users club. It is not run by committee or founders but by its members.

Our call sign is Bravo Quebec, but members may use other call signs if they don't like it. The post office tell us that this is the only radio club in Bradford with its own P.O. Box. We have applied for membership to NATCOLCIBAR.

Anyone wishing to join can either contact any Bravo Quebec member on 27.525MHz. USB or call Paraffin Lamp or Mr. Brass Man on channel 14 AM. Alternatively they can write to me at the following address.

Rhys Bowen (Secretary)
Bradford DX QSL Club
P.O. Box 29,
Bradford,
West Yorkshire.
BD12 8DW

Braintree Breakers Club

I am writing in the hope of getting a mention of our club. We are the B.B.C. — Braintree Breakers Club,

originally AM. We now have an SSB DX club, the Sierra Tango DX Club.

As interest in FM DX and QSL swapping is getting nearer we are now forming an FM DX QSL Swap club and anyone requiring information can contact me, Ian 1ST 10, or 1ST 31, Peter. Swappers and DXers welcome. We all return QSL 100%.

Ian,
1ST 10,
P.O. Box 314,
Braintree,
Essex.
CM7 7ND

Southampton Citizens Band Club

Going back through my old copies of your magazine I noticed that we appeared in the August 1981 issue National Directory, so perhaps it is time for us to contact you again.

We now have our own P.O. Box to make contact easier. As a club we are still going strong, putting on pantomimes, disco's, fun evenings, parties and the odd technical talk.

We meet on the last Wednesday of every month at the New Bridge





Inn, Woolston, Southampton at about 7.45 pm and we welcome visitors and new members to our very friendly club.

We also put out the Southampton Breakers Weekly News at 7.00 pm on channel 7 every Sunday to keep all the breakers in Southampton aware of our club and other club activities.

Philip (Secretary),
S.C.B.C.,
P.O. Box 79,
Southampton,
Hants.

Warley and Bearwood DX Group

Our club is growing fast, we have at present 15 members who meet fortnightly on Monday nights from 7.30 pm at the Two Brewers Pub, Queens Road, Warley. We also have over 100 postal members from various parts of the world.

The fee for life membership is £5.00.

Dennis Clark (Secretary),
Warley and Bearwood DX Group,
P.O. Box 15,
Warley,
West Midlands,
B66 4EA.

Citizens' Band Radio For The Blind, Scotland

Through the pages of your magazine I would like to thank all those great breakers who came to the sponsored modulation last autumn. It was an exceedingly ambitious, but highly successful, modulation, which covered no less than twenty locations, stretching from Inverness in the north to Wales in the south, from Berwick-on-Tweed in the east to the Outer Hebrides in the west.

It is not possible to mention each and every handle, it would fill the magazine, but a special mention to Highland Bear and Crispy who were in the Moffat Hills, Raven, Desperate Dog and Dirty Dozen in North Wales, Gunga Din in Benbecula, Electronic

Wizard in Dumfries and the M.A.C. DX Group in Inverness.

There were many others who did an excellent job in keeping the channel open and without their assistance we would not have reached the grand total of over 6,400 copies in the 24 hour period.

The result of the appeal is that no less than seven blind persons will be on channel — and that is an admirable achievement by any standard.

Ken Callow (Secretary),
Citizens' Band Radio for the Blind.

Welcome CB Club

We are the Welcome CB Club and we have been going for two years now. All the work we do is for charity — over the past two years we have raised £4,000.

We recently started up a new section of the club, with the name Whisky Lima. On 8th October 1983 at 10.00 pm we started a 72 hour DX in aid of the mentally handicapped in our area. With a lot of help, and numerous donations from breakers all over the country, we managed to raise £320.

We would like to thank everyone that helped in this venture.

We meet every Monday night at the Welcome To Gower, Gowerton, Swansea.

Since starting our club we have been told that there is another group also using the Whisky Lima name. If anyone knows them, please let us know.

W. L. Jakabus,
P.O. Box 610,
Gorseinon,
Swansea,
Wales.
SA4 2WR

Kingdom Breakers Club

As regular readers of your magazine, we thought we would drop you a line to tell you about some of the work done by our club, the Kingdom Breakers Club, here in the kingdom of Fife.

Over the past few months we have been involved in several events to raise funds for the Scottish Ambulance Service in Fife. The total sum raised was in excess of £1,200 which bought equipment for ambulances in this twenty. Among the equipment purchased was a resuscitator, which alone cost £600, blood pressure units, stethoscopes and several complete sets of vacuum body splints.

Senior members of the Ambulance Service were invited along to a presentation disco at a local Social Club to receive the equipment.

We would like to thank the original committee who started the fund raising, and too, the present committee who took over after our A.G.M. and finished off the good work.

We have been disappointed in the reaction that we have had from the local press — the only recognition we got for our efforts was a small picture and two lines in the area's free paper. We hope that you think our efforts worth a mention in your magazine.

Dave and Sue Lace,
(Stormbringer and Stormbird),
Kingdom Breakers Club.

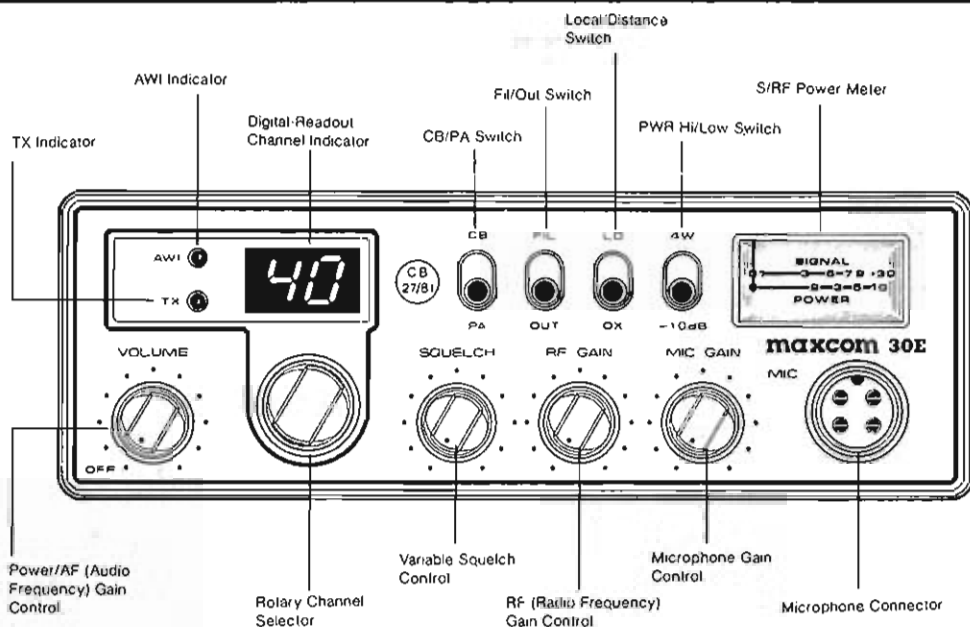
P.O. BOX 610
GORSEINON
SWANSEA
SA4 2WR

WHISKY LIMA 25

FREQ: 27 MHz

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 quelling 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 quelled 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.

tone or Filter Control
This can either be a rotary or flick switch. It controls the tonal quality of received signals in accordance with the users preference.

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

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

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

Your set may also have the following controls . . .

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

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

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

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

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

FM RIG CHECKLIST



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

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

MOBILES

					ADDRESS	NAME
•	•	•	SL	Report Feb '82	Amstrad Consumer Electronics, 1-7 German 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
•		•	FL		Roger D, 831 Mansfield Rd, Notts	COMMTRON
•			FL			COMMTRON
•			SL		Goodmans Loudspeaker Ltd., Downley Rd, Havant, Hants PO9 2NL	CYBERNET
•	•		FL	Report May '83		CYBERNET
•	•	•	FL	Report September '83		CYBERNET
•			FL	Report July '82		DNT
			SL	Report December '81	Fidelity Radio Ltd., Victoria Rd, London NW10	FIDELITY
		•	FL	Report March '82		FIDELITY
		•		Report September '82		FIDELITY
•			SL		Bee-Ware Ltd., Ripon Way, Harrogate, N. Yorks.	GRANDSTAND
•	•		SL			GRANDSTAND
•			SL			GRANDSTAND
•	•		SL		Telecomms, 198 London Rd, North End, Portsmouth	INTERCEPTOR
•	•		FL			INTERCEPTOR
•	•		FL			INTERCEPTOR
			FL	Great GT868 chassis	Star Warehouse, Chalk Farm Rd, London	JOHNSON
			FL		Roger D, 831 Mansfield Rd, Nottingham NG5 3GF	LAKE
			FR	Report April '83		LAKE
•	•		FL	Report March '83	Lowe Electronics, Matlock, Derbyshire	LOWE
•		•	FL	Report November '82	Magpie Electronics, PO Box 35, Andover, Hants SP10 2LG	MAGPIE
•			FL		AM House, 9A Old's Approach, Tolpits Ln, Watford, Herts	MAXCOM
•		•	FL			MAXCOM
•		•	FL			MAXCOM
•		•	FL			MAXCOM
•		•	FL			MAXCOM
•			FL			MAXCOM
•			FL	Report Jan '84		MAXCOM

REFERENCE



NAME	MODEL	RETAIL PRICE	NO OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	tone CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAKERS
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	£89.95	40	13.8VDC	•			•	•	•				•	•
WAGNER	9000	£59.95	40	13.8VDC	•			•			•	•		•	•
WAGNER	COMPACT 40	£25	40	13.8VDC	•									•	•
WESTERN	COMPACT 40	£34.50	40	13.8VDC	•						•			•	•



NAME	MODEL	RETAIL PRICE	NO OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	tone CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAKERS
AUDIOLINE	345	£139.95	40	240VAC	•			•	•	•				•	•
COMMTEL		£65	40	240/12V	•						•				
DNT	B40	£18.8	40	240VAC	•									•	•
DNT	B2740	£18.8	40	240VAC	•									•	•
DNT		£18.8	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	•			•	•	•				•	•
JOHNSON	XK2000	£99	40	240VAC	•			•		•				•	•
MIDLAND	76-200	£150	40	240VAC	•					•				•	•
UNIDEN	UNIACE 300	£149.95	40	240VAC	•			•	•	•				•	•
WAGNER	BASE	£150	40	240VAC	•		•	•	•	•				•	•

MOBILES

TX 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, Wombly, 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	Cybernet chassis	Rotel Hi-Fi, 2-4 Erica Rd, Stacey Bushes, Milton Keynes	ROTEL
•	•	•	SL	Cybernet chassis		ROTEL
•			SL	Cybernet chassis		ROTEL
•			FL			SIRTEL
•	•		SL		Tape Way, Tower Bridge St, Walsall, Staffs	TANDY
•			SL			TANDY
•			SL			TANDY
•			-			TANDY
			SL	Report Nov '82		TANOY
•			SL	Report Sept '82	Cravenminster Ltd, Unit B, 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

BASES

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

REFERENCE



NAME	MODEL	RETAIL PRICE	NO. OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	TOPE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAKER
DNT	HF 12/3	£47.55	3	BATTERIES	•										
KAISER	CBX40	£80	40	BATTERY	•					•		•			•
MAXCOM	7E	£49.95	40	BATTERY	•								•		
MIDLAND	75-720	£59.95	40	12VDC	•										
TANDY	TRC1001	£119		BATTERY	•					•		•			•
WESTWARD	PT2	£130	40	240/12V	•					•		•	•		•

PHONE CHECKLIST

NAME	MODEL	PRICE	FREQUENCY	RANGE	RECHAR. BATT.	IN USE LAMP	INTERCOM	AUTO DIAL	EXTERNAL ANT.	SECURITY CODE	HANDS FREE
A-PHONE	TP125	£80	49MHz., 1.6-1.8MHz	230m	•	•		•			•
FIDELITY	WANDERER	£170	47MHz., 1.7MHz	200m	•	•	•	•	•	•	
FREEDOMPHONE	3500	£199	49MHz., 1.7MHz	200m	•	•	•	•			
HANDY PHONE	HP 1001	£199	49MHz., 35MHz		•	•	•	•	•	•	
MAXCALL		£116	49MHz., 1.7MHz	100m	•	•	•	•			•
MAXCOM	MCP150A	£89	49MHz., 1.6-1.8MHz	800m	•	•		•			
MAXCOM		£99	49MHz., 1.7MHz	200m	•	•	•	•			
PACER	7800	£149	49MHz., 1.7MHz	500m	•	•	•	•			
SUPERFONE	CT600	£115	49MHz., 1.7MHz	100m	•	•	•	•			
SUPERFONE	CT650	£199	49MHz., 1.7MHz	230m	•	•	•	•		•	•
SUPERFONE	CT505	£299	49MHz., 70MHz	1Km	•	•	•	•	•	•	

PORTABLES

TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS	ADDRESS	NAME
					Solid State Electronics (UK), 41 Twyford Ave, Shirley, Southampton (Tel: 0703 7803 780335)	DNT
					A.T.M., AM House, 9A Old's Approach, Tolpits Ln, Watford Herts	KAISER
					Plustronix Ltd., Hempstalls Ln, Newcastle-under-Lyme, Staffs	MAXCOM
					Tame Way, Tower Bridge St, Walsall	MIDLAND
					The Mill House, Tuckenhay, Totnes, Devon	TANDY
			FL	Report Nov '83		WESTWARD

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

CORDLESS PHONE

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

REFERENCE

ANTENNA CHECKLIST

Here's a brief intro

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

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

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

NAME	ADDRESSES	MODEL	CONSTRUCTION		MAX POWER	TYPE	MOUNT	PRICE RANGE
			AL	SS				
AERIAL SUPPLIES	Aerial Supplies, 6 Widney House, Bromsgrove Rd, Reddick, Wotton. (Tel 0627 82620)	Silver Star	AL	1.5	100	B	Pole	D
		Silver Arrow	AL	1.5	500	B	Pole	F
		CBA 150D	SS	—	—	—	Various	C
ANTENNA INC.		12510 Telecomm	SS	0.9	—	M	1/2ths	D
		Super Persuader	SS	1.5	—	M	Mag	F
		MR511	SS	1.2	—	M	Mag	G
		M710	SS	1.5	—	M	1/2ths	G
		AS M125	SS	1.14	150	M	3/4"	C
		AS M 128	SS	1.14	150	M	3/4"	C
ANTENNA SPECIALISTS	Antiference Ltd, Aylesbury, Bucks HP19 3BJ	AS M131	SS	1.14	150	M	gutter	D
		AS MR440	SS	1.2	100	M	mag	D
		AS M117B	SS	1.2	150	M	mag	D
		AS M510	SS	1.2	200	M	3/4"	D
		AS M2000	SS	1.5	150	M	3/4"	D
		AS 9812	SS	1.2	150	M	mag	D
		IC 8S	SS	1M	—	M	mag	D
		IC 80	SS	1M	—	M	spring-based mag	C
		IC 15	SS	1	—	M	trunk	C
					SS	1	—	M
ANTLER	Shakespeare, Performance Antennas, Selton Rd, Market Drayton, Salop.	IC 20	SS	1 1/2	—	M	roof	D
		IC 30	SS	1	—	M	gutter	C
		IC 40	SS	1 1/2	—	M	mirror	C
		IC 80	SS	1 1/2	—	M	mag	C
ARCHER	Tandy Corp, Tame Way, Tower Bridge St, Walsall, W. Mid	21-904	SS	0.5	50	M	3/8" snap	D
ARMSTRONG	Stateside Trading Ltd, Audley Ave, Newport, Shropshire	SAM 10	SS	1.06	1,000	M	surface	F
		SAM 20	SS	1.06	1,000	M	surface with spring	F
		TAK 10	SS	1.06	1,000	M	boot lip	F
		TAK 20	SS	1.06	1,000	M	with spring	G
		MAG 10	SS	1.06	1,000	M	magnetic	G
		MAG 20	SS	1.06	1,000	M	magnetic	G
		BDY 20	SS	1.06	1,000	M	with spring	G
		PEC 20	SS	1.06	1,000	M	side	G
		TAK 101	SS	1.06	1,000	M	side & fold over & quick disconnect boot lip illuminator	G
AVANTI	CB Radio Centre Ltd, 337 Kenyon Rd, Harrow	AV 241 (Moonraker)	SS	1.22	—	M	stud	D
		AV241 T	SS	1.22	—	M	trunk	D
		AV241 M	SS	1.22	—	M	mag	D
		AV241 MM	SS	1.22	—	M	super mag	D
BADLAND	Badland, Roatan Ind. Est, Providence St, Lye, Skarbridge	B10	SS	1.22	—	—	mag	G
BANDIT	Telecomms Ltd, 189 London Road, North End, Portsmouth, Hants	B10	SS	1.42	—	M	mag	G
		B15	SS	0.61	—	M	mag	F
		B15	SS	1.22	—	M	mag	F
		B20	SS	1.42	—	M	mirror	F
		B30	SS	1.42	—	M	drill thru	F
		B30	SS	1.22	—	M	drill thru	F
		B40	SS	1.42	—	M	various	D
		B40	SS	1.22	—	M	various	D
		B50	SS	1.42	—	M	various	D
		B50	SS	1.22	—	M	various	D
C. BRIT	C Brit, Unit 3, 5 East Lane, Wembley, Middx	Stingray Whiplash	AL	1.5	500	B	pole	G
			SS	1.5	25	M	3/4"	C
CT INTERNATIONAL	CT International, CTE (UK) Ltd, Unit 3, Mitcham Ind. Est, 83 Streatham Rd, Mitcham, Surrey	MG27	SS	0.91	—	M	mag	C
DIAL-A-MATCH	WTA Electronics Ltd, 111 Cromer Rd, Holliston, Norwich. (Tel 0606 47694)	Rubber Duck —	R	0.3	—	M	1/4"	C
		530 (Cherokee)	SS	0.61	—	M	—	F
		531 HBF	SS	0.81	—	M	—	F
		531 SMF	SS	0.61	—	M	—	F
		540	SS	1.22	—	M	—	F
		641 HBF	SS	1.22	—	M	—	F
		541 SMF	SS	1.22	—	M	—	F
		520 (Halfbreed)	SS	1.27	—	M	—	F
DIGITEK UK LTD	178-181 Streatham Rd, Mitcham, Surrey	Falcon 27	SS	1.5	—	M	various	D

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Length

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

Maximum power

This is given as a guide only. The law allows for a maximum two watts. However,

the higher the maximum power figure given the sturdier the antenna will be.

Type

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

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

Mount

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

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

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

Key:	C: £10 - £14.99	G: £30 - £39.99	AL - Aluminium	B - Base
Price Bands	D: £15 - £19.99	H: £40 Plus	FG - Fibreglass	
A: £1 - £4.99	E: £20 - £24.99	Construction	Application	Note: Prices are given as a guide only.
B: £5 - £9.99	F: £25 - £29.99	SS - Stainless Steel	M - Mobile	

NAME	ADDRESSES	MODEL	CONSTRUCTION	LENGTH	MAX POWER	TYPE	MOUNT	PRICE RANGE
DIXONS	Dixons Photographic	Harrier	SS	0.9	--	M	Mag	D
HOT ROD 200	Hot Rod 200 Statexco Trading Ltd. Audley Ave Newport, Shropshire	FM UK	SS	1.27	--	M	1/2"tha	B
FREEMAN & PARDOW	Freeman & Pardow Tything Rd. Arden Forest Ind. Est. Alcester, Warwick	The Invader The Thunderpole	AL AL	1.5 1.5	250 500	B B	pole pole	E F
CB SERVICES	97 Crab Lane Watlington, N. Yorks HG1 3BD	Bullwhip Knuckleduster	SS AL	1.5 1.5	--	M B	various	C D
MIDWEST		Dial-a-tune Dial-a-tune	SS SS	0.61 1.22	500 2	M M	various various	C D
MODULATORS	Les Wallen Manufacturing, Pembroke Works, Sandwich Rd., Sandwich, Kent	MOBILE LC MOBILE SC MDX LC MDX SC 934 BASE 934 MOBILE VHF MOBILE VHF BASE 27 L/C BASE 27 DX BASE	SS SS SS SS FG FG SS SS AL AL	1.3 1.3 1.5 1.5 1.5 1.3 1.3 1.5 1.5 1.5 1.5	1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000	M M M M M M M M B B	1/2"tha 1/2"tha 1/2"tha 1/2"tha Pole Gutter Pole Pole Wall Pole	C C C C H G C D D D
MOTOROLA	Motorola Taylors Rd. Stratford, Herts	EC106M	--	--	--	M	--	F
OCT.	Unit 1 Earlsfield Lane Ind Estate, Grantham, Lincs	K40 Z27	SS SS	1.4 1.45	500 200	M M	various various	G B
PANORAMA	Panorama, 73 Waltham Rd, London SW15 2LS	CB27	SS	1.22	--	M	mag	B
PRIDOW		KT40	--	1.5	--	M	trunk	C
REVCO	Telcomms, 189 London Road, North End, Portsmouth, Hants	Revco	SS	1	100	M	various	B
SHIRA		SYS 206M SYS 203C MA 62	SS FG M	1 0.75 0.91	--	M M M	mag trunk --	C C O
SIRTEL	Sirtel, 24 Adm. Sq. Off Maxwell Rd, Woodson Ind. Est. Peterborough	GP Messenger GP Signal Keeper	SS SS	1.5 1.5	--	B B	clamp tripod	E F
SMC	S.M.C. Runbridge Street, Totton, Hants SO4 4QP	Oscar Base CBA 11GP Oscar Base IIVIIIS Oscar IICM Oscar IICE Oscar IINE Oscar IISE Oscar TMCAS	SS SS SS SS SS SS SS	1.5 1.5 1.2 1.2 1.5 1.5 1	-- -- -- -- -- -- --	B B M M M M M	-- mag foldover base 'pull-up' 'locking-coller' foldover base trunk	F F D B C C B
SPYDER		Spyder	AL	1.6	--	B	pole	B
TAGRA	CB Radio Centre Ltd, 337 Kenton Rd, Harrow	T40	SS	1.4	500	M	various	E
THOROBRED	GCS, Unit 1, Earlsfield Lane, Grantham	251 Z27 Locktune	SS SS SS	1.6 1.5 1.5	--	M M M	various 1/2"tha various	C B C
WITCHSTICK	CJM Motor Factors, Hill Farm Ave, Levensden, Walford, Herts SG7 7J 74845	Witchstick homebase	AL	1.6	--	B	--	E
WTA ELECTRONICS	111 Chesser Rd, Halesden, Norwich, Norfolk	Wot Pole Wot Mag	AL SS	1.5 1.5	--	B M	pole mag	
VAN ORDT	Van Ord, Knight CB Specialist, 204 Dunstable Rd, Luton, Beds	Audio Kling AKO-100	SS	1.5	2,000	M	1/2"	G

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

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

Writing for CB

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

Telephoning

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

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