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Design and Origination  
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Editorial Assistant:  
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Managing Editor:  
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# CB Citizens' Band

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### ABC

#### Cover this Month

The Binatone Long Ranger 40, a nice forty channel portable that — if you are very clever — could be yours for the price of a postage stamp. Which reminds me . . .

Four young breakers were driving along the road in an open topped convertible. They were happy and gay — well, happy anyway. As they drove past a block of flats a younger breaker, having polished off a Golden Delicious, tossed the munched-up apple core out of the window. That core made its way unerringly to the nose of the car driver who was on channel at the time. 'Look out!' warned his companions with one voice. 'Look out for that apple core!' But the driver paid them no heed and upon being struck by the residue of that popular fruit from the rosaceous tree he drove the vehicle slap bang into a lamppost. All four were hurt though I'm happy to say, not very badly. Hence the saying . . . Core scorned is four harmed!!!!



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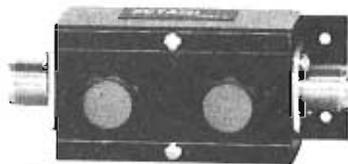
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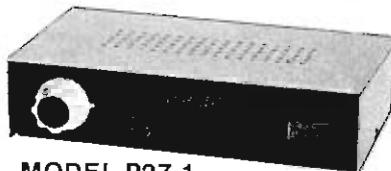


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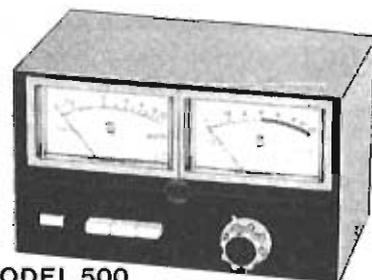
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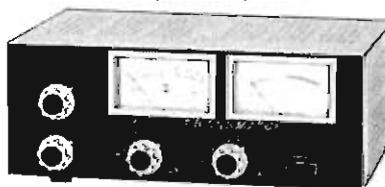
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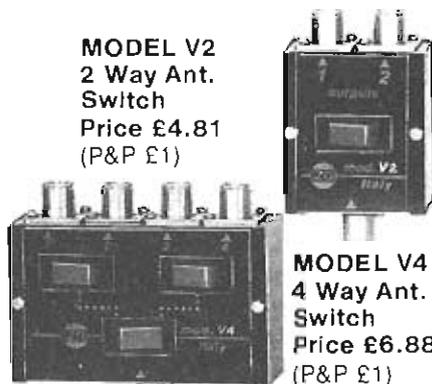


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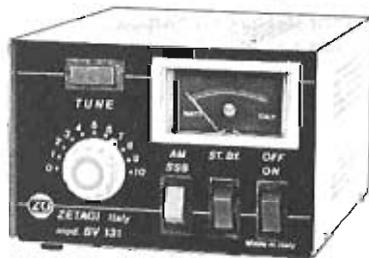
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# UPDATE

## NEWS FROM THE WORLD OF CB

NEWS FROM

Christmas is done and gone and an awful lot of money has changed hands for both wanted and unwanted presents. Many of the younger readers will, by now, be proud owners of CB radio transceivers — mostly mobiles masquerading as base stations or portable models. Parents, Uncles or Aunts who parted with precious cash during these difficult times will not want to see their money wasted.

One would hope that some interest was shown in CB by the recipient before the gift was purchased — that interest is something that needs to be nurtured. It is very easy for children — or adults for that matter — to misuse CB and during the period following Christmas the airwaves will be bubbling with new breakers. All are most welcome. It will now be left to adults with a genuine respect for the service

to ensure that those rigs are used properly. Common sense, a close eye and a little earwiggling will not be wasted during this period.

Your favourite CB mag goes from strength to strength and a host of new features will be introduced during '83. The 'Rig of the Year Award' initiated in *CB World*, now incorporated in *Citizens' Band*, will continue but under a revised format. Details of this soon.

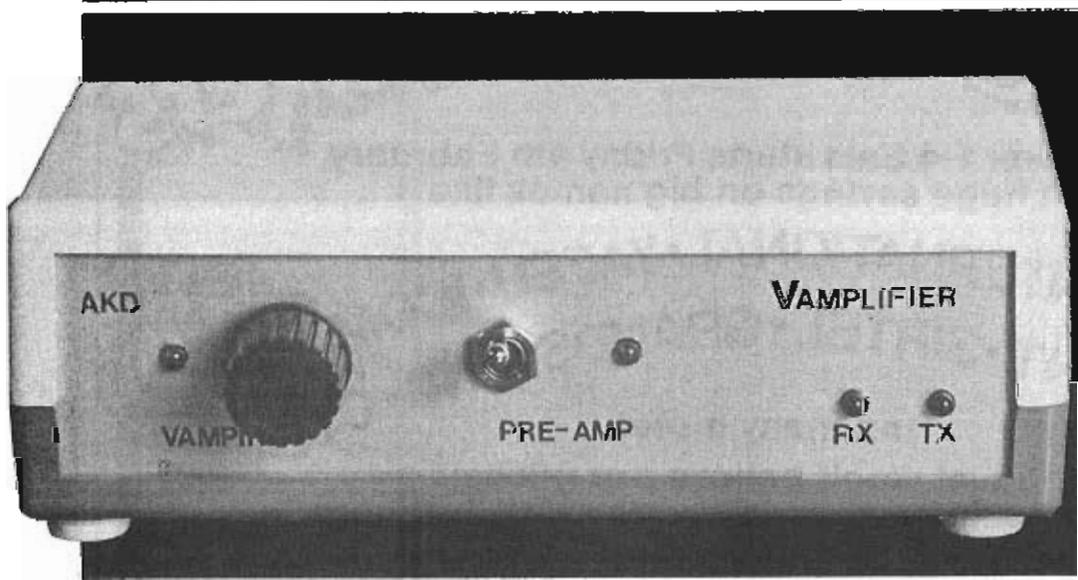
The health of the CB market, contrary to belief in some quarters, is strong and at least three new rigs will be 'on the shelf' early in '83. You will get full and detailed reports on these just as soon as the lab boys have finished their analysis. Some rigs have disappeared from the shops and some care must be taken, when buying, to ensure that servicing is available under your rights as a consumer.

A couple of new contributors have been taken on board and we hope — depending on the practicability of their schemes and things — to bring you more DIY projects. Hopefully we will kick off next month with a follow up to the very popular Update article on rig modification.

Somewhere in this issue — at the time of writing the pages are un-numbered — you will find that joyful TWONG character, a fugitive from another magazine who has sought refuge with *Citizens' Band*. Great character and we hope you enjoy his crazy world.

If you are home based be sensible, if you are mobile, be extra careful on the roads. One CB phrase that I do like is . . . Take care 'cos we care!

Chris Adam-Smith



### Vamplifier

Telecomms, UK distributors of AKD products have announced the release of the 'Vamplifier'. This unit is a combination of their already popular CB Booster and Vampire.

The Vamplifier's pre-amp stage is switchable incorporating a very low noise F.E.T. device. Whilst the attenuator section (Vampire) is now made variable and switchable for Ultimate control of "bleed over". The unit will be selling at a retail price of £29.95.

As an added bonus AKD now incorporate a Low Pass Filter in both the Vampire and CB Booster at no extra cost.

CAS

## FROM THE WORLD OF

### Big Dixon's

Tuning into CB in a big way is Sandra Clifford. Sandra who? Good question. Sandra is Coventry Carnival Queen and was recently around and about at the opening of Dixon's superstore in that fair city.

Dixon's have built a

4000 square foot store — big enough to house the whole range of their products — including CB. As you can see from the picture prices at Dixon's are really low right now — we advise you to rush along to your local store or even onto the new one in Coventry. It's so big you can't miss it.



The new Maxcom 30E



## More Maxcom

Maxcom have added two new rigs to their already comprehensive range. The Super 4E, which is an updated version of the standard 4E will be reviewed next month. Their spankingly brand new rig, the Maxcom 30E, will be on sale early in the new year. As you can see from the photograph it is a handsome CB and just how well it works we will be finding out very shortly. Watch this space.

Enquiries on either of these rigs should be addressed to AMTelecommunication Services, AM House, 9a Old's Approach, Tolpits Lane, Watford, Hertfordshire WD1 8QR. It should be noted that AMT (Maxcom) obviously have faith in the growth of CB in this country and are backing this faith with hard cash and some good products.

CAS

## Competition Winners

Hey, you at the back! Sit up and pay attention. You don't want to miss the winners of our November competition do you?

If you remember (I know, I know, November was long time ago) we set you eight cryptic questions, the answers to which were the names of certain antennas. Well, as usual, the postmen had a hard time of it. The Charing Cross Road was jammed with red vans packed full of entries. Thankfully, most of you entered on postcards so my letter-opening finger was spared. It was left to our revered Managing Editor (bow, bow, scrape, scrape) to dive head first into the pile. When he emerged he was smiling and holding Mr Brind of Beaconfield's entry aloft. Mr Brind will receive his prize forthwith — a Maxcom 4E rig.

The second entry to be extracted from the mountain was that of Stuart Gagen of King's Lynn. He wins an SWR meter courtesy of South Midlands Communications.

The third prize was a Johnson SWR meter. We sent dear Mr Wilson in again, and although he wasn't smiling quite as much now he emerged triumphant. In his delicate paw was Mr Powell



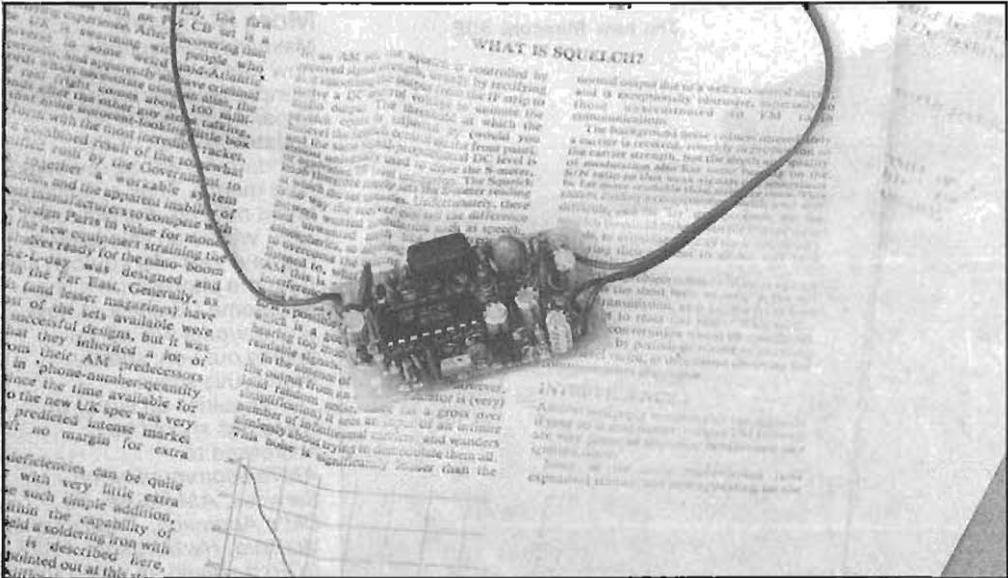
Maxcom 4E for the lucky prize winner

of Mold's entry.

There were ten runners-up. Each will receive a unique CB sew-on patch. They are: Simon Marles of Wrexham, A

Sumbly Snr. of Sunderland, Mr P Sumbly of the same address, G Knox of Stockton On Tees, CC Bowering of Bristol, Paul Hallsworth of

Denby, Derbyshire, Mrs B Gouin of Sittingbourne, P Matin of Glasgow, Mrs P Craddock of Sponoon and C Horner of Rugby. **KW**



Noise squelch kit from Bonex & Ambit

terminating impedances! In other words, just unsolder the original ceramic filter, substitute this one and you're away!

Next off is a sample from *Bonex Ltd, of 102, Churchfield Rd, Acton, London, W3 6DH. (01-992 7748)*. Bonex are the West London agents for Ambit International, who we mentioned in the original article. The specification of this filter is identical to the one detailed above except that the impedance is the more usual 3Kohm. This will necessitate some modifications to the rig circuitry in order to provide the correct terminating impedance. These mods will be along the lines of those outlined in the October article. Price is £4.30 inc VAT and p&p.

Also available from Bonex and Ambit is a noise squelch kit. Pictured here. This is also £4.30 inc VAT and p&p. We have fitted our sample to a Cybernet 134 chassis with excellent results. However, the PCB is very compact, and construction is not recommended by those unused to very fine soldering work.

## More on Mods

Our 'Update Special Rig Modification' feature in the October issue seems to have generated a fair degree of interest. Interested parties will recall that at the time a genuine 10.695 MHz crystal filter was unobtainable, and we recommended a 15KHz wide 10.7MHz filter. We now

have details of a number of suitable 10.695MHz crystal filters which will offer superior performance to the one originally detailed.

First off we have a sample from *P.R. Golledge Electronics, of Merriott, Somerset, TA 16 5NS. (0460-73718)*. This is a two pole filter with a centre frequency of 10.695MHz. The 6dB bandwidth is

$\pm 3.5\text{KHz}$ , and the stop bandwidth at  $\pm 10\text{KHz}$  is 20dB. The input and output impedance is 1Kohm. Price in one-off quantities is £4.30 inc. VAT. Because the input and output impedance is fairly low by crystal filter standards, it ought to be possible to directly substitute this filter for the standard ceramic type without worrying too much about

CP

## Law Givers?

The Telecommunications Bill, published on November 19th '82, includes provisions amending the Wireless Telegraphy Acts 1949 and 1967. Their purpose is two-fold: to rationalise and update the penalties for wireless telegraphy offences; and to introduce new powers to enable more effective enforcement of the law. The provisions include:

- powers for the police or persons authorised by the Secretary of State (members of the Radio Interference Service) to seize apparatus for the purpose of proceedings;
- a limited power of arrest

without warrant for the police in cases involving the illegal use of radio transmitters; and - powers for the Secretary of State to control the sale and possession of specified wireless telegraphy equipment.

### Controls on sale and possession

To reduce or prevent interference, the Secretary of State has powers at present to prohibit by order the manufacture and importation of specified equipment except with his authority. But he does not have powers - which the provisions will give him - to control the sale and possession of such apparatus. This will help control further the availability

of illicit CB equipment; at the moment, about 1000 complaints a week concerning interference to domestic TV and radio caused by illegal CB are received by the Radio Interference Service (R.I.S.).

### Seizure and forfeiture of apparatus

The proposed powers of seizure will include a provision enabling the police or the R.I.S. to apply to the court by way of a civil procedure for the forfeiture of apparatus illegally possessed. This would give an alternative to prosecution where it appears that nothing useful would be achieved by seeking a criminal conviction. This might be, for example, where

a person accepts that he should not have had the apparatus in question and does not appear to be deliberately flouting the law.

### Penalties

The provisions in the Telecommunications Bill do not increase penalties for existing offences (other than for two which are made triable-either-way). However, one effect of the Criminal Justice Act 1982 will be to raise the maximum fine for the unlicensed use of a transmitter from £400 to £1000.

At the moment these very serious proposed changes to the law are being carefully studied and we shall be reporting further. CAS

## Knight Time

We have received three rigs from Knight Communications for review in the magazine. The largest of the three is a base station, this will be reviewed in next month's

issue. The other two rigs are mobiles one, a budget rig, costing only £25.00. Details of the range can be obtained from the *Luton branch at, Unit 19, Britannia Estate, Leagrave Road, Luton LU3 1RJ.* CAS

## Supertuned Base

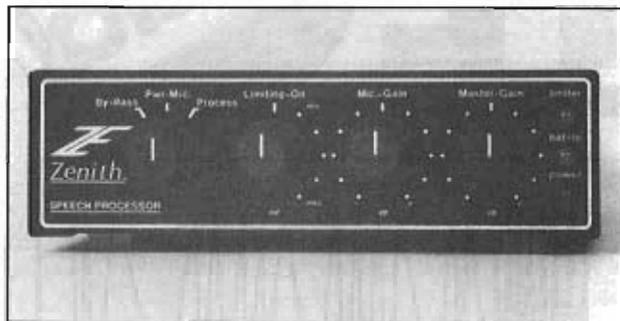
One of our favourite rigs is Radiotechnic's Supertuned M40 Special. But now there is a rival for our affections. Because Radiotechnic are selling a new Supertuned rig

- their B40 FM Special. It sells for around £110 and if it lives up to the reputation of its mobile brother should be very good indeed. Watch out for a review in the near future. KW

# Zenith

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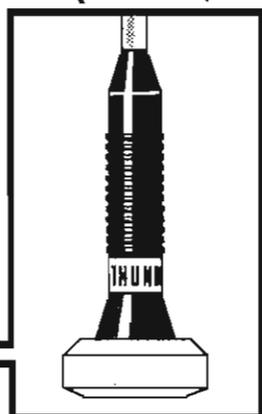
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- Exciting new ribbed coil design with doubly encapsulated windings for maximum performance and all-weather protection.



- Tests indicate performance matching that of an illegal 5dB home base antenna.
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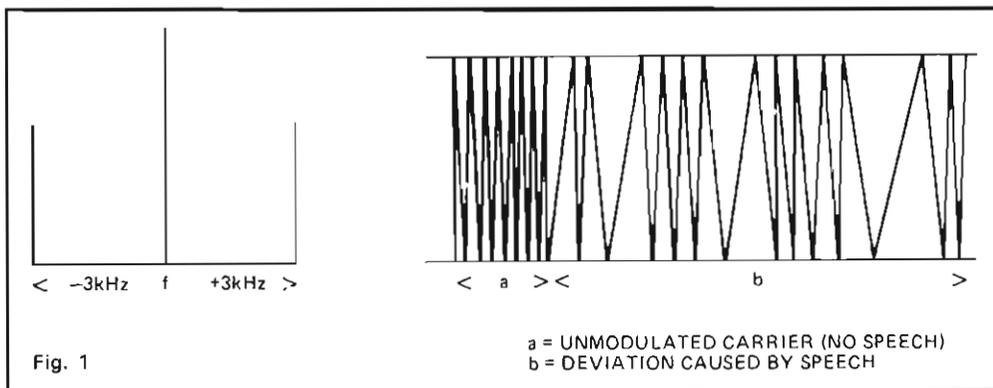
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# UPDATE

Special

Keith Townsend well known CBer and exponent of sartorial finesse, takes you inside of the black box to see just how that signal gets out . . .



Last month we offered a thumb-nail guide to the various functions performed within the average radio receiver. This month let's take an equally simplified look at the other side of the coin, the way in which an audio signal such as music or the human voice is transmitted to that receiver. In some respects the function of a transmitter is less complex than that of the receiver, needing only to convert a sound from the relatively low frequency audio band to a frequency within the radio part of the spectrum and then to pass the resultant signal to an aerial, from where it will be radiated in a manner which is acceptable to a receiver operating on the same frequency.

For sound technical reasons most modern transmitters, including those designed for CB, use the system known as narrow band frequency modulation let's examine this method of transmission first, leaving other forms for further down the page.

## Hot and Cold

Obviously the first necessity is to change the sound which you wish to transmit into a wave from which the transmitter will recognise. To achieve this the sound is collected by the microphone. As the sound waves cause the diaphragm to vibrate the electro-magnetic field within the microphone feeds the variations into the first stage of

the transmitter, commonly a crystal oscillator — though a variable frequency oscillator is needed if the transmitter is to be capable of tuning to anything other than predetermined channels. It is most important that the crystal oscillator and its component tuned circuits are stable, ie not subject to drifts or other variations in frequency, since the result of such changes would make reception of the signal difficult and, in severe cases, would place your signal outside the band in which you intended to transmit. Since the temperature of working components is a major factor in determining frequency stability, some slight variations are unavoidable within the first few minutes after the set is switched on, or when it is operated in conditions of extreme heat or cold.

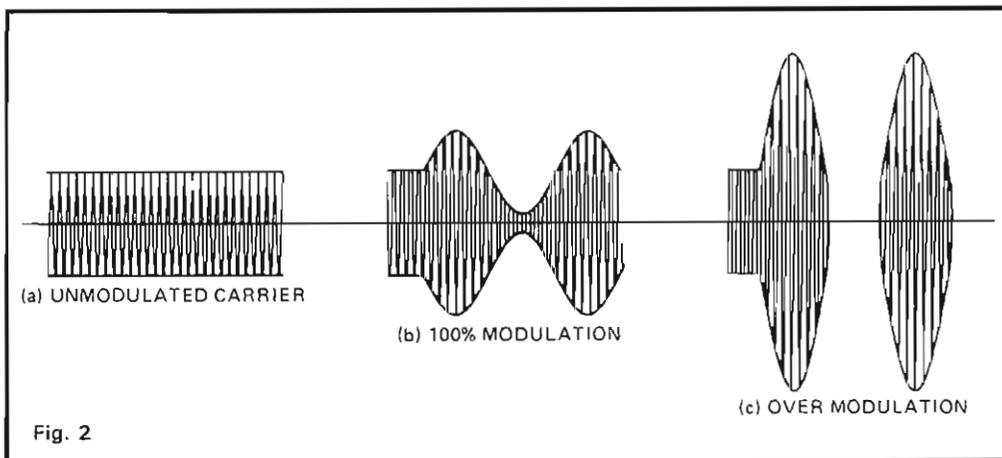
## Passing Phase

In the case of modern CB rigs this oscillator is contained within, and forms part of the PHASE LOCKED LOOP, which also determines the frequency at which a signal will ultimately be delivered to the antenna. Inside the phase locked loop the audio frequency taken from the microphone is compared with the stable frequency. The relationship between these frequencies is subject to a slow phase change, thus allowing the frequency to be modulated, whereas a rapid phase change would actually prevent modulation of the frequency. The result of this phase difference is to create a direct current voltage which varies slightly in sympathy with the exact audio frequency being applied at any precise moment. This produces a DEVIATION about the centre

frequency, typically of the order of 2 to 3kHz (Fig. 1).

In order that the desired channel may be selected without altering the relationships created within the phase locked loop control now passes to the FREQUENCY SYNTHESISER, which ensures that the degree of deviation does not exceed the stated limits, regardless of the difference between the applied audio frequency and the final transmission frequency, ie whether you use channel 1 or channel 40.

By means of the phase locked loop and synthesiser the signal for ultimate transmission has now been created, but it must undergo considerable amplification before it is delivered to the aerial. In the case of transmitters having a power output below about 25 watts this is achieved by means of a transistor, though a circuit



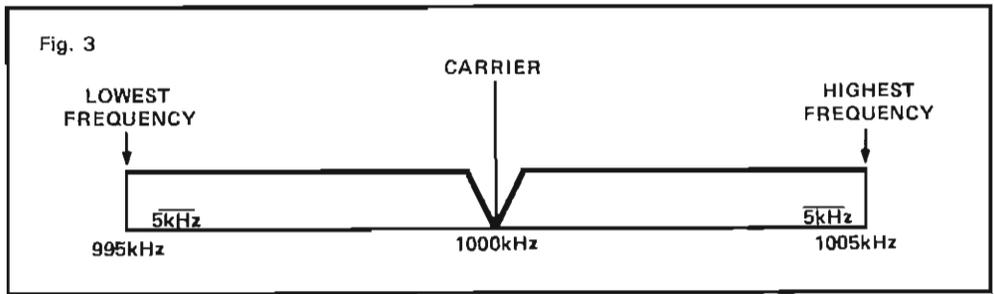
designed round a valve will be needed to handle power output in excess of this region.

## AM & SSB

Having discussed the principle of an FM transmitter, let's examine the differences between that and the other two modes of transmission, amplitude modulation and single sideband.

All transmissions rely upon a carrier wave, though the treatment of this wave varies, dependent upon the mode of transmission selected. Whereas in the case of FM the actual frequency transmitted varies by a few kHz, in AM the carrier frequency remains constant whilst the amplitude of the applied signal varies (Fig. 2). That is to say that the pitch and the volume of the voice affect the strength of the outgoing signal. In the case of broadcast stations a large bandwidth — upwards of 75kHz either side of the nominal frequency — is required in order to achieve high fidelity where the applied audio frequency can vary a minimum 20Hz and a maximum 16kHz. For voice communication, on the other hand, intelligibility is the prime requirement. This means that only frequencies up to about 3kHz need to be transmitted and has the added advantage of enabling a greater number of stations to operate within a restricted frequency band. Thus the bandwidth of an AM transmission needs to be about 5 to 6kHz — roughly 3kHz either side of the nominal frequency. Hence over-modulation of the signal will cause interference to adjacent channels in the same way that over-deviation of an FM signal does by increasing the bandwidth of the signal.

To properly modulate a carrier wave the power within the wave must be increased by fifty percent. That is to say



that a carrier wave of, say 5 Watts, will require the addition of an audio wave of 2.5 Watts. It is for this reason that power mikes, which tend to add more than the required power increase, cause significant over-modulation when used in conjunction with an AM transmitter and are virtually useless when used with an FM transmitter in which the depth of modulation remains constant.

The increased power necessary to modulate the carrier in an AM transmitter is supplied by a MODULATOR, a form of fairly high powered amplifier, coupled to a modulation transformer. This configuration is extremely wasteful of power, meaning that for a given input power the transmitted signal power would be less than would result from the same initial power using FM.

## Hi and Lo

The transmission of a carrier wave inevitably produces SIDEBANDS, which consist of frequencies above and below that of the carrier itself (Fig. 3). For example a frequency of 1,000kHz, having a bandwidth of 10kHz would exhibit an upper sideband of 1,005kHz and a lower sideband of 995kHz. Since all the intelligence in an AM, or double sideband transmission is contained equally within each sideband it is wasteful of both power and frequency to

transmit both sidebands together with a carrier which contains no intelligence whatsoever. For this reason the single sideband transmitter (Fig. 4) suppresses both the carrier and one of the resultant sidebands. In order to do so the carrier frequency is fed from its oscillator into a balanced modulator, together with the modulating voltage. The effect of this stage is to suppress the carrier, leaving both sidebands to be passed to a filter stage, in which the unwanted sideband is removed. Since normal methods of frequency multiplication would result in a corresponding increase in the width of the remaining sideband this method of final frequency determination cannot be used. Thus the frequency — the wanted sideband — is then mixed with the product of a crystal oscillator and a variable frequency oscillator. This stage is then followed by a tuned amplifier with the ability to reject the unwanted product of the earlier stages.

## Design and Construction

Because of the complexity of single sideband transmitters and the multitude of different frequencies produced within the various stages it is essential that design and construction should be of the highest possible standard in order to prevent the accidental transmission of any but the

desired final frequency as this would inevitably lead to interference to other services, particularly television. For this reason the final stage of the transmitter is a linear amplifier, used so as to amplify the wanted signal without amplifying the unwanted product. A good quality SSB transmitter will include a buffer amplifier between the mixer and the power amplifier in order to further reduce this suppression. The addition of a further, external linear amplifier will greatly increase the likelihood that unwanted frequencies are transmitted and can often be the direct cause of TVI where none existed before.

## Power

Since each stage of the transmitter will consume a proportion of the power fed into it, it is safe to assume that the transmitter will be no more than about seventy percent efficient, since the peak amplitude of modulation is twice that of the unmodulated carrier the peak power is the sum of the top and bottom peaks of the modulation envelope, or four times the sum of the carrier power less the stage losses.

Of the three different forms of transmission which we have discussed single sideband can be said to be the most efficient form of speech transmission, since it occupies the least bandwidth. It is, however, more critical of accurate tuning than either AM or FM and therefore more likely to cause interference, particularly to television and broadcast reception. Narrow band FM, on the other hand, is far less likely to be the cause of such interference and provides good coverage, subject to the limitations of the type of antenna into which its signal is fed. Although widely used within the amateur HF bands, AM is rapidly falling out of favour worldwide, since it offers neither the power and efficiency advantages of sideband, nor the relatively low incidence of interference of FM.

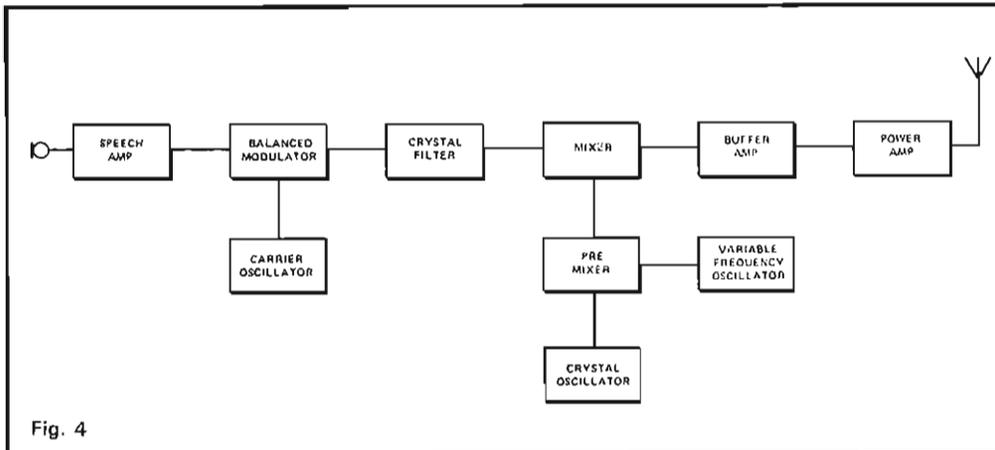
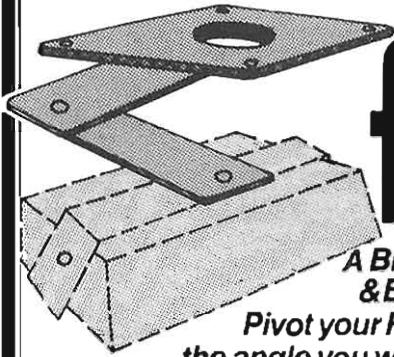


Fig. 4

# PIVOT RIG



R.R.P.

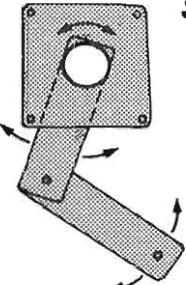
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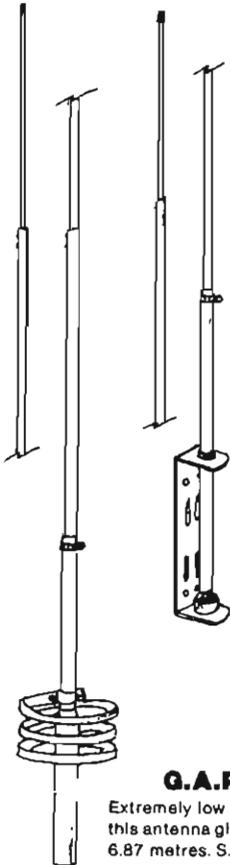
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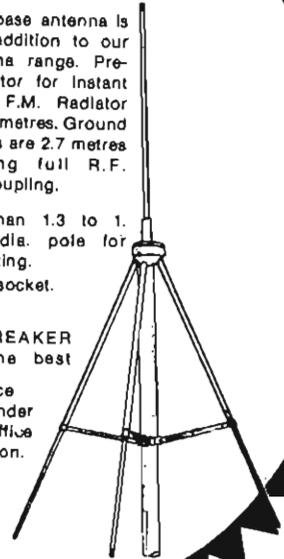
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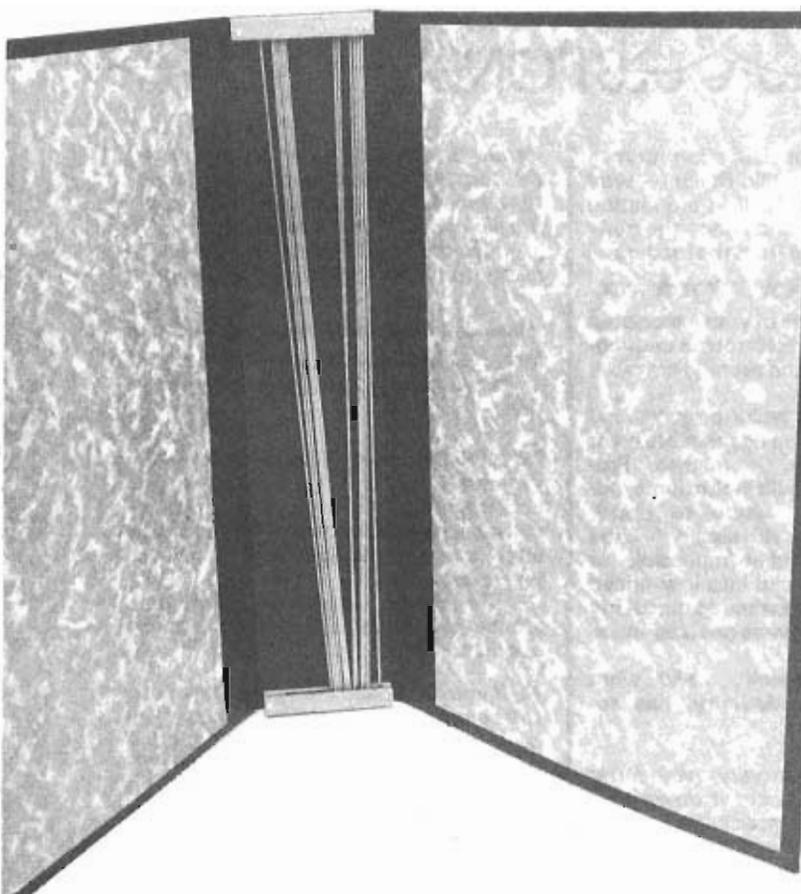
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CP

While you are at it Chris you had better answer this one from S. McLauhin from Market Harborough

**Q** I carried out the rig mod in the October issue of your mag exactly as described. I found that the mod worked well until I used the rig in the car, I then found that I had severe ignition interference which I could not cure. I returned the rig to its standard condition and the interference was gone.

Could you tell me if this is usual with this mod and is there any cure for the problem?

**A** I have not experienced the difficulty you mention regarding ignition interference, nor do I know of anyone who has. However I have received two other enquires from people with problems and there does appear to be a common thread.

I suspect that the receiver was previously being de-sensed to such an extent that you were unaware of the ignition noise problem. Possibly it was being de-sensed by the ignition noise itself! Now that the de-sensing has been largely eliminated, the other more subtle problems are becoming noticeable.

Basically, there is no reason why the modification should have affected the rig's basic susceptibility to ignition noise. I can only suggest you follow the usual tedious ignition noise remedy procedures.

CP

One last question Chris then you can go back to sleep. This time from Mr.G.A of Catford in London.

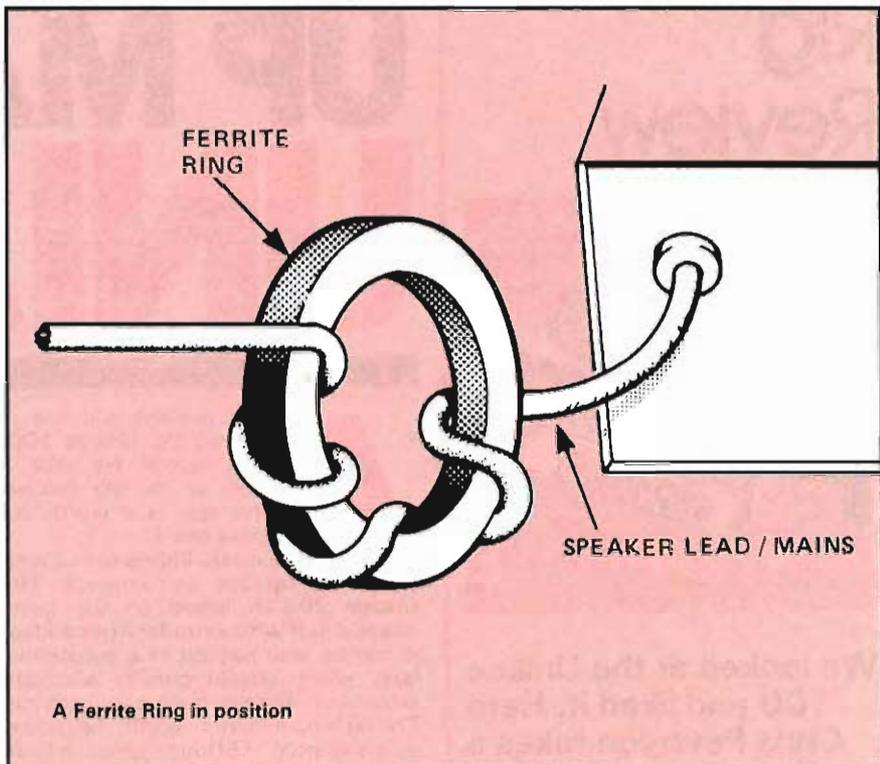
**Q** You referred, on several occasions to circuits using the MC3357 IC. Is this a suspect chip?

**A** The 3357 is adequate when preceded by a crystal filter as the IC manufacturers intended. However, most rig manufacturers have deleted this essential component on the grounds of cost, with the all too familiar results!

CP

That's all on the rig modification article for the present, in the coming issues Chris will be writing an Update on his Update! So, to a question on Hi Fi interference from Hedgehog down there in Kent.

**Q** I have a problem with my rig, when the Hi Fi is on downstairs and I key the mike, my rig interferes with it. Could you please tell me what causes this and how I can cure it?



**A** The interference is caused by RF getting into the Hi Fi. Disconnect the Hi Fi speakers and plug in a set of headphones. If the trouble is not present then you know that the RF is getting in through the speaker leads. Simply put a ferrite ring as close to the socket as possible and wrap the cable around and through it five times. If it isn't that then try the same principle on the mains lead. If that does not work you will have to get an engineer in to isolate the Hi Fi. Telecoms of Portsmouth will supply the rings and you must connect them as illustrated.

SA

Two quick questions to finish off this month's column with — they both concern the price of rigs and come from Mr. B Davis of Bolton and from A.M. Jones of Salop. Both breakers are curious about rig prices — our reference section, catalogue price lists and shop prices. All seem to be different.

**A** The price list in the reference section contains the prices quoted by the manufacturer or distribution company. They are typical prices. As we always tell you — shop around as prices can vary considerably. It is not always best to buy the cheapest. As rig bought for ten bob in a backstreet may have another owner and, if you buy a rig from a shop that isn't going to be there tomorrow — how are you going to get it serviced if things go wrong with it? Shops that have high overheads may be forced to charge more than the little CB shop around the corner or, vice versa. We can

only tell you of the recommended price the rest is up to you and your hairy legs!

SA

An anomaly spotted by the Bookworm of Lanarkshire in Scotland... the sharp eyed Scot!

**Q** In your December '82 issue, you reviewed the Harvard Good Buddy and the Lowe TX40. Both have front and left microphone sockets but in the panels you gave one 'good' and the other 'fair' for mike location. Could you please explain.

**A** Happy new year to you too, and thanks. Simply an error in setting the copy. Which the eagle eyed little Kev failed to spot. I have had words with him but as he really isn't so little I didn't push it too far! Yes David, they should have both been fair. We usually give a 'poor' only if it is left and at the side of the rig. A CB patch is on it's way to you this very moment.

SA

Well that's it again for this month. Keep'em coming but keep 'em short. I would just like to thank Ken Stone of Birmingham for his pleasant and long — very long — letter. Perhaps a shorter letter for Back Chat... Now I'm going to type this veery sloowly. NO SAEs PLEASE! As yet we do not operate that kind of readers service although we are looking into the possibility.

Problems should be sent to CB Q & A, Citizens' Band, 145 Charing Cross Road, London WC2H 0EE.

# Rig Review



We looked at the Uniace 100 and liked it. Here Chris Peterson takes a close look at the 200 and tells you what extra you can expect for your money . . .

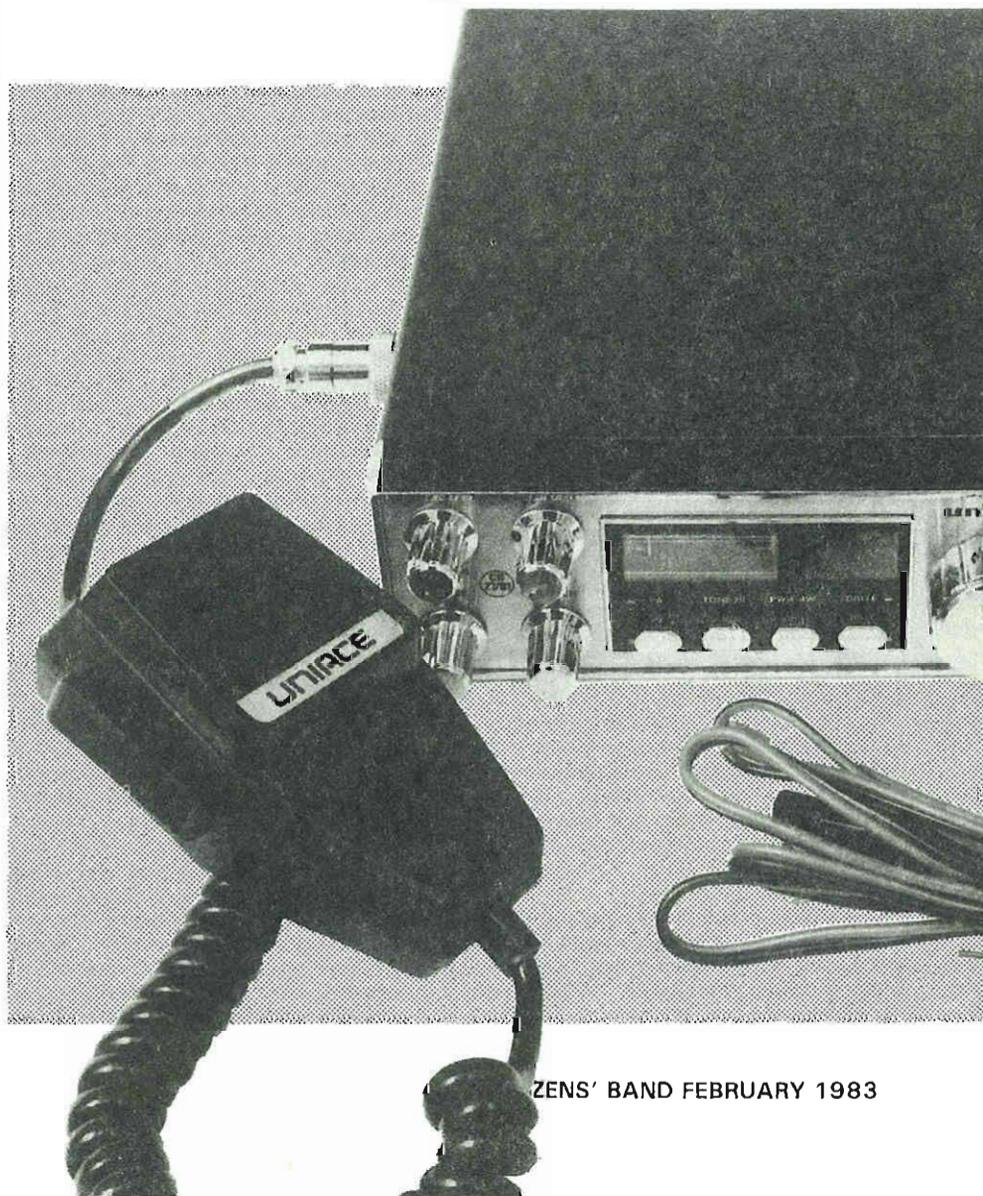
# UP MARKET UNIACE

**A** few months ago we reviewed the Uniace 100. This month we take a look at its big brother and ask: Is it worth the extra cost?

The Uniace 100 impressed us with its above average performance. The Uniace 200 is based on the same chassis, but with extra facilities added. It comes well packed in a substantial box, which should provide adequate protection against our postal service. The rig is no miniature outfit, measuring a substantial 160mm wide, 51mm high, and 215mm deep. This may not sound too bad, but remember that this is another rig with the mike connector on the left hand side. This eats up at least another inch width wise.

Although quite a lot of chrome is in evidence, the styling isn't too garish. Some of the rigs we've seen have resembled a Wurlitzer juke-box more than a transceiver. **Uniden** have managed to avoid falling into that trap, though the styling does show a certain transatlantic influence.

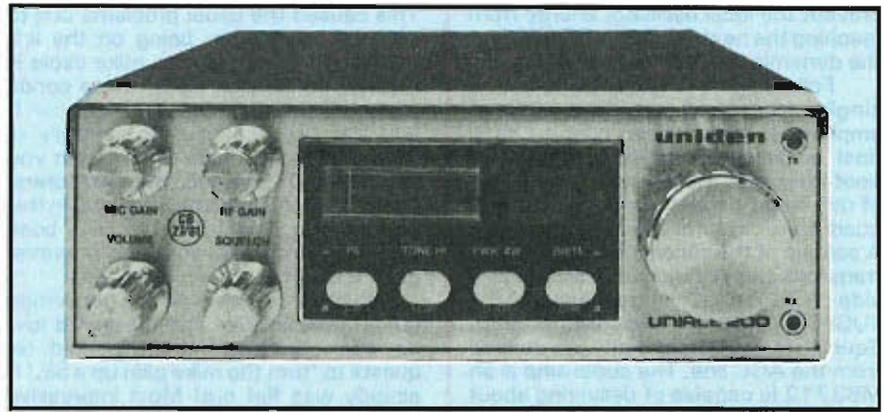
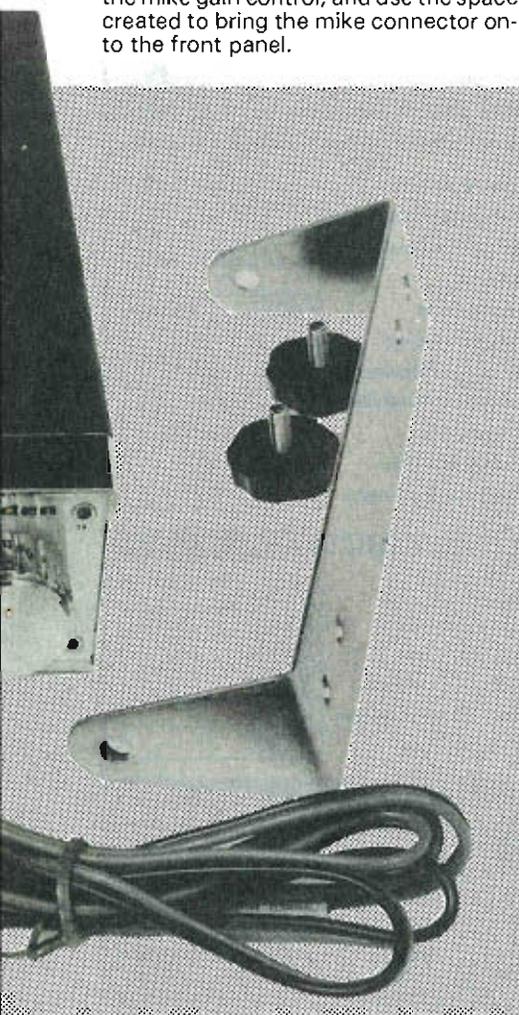
The left hand side of the front panel contains a group of four knobs, arranged in a square. Top left is the mike gain, and alongside it the RF gain control. Bottom left is the volume/off control and alongside it is the squelch. The central feature of the front panel is a black rectangle containing in the top left the power/signal strength meter, and alongside it the red LED channel indicator. Beneath these, arranged in a horizontal row are four push-buttons.



From left to right these are PA/CB, tone hi-lo, 10dB attenuator, and a dimmer switch. Finally on the extreme right is a large channel selector knob. In the extreme top right hand corner is a small red TX warning led. Similarly in the bottom right hand corner is a green RX LED.

On the back panel is a standard SO-259 antenna connector, two 3.5mm jack-sockets for external and PA speakers, and a standard type 3 pin power connector. The mike connector is a four pin locking type on the left hand side. Apart from being mounted in an awkward place it also has non-standard pin connections, so beware when using it with 'brand X' microphones.

All the controls had a nice feel to them. Compared to the smaller Uniace 100, they were easier to operate, benefitting from the increased spacing possible with the larger front panel. Mike gain controls are largely a waste of time. Most produce best results when turned fully up, and tend to be left there permanently! Similarly dimmer switches are usually largely unnecessary especially when used with LED displays. These are usually dim enough to start with. However on the Uniden it also dims the meter illumination, which may prove useful if you drive a lot at night. All too often we have come across rigs that dim the LEDs, only to leave the RF meter dazzlingly bright. Uniden have avoided falling into that trap, and are to be congratulated. It's a pity they didn't omit the mike gain control, and use the space created to bring the mike connector on to the front panel.



The rig comes with all necessary mounting hardware and a reasonable instruction manual. However, as with the Uniace 100, the printing in the section on SWR could confuse anyone unfamiliar with the subject. Adequate reference is made to Home Office regulations on antennas.

The Uniace 200 has an isolated chassis, and can therefore be used in both positive and negative earth vehicles. A full circuit diagram is included in the manual, a practice of which we whole-heartedly approve. Other manufacturers please note.

### Technicalities

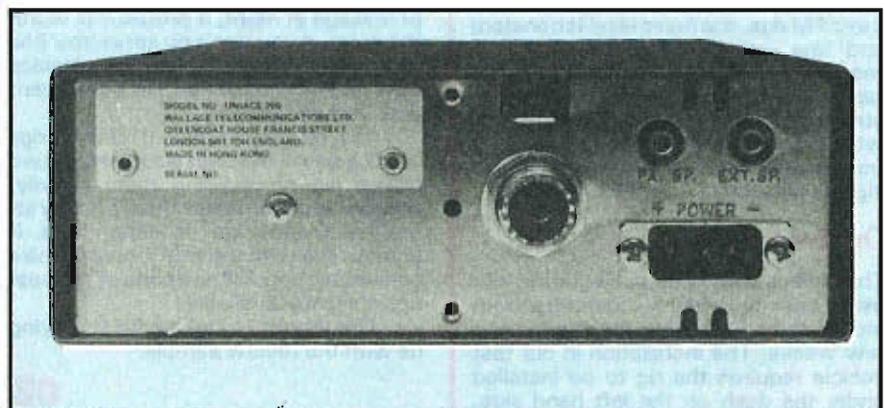
Hardly surprisingly, the Uniace 200 circuit bears more than a passing resemblance to its smaller brother. The synthesiser is a TC9119P, Toshiba's answer to the Sanyo 7137. A single transistor crystal oscillator provides the 10.24 MHz reference frequency. The VCO output is buffered in an emitter follower circuit feeding a tuned transformer. Rather an unusual practice, as this sort of circuit is notoriously difficult to stabilise at RF frequencies. However Uniden seem to have mastered it as no signs of instability were noticed.

In the transmit mode, the buffered VCO output is doubled in a TA7310P ic to achieve the final 27MHz output frequency. A conventional 3 transistor RF amplifier strip raises the output up to 4 watts. The output filtering is comprehensive, as might be expected, to meet HO requirements. 10dB attenuation is achieved by reducing the supply voltage to the pre-amp and driver stages. The output stage is run at full voltage all the time.

The mike amp uses a pair of op-amps with a diode limiter between them. Plenty of audio filtering is in evidence.

The receiver is a strange mixture of the boringly conventional and the unexpected. Starting at the front end, a pair of back to back diodes protect the RF transistor in the transmit mode, there being no antenna switching between TX and RX modes. Usually, the diodes are fed with an amount of DC bias which can be varied down to zero by the front panel RF gain control. Usually RF gain controls vary the gain of the RF amplifier stage. In this case, the protection diodes are used as an electronically variable RF attenuator. This is certainly a novel approach. PIN diode attenuators working in a similar manner are common in professional VHF and UHF equipment, but this is the first time we have come across this approach using conventional diodes in domestic equipment.

Following the input tuned circuit, the RF amp is boringly conventional in comparison. It consists of a simple common emitter NPN transistor, biased from an AGC line. The first mixer is a **jugfet** using source injection. The 10.695 MHz first IF is transformer coupled into a ceramic filter. The filter output is transformer coupled into the second mixer. This is an NPN transistor with emitter injection. The output is resistively coupled into a 455KHz ceramic filter, which is in turn resistively coupled into the second IF amplifier. Since this stage isn't balanced, there must be quite a lot of local oscillator energy appearing at the collector of the transistor, and we can't help being surprised at the absence of a tuned transformer at this stage to trap it out. Admittedly the ceramic filter should



prevent the local oscillator energy from reaching the next stage, but it must limit the dynamic range of the mixer.

Following the ceramic filter, a single transistor common emitter amplifier is transformer coupled to a final amplifier consisting of a pair of boot-strapped transistors. The output of this stage is transformer coupled to a quadrature detector ic type uPC1028H. A sample of the second IF from the final transformer is rectified and used to provide AGC to all stages except the JUGFET mixer and the final IF amp. Squelch is level dependent, and derived from the AGC line. The audio amp is an MB3712 ic capable of delivering about 1.8 watts of audio.

### Lab Results

The power output measured **4.2 watts** at **13.2 volts**, and the **10dB** attenuator reduced this by **11dB**. This is slightly over the limit on power, but within the 1dB measurement tolerance allowed. The second harmonic measured **-82dB**, bettering the HO requirements by a whole **10dBI**. All other harmonics were better than **-80dB**, again comfortably within spec, but not by quite such a good margin as the Uniac 100 we tested. All frequencies were within 180 Hz of nominal, another creditable performance. However we could only record a deviation of  $\pm 1.05$  KHz. The recommended deviation is  $\pm 1.5$  KHz, with a 'never exceed' limit of  $\pm 2.5$  KHz.

The readability of an FM signal under difficult conditions is directly proportional to deviation. Whilst over-deviating can cause other problems, to get the best out of the system you must take full advantage of the deviation allowed. Most manufacturers consequently tend to set the deviation slightly on the generous side. The result recorded here is slightly disappointing.

At maximum RF gain, the receiver sensitivity measured **0.7 uV PD** for 10dB S/N, 89 corresponded to **310 uV**, and the fully turned up squelch required **7 mV** to open it. With the RF gain turned down, the sensitivity reduced to **180 uV**, S9 corresponded to **80 mV** and the fully turned up squelch couldn't be opened at all.

This indicates an adequate sensitivity, and a sensible working range for the RF gain control. However, it is worth mentioning that in contrast to many FM receivers the noise increase with falling signal levels is very progressive. With most FM rigs, the noise level is constant and low until a certain threshold is reached, at which point it builds up rapidly. This indicates that whilst on strong and weak signals performance will be comparable to any other rig, it may appear slightly noisier on mid-range signals between S3 and S7.

### On the Air

The Uniac 200 was subjected to our usual test procedure, operating both mobile and home-based for a period of a few weeks. The installation in our test vehicle requires the rig to be installed under the dash on the left hand side.

This caused the usual problems due to the mike connector being on the left hand side of the rig. The mike cable is barely long enough under these conditions, despite the small size of the car. If your car can accept a rig centrally or under the drivers side of the dash you should be OK. **Please, manufacturers, desist from this dreadful practice.** In this case the rig would have to have been scratched from my short-list however good it may have been otherwise.

In other respects the rig performed quite impressively. The measured low deviation produced the expected requests to 'turn the mike gain up a bit.' It already was flat out! Most impressive was the receiver performance. Swamping and de-sensing were noticeable only by their absence. Well, there was a hint of it under extreme conditions, but I really do mean extreme! Indeed, this must rate as one of the best rigs around in this respect. Audio performance was adequate and clear without being sparkling.

The tone control produced the best results in the 'lo' position. The audio response was quite adequate, and it took the slightly harsh edge off.

The squelch worked well and had plenty of range to cut out the central London 'garbage' on channel 14. A little bit more hysteresis might have helped. Indeed, this rig is one of those that responds to severe overloads from adjacent channels by getting slightly noisier rather than by going deaf. As such it would benefit by employing a noise squelch rather than the level type fitted. Nonetheless, as supplied it is definitely one of the better rigs around.

Inevitably, it is going to be compared with the various Cybernet offerings, being similarly priced and specified. A fair judgement is probably that the Uniden has a slightly better receiver in terms of swamping, whilst the Cybernet has slightly better audio performance, both transmitting and receiving.

The next question is - is it worth the extra cost over the Uniac 100? Well, the receiver is so good that unless you are operating on a big twig in a congested area, you rarely have to touch the RF gain control. Similarly, the mike gain produces the best results flat out. On the other hand, the improved spacing on the front panel does make it much easier to operate whilst mobile, and the dimmer working on the meter illumination eases eye-strain at night. So if you operate a lot from home base, or do a lot of mileage at night, it probably is worth the extra. If you don't do either you'll be just as well off with the smaller Uniac 100. In either case you will have spent your money wisely.

The official list price of Uniden rigs is still a bit on the high side. One or two places are discounting them heavily, though, and this makes them a highly attractive proposition. In either case, if you can live with the side mounted mike connector, you will have one of the best rigs currently available.

Our thanks to Uniden for supplying us with the review sample.

**CB**

## RIG REVIEW DATA PANEL

**Model** UNIACE 200  
**Distributor** Wallace Comm. Ltd  
**Typical Price** 89.95

Features	Yes	No
PA Facility	<input checked="" type="checkbox"/>	<input type="checkbox"/>
External Speaker Jack	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TX Indicator Light	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RX Indicator Light	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PA Indicator Light	<input type="checkbox"/>	<input checked="" type="checkbox"/>
S/R/F Meter	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hi/Lo Power Switch	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ANL/NB Switch	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CH9 Switch	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Variable RF Gain	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mike Gain	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Delta Tune	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tone Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LED Channel Readout	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Facilities	Superb	Good	Fair	Poor
Ease Of Controls	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Built In Speaker	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Microphone Location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cabinet Construction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality Of Control Switches	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Channel Indicator Readability	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mounting Bracket	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hand Book/Instructions	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Specifications	
Modes Of Operation	FM Only
No. Of Channels	40
Weight	—
Dimensions	160x51x215mm
Supply Voltage	13.8 VDC
RF Output Power	4 watts
Frequency Stability	In spec
Swamping	V-good
Sensitivity (RX)	Good
Spurious Emissions	In spec

### CB VERDICT

Range	XXXX
Clarity of TX	XXXX
Clarity of RX	XXXX
Ease Of Controls	XXXX
Ease Of Installation	XXX
Performance	XXXX

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



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# Equipment Review



Andy R Giles has been playing with a device that should help those of you who would like a little more privacy on the air. It's a selective calling unit that can be used with any rig.

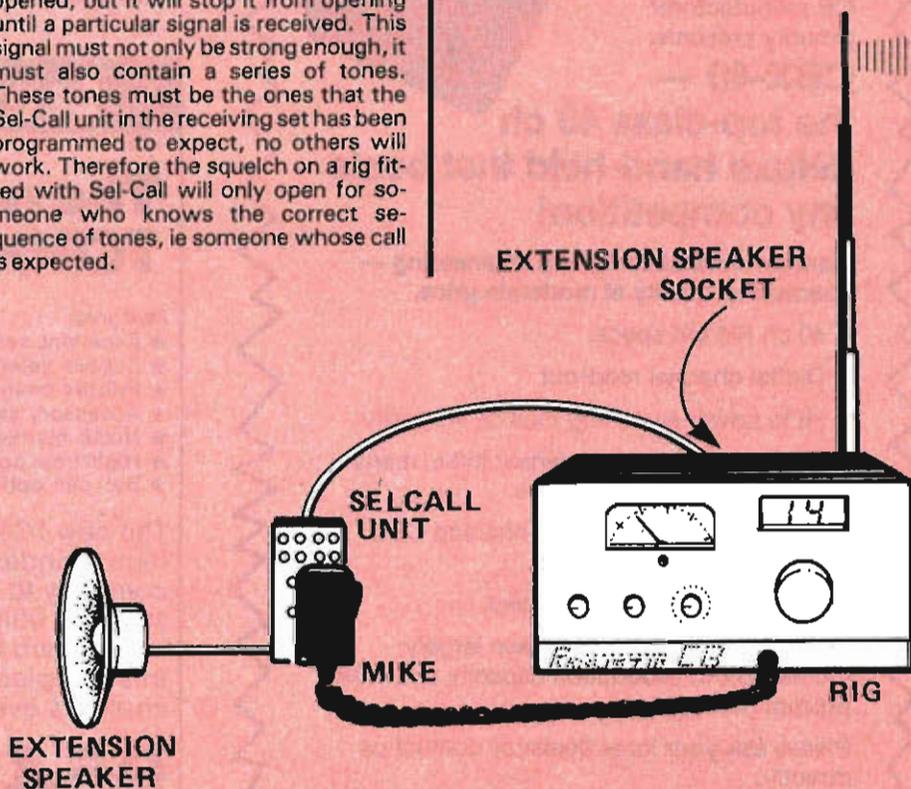


The Datong Codecall 4096

# SELCALL CALLING

For those of you who missed the selective calling article in our April '82 issue, here's a brief explanation of how the system works. When an ordinary CB rig transmits to another CB rig, it is only the strength of the signal that determines whether or not the second set's squelch opens, assuming that both rigs are on the same channel. The higher the setting of the squelch on rig B, the stronger the signal from rig A has to be to open it. Unfortunately, any signal that is strong enough will also cause the squelch to open and when it has opened, it allows all signals to come through, skip, sidebanders, bleedover from adjacent channels, in fact, anything that is within range. Adding a Sel-Call unit to a rig will not stop all these other signals coming through once the squelch has opened, but it will stop it from opening until a particular signal is received. This signal must not only be strong enough, it must also contain a series of tones. These tones must be the ones that the Sel-Call unit in the receiving set has been programmed to expect, no others will work. Therefore the squelch on a rig fitted with Sel-Call will only open for someone who knows the correct sequence of tones, ie someone whose call is expected.

I know several people who had hoped to be able to use CB to talk to their wives while on the way home from work but this has been made impossible by the number of dummies who pollute the airwaves with the outpourings of their deranged minds. I've even known embittered Fleet Street journalists blush at some of the things that they have heard on the air and so it is not surprising to find that most wives are reluctant to have a rig turned on while they are alone in the house. Even if they are just monitoring and do not try to use it to talk to anyone, it can be very disconcerting to have the squelch open every time the rig picks up a strong enough signal, usually from a bucketmouth.



How selective calling works

If the set being monitored has Sel-Call fitted, no unexpected signals can open the squelch, no matter how strong they are. This would allow a wife to monitor for as long as she likes because the only signal that she could hear would be from her husband. Once the squelch has opened, the set will perform in exactly the same way as before and all the rubbish will be heard in the background, but that should not matter too much because the required signal should be strong enough to be heard or the Sel-Call tones would not have got through.

## Enter Datong

Sel-Call has been available for commercial radios for a long time but it has always been very expensive, at least £50 per unit, plus the cost of fitting it inside the radio. Now a company that specialises in making amateur radio equipment, **Datong Ltd**, has introduced an inexpensive Sel-Call unit that does not have to be wired into the rig and which is very simple to use. It's called the **Codecall 4096** and two units are needed for the system to work, one on each rig. Each unit is a tone generator and a tone decoder, all contained in a plastic case that is about the size of a packet of cigarettes, depending on what you smoke. A PP3 battery also fits inside the case and provides the power.

They draw so little current that a battery should last for a long time.

Each unit is supplied with a length of cable with a 3.5mm jack plug fitted to each end. One of these fits into a socket on the unit and the other goes into the extension speaker socket on the rig. This is the only connection to the rig. An extension speaker can then be plugged into the other socket on the unit and that's all there is to it, Sel-Call has now been fitted.

The front panel of each Codecall has three rotary switches on it, each with fifteen numbered positions and so the possible permutations are enormous — 4096 to be exact (16 x 16 x 16), hence the name of the device. The two users must first agree which settings they are going to use eg 9 7 13, or 03 5. These numbers are then entered on the appropriate switches and the units connected to the rigs. The rig's squelch and volume must be adjusted according to the instructions so that there is enough volume to drive the units but apart from that there is no other setting up to do when fitting them. When one user wants to call the other, he has to place his microphone against the section on the Codecall's front panel marked 'Coded Bleep Output' and then press the switch on the top of the device. This causes a stream of high pitched warbling sounds to be sent down the microphone and transmitted. These sounds contain the code and to make sure that they get through, the signal should be transmitted for several seconds. The rig at the receiving end has not been picking up other signals because the jack plug in its speaker socket has silenced its internal speaker

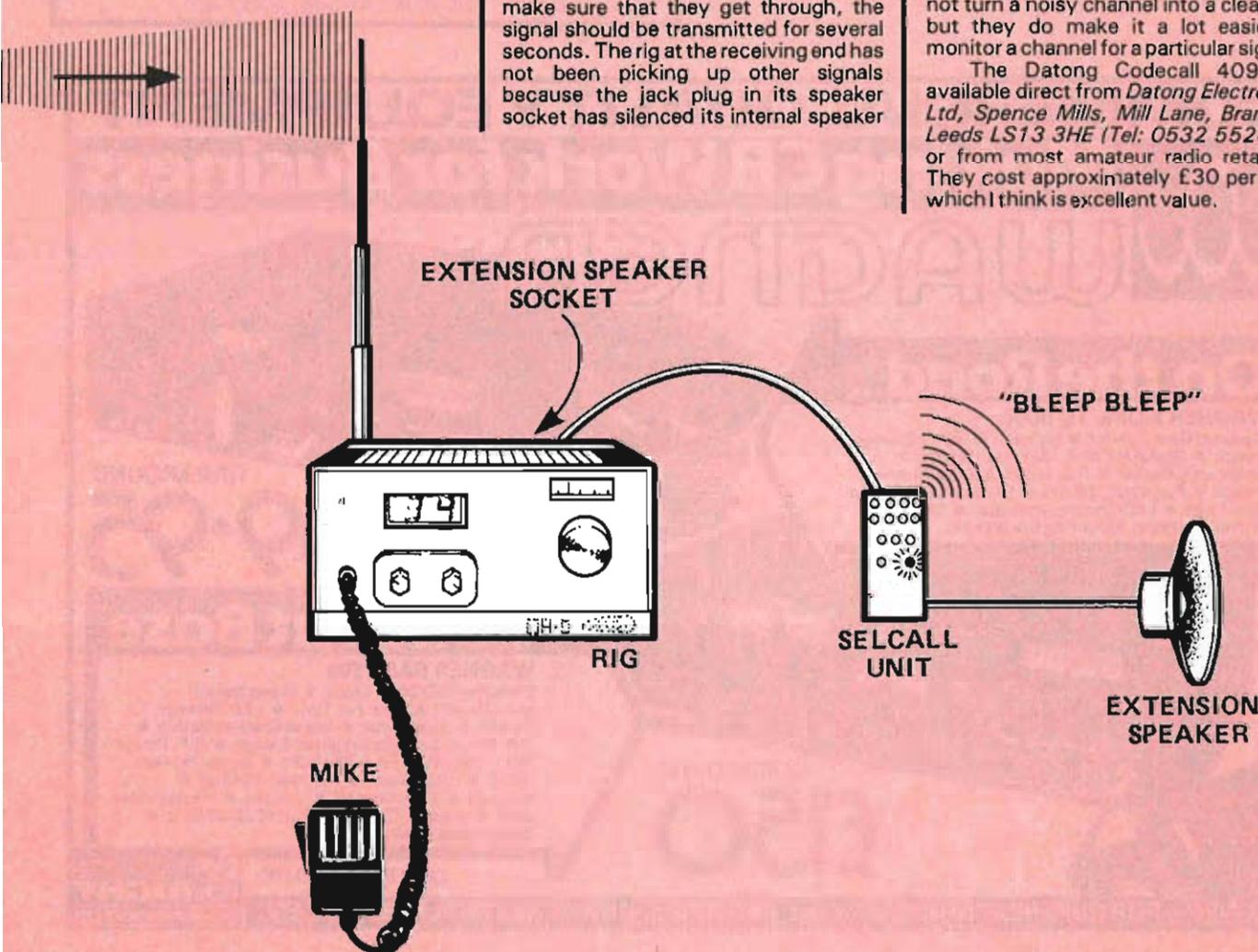
and no sound can get out past the Codecall. However, when the coded signal is received, the Codecall recognises it and reacts by starting to bleep and an LED on its front panel also lights. If there is nobody there to answer the call, the light will stay on and the unit will continue to bleep for ten minutes. If it will then give up and go back to standby. If there is someone there to answer, all he has to do is press the 'L.S. OFF' button and the external speaker will be activated and the two rigs can then be used to hold a normal conversation. When he wants to reset the Codecall for the next call, he must press the 'L.S. OFF' button again and this will cut off the extension speaker normally, it is not necessary to disconnect everything, leaving the button in the 'out' position allows all signals to be heard on the extension speaker.

## Conclusion

We experimented with these gadgets for several weeks and found that they work very well. There were no operational problems, apart from the signal not getting through but that was nothing to do with the units. We found that it is a good idea to transmit the tones for at least five seconds in order to make sure that the receiving unit had time to recognise them, especially if there is a lot of background noise on the channel. As I said before, these units will not turn a noisy channel into a clear one but they do make it a lot easier to monitor a channel for a particular signal.

The Datong Codecall 4096 is available direct from *Datong Electronics Ltd, Spence Mills, Mill Lane, Bramley, Leeds LS13 3HE (Tel: 0532 552461)* or from most amateur radio retailers. They cost approximately £30 per unit, which I think is excellent value.

**CB**



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QSL card swapping is an international hobby. Multi coloured cards for you to wallpaper your room with. Here Medicman introduces you to the world of the QSL . . .

# COMMUNICATION THE QSL WAY

**L**ong before Aunty Mary arrived in the UK we were in constant contact with CBers across the world, and totally legal! This was our introduction to the world of QSLing, or wallpaper as it is known in the States. Of course, it was not until the advent of the now-demised *BANDSTAND* duplicated CB newsletter that QSLers in the UK were able to contact each other and, I distinctly remember, the first UK cardswapper who advertised a 1-4-1 swap of his personal card, he now writes under the nom-de-plume of Charlie Hotel in

another CB Magazine, and we have kept in touch all of that time. That's the friendship to be had for the price of a few personalised postcards.

QSLing is simply the postal exchange of postcards that you have had printed with a design which illustrates your Handle, Call sign or Station, and it is always polite to include a few small giveaways and generally follow a certain code of QSLing that has evolved over the past few years which, if followed, will bring you mail from friends all over the World — the brotherhood of CB worldwide really is that strong.

## The Citizens' Band Code of QSLing

- |        |  |       |   |
|--------|--|-------|---|
| ALWAYS | send 2 or 3 of your cards.   |       |   |
| ALWAYS | include 1 or 2 of your friends cards.  |       | postcards or brochures of places of local interest — especially to overseas contacts.                                     |
| ALWAYS | personalise your card with a greeting, and where you received your contacts name from. | DON'T | Send 1 card and expect to receive 6 in return.  |
| ALWAYS | exchange at least the number of cards you receive.                                     | DON'T | receive 6 cards and send 1 in return.   |
| ALWAYS | pay the correct postage for Airmail or Surface Mail.                                   | DON'T | send cards Surface Mail and expect an answer in a week.   |
| ALWAYS | QSL back for each one you receive or you will soon be blacklisted in the QSL World.    | DON'T | send scraps of paper with your name and address scrawled on them, they usually end up in the waste bin where they belong. |
| ALWAYS | use your club rubber stamps and unit number on your cards.                             |       |   |
| ALWAYS | try to exchange 1-4-1 colour and black and white cards.                                | DON'T | forget to include your name and address on all cards, you will not get any replies unless you do so!                      |
| ALWAYS | try and use commemorative postage stamps.  | DON'T | join a QSL swap club unless you QSL 100%. Clubs only work for you when you do your part.                                  |
| ALWAYS | try and include some little extras, such as view                                       |       |   |

### QSL Club Of The Month:

**THE BRITISH CONCORDE INTERNATIONAL CB-QSL CLUB**  
187, Walton Road, East Molesey, Surrey KT8 ODY

On record as the second British QSL club to be formed the 'Concorde' as it has become known was established just two years ago, and has maintained a set standard which many other clubs have failed to achieve. The 'Concorde' was the first British club to offer a full mounted club rubber stamp where many others offered the poor unmounted rubber impression only. As with most clubs, part of the membership fee is ten of your own signed and dated personalised QSL cards, but Picture Postcards are acceptable by this club if you are a newcomer to the hobby. For £5.00 you will receive:—

- 1) Club membership card
- 2) Membership Certificate
- 3) Club rubber stamp
- 4) Club I.D. Wallet
- 5) Club QSL labels
- 6) Club pen
- 7) Club key ring
- 8) Club QSL cards
- 9) Members exchange QSL cards
- 10) London Tourist Information



- 11) Invitations of other clubs
- 12) List of good QSL addresses
- 13) Club newsletter
- 14) XYL Unit Number (If required)
- 15) Other items as available

Currently with over 800 members from 22 countries the club boasts some 40 different personalised club cards which have fast become a collectors theme, and are highly sought after in the QSL world. If you require further details of the club or a membership form please send a stamped addressed envelope to the above address.

As you can see the basic rules are quite simple, and usually within a month of starting QSLing the cards of radio friendship start arriving from all parts of the world, many bringing lifelong friendships. I have firm friends now in many parts of the USA, Canada, New Zealand, West Germany, Holland, Austria, Switzerland and Australia, all gained through CB-QSLing, and many have extended an open invitation for a personal visit to them.

So how do you start QSLing? Quite simply the only requirement is a printed personalised postcard. Many printers throughout the country are well-versed in the production of superb QSL cards, from the basic starter, the cards I began my hobby with, produced by **DERWENT PRESS** of 69, Langstone Drive, Exmouth, Devon EX8 4HZ. This firm will

Tongue Tied



**Brownhills**  
**Q.S.I**

for 25 pence in stamps, send you a sample selection of the QSL cards they produce using standard printing designs which can be chosen to make some very attractive QSL cards in up to six colours. If you want to go in at the deep end on superb full colour artist drawn cards then many specialists have come to light during the past few months. Perhaps the best known of these is the **COOKY'S QSL SERIES** designed and printed by **PAPA BRAVO INTERNATIONAL CB-QSL CLUB** run by **Andy Cookson** of P.O. Box 48, Preston, Lancs. **Chris Darlington** of the **HAPPY COBBLERS QSL CLUB** at P.O. Box 99, Northampton has recently come onto the QSL scene in a big way with some excellent full colour cards.

Now we have our prized new QSL cards, how do we go about making some QSL contacts? Probably the best way is to join a reputable QSL-Swap club, but beware as many rip-off merchants have unfortunately crept into an otherwise respectable hobby. Be guided by the number of your correspondents cards you see with a particular club's rubber stamp on them, obviously the more you see a club mentioned usually the better it is. To assist newcomers some of the better clubs are listed below:—

**ANGLO AMERICAN MAGNA CARTA INTERNATIONAL SIDEBANDERS**

Coronation House,  
Tolcame Road,  
Newquay,  
Cornwall

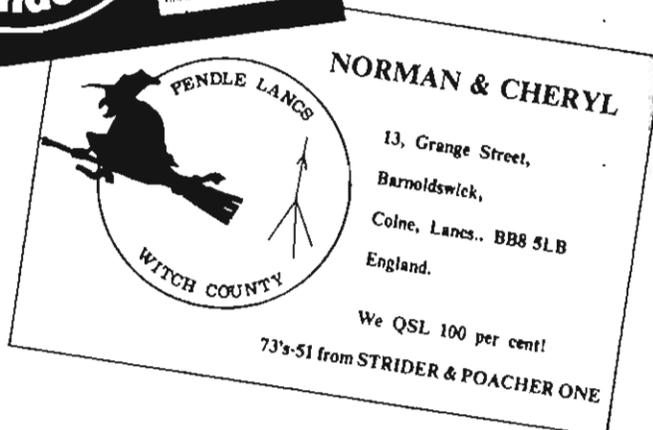
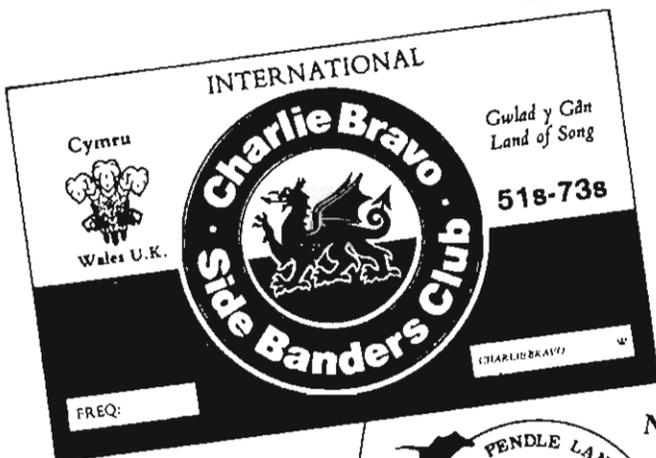
**HAPPY COBBLERS DX QSL CLUB**  
P.O. Box 99,  
Northampton

**SIERRA VICTOR INTERNATIONAL DX-QSL CLUB**  
43, Greedon Rise,  
Sillaby,  
Leicestershire LE12 7TE

**BRITISH CONCORDE INTERNATIONAL CB-QSL CLUB**

187, Walton Road,  
East Molesey,  
Surrey KT8 ODY

**PAPA BRAVO INTERNATIONAL DX & QSL CLUB**  
P.O. Box 48,  
Preston,  
Lancs.





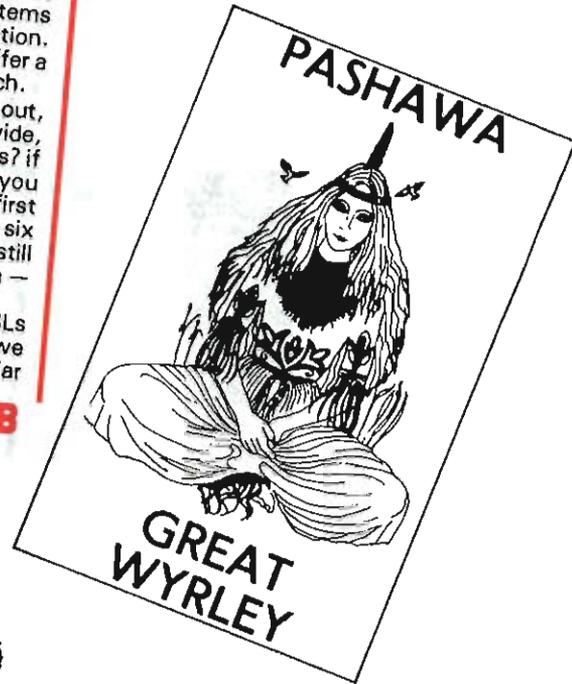
These are some of the Clubs with the best reputation in the UK which have constantly upheld a good club package, and a reasonably quick return of membership applications. We have on file some 500 QSL clubs throughout the world, some long established, some quite suspect, so carefully check-out the clubs you have decided to patronise. Most good QSL clubs offer a fully mounted rubber stamp. A long serving QSLer will belong to many clubs and will normally display the club stamps on their cards. An average membership fee is normally between £5 to £6 and for that you can expect to receive a selection of QSL goodies including a Club Membership Certificate, Club Member-

ship card, Membership wallet, perhaps a club keyring and pen, club QSL cards and swap cards and various other items of interest including tourist information. Tips on QSLing and, some clubs, offer a woven club patch — a very nice touch.

Well, that's what it's all about, friendship through radio — worldwide, and what better way to make friends? if you are new to QSLing I envy you — you still have the thrill of making your first overseas QSL contacts. I have over six thousand different QSLs now, but I still enjoy receiving every last one of them — such is QSLing when you get hooked.

If you decided to have some QSLs designed please send them along, we might even make QSLing a regular feature in *CITIZENS' BAND*.

**CB**



### Citizens' Band Magazine : Good QSL Contacts

SUSAN SD25	P.O. Box 27, Southport, Merseyside.	ALEX BLACK <i>Squeezebox</i>	25, Warmanbie Road, Brydekirk, Annan, Dumfriesshire.
WENDY— <i>Tongue Tied</i>	107, Howdles Lane, Brownhills, Walsall WS8 7PJ, West Midlands.	PETER EVANS	90, Caecoed, Llanybie, Ammanford, Dyfed SA18 3UG, South Wales.
PAUL SAUNDERS	9, Arlesey Road, Henlow, Bedfordshire.	JEREMY HUNT	12, Meadow Close, Hockley Heath, Solihull, Warwickshire B94 6PF.
DERIK BARR	P.O. Box 424, Tweedale, Telford, Shropshire.	D.J. WALLING	152, North Lonsdale Road, Ulverston, Cumbria LA12 9DZ;
KEN B036	P.O. Box 16, Southsea, PO4 8EP, Hants.	JOHN	P.O. Box 162, 4530 A.D. Terneuzen, Netherlands.
DAVID MAGUIRE	16, Kilmacormick Drive, Enniskillen, Co Fermanagh, Northern Ireland.	TOM QUINN	11, Main Arm Road, Mullumbimby, New South Wales, Australia 2482.
SHANE COOPER	61, Limes Avenue, Brierley Hill, Dudley, West Midlands DY5 1PG.	GLADYS CHERVEN	P.O. Box 80541, South Burnaby, British Columbia, Canada V5H 3X9.
DAVID SANDERSON	7, Sunderland Avenue, Hambleton, Nr Blackpool, Lancashire.	THE WARNER FAMILY	P.O. Box 202, Oakwood, Illinois 61858, U.S.A.
COLIN SWT 04	Cottswold CB Centre, 56, High Street, Gloucester.	LORNA JONES	P.O. Box 116, Otaki, New Zealand.
JOHN GREENWAY	7, Kenilworth House, Princess Elizabeth Way, Hesterway, Cheltenham, Glos.	PAUL DUNSTER	P.O. Box 855, Fremantle 6160, Western Australia.
JIM <i>Deisel Doctor</i>	4, Tinwald View, Locharbriggs, Dumfries, Scotland. DG1 1RT.	ANDREAS DAMM	P.O. Box 1252, 5439 Bad Marienberg, West Germany.
DARYL <i>Mighty Midge</i>	31, Medlock Avenue, Fleetwood, FY7 8DE.	E D SMITH	P.O. Box 14, Lansdowne 7780, Cape Town, South Africa.
S.W. <i>Parramore</i>	P.O. Box 1128, D 4513 Belm, West Germany (British Breaker).	BERT	P.O. Box 3011, 3130 CA Vlaardingen, Holland.
DAVID & JACKIE COOPER	95, Greenock Crescent, Stirchley, Birmingham B30 2TD	MAURICIO MACHADO	P.O. Box 27, Parnaiba, 64200 Piaui, Brazil.
CHRIS HUMPHRIES	9, Greenfield, Caldicot, Newport, Gwent.		



Winter isn't so much of a wonderland when you're stuck in a traffic jam or snowdrift. How is CB going to help the motorist? Will CBers cooperate? Can CB make driving safer this winter? We have the questions — but do we have the answers?

# WINTER



**T**he central heating goes on and the evenings get decidedly darker as the winter depression sets in. Cold feet, cold hands and a feeling of lethargy as you crunch off in the morning for that bus or train for a reasonably hazard-free journey to the old work place. I say reasonably hazard-free because, with the exception of frozen points and other damage of frost prone equipment, the journey is normally warm and speedy. Whatever happens your fate is in the hands of someone else and at the very worst you can only arrive at work late and short tempered. Not so the motorist or the two wheeled traveller.

## Travel Hazards

For him or her it is a totally different matter. Flat batteries, damp engines, snow and icy roads coupled with the madman who speeds in fog tend to make their journey in the winter a nightmare. Accidents do and will happen even when everyone concerned is taking the utmost care. Local authorities working on reduced

budgets strive to keep the main roads gritted and the police endeavour to keep the traffic moving — still the winter jams occur. And, stuck behind a line of vehicles or crawling out of a wrecked car — or almost as bad, watching someone else crawl from a wreck — tends to make you wish that you had stayed in bed!

Is a CB radio going to help you at all this winter? Well, last year at the beginning of winter legal CB was only a babe, yet it did manage to extricate individuals from some nasty predicaments. Old hands of the AM brigade had been helping themselves and each other for almost two winters and there was no doubt in their minds as to the value of the CB radio. Even the Police, from time to time, turned a blind eye to the illegal rig that had summoned them to the site of one disaster or another. This year things could be much better or worse — depending upon three unknowns.

## Questions

Will the wallies recognise the value of the emergency services to the motorist

# BREAKERS

and cease their summer activity of baiting the monitors?

Will organisations such as REACT, THAMES, AIM and ALERT — to name but four of the many — have a sufficient number of trained monitors to give the sort of cover that is so very necessary if a motorist is to put any faith in the use of his CB should disaster strike?

Will people with CB radios be prepared to help each other out of the tight spots?

## Answers?

The answer to the last one is fairly certain or at least it was in the old days of the brotherhood of the AM CBers. Not only were they willing to help but they were keen to do so. Keen to show that CBers were not all cow-boys and that CB had an important and valuable role to play toward the general well-being of the community. They were and, I suspect from frequent encounters with them, still are, a bunch of people enjoying the good natured spirit of the innovators they were.

How different is it today? How different is this winter going to be with

the new one year old breed of CBer on the channels? Well, indications up to now tend towards the FM breakers not being quite so cooperative. In many ways the old pioneering spirit has vanished. More wallies are now on channel than there ever were pre-legislation. I mean more percentage wise considering the amount of breakers on channel then and now. This winter will be their first real test. This winter will certainly prove or disprove the value of CB to the motorist and I for one look ahead with some apprehension to those long road-slick drives to the South Coast or to the shows and trade fairs of the North.

## Emergency Rigs

Many motorists who are in no way considered to be breakers will be persuaded to equip themselves with CBs — either straight forward mobiles or with one of the many emergency rigs currently available. They will set off with that small chunk of added security in the glove compartment, fingers crossed and hoping that many of the things about CBers that they read in the popular press are as without foun-

ation as many of the other things that they read and feel to be either untrue or exaggerated. Well, when the crunch comes — excuse the metaphor — I believe whether or not they know a Roger D from their elbow, a call for assistance reaching another breaker will be responded to. If I didn't believe that I would chuck in my rig tomorrow.

## Public Relations

As much as I dislike the term Good Buddy let's show people, the press included, that properly used CB is a great service. We can do that by saving a few lives and a few heartaches this winter. So keep your CB on and your eyes peeled and if somebody needs help give it to them and talk about it as much as you can afterwards. After all we are our own Public Relations officers and not too many people will find anything good to say about CB if we don't.

The Editor would like to hear reports from readers who helped or were helped by the use of CB Radio this winter. Letters only please.

**CB**

MARCH  
ISSUE WILL BE ON SALE  
FRIDAY  
**18**  
FEBRUARY

# NEXT MONTH

The articles mentioned are in an advanced state of preparation but circumstances may affect the final contents

March is the month for mad hares and those mad people from Britain's leading CB monthly are primed to bring you a magnificent, majestic magazine filled with a multitude of mobiles together with a miscellany of magical equipment. Don't miss it!

**Andy R. Giles**, fresh from his success as Santa Claus at a downtown store, explores the wonders of his bestest Chrissy pressy. He's turned on to Scanners in a big way and tells you just what goes on inside and out of the **Bearcat 250**.

**Brian W. Wright**, ageing breaker and master of the frosted tubes takes a **Copperstik** out and about. **Captain Pugwash** jaws while the **Actual Ace** draws! Together this dutiful duo bring you the facts on an unusual looking mobile antenna.

**Chris Peterson** is back on the ball with the **Wagner Base Station** that looks as if it will do everything except make the teal **Mike Newbold** — the Medicman — will be delving deeper into his bumper bundle of QSL cards and give you the latest on

this exciting hobby. **Smart Alec** will try to answer some more of your posers and **Little Kev** will be putting together the second feature for **Junior Breakers** and, if he can get through the mountain of mail, inform the lucky winners of the results of the **Battleship Competition**.

There will be a feature article, the results of the crossword competition and, of course, ol' **Mack the Hack** will be rambling on about something or other.

All of this and more for just 80p? Can't be bad can it?

## COMPETITION

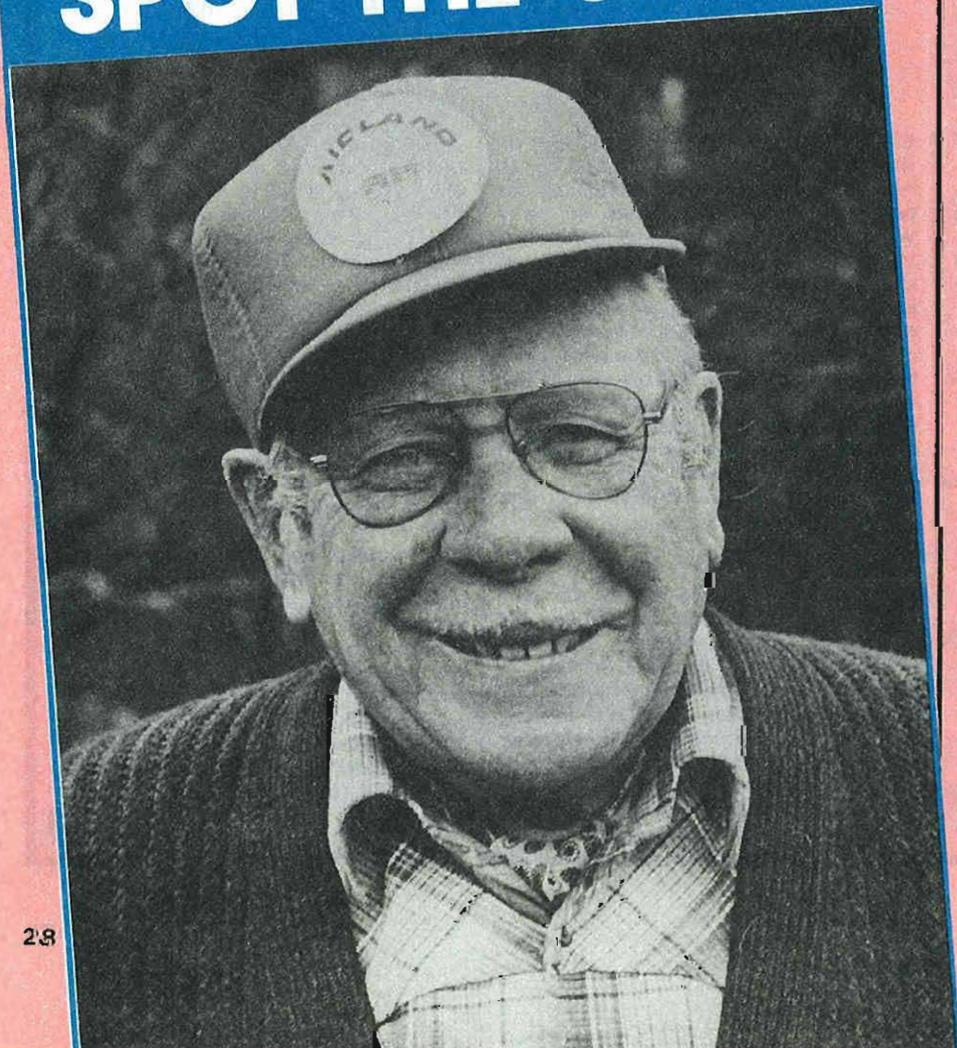
Here it is, the competition to utterly confound you — the competition that is a real splitter of infinitives. Remember *Citizens' Band* brought you **Battleships** and the easiest crossword in the world? Yes sir this is the page for invention and initiative — pit your wits against the team that brought you **Shuttlecock A-Doodle-Do**, the *creme dé la creme* of CB journalism — **Spot the Spot** if you dare. Yes folks somewhere on the time worn visage of this young at heart ageing breaker was a spot, a pimple of some magnitude, a beauteroony of a face-bound bunion long since removed by a deft stroke of the surgeon's knife. We challenge you to put an X on the spot vacated by the spot!

**Binatone** have entered into the spirit of things by offering one of their fine **Long Ranger 40's** to the breaker who gets the nearest and we will throw in a couple of runners up prizes to the next to nearest spot spotters.

If you do not like to cut your mag up — we know how precious they are to you — then trace the face! Oh and by the way anybody who happens to know this good ol' breaker will have no advantage...cos **Kev** moved the spot!

Don't forget the rules. No employees of ASP are allowed to enter (they have all got spots before the eyes anyway). All entries must be here by second post Friday 19th February. The editor's decision is final. And, don't forget your name and address. Entries to Spot the Spot competition, Citizens' Band, A SP Ltd, 145 Charing Cross Road, London WC2H 0EE.

## SPOT THE SPOT



# CB

## Citizens' Band REFERENCE SECTION



Over one hundred and fifty rigs and twigs are listed in the following pages. Remember to shop around for the best buy as prices vary considerably from retailer to retailer. **REMEMBER** if you buy too cheaply off a fly by night dealer you will have problems if the rig breaks down.

**REMEMBER** nicad batteries are the best bet if you are working a portable.

**REMEMBER** back numbers are available at £1.25 from 513 London Road Thornton Heath, Surrey if you want to check up on a specific rig report.

# F M RiG CHECKLIST

## MOBILES

Listed here are the currently available mobile CB rigs.

NAME	ADDRESSES	MODEL	NO OF CHANNELS	SUPPLY VOLTAGE	RETAIL PRICE
ALBA	Alba (Electronics) Ltd, Bull Lane, Edmonton N18	CBMI 40	40	13.8VDC	TBA
AMSTRAD	Amstrad Consumer Electronics, 1-7 Garman Road, London N17	CB 901	40	13.8VDC	£89
AUDIO LINE		341	40	13.8VDC	£106
AUDIO LINE	CB Radio Centre, 337 Kenton Rd, Harrow Mdx	340	40	13.8VDC	£80
AUDIO LINE		342	40	13.2VDC	£149.95
BARRACUDA	Halfords Motor Accessory Shops	GT 868	40	13.8VDC	£70
BARRACUDA		HP 940	40	13.8VDC	£85
BINATONE	Binatone House, Baresford Av, Wembley, Mdx	BREAKERPHONE	40	13.8VDC	£99
BINATONE		BEAMBREAKER	40	13.8VDC	£79.95
BINATONE		ROUTE 66	40	13.8VDC	£79.95
BINATONE		SPEEDWAY	40	13.8VDC	£69.95
BINATONE		5-STAR	40	13.8VDC	£100
BRAEMAR	Geminex Overseas, 348 Kings Rd, SW3 6UZ	BRAEMAR	40	13.8VDC	£TBA
COBRA	Mura (UK) Ltd, High Rd, Willesdon, NW10	21 X FM	40	13.8VDC	£79
COLT	Shellpost, 183 The Rock, Bury, Lancs	295	40	13.8VDC	£80
COMMTRON	Roger D, 831 Mansfield Rd, Notts	CB40F	40	13.8VDC	£70
COMMTRON		CXX	40	13.8VDC	£95
CYBERNET	Goodmans Loudspeakers Ltd, Downlay Road, Havant, Hants PO9 2NL	BETA 1000	40	13.8VDC	£70
CYBERNET		BETA 2000	40	13.8VDC	£85
CYBERNET		BETA 3000	40	13.8VDC	£100
DNT	Radiotechnics Ltd, Grove Way, Bel Royal, St Lawrence Jersey CI	M40FM SPECIAL	40	13.8VDC	£100
ELFTONE	4 Baresford Av, Wembley, Mdx. HA0 1YA	ELCB 6000	40	13.8VDC	£TBA
EUROCOMM	Zycomm Electronics, Ripley, Derbyshire	EURO 40	40	13.8VDC	£69
FIDELITY	Fidelity Radio Ltd, Victoria Rd, London NW10	CB 1000M	40	13.8VDC	£70
FIDELITY		CB 2000M	40	13.8VDC	£90
FIDELITY		20001 FM	40	13.8VDC	£70
GRANDSTAND	Bee-Ware Ltd, Ripon Way, Harrogate, N. Yorks	BLUEBIRD	40	13.8VDC	£90
GRANDSTAND		HAWK	40	13.8VDC	£80
GRANDSTAND		GEMINI	40	13.8VDC	£122
GREAT	Brittania Trading, Northern Rd, Sudbury, Suffolk	GT 858B	40	13.8VDC	£65
HAM INT.	25 Buckland Road, Leicester	EXPLORER	40	13.8VDC	£75
HAM INT.		MARINER	40	13.8VDC	£110
HARRIER	Dixons Photographic Ltd.	CB MOBILE	40	13.8VDC	£49
HARRIER		CB X	40	13.8VDC	£89.99
HARVARD	Harris Overseas Ltd, Harvard House, 14-16 Thames Rd, Barking, Essex	400M	40	13.8VDC	£80
HARVARD		402 MPA	40	13.8VDC	£69.95
HARVARD		H403 GOOD BUDDY	40	13.8VDC	£50
HARVARD		420M	40	13.8VDC	£100
INTERCEPTOR	Chelsea CB Centre, 73-77 Brittenia Rd, London	INTERCEPTOR	40	13.8VDC	£80
INTERCEPTOR		TC400	40	13.8VDC	£95
INTERCEPTOR		ONE HANDER	40	13.8VDC	£100
JOHNSON	Star Warehouse, Chalk Farm Rd, London	JOHNSON	40	13.8VDC	£50
JWR	Wolfe House, Nurse Rd, Bedford MK41 0LF	M2	40	13.8VDC	£60
JWR		M2	40	13.8VDC	£90

On the following pages you will find listed just about all of the CB rigs available for use on UKFM CB. We have split the reference section into three parts; mobile base and portable to make individual rigs easier to find.



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. SPEAKER JACK	TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS	
•				•		•					•	•	•	FL		ALBA
•				•	•	•	•	•	•	•	•	•	•	SL	Report Feb '82	AMSTRAD
•			•	•	•	•		•	•	•	•	•	•	SL		AUDIOLINE
•			•	•	•	•		•	•	•	•	•	•		Report Feb '82	AUDIOLINE
•					•	•		•	•	•	•	•	•		Report Oct '82	AUDIOLINE
•			•	•	•	•		•	•	•	•	•	•	FL	Great GT868 chassis	BARRACUDA
•			•	•	•	•		•	•	•	•	•	•	FL	Cybernet chassis	BARRACUDA
•			•	•	•	•		•	•	•	•	•	•		Report Feb '82	BINATONE
•	•				•	•		•	•	•	•	•	•			BINATONE
•					•	•		•	•	•	•	•	•	FL	Report Dec '81	BINATONE
•					•	•		•	•	•	•	•	•	FL		BINATONE
•			•	•	•	•		•	•	•	•	•	•	SL		BINATONE
•			•	•	•	•		•	•	•	•	•	•	SL		BRAEMAR
•				•	•	•		•	•	•	•	•	•	FL	Colt, Midlind, Mexcom lookalike	COBRA
•				•	•	•		•	•	•	•	•	•	FL		COLT
•				•	•	•		•	•	•	•	•	•	FL		COMMTRON
•				•	•	•		•	•	•	•	•	•	FL		COMMTRON
•				•	•	•	•	•	•	•	•	•	•	SL	Ultra compact performer	CYBERNET
•				•	•	•	•	•	•	•	•	•	•	FL		CYBERNET
•				•	•	•	•	•	•	•	•	•	•	FL		CYBERNET
•				•	•	•		•	•	•	•	•	•	FL	Report July '82	DNT
•				•	•	•		•	•	•	•	•	•	FL		ELFTONE
•					•	•		•	•	•	•	•	•	FL		EUROCOMM
•					•	•		•	•	•	•	•	•	SL		FIDELITY
•			•	•	•	•		•	•	•	•	•	•	FL	Report March '82	FIDELITY
•			•	•	•	•		•	•	•	•	•	•	FL		FIDELITY
•				•	•	•		•	•	•	•	•	•	SL		GRANDSTAND
•				•	•	•		•	•	•	•	•	•	SL		GRANDSTAND
•	•			•	•	•	•	•	•	•	•	•	•	SL		GRANDSTAND
•					•	•		•	•	•	•	•	•	FL	Same as Johnson rig	GREAT
•			•	•	•	•		•	•	•	•	•	•	SL		HAM INT.
•		•		•	•	•		•	•	•	•	•	•	FL		HAM INT.
•					•	•		•	•	•	•	•	•	SL	Report Feb '82	HARRIER
•			•	•	•	•		•	•	•	•	•	•	SL		HARRIER
•				•	•	•		•	•	•	•	•	•	FL		HARVARD
•				•	•	•		•	•	•	•	•	•	FL		HARVARD
•				•	•	•		•	•	•	•	•	•	SL		HARVARD
•				•	•	•		•	•	•	•	•	•	SL		HARVARD
•				•	•	•		•	•	•	•	•	•	SL		INTERCEPTOR
•		•		•	•	•		•	•	•	•	•	•	FL		INTERCEPTOR
•			•	•	•	•	•	•	•	•	•	•	•	FL		INTERCEPTOR
•				•	•	•		•	•	•	•	•	•	FL	Great GT868 chassis	JOHNSON
•					•	•		•	•	•	•	•	•	FL		JWR
•					•	•		•	•	•	•	•	•	FL		JWR

# MOBILES continued

NAME	ADDRESSES	MODEL	NO. OF CHANNELS	SUPPLY VOLTAGE	RETAIL PRICE
KAISER	Kaiser Electronics Nevrottsraese 21-25, Waldorf Baden, W. Germany	UK 40	40	13.8VDC	£TBA
LADYLINE	Market Drayton, Salop	QUASAR	40	13.8VDC	£80
LAKE	Roger D, 831 Mansfield Rd, Nottingham NG6 3GF	MANXMAN 850	40	13.8VDC	£32.50
LAKE		MANXMAN 950	40	13.8VDC	£37.50
LCL	LCL Imports Ltd, 101 Dixons Green, Dudley, W. Midlands	2740	40	13.8VDC	£80
LCL		COMMUNICATOR	40	13.8VDC	£95
LOWE	Lowe Electronics, Matlock, Derbyshire	TX 40	40	13.8VDC	£50
MANOR	Menor National Group, Oxford Rd, M/cr	KESTREL	40	13.8VDC	£99
MAXCOM	AMT AM House 9a Olds Approach, Tolpits Lane, Watford Herts.	4E	40	13.8VDC	£50
MAXCOM		6E	40	13.8VDC	£48
MAXCOM		20E	40	13.8VDC	£50
MAXCOM		21E	40	13.8VDC	£50
MAXCOM		16E	40	13.8VDC	£40
MICROLINK	Warman-Freed Ltd, 82 Golders Gn Rd, NW11	CB401	40	13.8VDC	£115
MIDLAND	Fluotronics Ltd, Hempstalls Ln, Newcastle-under-Lyme, Staffs.	2001	40	13.8VDC	£70
MIDLAND		3001	40	13.8VDC	£80
MIDLAND		4001	40	13.8VDC	£90
MIDLAND		2001 T	40	13.8VDC	£100
MUSTANG	KB & Co Ltd, 202 Cheotham Hill Rd, M/cr.	CB1000	40	13.8VDC	£49.95
MUSTANG		CB2000	40	13.8VDC	£59.95
MUSTANG		CB3000	40	13.8VDC	£69.95
NATO	Roger D, 831 Mansfield Rd, Nottingham NG6 3GF	40M	40	13.8VDC	£69.95
NATO		2000	40	13.8VDC	£167.95
OSCAR	S.M.C. Osborne House, Totton, Southampton	OSCAR1	40	13.8VDC	£85
RADIOMOBILE	Goodwood Wks, North Circular Rd, London NW2 7JS	201	40	13.8VDC	£80-90
RADIOMOBILE		202	40	13.8VDC	£120
REFTEC	RF Technology, Leyton Avenue Ind Est, Mildenhall, Suffolk	934	20	13.8VDC	200
ROTEL	Rotel Hi-Fi, 2-4 Erica Rd, Stacey Bushes, Milton Keynes	RVC 220	40	13.8VDC	£50
ROTEL		RVC 230	40	13.8VDC	£70
ROTEL		RVC 240	40	13.8VDC	£90
SAPPHIRE	CB Services 87 Crab Lane, Harrogate, North Yorks	2000X	40	13.8VDC	£68
SHOGUN	Colliers Fm, Frieth, Henley-on-Thames, Oxon RG6 6NR	SHOGUN	40	13.8VDC	£100
SIRTEL	24 Alfric Sq, Off Maxwell Rd, Woodston Ind Est, Peterborough	SEARCHER	40	13.8VDC	£40
SPIRIT	Martello Sound Ltd, Haywood Way, Ivyhouse Lane, Hastings	SPIRIT	40	12VDC	£100
STEEPLETONE	Park End Works, Croughton, Nr Brackley, Northants	SCB1FM	40	13.8VDC	£103
TANDY	Tame Way Tower, Bridge St, Walsall,	TRC2001	40	13.8VDC	£80
TANDY		TRC2002	40	13.8VDC	£70
TANDY		TRC2000	40	13.8VDC	£100
TANDY		TRC1004	40	12VDC	£79
TANDY		TRC 2003	40	12VDC	£130
TENVOX	Voxon Audio Ltd, Abingdon, Oxon	TENVOX	40	13.8VDC	£100
UNIDEN		UNI ACE 100	40	13.8VDC	£70
UNIDEN		UNI ACE 200	40	13.8VDC	£90
VIPER	Radio 88, Barking, Essex	VIPER 88	40	13.8VDC	£85
WESTERN	Western Electronics, Feltham Estate, Louth, Notts.	COMPACT 40	40	13.8VDC	£34.50
YORK	Sulkin (UK) Ltd, 73 Grosvenor Street, London W1X 9DD.	JCB 861	40	13.8VDC	£69
YORK		JCB 863	40	13.8VDC	£89

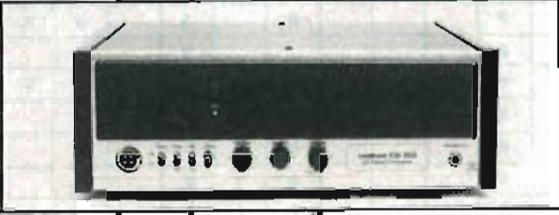
Remember — Shop around as prices can vary



SOUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	STONE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAKER JACK	TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS	
•						•		•		•	•	•		FL		KAISER
•				•		•		•	•	•	•			FL	First marine rig	LADYLINE
•						•		•		•				SL		LAKE
•				•		•		•	•	•				SL		LAKE
•					•	•		•		•	•			FL		LCL
•				•	•	•		•		•	•	•	•	FL		LCL
•				•		•		•		•	•	•		FL	Report Nov '82	LOWE
•				•	•	•		•	•	•	•	•	•	FL		MANOR
•						•		•	•	•	•			FL	Maxon chassis	MAXCOM
•				•		•		•		•	•		•	FL	Report Dec '82	MAXCOM
•						•		•		•	•		•	FL		MAXCOM
•						•		•		•	•		•	FL		MAXCOM
•				•		•		•	•	•	•	•		FL		MAXCOM
•				•		•		•	•	•	•	•		FL		MICROLINK
•						•		•		•	•			FL		MIDLAND
•				•		•		•	•	•	•			FL		MIDLAND
•			•	•		•		•	•	•	•			FL		MIDLAND
•						•		•	•	•	•			FL	The talking rig	MIDLAND
•						•		•	•	•	•			FL		MUSTANG
•				•	•	•		•	•	•	•	•	•	FL	Report July '82	MUSTANG
•				•		•		•	•	•	•	•	•	FL		MUSTANG
•			•	•		•		•	•	•	•			SL		NATO
•	•	•		•		•		•	•	•	•			SL		NATO
•						•		•		•			•	SL	Cybernet 134 chassis	OSCAR
•						•	•	•		•				FL	Report Oct '82	RADIOMOBILE
•				•	•	•	•	•	•	•	•	•	•	FL	Report Sep '81	RADIOMOBILE
•						•		•		•	•			FR	934 MHz — Still waiting!	REFTEC
•						•		•		•	•			FL	Cybernet chassis	ROTEL
•				•	•	•		•	•	•	•			FL	Cybernet chassis	ROTEL
•			•	•	•	•		•	•	•	•	•	•	SL	Cybernet chassis	ROTEL
•						•	•	•		•	•	•		FL		SAPPHIRE
•				•	•	•	•	•	•	•	•			SL	Up market elegance Report June '82	SHOGUN
•						•		•	•	•	•			SL		SIRTEL
•						•		•		•	•	•		FR		SPIRIT
•						•	•	•		•	•	•		FL		STEEPLETONE
•						•		•	•	•	•	•		SL		TANDY
•						•		•	•	•	•	•		SL		TANDY
•			•	•		•		•	•	•	•			-		TANDY
•						•		•		•	•			-	Report Oct '82	TANDY
•						•		•		•	•			-	Report Nov '82	TANDY
•						•	•	•		•	•	•	•	SL		TENVOX
•						•		•	•	•	•			SL	Report Sept '82	UNIDEN
•			•	•	•	•		•	•	•	•	•		SL	Report coming soon	UNIDEN
•						•		•		•	•	•		FL		VIPER
•						•		•		•	•	•		FL		WESTERN
•				•	•	•		•	•	•	•			SL	Report Oct '81	YORK
•			•	•	•	•		•	•	•	•	•	•	SL	Cybernet 134 chassis	YORK

considerably from CB shop to CB shop!

# BASE STATIONS - HAND HELDS

NAME	ADDRESSES	MODEL	NO. OF CHANNELS	SUPPLY VOLTAGE	RETAIL PRICE
<h2 style="color: blue;">BASES</h2> <p>It's much more fun breaking from home when the car's too cold to start - and it saves petrol!</p>					
DNT	Radiotechnics Ltd, Grove Way, Bel Royal, St Lawrence Jersey CI	B40	40	240VAC	£TBA
DNT		B2740	40	240VAC	£TBA
DNT		B5040	40	240VAC	£TBA
FIDELITY	Fidelity Radio Ltd, Victoria Rd, London NW10	CB 300M	40	240VAC	£TBA
GRANDSTAND	Bee-Ware Ltd, Ripon Way, Haregate, N.Yorks	BASE	40	240VAC	£220
HAM INT.	25 Buckland Rd, Leicester	HERCULES	40	240VAC	£170
HARRIER	Dixons Photographic Ltd,	CB HQ	40	240VAC	£130
HARVARD	Harris Overseas Ltd, Harvard House, 14-16 Thames Rd, Barking Essex	H407	40	240VAC	£125
HARVARD		H401	40	240VAC	£149.95
JOHNSON	Star Warehouse Chalk Farm Rd, London	XK 2000	40	240VAC	£99
JWR	Woolfs House, Norse Rd, Bedford	DIPLOMAT	40	240VAC	£194
MIDLAND	Plustronix Ltd, Hempstead Ln, Newcastle-under-Lyme, Staffs.	76-200	40	240VAC	£150
MURPHY	Murphy Electronics, Wembley, Middlesex	BASE	40	240VAC	£100
SPIRIT	Martello Sound Ltd, Haywood Way, Ivyhouse Lane, Hastings, Sussex	SPIRIT	40	240VAC	£100
<h2 style="color: blue;">PORTABLES</h2> <p>Why not get out and about with a portable rig? Not only is it fun, there's fresh air too.</p>					
BEAR	Air Bear(UK) Ltd, Wortley, Sheffield	RHB 36	3	BATTERIES	£44
BINATONE	Binatone House, Beresford Av, Wembley, Middx.	LONGRANGER	6/12	BATTERIES	£60
DNT	Radiotechnics Ltd, Grove Way, Bel Royal, St Lawrence Jersey CI	HF 12/3	3	BATTERIES	£47.66
ELFTONE	4 Beresford Av, Wembley, Middx.	CB30	2	BATTERIES	£TBA
ELFTONE		P-3	3	BATTERIES	£TBA
HARRIER	Dixons Photographic Ltd	WT1	2	BATTERY	£26
HARRIER		WT2	40	BATTERY	£69.99
HARVARD	Harris Overseas Ltd, Harvard House, 14-16 Thames Rd, Barking Essex	0-2-0	2	BATTERY	£20
HARVARD		410T	40	8xAA cells	£89.95
HARVARD		10-4 CONVOY	2	BATTERY	£19.96
HARVARD		H6	2	BATTERY	£29.95
KAISER	Kaiser Electronics Neuwirtstrasse 21-25, Waldorf Barden, W, Germany	CBX40	40	BATTERY	£TBA
MAXCOM	AMT AM House 9a Old Approach, Tolpits Lane, Watford Herts.	7E	40	12VDC	£79
MIDLAND	Plustronix Ltd, Hempstead Ln, Newcastle-under-Lyme, Staffs.	76-720	3	BATTERY	£TBA
TANDY	Tome Way Tower, Bridge St, Walsall	TRC1001	40	12VDC	£119



# ANTENNA CHECKLIST

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 decide on the antenna for you!

NAME	ADDRESSES	MODEL	CONSTRUCTION	LENGTH	MAX POWER	TYPE	MOUNT	PRICE RANGE
ALLCOM		DPA 2UK	AL	1.5	100	M	—	E
AMSTRAD	Amstrad Consumer Electronics, 1-7 Garman Rd, London N17	CBA 1600	SS	1.5	—		Various	C
ANTENNA INC.		12510 Telecomm	SS	0.9	—	M	3/4ths	D F G G C C
		Super Persuader	SS	1.5	—	M	Mag	
		MR611	SS	1.2	—	M	Mag	
		M710	SS	1.5	—	M	3/4ths	
		AS M125	SS	1.14	150	M	3/4"	
AS M128	SS	1.14	150	M	—			
ANTENNA SPECIALISTS	Antifarnoe Ltd, Aylesbury, Bucks HP19 3BJ	AS M131	SS	1.14	150	M	gutter	D D D D D D D E C
		AS MR 440	SS	1.2	100	M	mag	
		AS MT178	SS	1.2	150	M	mag	
		AS M610	SS	1.2	200	M	3/4"	
		AS M2000	SS	1.6	150	M	3/4"	
		AS 9812	SS	1.2	150	M	mag	
		IC 85	SS	1M	—	M	mag	
		IC 80	SS	1M	—	M	spring-based mag	
IC 16	SS	1	—	M	trunk			
ANTLER	Shakespeare, Performance Antennas, Betton Rd, Market Drayton, Salop	IC 20	SS	1 1/2	—	M	roof	D D E D
		IC 30	SS	1	—	M	gutter	
		IC 40	SS	1 1/2	—	M	mirror	
		IC 80	SS	1 1/2	—	M	mag	
ARCHER	Tandy Corp., Tame Way Tower, Bridge St, Walsall, W.Mid.	21-904	SS	0.5	50	M	3/4" snap	D
ARMSTRONG	Stateside Trading Ltd., Audley Ave, Newport, Shropshire.	SAM 10	SS	1.06	1,000	M	surface	F F G G G G G
		SAM 20	SS	1.06	1,000	M	surface with spring	
		TAK 10	SS	1.06	1,000	M	boot lip	
		TAK 20	SS	1.06	1,000	M	boot lip with spring	
		MAG 10	SS	1.06	1,000	M	magnetic	
		MAG 20	SS	1.06	1,000	M	magnetic with spring	
		BDY 20	SS	1.06	1,000	M	side	
PEC 20	SS	1.06	1,000	M	side & fold over & quick disconnect			
TAK 101	SS	1.06	1,000	M	boot lip illuminator			
AVANTI	Avanti, 132 Penstone Rd Nth, Sheffield, Yorks.	AV 241 (Moonraker)	SS	1.22	—	M	stud	D E E G
		AV 241 T	SS	1.22	—	M	trunk	
		AV 241 M	SS	1.22	—	M	mag	
		AV 241 MM	SS	1.22	—	M	super mag	
BADLAND	Badland, Roeten Ind Est, Providence St, Lye, Stourbridge.	B10	SS	1.22	—	M	mag	G
BANDIT	Bandit, Rougham Ind Est, Bury St Edmunds, Surrey.	B10	SS	1.42	—	M	mag	G F F E E D D D D
		B15	SS	0.61	—	M	mag	
		B16	SS	1.22	—	M	mag	
		B20	SS	1.42	—	M	mirror	
		B30	SS	1.42	—	M	drill-thru	
		B30	SS	1.22	—	M	drill-thru	
		B40	SS	1.42	—	M	various	
		B40	SS	1.22	—	M	various	
		B60	SS	1.42	—	M	various	
		B60	SS	1.22	—	M	various	
C. BRIT	C Brit, Unh 3.6 East Lane, Wembley, Middx.	Stingray Whiplash	AL SS	1.5 1.5	500 25	B M	pole 3/4"	H C
CT INTERNATIONAL	CT International, CTE (UK) Ltd Unit 3, Mitcham Ind Est, 85 Streatham Rd, Mitcham, Surrey.	MG27	SS	0.91	—	M	mag	C
DIAL-A-MATCH		Rubber Duck	R	0.3	—	M	3/4"	C C F F E E C
		530 (Cherokee)	SS	0.61	—	M	—	
		531 HBF	SS	0.61	—	M	—	
		531 SMF	SS	0.61	—	M	—	
		540	SS	1.22	—	M	—	
		541 HBF	SS	1.22	—	M	—	
		541 SMF	SS	1.22	—	M	—	
		520 (Halfbreed)	SS	1.27	—	M	—	
DIGITEK UK LTD	178-181 Streatham Rd, Mitcham, Surrey	Falcon 27	SS	1.5	—	M	various	D
DIXONS	Dixons Photographic	Harrier	SS	0.9	—	M	Mag	D
HOT ROD 200	Hot Rod 200, Stateside Trading Ltd, Audley Avenue, Newport, Shropshire	FM UK	SS	1.27	—	M	3/4ths	B
FREEMAN & PARDOW	Freeman & Pardow, Tything Rd, Arden Forest Ind Est, Alcester Warwick	The Invader	AL	1.5	250	B	pole	E F
		The Thunderpole	A1	1.5	500	B	pole	
K40		K40	SS	1.4	500	M	various	F

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
LCL	LCL Ltd, Enterprise Trading Est, Padmore Rd, Dudley West Mid.	Hot Rod 200	SS	1.27	-	M	3/4ths	B
MARGINPLAN	Hope House, Hope Rd, Leeds LS8 7DU	Bullwhip	SS	1.5	-	M	various	D
		Knuckleduster	AL	1.5	-	B	-	E
MIDWEST		Dial-a-tune	SS	0.81	500	M	various	C
		Dial-a-tune	SS	1.22	-	M	various	D
MOCOM	Mocom, Moto Communications Ltd, 140 Sandy Lane, Camphill, B'ham	Revco	SS	1	-	M	various	B
MOTOROLA	Motorola, Taylors Rd, Stotsold, Hitchin, Herts.	EC106M	-	1.5	-	M	-	F
PAN INTERNATIONAL		Pan Mobile 280	SS	1.25	-	M	clamp	-
PANORAMA	Panorama, 73 Wedham Rd, London, SW 15 2LS	CB27	-	1.22	-	M	mag	B
PRIOWW		KT40	SS	1.5	-	M	trunk	C
SHIRA		SYS 208M	SS	1	-	M	mag	C
		SYS 203C	FG	0.75	-	M	trunk	C
		MA 82	-	0.91	-	M	-	C
SIRTEL	Sirtel, 24 Afric Sq, off Maxwell Rd, Woodston Ind Est, Peterborough.	GP Messenger	SS	1.5	-	B	clamp	E
		GP Signal Keeper	SS	1.5	-	B	tripod	F
SMC	Oscar, South Midlands Communications, Osborn House, Totton, Southampton, SO4 4DN	Oscar Base CBA 11GP	SS	1.5	-	B	-	F
		Oscar Base IIVIS	SS	1.5	-	B	-	F
		Oscar IICM	SS	1.2	-	M	mag	D
		Oscar IICE	SS	1.2	-	M	foldover base	B
		Oscar IINE	SS	1.5	-	M	"pull-up" foldover base	C
		Oscar IISE	SS	1.5	-	M	"locking-collar" foldover base	C
SPYDER		Oscar TMCAS	SS	1	-	M	trunk	B
		Spyder	AL	1.5	-	B	pole	B
TAGRA	Europasonic (UK) Ltd, Britannia Works Building, Sherbourne St, Manchester	T40	SS	1.4	500	M	various	E
THOROBRED	ZL Communications, Cantley, Nr Norwich, Norfolk	251	SS	1.5	-	M	various	C
		227	SS	1.5	-	M	3/4"	B
		Locktune	SS	1.5	-	M	various	C
WITCHSTICK	CJM Motor Factors, Hill Farm Ave, Leavenden, Watford, Herts, 09273-73846	Witchstick homebase	AL	1.5	-	B	-	E
WTA ELECTRONICS	111 Cromer Rd, Halesdon, Norwich, Norfolk	Wot Pole	AL	1.5	-	B	pole	C
		Wot Mag	SS	1.5	-	M	mag	C
VAN ORDT	Van Ord, Knight CB Specialists, 204 Dunstable Rd, Luton, Beds.	Audio King AK0-100	SS	1.5	2000	M	3/4"	G

## Here's a brief introduction to the world of antennas and what we tell you in our checklist.

### Name

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

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

### 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 and stainless steel home based antennas.

### 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.

### Length

The longer the better is always

### 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. We'll keep you in touch.

### Mount

The majority of mobile antennas are held in place by a magnet - these are called mag mounts. Others are attached by means of a clamp 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.

### Price

Here we use eight price bands. The figure given is the recommended retail price. You may get your antenna for less, it may even cost you more. We just give a guide.

# Armstrong



## ALL-AMERICAN

### STATESIDE TRADING LIMITED

The antenna that  
**OUTPERFORMS K40**  
in mobile tests in the USA

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**HERE'S PROOF:**  
*Armstrong is the  
new leader!*

COPPER PLATED (adds 1 DB gain) 17-7 PH stainless steel. Tapered whlp with static tip — factory preset — minimum SWR.

SOLID MACHINED BRASS, triple chrome plated for corrosion-free, attractive appearance.

Molded NORYL — highest quality engineering plastic available — impervious to elements.

First truly hollow coil form — less than 1% variance from antenna to antenna.

Special high strength low loss glass-filled NORYL plastic. Heavy duty copper wire coil. 500 watts continuous operation rating — 1000 watts intermittent operating rating.

Silver, plated beryllium copper contact spring.

58-AU type cable 95% braid coverage sealed against water and moisture.

Solid machined brass, triple chrome plated for corrosion-free, attractive appearance.

**not the most expensive  
JUST THE BEST!**

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**24-MONTH LIMITED WARRANTY**  
Armstrong Industries, division of Monitor Crystal Service Inc., warrants each new product to be free from defects in material and workmanship under normal use and service for a period of 24 months from delivery to the ultimate consumer.  
For complete information, consult the written warranty of Armstrong Industries.

**TRIPLE GUARANTEE**  
1. The Armstrong Antenna will outperform any equivalent antenna it replaces, or you will receive a prompt, full refund from the Armstrong dealer who sold it to you.  
2. Guaranteed satisfaction with 24-month Limited Warranty.  
3. Plus, lifetime coil burn-out Guarantee.

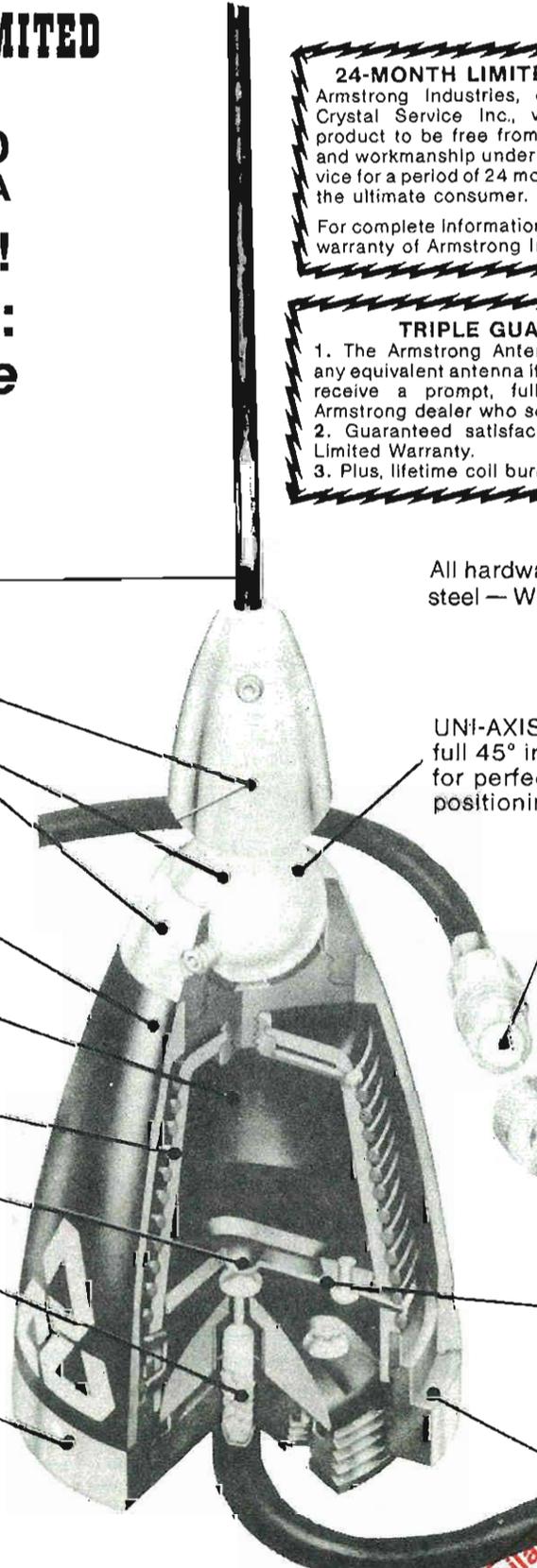
All hardware is stainless steel — WILL NOT RUST.

UNI-AXIS ball joint tilts full 45° in all directions for perfect vertical positioning.

IN-LINE connector simplifies antenna installation.

SHUNT FED coils for quieter reception.

QUICK DISCONNECT — 1-3/4 turn. Water tight. Available in seven (7) different mounts.



Now available following the  
Shop in Shop magazine. Contact  
your local CB



# Rig Check



We go walkabout with the Long Ranger, a rugged looking 40 channel portable, so it's Hi Yo Binatone away . . .

# Bouncy Binatone

**C**itizens' Band Radios are a bit like horses! Well not so much the radios themselves but their designs. Some people prefer the sleekness of the race-horse while others much prefer the quiet bulky dignity of the shire horse — them with the furry legs — and some prefer the powerful and smart Western pony. The design factor cannot please everybody and it's really a matter of 'horses for courses'. If it goes like a good 'un, why worry?

The **Binatone Long Ranger 40**, in comparison to the sleek plastic bodies of most hand helds, is big, chunky and a little garish. At least, that is the opinion of reviewer — other breakers of my acquaintance fell in love with it at first glance. So, let us put a tight rein on the 'small is beautiful' syndrome and take a long, hard look at this forty channel portable.

## The Rig

The case measures 58x80x240mm — excluding projections — and is quite a handful. Not heavy but solid. Unlike its brother the Long Ranger 12, which has a black facia, the front panel is a shiny, silvered plastic and a little flashy with black faced knobs and switches. The back and the bulk of the case is in green metal.

The facia comprises of a speaker and mike combined at the top with a red LED channel indicator at the base. A central panel houses the main controls and these are, from top to bottom, an on/off/volume control situated next to a very effective squelch control. The channel selector switch is placed centrally on the panel with the channel numbers indicated clearly in black. Bottom left is the attenuator switch and — for battery conservation — a channel display on/off switch. Right hand bot-



tom is a green RX LED and a red TX LED.

On the right hand side of the main casing is a panel containing sockets for external jacks — 80ohm extension antenna — mains adaptor and battery charge sockets. The PTT — push to talk button — is situated on the left hand side. The battery box at the base, opened with a coin, houses ten nicads or eight ordinary cells. Two dummy cells are provided for the change over. The antenna, is in stainless steel and made up of twelve sections, measuring a full 1.5M, it tops off the whole package. A separate earpiece is provided for the benefit of those around you who do not want to listen in on your chatter. The whole kit and kaboodle can be carried around in the black carrying case supplied.

The handbook is better than average with a nice little section on do's and don'ts

**On Test**

Loaded with a set of fully charged nicads the Long Ranger 'busted out all over'. Three miles, living room to living room — hand held to base station, presented no problems and the copy

was clear. The volume of the RX — with the control set at halfway — was more than adequate. TX was reported from several stations as being 'loud and clear' at 7 + pounds. This dropped marginally when using portable to portable but reports were still very good. Out in the open, away from the bricks and mortar these portable copies improved. The squelch fine tuned easily and removed the rubbish that was around at the time of the test.

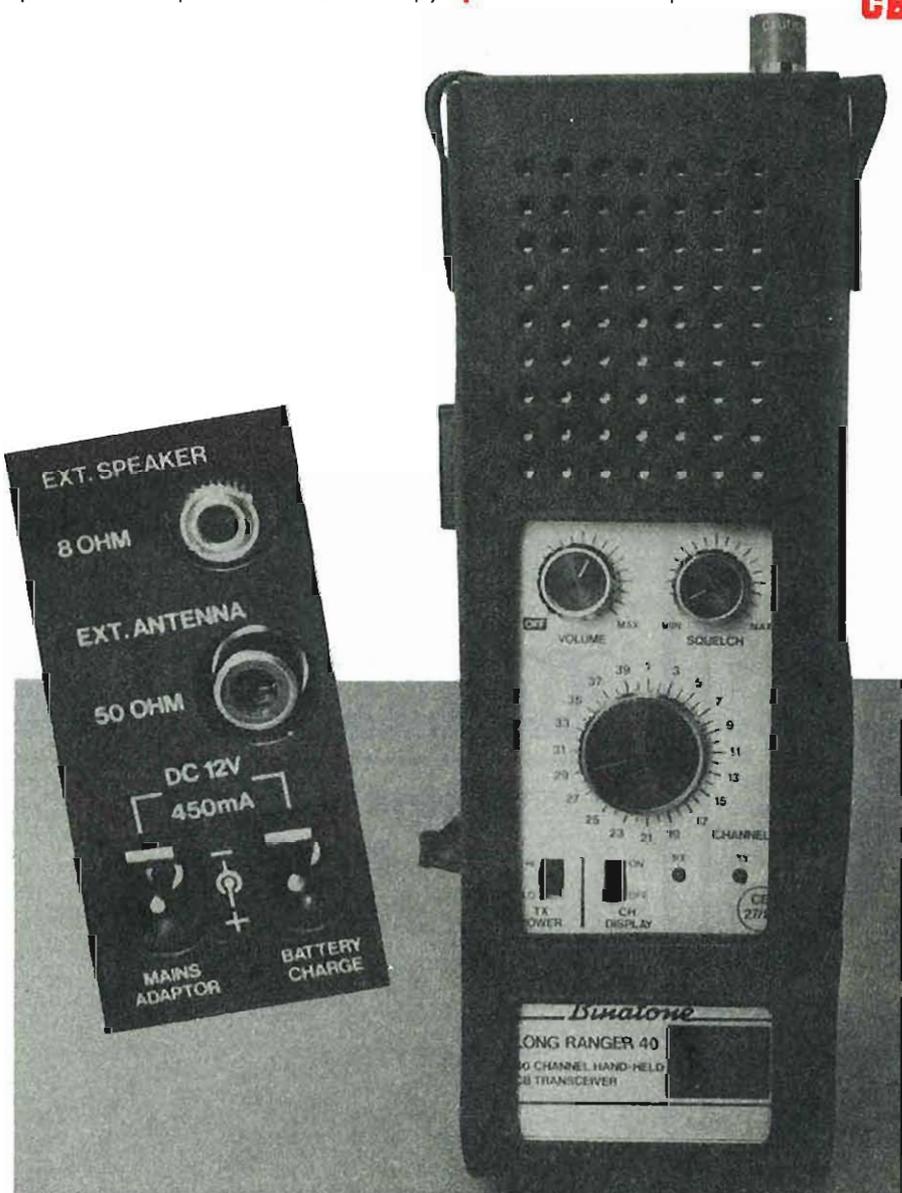
**Conclusion**

The Long Ranger may not be as sleek as some of the competition but the metal casing, acting as a ground plane with the body, does seem to give a boost to the performance. You also get a feeling that the rig will stand up to some rugged usage in or out of its carrying case.

Definitely one for the short list and at £59.95 it compares favourably to rigs offering a similar performance.

Our thanks to Binatone for supplying the sample tested which, is now, offered to some lucky breaker as a prize in this month's competition.

**CB**



**RIG REVIEW DATA PANEL**

**Model** Long Ranger 40  
**Distributor** Binatone  
**Typical Price** £59.95

Features	Yes	No
PA Facility	<input type="checkbox"/>	<input checked="" type="checkbox"/>
External Speaker Jack	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TX Indicator Light	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RX Indicator Light	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PA Indicator Light	<input type="checkbox"/>	<input checked="" type="checkbox"/>
S/RF Meter	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hi/Lo Power Switch	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ANL/NB Switch	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CH9 Switch	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Variable RF Gain	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Mike Gain	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Delta Tune	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tone Control	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LED Channel Readout	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Facilities	Superb	Good	Fair	Poor
Ease Of Controls	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Built In Speaker	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Microphone Location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cabinet Construction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality Of Control Switches	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Channel Indicator Readability	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mounting Bracket	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hand Book/Instructions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Specifications	
Modes Of Operation	FM Only
No. Of Channels	40
Weight	—
Dimensions	58x80x240mm
Supply Voltage	12VDC
RF Output Power	4 watt
Frequency Stability	In spec
Swamping	Good
Sensitivity (RX)	In spec
Spurious Emissions	in spec

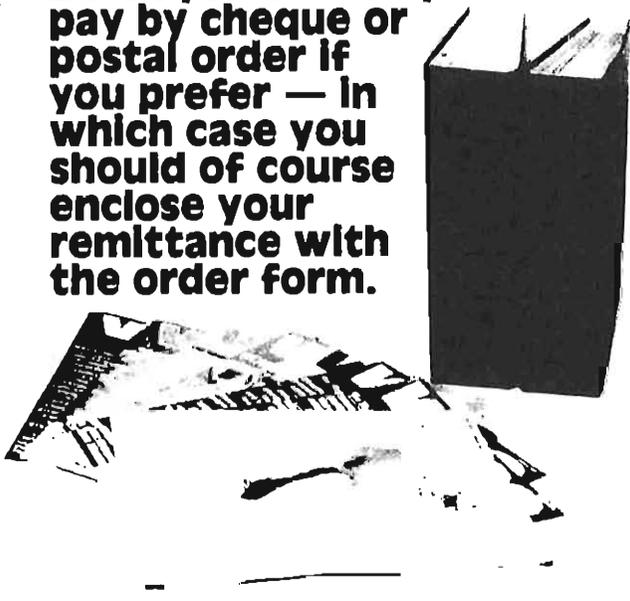
**CB VERDICT**

Range	XXX
Clarity of TX	XXXX
Clarity of RX	XXXX
Ease Of Controls	XXXX
Ease Of Installation	—
Performance	XXXX

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

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Address .....

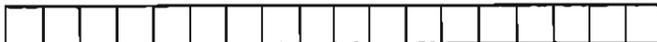
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# Mack Chat

This month Good Ol' Mack takes a look at the horizontal and comes up with an interesting use for one of those wire coat hangers that clutter up the wardrobe . . .

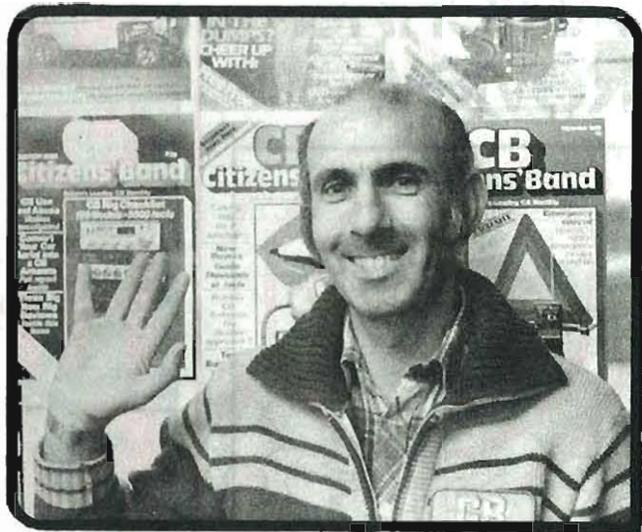
**CB** in this country is following the same road that other countries seem to have taken in the past. So maybe we can look at foreign CB systems and glimpse our future. The great novelty of CB has worn

thin for many and breakers have turned to other interests. I am not surprised to hear of the closing of other CB mags as this also happened in other countries where only the few survived. CB on this island is limited once you have decided upon and obtained what you believe to be the best rig and installed a legal type antenna. Many people get the urge to try and improve the performance of their equipment. There is not a lot one can do at present to ones antenna as the law limits us to what can be used and how high they should be mounted.

A few issues ago I mentioned that the authorities could be taking action against people who use illegal antennas, but rumour now has it that they have changed their minds. It seems that complaints of TVI through the fault of legal installation is increasing, the reason for this is that antennas mounted at the legal height put them in line with domestic TV antennas. I am also led to believe that the regulation base loaded 1 1/2 metre whip antenna is not the best design for the 11 metre band. It is claimed that helicals are more efficient and cause less interference. So could we see the restrictions on antennas lifted in the future? That would certainly give us more scope for a better antenna system.

Back in the naughty days of illegal CB many of those who used home base stations delved into building 'disguise' antennas. Many stations used to hide antenna systems in the garden trees or up the side of the house. As the number of illegal breakers grew many purchased Silver rods, GPs, or Sigmas and these were installed in open view on chimney stacks. Why people did this baffles me. Were they very foolish or brave in the fact that they were advertising that they had CB. Many home base stations would experiment with antennas and it was during these experiments that long wire antennas were used in a horizontal mode.

It's a well known fact that the longer you can make your antenna the more effective it becomes. The reason that we don't use longer antennas on mobiles is obvious, even home base verticals are limited to 1/2 or 3/4 wave because of length. If one has the space a horizontal antenna in the form of a long wire or dipole can easily be a full wave. The advantages of a horizontal antenna are that you eliminate the hash that you would find working vertically — plus you will, and I repeat, will get out further.



The disadvantage is that although you will be able to work stations mobile or base with vertical antennas your signals will be lower. But if you work other stations using horizontal you will be suprised at the difference in increased 's' points obtained. If you are still not convinced, ask yourself why most beam antennas are worked in the horizontal plane? If I have whetted your appetite and you want to know more about long wire antennas most Amateur Radio books explain the whys and wherefores.

Finally don't forget the cost. The chances are that it could cost you nothing as I am sure you could find 11 metres of wire knocking about. Could horizontal FM working catch on? If enough people take the effort to erect a long wire and experiment it will. What about the authorities and the legal aspect you may ask? Well look at all the GPs, silver rods and such. How much notice do the authorities take of these unless of course the owners are causing interference. But as I said before changes could soon be made.

Did you read in one of the national newspapers the article about some evil people with CB who are arranging eyeballs with young female breakers and luring the to isolated places with wicked intentions in mind — it's always the bad side of CB that makes the papers, — in reply to this came a statement from Sir Patrick Wall MP, who said that, when, the culprits are caught their licences will be revoked. What a stupid comment, as if these villains would have a licence and if they did would taking it away stop them from using CB.

And yet another bit of friendly advice. Many breakers are getting stopped for using hand mikes whilst mobile and are being pinched for dangerous driving or driving with undue care and attention. Those of you who do use hand mikes must agree that it can be dangerous, I myself have had some nasty experiences so I will now only use a mobile mike whilst driving. If you can afford it there are some good ones on the market, but a little forethought on your part will show that there are many ways you can safely modulate whilst mobile.

Those mikes that clip on to the sun visor with a switch attached to the gear stick can be built for a couple of pounds if you are handy with a soldering iron or, why not buy secondhand cheap mike and with a few modifications like replacing the PTT switch with a toggle switch and hanging the lot around your neck with the aid of a wire coat hanger. But make sure that the cable does not obstruct the steering wheel. 'Oiy Ed' how about some designs for mobile mikes or a competition for the best idea. Well take care when mobile and don't get bitten by the bears, you have been warned.

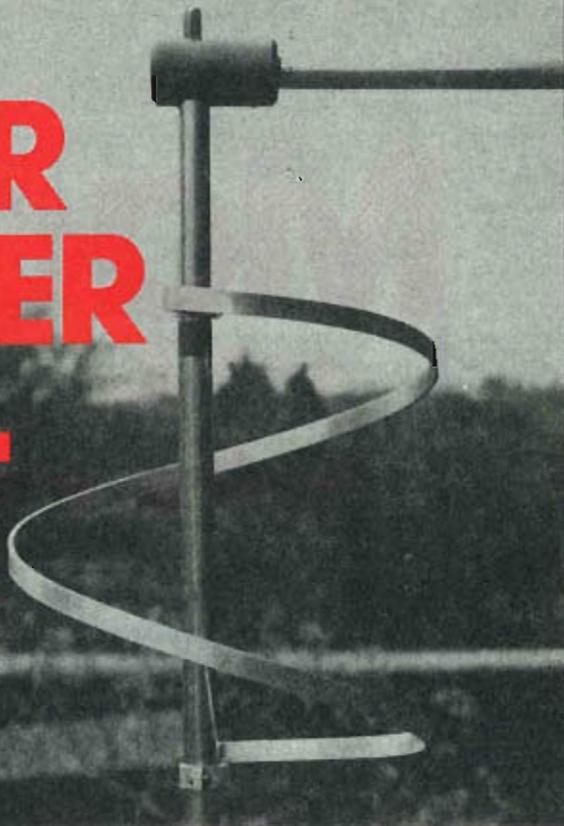
**CB**

# Antenna Review



Manufacturers are continually surprising us with their efforts to provide antennas that, while conforming to spec, stretch that spec to the very limits. Brian W. Wright looks at the latest item...

# HELTER SKELTER HELI- BASE



**M**ost breakers with limited antenna space are usually content, at first, to use makeshift antennas — very often in the bedroom or somewhere similar. Once over the initial novelty of rat-cheting to the fairly local breakers, (or maybe simply because the DV 27 keeps falling over when they have eaten all of the biscuits in the tin it was on) they look for something better. The original space restriction will probably rule out many good antennas mainly because of the room required for the ground plane elements. If space is your problem or you just want a homebase aerial that is not too large the **Heli-pole base station adapter**, from **CB Services (Harrogate)**, fitted with a suitable mobile antenna, could well be what you are looking for.

The Heli-pole is not a complete antenna in itself but a rather unusual groundplane on which to mount any mobile antenna with a  $\frac{3}{8}$ " 24 T.P.I. mounting thread. It is obvious from this that the performance will be affected by the type of antenna fitted to the Heli-pole. The aerial fitted for the purpose of our tests, was the fairly efficient looking **Detonator** mobile antenna, also provided by CB services. Comments on tuning and performance will therefore be mainly related to the Heli-pole and Detonator combination and may differ with various antennas.

This base station adaptor consists firstly of a short horizontal tube or boom one end of which fits into either a wall mounting bracket or a mast mounting bracket, both are provided. The other end of this tube fits to a plastic insulator. The coax is connected to a socket in the insulator using a PL 259 plug which is completely covered from the weather by the mounting boom. The feeder cable runs along the inside of the boom and out of the end where it

can be fixed down the wall or mast as is appropriate. In the top of the insulator is a female  $\frac{3}{8}$ " 24 T.P.I. antenna mounting thread. Out of the bottom of the main insulator there is first a short length of tube, then a small insulator, then a longer tube. A large aluminium coil about 300mm diameter consisting of  $1\frac{1}{2}$  turns is then clamped to the lower tubes bridging across the small insulator. The instructions say that the lower end of the coil should be about 150mm below the small insulator to start with, but it is not clear where the top end should be. The coil end clamps on the test sample were too large and would not hold onto the tubes. These both had to be packed with metal strips. The mobile antenna simply screws into the threaded boss on the top of the main insulator.

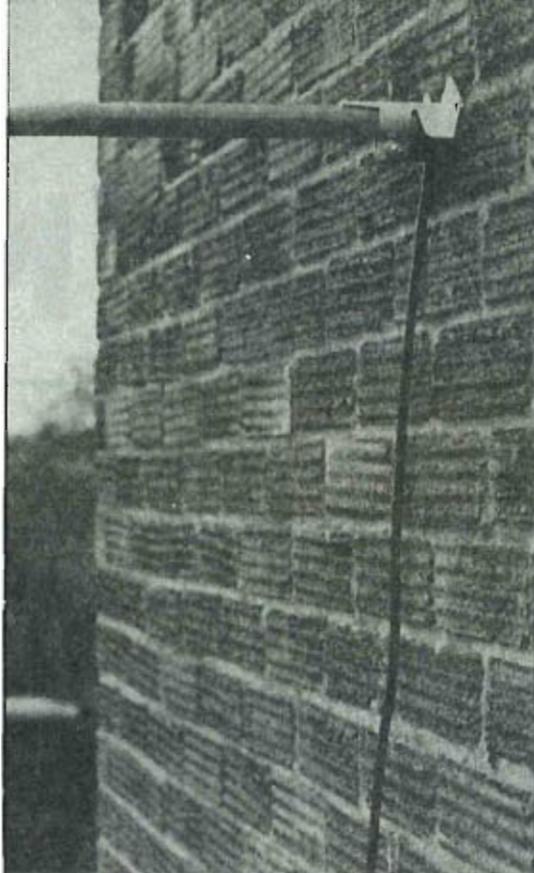
## SWR

Although it is never easy to tune an untuned homebase antenna, because of the physical difficulty in reaching it, the SWR adjustment is relatively simple on the Heli-pole. This is done by loosening the lower clamp on the large coil and sliding it up or down the pole. If the coil has to be stretched too far down the pole then the whip has to be shortened as for mobile tuning. The whip would naturally require lengthening if a low SWR was not obtained with the coil closed up to the top of the lower pole. When the Detonator was fitted to the Heli-pole, about 50mm had to be cut off the whip. Adjustment of the coil then brought the SWR down to less than 1.1 : 1 on channel 20 and slightly over 1.2 : 1 on 1 and 40.

## On Test

We mounted our test sample on the wall of the house at about the legal height for 4 Watts. The test pattern obtained was therefore a bit lopsided

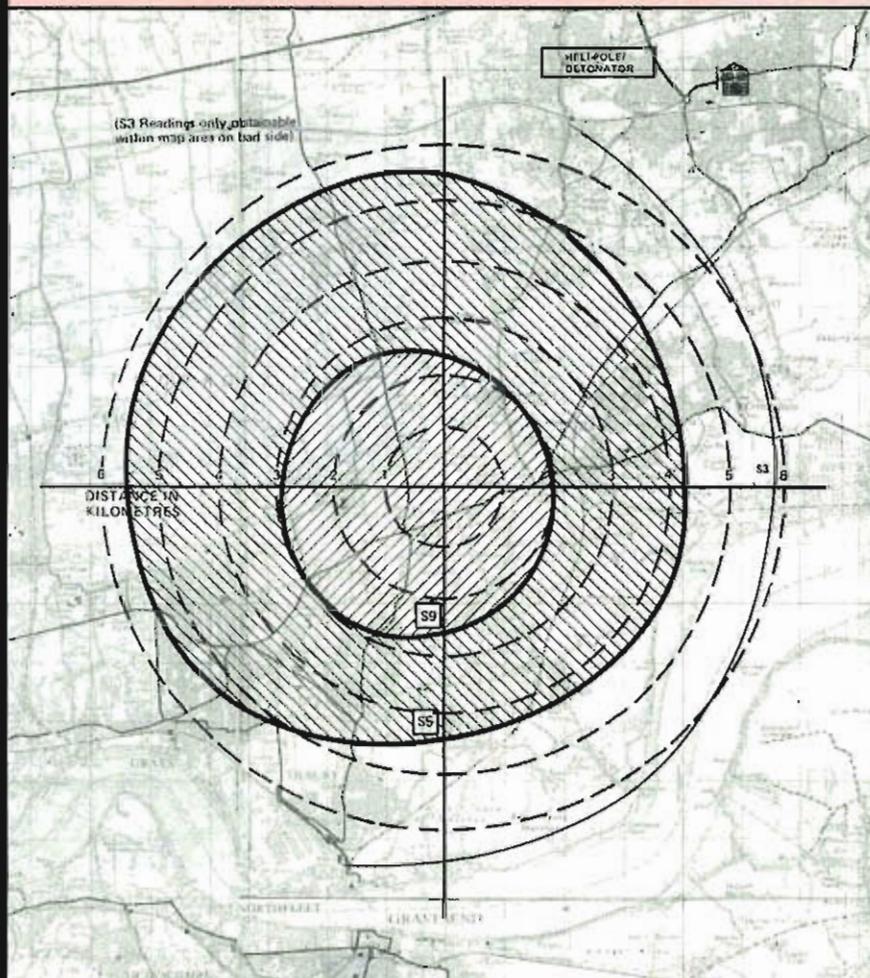




## ANTENNA REVIEW DATA PANEL

### SPECIFICATIONS

<b>Model</b>	Heli-pole
<b>Type</b>	Base station antenna adaptor
<b>Length</b>	1-4m plus antenna
<b>Frequency Range</b>	27-28 MHz
<b>Max Power Handling</b>	
<b>Impedance</b>	50ohm
<b>Cable Supplied</b>	None
<b>Mounting Details</b>	Wall or pole mounted
<b>Supplier</b>	CB Services (Harrogate)
<b>Typical Price</b>	£12.50



where the signal had to pass immediately through the house. A more symmetrical pattern should be obtained if the antenna is mounted on a mast in the open. However, we considered this to be a realistic test as the antenna is likely to be mounted in this manner in many instances. The performance was quite good, especially in the direction away from the mounting wall and a reasonably clear copy was maintained even on the bad or wall side.

Instructions are rather poor consisting of a small printed sheet without diagrams. When assembling antennas, as with most things, the old saying — a picture speaks a thousand words — is still true.

Construction of the Heli-pole is generally quite good, the only criticisms being the size of the coil end clamps and the nuts and screws in the clamps being unplated mild steel! The Detonator mobile antenna used, is very well constructed, having a black sleeved 350mm long spirally wound coil with a 1.5 metre taper ground stainless whip. Coil fittings are solid brass.

### Conclusion

In conclusion, the Heli-pole is a useful groundplane assembly. Combined with a Detonator, fitted and wall mounted, it has a medium to good performance. Mounted clear of obstructions it should perform even better. Brief tests with four other antennas fitted, indicated consistent performance and tuning. With plated or stainless clamp bolts, the Heli-pole should stand up to the British climate without any trouble. Priced at £12.50, represents good value, (Detonator price also £12.50).

Our thanks to CB Services for providing the samples tested.

**CB**

### REVIEW VERDICT

<b>Performance</b>	XXXX	<b>Installation</b>	XXXX
<b>SWR Adjustment</b>	XXXX	<b>Instructions</b>	XX
<b>Construction</b>	XXX	<b>Value</b>	XXXX

We rate our samples on a scale of one to five. Five stars is excellent, four stars is very good, three stars good to average and one or two stars mean it's not doing so well.

#### The Tests

We have used our standard 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.



# HAM 'N' FROM CB TO

Busy channels, Wallies, HO regulations and DX-ing have all contributed to the growing interest of CBers into the field of Amateur Radio.

Here David Saul G4EKZ introduces you to the world of the Ham! . . .



**T**here's no doubt about it, when it came to legalising CB the Government was less than enthusiastic. Considerable pressure was brought to bear before anything was done, and the CB law that has resulted is seen by many people as being very restrictive. Why is this? Did the Government set out just to spoil everybody's fun, or was there a better reason? One reason is undoubtedly this; the Government knew that for anyone with a deep interest in radio communication, there already existed an alternative.

CB is simply a personal two-way radio service, and its intended range is no more than a few miles. By putting stringent limits on transmitter power, aerial height and ERP, the Government has made sure that CB will not develop into anything bigger. So what is the alter-

native? What about the breaker who wants to play about with more powerful rigs and fancy antennas? What happens, dare I say it, when the novelty of chatting to a breaker a few miles down the road wears off, and the idea of talking to someone in the USA, or even Australia, seems a bit more exciting?

## 'Hamateur' Radio!

The answer to these questions has been around for a long time, long before CB was even a twinkle in some trucker's eye. Amateur Radio or 'Ham Radio' — as non Hams call it — could be what you are looking for.

Radio Amateurs have been in long distance right from the start, it was Amateurs who showed that worldwide radio communication was even possible. What's more, Amateur Radio, particularly in this country, has always had the blessing of the Government. The

# N' EARS HAM RADIO



All photographs of amateur radio equipment were kindly supplied by Lowe Electronics Limited and represent a sample of the equipment available from them.

Amateur law encourages experimentation and inter-continental communications — the regulations are far more flexible than those for CB

There are several million Radio Amateurs around the world, including over 30,000 in the UK. Only a handful of countries ban Amateur Radio, and a listen around the bands reveals a surprising number of Amateur stations from behind the Iron Curtain.

What can Amateurs do that CBers can't, and what should you do if you are interested in finding out more?

For a start, Radio Amateurs in this country have a choice of 19 frequency bands — two of which were added this year by international agreement. These bands range from near the medium-wave broadcast band, through the short-wave bands — where 27 MHz sits — up into the VHF range, on up past 934 CB and into the microwaves —

from DC to light! Amateurs may use various types of modulation; SSB — most popular on the lower frequency bands — CW — morse — FM on VHF, and AM which is now almost extinct. More exotic types of transmission include radio teletype — RTTY — and slow-scan television — SSTV. Transmitter power is limited to 150 W output on most bands, and when it comes to antennas it's the neighbours and local planning authority who will decide what is too big. The field is wide open for experimentation. Amateur satellites are available to any Amateur with suitable equipment, and techniques such as tropo-scatter, meteor-scatter and bouncing signals off the moon, have all been tried and tested by Amateurs. Ready built rigs are the most popular, but anyone who wants to have a go with a soldering iron will find a home-brew transmitter fun to build, and

far more rewarding to operate than a commercial rig.

On the operating side there are awards and contests to aim for, points may be awarded for countries worked or for QSO distances. Some Amateurs enjoy rag-chewing with friends either locally or across the world, others spend hours chasing rare DX stations in the more obscure parts of the world.

## Licensing

The essence of Amateur Radio, as specified in the licence, is the 'self-training in communication by wireless telegraphy'. This could be roughly translated as 'playing about with radio'.

There are two types of Amateur licence in the UK; the class A licence which allows operation on all bands and the use of morse, and the class B which is limited to the bands above 70 MHz. Some Amateurs start off with a class B licence and later pass the morse test necessary for class A. All Amateurs have a callsign which must be used on the air, and identifies the country and type of licence. eg G4EKZ; G means England and 4 a class A licence. The last three letters are unique to that station.

To get a licence it is necessary to pass the Radio Amateur Examination — RAE — and for a class A, a Post office morse test. The RAE is a multiple choice type exam covering basic radio theory and licence conditions. It is held in May and November in many towns, and local colleges often run evening courses. The exam is not intended to put people off, it just ensures that they are genuinely interested in Amateur Radio and are able to operate their rigs legally. To pass the morse test you must be able to send and receive at 12 words per minute. This is not as difficult as some people think, plenty of practice, and listening to slow transmissions on the air will bring you up to standard.

## RSGB

There are Amateur Radio Clubs in most towns and these are all under the auspices of the Radio Society of Great Britain — RSGB. The RSGB offers many services to Amateurs, including a QSL card bureau — this saves on postage of sending cards individually — books and a monthly magazine. More importantly the RSGB represents Amateurs in negotiations with the Home Office and internationally through the International Amateur Radio Union. 'A Guide to Amateur Radio' is a good book for finding out a bit more about the subject. This and other RSGB books can often be found in local libraries. The RSGB will send you more information if you send them an SAE to the address below.

## Follow Up

If you're interested then why not give Amateur Radio a try. After getting your toes wet with CB it could be just the hobby that you're looking for.

Radio Society of Great Britain,  
35 Doughty Street,  
London, WC1N 2AE.  
(Please send large stamped addressed envelope.)

**CB**

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## REPAIR & SERVICING

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If you want us to post to you allow for postage or Securicor. See you soon.



A lot of readers have put pen to paper again this month and here we select the few from the many . . .

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### Light in the Darkness

Dear CB,  
Rainmaker's last article certainly brought some CB problems to light, but his area is Heaven compared to what I and many other breakers have to contend with.

Often travelling second man in a CB equipped truck, I can say that a lot of Scotlands CB operators and, indeed, a lot of English breakers need a lesson in decency. No one needs endless repetitions of slang on the one four or for that matter anywhere else on the 37 conversation channels. In my area people key mikes, play music, swear and even do 'abnormal' things like have sensible conversations — although these are now rare.

Junior Breakers are only partly to blame and perhaps, if adults on CB were to set a better example, the kids would not muck about so much.

CB has been legal for one year and 25 days as I write this letter and a lot of water has passed under the bridge and a lot of breakers have drowned in it, maybe CB will improve with time but at the moment it is a useless waste of money, a total farce. I hope it improves.

James L. Miller  
Fife

### Mayday Nayday

Dear CB,  
Early this morning I tried to get assistance by using Channel 9, I always understood that this was manned 24 hours a day, I could get nothing at all from it, I put out a 'Mayday' call on Channel 14 again-nothing. I even tried to call 'Breaker on the side' that I had a Mayday call but no one would answer. One of the reasons for getting a CB was, so that, in an emergency I would be able to call assistance. In the-end I had to walk to the nearest working call box and dial 999. Had I been able to call Police a lot of time would have been saved — luckily a dog saved the man's life. An earlier call would have

made things so much better, what is the point in having an Emergency Channel when you can't get a reply from it? How many other people have been in danger in such circumstances?

Yours shocked at lack of help.  
Eric M Stanhope  
Melton Mowbray

*Thanks for your letter Eric — we would be interested to know what part the dog played in this rescue.*

### Two's Company...

Dear CB,  
I have read in your magazine, many times, about DX on FM but as yet I have not heard of anyone who has copied the same DX station twice (*Ah the immortal words that make young Joan in the CB post room tremble!*).

On July 11th '82 I copied a Whiskey Delta from Aberdeen, this being my first DX I was thrilled. I received a QSL card confirming the copy. One month later, on the 21st August I copied Golf Delta a member of the same family. It was great and certainly made my weekend. I can only hope that I can copy them for a lucky third time.

Tim Beaumont  
Warwickshire

*We'll keep our fingers crossed for you Cosmo!*

### One for the Road

Dear CB,  
I read with interest Smart Alec's reply to a letter from a person enquiring about the pro's and con's of two antennas on his vehicle. I thought that I would let you know of my own experience with one Half Breed twig.

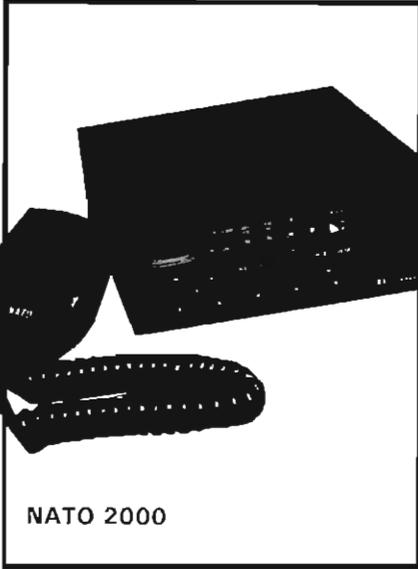
I recently spent a holiday in Italy and had twelve DX copies from back in the UK using a Half Breed mounted centrally on my boot lid. I had only 12 Watts using a NATO 2000 on SSB (not that you would know anything

about that — your words!). One copy I made was a trucker in Wales who was using twin Half Breeds.

I hope that this letter will help to show that one good antenna will do the job and, incidentally, antenna wise, it is a legal twig.

**Streaky Bacon  
Penzance**

*Passed that info on to SA and he passes back his thanks Streaky!*



## Appeal — No Hoax

Dear CB,  
**NATCOLCIBAR** have been investigating the appeal for 'Little Buddy', 'Paul', and 'Kingfisher' etc. in Scotland, which was reported in the press as a hoax. From information we have received from Scotland, it is clear that this was a very genuine appeal, but through the well-meant but over-zealous good nature of Cbers nationwide, it snowballed until it became confusing and suspicious.

The appeal was started in June and was for a genuine 'Eyeball' and 'QSL' card collection for a nine year old, Paul, with terminal cancer. Owing to the over-whelming response from breakers, and ordinary people, Paul's parents became distressed by the unwanted publicity, and naturally 'went underground'. Paul has since died and the appeal was closed on 2nd October.

However, there are still many clubs in the U.K. holding cards, gifts and other correspondence in this respect, and the following advice had been given to us by Scotland:  
**EYEBALL, QSL, and CB CLUB CARDS ONLY** may be sent to the secretary,  
**OILMAN,**  
**Forefront CB Breakers Club,**  
**Fish Cross, ALLOA.**

Where they will be sorted and made up into a collection for Mandy, 'Daddy's Girl' a mentally handicapped

little girl (or select a child locally). This is *NOT* an appeal for more.

**MONEY**, that cannot be returned to the sender, should be donated to Cancer Research, as requested by Paul's parents, or a local children's home.

**GIFTS and TOYS**, it is suggested, could be donated to local Childrens' Homes or Hospitals.

Any other items or correspondence can be disposed of as thought fit by each Club involved.

We hope that this information will help to clear up the confusion, and reassure breakers that they were not being 'taken for a ride'. **NOBODY** has ever asked for money on this appeal, only Eyeball, QSL and Club Cards, but the response is typical of the 'Good Buddies' principle that runs through the CB channels.

If any further information is required, **NATCOLIBAR**, which is a NATIONAL Organisation, can be contacted through the area co-ordinators or the secretary at the address below.  
**Steve Donohue,**  
**Admin Secretary,**  
**NATCOLCIBAR,**  
**430 Westwood, Windmill Hill,**  
**Runcorn WA7 6LL.**

## Meal 'n' Wheel

Dear CB,  
I am writing on behalf of the CB for the Guildford and District Disabled.

We are hoping to hold a Charity Night at the Lakeside Country Club, Frimley, with a meal and a cabaret. Tickets are to be priced at £12.00 a head and no date as yet has been set. Any reader who feels he would like to support this venture or who would like further information please contact The Secretary, J. Sommerville, The Chase, Guildford Park, Guildford, Surrey, or me, at the address below.

**Brian Warner**  
**50 Lime Grove**  
**Bellfields Est.**  
**Guildford.**

## CBA...R U There?

Dear CB,  
Keith Townsend, in the name of the Citizens Band Association, seems to have got the right idea in the article — *November '82* — but it's a pity it's not their own. This article is very similar to a **Natcolcibar** press release dated the 6th July 1982 and the parliamentary working party's press release dated 10th June 1982.

As for the CBA meeting the Home Office, this is perfectly true but the RRD were under the impression that the CBA represented over one million breakers (They now know better). The Home Office are at this moment meeting with the representatives from **Natcolcibar** who do represent thousands of breakers. It's about time the CBA stopped deluding the media,

you, the breakers and themselves and went back to flogging FM rigs, or acting as politicians in party politics.

**Ian M Perry**  
**Chairman SLAB 27**  
**Kent**

*Any reply from the CBA would, of course, be welcome.*

## In the Beginning

Dear CB,  
May I correct the impression you gave in your first CB Mag./CB World issue? CB World was actually started in Dec 1980 by IPC's then publishing director Gordon Henderson. Brian Chalmers-Hunt (The Scribe) only arrived on the scene in June 1981 from Commercial Motor. Please don't underplay the part that IPC played in the legalisation campaign since when national institutions such as IPC, your predecessors Modmags and WH Smiths started distributing CB publications, the Home Office resistance to any form of personal radio service started to crumble.

Isn't it about time the legalisation handle was cranked once again? It's been over a year now and we've still got these funny 1.5 metre twigs and FM only and still no CEPT/FCC channels.

**Richard Town**  
**London**

*Impression corrected and thanks.*

## REACT Reaction!

Dear CB,  
I have recently been appointed County Co-Ordinator for Oxfordshire.

Last winter much valuable work was done by Channel 9 monitors in this area but there are many parts of the county where there is no organised monitoring service. There is in fact only one 'REACT' team in the county. I am anxious that other teams should be operating before this winter sets in.

May I appeal through your magazine for anyone interested in this service to the community, to contact me at the above address, when I will do all I can to assist them in setting up a 'REACT' team in their area.

**Mr W Tully**  
**REACT**  
**8 The Croft**  
**West Hanney**  
**Nr. Wantage**  
**Oxon OX12 0LD**

*Yes Sir — you may — and we wish you well.*

**CB**

**Letters intended for publication should be addressed to: Backchat, Citizens' Band, 145 Charing Cross Road, London WC2H 0EE. Letters not containing a name and address will not be considered for publication.**



**It was Groucho Marx who said 'I don't care to belong to any social organisation which would accept me as a member'. It was Chris Adam-Smith who said 'If there's a free drink going, I'll join.'**

# CLUB NEWS

Two days is a long time. I mean, you could just about fly round the world in two days. You could play sixteen full soccer matches — as long as you ignored half-time. You could even boil 960 eggs — one after another. Best of all, if you wanted to raise some cash for charity, you could talk on the air for 48 hours — like some breakers from Westbury in Wiltshire.

## **Westbury FM Breakers Club**

Back in September we held a 48 hour DX link-up. We did it to raise money for the Bath Cancer Unit — which is close to where we live.

The CB operators manned their transmitters in a caravan — complete with lattice tower and 18 foot dipole — on the White Horse Hill near Westbury, 770 feet above sea level. We talked for a total of 48 hours non-stop, the object being to contact operators in other parts of the country

as far away and as numerous as possible. On completion of a contact the operator was asked if he would like to make a small donation for the charity — and on receipt of a donation a special QSL card was sent back.

The total number of contacts was 1,082, they were as far away as Plymouth, Mid-Wales, London and Scotland.

On Sunday 14th November at the club eyeball at the Labour Club, Mr Chris Norman, chairman of the appeals committee for the Bath Cancer Unit was presented with a cheque for £405 by Margaret Shields, the club chairperson. We now hope to make the link-up an annual even.

**D J Sheilds,  
Westbury FM Breakers Club,  
c/o 42 Studland Park,  
Westbury,  
Wilts BA13 3HL**





The news from Nottinghamshire is that the bad Sheriff is dead — the Castle Town Junior Breakers rule . . .

### Castle Town Junior Breakers Club

The Castle Town Junior Breakers Club was formed for the benefit of all the young breakers between the ages of 5 years to 15 years, in the Newark area. It enabled them to come to the club and register their Handles and also to meet other young breakers that they talk to in safety. The club is also a youth club with an adult and junior committee, the club meets twice a month. They have an eyeball (disco) and also a games evening, normally they meet on a Friday evening between 6.30pm and 10.00pm at St Augustines Hut, Newton Street Newark.

Of course nothing comes free so the young breaker who joins the club has to pay a membership fee of 10p a year and also 25p on the night at the door. All money is channelled back into the club for the young breakers, it enables the Adult and Junior

Committee to buy games and also enables the young breakers to have a Christmas party. Also just recently it enables the committee to buy records and lights for the A.L. Disco, which is owned by the C.T.J.B.C. It was agreed that the Disco be lent out to any other youth clubs for a small donation. Also the Disco is being hired out for parties and dances for a nominal fee. Of course, not all the money was raised on the membership and entrance fees, a lot was raised by sponsored walks and a sponsored pram push from Skegness to Newark.

The club has now been going for five months and in that time we have got a membership of just over one hundred and sixty members. On the first night we had a total of sixty members, and of course the number just grew to the present number. Every meeting the club has there are always new members starting with us. After about two months of existence the two committees decided to have competitions with the winner receiving his or her own cup for the particular competition.

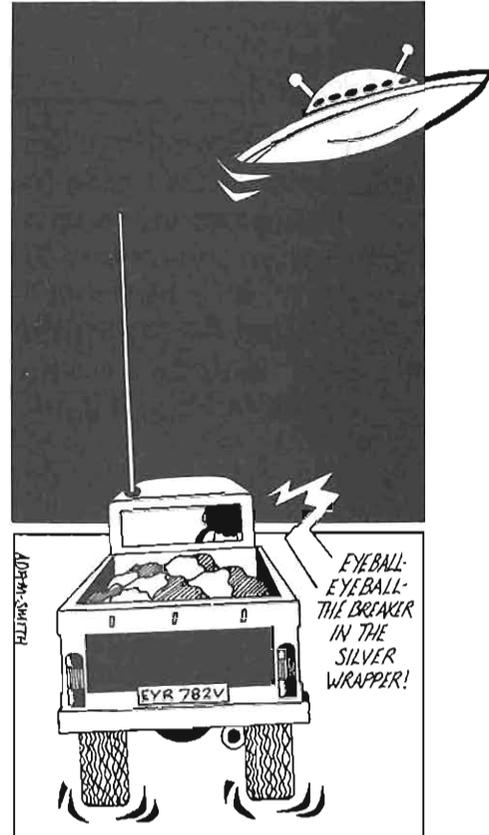
For the first five months of this club the committee has come to the conclusion that it is a great success, and also it will become a greater success in the months to come. It has not all been smooth riding, but then what ever is? Next year we hope to do more for charity, as we think this will give us a good name in the local community. We will write to your magazine and let you know about anything that we think is important for the club.

The Secretary,  
**Castle Town Junior Breakers Club,**  
**1, Manthorpe Way,**  
**Balderton,**  
**Newark**  
**Notts.**

### Bradford Bound

Finally there's an invitation from West Yorkshire, Bradford to be precise. The Kilo Bravo Breakers have thrown down the gauntlet to any club who will take them on at anything. Or perhaps just an exchange visit. The man to contact if you fancy a trip to Yorkshire is Mr L Carter, 89 Buttershaw Drive, Buttershaw, Bradford, BD6 3RZ, West Yorkshire.

**CB**



# CITIZENS' BAND CLUB DIRECTORY REGISTRATION FORM



CLUB NAME . . . . . ( )  
 CHAIRMAN . . . . . ( )  
 Secretary . . . . . ( )  
 PR Contact . . . . . ( )  
 Contact Address . . . . . ( )  
 . . . . .  
 . . . . . (Tel No. . . . . )  
 MEETING PLACE, DAY AND TIME . . . . . ( )  
 . . . . .  
 No. of members . . . . .  
 Position in club . . . . .  
 Fee/sub etc . . . . . (Committee members only please)  
 Please mark (\*) information that may be published.

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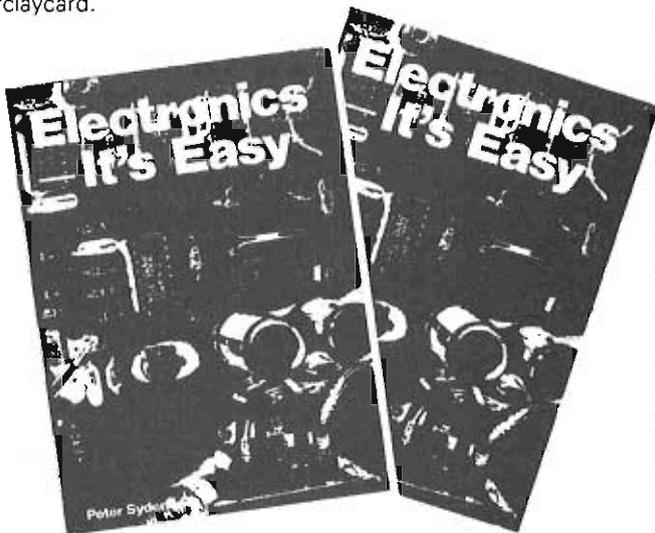
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As promised last month we are pleased to announce that a service for obtaining certain back numbers is now available. Some of the issues listed are in short supply so it will be a matter of first come — first served.

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 FEBRUARY 82  
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 APRIL 81/82  
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 JULY 81/82  
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 SEPTEMBER 82  
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 NOVEMBER 80/81  
 DECEMBER 81



CITIZENS' BAND: 513, London Road,  
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ADDRESS .....

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EXACTLY LIKE A CREDIT CARD. Same size, shape & material, INCLUDING FREE DESIGN, PROOF SETUP  
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P202

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**A MUST** for genuine C.B.'ers. Quality rubber stamps for your handle, QSL cards, club emblems. Details (SAE please). From Cuddly Bear, 2 Arthog Road, Hale, Cheshire WA15 0NA.

**J & R**  
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We know your problems — because we have had them too. For a confidential and friendly service write to: J & R, Victoria House, 26 Queen Victoria Street, Reading, Berks.

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**COLT BLACKSHADOW 485.** 8 U AM SSB £59. Superstar 360 F.M. £169. Tristar 777 £135. 40 UK Enterprise £25.00. Post Free. Guilford CB. (0483) 574434. Access, Barclaycard, C.O.D.

**IC's  
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S.A.E. for prices of component  
**Roger D**  
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Nottingham, NG3 5GT.

**DUE TO POPULAR DEMAND** the Anglo American DX manual is now available to all CB'ers. send £1.50 inc P&P to Anglo American, Coronation House, Tolcarne Road, Newquay, Cornwall TR7 2NQ.

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**FOR SALE:** Shogun CB. Used once. Unwanted gift, £75 ono. Tel: 0727 575777.

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BEST C.B. SHOP  
GUIDE!**

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SHOP WITH  
CITIZENS' BAND!**

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SHEILA ON  
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Retail and wholesale

## LONDON

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Please include my business details in the next available issue of Citizens' Band:

Business Name: .....

Address: .....

Tel. No.: .....

Open Hrs: .....

Contact (Office Use Only): .....

Post To: Breaker Bases, Citizens Band, 145 Charing Cross Rd, London WC2H 0EE



**TECTEL**

## C.B. ACCESSORIES

Broad Band Filter.....	£9.50
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Package & postage £1.50 payable to Tectel Wrekin DC  
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Now the **ONLY** combined mobile **AND** hand held CB

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- No installation
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- 40 Channel FM
- Includes battery pack and carrying case

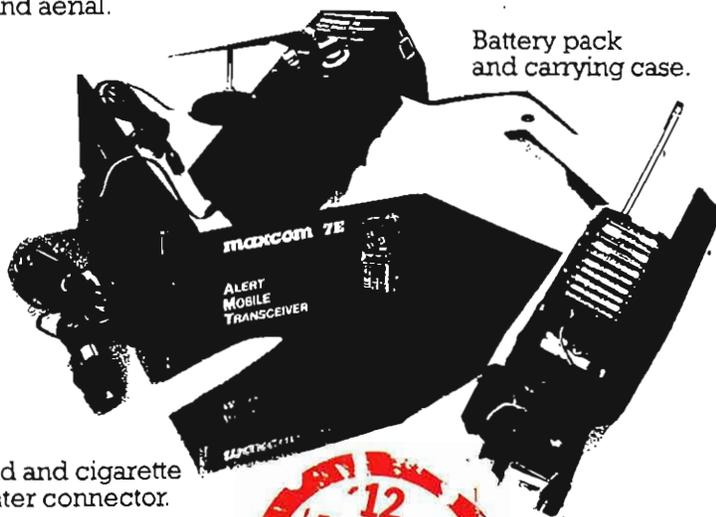
**The CB for all the family  
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From the manufacturer of the Midland range, Cobra, Colt and Commtron comes the newest innovation in CB – a combined mobile and hand held CB.

A CB unit that requires no installation and no SWR tuning. Just plug into your cigarette lighter, put the magnetic mount and aerial on the roof and you're on the air. For portable use just put the batteries in the battery pack, clip the strap to the carrying case, screw on the aerial and you have a full 4 W power, hand held CB!  
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# In one year our **K40™** antenna has become the largest selling CB antenna in the world!

**1. It's more expensive ...**

**£32.50** suggested retail  
vat included

**And when you pay more, you expect more!**

**MORE PERFORMANCE:**

The K40 is guaranteed to transmit further or receive clearer than any antenna it replaces. We know it will. We've tested it with 771 CB'ers just like you for one year.

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You can fit your K40 to any mounting surface. It will fit any vehicle you'll ever own! That includes choppers, dune buggies, gutters, mirror mounts, luggage racks, trunks, hatchbacks, through roofs, semis, pick ups and RV's.

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It's not imported. It's not made in Taiwan, Korea or Japan. It's American made in an American town. It's made with better materials that cost more and by professional people we pay more. And we designed it in the U.S.A.

\*Including optional mounts at extra cost.

**2. It's made better...**



**3. It's proven best!**

**...Here's what the leading U.S.A. CB publications said.**

**CB TIMES:** "... it's not often that a product bursts onto the market scene, dominates and improves CB'ing for everyone. American Antenna and the K40 are doing it—repeated tests showed the K40 could out-perform the major competitive brands."

**RADIO ELECTRONICS:** "The results of our tests showed that, in three different positions of the monitoring receiver, the model K40 equaled or out-performed the competitive antenna. Apparently, American Antenna's advertising is not merely Madison Avenue showmanship."

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"No ifs, ands, or buts! The K40 Antenna from American Antenna would have to be just about the best antenna around."

**CB MAGAZINE:** "Introduced in October, 1977, the K40 quickly became the top seller and in mid 1978, became the number one selling antenna in the nation."

**...Here's what CB'ers all across the U.S.A. said.**

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PERFECT FOR FM TOO!!



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Our K40 Dealers will be happy to sell you any of the older style and less expensive antennas that are great bargains for any beginning CB'er.

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**K40**  
**POWER!**

**... Sold exclusively by 5000 K40 dealers throughout the U.S., Canada & U.K.**