

CB 82

RIGS
offer inside

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Home Office minister - Exclusive interview
How to be a breaker - Special beginner's guide



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WHAT DO YOU THINK?

Right then. In this magazine you'll find around a hundred pages packed with information written by us, especially for you, the reader.

Nowhere (apart from the questions and answers pages) do we provide you with the opportunity to tell us what you think about the CB scene. I mean, what do you think about FM compared with AM? About this magazine; about CB magazines in general? And so on.

We've been hearing about how the CB bubble has burst. Did it go bang without anybody hearing it? Or did it burst at all? CB shopkeepers and rig manufacturers are talking about keeping stocks low, and "treading carefully" because the CB market is dying on its dipoles.

But what do you — the readers — think about it all? Nobody has ever bothered to ask you, the breaker. Perhaps they believe the average CBer can't think. CB82

believes they can, and we want to prove it. Let us know your thoughts about CB.

As happened in the United States, the "new" CB hobby boomed, and then fell suddenly, as the craze element drifted away and serious breakers began to realise how useful and convenient CB could be.

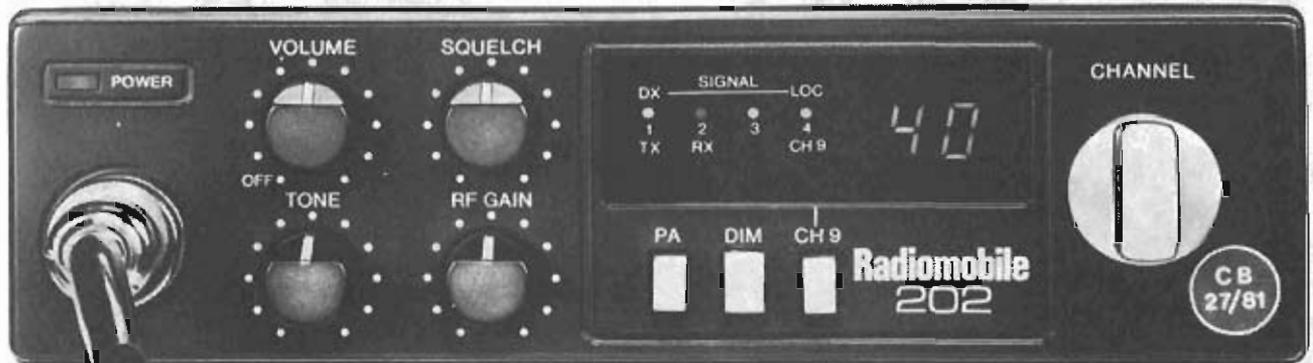
It is probable that CB in Britain is going through that phase at the moment. I believe that the market is going through a quick-change — a sort of hiccup. But the expected sales to responsible (wrong word that — we really meant to say mature) breakers had not yet happened.

Generally though, we believe that CB has a great future. It's just that the youngsters have been over-exposed to it, and the oldsters haven't been exposed enough to the advantages of this exciting mode of communication.

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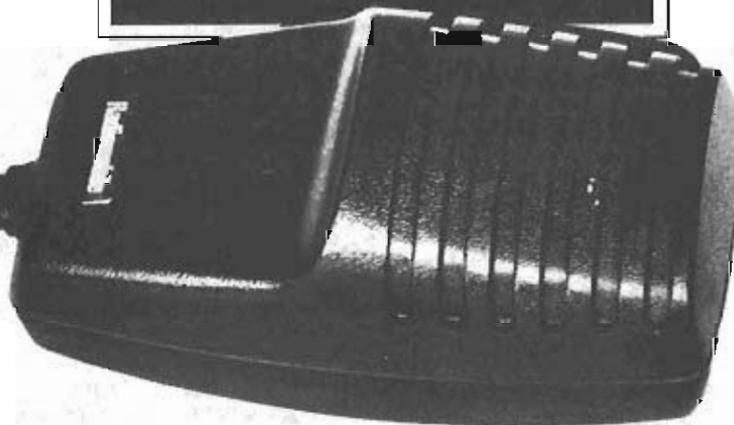
They'll probably mention the squelch tone, the RF gain and LED channel read out. And they may go on about the 4 digit LED S/RP power meter and the transmit, receive and power-on indicators all with dimmer control.

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This is the future of European CB. A compatible system for all.

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They are the things that can give you a good reputation, or otherwise. Don't let people think you're a fink. Design yourself a good QSL card. Lots of examples, so you can decide on a card.

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The ultimate in CB? Erect a dish in your back garden and talk to people in distant lands. Watch them too, on your CB telly. Peter Dodson wrote the words this time.

30 YOU DON'T LIKE HAM?

If you thought amateur radio was all diagrams and static, think again. John Nelson says that it can be interesting, worthwhile, useful, and probably most of all, good fun.

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Installing your own citizens' band radio needn't be difficult, as long as you follow a few simple rules. And if you don't follow these ideas and tips for easy fitting, and blow up your rig, then you must be really simple!

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58 LONG DISTANCE INFORMATION

Give me Memphis, Tennessee... No? Oh well. Long distance CB talk isn't as difficult as you might imagine. David Lazell tells you why. It's a thing for the future, that's for sure.

64 HISTORY OF CB

Nobody has actually documented the history of CB in this country properly, so we thought we'd have a go. Peter Dodson went out and found dates, facts and figures, put them all together and came up with this diary of events. Interesting reading, it is.

67 NEW BREAKERS!

Our 20-page special section for new breakers. If you are starting in CB, then this is a must for you. It's got everything — how to use a rig, what these specifications mean, the lingo, all the codes, and a little advice on how not to get into trouble using your rig...

72 MIKE FRIGHT

Do you suffer from microphone fright? If you do, then you'll know what we mean. If you don't good luck to you. 10-ar 4-um Good B-buddy.

74 SITUATION COMEDY

Peter Dodson seems to get himself into trouble every time he uses his rig. Take our advice, and don't follow his.

78 CEE BEE JEEBIES

CB-speak. We know that CB lingo isn't used so much nowadays, but once you've got it off pat (Pat?) you can really confuse the opposition. Know what we mean?

82 SLICK ANSWERS

Have you ever said to yourself: I wish I'd said that! Well, here are a few slick answers to those comments you're bound to get over the airwaves. Like this: My son wants a cowboy outfit for Christmas. Answer: Give him BL. Heh heh.

84 THE CODES

10 codes, Q codes, 13 codes, pronunciation, Morse code. Oh it's all here.

90 DO YOU WANT TO BE A MONITOR?

The THAMES monitoring service has been in existence for a long time now and is one of the most successful emergency rescue monitoring networks around. Here Seen Barry-Weske takes us on a guided tour round the organisation.

94 CLUBS

CB clubs thrive in nearly every city and town in Britain. Listed here are some of them, plus the address to which to write (or phone) if you want to get in touch with one of them.

Q & A

YOU WRITE TO
THE EDITOR

I want to use a mobile antenna on a base station. What is the best way of mounting it inside or outside the house?

MARTIAN MUMBLER, CHELTENHAM.

The important thing to remember about mobile antennae is that they must have a ground plane — a large metal mass, like a motor car! It is possible, for instance to clamp a gutter mount to a Mini boot lid and put it in the loft, or to attach it to a gas fire flue. Alternatively, a garage up-and-under door in the horizontal position can serve as an excellent ground plane. Always SWR a new antenna system before using.

As a breaker I am a bit puzzled about how to use my squelch control. What is the correct method?

THE ADMIRAL, WYMANS BROOK.

There are two schools of thought about squelch control use. Hard-line AM breakers maintain that the control should be left "wide-open" to pick up the weak signals. Manufacturers of FM equipment, on the other hand, maintain that the control should be set just inside the "quiet zone" and that any signals picked up outside it aren't worth having anyway. Personally, I set the squelch knob just inside the "noisy bit", then bring it back when I have made my contact.

I find that the meanings of the ten code vary from one magazine to another. Isn't it about time you all got your act together and agreed on a common code?

F. JOHNSON, BOLTON.

Obviously you have been reading the wrong magazine! Seriously, you must remember that CB in Britain is still in its infancy and it will take a little time to settle down. In any case, when in doubt, what's wrong with good plain English? If you are going to use all the obscure ten codes, you're only going to confuse all those breakers who haven't learned them yet.

On my home base, the co-ax cable to my twig is not long enough to reach from the attic to my bedroom where I keep my rig. Can I extend it?

CRAZY PAVING, WOLVERHAMPTON.

The length of co-ax cable is important — it is all part of the "balance" between antenna system and transmitter. Usually, the cable as supplied is correct although a yard or so of extension will not upset the "matching". You could use R8 co-ax, which is thinner.

What is the best way of adjusting the length of a mobile antenna when SWR'ing?

BIG HARRY, SOUTHAMPTON.

Methods vary according to the type of twig, or some it is just a matter of cutting a chunk off the tip. Having said that, on many base-loaded antennae, the metal section fits into a channel, and is kept in place with an Allen nut. Most aerials come about an inch and a half too long, and require "pruning" back. This should be done taking only a quarter of an inch off at a time, leaving the depth of the channel for final adjustment. Don't be tempted to chop off an inch at a time, as too much pruning could give you a worse SWR than you had to start with.

I am an FM breaker burning 12 candles. Grown-ups get all cross with me and my friends when we use our CBs. We are entitled to use CB like they are, so why can't they treat us like other adult breakers?

BEANO, FULHAM.

Of course you are just as entitled to use CB as adults. But having said that, I might be permitted to make a few observations and perhaps the odd constructive criticism. Firstly, junior breakers tend to call up specific handles rather than go "ten four a copy". They will repeat their call over and over again with little time between calls for others to use the contact channel. What is more, they will go on calling when it is obvious that the breaker they are looking for is not on channel. Yes you have every right to the CB channels — but so have we.

My family has a farm in Gloucestershire and we are thinking of installing a CB rig in the house with a hand-held set for use on the tractor or in the fields. Is this a viable proposition?

JOHN HENDERSON, STROUD.

It most certainly is. The base rig can be run on a battery or mains power pack which presents no problems and a hand-held rig will last a day if used sparingly on the transmit side. Even if left on to receive, the mobile rig will draw no more current than a transistor radio. I would, however, recommend buying one of the re-chargeable type mobile sets — they may cost a little more, but you will save the excess in no time by not having to buy batteries all the time.

I want to get my converted AM rig authorised. How do I go about it?

BIG DADDY, CHELMSFORD.

The law is a bit hazy about this, as not a lot of breakers are converting their rigs. However, provided that you are satisfied that the conversion has been carried out according to government specifications, just go to the Post Office and get a licence. You should then write to your local Customs and Excise office explaining the situation and I believe that on payment of £5, you will then be exonerated from any charge of illegal importation of CB equipment. If the firm who converted your rig is bona fide, they should put the official stamp on it and charge you the £5 fee.

I have decided to change my car, but I am worried about sealing up the hole in the roof where my CB twig was mounted. What is the best way of doing this?

DYNAMIO, WORKSOP.

Making a professional finish to a "body job" on a car is a difficult task, despite what the touch-up paint people say — and doing it on a large flat surface like a roof is even more difficult. When intending buyers see repairs of that nature on the roof, they tend to wonder what else is wrong! Far better to do a neat job with a blanking-off grommet and explain why it is there. With a bit of luck you'll get a breaker for a purchaser and he'll want to put his own antenna on the roof. Car radio aerials work best when fitted to the roof anyway.

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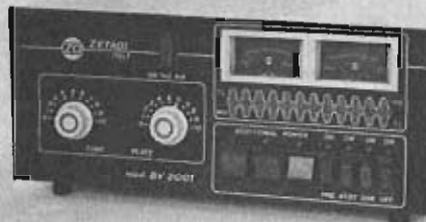
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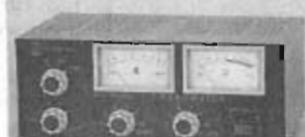
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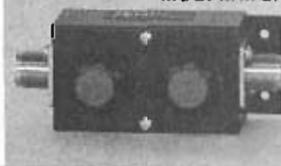
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I have been given a CB rig, but I am worried stiff about the jargon that is used on channel. I just can't get used to using it. Is it all that important?

NEW BREAKER. ROTHERHAM.

Looks like you've already started! Don't worry. Father Christmas filled a few stockings with CB rigs last Christmas Even and you won't be on your own. Once you have learned how to contact other breakers and changed to a traffic channel, it is nearly all plain English. Everybody had to start at the bottom, and you will find that most breakers are very helpful to new recruits. In no time at all you'll be into the lingo like everybody else.

I have decided that breaking is much more comfortable when practiced from the comfort of the sitting room. What alternatives have I for power supply to my rig?

CONCRETE MIXER. PRESTON.

Provided that you aren't doing anything fancy with your rig like using a linear amplifier which draws a high current, a standard 12-volt battery as used in a car will last for a week with normal use. A standard rig draws 1½ to 2 amps on transmit and an £8 domestic battery charger will put back what you used in a day in 24 hours. Certainly you would get your money back in no time rather than carry the battery down to the local garage for charging at 50p a go! Alternatively, you can buy a rig with a built-in power pack and just plug it into the mains, or you can buy a power pack which plugs into the mains and to which your rig would be attached. Don't try any clever tricks like using Scelextric transformer or feeding the rig direct from a 12-volt charger.

I have been considering buying a power mike, but am worried about the legality of such a component. Can you help me please?

PRINCE OF WALES. CARDIFF.

No problem, power mikes are perfectly legal. Using one of these does not, in fact, increase the power output from the antenna, but, as it is more sensitive than the normal microphone, it utilises all the audio input. Very effectively, too. My regards to Dai!

I am for ever getting complaints from the neighbours about interference from my CB on their television sets. Aren't I as much entitled to use my rig as they are their telly?

BIG-BORE. CARLISLE.

Not if it interferes with someone else's enjoyment. I suspect that your rig is AM and there is every possibility that your voice is not only breaking through on their TV but is also recognisable and therefore recordable. All your neighbours have to do is offer a recording of your voice as evidence to the GPO Interference Officer and you could be in big trouble.

I am not allowed to have an antenna more than 23 feet from the ground, but my mate lives in a house up on the big hill near me (which must be 500 feet up). Why doesn't he have to attenuate his rig?

ANNOYED. HULL.

Just his luck, isn't it? The law says 23 feet above ground level and if you lived on the top of a mountain you'd be laughing. The alternative is to move!

As I have no garage, and have to leave my car in the street all night, what is the best way of securing my CB gear?

WORRIED. BARNET.

Make no mistake, there is no guarantee of security of equipment, no matter what measures you take. The only answer is to take your twig off (most gutter and lip-mounts have this facility) and, having mounted your rig on a slide mount, take it out of the vehicle altogether. There are lockable slide mounts and any number of sophisticated electronic alarm systems, but they are all surmountable by a skilled thief. In any case, by the time you've got up to see what set the alarm off, he's long gone!

Why is it illegal to import CB rigs, but it is possible to buy 49MHz walkie-talkies legally?

SUNSHINE KID. RAMSGATE.

It is not generally known, but the import ban on transmitting equipment was made against 27MHz gear only. It is legal to import 49MHz sets, and it is legal to sell them, but it is against the law to use them. It may well say on the sets "no licence required", and no licence is required — in the United States — which is where the sets are "intended" for use.

How do GPO detectors locate the source of a signal? Or is it all very secret?

MARULA. GLASGOW.

I have no doubt that the GPO has many methods of detecting not only the location of breakers, but also the mode (AM or FM) of their rigs, but one method is "triangulation". This is a well-known radio technique of working in pairs. Both detectors will take a bearing on the wanted station, put their bearings on a map from their known locations, and the two lines on the map will cross at the location of the wanted transmitter.

I want a uni-directional antenna for my base station as I only want to use my rig for radio contact in one azimuth. I want it to be legal, and either use my mobile antenna or make one up myself.

SNOWPLOUGH. READING.

Theoretically, a pure dipole, if placed in a horizontal plane, will become bi-directional — which is half way to what you want. Unfortunately that is about as much as you can get within the legal confines of government specification, as the addition of a parasitic element which would make it uni-directional is against the law.

I have been offered a sideband rig by a friend of mine. At the moment I have a straight 40-channel set, so what advantages will his rig give me?

SWEET SUE. WORTHING.

There are many advantages, but did your friend tell you about the disadvantages? Sideband will give you more selectivity; it will give you an increase of up to 12 watts in power and your range will be correspondingly increased.

On the other hand, it is illegal, and if used in a car will take a lot more out of your battery. As a legal breaker you must be only too well aware of what sidebanders do to those on straight FM sets and you will only be adding to their problems.

I have recently acquired a rig that has everything — AM, FM and sideband. Shouldn't all AM breakers say "knickers" to the authorities? I think this is the answer to the problem. Perhaps this will help us get AM as a legal channel.

HOTROD. SOUTHPORT.

It's like somebody saying to the TV detection people "yes I've got a telly, but we don't use it". They might be Civil Servants, but they weren't born yesterday. There are better ways, in our opinion, to campaign for AM. If you do flaunt the law, you are on your own if you're stopped.

I have heard of "upper band" units that can be switched to rigs. I have been told that they are legal, but I would like to make sure.

STAN (MOODY). DERBY.

Without seeing the units in question I couldn't be sure, but the quick answer is probably not. The upper-band piggy-back jobs I have seen are definitely not legal, as they merely change the frequency band of AM rigs without changing the mode from AM to FM. This is merely a ruse which puts the rig in the legal band to try and "hide" among legal breakers. This, incidentally, doesn't fool anybody — least of all GPO detector-men — and interferes with FM breakers. Even worse, are the "high band" units which take the transmitted wave into 28MHz which is the Amateur band.

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I am thoroughly fed up with CB. The bands are so crowded you can't get in, there are kids jamming up the channels, and even when I get someone who can use big words, they have no knowledge of radio to base a decent conversation on. I think the whole thing has got out of proportion.

ALMOST EX-BREAKER. STOKE-ON-TRENT.

I would have thought someone of your technical qualifications and intellect would have moved on to the higher realms of radio communications — like amateur radio. Read John Nelson's article elsewhere in this issue.

Why is it that out of the 60-odd countries who have got CB, only a handful of them are FM, whilst all the rest are AM? If, as the government say, AM causes so much interference, how do they manage in other countries?

TRIGGER. NORTHAMPTON.

In the first place, you have to consider the countries you are talking about. In densely populated countries, one CB rig could interfere with hundreds of other HF users, whereas in Australia it wouldn't interfere with any. Apart from that, we cannot answer for the attitudes towards CB of other heads of state, although we suspect that many just gave up in the face of insurmountable odds! Although the choice of FM came as a great disappointment to many, we do feel that the government took the quickest means of getting breakers on the air and they are committed to reconsideration in the not too far distant future. Time will tell.

Why is it that market traders can sell CB rigs so much cheaper than they are in the shops? There is a guy near me who sells them for £35 and the one he had worked was going all right.

JOHN ARKWRIGHT. BEDFORD.

If someone is selling any item at a vastly reduced price, there has got to be a catch — either it isn't what it claims to be, or it fell off the back of a lorry! In the case of rigs, they must comply with the government specification, particularly with regard to operational frequency and FM modulation; it must certainly carry the official stamp of approval. In the event of electrical or mechanical failure of a rig, in the absence of a guarantee (or even someone to complain to) you have no come back.

I want to make my own antennae for mobile and base operation. They look so simple that it must be possible to make them for a lot less than they cost to buy.

ROAD-RUNNER. GLASGOW.

I can assure you that they are not as simple as they look, and unless you know what you are doing, will be about as much use as a piece of wet string. Antennae have to be exactly the correct length to suit the frequency for which they are intended, or an exact fraction of that length, that alone may not represent such a big problem, but the gauge of the metal components, including the wire, must also be correct to suit the impedance or radiated resistance of the equipment it is used with. By all means try, and the best of luck, but you might find you have to do an awful lot of experimenting before you get better results than from a bought twig.

I would like to insure my rig. A lot of my mates have had their's stolen and I feel that it is worth a few quid by way of protection.

FIREFLY. PRESTON.

It is all very well using locking slide-mounts and all that gear, but it's like anything else, if a thief is intent on ripping-off your rig (or for that matter, your wheels) he'll do it.

There are numerous firms offering rig insurance, but one of the best is David Allen who can be found at Carifon Chambers, 24 Queen Street, Huddersfield, HD1 2SP or telephone (0484) 47027. A breaker himself, David can offer cover for rigs of any kind. To quote his terms "the rate per cent on premiums are declared on rig value at 10 per cent plus confiscation risks, £7 mobile, £5 base station" — which just about sums it all up. Exclusions to the policy include open top cars (which includes canvas or similar material covers), unlocked vehicles, and the first £5 of any claim, and claims resulting from damage, storm or tempest. All these, we think are reasonable.

Another organisation that is concerned with the same problem, but tackling it from a different angle, is the Central Bureau of Registration with a ten-twenty at 31 Kingsway, Stoke, Coventry, phone number (0203) 459655. Boss man is a Mr T. Beard (or Flying Dutchman to his breaker pals) whose outfit aims to cut down rig thefts by the registration of serial numbers and their subsequent recovery by a national network together with the co-operation of the police. Furthermore, the organisation hopes to recover unclaimed rigs which have been held by the police, and work closely with the GPO to reduce the incidence of TV interference through the CB clubs and associations. Membership fee is £1.50 which entitles the member to a badge complete with membership number and a membership card on which will be the rig number, handle and photograph. This, it is suggested, would be of considerable assistance if stopped by the police and the ownership of the rig that happens to be in the boot is of questionable ownership!

As CB is now legal, I have decided to take it up as a hobby. Having looked through a lot of CB mags, I am confused as to how to go about it.

BREAKER-T-O-BE. LUTON.

So often, new breakers just go to their nearest CB suppliers with a fistful of money and let themselves get talked into buying everything the salesman offers. It may appear to be putting the cart before the horse, but my advice is to join a CB club first. Then, after talking to as many breakers as possible and using a bit of commonsense, you can decide what equipment is necessary. Having decided how much money you are prepared to spend on your new found hobby, go to a reputable dealer, buy branched equipment with an adequate guarantee and confine your purchases to those that are officially approved. Many items of CB equipment on sale are still illegal, and use of them will continue to be liable to confiscation, not to mention the prosecution that can involve you in a lot of money. CB can be a lot of fun, even within the legal limits, so stay within the law and the best of luck.



A photograph of a woman from the waist down, wearing a bright yellow, form-fitting, ribbed dress. She is holding a black CB radio in her right hand, which has red nail polish. A coiled black cord is visible on her left arm. The background is dark and out of focus. The entire image is framed by a thin red border.

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THE CB BUBBLE. Peter Dodson looks at reports that CB is on the wane — or is it?

IF you are one of those gullible people who takes everything that is printed in the national press as gospel, they would have you believe that citizens' band radio is dead, that CB has gone the way of all other crazes and has been buried in the sands of time along with the skateboard, yo-yo and the hula-hoop.

It may be true that Christmas, that silly season when folk spend money they haven't got on things they don't want for people they don't even like, has passed. And with it the extra sales that apply to all commodities. On the other hand the British public, having spent all of its December money — and probably most of January's as well — on the excesses of the festive season, don't do a lot of shopping for a couple of months, anyway.

CB rigs, unlike groceries, do not have to be replaced every week and it can be appreciated that, having satisfied the immediate demand for a new product, subsequent sales must be of lower volume.

People buy CB rigs for a variety of reasons. There are those who, like mountaineers, must have one just because it's there, whilst others feel that if CB is the in thing, then they have got to be into the current scene. There are impulse buyers, those who go for the soft sell, the hard sell — not to mention the congenital idiot! And anything as new as citizens' band radio has got to attract all of these. Their interest may well be shallow or even capricious and no way can the basic value of any commodity be judged by their unreliable custom. The thinking breaker on the other hand, is not so impetuous; he will consider, evaluate and shop around before he buys, having first considered why he wants a rig, what he wants it for and indeed, if he really wants one at all.

When CB was legalised in November of 1981, the sheer novelty of using radio transmitting equipment captured the imagination of everyone remotely interested in the subject. But after a couple of weeks of "one four for a copy", followed by awkward silences during which there was a frantic searching for something to say, the general consensus of opinion was that there had to be more to it than that.

This view, however, was not shared by the more junior members of the breaking fraternity who evaluated their skill, not by the distance they could span with their rigs, but by the number of contacts per minute they could achieve. And as children must represent one of the biggest groups to benefit from the generosity of Santa, there were a lot of them doing it! And it was this mess appearance of juveniles with their repetitious and frequent pleas for radio contact that disillusioned many adult breakers.

The arctic conditions that covered the country in January provided an ideal opportunity to prove the true worth of citizens' band radio. REACT — an organisation dedicated to the monitoring of channel nine and the onward transmission to the emergency

services of distress calls — formed groups all over the nation. Literally thousands of motorists benefited from the advice relayed through monitoring controls with regard to road and traffic conditions and praise for the service that was provided even emanated (albeit grudgingly) from many police forces throughout the land. Their main criticism, it must be said, was of the radio interference caused by AM breakers to their communications being made in support of CB distress reports.

It must also be admitted that for some once the initial excitement of radio contact had subsided, there was only frustration. The government's limitations of mode, power and antenna were such that the average five-mile radius of contact was just not enough.

This was particularly true of ex-AM breakers who began to doubt the wisdom of choosing to comply with a law which had deprived them of a mode of communication that appeared to be more restricting. And the strange thing is that, although there is no technical reason why FM cannot be as far reaching as AM, it doesn't appear to work that way.

Inevitably there have been those whose disillusionment had led to a complete abandonment of CB. On the other hand, it has been reported that many breakers have traded in their FM sets against the AM variety — and a return to illegality. But for the bulk of the breaking brigade, they have accepted CB for what it was originally intended — as a personal, short-range communications system. The by-products may include access to information relating to driving conditions in the immediate area, or for emergency and assistance reasons, but its main aim is to provide in-car entertainment.

If anyone was worried about the future of CB, then it would be the manufacturers. But even allowing for the natural optimism of those who make a living out of such things, the proof of their confidence is there to be seen. Both Binetone and Fidelity, major suppliers of CB equipment, are still having to air freight rigs from Japan, such is the continuing demand. Binetone's Marketing Director is of the opinion that his basic misconception about the "breaking of the CB bubble" put about in the press has resulted from a tactical manoeuvre on the part of opportunists who have got their fingers burned. They did not do their homework properly with regard to suppliers and retailers, provided inferior equipment with a high return rate and their original intention had been a quick "in-and-out-job for a fast buck".

As with most consumer products, there are seasonal troughs in sales and this applies equally to in-car equipment. Come March, when the population of Britain is again thinking in terms of the open road, caravans, boat cruises and all the joys of summer, then the sales of associated products will be on the increase again. Anyway, who wants to go out drilling holes in motor cars and SWR'ing twigs when the temperature is 15 degrees below?

Although the government has issued figures relating to the sale of only 100,408 CB licences by the end of December, it must be remembered that each of these can cover the use of up to three rigs. Indeed, Binetone frequently sell their units as a matched pair. Add to this the number of licences sold since the end of the year, and the number of breakers who, either by accident or design, have forgotten to buy one, and the number of rigs that have been bought, could well approach half a million!

And if you consider the popularity of CB as a whole, having due consideration for those on AM, that is another story!

AM CB: Is anybody still fighting for it?

DESPITE legalisation restricting the use of CB to the upper end of the 27MHz band, an FM mode and a certain choice of antennae, AM CB has appeared to flourish. Estimates of their number vary from being on a par with legal breakers, to a very questionable eight million.

Occupying the lower half of the band, they are now spreading upwards with the help of "high-band" adapters to impinge on FM territory, and downwards to the top half of 26MHz. They continue to operate their illegal equipment in the hope that the government will reverse its decision to regard FM as the legal mode for the United Kingdom.

Their faith is sustained partly by what some people call blind optimism, and by the fact that such a step is definitely not envisaged for some considerable time. The Home Office has not totally ruled out the possibility that AM may be allowed in the future.

The reason for enforcing FM on a country which, prior to November 1981 was predominantly (but unofficially) AM, was to eradicate radio interference to the emergency services. To this, AM enthusiasts have no effective answer. There are, however, several proposals put forward by persons claiming to represent the interests of AM breakers. The fact that such breakers are illegal makes confirmation of their representation extremely difficult as, indeed, is verification of the total number of AM breakers.

Nevertheless, an official spokesman for AM breakers did put to CB82 a number of previously-agreed proposals, the strongest of which of course, is their demand for AM CB. Their answer to the thorny question of television interference is to have the licence fee increased to £15, a fiver of which would go to the manufacturers of television sets (not fitted with filters as standard) to modify their products. This, incidentally, would not apply to Japanese equipment which is already supplied with such filters.

On the subject of licence fees, AM breakers maintain that the government stand to make a lot more money by the legalisation of AM and allow existing illegal operators to pay their way. "We should have had AM by default. They fobbed us off by saying that we would be legal in November and yet under the EEC agreement we could have had AM." According to their spokesman, AM breakers would want the licencing system to be on a one set — one licence principle, instead of the present arrangement whereby one ticket covers up to three FM sets.

Not unnaturally, AM breakers are jealous of the fact that radio amateurs are not bound by the same strict regulations as the CB enthusiasts. Hams have a variety of alternative frequencies available to them and the restrictions on power and antennae are not nearly so stringent; AM breakers would also like a call sign allocation, similar to that used by amateurs. But perhaps their biggest and for that matter the most valid complaint against FM is that although it may be legal in Britain, the moment a legal breaker takes his set across the English Channel to the continent, he immediately becomes illegal by the laws over there.

AM breakers, it would appear, do not want just a straight swop for FM — they want to retain both modes. "It is understandable that the mass influx of children in their early teens on channel 9 has upset a lot of people — particularly the AM brigade who tend to take their breaking very seriously, but as no restrictions have been placed in terms of age, there isn't much that can be done about it. The AM fraternity would like to see an FM facility reserved for the younger generation."

Having put a lot of licence money into the government's coffers (either as FM or hopefully as legal AM breakers) they would want to know how this new-found money would be spent. Would it, in fact, be a self-defeating exercise in that the licence fees that had been collected merely paid the salaries of Post Office officials who took the cash over the counter or the civil servants who administer the scheme? "Once white-collared workers became involved in CB, it could be used for political purposes. Are breakers, in fact, just paying for the monitoring and detection equipment to police their own activities? It has also been rumoured that German equipment is being introduced to this country that can locate breakers within seconds."

What AM breakers would like to see, we understand, is more in the way of availability of services, in return for their licence fee — but only when they start paying them. There should be an official embargo on the use of channel nine for all but authentic emergencies, and full-time monitoring of CB distress channels. "There was the recent case of someone in real trouble in the Adriatic. The coast guard service was alerted, but they said that they didn't have the equipment to cover the frequency," said the spokesman.

What are the chances of success?

So how does the AM brigade intend to campaign in support of their demands? "The days of the demonstrations are over. We had thousands of people marching through the streets of London, and never got a mention in the press; an old lady with an injured cat made the front page the same day!"

So how about lobbying MPs?

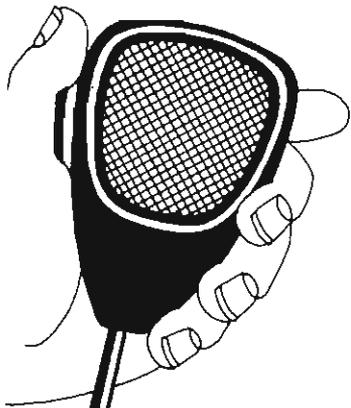
"Could do, I suppose, but I really don't think that it would do any good.

So how does the movement for legalising AM intend to further its aims?

"Well, it is all down to sheer weight of numbers, isn't it? People are going into CB shops demanding to be supplied with AM rigs. They are all thoroughly disillusioned with FM — in fact they are getting £20 for their old legal set against a new AM one."

What are their chances of success? Minimal. Mike Granite of the Home Office Press Department said: "We have always said that the government would work towards a system of CB compatible with Europe. The introduction of the present system was merely the quickest way of providing a CB system.

"British FM CB provides better facilities than those recommended by the Conference of European Postal and Telecommunications Administrators. Europa is rapidly going over to FM, and that includes all of the countries concerned, with the exception of two Scandinavian nations."



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CEPT — what DOES it mean?

CITIZENS' band radio, be it of the AM or FM variety, certainly has its fair share of critics and there is much to be said for and against both systems.

But the initial responsibility for recommendations of rig specification and, for that matter all matters pertaining to CB, lies with the Conference of European Postal and Telecommunications Administrator. Or CEPT, to anybody else.

Set up in June of 1959 this body meets basically once a year to consider all matters within the terms of its title, CB being one of them. It is comprised of a number of specialist groups, although the majority of business is conducted by two main sections, to which interested parties are invited to attend. The findings of this body are in no way binding upon the members who take part, and not every country provides representatives.

The recommendations with regard to CB in Europe as made by CEPT were for a 22-channel system using a frequency band extending from 26.96 to 27.23MHz and using a maximum power output of half a watt. To make some comparisons, the American Federal Communications Commission were recommending for their breakers a 40-channel system between the frequencies 26.965 and 27.405MHz using four watts. The CEPT further

recommended an AM/FM system for Europe, AM/SSB for the United States and FM for the United Kingdom. And, as far as Britain was concerned, this was about the only recommendation that was acceptable, at the time.

There have been many who accuse the Home Office of not standing up to the outside pressures of foreign organisations like the EEC, but in this respect such accusations are unfounded. The British government stated its intention of launching a CB system modelled as closely as possible to that in the States. And with the exception of the FM mode, this has been done with a 40 channel availability and four watts maximum power.

We have, in fact, been given far more in the way of power than many other countries when you consider that France for example can only use two watts, and many others have only 22 to 24 channels to play with.

It is perhaps surprising that even with the power levels that we have, that our interference level is as low as 15 nW as compared to that in the States which is as high as 4 mW. So, to those who complain so bitterly about the CB situation in Britain, it really is a lot worse elsewhere.



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Hy-Gain Silver Rod Base Ant 3.8 Dbs gain	23.95 (A)
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CTE GP127 Loft Antenna	16.12 (A)
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K40 Magnetic Mount	13.35 (A)
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Bandit B20-56 56" Mirror Mnt complete	22.43 (A)
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CARD



Design your own eyeball cards or QSL cards! Giving business cards away is a popular hobby with businessmen, so why not give away eyeball cards? But if you're into long distance CB or amateur radio, you will find QSL cards a real must. Follow this guide to producing your own cards.



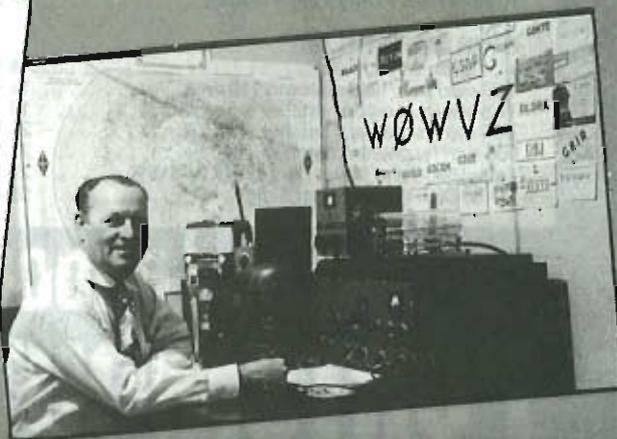
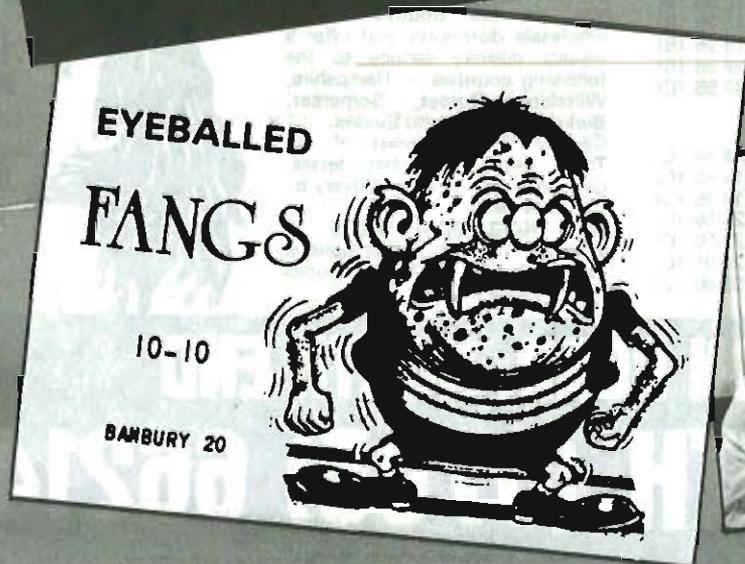
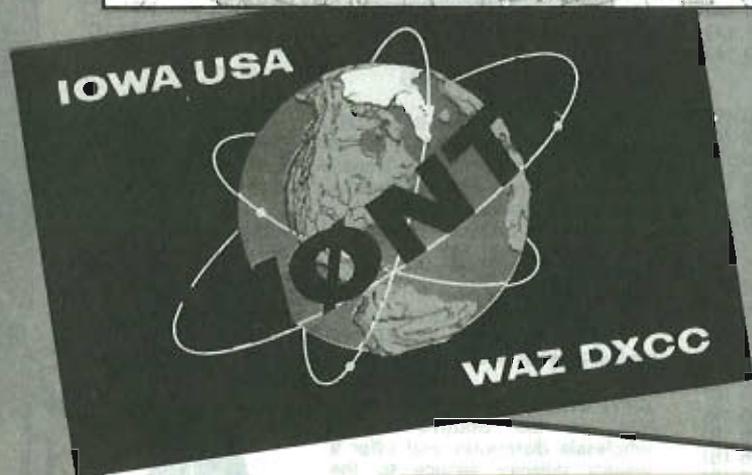
Despite legalisation on November 2 last year, we have noticed that many breakers are still using the lingo (see pages 78-81), personal handles, and eyeball cards.

Now, eyeball cards are simply derivations of business visiting cards but without all the details that might have resulted in the bears tracing where it came from in the first place!

So, eyeball cards are simply little bits of card with the handle, a best wishes greeting, and often a snazzy little drawing that should describe in some way what you're all about. There is still a use for eyeball cards, of course; nowadays though, there's no reason why you shouldn't fit your name and telephone number on them — as long as you're legal.

CB business cards have come about through the existence of QSL cards, used widely by amateur radio enthusiasts and long distance CB operators in Britain and abroad. QSL cards (the code means I am Acknowledging Receipt) are a different game of cowboys, although the RSGB wouldn't like to hear us referring to their activities as that . . .

QSL is part of the long distance Q code (listed elsewhere in CB22) and the



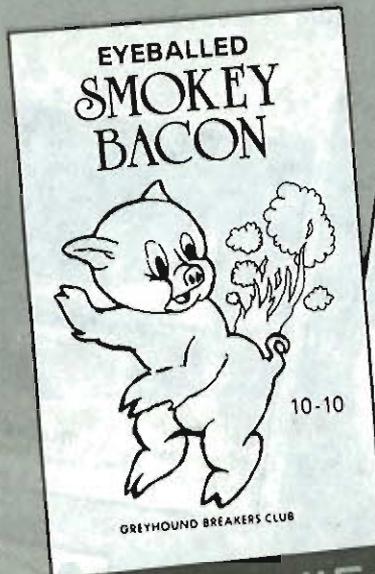
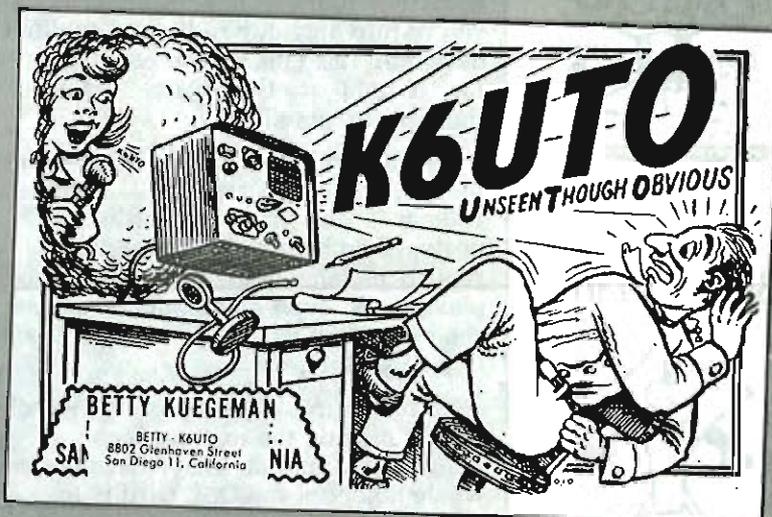
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cards are sent to confirm radio contacts made. In the early days of amateur radio, long distance contacts were often national records, and so the operators needed some form of confirmation to prove the contact was made. That's where it all began.

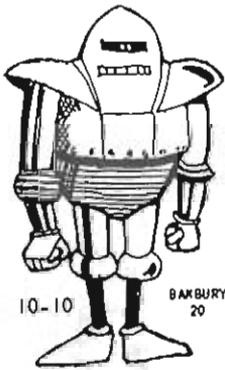
QSL cards are slightly more complicated than eyeball cards, in that they included the operator's call number (or handle), name and address, time and frequency of contact, and some technical information such as the equipment and antenna used. Some QSL cards have spaces for weather conditions, interference levels, and so on. There are few records broken nowadays, but the exchanging of QSL cards has become one of the most popular and satisfying pastimes of CB and amateur radio operators.

Indeed, some CBers and amateurs "wallpaper" their radio rooms (shacks) with cards, using them as reminders of contacts made, and as the inevitable conversational gambits.

In the radio amateur world there are even competitions to find the operator making as many contacts as possible within a given time, and in as many foreign countries as possible. Another service is what are called "clearing houses" where you don't need to send your card direct to an obscure country, in the hope that it might arrive. Instead you send it (or them) to a central address in your own country, and they send the cards (in batches, sometimes)



EYEBALLED
Ally Boy



off to those countries. It's cheaper, and there is less of a problem taking down the name and address of the foreign contact over a possibly static-ridden conversation.

We have plopped eyeball and QSL cards into one subject in this feature, eyeball cards of course being a less complicated version of the others. Designing your own card is a straightforward job, and you can either construct yours from scratch, or if you're into amateur radio and couldn't design an Irish maze, you could buy them from firms that design and print them professionally.

Cards should not be any bigger than the standard postcard size — 140mm x 190mm — and printed on ordinary postcard-type card. We have heard reports of some being printed on wood, plastic, and even aluminium or copper sheeting. Nice, but could be dangerous to post sorters, etc.

To be technically correct, the wording should include the expression: Confirming Contact. Why? Because the whole object of the QSL card is to confirm *two way* communication. Otherwise there's no proof that a conversation actually took place.

All this information should be designed neatly into the card, and often there is space for some artwork that describes your hobby, personality, interests, profession, and so on. This is where the real design work comes in. A well designed and produced card will be kept by the person that receives it; like postage stamp collecting really.

Some of the examples we've seen include a section of map, with the operator's location printed onto it, photographs of the operator, or his "shack", a cartoon character of some sort, and a rough drawing of a map overprinted with a picture of the operator in the area of the station.

If you are having the cards produced professionally, remember that colours cost money. Most people have one or two extra colours (apart from black and white) and this is often sufficient.

As far as cost is concerned, if you have eyeball cards printed and designed professionally, and by a small firm, you will probably get away with a bill for between £7.50 and £10 for 100 cards. QSL cards are a little more expensive, assuming a single colour (black) on white or a coloured card.

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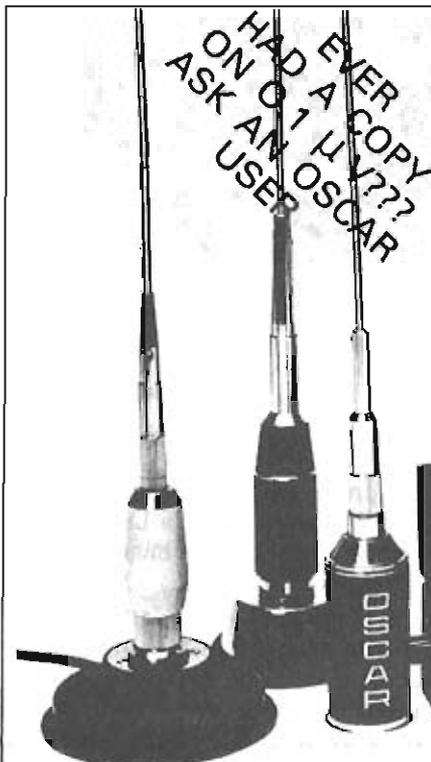
The front panel of the Oscar One is not cluttered up with a multitude of controls, the positions of which cannot be memorised or distinguished at a touch (for "eyes on the road" driving), and the inclusion of which can be ascribed as gimmicky or worse still as a cover-up for defects inherent in the design of the radio itself.

New techniques have rendered the RF gain, local/dx, ANL and microphone gain controls obsolete. A balanced mixer reduces "wipe out", allows continued operation even when one's neighbour is on the air. Feedback circuits keep the transmitted signal crisp and constant, while special limiting circuits reduce electrical interference on the receiver, and, in the transmitter,

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With the purchase of an Oscar One you will be entering the "Wonderful World of Wireless". If you get bitten by the technical bug, and this fosters an interest in "Ham Radio", it is reassuring to know that you are already dealing with the biggest Amateur Radio dealer in the U.K. (Yaesu Musen Importer), or, if you need communications for business use, remember we have our own extensive range of land and marine type approved equipment and accessories.



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Exclusive to
CB82 readers

CB82 CASH SAVER

AMAZING SPECIAL OFFER

Save 20% on a Radiomobile CB201 rig

In this exclusive-to-CB82 special offer, you can save more than 20% on the price of a new Radiomobile CB201 FM rig. Retailing at £90 in the shops, you can purchase one of these quality-built valuable rigs for the amazing price of £72.00 including VAT and postage and packing. Simply cut out the coupon at the bottom of this page, complete it and send it off (with the money — either cheque or money orders will be OK) to: CB82 Special Offer, A. T. Gittins & Sons Ltd, 15 Sutton Street, Birmingham, West Midlands B1 1DG.



SPECIFICATIONS

Current drain: transmit 1.3amp; receive 0.8amp

Frequency tolerance: plus/minus 1.5kHz

Operating temperature: -10dC to + 55dC

Dimensions: Width 129mm height 39mm depth 160mm

RECEIVER: Dual conversion superhet.

IF: 10.695MHz and 455kHz

Sensitivity: 0.7 microvolts at 20dB NQ

Audio output: 1.8 watts at 10% THD.

8ohms impedance

TRANSMITTER: Output: 4 watts into 50ohms

Output: 4 watts into 50ohms

FM deviation: plus/minus 1.5kHz at 3mv

This extremely compact high quality CB transceiver operates in accordance with MPT 1320. Features include LED channel readout, LED S/Rf power meter, integral bottom mount speaker, and external speaker jack.

Base station adaptability is incorporated with a 10dB transmit power attenuator on the rear panel. The unit is supplied complete with a dynamic microphone, vehicle mounting bracket, and full instruction manual.

Please send me, within the next 14 days, Radiomobile CB201 FM CB rig(s) at £72.00 each. I enclose the money as requested.

Name [block capitals please].

Address

Signature

To: CB82 Special Offer, A. T. Gittins & Sons Ltd, 15 Sutton Street, Birmingham, West Midlands B1 1DG.
This offer lasts until the end of May.

Three into one will go! and we have done it!

The Emu Trinity, the ultimate transceiver!

AT LAST, A BRITISH DESIGNED AND MANUFACTURED C.B. TRANSCIVER THAT IS NOT A TOY — IT IS A TOOL produced with robust durability and outstanding performance in mind. We even use an 8-pole crystal filter for the ultimate in selectivity. The result is a legal alternative to communication transceivers as used by Radio Amateurs and Professional Operators, and with no compromise. Instead of offering many modes, covering several bands and coping, fairly well — the TRINITY is dedicated to C.B. and handles it's responsibilities magnificently!

We have called it the TRINITY because it is three rigs in one. AS A HAND-HELD it is compact and easy to use with built-in microphone, loudspeaker and push-to-talk switch. The integral telescopic antenna is fed with a full 2 watts and is automatically coupled to the transceiver circuitry when removed from it's slide mount. The internal battery pack may be either disposable Manganese Alkaline (Duracells) or rechargeable Nickel Cadmium in which case the recharging is achieved automatically when replaced in the slide mount.

AS A MOBILE, the use of automatic circuitry has eliminated many controls leaving just Volume and Squelch. We have dispensed with RF Gain, IF Gain, Display Dimmer, Tone, Delta Tune, Mic Gain, Local/Dx Switch etc. Security is ensured because each TRINITY is supplied with an integral slide mount included neatly in the case design. Even the microphone has been designed with the driver in mind, for channel selectors are mounted symmetrically (for use in either hand) to facilitate effortless channel searching and changing. A High SWR warning instantly notifies the operator of a problem with antenna or its associated wiring, whilst the ambient light level is constantly monitored and the display brightness is adjusted automatically, thus ensuring good daytime visibility, and non-glare night time viewing.

AS A HOME-BASE transceiver it provides as many desirable features as any other HUGE home-base, without the more usual LARGE cabinet full of fresh air, but it also constantly monitors Channel 9, whilst using any other — an external transmit switch socket enables VOX operation, footswitch etc.

Also provided are three preselected Channel buttons — one for Channel 9 the other for any others, but every TRINITY leaves the factory set to 14 & 19. A few moments are required to effect a change!



MOBILE

OTHER FEATURES seldom found on C.B. transceivers are:

- *GLASS-FIBRE PRINTED CIRCUIT BOARDS for extreme strength/stability*
- *ORANGE DISPLAY for best possible visibility in bright lighting*
- *NOISE MUTING to eliminate the 'no signal noise' of an F.M. receiver*
- *EITHER HAND MICROPHONE perfectly symmetrical for ultimate ease of use in either hand*
- *ULTRA HIGH DYNAMIC RANGE. Owing to careful design, the receiver will never be 'blotted out' by a transmitter on another channel nearby*
- *ALL METAL CASE for use in rugged environments. We only use plastic for insulation, not cheapness!*
- *RIGHT HAND MICROPHONE SOCKET, proves that the TRINITY was designed in Britain for British users*
- *PHASE LOCKED DETECTOR to obviate interference from sidebanders, foreign or otherwise!*
- *REAR PANEL (OF SLIDE MOUNT) contains antenna socket, RF power switch, external power socket, speaker socket & transmit socket*

HAND-HELD

CARRYING CASE & 'BASE CASE' WITH MAINS SUPPLY also available as optional extras

- *AUDIBLE 'LOW BATTERY' INDICATOR to prevent battery damage*
- *FULL 4 WATT OUTPUT when used in Mobile or Base mode. Automatically switches to 2 watts for hand-held*

SPECIAL OFFER

To the first 500 TRINITY owners who return their serial number Registration Cards: a £10 voucher will be issued for use in whole or part to purchase any EMU product, or alternatively donated to either R.E.A.C.T. (UK) or any Registered R.E.A.C.T. Team. Orders will be dispatched in strict rotation.

£179 inc VAT

If you feel that £179 is a high price to pay, why not add up the prices of:

- i) the best 40 channel mobile,
 - ii) the best 40 channel home-base, and most important
 - iii) the best 40 channel hand-held.
- Remember the TRINITY out-performs them all.

NEW

MEET THE BLACK BOX RANGE OF C.B. MODULES

SELECTIVE CALL UNIT, the ultimate accessory to obviate the need for constantly monitoring regular channels. Directly programmable personality codes enable nearly 1000 persons to be called individually without disturbing any other users on channel. Ideal for the small business or fleet operator.

Two versions are available, either simpler pre-set model SEL 1 which can be fitted with a new personality coding module supplied by EMU, pre-coded to your specific requirements, or the more sophisticated model SEL2 (shown) which has full coding selection facilities available on the front panel. A message led will warn you if an attempt has been made to contact you in your absence. Simply dial up the code of the person you require and press CALL!

Price: Model SEL 1 £50-95 inc. VAT Model SEL 2 £62-75 inc. VAT

VOCHRON, the talking clock/10-36 module — will either tell you the time or at the touch of a button transmit and say "10-36" followed by the correct time! Latest microprocessor techniques enable us to produce a realistic speech synthesizer, coupled to a stable clock with Quartz accuracy. Price: £79-95 inc VAT

REFLECTOMETER, a constant watch-dog to reduce the risk of costly repairs due to mismatch, unnoticed vandalism or even driving at high speed. Can be set to warn operator whenever a high SWR is present. No minute meter needles to watch when trying to negotiate a bend! Also available with an optional audible warning device — ideal for unskilled users.

Price: without AWA, £9-95, with AWA £12-95 inc. VAT

POWER REDUCER MK II, a module with ever increasing popularity, especially amongst those C.B.ers who are generating TVI, or are concerned with the risks of detection when using AM. Affords a perfect match to any antenna, and provides a dummy load facility, at no time affecting the strength of the received signal. £12-50 inc. VAT

ECHO UNIT, another innovative module designed with C.B. in mind! This fully electronic device simply plugs into the microphone socket, and adds a third dimension to every transmission, and is continuously variable in depth. Led indicates depth of reverberation to user. This technique will produce a controlled 'sparkle' to the voice and increase readability in noisy environments. The British Army have been doing just this in their Armoured Vehicles for years. Mallory PP3 batteries last almost indefinitely, owing to power being applied automatically during transmit only. Two versions available, with either DIN or 4 pin connections, programmable for any rig commonly available, by the user in moments.

£36-80 inc. VAT



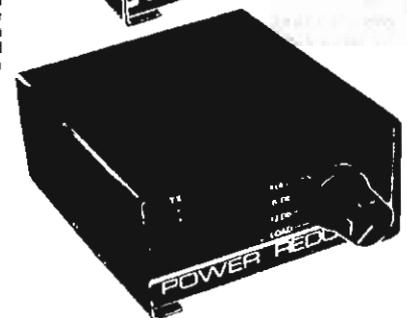
NEW



NEW



NEW



C882

Please send details of the TRINITY and BLACK BOX range of C.B. Modules (CAPS PLEASE)

NAME

ADDRESS

For full details of these products and our range of TVI & Low Pass Filters please send the completed form to: EMU SYSTEMS Limited, Marketing Division, 9a Crown Street, St. Ives, Huntingdon, Cambs. or Telephone (24 hrs) 0480 611 77 for details now. Alternatively contact your Local Dealer.

The Hart of CB in London

CB82 visits the Chelsea CB Centre, where race-engine tuner Tony Hart has developed a business catering for the enthusiast.

Tucked away just off Fulham Broadway, in Britannia Road, are the garage premises of Tony Hart Racing. Now, the major portion of the business is race-tuning and rectification of problems with Triumph Stag and TR7s.

That's another story, however. What interests us is that also on the premises is the Chelsea CB Centre. Tony Hart, well known in motor racing circles, had the good fortune on his travels to meet up with a young lady named Sally Smith.

Sally had just returned from the USA, where she obtained her CB licence long before anybody in Britain even understood what the initials stood for! Er, Companion of the Bath? Contact Breakers? Citizens' Band? What's that?

Anyway, she and Tony Hart watched with interest how CB was developing, in America and in Britain, as a talking point. No pun intended!

Requests for CB equipment from enthusiastic customers led to the supply of legal accessories like aerials, power supply units and so on, and demand for these "hard to get" items multiplied as word went around. Soon, the CB centre was swamped with orders. With legalisation just around the corner, Sally and Tony decided that it was time to design a set that would give satisfaction to the serious user, at a competitive price, and meet the legal UK specifications completely.

Their first major hurdle was persuading the Home Office to give them some kind of advance notice of what the minimum specification was likely to be. By keeping their ears to the ground, and badgering those worthies in the Civil (sic) Service at every opportunity, they were able to formulate the design for a quality mobile rig -- well, almost!

The Home Office, in its wisdom, released the final and rather amended specification one grudging week before legalisation day. Needless to say, Chelsea CB Centre had to work very fast to produce their TC300 in good time. But produce it they did, and they made a good job of it too.

Tony Hart wonders just how many of the "legal sets" sold on legalisation day, were really up to UK specification. He says it would have been difficult for everybody to have met the requirements so quickly. Many rigs, he adds, were, and still are, rather shaky conversions.

"This is the point where the Interceptor TC300 really comes into its own," he says. "It is too easy to make simple mistakes when installing rigs, and the result could be a blown set, and a blown guarantee!"

For instance, a mistake when fitting a "quick conversion" rig can involve incorrect polarity of the car (positive or

negative earth system). An error here would usually mean a fry-up inside the rig. Simply them, you've blown it, and the retailer won't want to give you another one. With the Interceptor TC300, reverse polarity protection is built in. So getting your wires crossed merely produces nil response, instead of a big bang and lots of smoke.

Other safeguards built in, include SWR protection and a "genuine" RF gain control which actually increases signal strength. The LED read out makes tuning, when mobile, simpler and safer than analogue systems. "Chelsea CB Centre would hate the thought of anyone having an accident while struggling to tune a rig," says Tony Hart. He added that there are sets on the British market which, at a higher price, do not incorporate all of these essential safeguards.

With many years' experience behind them, and the knowledge that people can strip threads and snap off studs, and short circuit wiring harnesses, Chelsea CB Centre feel it is very important that their rigs should be "user proof and safe."

**On kids using CB:
"It's great when they
all go to bed around
11pm. You can then
get to talk to serious
breakers."**



Tony Hart makes another point about so-called legal rigs. Where, for instance, a 10dB attenuator is required, it must form part of the set. The "make do and mend" system in the aerial circuit is illegal, he states, and adds that no such problem exists with the Interceptor; the attenuator is already in there.

**On 934MHz:
"The introduction will probably sort out the genuine breakers from the meddlers."**

For the future, there is the Interceptor TC400 to come, probably at some time in April. This will incorporate all the features of the TC300 plus handset channel change, a useful function in a busy road situation. A built in clock will save the expense and hassle of fitting a separate unit, but perhaps the best of all is a channel 9 (emergency) scan with bleep attention-getter facility.

A possible bonus is the built-in Selcall. This will be incorporated if the technical problems are not too heavy. But if it does happen, it should become available as a not-too-expensive plug-in extra. Very useful for doctors and others who are on call. The TC400 will retail at about £120.

One of the first people to put the Interceptor to the test was Barry "Whizzo" Williams, well known in saloon car racing circles. Out of season, he transports racing and vintage cars in his specially adapted

transporter. On his first time out with the TC300 he called another "big wheeler" to advise of a lighting fault in bad weather. Apparently, he was "estounded" when the reply came back as clear as a bell, and a friendship was sealed over the airwaves between two travelling truckers.

Of interest to many people will be the Interceptor Base Station, expected Mid-June this year. Carrying the features of the TC400 with slider controls, this rig is already being looked at by the Social Services Department as a possible aid to the elderly.

Using the easy controls, and channel 9 scan system, senior citizens in trouble would be able to summon help much more easily than at present. At around £280 per set, it would seem a practical alternative to costly telephone installation, with the advantage of almost guaranteed help close

at hand. As near, in fact, as the nearest breaker.

What of the CB scene now? Tony Hart feels that not putting a minimum age limit on licences (as in the US) has led to abuse from some young and irresponsible breakers who now clog the channels with inane chat during the day.

It's great when they all go to bed around 11pm, says Tony. You can then get to talk to serious users.

The introduction of 934MHz rigs will probably sort out the genuine breakers from the meddlers, thinks Tony. Being superior in transmission and reception quality, they will be rather more expensive, but worth it for the enthusiast.

Without doubt, the best of these will be in stock at the Chelsea CB Centre, when the time comes.



CHELSEA CB CENTRE

INTERCEPTOR



Chelsea CB Centre are proud to announce the arrival of the Interceptor TC 300 Mobile CB Transceiver, the first model of the all new British designed CB equipment. Even the basic model has better specifications and performs better than more expensive makes. Standard features include cross wire protection: If you connect the power leads in reverse by mistake, no damage will occur to your transceiver. Without this protection your set would be reduced to a smoking box and your guarantee void. An expensive mistake. SWR protection is essential because CB antennas have to be tuned into the transceiver. If a bad mismatch occurs this overloads the output transistor causing irreparable damage. With the Interceptor the power lights will flash to warn you something is wrong, and even if you do not see the lights, unwanted power is absorbed into the SWR protection circuit safeguarding your transceiver and your warranty. Also RF gain control — turn it up to pull in weak stations or turn it down to make close stations more readable.

**£79.95p
inc. VAT**

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CB BY SATELLITE?

Obviously a thing of the future, but exactly how soon will it happen? All you need is a big dish in the back garden and a book of instructions on how to use those little metal things drifting around the upper atmosphere. True or false? Well, it's true, nearly. Here CB62 outlines the problems that must be overcome before such a possibility occurs.



Above: In the US, you can buy a 2½ft satellite receiving antenna (smaller than conventional TV antennae) which can be mounted on a house, or any other convenient location. Satellite Television Corp., of Washington DC, provided the photograph.

WE have all watched television programmes that begin with the words "Live by satellite." Well, how about CB-by satellite? Not possible? If that's what you think, then think again, because with a little money, knowledge and somebody to speak to at the other end, there's no reason why you shouldn't be speaking to people all over the world in years to come.

Someone once said of children that "big oafs from little urchins grow" and perhaps the same could be said of the latest enfant terrible of the world of communications — citizens' band radio. Although it would be difficult to envisage the short-range CB transmissions of today being used to span oceans and vast continents with the help of satellites, the same could have been said of the amateur transmitting equipment not that long ago.

For many, the restrictions of power and antenna type imposed by the government when CB was legalised last November has been too much; although there is no technical reason why FM waves should not follow the same laws of propagation as the AM variety, the point is that skip just isn't happening to the same degree. Many, in their infinite frustration are turning to the amateur world, with its extensive choice of frequencies and equipment. Many, on the other hand, are turning to AM with illegal power levels and antenna systems — indeed some breakers have never left it.

These days, high technology terms are bandied about in the same casual manner as the millions of pounds that it costs; even the word "billion", hitherto incomprehensible to the human brain is now accepted in the same vein as today's cup of

coffee which cost the equivalent of five shillings as compared to four old pence! And the expression "Live by satellite" is regarded with about as much excitement by a population with minds dulled by a barrage of technical achievement, as the arrival of a number four bus.

Before even attempting to comprehend the principles of satellite communication, it is necessary to first understand the basics of wave propagation. A radio wave is comprised of two components — namely electromagnetic and electrostatic. From an omni-directional antenna, these will emanate very like the waves that spread in a pool of water when a stone is thrown into it. The distance between the wave tops represents the wavelength, and the number of times per second that the waves break against the bank of the pool is known as the frequency.

Frequency is determined by dividing wavelength into 300,000, and vice-versa; a frequency of 15,000 is therefore 200 metres and 200 metres equates to 15,000KCs.

All transmitters emit three waves — a ground wave with a very limited range, a direct wave which is that used extensively by CB enthusiasts with a range of a few miles, and a sky wave. And it is this sky wave which, when reflected back to earth from an ionized layer, some 200 miles distant from the earth, that gives rise to the "skip" effect on transmissions that can span hundreds or even thousands of miles.

The substance which does the reflecting comprises a series of ionized gaseous layers which, when subjected to the differing degrees of heat

from the sun throughout the day, reflect from differing heights. Obviously, the higher the reflecting layer, the greater the "skip" effect. Furthermore, the level of reflecting layer used is also dependent upon the frequency of the transmission, and the higher the frequency the higher the layer — which, again, gives a greater degree of skip. There comes a point, however, when the frequency is so high that it will pass directly through all of the reflecting layers and out into space.

Unfortunately, these ionized layers are not as dependable as they might be — especially for low power transmissions. Apart from the fact that they are constantly changing at the top and bottom layer-level, there is a massive "re-shuffle" at dawn and dusk when the major temperature changes take place. Add to this the problems of density lapse, or holes in the layers, tilting of the ionosphere which alters the direction of transmissions, or sporadic formation at unexpected heights, and it can be seen why skip working is rather a hit-and-miss affair. On top of all that, the current sun spot cycle will shortly be producing even more erratic ionization densities because of solar flares.

It became apparent to many in the communications business in the late 1950s that the answer to all these problems lay in an artificial reflecting substance of known reflective properties in a known and constant position in the sky — in a word, a satellite — and from which signals could be bounced.

The ionosphere has become a scrapyard

The transmitting frequencies that would be necessary to pierce the ionosphere to reach the satellites would have to be very high, and be of the line-of-sight variety. And in 1964 the first Intelsat satellite was put in orbit, suitably positioned above the earth to be within range of the transmitter and yet high enough to "see" as large a section of the earth's surface as possible.

Since 1964, countless other satellites have been launched, serving all manner of purposes, until the ionosphere has become a virtual scrapyard, especially when you consider that as the life of an unmanned satellite is limited, so it must be replaced. And as there appears no easy way of bringing down an exhausted "bird", it would appear that the amount of junk floating around out there will increase indefinitely!

Satellites fall primarily into two types — the geostatic and the orbital type. Geostatic satellites, to which the Intelsat belongs, remain in a constant position in relation to the earth. The disadvantage of this type is that it serves one area and one area alone, of the earth's surface. On the other hand, it requires relatively little in the way of positional adjustment and virtually no tracking equipment.

The orbiting satellite, as its name implies, orbits the earth in a predetermined pattern and is in a position to "see" all (or virtually all) parts of the globe — but only once every 90 minutes as it passes. That is one problem with orbiting satellites — the fact that its use is transient as it passes over the earth's surface and there is therefore a requirement for three such units, equally spaced around the world to give a continuity of availability. With this arrangement, the effectiveness of one satellite would be fading as the next one came round to take up its task. Coupled with this problem is that of sending signals up to the satellite (and receiving them) at an azimuth and elevation that is constantly changing. It can be seen that satellite communications is indeed complex.

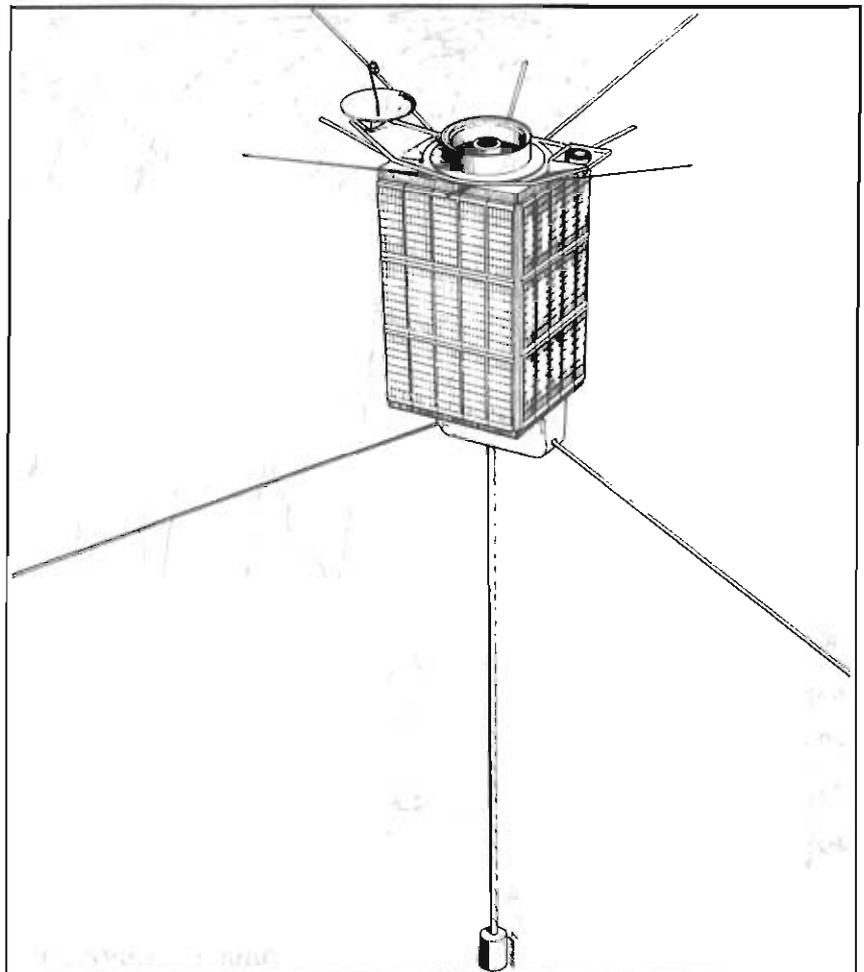
Having cited the two basic types, there is a

further division of satellite types according to their respective functions. Basically, this division is between "active" and the "passive" type. The passive variety merely act as mirrors in the sky, reflecting back what has been sent up. But as the power loss (estimated to be around 200dB) both up and down is so great, some form of boosting device is usually necessary.

This is achieved by the use of transponders and turns the passive satellite into an active one. In order to remove interaction between the upgoing signal and the amplified downgoing one, the signal is received on one frequency and transponded to another for re-transmission back to earth, with the necessary electrical power provided by solar energy. There is an even more sophisticated system



Left: Another variation on the dish antenna system, able to receive international transmissions. Below: The UOSAT-OSCAR-9 was launched on October 6, 1981 by NASA and, with support from the Radio Society of GB (among others), part of its objective is to provide radio amateurs with a "readily available tool to carry out studies of the near-earth electromagnetic environment etc." UOSAT stands for the University of Surrey satellite programme.



which picks up signals at one point in its orbit, stores them until the satellite is suitably positioned over the required addressee, then sends them down.

So what has all this high technology got to do with CB? Possibly quite a lot. No longer is the installation of the sensitive "dish" antenna the sole prerogative of major communications companies. Already, radio operators throughout the world have access to no fewer than nine active orbiting satellites which are reached by the use of small micro-wave parabolic aerials. It requires as little as 50 watts output to make it up to a "bird", after which the signal is boosted by the transponder before being returned to earth.

On an even wider scale, technologists are

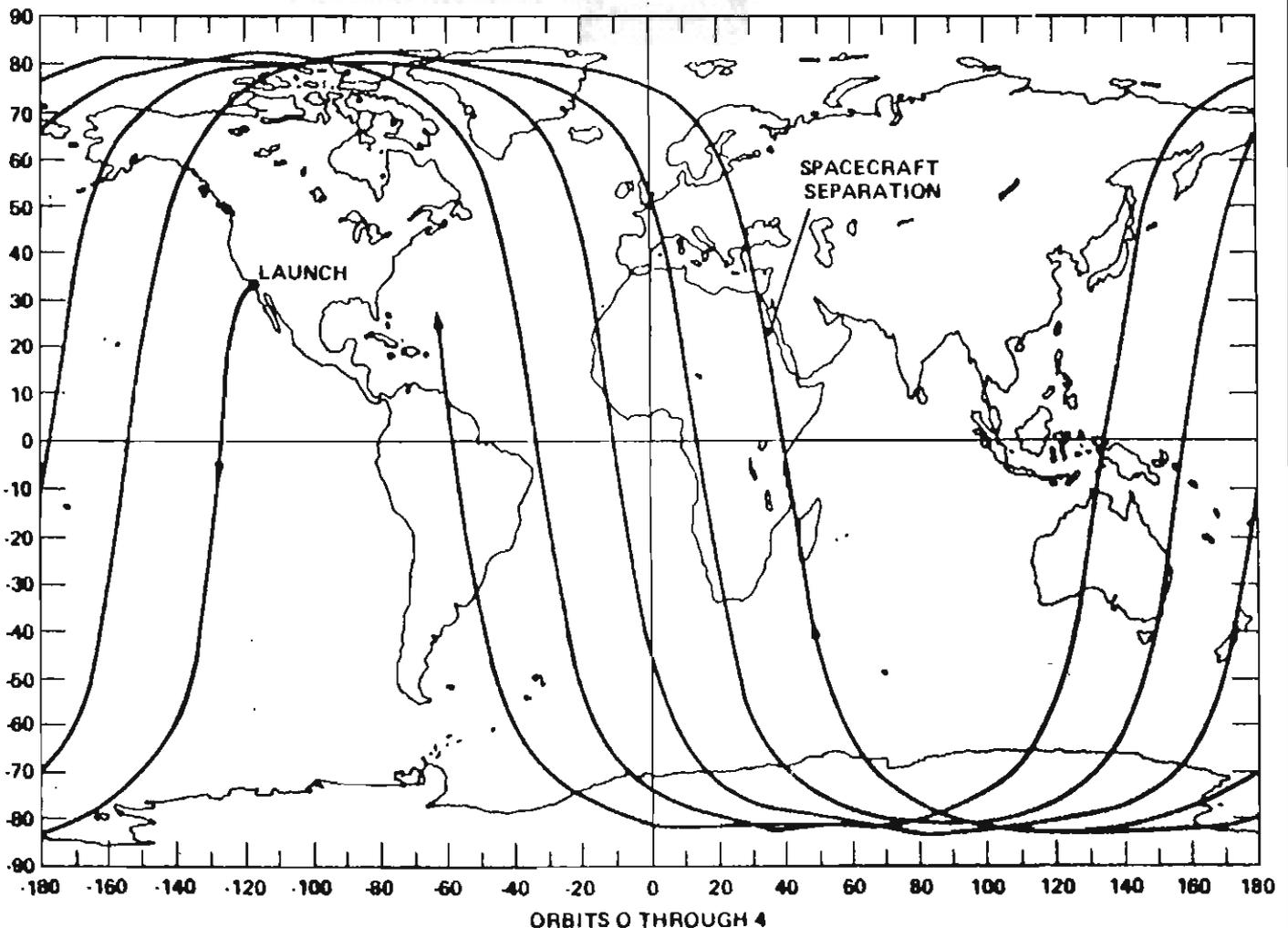
working hard to perfect domestic reception of British television, together with their European counterparts acting in the interests of their country, with the use of individual portable antenna. Not only will this at least reduce, if not eradicate, the need for expensive repeater stations and miles of feeder line, but it will also improve reception for those situated in the "grey" reception areas. For the very same reason that satellite "line of sight" transmissions are of superior quality by virtue of their stable reflective medium, so the existing dependability of TV reception relies on the relative siting of the set in relation to the nearest repeater station.

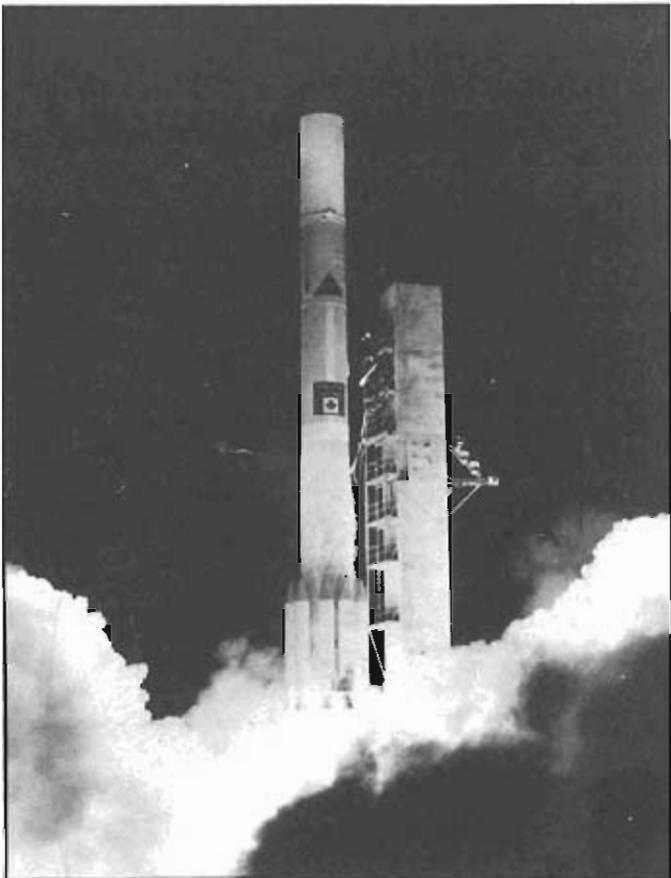
Taken a step further, ever since 1977 discussions have been going on with the ITU reviewing the possibility of the reception of European TV in this country with the use of geostatic satellites to reflect transmissions onto 60cm dishes placed literally in the back yard. In the United States, such antenna are already being sold on a commercial basis, and at least one British "Euroviewer" has been on TV proclaiming his success.

Dishes as long as your arm will be the norm

So, in this gloomy recessional world of ours, let's be optimistic. Let's presume that our beloved government will ultimately see its way to letting British breakers have a little more power — something approaching that enjoyed by amateur radio enthusiasts. And who knows, in the not too far distant future, not only will you know all the revolting personal habits of the kids down the street — but also those of a couple of million of 'em in Australia as well.

Below: Technicians at the University of Surrey, Guildford, assembling the UOSAT Oscar 9 satellite. Note the clinical conditions. Bottom of page diagram shows typical "ground tracks" covered by the satellite.



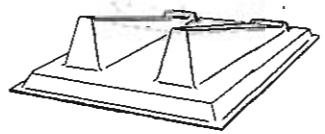


The UOSAT satellite is currently in a 554km, 95 minute, polar, sun-synchronous orbit. Spacecraft launches are always spectacular — this satellite is aboard a Delta 2310, from the Western Space and Missile Centre, Vandenberg, California.

SURREY SUSSEX ELECTRONICS

27 MEADOWBROOK ROAD
DORKING, SURREY
TEL: DOR (0306) 883314

This is the latest in CB equipment, a must for all Home Base users. These new CB Stands are just the thing for using your Mobila Rig at home, your box of tricks will now look like it should — a CB not a heap on the corner of your settee. You will never have to



stick books, cushions, and tobacco tins, or your left shoe under your rig to hear your CB buddy saying "give us a 9". The Stand is made in such a way that the sound from your rig is directed at you, not muffled by your settee or table top. These metallic grey, leather grain, strong (abs) plastic base compound stands are virtually indestructible and will last a lifetime guaranteed.

There are four sizes to fit all rigs.

9in x 9in Stand fits UNIACE 100 or similar size for **£3.45 inclusive**

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14in x 9in Stand Writing Pad Facility to jot down notes. This size is for the UNIACE 100 for **£4.45 inclusive**.

16in x 12in Stand with Writing Pad Facility is for all big AM, FM, SSB (multi mode, super star, cobra 148dx) for **£4.95 inclusive**

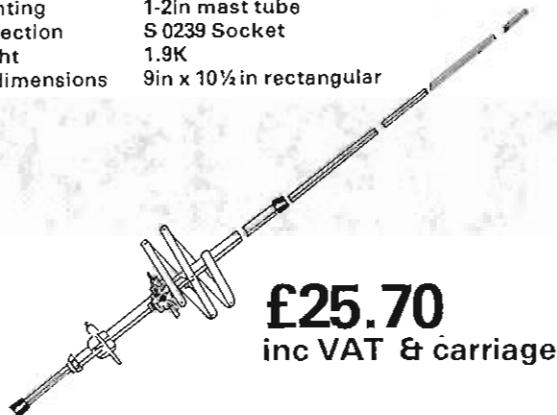
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Impedance	50 Ohm
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Gain	+ 4dB
Bandwidth	1.5 MHz
VSWR	Less than 1.5
Max Power	500 W
Total Length	19ft 0in
Mounting	1-2in mast tube
Connection	S 0239 Socket
Weight	1.9K
Coil dimensions	9in x 10 1/2 in rectangular



£25.70
inc VAT & carriage

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1.5 CB ANTENNA

Antenna length (excluding loading coil): 1.5.

Power handling: 250W

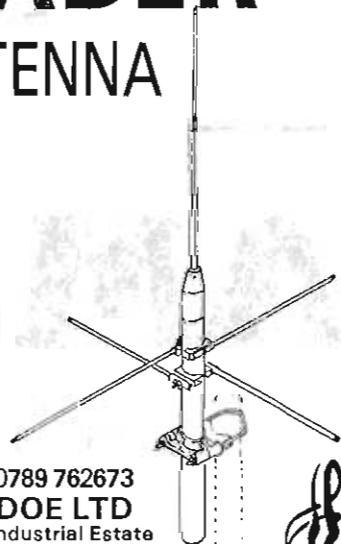
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Frequency: 27MHz FM, AM, SSB.

Mounting clamps, included (as illustrated).

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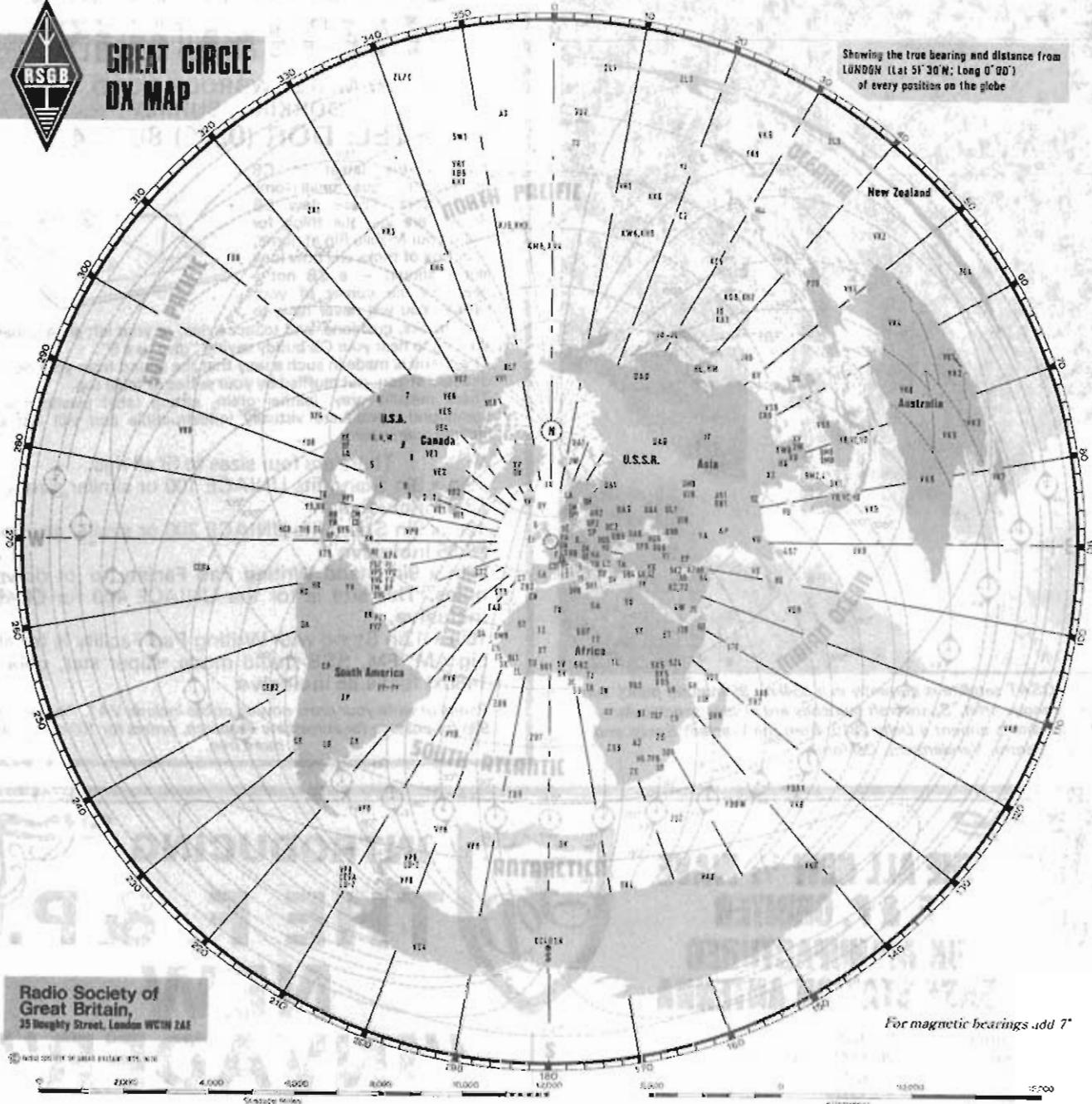


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AMATEURISM

... or amateur radio to the likes of us. It's not all Morse codes and complicated diagrams. It can also be a lot of fun. Read John Nelson and find out more about this exciting hobby which is seen by many to be the next step up from CB.

So — you're a breaker. Maybe a legal FM CB user, maybe one of the diehards who says "AM at any price" (and I'll bet your neighbours really love you) or maybe you're a sidiband DX chaser (ditto, and what are you going to do in a couple of years when the sunspots have quit on you and Golders Green to Finchley Central is gonna rate as your best DX all week...?)

However pro-CB you may be, you may have a sort of idea in the back of your nut that there might be a bit more you could do with the hobby-type radio. Sure — you could start an independent radio station if you had the bread and the influence, and make like Lord Grade. About half a million as a down payment should do fine. Seriously though, there just might be another way.

It's known as amateur radio. Stand up the man at the beck who said "oh yeah — radio hams" and write out 500 times "I am a silly whelky who's listened to Tony Hancock too often — alternately I am a newspaper editor who long ago lost any latent ability to think straight". Right. Not hams, folks, amateurs — that's lesson one. Lesson two is that it isn't a sort of glorified CB. Both make use of the facts of radio life, but whereas CB is meant to be a sort of service which happens to use Wireless Waves, the thing about amateur radio is that the wireless waves in themselves are a bit more important — in fact, you can have a whole lot of fun trying to get the little perishers to wave about and do their thing so that you can talk to whoever you want to.

Is it slog; is it fun, or what?

Amateur radio is actually a radio "service" in the same way that the Beeb, etc. are a radio service. you don't just swan into the local Post Office and buy the licence; you have to pass an exam (dead easy) and a Morse test if you want to use the high frequency bands (also dead easy, and don't believe them who say it isn't).

All of which brings us to the "fun" bit. I'd guess that by now most people have some sort of idea about the differences between CB and amateur radio, and that if you're at all into CB in whatever shape or form you have some idea that it's a bit limited in terms of what you can do with it.

It seems to be a fact that a hell of a lot of ex-breakers are biting the bullet, sweating over the Radio Amateur's Examination, pounding away at the old Morse key and launching CQ DXes all over everywhere. Apparently the Radio Society of Great Britain — they're the outfit who look after radio amateurs in this country and you can get all sorts of handy books, information and encouragement from their headquarters at 35 Doughty Street, London WC1N 2AE — have had a pretty amazing upsurge in their membership in the last year or so, and the poor old civil servants at the Home Office have been chewing their fingernails and buying up masses of pens and paper to issue all the new amateur licenses with. Now all these new amateurs didn't come from outer space and, judging from what tends to waffle over the amateur airwaves these days, there's a whole lot of ex-CB types who've Taken The Vow. Which is actually what this article on amateur radio is doing in a CB publication; is it a slog, is it fun or what?

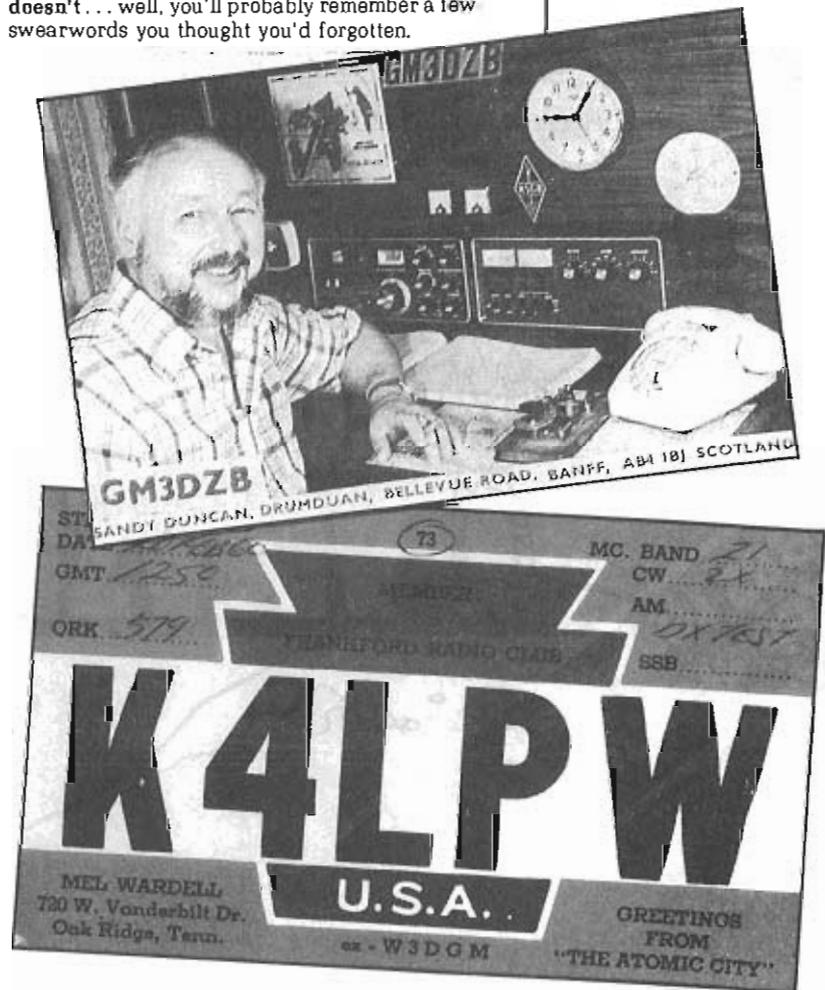
Maybe we can approach it by taking a look at what you can do with amateur radio that you can't do with a 27 MHz rig. For a start, you've got 23 frequency bands to rattle about in, all of which behave in radio terms in different ways. You're not restricted as to what vast erections you have in your back garden... er, sorry, let's put that another way: you can use any kind of antenna installation you want provided the planning committee of the local council don't have a collective cardiac arrest and tar and feather you or

whatever. And — what's probably the best place to kick off the discussion — you can build your own gear from the ground up if you want to.

If somebody says to you that passing an exam can be fun, you're probably going to suggest in no uncertain terms that somebody is a Grade 1 twenty-four carat nutter. OK, that makes me a nutter. But it's a funny thing that if you're vaguely interested in something, having to pass an exam in it seems to have the effect of getting you going when otherwise you might say "oh no, there's no way I could cope with all that technical stuff — it's way over my head, mate". T'aint always so; and one of the things you notice on the amateur bands is that a lot of the guys with new call signs know a lot more about radio and how all the bits of wire work than simply that you'd need to pass the RAE. I'd guess that they've found it kind of fascinating the more they got stuck into it.

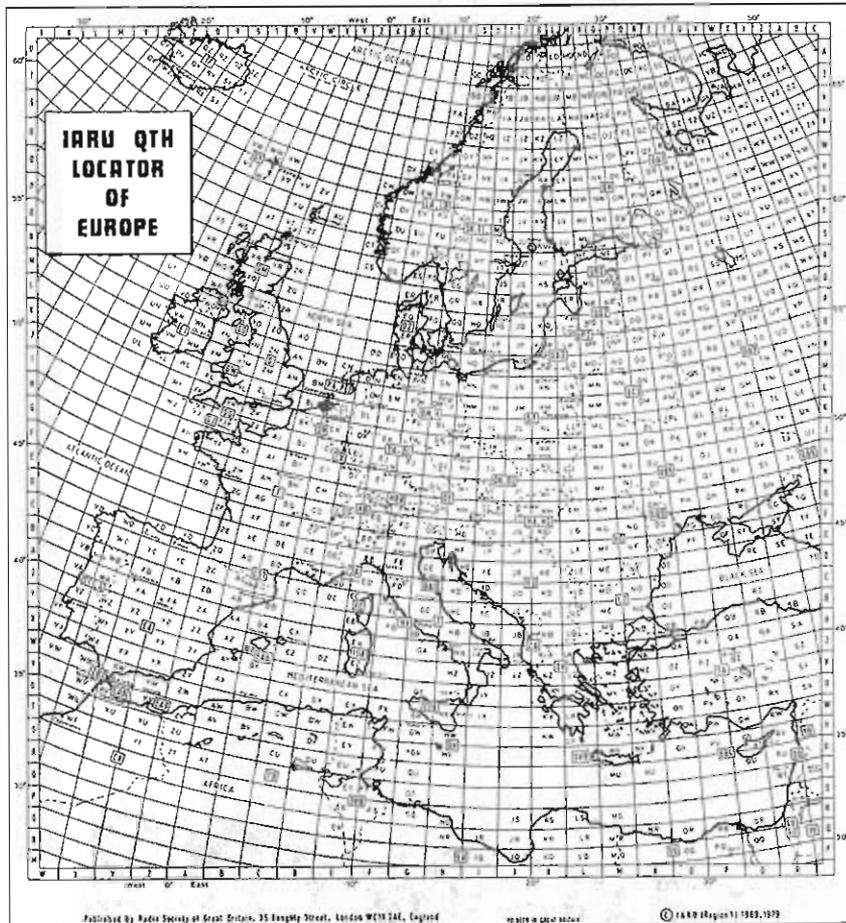
The thing is that when you pass the exam, you can get to thinking about building some gear of your own — and for a lot of radio amateurs, including many of the ex-CB folk, this is really what it's all about. I'm not a psychologist, and I don't have the foggiest idea why, but there's something incredibly ego-boosting about making something out of bits and pieces on the kitchen table and using it to talk to somebody, even if they're only three miles down the road. Maybe it's because you can't see all the little electrons whizzing about at high speed and there's still a touch of black magic about the whole deal — I don't know, but it ain't 'arf good. Not that you have to build your own, mind you; if you really want you can saunter off to one of the vast emporiums that sell amateur radio gear and buy the whole shooting-match from microphone to aerial. Many do, and why not? One of the good things about an amateur licence is that, within reason, you can do more or less what you want with it. It's just that I reckon that to buy it all is to miss out on something pretty basic which can make you feel good when it works. Mind you — if it doesn't... well, you'll probably remember a few swearwords you thought you'd forgotten.

Most, if not all, radio amateurs, send QSL cards to each other to confirm they have made a contact. Here are two popular designs.



And there's one other point — if your rig wasn't made on your kitchen table but in some factory in Japan, you've at least got a sporting chance of fixing it when it **does** quit if you're an amateur. Granted, you probably aren't going to tackle the innards of a microprocessor-controlled synthesiser the day after you pass the exam (and if you do, mate, then the best of British) but you'll have some idea that it is the micro, etc. Since the amateur

Every area has a code in amateur language.



licence also includes a section on interference problems, you'll have a better idea of how to stop your CQs knocking Dallas for six and bring forth howls of rage from the lounge.

Anyhow, let's look at the fun bit again. Let's try a rather different scenario . . .

It's a Saturday morning in September. You and half a dozen cronies are somewhere in Wales with a knackered Land-Rover (or a knackered Mini if you're like the rest of us) and, for reasons which will shortly become clear, your mission is to ascend the highest hill you can find armed with about a hundred tons of assorted radio gear, a tent, food, beer, antennas, etc. etc. you will then set up all this lot to resemble as far as possible a radio station; you will then sit on top of said hill for twenty-four hours (yep, you heard, 24 hours — Ratchet Jaw's got nothing on this little lot). You are going to take part in an amateur radio contest.

Anyone at this point who says "stuff that — ditch the radio junk and drink the beer" can leave the room.

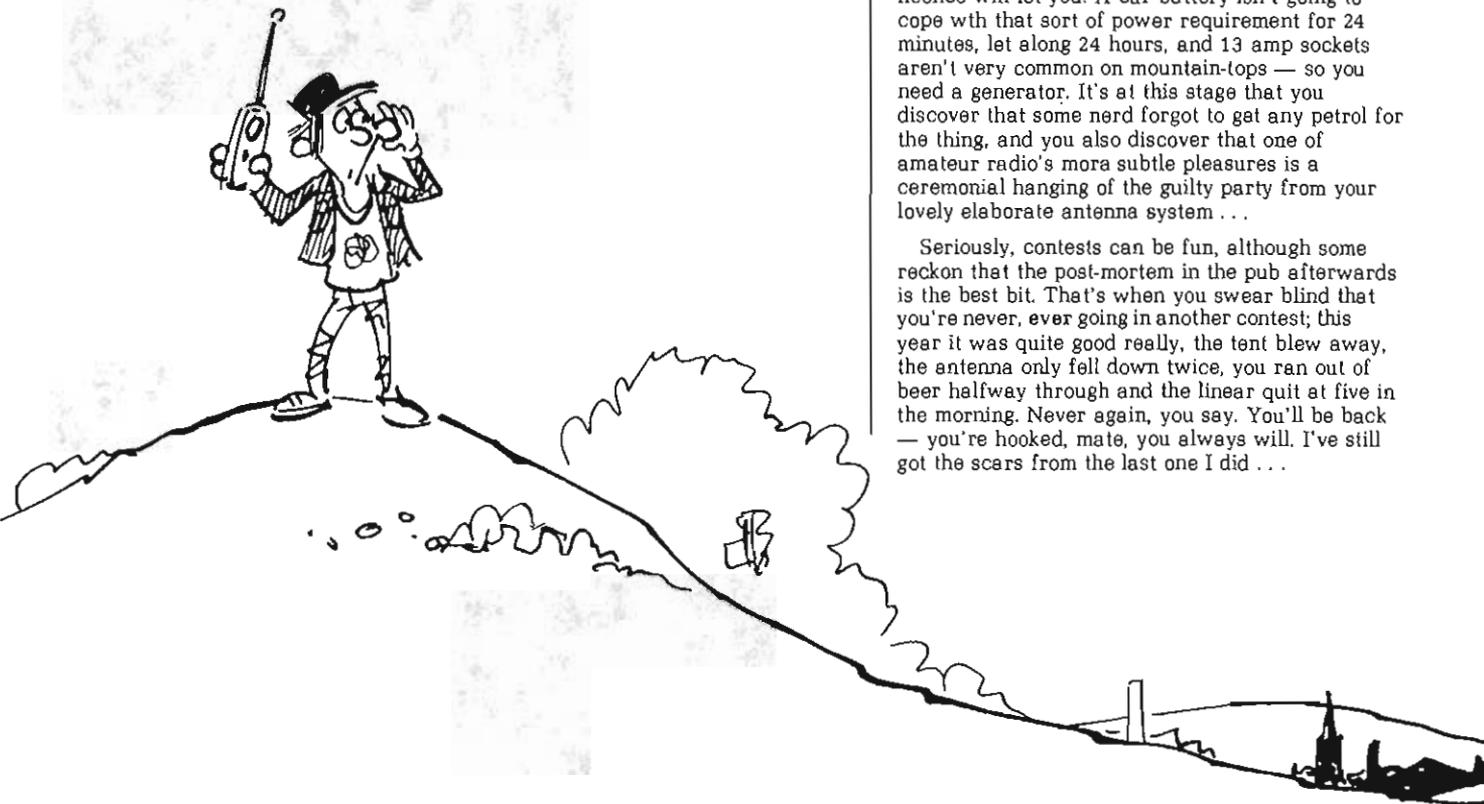
So what on earth is an amateur radio contest? Well may you ask, the idea, roughly speaking, is to see who can work the most stations — ideally you want to work stations as far away as possible as well, since you get more points that way, hence the high hill.

"Post mortem in the pub is the best bit"

As you will have gathered, setting up a radio station on the top of a hill in the middle of nowhere brings up a few teeny problems. The antenna, for one — if you're going to win, you need a good one, which is another way of saying a lot of metalwork floating around as high as possible in the sky. It tends to blow somewhat on top of a Welsh hill, and sitting in a tent surrounded by aluminium spaghetti which was a brilliant antenna system ten seconds before isn't too funky. Did I say "fun"? Ah well.

There's also the little matter of power to run the thing. You're not messing about with a couple of watts here; the amateur licence limits you to 400 watts peak output on sideband and if you're into contests you're going for every little milliwatt the licence will let you. A car battery isn't going to cope with that sort of power requirement for 24 minutes, let alone 24 hours, and 13 amp sockets aren't very common on mountain-tops — so you need a generator. It's at this stage that you discover that some nerd forgot to get any petrol for the thing, and you also discover that one of amateur radio's more subtle pleasures is a ceremonial hanging of the guilty party from your lovely elaborate antenna system . . .

Seriously, contests can be fun, although some reckon that the post-mortem in the pub afterwards is the best bit. That's when you swear blind that you're never, ever going in another contest; this year it was quite good really, the tent blew away, the antenna only fell down twice, you ran out of beer halfway through and the linear quit at five in the morning. Never again, you say. You'll be back — you're hooked, mate, you always will. I've still got the scars from the last one I did . . .



Anyhow, that's the contest; there are many of them in the amateur radio year and they are all fun in their way. There are even some particularly sadistic ones known as "DF" or direction finding contests, where the transmitter crew habitually secrete themselves in some unseavoury spot and use all kinds of sneaky techniques to make their transmissions difficult to track. The winner is the first guy to find the transmitter, and if you always henkered after making like the Gestapo tracking down the secret radio transmitter operated by the dishy French crumpet in the Resistance, then DF contests could be for you. Actually, one shouldn't send them up; there's a lot of skill involved, and the organisers usually provide a good tea afterwards . . .

Bounce your signals off the moon

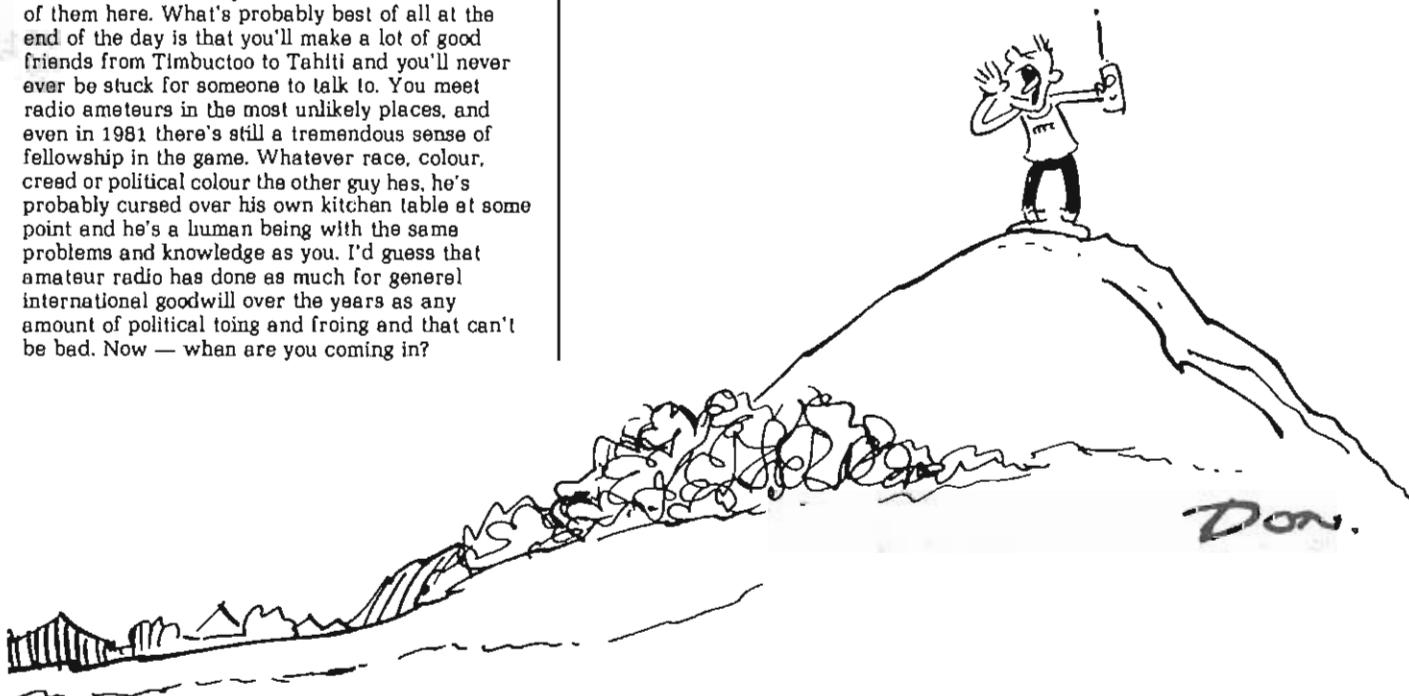
Let's move on and take a look at DX-chasing in one form or another. One of the best things about the variety of frequency bands available to the amateur is that what would be real DX on, say, 432 MHz — that's a UHF band, with wavelengths of around 70cm — would be run-of-the-mill on, say, 7 MHz and you could natter to the guy with ease all day long. Equally, it's no great shakes to work New Zealand on 21 MHz but it certainly is great shakes to do it on 7 MHz and the only way you'd do it on 432 MHz is to bounce your signals off the moon. I kid you not — it can be done and it quite often is.

Many amateurs, however, like to collect different countries and at the moment there are about 340 that count as separate "countries" for QSL card purposes. There are a vast number of awards that you can collect with your "confirmed countries" and some of them wouldn't disgrace any wall in the land. Some countries — Australia, France, etc, etc — are dead easy to work most days of the week but somewhere like Desecheo Island or Serrana Bank — both of which count as "countries" — aren't exactly densely populated, so the usual thing is for some amateurs to go to these exotic spots for what is known as a "DXpedition". Half the amateur population will then sit up all night trying to "work" them to gain the rare QSL. Great fun — you need good tectics, a well-developed competitive instinct, good antennae (which again you may have built yourself) and a strong constitution. It's more fun than practically anything.

When you add it all up, the beauty of amateur radio is that there are so many ways of having fun with it and we've only skimmed the surface of some of them here. What's probably best of all at the end of the day is that you'll make a lot of good friends from Timbuctoo to Tahiti and you'll never ever be stuck for someone to talk to. You meet radio amateurs in the most unlikely places, and even in 1981 there's still a tremendous sense of fellowship in the game. Whatever race, colour, creed or political colour the other guy has, he's probably cursed over his own kitchen table at some point and he's a human being with the same problems and knowledge as you. I'd guess that amateur radio has done as much for general international goodwill over the years as any amount of political toing and froing and that can't be bad. Now — when are you coming in?



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CB

RIGS LATELY

What's available on the CB scene. Rigs, and accessories available in the shops lately. Compiled by Peter Dodson.



Right: The Harvard 420M, top of the mobile range which comes with tone control, but no Roger beep. Below: The 400M from the same firm has the beep facility plus RX and TX LED display. Two good-looking rigs.



In the Editor's opinion, the best-looking of the reviewed rigs, the Shogun, a really businesslike radio which is extremely thin, just 1½in high. Price is £99.



From GB Associates comes the Transcom. This one is the GBX2000 priced at just under £70 retail. A basic unit, but with a 10dB attenuator switch.

Basically speaking, the enthusiast's choice of CB equipment is all down to what he wants it for, and how much he is prepared to pay for it. Since citizens' band radio became legal last November, the CB industry (most of which resides in the Far East) has set out to provide a range of products that will be suitable for everyone from hand-held units for mountaineers to arm-chair enthusiasts who like to do their breaking from the comfort of home.

By far the most popular line, of course is the 'mobile' which can serve the dual purpose of in-car rig or base unit, and of which there is a profusion of choice.

One firm which has produced a "rig for all reasons" is HARVARD. Bottom of their range is the Harvard 0-2-0 hand-held transceiver retailing at around £20. An extremely lightweight unit, this rig is suitable for emergency-type use over a limited period — 10 PP3 batteries last only a matter of hours.

Channel availability is restricted to two, namely 14 for contact and 30 for traffic. Its bigger brother the Harvard 410T, does have rechargeable batteries and the availability of all 40 channels, but also costs about £70.

Harvard's mobile range of rigs include their 400M, 402MPA and 420M units. The 400M has all the standard rig facilities in addition to which it has a Roger beep capability and RX and TX LED display — which, I suppose, is something to look at when there isn't a lot doing on channel. It also boasts an external speaker socket, an attenuator switch and RF gain control.

The 402MPA, on the other hand, has minimum of controls up front, restricting them to an on/off/volume control, squelch and channel selector. It does, however, boast a public address facility and an attenuator switch. In contrast, the 420M model includes an RF gain among its attractions, not to mention a tone control and automatic channel 9 emergency selector.

Hailing from Bracknell in Berkshire, the firm of G.B. Associates are currently marketing two TRANSCOM International CB rigs — the GBX 2000 at £69.96 and the GBX 4000 at £89.96. "We started sourcing our range earlier in 1981" said Mike Buckland, Managing Director. "Therefore our mobile units are built for us with an exclusive hi-fi type brushed aluminium finish."

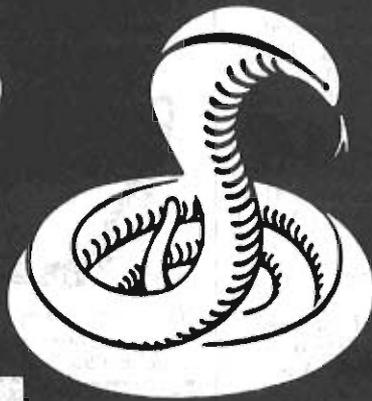
The GBX 2000 is a basic unit for those new to CB, and with a volume, squelch and channel knob, you can't get much more basic than that. The unit does, however, boast a 10dB attenuator switch.

The bigger model (GBX 4000) includes RF and tone control among its virtues although how the manufacturers can describe their Roger beep facility as "unique" is something of a mystery.

For those with a space problem in their cars, or who just want to be modest about their equipment (and don't we all!) Sunrise Products of London have produced the very thing. Measuring on 7 x 9½ x 1½ inches, this "Mighty Mini", as the SHOGUN model has been named, represents the latest in Japanese technology at £99. Using the new "noise blanker" system to all but eliminate interference, the unit also includes a control for de-tuning the signal should it drift off frequency. Fitted with extension and PA facilities, the rig has pretty lights for transmit and channel indication, but perhaps the most striking feature is the "select call" operation. This, when used with an encoder/decoder attachment, will select only the wanted call from incoming signals.

Ideal, in our experience, for communications up to a maximum of three miles, the P. E. RANGER is more a shoulder-slung than a hand-held rig. It must be mentioned that the transformer fitted in the built-in battery charger was on the blink on the model we tried. Furthermore, the rubber duck antenna tended to produce crunching noises when

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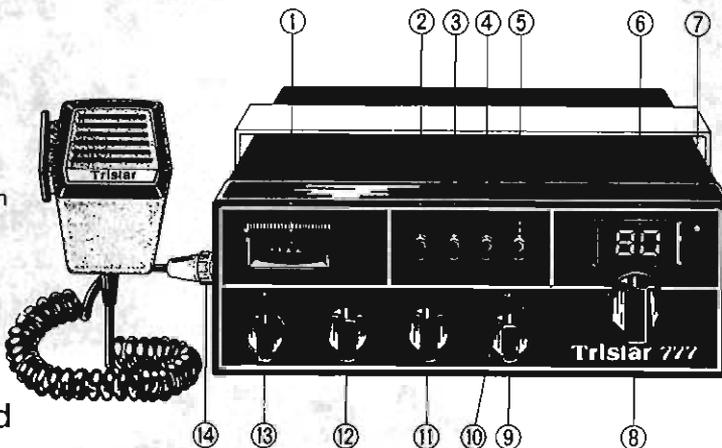
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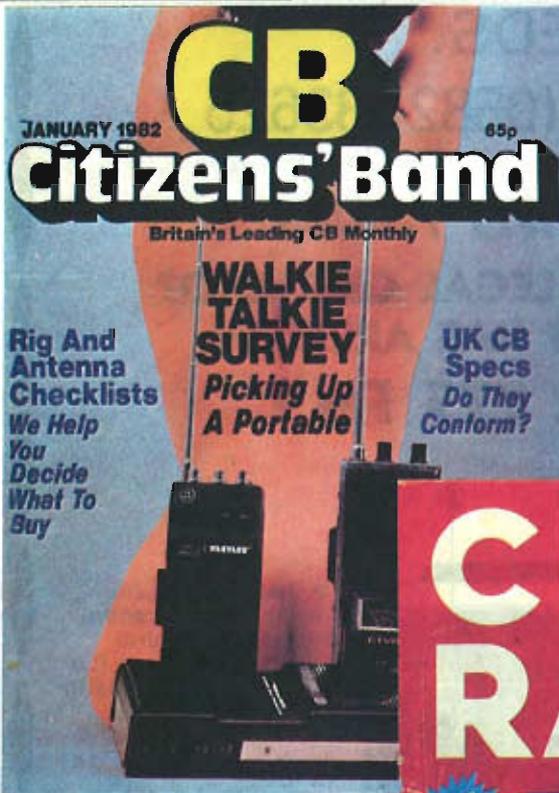
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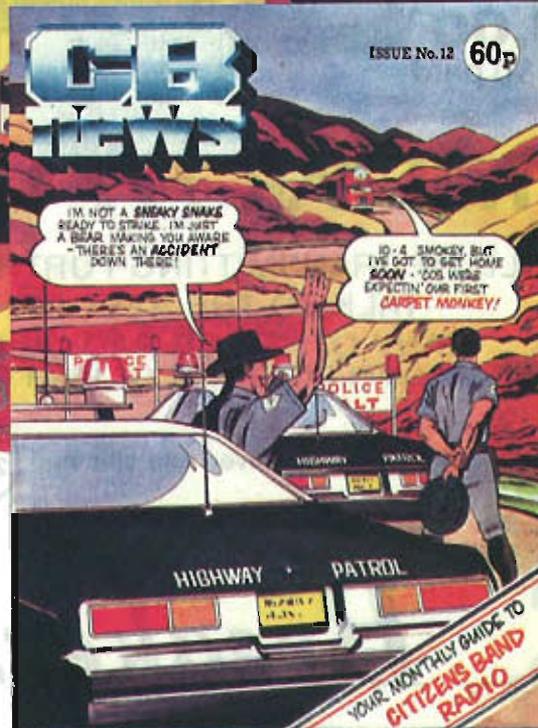
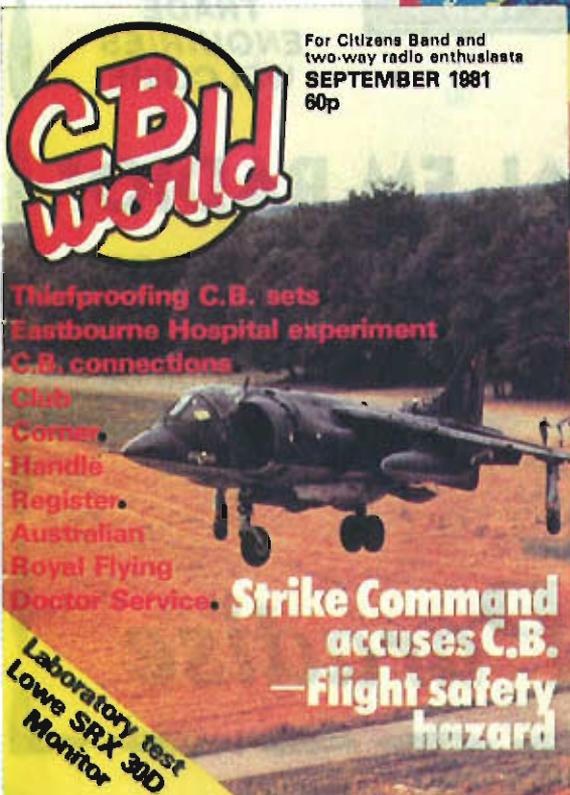
Breakers Paradise

CB MAGAZINES

— how many will survive the 80s?



David Lazell looks hard at CB magazines in America and elsewhere, and says there are lessons to be learned from their successes — and failures.



1981 saw two amazing developments in the press — first, the bingo boom in the daily tabloids, and, second, the appearance of at least eight CB magazines! No one is saying which of these may make (or lose) most money for their proprietors... But 1981 was certainly a year to remember as far as CB magazines were concerned, and we will be lucky to enjoy such a wide choice at the end of 1982, for obvious reasons.

With the belated legalisation of CB on 27 MHz FM, there was naturally enough, a hunger for information, no less than for rigs themselves. But then, the CB magazines, having pushed hard for legal CB, were somewhat embarrassed by the shortage of rigs. Base stations were as rare as rocking horse shoes, so that some companies even soft-pedalled their advertising plans. Yet, for all their problems, the magazines appeared, and were occasionally armed with technical data that even the real amateur could understand.

Whilst Britain was basking in all these CB publications, Australia saw the departure of one of the world's most famous monthlies, **CB Action International**, formerly called **CB Action**, and edited from Melbourne. However, as will be detailed later, a merry phoenix rose from these literary ashes, a new independent journal, **CB Focus** including many of the excellent features formerly seen in **CB Action**, albeit with different titles.

Significantly, though, **CB Focus** emphasises the benefits, not of 27MHz AM primarily, but of 477 UHF/FM. Whilst Australia is moving from an 18-channel to a forty-channel AM system, there is little doubt that more serious use of CB utilises 477MHz UHF.

Australia, like the USA had enjoyed a lively variety of CB publications. **CB Action**, launched in 1977, soon incorporated **Breaker** and **10-4**, and well into the late 1970s **CB Action** ran very substantial issues of at least 100 pages and sometimes as many as 132. These contained a vast array of display advertisements for 27MHz AM equipment, ensuring a good advertising income for the magazine.

But these golden times for advertisers did not last and by the spring of 1981 the magazine was down to around 60 pages with far less advertising backup. Reasons for the decline in CB business might better be gained from the financial papers than from the CB journals, but it seems that the rig market was swamped and that cheap and not-too-well-made rigs were used by kids (ruining the prospects for real enthusiasts) and also that some firms went into CB to make a quick killing and then get out. And then they got stuck with the gear...

CB Action changed its title with the fiftieth issue, and **CB Action International** seemed all set for a golden future, albeit a little slim and lean on advertising. Rumours that the magazine was planning closure were dismissed by the editor — but came issue 54 in the summer of 1981, and its run ended abruptly. Even the glamorous cover girls, caught by photographer Joe Richelieu, had failed to save the magazine. Yet **CB Action** remains something of a model for British magazines, with our excellent array of technical and general interest features.

In terms of serious discussion of CB use in different parts of the country, no British CB magazine has yet come up to the coverage of **CB Action**. However, it may not be fair to make comparisons, given that FM CB is still in its infancy in Britain. Rig and equipment reviews had a high priority in **CB Action** (as in British journals) with a continuing series on basic electronics. Several writers reported on CB activity in various parts of Australia, eg 'South Australia Scene', 'Queensland Scene', 'Sydney Scene', 'In Melbourne Style', and so on.

Although literary style was colourful, referring to 'rethbogs' and other mischief-makers on 27MHz AM,



"So, unless we get another magazine that majors on the AM cause, it looks as though the CB press will become entirely pro-FM"

these regional/state reports were an excellent source of hard information on the developing use of 477MHz UHF by more ambitious breakers. Like the British journals, **CB Action** reported the good deeds of breakers, but there was far more emphasis on the work being put in to make CB a two-way, or small-group radio system for the 1980s.

CB Action ran a regular column reflecting the feminine view, and use, of CB, but Bev Grey's 'Girl Talk' appeared only a few issues before the magazine closed. Subjects raised by this 29-year-old lady, resident, as she explained, in what could be called one of the middle class suburbs of Sydney, included the use of sideband; abhorrence of obscene language on AM; problems of 'CB widows'; 'Romeos and Juliets' on CB, and a great deal more. Bev Grey certainly deserved her two pages of the magazine. Here's a sample of her literary style:

'The family that CBs together, stays together. A CB set makes a cold bed companion'.

Well, you can't argue with that!!

Sem Voron produced an excellent feature on equipment and the various encounters that might be made on the frequencies, ie for shortwave listeners as well as for CB/scanner users. Leon Senior, the non-de-plume for a businessman long experienced in CB, started a regular feature, '477: The UHF Report' shortly before the magazine closed. **CB Action** also ran an interesting example of CB fiction, by Dan Bartley. The Terry Walker stories related the adventures of a truckle (trucker) and former Vietnam serviceman Terry Walker, and his long suffering friend, Konrad. If Terry could somehow be persuaded to stay at the Crossroads motel for a few days, it could make a lot of difference to the viewing figures for the show! Also for the local aspirin sales.

Dan Bartley deserves some kind of literary award for the series. You might say, as for 477UHF CB, 'we've got nothin' like it in the old country'.

CB Action, although primarily a commercial publication, one of a stable of publications from Newspress, a diversion of Age Publications of Melbourne, was also the official organ of the National Citizens Radio Association (NCRA) of Australia, and carried reports of NCR activities. We do not have anything like NCRA in Britain, though various groups like the CBA and NATCOLIBAR, have done good work in pressing for legal CB development. The NCRA has been working closely with the Australian Department of Communications (DOC) for some six years and provides regular information to users, via the media.

Since **CB Action** also carried regular reports of the



“... excellent idea to build up a collection, since in a few years' time early issues will be avidly sought.”

Citizens Radio Repeater Association (CRRA) — (a group of concerned operators and user bodies to promote, on a wide basis, the introduction of a permanent repeater service) ie for UHF CB: and also on CREST, the Australian equivalent of REACT, in general monitoring terms, it was really an influential and important magazine. Its sudden closing was, for regular readers, more than a little traumatic.

CB Action at least out-lived the other magazines, including the attractive **CB Australia**, a monthly published from New South Wales from 1976. In addition to its incorporation of 'NCRA News', a regular supplement from the National Citizens Radio Association, the magazine ran extended interviews with personalities on pop and/or free radio scene.

These were a little like 'The Rolling Stone' interviews, and well illustrated by cartoons. Literary style came from such writers as 'Phantom Squid Wielder One', who proposed chastising wayward CBers 'by striking them in the face with a dead, cold, totally wet, smelly, foul, putrefying SQUID'. This is the kind of idea you might normally expect to come from that intellectual show 'Tiswas'. Unfortunately, though it had a great deal of product information, and other good features, **CB Australia** closed down.

This was also sudden, and reflecting the financial problems that can overcome any magazine when it faces a shortage of revenue from advertising. Whilst interest in UHF CB is increasing in Australia, with the promise of at least one new UHF model on the market shortly (to make four in all) the cutback in 27MHz AM business was somewhat disastrous to the publishers.

This point was underlined in the final editorial of **CB Action International**: "The boom will never return to this country, but CB will continue to play a major role in the Australian community." Was this judgement correct? Or will the move from an 18-channel to a 40-channel system on AM, revive business? Few could claim to know the prospects better than the editor or the magazine, who added: "MY final observation of CB in general, is that it has become stagnant. There exists many thousands of CB operators, but their collective actions are markedly less united than any previous stage of CB growth in Australia. Initially, all interested operators were enthused by a driving urge to legalize CB operation; then came the fight for rights as citizens of a proud democracy; now, demoralized by lack of response by the authorities to the pleas for sensible band planning, and adequate HF allocation, CB appears to have slid into the disorganized murk from which it evolved. Perhaps the coming announcement of 40 or more Australian channels would have saved the day had it been forthcoming sooner. We can't say for sure — but the time has passed to rescue this publication." The decision to end **CB Action** must have been

taken at short notice, for Bev Grey's 'Girl Talk' closes, in that final issue with a reference to next month's column. However, Bev, with most of the other **CB Action** regulars, switched to the new **CB Focus**, edited by Graham Pockett — who had worked on the departed **CB Action**. Appropriately, in the editorial for the first issue (October 1981) Graham referred to the move towards a legal 40-channel system, on 27MHz AM.

In addition to Bev Grey's column, **CB Focus** now includes, 'Focus on Queensland' (Rod Fewster); 'Focus on Sydney' (Paul Richards); 'HF Scene' (Sam Voron); 'Focus on Canberra' (Colin Ford); 'Focus on Melbourne' (Lee Travers) 'The UHF Scene' (Leon Senior), 'QSL News' (Garry Morosoff) and news from the Citizens Radio Repeater Association, monitoring groups and other serious users of CB.

Early issues of **CB Focus** carried reports of CB use in helping mentally handicapped youngsters, as well as a college's use of UHF in educational work. For light relief, the Terry Walker stories are included. **CB Focus** is a worthy inheritor of the mantle worn by **CB Action** — but can it succeed in lean times? Well, it ought to, and as an independent magazine it may generate a special kind of enthusiasm not always possible when a magazine is run as one of a series (as the excellent **CB Action** was).

The lesson may be, 'small is beautiful', and that could have lessons for British CB magazine publishers too. New Zealand has a monthly CB magazine, **Cee Bee World**, with special emphasis on CB use by disabled people. But to some extent the magazine uses sources of material outside Australia (inevitably, for New Zealand is a small if energetic country).

A cool million at Sotheby's

Before moving to the British CB magazine scene however, it's worth noting that the home of CB — the USA — is now down to two nationally distributed monthlies, and neither of them concentrates on CB alone. **S9 Hobby Radio** is perhaps the better known of the two; the other, **CB Radio Times** was called **CB Magazine** prior to the autumn of 1981. At one time, there was an impressive selection of CB publications in the USA, with titles like **Official CB**, **CB Digest**, **CB Today**, **10-4 CB**, **CB Quarterly**, and so on. No doubt, a complete collection of these literary rarities would fetch a cool million or two at Sotheby's.

Any development in hobby or collecting brings its own publications so it is hardly surprising that America had so many CB papers. But there were too many; advertisers could not sustain them all. In any case, as editors of CB magazines in Britain learned (especially during the pre-legalisation months) it is sometimes very hard to say something new about CB in the absence of new products, new uses and new frequencies.

Today, the two US magazines are devoted to far more than CB radio, and in fact the USA does not have anything like our British CB publications. Though it once did. **S9 Hobby Radio**, which calls itself America's oldest and largest CB magazine, covers in-car radar, electronic scanners, ham radio, shortwave and car stereo. It had a distinct leaning towards sideband use (which is where most serious CB users go, given the problems with 27MHz AM) and its editor, the energetic Tom Kneitel is author of a well known book on the subject.

Extensive coverage of frequency use by aircraft, the military, public authorities etc encourages the growing band of scanner owners, and there is considerable coverage of in-car radar (which would certainly be outlawed in Britain). Radar is very widely used in the States to check on car speed, and the move towards in-car counter-measures and



"The home of CB — the USA — is now down to two nationally distributed monthlies. S9 Hobby Radio, and CB Radio Times."

warning devices is now assuming the enthusiasm once reserved for rigs.

Other government or legal decisions on hobby radio use are covered in S9, as well as **CB Radio Times**. But a special feature of S9 and one of the most popular is 'CB Pioneers Corner', in which 'Judy' examines the rigs and companies of yesteryear. This is a fascinating series and probably unique, world-wide. 'Tomcattin' with Tomcat' is a regular column about CB life, products and activity by the editor, and S9 also has excellent coverage of products in hobby radio areas other than CB itself, eg in-car radar.

CB Radio Times, formerly **CB Magazine**, has also been around for some years — about 18 in fact. It has run some excellent features over that time, including 'HELP', a series of true-life reports on the way that CB had worked to save people facing tough situations. Another regular feature links CB to amateur ham radio use, to create a helpful bridge between the two. With a good family orientation, **CB Radio Times** has perhaps more emphasis on the social and community use of CB than S9. Recently, for example, **CBRT** published practical guidelines for community patrols on foot or in vehicles.

Community patrols, using CB and working as an information source for the police, are a growing feature of CB life in the States. Earlier in 1981 there were special issues devoted to shortwave use and other aspects of hobby radio — and **CBRT** also has a lively interest in satellite television.

Opening its pages to readers

Although S9 **Hobby Radio** and **CB Radio Times** are the only commercially produced magazines in the USA there are many privately produced journals, dedicated to shortwave or scanner use. **FRENDX**, produced by NASWA (North American Short Wave Association) is one of the best, a well-informed and stimulating bulletin on shortwave and other hobby radio activities. One must also mention that excellent newspaper, **The REACTer**, produced by and for members of REACT in America. Tabloid in size, and usually with eight or 12 pages. **The REACTer** is basically dedicated to the activities of REACT at central, regional and local levels, so that notes on their work in rescue, monitoring, good work in the community, etc. are included, and are often used by CB magazines, etc. During the past year or so, **The REACTer** has started carrying paid advertising by equipment manufacturers, and this is a wise move, given that such advertising is naturally scrutinised as worthy of the pages in order to extend the influence of this excellent publication.

We will certainly have something like it in Britain

sooner or later. **The REACT Supporters Bulletin**, in the early days of REACT development in Britain, carried some good material from **The REACTer's** pages.

Canada has a CB publication called **On The Side**, this having a special policy of opening its pages to readers, but to some extent Canadian CB is overshadowed by what happens in the USA. This is not a criticism, just a fact of life. If you wish to discover more about the commercial CB magazines mentioned in this article, please write to the addresses at the end of this feature.

Although CB magazines from overseas had been read in Britain by real enthusiasts for a year or two before the appearance of the first British magazine, British publishers wanted to do their own thing. There is some modest link between US and British publications: **CB World** has sometimes credited **CB Magazine (USA)** for material, and **CB News** has quoted **The REACTer** as well as **FRENDX**, for example.

Yet, the first British CB magazine, **CB Radio** has a strong technical bias from the outset, apparently aiming at the DIY enthusiast with some basic radio knowledge. This creditable technical emphasis was hardly surprising, given that **CB Radio** had Fred Judd as its Technical Adviser. Like E. A. Rule, another contributor, Fred is professionally involved in the CB design business and was for many years electronics editor for a nationally known publisher. **CB Radio** also has Parliamentary News (pretty important given all the arguments about CB in the early days), the law applying to CB, readers' letters and club news. Even after all this time, **CB Radio**, an independent publication, remains the 'GCE' of the CB publications world. At A level, naturally.

Sometimes thought to be around the CSE Level, another early publication was **CB News**, launched by an independent publisher, Crofts Publishers Ltd. of Heanor, Derbyshire. 'Todd' Slaughter the editor, saw the potential for CB during one of his annual trips to America, and thought it would be a good idea to press for something similar in the Old Country.

Although **CB News** has little technical information it has attracted many older readers' (surprising, but proved from mail received). It has developed several general interest features 'Uncle Charlie: Notes of an FCC Engineer On The Road'; 'The Downtown Breakers Club' (based on real life events in CB clubs); **CB Intelligence** and 'Copying The Mail' — a series of short paragraph comments based on CB high life up and down the country. Maybe the most significant aspect of **CB News** is the response to its coverage of UHF CB, which has apparently stimulated a lot of interest in the medium. There is also a significant move towards relating the styles of small group use of CB — the nets — to future forms of community, or alternative radio.

Best-looking of all the CB monthlies is **CB World**, launched in December 1980 by IPC Electrical-Electronic Publications Ltd. With good quality layout and high standard of visual appeal, printing, etc. **CB World** has a reasonable editorial balance and like the US publication, **CB Radio Times** has features from CB to radio ham.

Since CB was introduced into Britain there has been a real upsurge in interest in amateur ham radio so it is appropriate that one of the leading CB magazines should help ordinary CBers understand what is involved. Like **Breaker**, **CB World** has used full colour insert pages on trucks and other aspects of CB culture, to brighten the magazine's pages, and with technical material, readers letters, CB personalities etc, it is a good publication package.

Contemporary with **CB World**, another monthly, **Citizens Band** sprang basically from the pages of **Hobby Electronics**, which has been running features on the subject. Probably the most famous aspect of **Citizens Band** was its editor, Rick

CB MAGAZINES

Maybury, who, in the early days of legal CB, did some work via BBC interviews, for CB's reputation. The problem with **Citizens Band** was (probably) in carving a niche distinct from that of the technically-biased **CB Radio**, but it has found an interesting mix of product reviews and general articles.

In those coincidences of topics which are so striking in CB publications, **Citizens Band** at the end of 1981 (December issue) was running a sympathetic article on Customs and Post Office officials, 'Give Buzby A Break', whilst **CB News** (January 1982 issue) was uncovering the true life of Buzby, as revealed by Buzby's Ma.

Since Buzby had just been voted the most unpopular personality in Britain, you could say that 'your pay your money, and you take your choice'. The **Citizens Band** piece was a well conceived story about the real work of diligent public servants — it's just a pity that the word Buzby is, apart from 'planning' the most unpopular word in the British language.

One of **Citizens Band's** most popular features is that of 'Mack Chat', a report of CB life, on and off the motorway, by a veteran. Rig reviews is a special feature of the magazine and although **Breaker** is also strong in this direction, **Citizens Band** is probably easier to read in terms of typography, column width and general layout.

Another publication is Britain's sole CB newspaper, **CB Gazette**, launched in 1981. Although at 45p it might seem a little expensive compared with the far more substantial CB magazines costing between 60p and 80p, **CB Gazette** has basic material on CB use and practice, appropriate to its readership; the sociologist of a hundred years hence, wishing to find out what CB was all about, might find **CB Gazette** his best source.

Plain speaking

A further source, in terms of the political background to CB, would be **Breaker**, launched towards the end of 1980 at a cover price of 80p. From the beginning, **Breaker** (though it sprang from **Custom Car** and shared the editorial of Richard Nichols with that paper) had the flavour of the alternative press of the early 1970s, **Oz** and all.

With its less than flattering portrait of the Home Secretary, and plain speaking on the way that CB was being handled by the country's leaders, **Breaker** sometimes had more bite than the **New Statesman**. The first issue, by the way, sold out fast, and must be a collector's item today. In terms of design and graphics — the hand-drawn headings for articles, for example — **Breaker** is certainly a leader in this field, but its relatively narrow columns and small type makes it less easy to read than the others.

This is not meant as criticism: it is a matter of choice, and the market you have in mind. In terms of stuff to read, **Breaker** had been an example to follow. It has given a lot of room to **REACT**. Other features include a cartoon strip, 'Twong', which has a touch of Greek mythology and a light touch worthy of Al Capp, who did the great Li'l Abner cartoons. 'Haulin' Ass' is a well illustrated feature on customised trucks, and the magazine has maintained a constructive interest in the transportation end of CB, as well as product news, QSL features, and so on.

A neat, pocket-sized CB magazine, **Breaker On The Side** appeared in 1981, and is edited in Manchester. Seemingly, it is aimed at the younger CBER and newcomer to the hobby, though it is always good in its coverage of CB club activities. It is a little unfortunate that **BOTS** tends to get obscured by the larger magazines in the newsagents displays. But this reflects a problem that all magazines share.

This problem is not confined to CB magazines; it's just that modern magazine merchandising, whilst it gives shoppers the best choice, also permits occasional use of the newsagents as a public reading room. Final magazine to appear on the scene is another monthly, **What CB**, and this will probably develop in accordance with its title, as a journal giving basic reviews and comparisons on equipment.

With all this wealth in CB journalism, it would seem an excellent idea to build up a collection, since in a few years time, early issues especially will be avidly sought, along with those titles which disappear in 1982, 1983 or afterwards. For that is the point; how many of the current CB titles will survive?

Britain, like the Americas, will probably end up with two, or at the very most, three monthlies, though these will move into other areas of hobby radio. Even CB editors privately expect the CB boom to last only a couple of years, and then, following US and Australian experience, to decline.

However, this writer is not so pessimistic. Britain has always been a very radio-minded country, and CB in various applications could develop far more dramatically than is evident from mere hobby use. For publishers the problem is that of getting CB enthusiasts to buy magazines, for probably 90% of them do not.

Fly-by-night

Such advertising back-up as that enjoyed by the CB magazines in the earlier months of 1981, came from small specialist companies (in antennae, speech processors etc.) and importers of accessories, CB booklets, etc. CB badges, clothing and other merchandise was also advertised and although the magazines worked hard to prevent fly-by-night outfits getting into their pages, there were examples of companies advertising and failing to pay their advertising bills.

One case involved a company's lamentable record in sending out merchandise that had been paid for. The general situation, however, was good, and the magazines coped well in a tough business environment. The toughest question of all, though, was: whether 27MHz AM? Rightly or wrongly, the CB magazines were seen as champions for the AM frequency, and this was hardly surprising since, in 1980 especially CB was AM. The fight was to get the FCC frequencies available in Britain, and the pioneer breakers had no thoughts of 900MHz, FM, or any other fancy 'Open Channel'.

Naturally, to relate to this readership, the magazines adopted a critical stance to the government's action or in some cases, lack of it. **Breaker**, as we have observed, did very well in its comment columns. But, once the government offered and introduced 27MHz FM, albeit on frequencies that certainly did not please British manufacturers any more than they did the old-time breakers, the magazines were faced with the need to get advertising from companies moving into FM merchandise.

So, unless we get another magazine that majors on the AM cause, it looks as though the CB press will become entirely pro-FM, whilst they will also push the government to an expansion of the CB system generally, but on higher frequencies. The fact is that no commercial magazine can hope to survive without advertising back-up. That's certainly the lesson derived from the departure of excellent CB publications in other parts of the world.

Yet CB magazines have a lot to write about, and will help shape better CB systems in the 1980s and we trust the 1990s (though they may be on videotape by then). This is why breakers should buy at least one CB magazine — of their own choice — every month. Without a good CB press, we will not get more and better CB.

FITTING IDEAS?

If you're going to fit your own CB radio, here are a few tips on what to do, and what not to do . . .

Take plenty of time in planning the installation of your rig in the car. There is no point in running amok with a Black & Decker until you know where everything will fit.

If you intend to mount your antenna through the boot or car roof, first mark the spot with an X of plastic insulation tape beforehand, to make sure that your drill bit doesn't skid off and cause unnecessary damage.

Before you drill, ensure that there is nothing vital in the way of components or wiring underneath the chosen spot. Motor car wiring is so complex these days, that if it is damaged, you may need a complete new loom.

If possible, do not mount an antenna at the front end of the car, as this may well result in picking up interference from the electrics such as the alternator, distributor and other electrical components.

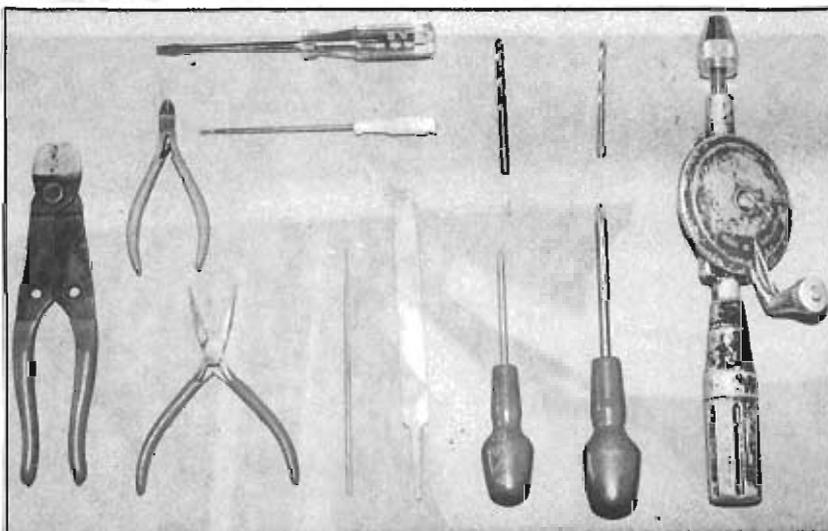
Use a hand drill to make holes in the car body. The gauge of metal used is not that thick and a hand drill is much more controllable. If necessary, make a pilot hole of small diameter, before enlarging it with a bigger drill.

If the diameter of the required hole is bigger than your biggest drill bit, enlarge it with a circular file. This will ensure that the hole is symmetrical, and is a better method of enlargement than stirring a small drill bit round to enlarge the hole. File a little at a time, as there is no way of making a big hole smaller.

If you **must** use an electric drill to make holes in the car, do it in the garage, or if you have to use it outdoors, don't try if it is raining. Water getting into electrical appliances or extension leads can be very colourful — and lethal.

Seal up the bare metal after holes have been made by running a brushful of matching touch-up paint round the edges. Leave to dry for as long as possible as touch-up paint might feel dry, but is soft underneath the surface. Even better results can be achieved by using an anti-rust primer.

Basic tools you'd need to fit a rig to a car. To be found in most average toolboxes.



A good earth is imperative. Here the indicator and flasher switch mounting bracket is being utilised.

If fitting a gutter mount aerial, scratch away the paint down to the bare metal immediately below the elamps. The paint is particularly thick in car gutters, and is enough to insulate the antenna.

Gutter mount antenna co-ax can be concealed by running it along the gutter and into the boot. This is a better method than taking it through the window of the rear door. Two door cars have sealed windows anyway, and taking an antenna lead through the car door can damage the rubber seal in time.

If mounting an antenna through the boot lid, make sure that the backing plate on the inside is large enough. If it is too small, the drag on the twig at high speeds may distort the bodywork.

Access from the boot of the car to the passenger compartment can be gained by feeding the co-ax underneath the rear seat squab, after removing the rear seat. If, because of design difficulties, this is not possible, the co-ax must be put through a bulkhead. If this is the case, the co-ax must be protected by a grommet — a "plug" with a hole in it. The grommet (they come in various sizes to suit the size of the hole they are required to fill, and the size of the cable that has to go through them) will prevent the cable chaffing against the metal of the hole. Although this is important in the case of antenna leads, it is vital when dealing with power leads, as the continual wearing away of the insulated cover will eventually lead to a short circuit and even fire.

To take the antenna lead from the rear of the vehicle to a position underneath the dash for connection to the rig, the plastic or metal trim should be loosened, the cable concealed behind it, and the trim screwed back into position. Make sure that the cable is clear of the screws when replacing the trim, and that it is not trapped underneath it.

Do not simply conceal cables, either antenna or power, underneath the car carpets. Continual pressure from passengers' feet will eventually wear away the insulation and cause a short to earth. It will also wear away the carpet.

Before mounting the rig, experiment with it in various positions within reach of the driver. Popular place for the rig is underneath the dash to the right of the driver's knee, but this is often inconvenient with certain makes of car. In Escorts, for instance, mounting it in this position prevents access to the bonnet lock lever.

Principles of rig positioning are, easy access for adjustment of controls, minimum sight line deviation from the road when making such adjustments and substantial mounting point. Ideal position is in a centre console which makes the rig equally available to driver and passenger and suits the conditions listed above.

Beware of the material used in the fascia of modern cars. Metal is fine, but very often the fascia or dash is made of plastic or a sort of strong cardboard. If the earth return of the rig is through the casing, and the fascia is **not** metal, a separate lead must be taken to an earthing point. Normally, plastic fascia is strong enough to support a rig, but the cardboard types are suspect, and metal washers should be used to add support. Similarly, a separate earth wire should be used on this type of fascia.

The method of attaching a rig to the fascia also depends on the type of material used. Self-tapping screws can only be used on a metal fascia, and nuts and bolts should be used if plastic or cardboard is the base.



When fitting, make sure the rig is within easy reach, and if there is a window (as in the Radiomobile unit) check that it doesn't reflect the sunlight into your eyes.

To correctly position the pilot hole for a self-tapping screw, use a drill of smaller diameter than the screw, and use the mounting bracket as a template. Attach the bracket to the fascia by the first self-tapping screw to hold it in the correct position, then drill the second hole to secure it. Held in position, any subsequent holes can then be drilled.

If the rig is to be mounted **inside** the glove compartment, which prevents the use of a drill, drill the necessary holes **underneath** the compartment as above, which will automatically position the holes in the right places for you to secure the rig bracket inside.

From a security point of view, mounting the rig in the glove compartment does conceal it from the view of the casual thief — it is not, of course, foolproof. There are several anti-theft devices available, but none of them are as effective as the complete removal of the rig. The slide-mount allows for this by enabling the owner to slide his rig into place and making all the necessary electrical connections simultaneously. A slide-mount is in two halves. Connections from the antenna and the power supply made to the static half which is bolted to the fascia, and similar connections are made to the mobile half which is attached to the rig. Full instructions are available when purchasing such a unit.

All connections between antenna and rig must be secure and are made by the use of standard connectors. These connectors require to be soldered to the cable which is the most technical task in the mounting of CB equipment. The cable used for antenna is called co-ax and comprises a plastic outer cover, beneath which is platted braid, and a wax layer covering the copper core wire. At the antenna end, the core is attached to the twig, whilst the braid is attached to the antenna base

which is, in turn, in contact with the metal of the car or 'ground plane'.

To fit one of these standard connectors, it is necessary first to cut back about an inch of the top plastic covering. This will reveal the copper braiding, which should be combed back to bare the waxy layer beneath. Half an inch of this wax should then be cut away to reveal the inner core wire. After dismantling the connector, the sleeve should first be slid up the cable for securing later, and the core wire inserted up the pillar of the connector.

Then, with a *hot* soldering iron, heat the end of the pillar where the core wire has penetrated, touch the spot with the solder, then, holding it very still, blow on the connector to harden the solder. The sleeve should then be screwed into position, trepping the combed braid underneath it.

Never take short cuts with electrical connections or equipment. Resist the temptation to do a quick tape job to connect two wires in the misguided belief that it is as good as a proper job, but quicker. There are two ways of attaching two wires, one is by the use of a connector strip, and the other with spade connectors.

Before applying power to the rig, check the manufacturer's instructions about polarity. Two wires will be attached to the set, usually red and black. The red wire is usually the positive one and is to be attached to the positive (or live) side of the car electrics. The black wire is earth — or usually negative. Nevertheless, check whether the vehicle is positive earth or negative earth and connect your set accordingly.

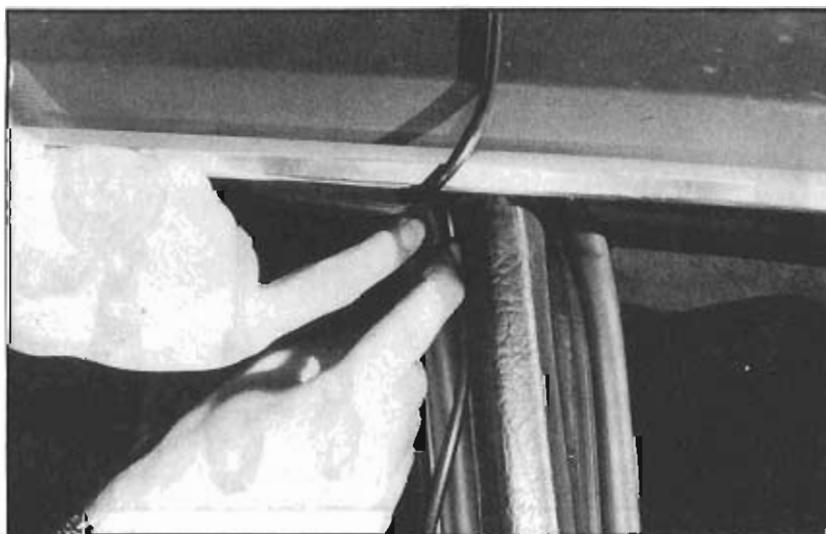
Ideally, CB rigs should be connected directly to the battery poles to avoid interference from the car electrics. However, a quick check if connection to the fuse box by the positive lead, and an earth contact for the negative one results in interference-free reception will establish if more direct connection is required.

Interference is caused by several of the car's electrical components, such as the alternator, distributor and plugs. Should you encounter this problem fit a set of compressors. These are bullet-shaped units, rather like big domestic fuses, and are fitted 'in line', which means they are inserted in the relevant circuits. Incidentally, they do not stop interference, but change its frequency so that it is outside the range of the receiver.

A fuse should be fitted 'in line' to the CB rig. This is usually a 2.5 amp unit which will protect the set against power surges and in some cases, against accidental connection to the wrong side of the battery. This can happen if the electrical supply to the rig is by two-pin plug which can be inserted the wrong way thus giving the wrong polarity.

If you want to power your rig by two-pin plug, get

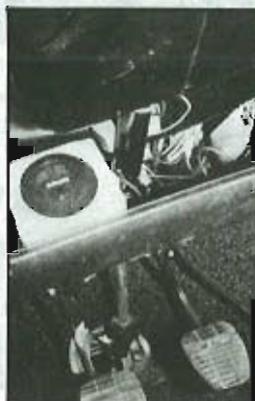
Below: If you're mounting to plastic-type material, you should use good, strong brackets, probably with a bracing plate on the other side of the panel. Bottom: Hide the co-ax behind the door seals where possible. It makes for a much tidier job.



Three pictures illustrating the best methods of doing various fitting jobs. From left to right, the co-ax is tucked behind the door seal rubber; our Radiomobile test rig is connected up to the Persuader antenna. This connection should be good and secure; Radiomobile offer as an accessory, an external speaker, providing you with stereo CBI



the type that are failsafe in that the pins can only be inserted one way — the right way. As a further precaution, never switch on the rig until the plug is in place, and there is no possibility of 'flashing' the set whilst trying to find which way the pins fit. When the rig is installed, it is essential that the Standing Wave Ratio of the unit is checked. This is a test to ensure that maximum power is being emitted from the antenna, and minimum power reflected back to the set, causing damage. For this you require an SWR meter. The best type is one with twin meters — one to denote when maximum power is being generated, and the other to show the degree of reflected wave. SWR readings in the region of four or five to one are dangerous to the set. This dangerous state of affairs can be reduced by shortening the antenna. With many twigs, the metal antenna is clamped into the base-mount with an Allen screw, and slackening this allows you to remove the metal twig. By frequent checking after taking minute lengths off the twig with a hacksaw (no more than 1/4 inch at a time) the SWR reading can be reduced to one to one — the ideal. It will be noticed that the metal section fits into a slot about an inch deep,



which can be used for the final adjustment. Base station breakers have an advantage over mobiles because they have a height advantage of some fifteen feet if operating from an upstairs room. If antenna are fitted on the roof, they have a further height advantage. Nevertheless, the minimum of co-ax should be used as this could minimise any advantage.

Power supply for base stations must be obtained from either a twelve volt battery or a 240/12 volt stepdown transformer with smoothing choke equipment. Alternatively, a twelve volt car battery with mains charging unit is a viable proposition.

Care should be exercised if a base station is powered by a 12-volt battery. Apart from a tendency to smell a bit (particularly when being charged), battery acid can inflict painful burns when applied to the skin, and make holes in things like carpets. For a very reasonable price, a plastic acid-resisting battery box can be obtained from boat or caravan suppliers.

Remember that if your antenna is higher than about 23 feet on a base station, you are required to limit your transmitter by using a 10dB attenuator unit. Apart from breaking the law, you are likely to become very unpopular with your neighbours if you don't.

Although it is possible to use a mobile rig as a base station, it is not possible to take the twig off a car and use it as it is. When attached to a vehicle, the antenna uses the metal of the car as a 'ground plane', and if merely stuck up in the roof space as it is, the twig will not radiate, and damage to the rig can result. Several do-it-yourself type suggestions have been formulated about how to provide a ground plane, but they all have their drawbacks and are not reliable. Far better to discuss the problem with your CB stockists who can provide an antenna system that is custom-built for the purpose.

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Exclusive Interview



The Government's

Timothy Raison, Minister of State at the Home Office, was put on the spot by CB82's Brian Charig and Editor Chris Drake recently. He answered our questions freely, holding nothing back. His view of CB's future was encouraging, and for a Government official Mr Raison has positioned himself squarely behind the British breaker.

Q: Has the Home Office changed its attitude in any way, to breakers operating on the AM frequency?

A: No. There is no question of an amnesty. We believe now, that the important thing for people to realise is that AM is an illegal way of using CB, and the sooner they switch to FM the better. As far as converted rigs are concerned, as soon as they convert them to FM they come within the terms of the licence.

Of course, it is not an offence to possess an AM CB radio. It's only an offence to use it. So if they haven't used their AM rig, but only transmit after it has been converted to FM, they have not broken the law.

Q: How do you view the fact that around 50 percent of breakers are still operating on AM, the illegal frequency?

A: I think it will decrease though. I think it's a great pity that people are still operating on AM. Now they have a good service on FM, the sooner they switch the better.

Q: What steps are the Government considering to stop the use of AM in this country?

A: Well, usage is illegal, and this is a matter for enforcement. But we have already said that when we find legislative time, we will amend the Wireless

Telegraphy law in order to ban the sale and advertising of these sets.

Q: Now, onto detection equipment. We have heard the name DONALD mentioned recently. What is this, and how will it be used?

A: This is really a matter for the British Telecom Radio Interference Service, in consultation with us, and I am sure that they will try to use the most efficient equipment they possess. But I can't comment on particular systems.

Q: There have been stories of increased fines for offenders, like £1,000 for using CB sets illegally. Is there truth in this?

A: Well, we have said that when we can, we will revise the Wireless Telegraphy Act. Our particular aim is to make sure, when we change the law, that it really does effectively outlaw the sale of unauthorised sets. The Criminal Justice Bill is also involved, and with a general increase in the level of fines, then penalties for the illegal use of CB radios would also increase.

Q: You stated recently that a lot of radio and television, and other electronic equipment interference stemmed from AM CB. Has the amount decreased since November 2nd?

Top of page: Brian Charig thoughtful as the Minister of State (right) discusses CB's future.

A: Until December there were 5,000 complaints per month, but since then the rate has dropped to 3,500 a month.

Q: *About the £10 licence fee. Is any of this being used to increase the amount of AM detection equipment?*

A: Part of it will be used for dealing with interference, and for supplying extra services. We do have sufficient equipment, and we don't think that we need any new apparatus.

Q: *Will the fee be increased? And by how much? And when?*

A: We hope to hold the CB licence fee for some time, and we naturally want to review at least one year of operation before making any definite decisions. But we do review all fees automatically every year and from time to time they have to be increased.

Q: *You said that the conversion of AM rigs to FM would be looked at sympathetically. Have many breakers come forward with converted sets?*

A: I don't think we'd have any figures on that question, but I assume that there is some evidence of that going on. There are one or two companies that are specialising in this, and seem quite happy with the trade. But that is entirely up to them. We don't police this, we don't register them, we don't look at the converted sets, and the onus is on the converter to produce the right stuff, and the user to use stuff which conforms with the specifications. If then, it causes problems, they might run foul of this.

Q: *Do you think we are any nearer using a CB system that is compatible with European systems?*

A: Europe doesn't have a compatible system. This is a fallacy. In the long term, there is the CEPT system which may develop, and which we hope will be compatible at that time.

I think one of the things that people overlook, is that CB is not seen as something with which you speak from this island to the continent of Europe. It simply does not have that kind of range. So it only seriously

selecting the current specifications was the need to avoid potential interference with aircraft systems — especially with the landing equipment.

We wanted to find something that would do the job properly. If we moved outside that parameter we could have found equipment that was harmful and in some cases, dangerous. So we will be seeing if there can be a slight relaxation on certain equipment, but there will be no wholesale relaxation. If there were, I think you would find that the civil aviation authority would be extremely unhappy.

Q: *So there is no way that antenna specifications might be altered? I ask this again because, of course, amateur radio enthusiasts are able to use variations of antenna, such as centre loaded aeriels.*

A: They're not precisely on the same frequency you know. The harmonics are very critical here. If you look at aircraft instrument landing systems, you'll notice there is no conflict with amateur systems. We have managed to fit in the current CB antenna specifications because the harmonics are right.

Another thing, the amateur, under the terms of his licence, is required to be able to deal with interference if he causes it. He goes to a great deal of bother to prevent it happening, and the CB user doesn't. That's not a criticism — he's just not equipped to handle it. I mean, most of them have just bought a black box, and there's a knob that you turn which is on or off. They are not experts in solving interference. On the other hand the amateur in general is required to sit exams to that effect.

Q: *Do you think that the introduction of legal CB has brought in a new breed of breaker?*

A: Well, I don't think we have any scientific information on this subject. Obviously we will have brought in people who don't like the idea of breaking the law and who have kept out of CB because they want to observe the law.

Q: *The first choice of the government for a citizens' band service was 934MHz FM. But it has been said that this is unpopular with manufacturers and breakers. Will the Home Office encourage its use? And if so, how and when?*

A: Our feeling is that if the radio spectrum that has been allocated to CB becomes very overcrowded — 27MHz FM — then people might start to become interested in 934. And if they are operating slightly more specialised services, they may well find it suitable.

On the ordinary 27MHz service you might be likely to

CBB2's Editor checks questions with Brian Charig before entering the hallowed portals of the Home Office.



Exclusive Interview

find everybody else on the air, so you might decide, for a particular use, you'd be better off on 934. An offhand example would be on a farm, where 934 could become quite useful as a management instrument. You can contact workers a mile or so away.

Q: *Could you tell us what machinery exists to follow up complaints of interference from CB radios?*

A: You mean general interference? Well, there is British Telecom of course. They operate a radio interference service, and they work in conjunction with the police to track down causes in interference.

Q: *On the subject of channel nine, the emergency channel. Has there been enough time to discover whether this is a useful facility, or not?*

A: We don't have much evidence, but there have been various reports of CB being useful in emergencies. But it is not a substitute for the existing 999 service, because in a sense, the CB service is going to be haphazard.

You never quite know whether anybody is listening, or whether they are capable of taking any action. So if you can possibly use the 999 service, that is a well established operation and is a much better one. But it



may be, from time to time, that people who get stuck in remote places, and haven't access to the 999 service, might well use channel 9 on CB to considerable advantage.

I don't think we would want to exaggerate channel 9's merits because there isn't enough evidence to justify doing so. One could say it is a possibly useful adjunct to the main emergency services.

Q: *FM has been accepted as being better than AM. Are there any figures to suggest whether today's breakers are new to the activity, or are they converts from AM?*

A: We don't have any hard statistics on that point, but we should say that the question isn't whether FM is better, but that it is not causing the same amount of interference as AM.

Q: *Are there any figures on the number of CB users currently?*

A: The firm figures we have are for people who have taken out licences for legal use. Since November 2, and until mid-January the number has been bumping around 135,000. But of course, this applies to the number of licences. We don't know exactly how many sets are in use.

The object was to give people licences for the whole system — a hand held walkie talkie, home base, and one in their car.

Q: *Britain has a unique CB specification. But we would think that at some time in the future, there should be common ground where European breakers can talk to British CBers. What is being done to arrive at what might be called a common specification?*

A: We come back to the CEPT recommendation, of course. This is something we can move towards, but that will be a little while yet. In the short term we have decided to go ahead with what we believe is the right system for this country, 27MHz FM.

Q: *How does the alleged breaking of the Treaty of Rome come into this?*

A: I don't think that's quite correct. The point was whether we were engaging in some form of restraint of trade. You may have more up to date information on this, but I understand that somebody made some form of complaint to the European Commission, but we haven't, recently, had any form of complaint. The Treaty of Rome is only concerned with trade, and it has little to do with whether we adopt a particular citizens' band system.

Q: *If new CB specifications are brought into force, would the manufacturers get reasonable notice to give them time to produce radio sets that meet the new rulings?*

A: If there are significant changes, we try to keep the manufacturers in the picture. We always have done. We have, of course, been operating fairly rapidly over the last 18 months and we've had to get a move on.

People have said to us 'Couldn't you delay it a bit longer so that the manufacturers could do this or that' but we really felt that the levels of illegal rigs were rising so rapidly that one simply couldn't sit back and say that we're doing to delay the whole thing for another year.

So we got on with it, but over a period of time, one is gradually moving to a system that is compatible with Europe. Presumably this would make it easier to keep the manufacturers in the picture.

Q: *Can you explain why it took so long to get a CB system into operation in this country?*

A: The fact is that the previous government was against CB. When we came in, we took the view that we ought to allow it, if it was possible to do so without causing undue damage to other interests.

So we were very anxious that there should be a proper consultation basis, which there was. We published our consultation paper and then, in response to talks with various people, we made a significant change.

I think that, given that, we haven't taken an unreasonable amount of time. My department has been under a great deal of pressure from different

people because they have wanted different forms of CB for one reason or another.

And as I have said, we have tried to do it with a fair amount of consultation. So really we either have consultation and it takes a little bit longer, or you don't have consultation, and can move a bit quicker. You can't please everybody.

Looking back on the whole process, we've done it in a fair way. We have talked to many people and in particular we went through the process of publishing the consultation document, and responded to the reaction. We didn't just publish it and say, well, that's it. We showed that we were prepared to change our minds, and I think that has been perfectly reasonable.

Q: *What is your answer to manufacturers' criticisms that you didn't give them enough time to make equipment, or to enable them to order from Far Eastern countries?*

A: Well, it's difficult to assess that. I mean, a number of them have made that point. Whether they would, in fact, have manufactured all the items and all the equipment if they had had a little longer, I don't know.

It's very hard to say, but we are being faced with the fact that there has been this very big growth in illegal use, and we have been anxious to provide the alternative to get people out of the illegal area. Sitting back and waiting for the manufacturers to make their decisions about making rigs, would have been unacceptable.

Q: *Do you see a big future in Britain for CB?*

A: We have always said that we want to make them available. We don't know how many people are going to use it — it is not possible to judge.

I think, if you look at it, there's a kind of a fashion and craze element about it. It's the sort of thing that people want to do and I also think there has been an

artificially high level demand.

In the longer run, it will settle down, and I'm sure it will go on and become useful to certain groups. I really don't think any of us can make a guess as to whether the future lies in hundreds of thousands, millions, or what.

Q: *Mr Raison. Are you a breaker? Or do you intend becoming one?*

A: I don't envisage myself using one, because I'm an extremely ungadgetty sort of person. I can't see myself becoming a breaker, but I'm sure other people will enjoy it.

CB82: *We wonder what your handle would be . . . Mr Raison.*

*From left to right:
Timothy Raison, Brian
Charig, Chris Drake.*



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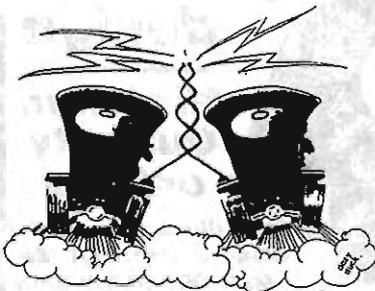
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Despite the fact that there are many, many ways of improving the power output of a CB rig by illegal means, there are relatively few methods, unfortunately, of boosting equipment within the government specification as laid down in MPT 1320 and 1321.

Having said that, there *is* a considerable amount that breakers can do to ensure that at least they are getting the maximum efficiency from their rigs, and there are a few modifications that can be made without stepping over the legal line. Although there may be many who would try to disagree with me, I would suggest that the best thing that any breaker could do to achieve an improvement in reception, if not transmission, was to buy an FM rig!

By its very nature, FM receiving equipment, as opposed to its AM equivalent, cuts down interference, and if presented with two incoming signals, will automatically select the stronger. Contrary to a widely held, but mistaken belief (mainly by AM breakers), Frequency Modulated signals are equally applicable to skip-working as Amplitude Modulated waves, but cause a lot less interference to other HF users.

Looking for possible avenues of improvement, equipment should start at the very basics of installation, with particular attention to the Standing Wave Ratio — or SWR. Many breakers buy their rigs and antenna, bolt them to opposite ends of their motors, connect them together, put power on the set — then wonder why they aren't

getting the desired results. A radio antenna is a particularly sensitive part of the equipment. Although it will *receive* with a reasonable degree of gain in an "un-tuned" state, its emitting properties will be seriously impaired.

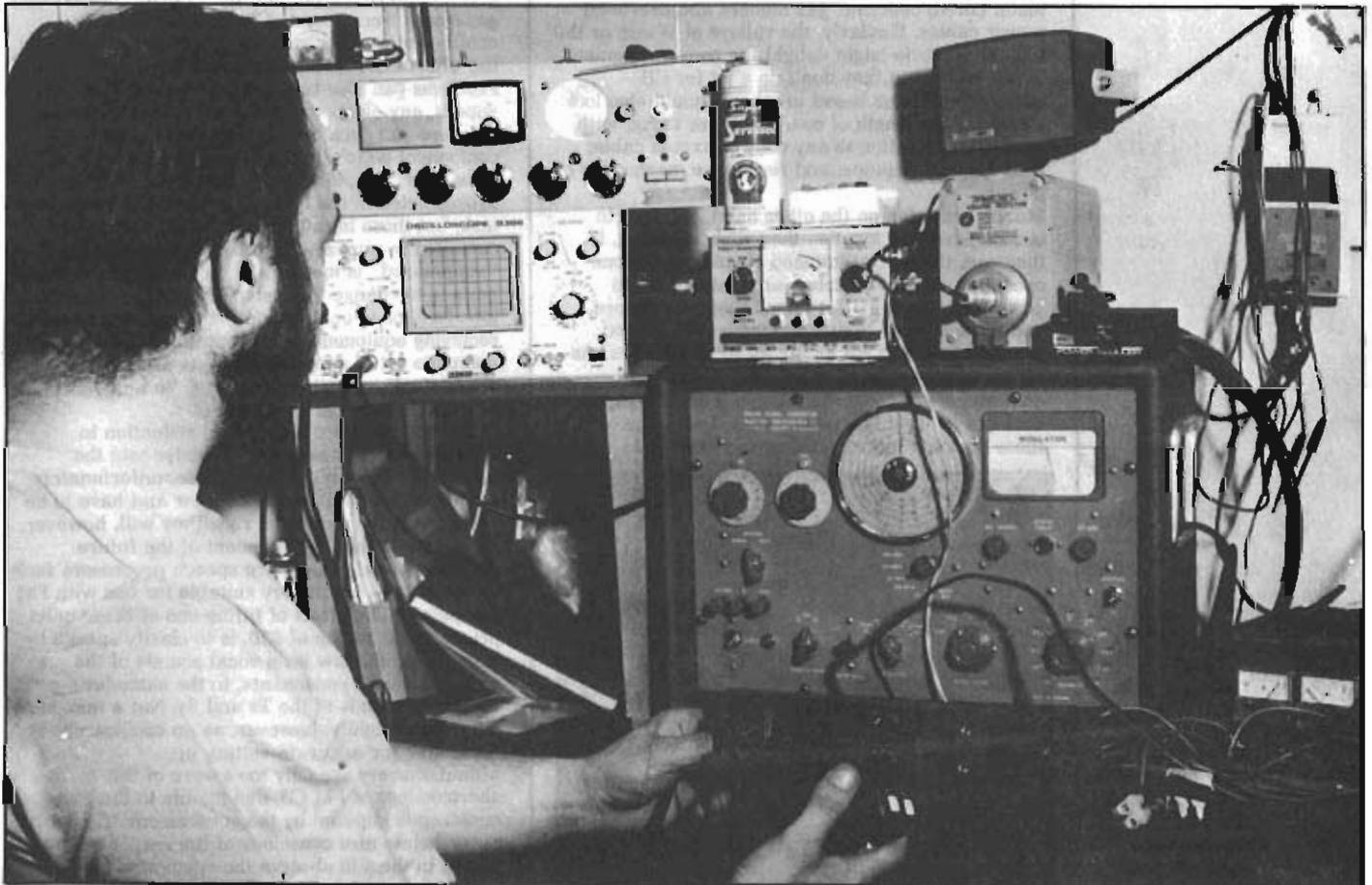
I would even go a step further and say that operating a rig with an SWR reading in excess of 4:1 could seriously damage the transmitting area of the set. A high SWR indicates that power, which should be going off the antenna in radiated waves, is being reflected back into the set, and although this might sound very technical, the remedy is comparatively simple. Most antennae are sold with an inch and a half of excess length, and by the elementary process of cutting slices off the end (4in at a time) the SWR can be reduced to something approaching 1:1. This, incidentally, is virtually unobtainable, but you should certainly be able to get a reading of 1:1.1.

Having taken that basic step, the positioning of the antenna should be seriously considered. A twig needs a metal mass to complement it — that mass being the "ground plane": how and where that ground plane is to be attached to the base of the antenna is a matter of how many holes you are prepared to drill in your motor! Ideally, boring a hole in the centre of the car roof and bolting the antenna through it will provide the ultimate technical advantage in terms of ground plane: the antenna is symmetrically surrounded by the necessary metal mass, and the twig is in a position to be completely omni-directional. This means that

Repair, service and checking can be carried out at some specialist shops, like that of White Horse Communications, of Whitehorse Road, Croydon.

Or it should be, according to Peter Dodson.
A few lessons on how to get the best from your rig.

LOUD AND CLEAR



the rig will both transmit and receive in all directions with uniform efficiency. However, if the prospect of a leaky roof, or an expensive roof centre mag-mount antenna does not appeal, then the next best twig position is in the centre of the boot — which gives problems to owners of estate cars. In this position, all the benefits of roof-mounted antennae are retained, although the directional properties of the aerial tend to be more bi-directional than omni-directional giving an increased 'gain' in the direction the vehicle is pointing.

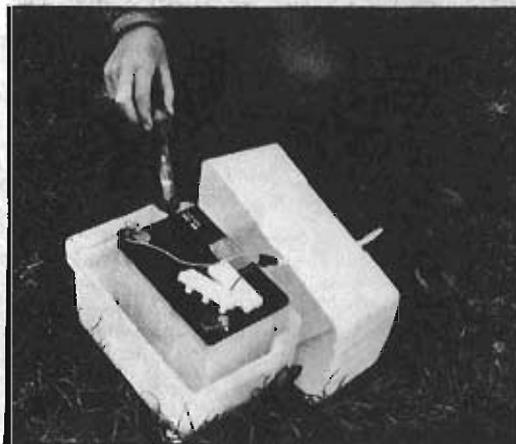
Almost as effective, due to the fact that the twig is clamped on, as opposed to being bolted on, is the lip mount on the leading edge of the boot. Although the difference in mounting may appear trivial, it does make a difference, and serves to illustrate just how sensitive such components are.

To cite a further example of this, when fitting antennae with clamps, the area immediately beneath the clamps should be cleared of paint — right down to the bare metal. Lastly, of course, there are gutter mounted twigs which, although quite effective, do not measure up to the efficiency of their centre-of-vehicle counterparts.

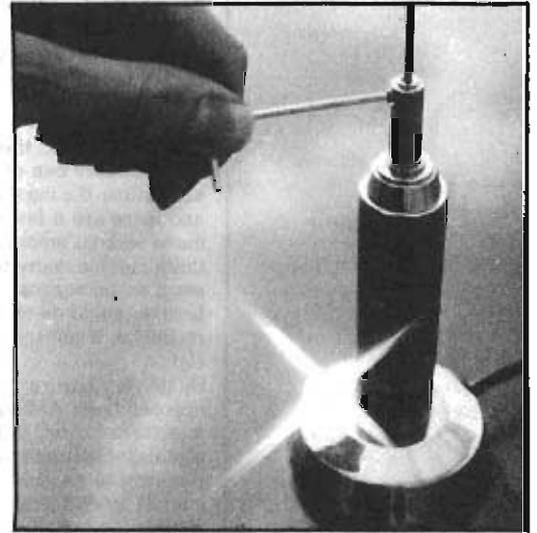
Whilst on the subject of antennae, it should be mentioned that any base station will automatically have a height advantage over mobiles. The very fact that an antenna, even in an upstairs room, is 15 feet above that of cars outside in the street, gives an edge to base-type breakers. When not using skip (and a high proportion of breakers don't) CB transmissions work on "line of sight" or "direct" waves, which means that, ideally, the transmitter should "see" the receiver. Taken a stage further, an aerial in the roof space, or even mounted externally on a chimney, will have an even greater advantage, although it must be remembered that any antenna mounted higher than 23 feet above ground level, must be subjected to 10 dB attenuation.

Base stations, however, do suffer the disadvantage of usually being situated in a residential area, and stuck with whatever man-made obstruction that surrounds it. Particular enemies of HF radio are high rise blocks with pre-stressed (and therefore metal cored) concrete, gas holders and overhead power cables. Similarly, the valleys of Wales or the fells of Cumbria might delight the conservationists in our midst, but they don't do a lot for CB enthusiasts. Home based breakers should also look closely at the length of co-ax they are using, with particular attention to any coils of excess cable; coils mean resistance, and resistance means loss of power.

Mobile breakers, on the other hand, are free to choose whatever location they wish, avoiding, if they can, the aforementioned obstacles! Anyone operating outside an urban area will be at an advantage, those on flat terrain gain even more, and those who do their breaking from elevated ground can reach out as far as 20 or 30 miles. As far as technical aids (as opposed to strategic advantage) are concerned, the only legal component that can be used is a power mike. Using one of these does not increase the power from the



Right: Keeping your home base (car) battery in good condition can help maintain top quality modulation. Note the polythene case with carrying handle, and clean terminals.



Correct SWR is absolutely essential to good reception — and if the SWR is really out, you could blow the rig! Cut 1/4 in off the bottom of the antenna each time. See text for details.

antenna, but utilises all of the speech input by increased sensitivity.

And so, having achieved maximum transmitting power, there remain two possibilities for improvement — to make reception more sensitive and to decrease the level of interference. Now, although it may be illegal to boost the transmitted signal beyond the legal limit of two watts ERP, there is nothing to prevent a breaker from amplifying the incoming signal, and this can easily be done by the insertion of a pre-amp unit between the antenna and the set which will effectively boost the level of received signals.

Interference, on the other hand, falls into two categories — adjacent channel and electrical, with a further sub-division of external electrical noise and the internal type. Internal interference is generated from a host of sources within the confines of a motor car, the prime offenders being the alternator, distributor and plugs.

Problems can also be caused by windscreen wipers, any electrical motor such as windscreen washers and even brakes; in a word, any component which produces a magnetic field or generates static electricity. To eliminate those causes listed in the last category would be quite a task, but those in the former can be effectively curtailed by suppressor units. Perhaps the word "suppressed" is inaccurate, as the function of such units is to change the frequency of the electrical interference to one outside the range of the receiving equipment to make it inaudible. A complete set of suppressors costs around £10 and are, in fact, capacitors which fit "in line" on the offending electrical components.

But to get any more substantial reduction in interference, it is necessary to delve into the realms of "noise blankers". These, unfortunately, cannot be bought over the counter and have to be tailor made for individual rigs; they will, however, be built-in to the CB equipment of the future. Available now, though, are speech processors such as the K40 — a unit very suitable for use with FM equipment. The effect of fitting one of these units, priced in the region of £30, is to clarify speech by bringing up the low level vocal sounds of the vowels and soft consonants, to the same level as the sharp sounds of the Ts and Ss. Not a task to be undertaken lightly, however, as an oscilloscope is necessary for accurate setting up.

Manufacturers are only too aware of the shortcomings of FM CB, due mainly to the constraints imposed by the government. They are nevertheless also conscious of the responsibility vested in them to observe the spirit of these restrictions with regard to interference to others.

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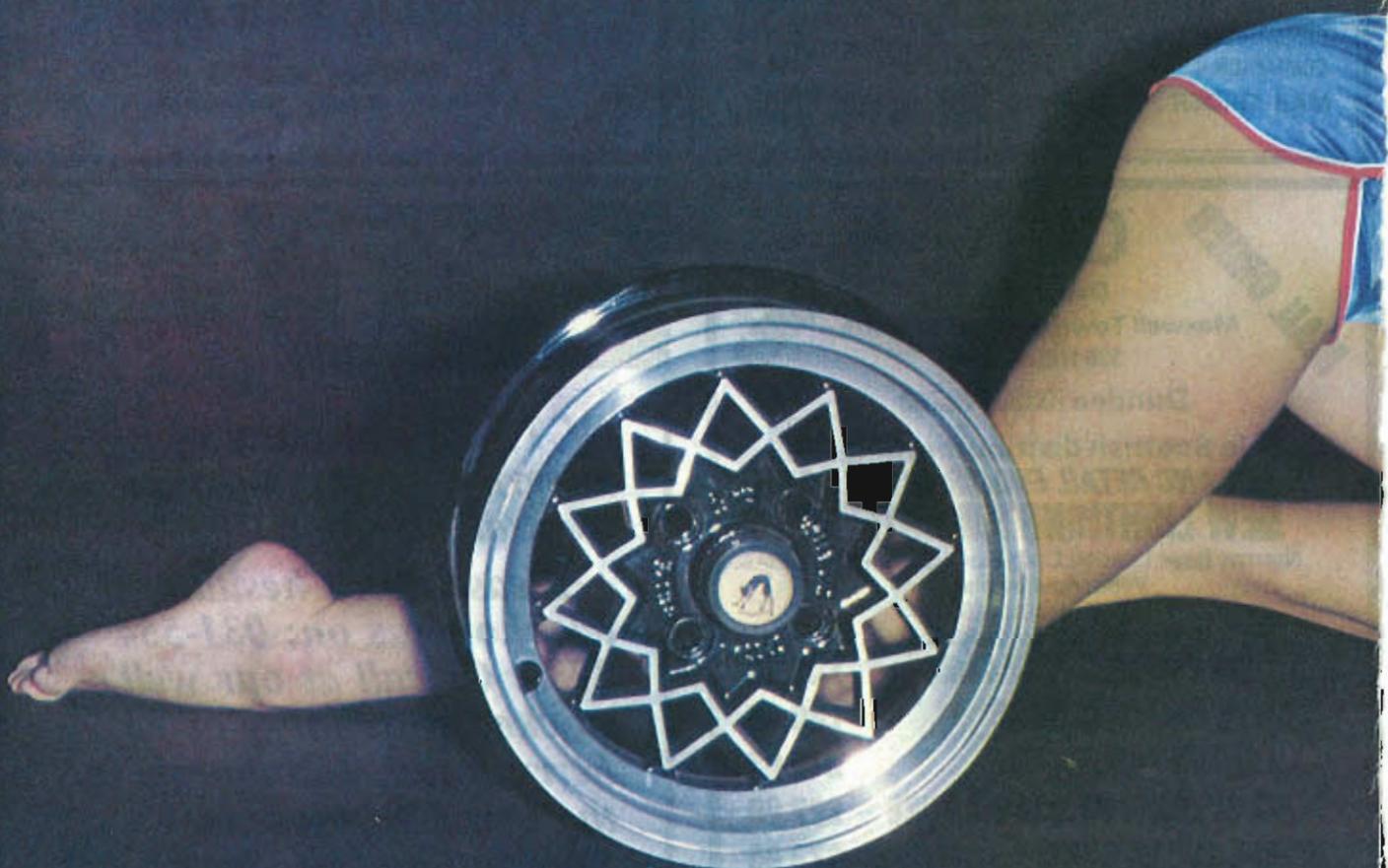
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LONG DISTANCE INFORMAT

... give me Memphis, Tennessee. Well, not exactly. But almost. Here David Lazell brings us up to date on future DX possibilities, which would put the current FM system into the "electronic chat over the garden fence" category.



**NCE
ION**



LONG DISTANCE INFORMATION

Possibly. But not until the pan-European system is introduced some time in the mid-1980s, and even then the links will be more with Europe than the west and America.

And what about CB television? That is on its way too and should follow a suitable cable TV system. Then we might see a Dick Tracy-type wristwatch style TV communications system, or at least a hand held CB radio with a screen. David Lazell reports.

The idea of a world-wide broadcast system is by no means new. In fact, the inventor of alternating current electricity distribution systems, Nikola Tesla, had a plan for world radio and television, back in the 1890s. He believed that it would be possible to have access to world-wide communication through a simple device carried in your pocket, briefcase or handbag.

Tesla's remarkable life must become the subject of a TV film sooner or later; his contribution to radio concepts have been for too long forgotten. In the meantime, you may care to look at a summary of his life, in a lively TAB Book, "The Fascinating World of Radio Communications" (Edited by Wayne Green, available in Britain through W. Foulsham and Co Ltd, Slough).

Britain's first boom in world radio came in the early 1930s, when hefty magazines like *Modern Wireless* and *Wireless Constructor* contained features of interest to shortwave users. Indeed, the circulation of the former, one of the most popular radio monthlies ever, largely depended on shortwave enthusiasts who wanted to capture the world in the garden shed, back bedroom, or wherever they kept their equipment.

Ham radio was in its infancy of course, yet the old-time all-valve sets had their merits. Indeed, the Antique Wireless Association of the USA (with a membership largely made up of hams) recently had a shortwave contest based on the use of pre-World War Two equipment. Magazines of the 1930s contained detailed information on shortwave stations, their eccentricities, occasional tendency to "shortwave wobble" (going off frequency) and station content.

If anything, there was far more real information available then, than there is today. That may well surprise some people who think that CB is a creation of the 1970s. The USA has had some form of CB since the 1940s, and, although the equipment largely sprang from work done during World War Two — including that for espionage purposes — it no less related to the lively interest in shortwave before Hitler marched into Poland.

In short, CB would have got here, in one form or another, even if the war had not occurred. Its origins go back to the boom of the 1930s, and before that to the ideas written up in popular monthlies at the turn of the century.

Readers will know that Morse Code has always been essential in amateur radio, since use of this medium permits best use of the available frequencies. Despite the alleged size of the universe, and the apparent unending flow of man's inventions, the resources are not limitless. Amateur radio enthusiasts have been taught to realise the need for a well ordered system as the basis of their long distance communication. So, naturally, they are inclined to look at the CBers as bulls in a china shop — if not something rather worse.

Some kind of award ought to go to the breaker who first thought of using the CB for long distance communication. This might consist of being thrown

into a pool of piranha fish. The authorities supervising the regulation of radio and TV communication in virtually every country, have great dislike of long distance CB. First of all, it's not in the rule book. Second, it brings a dimension of uncertainty into a system that needs all the order it can get.

The great difference between radio hams and CB DXers — apart from the sophistication of equipment, and, we guess the approach to life, is that the radio ham has a target. Armed with data, training and probably considerable experience he tries to keep the "hit and miss" element to a bare minimum, remembering that all radio communication is occasionally unpredictable.

The CBER has always been involved in rather more of an electronic lucky dip. With an AM rig, armed with a kicker (linear amplifier) the DX enthusiast has been able, during the appropriate part of the eleven-year sunspot cycle, to reach distant lands. Breakers in Britain could report reaching South America, for example, but unlike the radio amateur, they had not planned on getting there.

DXing with CB is rather like playing squash. You cannot tell exactly where the ball will bounce or how it will come back at you. But no-one can say it hasn't been fun. Now that the sunspot cycle is in decline, use of CB for DXing will diminish. But what other options are there? Will long distance CB, as Tesla seemed to believe, be part of the future?

From CB to ham

One fruit of the interest in CB has been the move into amateur radio, where the licence holder can, after passing his test, use sophisticated equipment and join a technically-minded fraternity. The Radio Society of Great Britain has long encouraged amateur radio users with an impressive list of publications, whilst *The Short Wave Magazine* (50p monthly) is on sale at an increasing number of newsagents, another sign of the times. One of the British CB magazines has taken a leaf out of the US monthly, *CB Radio Times*, running a series "From CB to Ham".

This instructive series helps those whose appetite for long distance radio communication has been stimulated by an interest in CB, but whose options with CB alone are limited. Amateur radio users today are planning for the satellite era, and some interesting work has been planned here. Low powered satellites can be launched by universities, for example, for experimental radio work, without affecting much of the existing radio spectrum in use. Trained radio amateurs, working within a definite framework, will certainly be using radio satellites almost as a matter of course within the next four or five years.

The main advantage here would be clarity and effectiveness of communication, an improvement rather than a revolution. Long distance communication may be opened to legal CBers in other ways, and a first step must be use of a frequency which is not exclusive to these shores.

The possibilities of alternative frequencies have already been examined elsewhere in this publication, but given the pan-European system which the government says we should use (in time) future DX communication will be eastwards, rather than westwards, less to the Americas and more to other countries in Western Europe.

Politically, this would be worthwhile, since there is clear evidence that our leaders want us all to become European-minded — which is fair enough. It is, after all, a continent of great variety, culture and possibility, we hear. And another main benefit to the British CBER is that the English language is increasingly used as the second language for today's Europeans.

Use of repeaters and satellites could bring a European CB system into being by the middle of the 1980s, perhaps a little later. By that time, there will be some blurring of the now clear-cut distinction between the CB user and the ham, since CB equipment will be far more commonly used, and technically advanced.

With more use in schools, CB will become as common a part of the curriculum as learning to type, or (as it is now) use a school computer or college word processor. CB will also feature in language teaching, and in stimulating interest in other countries in Europe.

Remember that these developments will almost certainly occur before the return of the sunspot activity that has made trans-Atlantic DXing such a happy hunting ground for AM breakers. By that time too, trans-Atlantic communication may have techniques of which we are today only dimly aware. By the end of this decade, we will certainly have a world-wide system of communication satellites bringing to fruition the dream of Nikola Tesla.

These will incorporate radio and television, naturally, but also many kinds of business/commercial developments like instant transmission of facsimiles (document copies) and computer data. We could be so surrounded by the evidence of long distance communication, that we will gladly return to the humble CB, on 27MHz FM, as light relief — the electronic chat over the garden fence.

The future of DX as far as CB is concerned, has to be related to use of the most advanced technology. The debate in the House of Commons on Information Technology at the end of November included CB in the list of impressive communication/data equipment. AM, as far as that is concerned, is a sort of handy soapbox on wheels, or humble runabout. The 1980 though, are intended to make use of the basics of CB communication in far more useful technology.

Putting satellites into orbit is a very expensive affair, and is likely to remain so. In that sense, the DX communication age ahead will have to be paid for — there are no free rides on the satellite! Use of satellites in long distance communication for amateurs/CB users can be financed through more realistic licence arrangements linked to more advanced equipment.

Dreams?

Users of UHF CB systems elsewhere in the English speaking world are already showing this professional approach and willingness to work, and pay for, the privilege of long distance communication. Remember that in some countries using CB in various forms, long distance communication is still a matter of internal contact — Australia and the USA being two examples.

Clarity of signal is given high priority, with the clear plan to make FM and UHF workable over great distances. But are these dreams? Well, the time scale between having a plan, and getting it worked out in hardware, is today very brief indeed. The only problem is raising the finance. One fact is sure; though DXing may be far more "scientific" in future years, the breaker will have to pay for the privilege. But almost certainly as CB enjoys a greater status, most breakers will be more than happy to pay for it.

Satellite communication, then, seems destined to link to a pan-European system of CB first. Trans-Atlantic contact, so attractive to CBers, may be less easily arranged. For one thing, the number of satellites planned for European consumption is considerable, and should allow ample spare radio (though not TV) channels.

It could be that the real "fun days" of trans-Atlantic DXing have gone, forever (so we hope you enjoyed them) and that the new phase in that area will be based on amateur radio involvement. There will be far less access to satellite facilities for radio users in a trans-Atlantic context, and costs of using those limited radio facilities could be high — and without the political sponsorship that might be expected inside the EEC.

One should not write, of course, as though the USA and Western Europe encompass the world of personal radio communication, given a world-wide system of satellite communication, it should be simple enough to DX to Australia and New Zealand, for example — or to Japan, assuming that you know the language.

Despite the real promise of satellite communication, and its vast possibilities, it is not too likely that all our hopes will come to fruition. They never do. Costs rise, economic recession hits us, and as we can see in the proposed introduction of a new commercial TV channel in autumn 1982, and breakfast time commercial TV in the spring of 1983, there is never enough money to do everything.

However, for the interest of its own specialist electronics industry, Japan could well develop a leadership role in satellite use which would assist personal radio links to Asia and Australia. The USSR, with an impressive record in satellites, could take an interest in personal radio communication, but we will have to see which country thinks the show worth putting on the road.

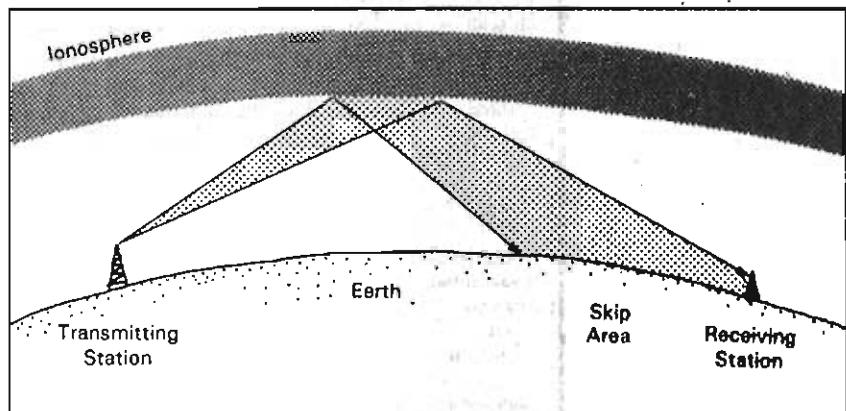
Despite the calls for "freedom, ie deregulation of the telecommunications industries" in western countries, satellite use is closely tied to national prestige and political decisions. Maybe that's another reason why breakers ought to get together in national pressure groups, based on licensed FM users that the government might respect.

What about CB-TV? The famous comic strip hero, Dick Tracy, long years ago, had a wrist watch TV which enabled him to receive and transmit messages fast. Are we getting near that? Almost certainly, yes. However, as every CB user will know a lot depends on the use of antennae or alternative method of receiving and transmitting the signal. We are maybe "uneducated" in this area in Britain, because of our lamentable record in cable television.

The government has been just as slow in getting a national cable television network, as in organising CB, and many would say that the former was far more important. With the experimental cable TV systems licensed by the government during 1981, we have taken a small step forwards — but are way behind the cable boom now being seen in the USA.

Satellite TV works because there is widespread cable television. The signal is beamed down from the satellite, to the earth station (downlink) owned or leased by the cable programme provider. The

Diagram shows how skip works, the signal bouncing off the ionospheric layer. The "landing point" varies, of course, as the layer rises or falls to a lower level.



LONG DISTANCE INFORMATION

cable programme company feeds the satellite signal "down the cable" usually on a pay-TV basis. Programmes are sent to the satellite by what are called "uplink" facilities. So a CB-TV system is entirely possible from a mains-supply two-way TV set linked to the cable network.

Cables currently under use in the USA often have some 40 or more signals in, or out, of the TV set, with some cities going in for 80 or more channel systems on the cable. Britain is about to embark on a massive programme of development, intended to replace our ageing telecommunications cable network (co-ax) with fibre optics cable that will give a vast potential for two-way television. But this is going to take time.

So for the most part, Britain has used television as a passive programme-acceptance medium; you sit and watch. In the USA, for example, the development of television is increasingly linked to the home computer and use of the terminal as despatcher of information, as well as a receiver. Very many experiments, and some excellent work in developing television as a two-way system (receiving messages and sending them) have been carried out in America, though most of them would be news to the average TV watcher in Britain, unaware of the potential of cable.

On lively record of the options is that of **Talk-Back-TV: Two Way Cable Television** by Dr Richard Veith, a hefty paperback in the TAB Books series (W. Foulsham and Co). Dr Veith wrote this book, round about 1976, as a summary of work carried out, in terms of people using television as more than a programme provider. For example, it has been used to order goods shown on the television screen (from a major department store), for teaching assignments, and for a great deal of other useful activities.

The relationship of all this to CB-TV is very clear, for the basics are identical. Given the use of a good cable system, and access to channels assigned to personal communications, CB-TV is a viable proposition now. And, as we all know, long distance television is also a reality, given the use of satellites, or, alternatively a good TV-DX arrangement.

Once a cable system is established, portable, hand-held CB-TV units would seem to be almost a foregone conclusion, as long as they can be made a financial proposition.

As in so much else in communication, the problems are not in technology, but in the shortage of financial resources. It is perhaps an eerie thought that George Orwell in his chilling novel, 1984 — pictured a future dominated by two-way TV showing "Big Brother", the dictator. We should be well on the way to our cable network by 1984.

Long distance television, or TV-DX as it is called, is an art in itself, a hobby that captures a few enthusiasts who can afford the time and the equipment to "capture" programmes from afar. This is often as unpredictable as using AM for DXing, but target stations are far more clearly defined, simply because the antenna array, for example, has to be so advanced.

The techniques of obtaining distant transmissions through conventional antennae are demanding, and are almost certainly to be rendered obsolete by the satellite age just ahead. TV-DXing in Britain has been concerned with receiving distant stations, not with any kind of two-way traffic. In that sense, it does not offer much for enthusiasts planning to save for a two-way CB-TV installation.

There is room for optimism though; no aspect of electronic communication can be seen in a vacuum. Satellites are about the whole range of communications, business and domestic, so that innovation in data transmission by satellite, or the use of satellites for computer links, are related to other aspects of telecommunication. If it were just a matter of providing the British public with more TV programmes, the government would hardly have been keen to get the Green Paper published in 1981.

But satellite communication is a major industry encompassing all kinds of communication systems. CB may be low on the list of priorities, assuming it appears on the list at all, but may well enjoy a spin-off from the developments primarily planned for business, government and professional services.

But — coming back to present reality. Can FM be made to provide long distance communication? Answer, on the present basis, is No. There are limitations inherent in the system, and there is no doubt that the government under-rated the attraction of AM as a long distance medium. However, as indicated elsewhere, there was never any strong likelihood that the government planned to legalise the AM frequency. In any case, CB was always designed as a limited range medium. Going in for CB, it might be said, and then asking for DX communication, is rather like buying a skateboard and then enquiring why it does not break the sound barrier. But as a US news report has just observed that a skateboarder was arrested on a freeway at more than 50mph, such an observation may be unwise.

In the long run, we may have to learn to stop talking about CB and ham radio, and use a generic term of, say, "personal radio communication".

Satellite opportunities

Long distance radio contact will be possible, but not with the CB we have today. New, more advanced systems, probably linked to satellite use, will offer more disciplined, objective opportunities, if you can afford to buy the equipment. And this is more likely to be associated with a pan-European system than with a trans-Atlantic one.

AM will never be the same again, though it will, as a frequency area, still have many uses in world radio, other than CB. CB-TV is a very real possibility but other countries may develop it, in one way or another, before we do, because they are more advanced in cable systems. And there will be — by the mid 1980s, a more prestigious status for the serious CB user.

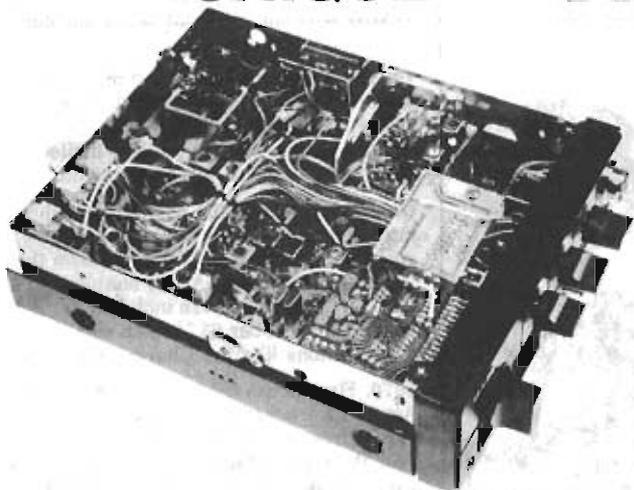
What does this mean for the international DX Clubs? A different role, perhaps, though many have long since separated the carefully reported monitoring contact (the original purpose of DXing and the confirmation DX station cards) and the handing out of the often handsome DX mailings. In any case, given the possibility of a far smaller video cassette and recording equipment in the later 1980s, DX Clubs may move into exchange of video material. They have done a great job in encouraging friendship on a national and international basis, and almost certainly have a bright future.

Looking at the prospect of long distance CB reminds the writer of his stay at a famous holiday camp in the later 1950s, as member of the entertainments staff.

It seemed a lot of fun to me and so I was surprised when a lady who had been coming since the late 1940s, told me that she was not coming any more. "It's not so much fun now," she explained. "It's got all . . . organised." If that's how you feel about the present and future condition of CB, remember the words of the poet: the best is yet to be.

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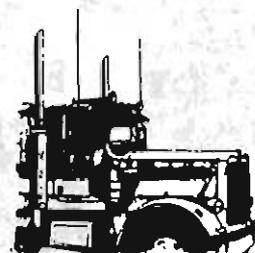
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A History of Citizens' Band Radio

IF you are looking for someone to either praise for starting a revolution in electronics, or to blame as the instigator of mass illegality, then look no further than Al Gross. For it was Mr Gross, a specialist engineer with Parsons Peebles Electric Products of Cleveland Ohio who pioneered the way towards the mass communications system that swept the world, to be known by the name of citizens' band radio.

Developed from portable two-way radio equipment designed for the US Army during World War II, and improved enormously by the introduction of the transistor, the modern CB rig represents the current ultimate in compact, efficient, robust and economic radio communications equipment.

1958. The US Federal Communications Commission established the principles of a 23-channel citizens' band radio system in the States on what many believe was originally an American amateur waveband. One thing is certain, the new CB organisation took over from the General Mobile Radio Service which was a similar system, but operating on a frequency of 467 MHz in the Ultra High Frequency band and having a very limited range. But for a long time, the potential of using CB 27MHz was not apparent to the citizens of America.

1965. A small number of 100 milliwatt AM CB sets were imported into Britain to be used by the "Charlie Bravo" group in the London area. Handheld sets, they had a very limited range and could be classed as little more than toys.

1988. Conscious of the possibility of the introduction of illegal CB in this country, the British government hastily did an up-date on the 1949 Wireless Telegraphy Act to enable it to encompass CB equipment. This was included in "Statutory Instrument number 61" which effectively wiped out organisations like the Charlie Bravo outfit.

1970. First to use CB in any numbers were the American truckers. Their reasons for doing so varied from a relief from the boredom of driving over the vast distance in the States to a security measure against an increased level of truck hijacking.

1973. It took an oil crisis to alert the majority of American truckers to the full possibilities of CB. As many of them were self-employed with no depots at which to obtain fuel, CB provided a means of seeking out the nearest gas station with available diesel. But they discovered many more advantages; apart from being an extension of in-cab-entertainment, CB could be used as an early-warning system for weather and traffic hazards — and the bears!

1974. The obvious advantage of those in isolation, like the truckers, spread to the environmentally isolated — the homesteads on the vast rolling plains of the States whose only contact with civilisation, apart from the telephone, was the endless ribbon of highway. Here was a cheap-to-install communications system that cost virtually nothing to operate that could be used as a base station to knit together a community separated by miles of nothing.

1975. Caught up in the accelerating momentum of CB, those living out in the backwoods of the States fitted rigs to their vehicles — the pick-ups and station wagons, to keep in touch with their base stations — and each other. And it was largely from them, not the truckers, that the bulk of the way-out lingo originated.

1978. By now the CB craze had spread to the cities of the States. Under the marketing expertise of American companies, rigs by the boat-load were being imported from Japan and other far eastern countries to be fitted to private cars. It was the in-thing to have a mobile rig.



In Paisley, Scotland, a petition with more than 1,000 signatures in favour of CB should have been presented to two local MPs, but apparently, because of the size of the crowd, they didn't venture into the open air. Instead the petition was handed to the commissioner at the door by the Chairman of the Greater Glasgow Breakers Club.



The Glasgow march began at Blythwood Square, gathered more than 700 breakers on its way to the City Chambers in George Square. But note the rare mentions of AM. Mostly the banners are asking for 27MHz alone. (Andrew Graham)

1976. CB rigs were finding their way into Britain from the United States. That year saw the formation of the Citizens' Band Association who were, at that time, campaigning for a frequency allocation on 232MHz. Faced with a mass-influx of American gear, the government of the day in Britain offered a form of open channel CB on 928MHz, but as a frequency that band was completely impractical, and it was rejected by breakers in this country.

1977. Nevertheless, if CB wasn't spreading that rapidly into Britain, it was finding its way into other countries. Already Australian breakers were appearing on the scene and it wasn't long before the Australian government capitulated to the demands of CB enthusiasts. 1977 also saw an increase in American CB channels from 23 to 40.

1978. Next to have citizens' band radio was South Africa, closely followed by some European countries. By now the CB industry was over the moon in the knowledge that their product had taken off on a global scale, and launched out in the production of every type of accessory. Linear amplifiers, which, until now, had not been used universally, were being mass-produced in an attempt to give breakers more power. They were, however, promptly banned by the American government.

1979. The steady trickle of illegally imported AM rigs into the British Isles was fast approaching a torrent. Not only were rigs being introduced from America, but by all manner of devious routes from the Far East. CB equipment was being advertised and sold almost openly from breaker centres throughout Britain with little or no action being taken against them by the authorities. British breakers were learning fast about their new toy and the technology of "skip" working to Europe and beyond was being acquired.

1980. Estimates of illegal CB operators in the UK varied from half a million to as many as two million. By now, CB equipment had reached new heights of sophistication with base rigs producing something like 300-500 watts by the use of amplification equipment. No doubt encouraged by the film *Convoy* which glorified the activities of American trucker-breakers, all sorts of CB equipment was coming "on channel". In fact, the CB channels were becoming so crowded that many breakers had started to "go side band" with the availability of 160-180 channels. They were illegal anyway, so what was the difference? Organisations such as the United Breaker Association had been formed and the movement calling for official recognition of citizens' band radio really took off. Demonstrations, the lobbying of MPs at Westminster and a concentrated barrage of words flooded into journals as varied as the *Times* and *Punch* all recommending legal CB. And yet, even as late as 1980, the British government was stating that "Citizens' band radio is not a viable proposition in the United Kingdom."

1981. February 28th. Whether it was as a result of pressure, research into the possibility of CB or a capitulation to a "fait accompli" will never be known, but the Thatcher Administration announced that "A form of citizens' band radio would be allowed later in the year". This statement sparked off a positive furor of speculation. Existing AM breakers didn't know if they would be allowed to use their equipment once CB was deemed to be legal, and manufacturers didn't know if they had to produce AM or FM sets or, for that matter, what frequency band and channel allocation would be required. Rumour was rife, with stories of an amnesty for AM breakers if FM was to be the legal mode, among the most prevalent. It was even put around that the Government had done an about-turn in their decision to ban AM.



1981. August 14th. Hitherto illegal AM rigs were being imported, with official approval, through the Isle of Man — and a loophole in import regulations. But although it was legal to buy these rigs, their installation and use were still against the law. Insurance companies were openly advertising cover, even against confiscation, AM CB equipment, but, yet again, the policies were issued through a Manx office!

1981. September 4th and official permission was given for the importation of FM CB equipment, so that dealers could build up their stocks ready for the day when citizens' band radio would be legal. MPT 1320 and 1321 had been issued which gave full technical specification of frequency modulated CB bands on 27 and 934MHz and authorised antennae. The speculation was over. It was now common knowledge that FM was the approved mode — a decision which was bitterly resented by AM breakers. All sorts of wildly inaccurate objections were lodged by AM enthusiasts to the adoption of FM as the official mode. And apart from the publication of the text of a speech by Timothy Raison on the reason for the choice of FM, the government did little or nothing to defend their decision. An official CB Home Office press office was opened, but apart from that — nothing.

1981. November 2nd — Legal Day, and not the occasion for jubilation that breakers all over the nation had originally envisaged. In fact the announcement, when it was made, heralded something of a non-event. There were a few TV adverts for CB rigs, a mild flutter of apathetic journalism in the national and local press and it was all over. The licence fee of £10 (which authorised a breaker to operate three CB sets) was a welcome relief, which was largely offset by the restrictions placed on antennae choice. Nevertheless, the advent of legalisation of CB brought an entirely new style of breaker on channel. Whilst it was true that many "old hands" from the AM world changed over to FM, many new breakers found CB a new experience.

But for many British breakers, nothing new has happened. They continue to be illegal by virtue of the fact that they continue to operate AM or sideband equipment with illegal antenna systems. On the other hand, FM CB has brought a new extension of in-car-entertainment into the lives of many — particularly teenagers.

It has provided a new concept in communications. That 50 per cent of British breakers have not availed themselves of Home Office approved CB rigs is a problem for the authorities, and it will be down to future historians to record just how they went about solving it.

10-400 Buzzy! So says the painted on slogans on the Transit. Another picture of a well-attended campaign for the legislation of CB. (Andrew Graham)

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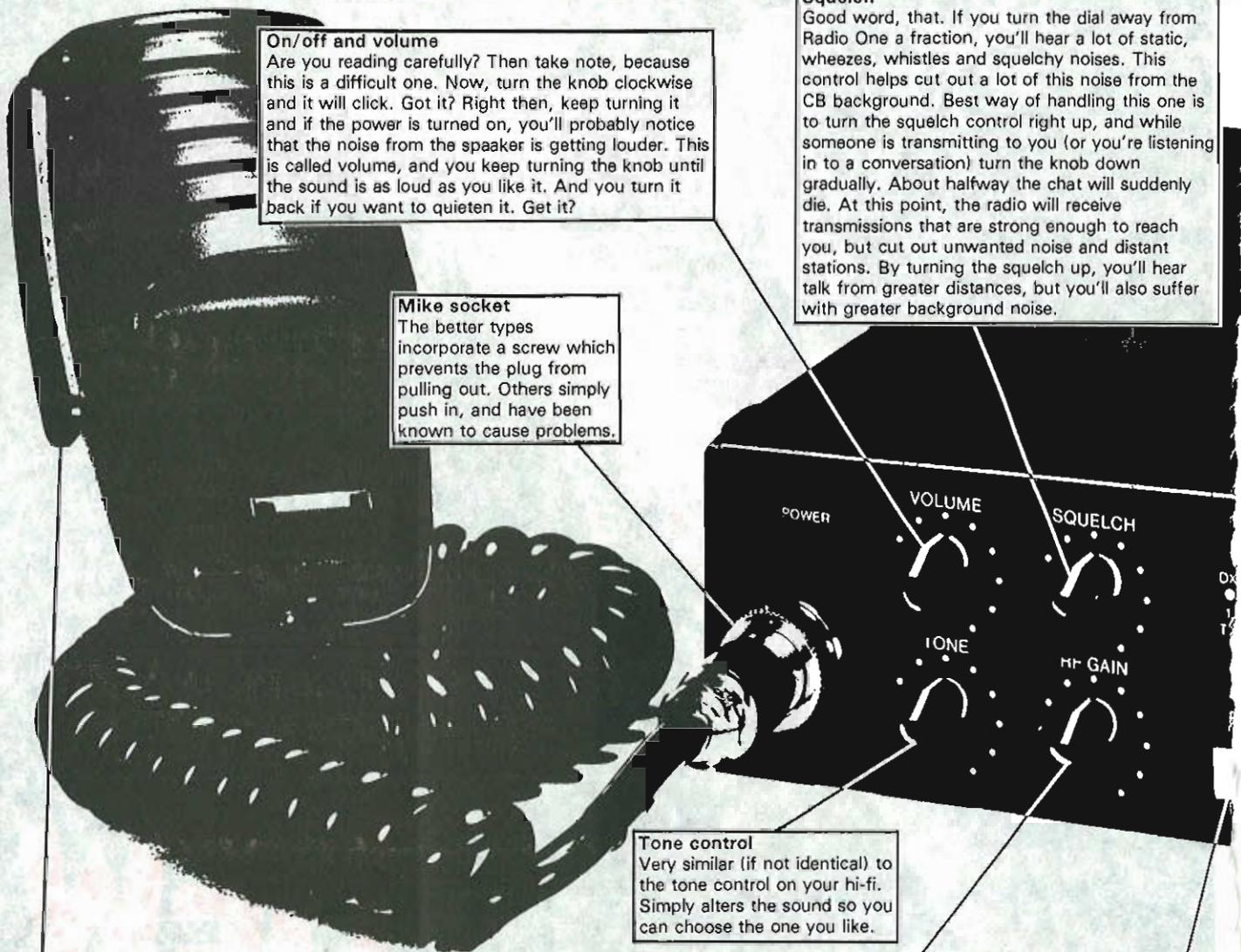
If you've bought this magazine because you want to become a new breaker, then start reading here. On the other hand, if you know it all, superior prole that you may be, then don't even bother to look any further — in fact put this magazine back on the shelf and forget it. Dare we suggest that even if you think you know it all, you might even learn something by reading the following paragraphs? No? Oh well.

Anyway, for those of you who'll admit to not knowing it all, read on . .

NEW BREAKER

BREAKING INTO CB

Rigs, and how to choose them, licence them, fit them, SWR them, and even use them! In fact, everything that concerns them . . . Peter Dodson wrote the words.



On/off and volume

Are you reading carefully? Then take note, because this is a difficult one. Now, turn the knob clockwise and it will click. Got it? Right then, keep turning it and if the power is turned on, you'll probably notice that the noise from the speaker is getting louder. This is called volume, and you keep turning the knob until the sound is as loud as you like it. And you turn it back if you want to quieten it. Get it?

Mike socket

The better types incorporate a screw which prevents the plug from pulling out. Others simply push in, and have been known to cause problems.

Squelch

Good word, that. If you turn the dial away from Radio One a fraction, you'll hear a lot of static, wheezes, whistles and squelchy noises. This control helps cut out a lot of this noise from the CB background. Best way of handling this one is to turn the squelch control right up, and while someone is transmitting to you (or you're listening in to a conversation) turn the knob down gradually. About halfway the chat will suddenly die. At this point, the radio will receive transmissions that are strong enough to reach you, but cut out unwanted noise and distant stations. By turning the squelch up, you'll hear talk from greater distances, but you'll also suffer with greater background noise.

Tone control

Very similar (if not identical) to the tone control on your hi-fi. Simply alters the sound so you can choose the one you like.

PTT switch

Press it when you want to speak. Let go when you don't. You can't hear somebody else speak when you've got the switch pushed in, and they can't hear you when you haven't. Easy one, this.

RF gain

The initials stand for Radio Frequency, and this control enables you to vary the sensitivity of your receiver. It helps fade out some of the more distant interference. Turn it clockwise to increase the input signal. It's usual to keep the switch turned right up, unless you get distortion from a very nearby transmission.

PA switch

This one means you can convert your CB into a public address system. Fit a speaker under the bonnet, and by throwing this switch, you can yell at someone in the car in front, or make a rude noise at someone on the pavement. Make sure you're not stuck at the traffic lights at the time though!

Internal/external switch

This means either the speaker inside the rig is being utilised (internal) or the sound is being pushed through an "external" speaker. See?

Mike gain

Some people speak louder than others, which means their volume will increase even though they are transmitting from a long way. So, this control increases the strength of your own modulation. If you turn it up too high, your voice will distort. Ask another breaker for a voice check. With this control, there's no need for a power mike.

Signal strength meter

Invariably in two sections — the upper scale is usually calibrated 1-9 and it gives you an indication of the strength of incoming calls, and the lower scale indicates the output when transmitting, thereby giving you a general idea of how much available power is leaving the rig.

Breakers refer to the numbers on the scales as pounds, although they are only relative figures.

If the strength meter is set on 1, you might not be able to hear anything, while if it's on 9 (or maximum) it should blow your ears off. Hence the expressions "pegging the meter", and "Give me a 9".

Channel selector

This is the knob that you turn in order to select your channel.

Channel 9 switch

Very useful gadget this. It means you can listen in to other people's problems without the laborious job of finding the right channel with the knob. All you need do is throw this switch and it goes straight to 9. Throw it back and it goes to the number you first thought of. Some sets have a channel 9 priority switch, which means that an emergency call will override somebody else's transmission. Basically though, the 9 switch enables you to make an emergency call without bothering to turn the channel selector.

Dimmer

Some illuminated controls are overbright at night. This switch dims the amount of light at the digital readout and other warning indicators.

What does it take to be a new breaker? In a few words, about a hundred quid, enough "O" Levels to write your name on a licence application form and the ability to speak the Queen's English (or one of it's regional derivatives) with sufficient clarity to be understood by at least part of the population of Britain.

As one of many who went on the air on November 2, my experience is probably no different from countless others, but although people are supposed to learn from their own mistakes, it is much less complicated if they can learn from the mistakes of others!

My choice of a rig was a Fidelity 2000FM, which retails at around £85. There are cheaper sets, but this particular model offers a few more refinements over its junior — the 1000FM — and a lot more over some other makes. The important thing, whatever you buy, is to choose a recognised make of rig from a recognised dealer. Not only will this ensure that the equipment you buy is legal in every respect, but it offers the protection of a guarantee and the availability of spare parts if it all goes wrong. Similarly, antennae of legal construction are readily available at CB stockists for £20 to £30.

So, having bought the basic necessities of CB life, and popped into the Post Office and parted with a tenner to get the official blessing on your future activities, you have arrived at the point where all

the trouble begins! Dependant upon your technical background, so too does the degree of assistance you will require to transfer the CB equipment from its shiny new box to become an integral part of your motor car.

If you are the sort of person to whom changing a 13 amp fuse is a technological jungle, of whose understanding of basic electrical principles comes to a shuddering halt at the switch on the Hoover, stop there; if you lack the personal charm, the physical aggression or the ability to crawl your way into getting someone to fit your rig for free, have it fitted professionally. For those with enough know-how to mount a standard car radio and aerial, you've got it made!

Elsewhere in the issue are listed the basic steps for installing a CB rig, but to give you some idea of what is involved in the operation, it is confined to two units — mounting the antenna and mounting the rig. As far as the antenna is concerned, it is a matter of choice between drilling holes in the middle of the boot (or car roof which can cause water-seepage problems) or clamping the twig on the boot or gutter (which doesn't).

It is true that an antenna fitted to the centre of the roof is technically better than all the other methods of attachment, with a boot-mounted twig in second place, but it is all down to how much you are prepared to mutilate your motor.

Perhaps the neatest method is by using a "lip-mount" which virtually clips on the leading edge of the boot door, leaving a good appearance with no untidy co-ax cable hanging about all over the place.

Having brought the co-ax through the boot and under the rear seat squab, tucking it behind the car trim all the way round to a point underneath the dash should present few problems, and there remains only the connection to the other headache — the rig. But first a suitable location has to be found for the set.

Glove compartment

Unfortunately, in my RS2000 Escort, the only suitable rig position is in the glove compartment, which might be a good from a security angle but requires an arm five feet long to reach! Again the ideal power connection should be direct from the battery poles which should minimise electrical interference from other components. Personally, I have just taken a positive lead from the fuse block, and a negative lead to the nearest convenient earthing point without suffering any undue problems. If, however, severe car-type interference is experienced, a set of electrical suppressors may have to be fitted.

Final step before unleashing yourself on the air waves is to SWR the antenna. Now this is a procedure to ensure that the antenna length is compatible with the transmitter by checking the standing wave ratio, and the minimisation of standing waves. In effect, this means that the maximum amount of power is going out and as little as possible is reflected back into the set. Highly technical though it may sound, the effective and simple remedy for a high SWR of, say 4:1 is to cut a short length off the base of the antenna until a reading of 1:1 is achieved (or as near as you can get to it). But be warned. Cut off only a ¼ inch at a time, as the maximum length of excess antenna is rarely more than 1 ½ inches. Checking the SWR of an antenna is really important, as operating a rig with a reading of 4 or 5 to 1 can damage the set.

So, having connected the electrics (after checking the instructions about correct polarity) you are ready to go. Now there is an old saying that it is better to keep your mouth shut and let everybody think you're a fool, then to open it and make them sure of it! So, for your first hour or so on CB you would be well advised to listen, first on the "contact" channel 14 to find out what the contact procedure is, then on the other 39 "traffic" channels to become familiar with the lingo.

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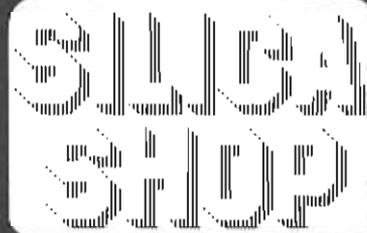
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But to hear anything at all, the controls on the rig must be set properly. Although they may differ in position from rig to rig, most CB sets have the same basic controls. Cchannel selection is usually denoted by a LED display which can be dimmed if found to be too bright at night. Selection is effected by rotating the knob. The squelch control should be turned until the "crashing" noise is just overridden, the RF control and microphone gain should be set at maximum, with the tone and volume controls adjusted to suit your requirements. And with the controls set properly, the first voice that comes over your rig should be of a surprisingly good quality, clearly audible over engine and general traffic noise when on the move.

Listen to the 'contact' channel 14. The predominant phrase will be "one four for a copy". This indicates that a breaker wants to speak to somebody, irrespective of who it is or where they are. On the other hand, there are breakers who make a call such as "one four Screwdriver" which means that they are looking for that person in particular, or "four for a Gloucester breaker" or "one four for breakers on the M5" which are self-explanatory.

Breakers make these specified requests for a variety of reasons which can vary from a desire for route instructions, to know traffic situations or even weather reports. But whatever the reason, once contact has been made on channel 14, further conversation must be conducted on one of the other 39 channels — with the exception of channel nine which is recognised as the emergency channel.

Let's follow the procedure through. After possibly several requests for "one four for a copy", eventually there will be an answer to the effect that "you got a copy breaker — pick a window". Now this indicates to the caller that he is being invited to choose a channel, which is answered by a random choice. There are those who have a quick look round the channels first to see which one is free. But often, an apparently vacant channel is occupied when you get there!

The answer, therefore, could be "two zero", "push it 20" or "knock it to 20" — all these mean the same thing. Similarly, channel choice might be given as "up two" or "up five" which requires a little mathematical expertise on the part of the breaker at the other end!

But whatever system is used, the channel number must be acknowledged by a "two zero, we gone" to indicate that both participants in the conversation know where they are going, channel-wise. After each transmission, certain terms are used indicating that a reply is required, and these include "come back", "bring it back", "bring it on back", "come on" or simply "is that a Roger?" The response to these terms is "Roger", "that's a Roger", "ten four" or simply "that's a four".

What's your handle?

So to the "traffic" channel. Having selected the chosen channel, arrival at, and preparation for reception is announced by saying "on channel" to which the other end will say "that's a Roger, breaker, what's your handle?" Now, handles are funny things, being the personal preference of individual breakers which may or may not refer to their occupation, personal habits, personal appearances or even proper names. Their origin is based on the illegal days when a reluctance to use real names was understandable, but the habit has hung over into legal CB, although there has been a marked tendency of late to use personal names.

So, having exchanged handles, the next step is often to exchange location info by the question: "What's your twenty?" — being an abbreviation of the "ten twenty" in the Ten Code. There are several codes, including the Q-Code — a list of three letter codes beginning with the letter Q. The Ten Code, nevertheless, is by far the most common.

"Ten thirty six" is a request for the time, often answered by the more flippant breaker by "sell your rig and buy a watch!"

But to get back to the "ten twenty". Most breakers will also give a "home twenty" which is the district, or even the address, at which they live. Again, this was seldom if ever used in the illegal days, for the most obvious of reasons! And after exchanging signal strengths by asking "What am I pushing you" which is answered by "you pushing me a good five pounds" — or whatever the strength scale on the meter indicates — breakers often finish the "standard" procedure by exchanging rig information.

Although the more junior members of the breaking fraternity tend to use breaker language more extensively after this point in the proceedings, for adults, anything they have to say to the distant end is in good ordinary English. There is a complete glossary of phrases that runs to many pages and covering a multitude of phrases or sayings, but we British tend to use the Queen's English once we have passed the stages in transmission mentioned so far.

Remarkable skill

First impressions, after listening to breakers either on the contact or traffic channels, is that it is all very complicated and full of jargon. In fact, getting to know this jargon comes very easily after constant repetition, and children tend to pick it up (as they do bad habits) with remarkable skill. They also pick up the good habits as well, because if any sort of order is to be maintained on a voluntary basis, there has to be a code of practice. On CB this is achieved by observing the simple rules of good manners and politeness; you should not, for instance, just barge onto a channel if someone else is using it — go back to the contact channel and start again.

Prior to the authorisation of FM CB, there was a lot of talk about obscene language on channel. Now whether or not this ceased when CB became "respectable" or not is not known. Could it be that it was a practice that has been confined to the still illegal AM side, or that FM usage is confined to a different sort of person. We just don't know.

We approve wholeheartedly of children using CB on the principle that any leisure activity which keeps teenagers off the streets and out of trouble must be encouraged. Their enthusiasm has to be seen to be believed, even if their conversation lacks the depth of more mature breakers!

For their part, many adult breakers have become a bit disillusioned with CB in that the power constraints do not permit more long-distance breaking, but it still remains a fascinating hobby. But if you accept CB for what it is — a personal, short range, two-way communications system (and not expect to reach the far corners of the earth on four Watts) you'll enjoy it — we promise!



MIKE FRIGHT

IF YOU DONT SUFFER
FROM IT. IT'S NOT A
PROBLEM. BUT IF YOU DO,
IT'S A VERY REAL---ER---
EMBARRASSING---ER---
SITUATION THAT---ER--- GOTTA
GO NOW BUDDY. WE GONE. PANT
PANT, GASP GASP.

SIMON BISLEY

Peter Dodson talks about a little-known but nevertheless very real problem for some users of citizens' band radio.

Just like the electronic calculator, without which the average current schoolboy would appear to be incapable of solving the most elementary of mathematical problems, so technology has become an integral part of modern society. Not that society has a particularly deep appreciation of the workings of such modern tools, but this technology has been accepted as part of everyday life in much the same way as the machine that puts up the little balls in the bingo hall! And among the many wonders of modern science that has come to the environmental front in past years has been the microphone, with its inevitable presence at public functions (with tape recorders) and more recently as an essential part of citizens' band radio.

But if the microchip and the personal computer have been universally absorbed by our lifestyle, the microphone has not, and the use of this relatively unsophisticated instrument represents a source of apprehension, not to say a real fear, to many.

Perhaps some indication of the phenomena can be gained by a comparison to the marked reluctance of many people towards using answer-phones — those cold, impersonal electronic devices which ask you to "give your message immediately after the tone" with all the warmth and appeal of a Dalek! There can be little doubt that such equipment represents increased efficiency and a laudable saving in manpower — but they do lack the little something that only a well-shaped blonde secretary can provide! Certainly, the impression that I, personally, am left with after availing myself of its sterile services, is that I am not in charge of the machine, but is most definitely in charge of me.

"A natural abhorrence of being at the mercy of a machine . . .

Taken a stage further, there are also those who dislike talking on telephones (as opposed to those with a compulsion never to stop) and apart from a natural aversion to pouring even more money into the coffers of British Telecom, their reasons are the same; they are relying upon a system of voice processors and amplifiers to convey speech to other human beings, despite the fact that the Almighty has already provided them with adequate equipment to accomplish the task unaided by electronic wizardry! Albeit over shorter distances.

And when it comes to microphones, the reluctance to resort to electronics is even more noticeable. I have only to switch on a tape recorder at an interview to see a marked lack of relaxation on the part of my subject. This is not shyness, nor is it a fear of making indelible mistakes, as recording material is only a media for my personal convenience which replaces the tedium of writing it all down. No, it is something deeper than that — a natural abhorrence of being at the mercy of a machine not unlike sitting in a car through a carwash.

On the other hand, using a microphone which is connected to a radio transmitter is something else. No longer is this already undesirable involvement with technology just a closed circuit thing, nor even a person-to-person situation, but it now embraces the capacity — or even the power — to communicate with every living soul within the radiating capacity of the transmitter. Up to now, the general principles of the telephone and even the tape recorder fall broadly within the understanding of the non-technical. But if all the complexities of radio (not to mention an infinite increase in audience) are added, the situation has passed into realms of technology beyond

comprehension, and man fears that which he cannot comprehend.

To the novice operating a CB for the first time, three elements of apprehension are present — the sheer novelty of the situation, unfamiliarity with the necessary procedure and something akin to stagefright. I say "akin to" because standing up before an audience to be looked at as well as listened to is a traumatic experience to all but a few. Conversely, speaking over a radio transmitter does afford an anonymity to hide behind, not to mention a freedom from the public speaker's nightmare of suddenly realising that his flies are open! I leave it to the imagination of the individual to appreciate the nerve-shattering potential of appearing on TV which represents the ultimate in exposure — even if your zip isn't undone.

It is interesting to note that many veteran broadcasters and even hardened television personalities never listen to or watch their recorded performances when they "go out" on the air. As professionals there can be little if any doubt that any serious fault could be found (with some notable exceptions), and I think that it is quite within the bounds of possibility that their reluctance to see themselves is an associated phobia to this fear of microphones.

With time, the novelty and unfamiliarity with CB will disappear, but for some there remains a tension over broadcasting to an unknown quantity of audience that no amount of practice can reduce. Having said that, in my experience the circumstances are completely reversed when applied to children. Whereas most adults will "have a go at it", despite their lack of knowledge of CB procedure, only to realise later that they have this inherent reluctance to use microphones.

Children, on the other hand, will refuse to operate a rig until they are reasonably sure that they aren't going to make fools of themselves. But having mastered the procedure (and quickly at that) the younger element will chat away without any inhibitions whatsoever and never look back. With a few nauseating exceptions, kids abhor being put on a stage and encouraged to "do their party piece" and yet their lucidity on the CB channels can only be admired as much as their repetitiveness must be discouraged!

"Apprehension can build up to astonishing levels"

To many "normal" breakers, these symptoms of microphone fright will be incomprehensible, but be assured, there are those to whom it is an acute problem. What makes the problem even worse is that tension feeds on itself and the compound interest of apprehension can build up to the most astonishing levels. The more determined breakers, bent on kicking the complaint, screw themselves up to untold heights of emotional tension which cannot be good when you consider the road safety hazards of CB enthusiasts with nerves as taut as violin strings.

Mike fright is not a matter of lack of confidence or an inferiority complex and it is something that no one at the University of Leeds, from whom I sought assistance, could offer any advice about.

So, what is the remedy? It would be difficult to prescribe a cure for an ailment that medical science has yet to recognise. Having said that, the very fact that those suffering from what can be loosely described as a psychological hang-up can identify with these words of mine, and know that they are not alone — which may be a help.

Perhaps they might conceivably form a club, contact each other on channel and talk about it — or, for that matter, NOT talk about it.



**NEW
BREAKER**



GETTING INTO TROUBLE

CB 82 outlines a few of the unwritten rules of CB, for instance...

"Move over, Sainsbury's lorry ahead. You're blocking the bloody road."

"Buggler off!"

"There's a word for people like you, but it's illegal to use it over the air."

"Try it. I might know it."

"Aw, c'mon. Move that crate off the road so normal drivers can get by."

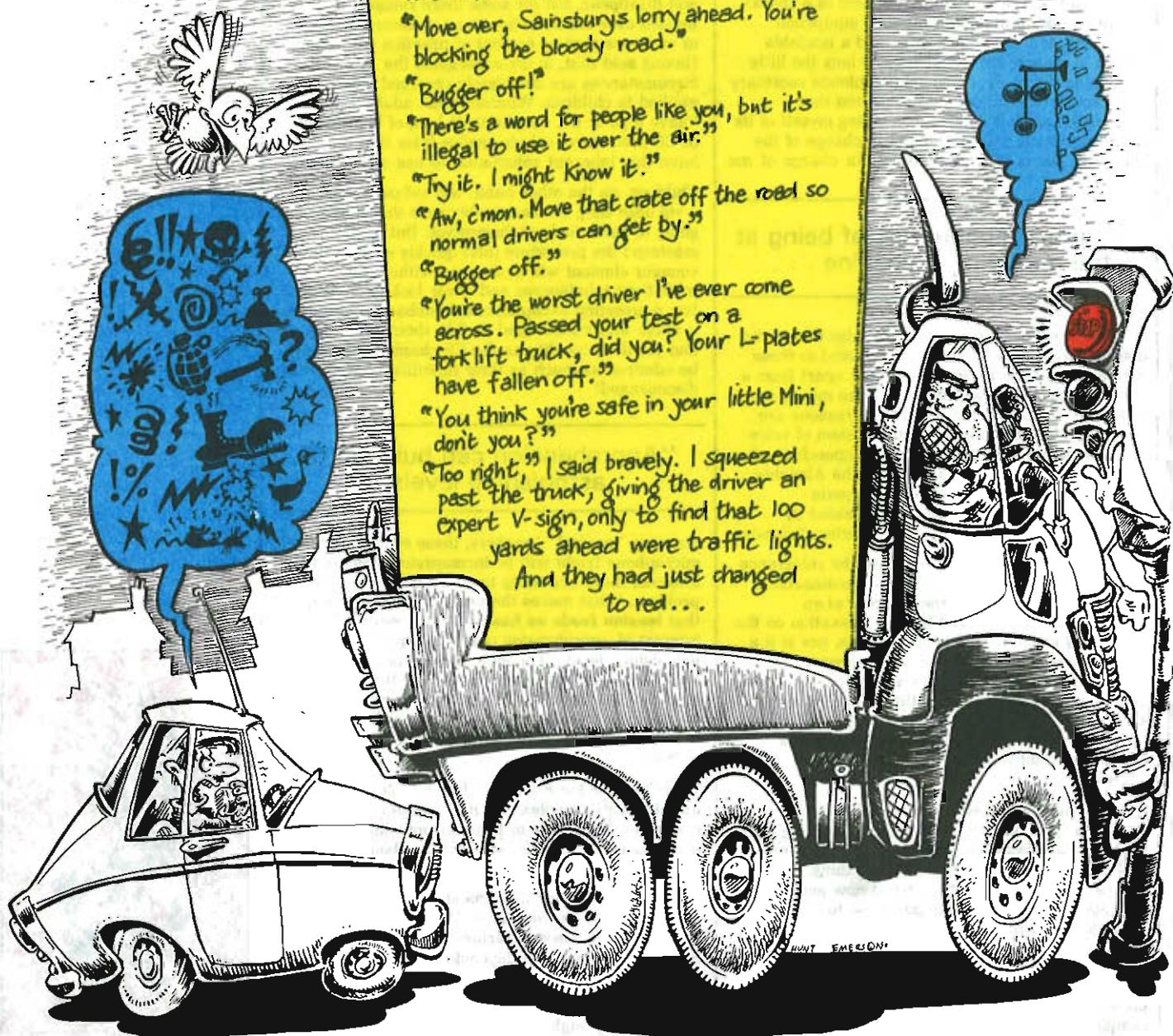
"Buggler off."

"You're the worst driver I've ever come across. Passed your test on a fork lift truck, did you? Your L-plates have fallen off."

"You think you're safe in your little Mini, don't you?"

"Too right," I said bravely. I squeezed past the truck, giving the driver an expert V-sign, only to find that 100 yards ahead were traffic lights.

And they had just changed to red...



Thousands, if not millions of words have been spoken and written about the advantages of citizens' band radio. And if they were to be believed, OAPs would wander the length and breadth of the land unmugged, virgins would remain unspoiled (whether they wanted to be or not) and the AA would have cashed in its chips long ago!

Unfortunately it hasn't worked out quite like that. The crime rate continues to rise (possibly with the help of CB rather than in spite of it), channel nine abounds with unanswered calls from motorists in need of help and assistance, and channel fourteen is occasionally used by middle-aged spinsters in a similar plight!

In this respect, I suppose that CB represents an ill wind that occasionally blows somebody some good — but not for me. Like countless others on November 2, 1981 I got myself an FM rig, stuck it on one end of my motor, put a twig at the other and launched out to talk to the world, expecting to share a wealth of intellectual exchange and to forge new links of permanent friendship.

That I failed miserably from the outset was, I admit, largely my own fault, starting with the basic omission of failing to do my homework first. I just switched the rig on, bunged the channel switch round to the first number I thought of and let fly. "Good morning, good buddies," I shouted. "This is Blue Peter tweaking your twigs, so gimme a four end let's do it to it!" That, I thought as I sat in my car in the driveway of my house, sounded suitably versed CB-talk, but the silence that followed was, to say the least, profound. The world, apparently, didn't want to talk to me!

I tried again. "Hey there, brother breakers, get your ears on, this is Blue Peter rustling the rigs for a big Roger. Come back!"

"Sod off!"

The two syllables cut through my dream of a new deal-for-friendship like a knife.

"Pardon?" I asked.

"This is channel twenty," answered a voice. "I am currently conducting a technical discussion with a breaker, and YOU are interrupting. Push off."

"You can't talk to me like that," I protested. "If I knew where you were, I'd come over and thump you!"

"If you're that interested, mate," said the voice, "I live next door." And it was then that I realised that the voice wasn't coming from the speaker, but through the passenger window! A fist like a ham reached into my car, flicked the channel switch to 14, and withdrew.

"Anything more you want to say?" asked my neighbour.

"How about 'have a good day?'"

Police brutality

Not, you may well say, a very good start, but trying to convince myself that this was just an isolated instance of misunderstanding, I set off to do a little mobile type breaking. I was in slowly moving traffic in the suburbs of Cheltenham — an ideal situation for testing the rig on the move.

"One four for a copy," I said, abandoning the more flamboyant trucker style. Almost immediately the answer came back.

"You got a copy breaker, pick a window."

"Knock it to two zero — no, for God's sake not there — make it four zero."

"Four zero we gone."

It was at this point that I discovered one of the technical design faults of my rig — I couldn't reach the channel switch from the driving seat without

almost disappearing under the dash. Now moving the selector switch from channel 14 to 40 took a little time — not a lot — but enough for my temporarily driverless motor car to roll forward a couple of feet, and into the back of the car in front. The fact that the vehicle concerned was light blue in colour, with matching light on the roof, and the word POLICE displayed conspicuously only added to my predicament.

"Morning inspector," I said to the constable (sometimes it works!) still clutching the microphone nervously in my sweaty palm. The law looked down, stoney faced. It hadn't worked.

"Good morning, sir. Doing our little bit for News at Ten, are we? What is it today, police brutality?"

"Oh now, officer," I laughed. "Just doing a bit of breaking." I caught sight of the crumpled fender on the police car, "if you see what I mean!" His eyes followed mine."

"Try me," he said.

"Sorry 'bout that," I swallowed hard. "I was, er, like, checking my rear view mirror at the time, and it sort of, like happened."

"When I checked MINE," said the law, "you weren't even THERE!"

"I can explain that, officer. you see my rig is positioned . . ."

"You got a licence for that thing?"

"Of course, officer. Wouldn't dream of operating without it." I brandished the document. "There it is, correct date and everything."

"Good. That's more than you can say about your road tax. Name and address, please?"

As the police car disappeared up the road, I sat there, seething with the seeds of discontent sown in my soul. And as I licked my wounds, the speaker on my rig crackled into life "on channel breaker, you're pushing ma 'bout five pounds. What's your handle. Bring it back."

"Oh, sod off!"

I panicked

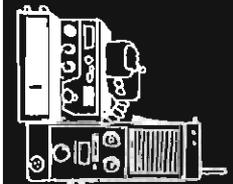
Deciding that perhaps the motorway might be not only a safer but also a more suitable place to practice my new hobby, I fired up the engine and headed for the M5. But even that simple operation was temporarily doomed to failure, because, not a hundred yards up the road the engine gave a couple of coughs, died and I coasted into the seclusion of a tree-lined lay-by. Not being of a particularly mechanical bent, I did what any good Englishman would do in the circumstances — I panicked. But my elation was short-lived — what was a CB rig for, if not to avail oneself of the humanitarian aspects of the breaking community? Quick as a flash, I was on channel nine and asking for technical assistance. And equally swift was the reply "be with you in a few minutes, breaker, I'm only about five miles away. Ten ten."

My faith in CB at least partially restored, I climbed out of my car and walked back up the lay-by in search of a tree — trauma appears to have this particular effect on my kidneys!

Returning some two minutes later, I was amazed to see a somewhat geriatric Anglia parked beside my car, the bonnet of which was up and from under which protruded the posterior of a human being. This was great — already some friend breaker was working on my motor. "Hello there," I said, my face wreathed in smiles. "Boy but you were quick."

Perhaps I had startled my benefactor, but the look of alarm promptly disappeared in view of my friendly greeting.

"Well, you've got to be quick in this game, ain't yer. I mean, well, yer can't afford to 'eng about,



NEW BREAKER

Written by Peter Dodson

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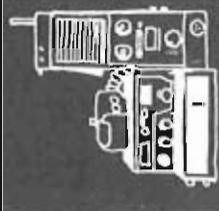
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NEW BREAKER



can yer? Tell yer wot, you can 'ave the wheels an' I'll take the battery!"

Needless to say, shortly afterward the somewhat rapid departure of the shark in the Anglia, the expected assistance arrived, sorted out my ailing motor and I was on my way to the big white slab. Cruising along up the M5, communication with other breakers came easy, and I had talked with half a dozen when, suddenly, the velvet tones of a lady breaker oozed over my speaker. "Hi there, you-all, any takes on one four on the slab, come back?"

I couldn't push the button quick enough. "Lady breaker, you got a copy, pick a window."

"That's Roger. How about two five, c'mon?"

"Two five we gone, man." I couldn't crank it round quick enough!

"On channel. This is Blue Peter, what's yer handle?"

"Blue Peter, honey, you got Suspender Belt. What's your twenny?"

"Northbound five miles short of Strencham Services. Come back?"

"Now ain't that really something, sugar, so happens I'm square-wheeled right there."

Obviously this lady came from the rolling prairies of Stoke-on-Trent where they eat chips and mushy peas with their pumpkin pie, and drink Guinness chasers with their mint julips! A little warning light flickered in my mind. "Suspender Belt," I called. "Are you on your own? Come back?"

"Sure am, honey, my boyfriend's away drivin' his li'l ol' Esso tanker, an' I'm all lonesome c'mon."

By now, steam was beginning to come out of my ears as I pushed the pedal to the metal.

"Blue Peter, sugar, how'll I recognise yer?"

"Red Escort LNP 571T," I shouted above the engine noise. "Is that a four?"

Whatever the answer was I never found out, because at this precise moment, some heavy-handed breaker pushed his mike switch and I lost the end of the conversation.

"Give me a nine, Suspender-Belt. Somebody's walking all over me. Bring it back." It was then that a new and very masculine voice thundered through my speaker.

"Blue Peter — honey bunch — if you think somebody's walking all over you, you ain't seen nothin' yet!" A glance in my mirror confirmed my worst fears. Looming large over my boot was the

biggest tanker I have ever seen in my life — two inches aft of my rear bumper, and closing fast!

Deciding, in the interests of discretion, to give Strensham Service a miss, I managed to pull away from the tiger-in-the-tank, only to fall foul of another, two junctions further up the line. Just to make a change, the offending vehicle this time was a Texaco rig which was coming onto the motorway from a slip road. I was in the inside lane, and being unable to move over due to heavy traffic, I expected the tanker to slow up till I passed. But no, he kept right on going and I had to stand on the anchors to tuck in behind. Having noticed his CB twig, I grabbed my microphone and belted out: "Eyeball tanker just joining the motorway, you just cut me up something rotten. Don't you know I got the right of way. Come back?"

There was a pause, then over the air waves grated the gravel voice of someone who had to be nine feet tall. "Listen, sunshine," it said. "The right of way is sunfink I gives yer, an' if I ain't given it to yer, you ain't got it. Get it?"

"Is that a fact?" I said, somewhat lamely.

"Do you know who I am, sunshine?"

"Negatory," I said.

"I'm the Midlands heavyweight wrestling champion, known as Bloodsport Bert."

"That's a Roger, Bert. Do you know who I am?"

"I ain't 'ad the pleasure."

Thank God for that," I said, and shot off up the slab like a rocket!

Enough, I muttered to myself, is enough. In barely two hours I had managed to get myself prosecuted, nearly decimated and almost liquidated, and the logical progression, should I continue to use CB, would be to start World War Three. At the next turn-off, I turned off, found the first transport cafe on the A6 and went in for a much-needed mug of coffee. As the place was almost deserted, I had been telling the proprietor (if a skinny little burke in a dirty tee-shirt, sporting two days' growth of beard, dirty fingernails and a Park Drive can qualify for such a lofty title) about my experiences of the morning. Then, to my horror, sailing into the car park in line astern were two tankers — surprise, surprise — one from Esso and the other Texaco!

As the establishment didn't even boast an inside loo to hide in there was nothing I could do but brazen it out to the best of my ability. And when the crews eventually came into the cafe, it wasn't difficult to identify who was who, with the exception of a pimply-faced, bow-legged, fat little scrubber, who turned out to be Suspender Belt!

But to my surprise there was no aggro, no confrontation — in fact, apart from a long, meaningful look in my direction there was no conversation whatsoever. And after what seemed an eternity, the whole party drank up, got up, and went out. For my part, I went up to the counter for another coffee.

"You know, mate," I said to the proprietor with more than a touch of panache, "when it comes to talking face to face with people, scum like that back off, they haven't got the bottle. In a word, they're all hot air."

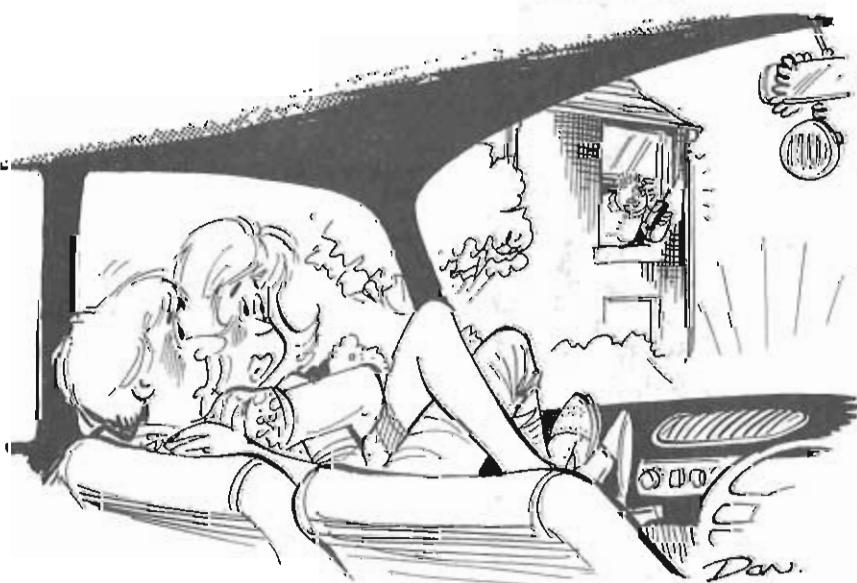
"Oh yes?" The proprietor was gazing out of the window, watching the crews getting back into their respective wagons.

"In that case," he said, "you could use a bit of it yourself."

"What do you mean by that?"

"Well, they've just let all the tyres down on your red Escort out there!"

"Whatever you're doing — stop it Good Buddy!"



The GeeBee CeeBees

British CB is now nearly four months old (well, the legal side of it is anyway) and it's obvious that the vast majority of legal breakers are now chatting in what we might remember as the English language . . .

On the other hand, there is still a big following by CB purists for Amplitude Modulation (get him) and therefore still a desire to maintain a low profile when it comes to telling people who you are, or where you are. And this, dear readers, is why we are providing you with a goodly list of expressions over the next few pages.



Ace	The MAN; important breaker
A little help	Additional power
Affirmative	Yes
ANL	Automatic Noise Limiter
Alligator station	Big mouth/incessant talker/a radio station that transmits but doesn't receive
BTO	Big Time Operator
Baby bear	Young policeman
Back door	Last vehicle in a line
Background	Interference
Back to you	Awaiting your reply
Bailing out	Leaving the highway
Base station	Rig based in one location, ie at home
Basement	Channel One
Bean store	Restaurant/service area
Bear	Policeman
Bear bite	Got a licket
Bear cave	Police station
Bear in the bushes	Speed trap
Bear taking pictures	Radar trap
Beaver	Female
Big circle	North Circular Road
Belly up	Overtaken vehicle
Big brother	Home Office, police, GPO
Between the sheets	Sleeping
Bible	Log book
Big daddy	Homa Office, GPO
Big four	Yes
Big slab	Motorway
Big switch	On/off switch
Bird cage	Liverpool/Heathrow Airport
Black box	Hearse
Black water	Coffee
Bleed over	Breaking into other channels
Blood box	Ambulance
Blue light	Police car
Blue note	A5 road
Bodacious	Receiving woll
Bone box	Ambulance
Boob tube	Television
Boots	Linear amplifier
Boot rest	Accelerator pedal
Brain bucket	Crash helmet



Breaking up	Signal cutting out
Brew	Tea
Bring it back	Call for a reply
Bubble trouble	Puncture
Bucket mouth	Obscene talker
Bull jockey	Someone who talks nonsense
Bumble bee	Motorcycle
Bumper jumper	Vehicle following close behind
Cancer stick	Cigarette
Camera	Radar trap
Carpet crawler	Kid
Cash register	Toll bridge/road
Cement mixer	Noisy engine
Charlie's Angel	Police woman
Check seat covers	Look at lady passengers
Chew and choke	Restaurant/service area
Chick	Woman/girl
Chopped top	Short antenna
Chrome dome	Roof aerial
Clean	No CB in car
Clean and green	Clear ahead
Clip joint	Heirdressers
Coffee pot	Restaurant
Come back	Your turn to talk
Convoy	Line of vehicles in CB contact
Cool it	Slow down/watch out
Copy	Receive
Copying the mail	Listening to other breakers on the CB
Coupon	Speeding ticket
Covering ground	Speeding up
Cowboy	Flashy character
Crank your handle	What's your handle?
Cruising	No particular destination
Cutting loose	Stopping transmission
Cut the co-ax	Signing off
DDT	Don't do that
DX	Long distance
Dandruff	Snow
Dead wheel	Flat tyre
Dog biscuits	Decibels (dB)
Do it to it	Drive very fast
Do you copy	Do you read me
Don't feed the bears	Don't get caught speeding

Double 88's Love and kisses
 Down Stopping transmission
 Down and gone Stop transmission and switching off
 Down on the side Stop transmission and standing by
 Driving on the peg On the speed limit
 Ear ache Problem with antenna
 Ears CB radio or antennas
 Ears on CB switched on
 Easy chair Middle vehicle(s) of three or more
 Eighty-eights Love and kisses
 Envelope Unmarked police car
 Eyeball To meet another CBER in person/to see another CBER
 Fancy seat cover Pretty girl
 Feed the bears Get a speeding ticket
 Feet Tyres/linear amplifier
 Final Last transmission
 Fireworks Police car with flashing lights
 Five by five Good signal
 Fixed station Base station
 Flap jaw Constant talker
 Flaps down Slowing down
 Flicks Cinema
 Flip flop Return trip
 Flop box Bedroom
 Flop stop Overnight stay
 Flyboy Speeding driver
 Footrest Throttle pedal
 Foot warmer Linear amplifier
 Four Abbreviation of 10-4
 Fox bunting Home Office trying to catch CBERs/weating time
 Front door First vehicle in a convoy
 Front end First vehicle in a convoy
 Full of vitamins Big engine/strong signal
 Full sails Driving very fast
 Fuzz buster Radar detector
 Galoshes Linear amplifier
 Gang plank Bridge
 Garbage interference
 Gorbage mouth CBER who swears
 Get a transfusion Stop for petrol
 Get horizontal Go to sleep
 Getting out Good signal
 Go breaker Go ahead speak
 Going down Turning off CB
 Going down on the side Signing off but still listening
 Going into the sunset Heading west
 Goldilocks Woman with blond hair
 Goodies CB accessories
 Get a copy Do you read
 Got my foot on it Speeding up
 Got your ears on Is your CB on
 Gravel agitator Hitch-hiker
 Greasy Icy road
 Greasy side up Overturned vehicle
 Green light Road clear of police
 Grizzly Police
 Grounded Driver outside vehicle
 Hammer back Decelerate
 Hammer down Accelerate
 Handle CB code name
 Hang out Monitor a channel
 Hang ten Speed up
 Hash Interference on channel
 Heater Linear amplifier
 Hen fruit Eggs
 Henry's Ford vehicles
 Hiding in the bushes Hidden police vehicle
 High rider Truck driver
 Home free Arriving at destination safely

Hole in the wall Tunnel
 Home on its back Camper
 Home port Base location
 Home 20 Base location
 Hooey bear Police woman
 Horizootal Asleep
 Hot foot Linear amplifier
 Hot load Cargo carried in a rush
 Hot stuff Coffee or tea
 Hump Mountain
 Idiot box Television
 In a short In 5 minutes
 In the dog house Under the bonnat of a vehicle
 In the hole Stopped or arrested by police
 In the mud Bad transmission
 In the pen CB not in use/parked up
 Indians Neighbours who have TVI (television interference)
 Instamatic Police radar
 Jabber Jaw CBER who talks too much
 Jaw jacking Talking on CB
 Joy juice Alcohol
 Juice Fuel
 Jump dowo Switch to a lower channel
 Jump up Switch to a higher standard
 Junk buzzard Tramp
 Junk yard Place of employment
 Keeping between the ditches Drive safely
 Keyboard Dials on a CB radio
 Keying the mike Pressing the mike button
 Kicker Linear amplifier
 Kiddie con School bus
 Kidney buster Rough ride
 Knocking on your back door Coming up from behind
 Knuckle buster Fight
 Kodak Police radar
 Kojak with Kodak Police with radar
 LSB Lower sideband
 Lady breaker Female CBER
 Land line Telephone
 Lay it on the floor Accelerate
 Lay over and listen Stop transmitting but still listening in West
 Left Behind you
 Left sboulder Accelerate
 Let it go Accelerate
 Let it roll Accelerate
 Lettuce Money
 Lie sheet Lorry driver's log book
 Light footing it Driving at the maximum legal speed
 Lights green Road ahead clear of police
 Linear lungs CBER with loud voice
 Little box Linear amplifier
 Little mama Short antenna
 Living dead Driving too close to vehicle in front
 Living space Home
 Loaded for bear CBER who has police radio listening equipment
 MOL My old lady
 MOM My old man
 Mafia squad Tough group of truck drivers
 Make a trip Change channels
 Making the trip Sending out a good signal
 Momma Wife
 Man In white Doctor

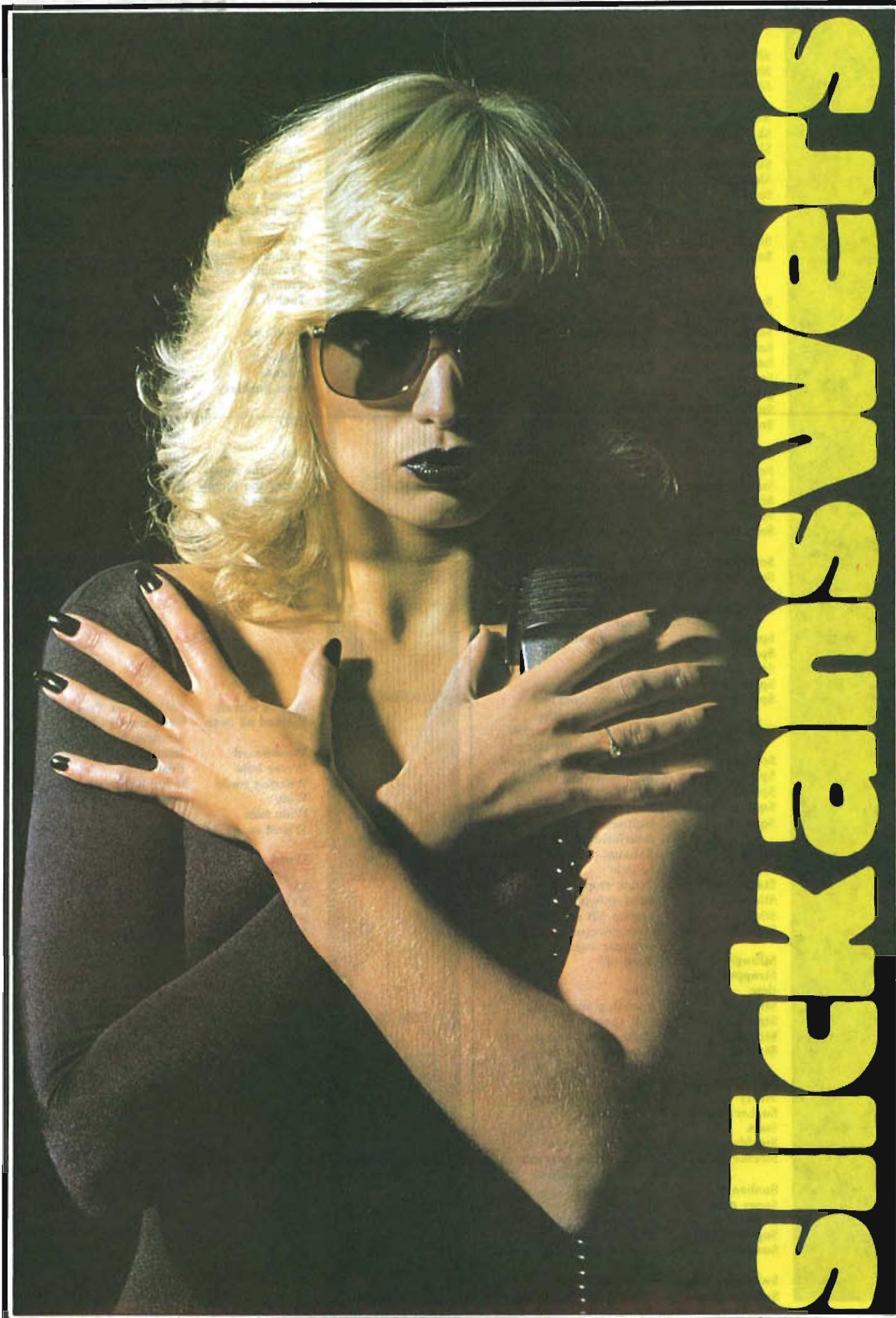
Maniac Garage mechanic
 May day Distress call
 Maxi taxi Bus
 Meany men Home Office/GPO etc
 Meat man Butcher
 Meat waggon Ambulance
 Meeting twenty Meeting place
 Micro bus Van
 Midnight South
 Midnight shopper Thief
 Mike Microphone
 Mike fright CBer nervous about using microphone
 Mobile Vehicle/CB radio
 Mobile mattress Car pulling a caravan
 Mobile rig CB in vehicle
 Modulating Talking on a CB radio
 Modulation Voice/conversation
 Monitor Listening to the CB
 Moonlight Drive along back roads to avoid police
 Motion lotion Fuel
 Motivate Move
 Motoring on Driving on
 Motor mouth Someone who talks too much
 Mouthpiece Microphone
 Move Vehicle driving along
 Movie camera Vascar
 Movies Police with Vascar
 M20 Meeting place
 Mud Coffee/interference on channel
 Nap trap Motel rest area
 Natives Local CBER
 Nature call Halt
 Negative No
 Negative contact CB called does not respond
 Negative copy No answer/answer is not understood
 Negatory No
 Nerd Twit
 Nickel bridge Toll bridge
 Night crawlers Police are everywhere
 Noise blanker Part of a CB that helps to reduce interference
 Noise limiter Basically same as above
 OM Old man/husband
 OW Old woman/wife
 Oasis Truck stop/lay-by cafe
 On standby Listening in
 On the peg Driving at maximum legal speed
 On the shore On the side of the road
 On the side Listening in
 One eyed monster Television
 Open season Police everywhere
 Out Stop transmitting
 Out stripped me Passed by a very fast vehicle
 Out to lunch Not answering
 Over modulation Talking too close to the microphone
 Pan handlers Nurses
 Pants on fire Getting stopped for speeding
 Peak power Maximum wattage
 Peaked up CB radio putting out more than standard watts
 Peanut whistle Low powered CB set
 Pedal down Speed up
 Pedal pusher Cyclist
 Peel off Turn
 Peppers Police
 Peg leg Driver who keeps braking when not necessary
 People car Bus
 Photographer Police with radar
 Pigeon Person who is caught speeding

Piggyback Small trailer
 Pinball machine Vehicle with flashing light
 Pink panther Unmarked police car
 Pitstop Layby cafe; rest area
 Plain brown wrapper Unmarked police car
 Pokey Prison
 Polaroid Police radar
 Polo mint Roundabout
 Portable can Tanker
 Portable rig CB that can be carried or moved with own antenna and power source
 Potato juice Vodka
 Pound meter "S" meter
 Pounds Meter reading in "S" units
 Press cooker Sports car
 Prime time Time spent with wife or girlfriend
 Professional Truck driver
 Pulling the plug Turning off the CB
 Pump Linear amplifier
 Pushwater Petrol
 Pushmobile Vehicle moving very slowly
 Pusholine Petrol
 Put your shoes on Turn power up/amplifier on
 Ratchet jaw CBER who talks a lot on channel
 Rag top Convertible car/soft top
 Rags Bad tyres
 Rain locker Shower room
 Read Hear
 Reading the mail Monitoring
 Rebound Return journey
 Red box Ambulance
 Rent-a-bear Private security guards
 Ride shot gun Be a passenger
 Rig CB radio
 Rig rip-off Stolen CB set
 Right East
 Ringing your bell Someone's calling you
 Road tar Coffee
 Roger Yes/affirmative
 Roger D Message received and understood
 Rodger dodger? Do you understand?
 Roller derby Accident; wrecked car
 Roller skate Small car
 Rolling bears Police on the move
 Roundy-roundy Roundabout
 Rubber duck Lead CBER in a line of two or more vehicles
 Rubber neck Slow down to look at accident
 Rude dude Reckless driver
 Runner Police chase car
 Running a boot Use of linear amplifier
 Running bear Police on the move
 "S" Meter Meter which measures level of signal
 SSB Single side band
 SWR Standing wave ratio
 Sallmines Place of employment
 Sand bagging Monitoring; listening in on a CB radio
 Sandbox Bathroom
 Set of doubles Truck with trailer/artic
 Shack Room where CB set is installed
 Sheep herder Hopeless driver
 Shim To boost power of CB radio above normal
 Shoe box Car/van
 Shoes Linear amplifier
 Short short Soon/rest room stop
 Shoulder boulder Abandoned vehicle parked on side of road
 Shovel coal Accelerate

Show off lane Overtaking lane
 Sinking ship Vehicle running low on fuel
 Sit on it Be quiet
 Sit rop Location report
 Skate jockey Driver of small high performance vehicle
 Skins Tyres
 Sky hook Base station antenna
 Slab Motorway
 Slanty eyed Japanese vehicle
 Slaughter house Channel II
 Smoke Police/London
 Smashed Overpowered by a stronger signal
 Smoke city London
 Smoke 'em out Speed slightly to bring police vehicles out of hiding
 Smokey report Police location
 Smoke signals Police in area
 Smoke screen Police radar
 Smokey hear Police
 Smokey dozing Parked police car
 Smokey on the ground Policeman on foot
 Smokey's trackin' Police using radar
 Snafu Situation normal all fouled up
 Snake "S" curve on road
 Snake den Fire station
 Sneaky snake Hidden police vehicle
 Sniper Hidden radar trap
 Socks Linear amplifier
 Soda fountain Truck carrying bottled gas
 Sore foot Flat tyre
 Sou' boulder Vehicle headed in southerly direction
 Sounding choice Clear reception of signal
 Spaghetti howl Motorway intersection
 Sparky Electrician
 Spin out Spin/skid
 Splat hat Crash helmet
 Splash Spill over from one channel to another
 Splashed on Interrupted on channel by someone breaking in
 Splatter Interference on channel
 Split Motorway intersection
 Spring water Beer
 Square wheels Parked up
 Squelch Unit which cuts out interference on a CB
 Stack Exhaust on a diesel vehicle
 Stage stop Truck stop
 Stand by Hold on/wait
 Stick Mobile CB antenna
 Stomped Overpowered by a stronger signal
 Turn off
 Strangle
 Strapped for time Late
 Streaker Speeding sports car
 Streaking Full speed
 Strip her Unload truck cargo
 Stroller CBeR with a walkie-talkie
 Struggling lane Left hand lane
 Stuffy Congested channel
 Sucker brakes Air brakes
 Suds Beer
 Sulcide cargo Dangerous cargo
 Suicide jockey Truck driver carrying a cargo of explosives
 Sunbeam Comedian
 Super cola Beer
 Super slab Motorway
 Superstructure Bridge
 Sweep the leaves Last CB vehicle in convoy
 Swimming pool Pond/lake
 Swindle sheet Truck driver's log sheet



TR switch Transmit/receive switch
 TVI Television interference
 TX Telephone
 Tags Number plates
 Ten bye-bye Sign off
 Ten pounder Excellent reception
 Ten roger Message received
 Thin Weak signal
 Threes and eights Best wishes/sign off
 Throw a shoe Got a flat tyre
 Tin bender Sheet metal worker
 Tooled up Boosted CB set
 Top of the shop Channel 40
 Tractor Lorry without a trailer
 Trading stamps Money
 Training wheels Provisional licence
 Travelling zoo Truck carrying livestock
 Truck on Move on
 Tuck it in Move into the left hand lane
 Tuned up CB putting out more than 4 watts
 Turkey Friendly insult
 Twenty Location/position
 Twin huskies Dual antenna
 URO Unidentified rolling object
 USB Upper sideband
 Under the hump Tunnel
 Under the thumb Unable to pass
 Undressed Unmarked police vehicle
 Voice check Radio check
 VOX Voice operated relay
 Wagon wheels Leyland, Nr Preston
 Walked all over Overpowered by a stronger signal
 Washboard Bumpy road
 Water hole Rest area
 Wearing socks Using linear amplifier
 Whip Rod for mobile antenna
 Wide side Empty lane on right
 Wiped out CB signal overpowered by stronger signal
 Word nut Student
 XL Unmarried woman
 XYL Ex young lady
 XYM Ex young man
 X ray machine Police radar
 YF Wife
 YL Young lady
 Zoo Police station
 Z's Sleeping



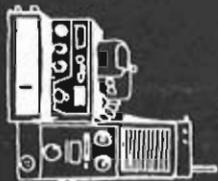
Slick answers

The sort of answers that you'd wish you'd thought of — about 10 minutes after the question.

HEARD ON CHANNEL — a selection of little gems from the DODSON COLLECTION.

"That's Roger, break, I run a driving school."
"Got any low terms for breakers?"
"Yes, sod off!"
"... and I got the Abbey habit."
"Been chatting up nuns again?"
"What's your handle?"
"Barbara Windsor."
"Ah, London's popular front."
"Ain't you breakers interested in the size of my boobs?"
"No — just the size of your husband."
"... and the answer to every breaker's dream."
"You must be a deaf and dumb nymphomaniac who owns a pub."
"When it comes to sex, mate, I can put it in a nutshell."
"So I've heard."
"How tall is that lady breaker?"
"Not that tall — in fact she's got mud-flaps fitted to her knickers."
"What about her boyfriend?"
"Well, let's say he's always the last to find out when it's raining."
"What sort of a lady breaker would go to bed with a guy on their first date?"
"My sort!"
"She has turned a few heads in her time, I can tell you."
"— And stomachs."
"You want to try the caff on the A35. The tea's got body in it."
"Hope it's no one we know."
"Our union's just got agreement for double wages, two-hour tea breaks, two months' holiday and we only work Fridays."
"Every Friday?"
"Are you a virgin?"
"not yet."
"My girlfriend and me are square-wheeled on the A40 near Burford."
"Are you on the verge?"
"Negatory. But we're breathing hard."
"My wife is a decided red-head."
"Yes, I know. I was there when she decided."
"This breaker you know, does he come round after work?"
"It isn't work he comes round after."
"We breakers should preserve wildlife."
"Yeah. Pickle a squirrel today."
"I can't leave my wife with five kids."
"Why, how many does she want?"
"Didn't you want to be by your husband's side when he died?"
"No bloody fear. He was hit by a 40-ton truck."

"... it's like the widow's mite."
"Yes, but some do."
"Well, I do fancy work."
"Good on yer — I don't."
"Tonight I would love to be in something long and flowing."
"How about the Thames?"
"At the moment, break, I'm working on a portable."
"A portable what?"
"Dunno, so far I've only made the handles."
"My son wants a cowboy outfit for Christmas."
"Give him BL."
"Our club has good, clean fun every night except Mondays."
"OK. Let's go Monday."
"Have you tried that Indian restaurant in the High Street?"
"Yes, all that snake and kidney pie."
"Cordon Bleu?"
"Ought to be cordoned off."
"There's a Pakistani breaker in our street who's a flasher."
"No. What's his handle."
"Show waddy waddy."
"and I wear giggle garters."
"You do?"
"Affirmative — once past those and you're laughing!"
"... and after I got this channel nine call, I gave him the kiss of life."
"Did he get better?"
"No he didn't get better. Bigger, but not better!"
"What do you give a lady breaker who has everything?"
"How about my phone number?"
"So who has Access?"
"Lumberjacks."
"Who's Maid Marion?"
"Who hasn't?"
"What's a breaker on about?"
"Would you believe fifty quid a week?"
"It was lovely. The pianist was tinkling gently in the corner of the room."
"The dirty sod."
"Channel nine for an emergency, I've sprained my ankle. What should I do?"
"Limp."
"Can you play the piano?"
"Dunno. I've never tried."
"I like a girl who doesn't hassle me."
"OK, your place or mine?"
"There you go, arguments, arguments."
"I'll have you know, my man, that I got this cold sleeping with Ursula Andress!"
"You too?"
"As I said to my friend Ethyl, I have got appeal."
"So has an orange, but it doesn't mean that I fancy one."



NEW BREAKER

THE CODE WAR

The codes can be very useful, so CB82's advice would be to learn them, or at least some of the 10 code, and the odd one from the Q code.

Now CB is legalised, codes have become used less because there's not so much of a need to keep your name and whereabouts hidden from the polizei. Mind you, as the channels become crowded as more breakers come on the air, the need for a code will become evident. The average newcomer to CB need learn only a few of the codes — those we have printed in bold letters — to get along nicely, thankyou.

But as long as you don't hog the channels, and let the other bloke in for a chat now and again, we should all benefit from what is a first class facility. After all, we have all paid our licence fees — haven't we?

On these pages you'll find the 10 code, 13 code, Q code and other useful bits of information, although you'll probably use the following expressions more often than not — 73s and 88s. No, they're not a reference to any of the commonly used codes, but they mean Best Wishes, and Love and Kisses, respectively.

In answer to the question: How are you receiving me? you should give the caller a "strength" number.

Strength 1: Intermittent. Very poor reception.

Strength 2: Poor. Barely intelligible.

Strength 3: Difficult to copy.

Strength 4: Clear. Fairly readable.

Strength 5: Loud and clear. Wall to wall, etc.

PHONETIC ALPHABET

LETTER	PHONETIC	PRONOUNCED	MORSE
A	Alpha	Al-fah	.-
B	Bravo	Brah-voh	-...-
C	Charlie	Char-lee	-.-.-
D	Delta	Del-ta	-..-
E	Echo	Ek-koh	..-
F	Foxtrot	Foxstrot	..-.-
G	Golf	Golff	-.-.-
H	Hotel	Hoh-tell
I	India	In-dee-ah	..
J	Juliet	Jew-lee-ett	.-.-.-
K	Kilo	Kee-loh	-.-
L	Lima	Lee-mah	.-.-.
M	Mike	Mike	-.-
N	November	No-vem-bah	-.
O	Oscar	Oss-cah	-.-.-
P	Papa	Pa-pah	.-.-.-
Q	Quebec	Keh-beck	-.-.-
R	Romeo	Ro-mee-oh	.-.
S	Sierra	See-air-rah	...
T	Tango	Tan-go	-
U	Uniform	Yew-nee-form	..-
V	Victor	Vik-tor	...-
W	Whisky	Wiss-kee	.-.-
X	X-ray	Eks-ray	-.-.-
Y	Yankee	Yang-kee	-.-.-
Z	Zulu	Zoo-loo	-.-.-

PRONUNCIATION OF FIGURES

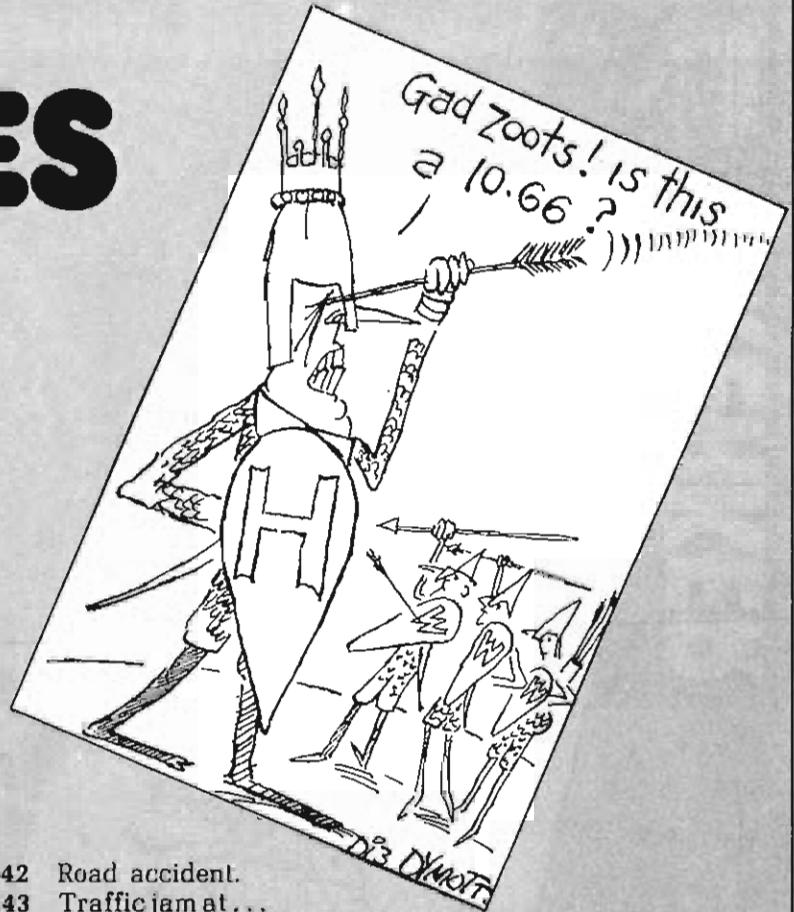
0 — Zero. 1 — Wun. 2 — Too. 3 — Thurree. 4 — Fower. 5 — Fyve. 6 — Sicks. 7 — Sev-en. 8 — Ate. 9 — Niner. 10 — Wun-zero. 11 — Wun-wun. 500 — Fyve hundred.

Note: When describing a number, use the word "figure" and make sure similarly pronounced figures (ie, five, nine) are distinguished by the above recommended pronunciations.

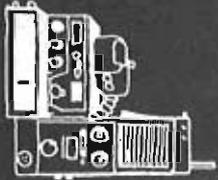
10 CODES

Everybody predicted that the channels would become heavily used after legalisation. But nobody really wanted to do anything about it. And now in many areas (especially in the towns, cities and other well populated areas) it's difficult to get on channel because of the overcrowding.

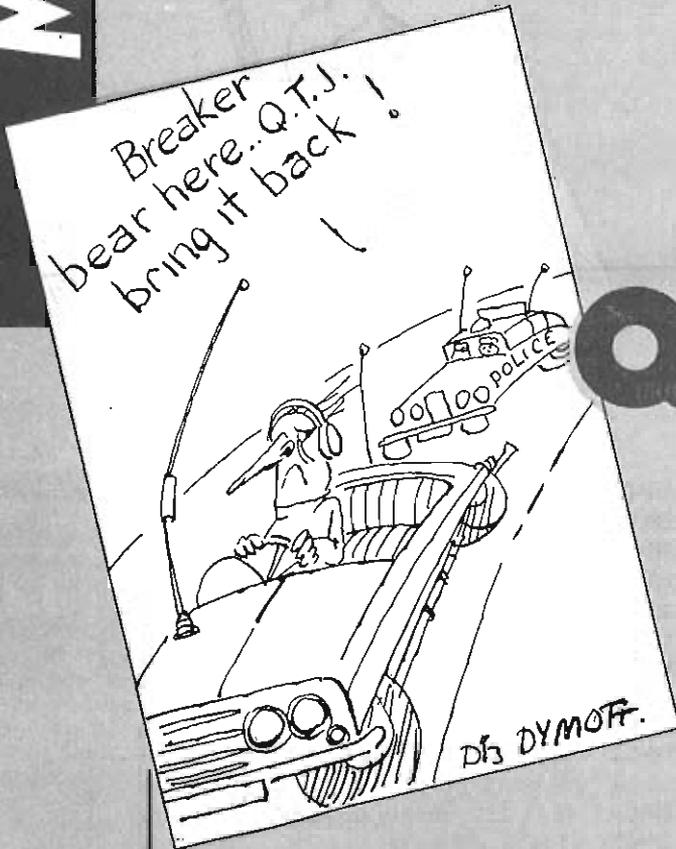
All of which means that conversations ought to be kept short. After all CB is only a two-way communications system and as you will appreciate, it should only be used as such. And this leads us to the 10-code, formulated in America by the so called law enforcement agencies and adopted by US truckers, and eventually by we Brits for military and CB use. Better use of the codes should mean more opportunities for breakers to talk on the air.



- | | | | |
|-------|------------------------------|---------|----------------------------------|
| 10-0 | Take care/caution. | 10-42 | Road accident. |
| 10-1 | Poor reception. | 10-43 | Traffic jam at... |
| 10-2 | Good transmission. | 10-44 | Message for you. |
| 10-4 | OK, Message received. | 10-45 | Anybody within range? |
| 10-5 | Pass message on. | 10-46 | Assist motorist. |
| 10-6 | Busy — stand by. | 10-50 | Break channel. |
| 10-7 | Out of service. | 10-53 | Accident — road blocked |
| 10-8 | In service — open to calls. | 10-60 | Next message number? |
| 10-9 | Repeat message. | 10-62 | Can't copy — use phone. |
| 10-10 | Message completed — waiting. | 10-63 | Network directed to.... |
| 10-11 | You're talking too fast. | 10-64 | Network clear. |
| 10-12 | Visitors present. | 10-65 | Next assignment/message? |
| 10-13 | Advise weather conditions. | 10-66 | Cancel message. |
| 10-14 | A party at.... | 10-67 | All units comply with.... |
| 10-15 | Disturbance. | 10-69 | Message received. |
| 10-16 | Collect at.... | 10-70 | Fire at.... |
| 10-17 | Urgent business. | 10-71 | Proceed with message. |
| 10-18 | Anything for me? | 10-73 | Speed trap at.... |
| 10-19 | Return to.... | 10-74 | Negative/no. |
| 10-20 | My location is.... | 10-75 | You are causing interference. |
| 10-21 | Phone me. | 10-77 | Negative contact. |
| 10-22 | Come personally. | 10-81 | Reserve hotel room for.... |
| 10-23 | Stand by. | 10-82 | Reserve lodgings. |
| 10-24 | Assignment completed. | 10-84 | My telephone number is.... |
| 10-25 | Get in touch with.... | 10-85 | My address is.... |
| 10-26 | Disregard message. | 10-88 | Advise telephone number of.... |
| 10-27 | Moving to channel.... | 10-89 | Radio repairs needed. |
| 10-28 | Identify yourself. | 10-90 | I have TVI. |
| 10-29 | Time up for contact. | 10-91 | Talk closer to the mike. |
| 10-30 | Illegal use of radio (?) | 10-92 | Adjust your transmitter. |
| 10-31 | Crime in progress. | 10-93 | Check my frequency. |
| 10-32 | Radio check. | 10-94 | Give me a long count. |
| 10-33 | Emergency! | 10-95 | Transmit dead carrier 5 seconds. |
| 10-34 | Trouble here, help! | 10-96 | Subject is mental. |
| 10-35 | Confidential info. | 10-97 | Check (test) signal. |
| 10-36 | Correct time is.... | 10-99 | Mission completed, secure. |
| 10-37 | Breakdown at.... | 10-100 | Going for a pee. |
| 10-38 | Ambulance needed. | 10-200 | Police needed at.... |
| 10-39 | Your message delivered. | 10-400 | Drop dead. |
| 10-41 | Change to channel.... | 10-1000 | Homosexual. |



NEW BREAKER



Q CODES

Now, the Q code is completely international, and is used by amateur radio enthusiasts and CB operators alike, not to mention other long distance talkers.

The Q code is unlike other codes in at least one way; each code can be used as either a question or answer. For instance, QTR. It can stand for "Can you tell me the time?" Or "The time is.....". Many breakers have the major codes pinned up on their walls as easy reference. A good idea.

- | | | | |
|------------|---|------------|---|
| QSO | Communication with contact. | QRB | How far away are you? |
| QSP | I will relay message. | QRD | What's your destination and where do you come from? |
| QSX | Listen to (name) on channel . . . | QRE | What's your ETA? |
| QSY | Change frequency. | QRF | Are you going back to . . . ? |
| QSZ | Send each word more than once. | QRH | The frequency varies. |
| QTH | Location. | QRL | Are you busy? |
| QTJ | What is your speed? | QRM | Interference from other stations? |
| QTN | What time was your departure? | QRN | Natural interference |
| QTR | What is the correct time? | QRO | Increase power from transmitter. |
| QTU | What are the hours your station is open? | QRP | Decrease power from transmitter. |
| QTV | Shall I stand by for you on channel . . . ? | QRQ | Transmit at a faster rate. |
| QTX | Will you keep your station open for further info? | QRS | Transmit at a slower rate. |
| QUA | What news of (name)? | QRT | Stopping transmission. |
| QUD | Did you get emergency signal from (name)? | QRU | Have you anything for me? |
| QUF | Did you receive distress signal from (name)? | QRV | Are you ready? |
| QUM | Is the distress signal finished? | QRW | Shall I tell (name) you're calling him on channel . . . ? |
| QUO | Shall I look for (name)? | QRX | Stand by. Call back later. |
| QUR | Information on survivors wanted. | QRZ | Who is that calling me? |
| QUS | Have you spotted wreckage survivors? | QSA | Readability of message. |
| QUT | Is position of incident marked? | QSB | Fading signal. |
| QRA | Your station number? | QSL | Acknowledge receipt. |
| | | QSM | Repeat the last message. |
| | | QSN | Did you read me on channel? |

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Altogether Dateline is the most exciting social advance for single people since the granting of the vote. Join it and your days will really come alive.

■ The Shifting Society

Social life is changing more rapidly than ever before. The older generation spent their lives more or less in one place.

School, work and family life grew out of the same environment people were born in. You knew everyone in your district and it wasn't too difficult to pick the friends who suited you, and who shared your interests. Even so, when society was more static the opportunities for widening your circle were still restricted, and life wasn't so varied as it is today.

Now we're in the space age. The old 'school-work-early marriage' syndrome is disappearing. A whole new generation of mobile young people is at large in the world. They're people with initiative, independent of their home background, able to change jobs and locations, to take up studies and pastimes, and to pursue their careers all over Britain and overseas if they want to. Many do just that, taking their freedom in both hands and making the most of the world's opportunities. Dateline is for them, and in this case, 'them' means you.

■ What The Friendly Computer Does

In the heart of the computer is the central processor. This contains the arithmetic unit in which the calculations are done, and the internal storage or memory unit whose job is the same as that of the human brain. Information reaches the central processor through an input device and your results are returned through an output unit. The computer's memory retains two types of information: the list of instructions on how to carry out its tasks, i.e. the program, and the data it is using. So, when the computer is told to find the usual, six-at-a-time, ideal dates for you, it is given a program that tells it how, and the data on you and on thousands of other Dateline members. All calculations are done at incredibly high speed.

The power of our computer, and our many years of international Dateline operations experience, enables us to provide you with the world's fastest, most accurate, and confidential dating service. Complete the questionnaire now — it's up to you.

■ Is Dateline Etiquette?

It's just possible that you might feel a certain hesitation about joining Dateline. After all, something of the old idea that true friendships are made in heaven still lingers in everyone's mind. But heaven has always been given a bit of help.

Right from earliest times people have been introduced to each other through third parties. It's nearly always been thought improper to meet in any other way. For example, the Ancient Egyptians ran a civil service of intelligent women whose duties were to gather information, on eligible young people, for general distribution. The Romans and Greeks had similar customs, and throughout Europe from the Dark Ages right down to our own times older married women would introduce unattached young people to each other at parties and formal functions.

In graceful Edwardian days the art of introducing people reached its highest expression. Hostesses lived out a kind of Forsyte Saga in grand houses with a carriage at the door. Evenings began with, 'May I introduce you to Mary?' and, 'I don't believe you've met John'. And John and Mary would answer, 'Delighted to have the pleasure of your company' or, 'Charmed I'm sure'. Cutting out the antique language and the long ball-gowns, that's just what Dateline does today. We've revived that charming custom and updated it. Our new-world computer hands out thousands of carefully planned introductions in all parts of Britain. In the time it takes for the postman to reach you.

There's a touch of glamour about those first phone calls and the first words you exchange. But the deepening knowledge of each other that comes when people are truly well-paired is even more pleasant. When you find you've both got a passion for sailing or the special music of a certain group, you'll get that warm feeling inside that makes up for so many mistaken dates in the past.

And even if you're not looking for serious long-term relationships, you'll find yourself recapturing the free and easy companionship you had in college or in the last years at school, only this time at a more mature level, with more varied contacts.

'I would like to ask for my fiancée and myself to be withdrawn from your lists. We would both like to send our many thanks for bringing us together, and hope you can bring true happiness to many others as you have done for us.'

Miss P.W.
Mr. D.B. Stretton,
Lancs.

'... and I'm pleased to say one of the dates you selected for me has consented to be my wife. So I shan't be needing your services again.'

B.J.H. Princes Risborough.

'18 months ago I entered Dateline and it certainly proved very enjoyable and worthwhile. I have now changed my address and would be pleased to receive another form so that my name can be entered again.'

J.M.B. (Miss) Denham, Bucks.

'Would you please send me a further half-dozen questionnaires. I have very much enjoyed the many dates I have had since my application to you and several friends have told me they have also had success. In fact I seem to have a never-ending stream of people asking me for forms!'

V.M. (Miss) Camberley, Surrey.

Writes a Birmingham girl:
'Thanks to you I've met the man of my life. He hasn't yet popped the question but if he doesn't I'll never recover.'

Our mailbag is probably the most cheerful in Britain and we could keep quoting for ever.

■ What Sort of People Join Dateline?

Everyone joins Dateline: showbiz personalities, artists, Lords, musicians, soldiers, cooks, stockbrokers, property-men, models, nurses, athletes, business executives of all kinds, teachers, secretaries, students, librarians, dancers. The only qualification you need is to be unmarried.

Most of our members are busy, successful, intelligent people with enquiring minds and varied interests. They've usually got plenty of their own friends, who, perhaps, they know too well to get romantic about. Others, through pressure of work, or through a shy disposition, or because they find themselves in a strange new career environment, are short of interesting company, and want to make a fresh social start. Through Dateline they can do it. Dateline puts you in touch with new faces, a different crowd, and completely refreshes your social life.

More important for many people is the scientifically-based probability of meeting the man or woman you've always dreamed about, and simply falling in love. Yes, it does happen: so frequently you shouldn't be surprised when it hits you personally. Every week Dateline receives scores of letters from happy couples matched by our computer. Already more than ten thousand known marriages can be attributed to Dateline, and perhaps thousands more that we haven't been told about.

■ How Do You Join Dateline?

Complete our questionnaire. Designed by experts in computer sciences and psychology, it takes about 15 minutes to fill in, longer if you're in an extra-thoughtful mood, but it's fun. The 200 questions are very thorough and for a good reason. The more you tell us about yourself and the kind of people you most like, the more accurate our computer can be and the closer to your ideal will be your dates.

■ What Kind of Questions?

First, basic straightforward questions on your age, physical build, appearance and social background. Then a few on education, social habits and occupation. Next a chance to list all your special interests. And finally, the personality test in three parts. There's also a space for any additional information about yourself that you care to give.

Side by side with the profile of yourself formed by the answers to this set of questions, you fill in a profile of your chosen man or girl, marking the qualities you prefer from the lists given. All this careful planning goes a long way to ensure that the people you meet through Dateline will be exactly your kind.

Send for your questionnaire, and from there on, Dateline takes over.

CONFIDENTIAL

FREE!

To
Dateline Dept (CB 82) Surname.....
23 Abingdon Road, First Name.....
London W8 Address.....
01-938 1011

I am over seventeen and would like you to send me completely free and without obligation lots more information about the Dateline matching system and the full Dateline questionnaire.

Dateline

13 CODES

A bit of fun really. It used to be taken seriously at one time, but obviously it will make sense only to those breakers who know what the various codes mean.

We don't think many breakers use the 13 code in this country, but if it is being utilised for any purpose by any CBers anywhere, please let us know. At present though, it's just a funny code and if nothing else, it should bring a grin to your face.



- | | |
|---|---|
| <p>13-1 All units copy, and think you're an idiot.</p> <p>13-2 I copy, but I'm ignoring you.</p> <p>13-3 You're beautiful when you're mad.</p> <p>13-4 Sorry 'bout that big fella.</p> <p>13-5 Up yours.</p> <p>13-6 OK I goofed, but we're all human.</p> <p>13-7 If you don't copy don't blame me, 'cos I'm producing 3,000 watts.</p> <p>13-8 You sound so illiterate. Were your parents married?</p> <p>13-9 Are you running AM?</p> <p>13-10 I'll help you, but how did you get here in the first place?</p> <p>13-11 Try blowing your nose — it might clear your ears.</p> <p>13-12 You have foot in mouth disease</p> <p>13-13 Has someone stolen your antenna cable?</p> <p>13-14 Now I know what an antenna with "less than unity gain" sounds like.</p> <p>13-15 If you're running only 130 milliwatts, how much did you pay for your licence?</p> <p>13-16 Isn't it about time you replaced that tired mouse running your generator?</p> <p>13-17 The only reason you're able to go horizontal is because your antenna's fallen over.</p> <p>13-18 If I could read you, I'd be tempted to answer.</p> <p>13-19 Are you talking into the back of your mike?</p> <p>13-20 What's that clicking noise? Is your upper plate loose again?</p> | <p>13-21 Bloody hell. Are you being paid by the word?</p> <p>13-22 If you had talked for another few seconds, you'd be eligible for a broadcasting licence.</p> <p>13-23 You make more sense when you're smashed.</p> <p>13-24 Either my receiver is out of alignment, or you're on channel 28.</p> <p>13-25 I could get a better signal from a piece of damp string.</p> <p>13-26 Hey, a fabulous signal. Heng on until I arrive in your driveway so I can copy what you're saying.</p> <p>13-40 Shut off and give me a land line so I can find out what you want.</p> <p>13-42 Either my speaker is u/s or you're out of your tree.</p> <p>13-43 That was a beautiful 10, now try it again with your mike connected.</p> <p>13-44 Love the tone. Now I know why the makers discontinued that model.</p> <p>13-45 Your transmitter must be faulty, because there's smoke coming from my speaker.</p> <p>13-47 How close do you want me to get before you read me?</p> <p>13-50 Can you drop down to 250khz?</p> <p>13-51 You've tried upper and lower sidebands. Now you're satisfied, will you please go QRT so we can use the central slot?</p> <p>13-52 Only one good thing about hearing you on single sideband. You're only half as offensive as you were on AM.</p> |
|---|---|

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THAMES

**TRAFFIC HELP AND MONITORING
EMERGENCY SERVICE**



**Do you
want to be
a monitor?**

On CB, a monitor is someone who listens in to channel 9 and passes any emergency calls through to the police, fire and ambulance services. Here, Sean Barry-Weske talks to Tommy Tucker of THAMES, namely, the Traffic Help And Monitoring Emergency Service. If you are interested in doing something useful with your rig, write to CB82 and we'll pass the message on . . .

"BREAKER CHANNEL NINE. I HAVE A TEN THIRTEEN"

"THIS IS THAMES UNIT ALPHA EIGHT. MAY I HELP YOU?"

As 'Tommy Tucker' waits for additional information from the unknown motorist asking for assistance on the CB emergency channel, Tommy, a South London monitor, has to be ready for just about anything.

Someone may be near death and in need of immediate medical attention following a traffic accident or a mugging; a crime may be in progress; a fire may be threatening life or property, or it could be something as simple as a lost motorist who needs petrol or directions. Or both.

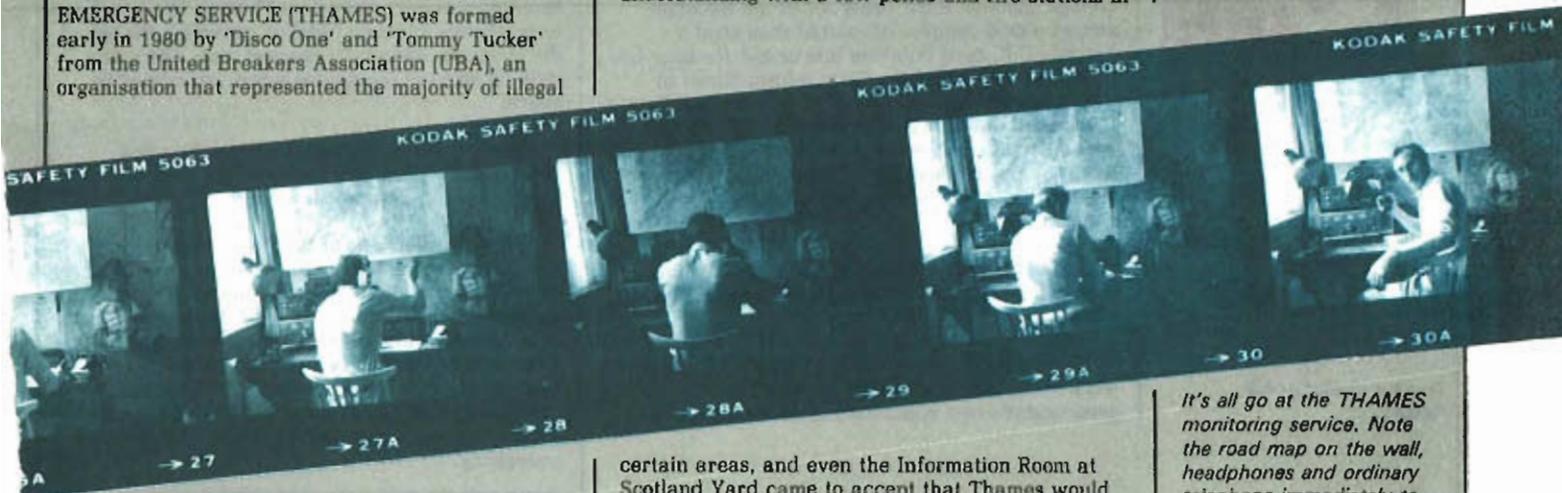
This time there is no urgency. Tommy Tucker relaxes a bit as the CBER describes a traffic jam he happens to be caught in. T.T. takes the needed information and passes it on to the 'breaking' channel, warning other motorists to avoid the area, and then directs the frustrated caller out of the jam. This time it was simple. But a THAMES unit can never be sure...

TRAFFIC HELP AND MONITORING EMERGENCY SERVICE (THAMES) was formed early in 1980 by 'Disco One' and 'Tommy Tucker' from the United Breakers Association (UBA), an organisation that represented the majority of illegal

country forming monitoring groups. First North London. Then the Essex coast. Devon and Cornwall was secured. Northampton, Wales and Scotland followed soon after. Area co-ordinators were elected and then county co-ordinators were needed. All these were, and still are being set up, to run the different departments in Thames. Up to the time of publication, Thames units number over 5,000 throughout the United Kingdom, 500 of these being based in London alone. There are very few places in the country where a Thames monitor is not listening out for an emergency call.

It wasn't an easy task. In the days of the 'Naughty Forties' or before CB was legalised, Thames monitors were still liable to be busted. There was no guarantee that because you were an emergency monitor, you would not get turned over by the Customs and Excise boys, questioned for hours in a police station and then finally taken to court and possibly charged on three counts. But it is a fact that, out of all the convictions for citizens band offences in the years preceding legalisation, very few were Thames monitors.

It took a great deal of time to form an understanding with a few police and fire stations in



citizens' band radio operators in Britain. It was to follow closely the system used in the United States known as REACT, where unpaid volunteers monitor the AM emergency channel nine (27.065 MHz).

Thames was first formed to give out flood warnings during the very high tides that were threatening London at that time. It worked so well that other CB clubs across the country started to form groups to monitor channel nine. Eventually, they were asked to be included under the Thames banner. Thames had started to grow, and Disco One and Tommy Tucker's dream of a 24-hour monitoring system was beginning to bear fruit.

In the summer of 1980, the running of Thames was handed over to a breaker whose call sign was 'Hot Dog'. From his home in Croydon, Hot Dog built up a network which covered an area from Stockwell in South London to as far afield as Brighton on the Sussex coast and from Uxbridge to parts of Essex. He spoke at meetings and rallies and marched shoulder to shoulder with Disco One and Tommy Tucker in the fight to have a legal CB system in Great Britain. Wherever the UBA held their marches, Hot Dog carried the Thames banner.

In January 1981 Hot Dog retired and total control and the running of Thames was handed over to George Mark (Sticks). He continued to expand the organisation nationwide. The rallies and the marches continued to be held. CB had to be legalised. It was being proved time and time again that an emergency monitoring service was needed.

Sticks continued to travel up and down the

certain areas, and even the Information Room at Scotland Yard came to accept that Thames would not simply go away. The persistence the monitors showed in reporting various incidents to the police — and then stating that they were illegal citizens band operators — must have helped convince the powers that be, that whatever the threat, whether prosecution, fines or imprisonment, Thames was determined to continue its good work.

Whilst interviewing Tommy Tucker at his shop in South London, he told me that the ultimate ambition is, of course, to be able to provide on-the-spot reporting of emergencies to ensure the prompt attention of the three emergency services with the minimum of delay.

"We all know the problem of finding a telephone box that works. Well, we fill that gap," he says.

Tommy Tucker and his fellow members must follow up on all Thames request calls, even when they appear to be an obvious hoax. "In the old days, if it was a hoax, it didn't help our credibility with the authorities, still being illegal as we were. But we felt that this service was needed, and whether CB was legal or not, it should be utilised to its best advantage."

I put to him the question that, how could he and Thames take over a whole channel to do this service, and didn't the other breakers out there mind? He answered: "Channel nine is, and has been regarded in most civilised countries, as the citizens' band emergency channel. There are some countries, of course, who fail to recognise this.

"Some parts of Italy and Spain, South American countries as well, forget the international

It's all go at the THAMES monitoring service. Note the road map on the wall, headphones and ordinary telephone immediately to hand.





NEW BREAKER

agreements, but the saddest one of all is West Germany, which, when they received a legal system of GB, only had twelve channels, from channel 4 to channel 15 (27.005 MHz — 27.135 MHz). So channel nine, being in the centre of the range, was chosen for the breaking channel."

But do the other breakers mind you taking over the channel? I put the question to him again.

"Channel nine is not the Thames channel. I mean that channel nine does not belong to us. It belongs to the breakers. It is *their* emergency channel and Thames are only there to monitor, and are at the breakers' beck and call at all unearthly hours of the day and night completely free of charge."

I asked him if 'skip' was a problem.

"Skip has, and always will be a problem, but it was getting better up to the time of legalisation," he said. "But we had ways of minimising it. Those of us who could speak a foreign language, like myself for instance, would go back to the offending station and inform them either in Italian or German that, they were interfering with the International Emergency frequency and would they please change channel. Eight times out of ten the other station would comply. We would then send a Thames OSL card thanking him or her for their co-operation and would they also inform others in their town or whoever else they would speak to, not to transmit on that channel any more. I do believe we made quite a few converts in other parts of the world by this method, and up to this time of legalisation, channel nine was quite a silent channel to listen to."

But that was the old AM illegal channel nine. What about the government's new channel nine? I asked.

"A sore point, I'm afraid," he said. "All our good work in the past is gone for naught. The government's new specification channel nine

(27.68125 MHz FM) is far worse than ever the old one used to be. We not only get Italian stations bleeding over, but American, Australian, South African, Spanish, Portuguese. In fact, the whole world is out there. And we cannot do anything about it because being on low power FM, we cannot go back to them to ask them to change channel. Even if we could, we couldn't logically ask them to change from the emergency frequency, because to them, it is *not* an emergency channel. To them it is channel 64."

If that is the case Tom, what do you do?

"We try to manage as best we can, but I hate to think just how many people will come to grief trying to put out an emergency call on a frequency which cannot possibly be heard."

Surely it is not as bad as you make out.

"It is, and worse. There is more to come yet. Tommy Tucker as a call sign was very well known on the old system and I like to think that the handle was respected by the majority of breakers up and down the country. But the new breed of breaker is something else. He has never heard of me or the monitoring service known as Thames. We now have to re-educate the new breaker regarding the use of the channels, especially channel nine, and it is a little bit short of impossible when you cannot be heard."

What do you do, personally, regarding this situation? Do you use a linear amplifier or any other means of getting out better?

Tommy Tucker, one of the first breakers in England, being on CB for over five years and not getting his collar felt, looked at me for a long moment and said: "YES . . . Yes I do. In my shop I have access to any CB equipment, whether amplifiers or large antennae that I need. If I feel that the circumstances require it, I have no qualms about using any illegal non-specified equipment if it helps to save a life or assists in any other type of emergency."

Tommy Tucker at his "desk".



"Ask the Fire Chief in Bexley why it is impossible for him to use his emergency radio. These are facts."

"Not only that, but I also continue to monitor the old channel nine as well. There are still five million AM breakers out there who only have the old rigs. So I feel it would be criminal not to help them when they need it. I feel that any emergency service must utilise all and any system if it will help them alleviate suffering."

I felt that we were getting close to the old AM propaganda campaign, and said so.

Tommy Tucker answered by showing me a portfolio of papers and documents and said: "These are facts. This is not a flight of fancy, but documented proof that the new government-approved (inexpensive) FM system is causing very bad interference to police and fire service emergency radio. If you don't believe me, then ask Scotland Yard why they have had to close down three of their mobile channels. Ask the Fire-Chief in Bexley why it is impossible for him to use his emergency radio. Facts, Mr Weska."

"Ask why there was a major emergency at Heathrow Airport a couple of months ago, when five aircraft were stacked up and couldn't land because their ILS system was blacked out. Also have you noticed that many more high street shops

have their alarm bells ringing now than ever before, which is keeping our undermanned and overworked police force running around in circles. I think you will find that the British government have boobed again by not listening to the old AM broaker. 27 MHz AM was the frequency we should have had, not the one we have now."

I asked him what he would like to see done even now.

"Give us back the old system and keep the old one for the kids, on limited channels. Since Christmas, thousands of youngsters under the age of 14 have been given their two-channel walkie-talkies and their 40-channel CB toys. They are cramming the airwaves with their mane chatter. So much so, that the sensible CBER just cannot find anyone his own age to talk to.

"Whatever channel you tune to now, all you hear is some infant saying 'Copy — Copy'. How can the trucker, who is the commercial lifeline of this country, compete with a situation like this? We should go back to the old system which the rest of the world has enjoyed for the past 25 years and not some idiotic invention of the Home Office.

"We've tried it their way and it doesn't work . . . But we are getting away from the purpose of this interview, but I must add one more thing. As you know, I have been campaigning for the legalisation of AM for five years now. I think that the government *will* come to their senses and allow the British CBER to join with the rest of the world in the only system workable. Namely 27 MHz AM."

Well, that is Tommy Tucker and whatever his views, whether right or wrong, he has certainly made his mark and is still making it, on the British CB scene. From a tiny insignificant band of early CBERs, Thamas now is able to "command"

ambulances, doctors, nurses, medico teams and even para-medics at a moment's notice, all from a call on either of the channel nine systems.

Why do they do it? Unpaid, sleepless nights and the worry of a bust? I will leave the last word to Tommy Tucker.

"We wanted to do something constructive to prove to the government and Home Office that CB users could be responsible human beings, not cowboys and certainly not deserving of the ruthless purges that were carried out against us. I think we've achieved that, at least, don't you?

THAMES monitors help out after a road accident, sending emergency messages to police, ambulance, and the fire service.



CLUBS

CITIZENS' BAND INFORMATION CENTRE (CBIC)

Bill Ridgeway, 7 Sandringham Crescent, Harrow, Middlesex, HA2 9BW. Telephone: 01-422 7570

This organisation is basically an information service, as its title infers. Run by Bill Ridgeway, the CBIC is independent of any other operation and was set up in July 1980. It maintains a constantly updated register of CB clubs and

organisations throughout the UK — in all they have the names and addresses of nearly 1,400 and so are well placed to gather and dispense information on all subjects relating to CB.

A list of some of the clubs appear below on the following pages. Space, as before, doesn't allow for their addresses, and in any case Bill Ridgeway comments that they are liable to change, "and some are held in confidence".

AVON

BATH: Aque Sulis Club.
BRISTOL: Avon BC; Bristol BC; Bristol CBC; Holly Town BC; new town BC; Pit Stop BC; West Country BC.
BRISTOL: Big A District Breakers, Lawrence Weston.
WESTON-SUPER-MARE: Weston BC.

BEDFORDSHIRE

BEDFORD: Delta Tango Group.
DUNSTABLE: Christian Buddies CBC; Oscar Charlie Club.
DUNSTABLE: DABS.

BERKSHIRE

BRACKNELL: Bracknell BA.
READING: Biscuit Town BC; Club 27; Slate City BC; 10-38 Club.
SLOUGH: Chocolate City BC.
WINDSOR: Windsor 20/27 BC.

BUCKINGHAMSHIRE

BUCKINGHAM: Buckingham BC; North Bucks BC.
HIGH WYCOMBE: Hillbillies BC.
MILTON KEYNES: CB Musketeers Club; Milton Keynes CBC.
MILTON KEYNES: New City Breakers.

CAMBRIDGESHIRE

CAMBRIDGE: Cambridge BC.
HUNTINGDON: Delta Echo Club; St Neots BC; Uniform Kilo Sidebanders Club.
PETERBOROUGH: Alpha Beta Sideband Club; Handbreak Club.
WISBECH: Whiskey Bravo Club.

CHESHIRE

CREW: Crews BC.
LYMM: Cenalside BC.
MACCLESFIELD: Silk Town BC.
NORTHWICH: Mid Cheshire Wheels Association; Smog City Breakaways Club.
RUNCORN: Boom City BC.
TARPORLEY: Big T BC; Tiny Town BC.
WARRINGTON: Red City BC; 10-4 Club; Warrington Breakaway Club.

CLEVELAND

STOCKTON-ON-TEES: Sedgfield BC.

CORNWALL

BODMIN: Jeil BC.
BUDE: Surf City BC.
HELSTON: Rolling Road Club; 10-13 Club.
LISKEARD: Caradon BC.
NEWQUAY: 21 BC.
ST AUSTELL: Rocky Mountain BC; White Mountain CBC.
WADEBRIDGE: Camel BC.

CUMBRIA:

BARROW-IN-FURNESS: Furness BC.
BARROW-IN-FURNESS: Furness BC.
CARLISLE: Carlisle Truckers Club; New Breakers Inners Club.
COCKERMOUTH: Solway BC.
KENDAL: Hazard County Breakers.
SEASCALE: Country BC.

DERBYSHIRE

BUXTON: Spa Town BC.
CHESTERFIELD: Circus Town BC; Concrete Canyon BC; North East Derbyshire 10-4 Club.
DERBY: Colortown BC; Hazard County BC; Ram City BC; Western BC.
DERBY: South Derbyshire Breakers Club, Newhall
ILKESTON: Convicts BC;
Ilkeston BC.

DEVON

BARNSTAPLE: Barnstaple BC.
BARNSTAPLE: North Coast Breakers.
BIDEFORD: Torridge Breakers Club.
EXETER: Roadrunner Club.
EXETER: Exeter CB Club.
EXMOUTH: River Exe BC.
MOLTON: Wool Ridge Runners.
NEWTON ABBOT: Moorland Riders Club.
PLYMOUTH: Border BC; Port City Breakers SC; Singing Wheels Club; Sugar Bowl (Emergency) BC.
PLYMOUTH: Little River Breakers; Plainsmen Club; Neptune Breakers.
SOUTH MOLTON: Wool Ridge BC.
TEIGNMOUTH: Titanic Breakers.
TIVERTON: Moorland Riders Club.

DORSET

BOURNEMOUTH: Bournemouth Independent BA.
CHRISTCHURCH: Beachcombers BA.
LYME REGIS: Dorset Knobs.
POOLE: The Airwave Braekers.
SHAFESBURY: Three Counties BC.
WEYMOUTH: WD 40 Club.

DURHAM

BISHOP AUCKLAND: Bishop Auckland BC.
NEWTON AYECLIFFE: 5-0 BC.
STANLEY: Derwent Valley BC.

EAST SUSSEX

BEXHILL-ON-SEA: Northeye Pidgeons Club.
EASTBOURNE: Eastbourne BC.
HOVE: Kingsway BC; Tango Kilo Club.
HEATHFIELD: Heathfield 20 Clubs.
SEAFORD: Seaford BC.

ESSEX

CANVEY ISLAND: Canvey BA.
COLCHESTER: East Coast BA.
GRAYS: Kent and Essex BA.
HARLOW: Breakaway 14/27 Club; GBA of Harlow.
LOUGHTON: Beach BC.
SOUTH OCKENDON: Breakaway Club; South Ockendon BA.
SOUTHEND-ON-SEA: South East Essex BA; Southend's Newly Organised BC.
STANDFORD LE HOPE: Corringham and Stanford BA.
TILBURY: Sunnside BA.
WITHAM: Essex CBC.

GLOUCESTERSHIRE

CHELTENHAM: Cheltenham Breakers; District Association; Jolly Roger DX Club; Trout Farm BC.
CIRENCESTER: Cirencester United BA.
DURSLEY: Diesel Town BC.
GLOUCESTER: Gloucester BC.
STROUD: Cotswold BC.
WOTTON-UNDER-EDGE: Wool Town BC.

GREATER LONDON

BARNET: Barnet BC.
BELVEDERE: Lakesire BC.
CARSHALTON: Breakers Town CBC; Carshalton CBC.
CROYDON: Croydon BC; Stickers Club.
EDGWARE: North London BA.
ERITH: Delta BC.
FELTHAM: Middlesex BC.
HARROW: Harrow and Wembley CB Group; Midnight BC.
HORNCHURCH: Cranham, Hornchurch and Upminster BC.
HANWORTH: Middlsex Breakers Club.
ISLEWORTH: Breakers and Takers SC.
LONDON, E: East London BC.
LONDON, N: Big Eyeball BC.
LONDON, W: Friendly Breakers Club, Chiswick.
LONDON, S: Kings Road Breakers, Chelsea.
LONDON, SE: All BC; CB Radio Action Group; Club 27; Elite BC; South London Associated Breakers; 27MHz Club.
NEW MALDON: Whiskey CBC of Graet Britain.
RAINHAM: Rainham, Ilford, Goodmayes, Barking In Essex Club.
RUISLIP: 10-25 Club.
SHEPPERTON: Anchor BC.
SOUTHALL: West London BC.
SURBITON: Molesey Open Channal BC.
TWICKENHAM: Silly Braekers' Society.
UXBRIDGE: Hillingdon Borough CBC.
WOOLWICH: Ace Breakers Club.

CLUBS

GREATER MANCHESTER

ASHTON-UNDER-LYNE: 10-5 Club.
BOLTON: Clog Town BC; GBA; New Untouchables Club; Twig Town Pirates Club.
BURY: Bury BC.
DUKINFIELD: Tameside Good Buddies Club; Tameside 99 Club.
HYDE: 99 Club.
LEIGH: Executive BC.
LITTLEBOROUGH: Tiger Town BC; Tiger Town Younger BC.
MANCHESTER: CBA Manchester; Eccles BA; 57 Club; Flixton, Urmston and Davyhulme GBA; North Cheshire BC; 10-4 Club of Greater Manchester; Trafford Breakers SC; 20-00 Club.
OLDHAM: Oldham BC; Saddleworth Breakers CBRC.
STOCKPORT: Box Town BC.
WICAN: Adult BA; Pier Town BC.

HAMPSHIRE

ALDERSHOT: Big A BC.
ALTON: Alton and District BC.
ANDOVER: Andover 27 Club; Test Valley BC.
BASINGSTOKE: Basingstoke BC; Popular BC.
EASTLEIGH: Eastleigh BA; Inter City BC.
FAREHAM: Meon Valley BC; Toad Hall BC.
HAVANT: Bandit DX Club.
LYMINCTON: Paradise BC.
PORTSMOUTH: Southern Breakers; Society SC; Victory BC.
SOUTHAMPTON: Alpha Bravo Charlie Sideband Club; Arrows BC; Big S BC; New Forest CBC; Southampton Breakaway and '79 Club; Southampton Crumb Snatchers Club.
WINCHESTER: Olde Capital BC; Round Table BC.

HEREFORD AND WORCESTER

BROMSGROVE: Bromsgrove BC.
DROITWICH: Droitwich BC; Wyre Forest BC.
EVESHAM: Wychavon BC.
MALVERN: Malvern BA.
PERSHORE: Plum Town BC.
REDDITCH: Redditch Area CBRC.
STOURPORT-ON-SEVERN: Stourport-on-Severn BC.
TENBURY WELLS: Hunters Heath and Orchard Town BC.
WORCESTER: Worcester CBC.

HERTFORDSHIRE

BOREHAMWOOD: First North London BC.
HEMEL HEMPSTEAD: Hemel Hempstead BC; Hemel Independent BA.
LETCHWORTH: Letchworth and District BC.
ST ALBANS: Brown Bottle BC; St Albans 27 BC.
TRING: Tring and District BC.
WATFORD: Bushey and Oxhey BC.
WELWYN: Welwyn and Hatfield BC.

HUMBERSIDE

BEVERLEY: Beverley and District BC.
BRIDLINGTON: Attic BC; The Original Bridlington BC.
COTTINGHAM: Castle Hill BC.
HULL: Bridge Town BC; Lockwood Arms BC.

ISLE OF WIGHT

FRESHWATER: Wight BC.
GREAT YARMOUTH: GY CB Club, Caister on Sea.
VENTNOR: Earthquake BC.

KENT

CANTERBURY: Kent and Essex Breakers.
DOVER: White Cliffs BC.
HERNE BAY: East Kent BA.
MAIDSTONE: Mid Kent CBC.
SHEERNESS: Sheppey BC.
SITTINGBOURNE: Medway CB Radio (Emergency Monitor) Group.
TONBRIDGE: Castle BC.
TUNBRIDGE WELLS: Tunbridge Wells CB Radio Association.
WESTERHAM: Diggin Hill CBC.

LANCASHIRE

BLACKBURN: Open Channel CBC — North West.
BLACKPOOL: Blackpool BC; Over Wyre Wind Up Club; 10-4 Club.
BURNLEY: Copycats Club; Padilham CBSC; Pendle CBSC.
CARNFORTH: Crimson Water BC.
CHORLEY: Chorley Organised BA; Chorley United BA.
CLITHEROE: Cement City CB Supporters Association.
COLNE: Big S BC.
DARWEN: Darwen Sunday Club.
FLEETWOOD: North Fylde Moonlighters Club.
LANCASTER: Cinderella BC; Lune Valley BC.
LANCASTER: Lancashire City Breakers.
MORECAMBE: Morecambe and District MC; South Fork BC.
NELSON: First Aid Post BC; Flag Town CBSC.
ORMSKIRK: Big O BC; Merseyside 27 Club.
PRESTON: Guillotine and Top Shop Breakers SC; Leyland and District BC; Ribble BA; Salwick BC; TX21 Club.
ROSSENDALE: Steg Valley BC.
SKELMERSDALE: Newtown BC.

LEICESTERSHIRE

ASHBY-DE-LA-ZOUCH: North West Leicester BC.
HINCKLEY: Hinckley BC.
LEICESTER: Soar Valley Breakers.
LEICESTER: Barwell CBRC; Bees Knees CBC; Free Wheel Club; Cypsy Lane BC; Leicester Area BC; Leicestershire CBC; Midlands CBC; South Leicester Area BC; Tiger Town BC.

LINCOLNSHIRE

CAINSBOROUGH: Gainsborough BA.
CRANTHAM: Active CBC; Fixit Club; Grantham BA; The Original Grantham BA; November Mike Club.
HORNCASTLE: Tom Thumb Club.
LINCOLN: Cathedral BC.
STAMFORD: Four Counties BC.
SKEGNESS: Surf City Breakers.

MERSEYSIDE

BIRKENHEAD: Merseyside CB Information and SC.
LIVERPOOL: Freedom Breakers; International Club; Liverpool BA; 20-00 Club.

ST HELENS: Bottle City BC; Concrete City BC; Grass Court BC; South West Lancashire BC.
SOUTHPORT: Amalgamated BC; North West CBC.
ST HELENS: Bottle City Breakers.
WIRRAL: Apollo CBC.

NORFOLK

DISS: Border BC.
KINGS LYNN: Kings Lynn BC.
NORWICH: Canary City BC.

NORTH YORKSHIRE

HARROGATE: Conference City MC
NORTHALLERTON: Northallerton and District CBA.
SELBY: Aire Valley BC.
SKIPTON: 27 Club.
YORK: Hamlet BC; Yankee Kilo BC.

NORTHAMPTONSHIRE

CORBRY: Corby Town Junior BC; Side Bandits BC.
DAVENTRY: Daventry Breakaway Rubber Ducks Club; Daventry BC.
KETTERING: Kettering BC.
NORTHAMPTON: Foxtrot Charlie SSB DX Group; Northampton BC.
NORTHAMPTON: South Northants Club.
WELLINGBOROUGH: Wellingborough BC.

NOTTINGHAMSHIRE

MANSFIELD: Big Tree BC; Brook BC; Stag Town BC.
MANSFIELD: Big Three Breakers Club.
NEWARK: Airwaves BC; Country BC; Newark BC; Smoky Town BC.
NOTTINGHAM: Bread and Lard Original BC; Bulwell and Hucknall BC; Castle BC; Dixie Town BC; Leapool BC; Nottingham Area Club; Rising Sun Club; Roger Bleep Club; Selston and District BC; Tango Victor Club.
RETFORD: Bassetlow BC; Ferryside BC.
WORKSOP: Carlton and Langold United BC; Dukesville BA; North Notts BC.
WORKSOP: Dukesville Breakers Association.

OXFORDSHIRE

ABINGDON: Abingdon Jail BC.
BANBURY: Caka Town BC.
BICESTER: Bicester BC.
DIDCOT: Didcot and District 27 Club.
OXFORD: Dream City Rebels Club; Oxford 19 Sliders Club; Quarry BC.
WANTAGE: White Horse CBC.

SALOP

SHREWSBURY: Brewery Town BC.
TELFORD: Telford CBRC.

SOMERSET

BRIDGWATER: Smelly Town BC.
CHARD: Chard and Ilminster BC.
CREWKERNE: Circle CBC.
TAUNTON: Apple County BC.
WELLS: CBA South West.
YEOVIL: South Somerset BC.

SOUTH YORKSHIRE

BARNSELY: Barnsley BC; Boxer Club.
DONCASTER: Don Valley BC; Polo Town BC; Roman Road BC; 20-00 Club.
MEXBOROUGH: Mexico City BC.

CLUBS

ROTHERHAM: Braithwell Rig and Twig Club; CB 007 BC; Maltby Campaigners For Open Channel Radio.
SHEFFIELD: Dinnington & District BC; Dronfield CBC; Hope Valley BC; Outer City BC; 69 Club; Steel City Air Piratas Club; Steel City CBC; Yorkshire Elite BC.

STAFFORDSHIRE

BURTON-ON-TRENT: Burton-on-Trent and District RC; Chicken Chokers RC; Jet Set Club; South Derbyshire BC; Styx County BC.
CANNOCK: Chase CBRC; Leamore CBRC.
STAFFORD: Castle Village BC.
STOKE-ON-TRENT: China Town BC.
TAMWORTH: Square 4 CBC; Tamworth and Teme Valley BC.

SHROPSHIRE

OSWESTRY: Wizard of Oz Club.

SUFFOLK

BURY ST EDMONDS: Bury CBC; Moonshine BC; Polo BC.
IPSWICH: Anglia BC.
LOWESTOFT: Ness Point CBC.
LOWESTOFT: Jolly Breakers Club.
NEWMARKET: Pony Town BC.
STOWMARKET: Eastern Counties OCC.

SURREY

CAMBERLEY: Woderick and Wax Town BC.
WOKING: Woking Centre BC.

TYNE & WEAR

NEWCASTLE-ON-TYNE: Newcastle City BC; Concrete City BC; West End BC.
SUNDERLAND: Sunderland BC; Sunderland North Side BC; Sunderland Sideband Society; Wearside BC.
WASHINGTON: Breakaway BC; CBRC — North East; Washington BC.
WHITLEY BAY: White City BC.

WARWICKSHIRE

ATHERSTONE: Hat Town BC.
LEAMINGTON SPA: Call Box CBC; North Leamington CBC.
NUNEATON: Heart of England CBC; Shaky Town BC.
RUGBY: Rugby Town BC.
STRATFORD-ON-AVON: North Cotswold CBRC; Shakespeare County BC.
WARWICK: Warwick and Leamington CB Organisation.

WEST MIDLANDS

BIRMINGHAM: Big 6 BC; Birmingham Small Heath Area CBC; Central Birmingham CBC; CB Specials Club; Crystal Set; Kings Norton CBC; Kilts Green BC; Midlands CBRC; North Birmingham CBC; Northfield and Surrounding Area Club; South Birmingham CBC; South West Region Birmingham Club.
BRIERLEY HILL: Sandwell Area CBRC.
COVENTRY: Muppet Town BC; OCC; Radford and District BC; WKCB.
DUDLEY: Dudley 200 CBC.
STOURBRIDGE — Black Country Breakers CBC.
SUTTON COLDFIELD: Falcon Breakers CBC.
WALSALL: Saddle Town BC.

WARLEY: Sandwell Sister BC; Smethwick Unit BC.
WILLENHALL: Clean Air Association.

EAST SUSSEX

HEATHFIELD: Heathfield 20 Club.

WEST SUSSEX

BOGNOR REGIS: Coastal Area BA; Red Rump BC.
BRIGHTON: Big 4 Club; Brighton BC; South Coast Area BC.
CHICHESTER: Chichester District BC; Whiskey Tango Victor Club.
CRAWLEY: Crawley United BA.
HAYWARDS HEATH: Square Weald BC.
HORSHAM: Night City BC.
LANCING: College Town BC.
LITTLEHAMPTON: Arun BC; Southern Breakers Society SC.

WEST YORKSHIRE

BRADFORD: Bradford BA; United Breakers National.
BRIGHOUSE: Band Town BC.
HEBDEN BRIDGE: Five Bridges BC.
HUDDERSFIELD: Big H Luddites Club; Milk Town BC; Summer Wine BC.
KEIGHLEY: Aire Valley BC.
KEIGHLEY: Worth Valley Breakers.
LEEDS: A64 BC; Breakaway BC; Circle City Breakers SC; Kippax and Garforth BC; Leeds GBA; Slab Town BC; Yorkshire United BC.
PONTEFRACT: Queens BC.
PUDSEY: Little P BC.
WAKEFIELD: Wakefield CBC.
WETHERBY: DX 27 Club.

WILTSHIRE

SALISBURY: Lima Bravo Association.
SWINDON: Swindon CBC; Thames Valley 27 DX Club; Thamesdown Transceiver Club; Wroughton CB 361 Club.
WESTBURY: White Horse Town BC.

NORTHERN IRELAND

ANTRIM

ANTRIM: Lochneagh DX Group.
BALLEYMENA: Bann Valley CBC.
BALLYMONEY: North Antrim RC.
BELFAST: Belfast CBC; Green Acres CBC; Jolly Roger Club; Smoke City CBC.
CARRICKFERGUS: Kilo Foxtrot RC; Painted Island BC.
LARNE: East Coast Breakers CBC.
LISBURN: Lagan Valley CBC.
NEWTONABBAY: East Antrim CBRC; Whiskey Alpha BC.
PORTRUSH: Surf City BC.

ARMAGH

ARMAGH: Armagh RS.
CRAIGAVON: Craigavon CBC.

DOWN

BANBRIDGE: Bridge Town BC.
BANGOR: Kilo Charlie SC.
CASTLEWELLAN: Ballyward CBRC.
NEWRY: Kilkeel RS.
NEWTOWN ARDS: Music City BC.
NEWTON ARDS: Ards Peninsula CB Club.

FERMANAGH

ENNISKILLEN: County BC; Lakeland Breakers CBC.

LONDONDERRY

COLERAINE: Bay City BC.
LIMAVADEY: Roe Valley CBC.

TYRONE

CLOGHER: Clogher Valley CBRC.
COOKSTOWN: Rainbow BC.
DUNGANNON: Dallas Breakers CBRC; Dungannon CBC.
STRABANE: Tango Delta BC.

SCOTLAND

ABERDEENSHIRE

ABERDEEN: Grampian BC; Granite City CBC.
ELLON: Ythan BC.
INVERURIE: Bennachie BC.

ARGYLLSHIRE

CONNELL: Campaign for 27MHz AM CB Radio.

AYRSHIRE

AYR: Ayrshire BC; Burns BC; Coyle BA.
DALRY: China Town BC.
DARVEL: Breaker Alley BC.
GIRVAN: Girvan BC.
IRVINE: Disneyland BC; Newtown BC.
KILBIRNIE: Garnock Valley BC.
KILMARNOCK: Kilmarnock K19 Club; 10-20 Club; Voice of Scotland DX Club.
KILWINNING: Beach House BC; Good Buddies Club.
MAYBOLE: Carrick CBC.
PRESTWICK: Seahaven BC.
SALTCOATS: Clyde Coast BC.
TROON: K19 Club.

BANFFSHIRE

BUCKIE: Thorn City BC.

CAITHNESS

WICK: Caithness BC.

DUMFRIES-SHIRE

DUMFRIES: Dumfries BC.
STRANRAER: R and B Club.

FIFE

KIRKCALDY: Kingdon BC.
LEVEN: CBA Fife.

INVERNESS-SHIRE

INVERNESS: County Area Breakers CBC; Highland BC.

KINCARDINESHIRE

STONEHAVEN: Bedrock BC.

LANARKSHIRE

AIRDRIE: Monklands BC.
BIGGAR: Tinto CBC.
GLASGOW: Boulevard BC; Glasgow CBC; Glesgow CBC (two clubs); Greater Glasgow BC; Kilsyth BC; Kirkintilloch BC; Scottish DX Club.
HAMILTON: Circle Breakers CBC.

MIDLOTHIAN

EDINBURGH: Edinburgh GBRC.

MORAYSHIRE

ELGIN: Moray Breakers CBC; Radio City BC.

CLUBS

ORKNEY

KIRKWALL: Orkney Airforce BC.

PERTHSHIRE

AUCHTERARDER: Langtoon BC.
PERTH: Fair City CBC.

RENFREWSHIRE

GREENOCK: West Coast BC.
RENFREW: Renfrew and District CBC.

ROSS-SHIRE

CROMARTY: Northern BC.

ROXBURGHSHIRE

JEDBURGH: Border BC.

SHETLAND

LERWICK: Shetland BC.

STRYLINGSHIRE

LARBERT: Central Scotland CBC.

TAYSIDE

FORFAR: Invaders Club.

WEST LOTHIAN

Wind Up City Breakers Club.

WIGTOWNSHIRE

STRANRAER: Red and Blue Club.

WALES

CLWYD

COLWYN BAY: Colwyn Bay Cruisers Club.
DENBIGH: Clwyd Valley BC.
RHYL: CB Popular Front: North Wales BC;
27 Coastline BC.

DYFED

NEWPORT: West Wales CBC.

GWENT

CWBRAN: Cwmbran and District BC;
Fireplace BC.
NEWPORT: Big K Club.
PONTYPOOL: Pontypool BA.

GWYNEDD

BANGOR: Dragon BA; Ogwen BC.
BETWS Y COED: Gateway BC.
CAERNARFON: Big C BC.
CEMAES BAY: West Mona BC.
HOLYHEAD: Black Cat BC; Free BC;
Harbour BC; Pimpernell BC.
LLANDUDNO: Fugitives Club.
LLANFAIRFECHAN: Hezard County BC.
LLANGFN: Cefni BC.
PORT DINORWIC: Snow Town BC; Victor
Oscar Whiskey Club.
PWLLELI: Pen Llynn BC.
TALSARNAU: Ardudwy BC.

MID GLAMORGAN

BRIDGEND: Bridgend BC; Rattle Town BC.
CAERPHILLY: Cheesey BC.
CAERPHILLY: Welsh Big Wheelers
Association.
MOUNTAIN ASH: Dare BC.
PENTRE: Rhondda BC.
TREORCHY: Sandringham BC.

SOUTH GLAMORGAN

BARRY: Barry BC.
CARDIFF: Cardiff and District BC.
LLANTWIT MAJOR: Llantwit Major BC.

WEST GLAMORGAN

SWANSEA: CB Charity Club; Single
Sideband Club; South Wales Big 10-4 Club.

ISLE OF MAN

DOUGLAS: Isle of Man BC.

Area committees:

All Hampshire Committee.
Associated Midland Breakers Clubs.
Central Lancashire Co-ordinating
Committee.
Confederation of North Wales Breakers
Clubs.
European CB Federation.
Federation of South Wales Breakers.
Joint Committee for the Legalisation of
27MHz CB Radio.
Kernow United Breakers (Cornwall).
Lincolnshire, Nottinghamshire, Derbyshire

and Yorkshire Area Committee.
National Committee for the Legalisation of
CB Radio.
North Down CB Council.
North West Breakers' Association.
North West Coastal Federation (Cheshire).
Northern Association of CB Clubs
(Doncaster).
Northern Ireland Breakers.
Northern Ireland CBA.
Red Rose Co-ordinating Committee
(Lancashire).
Scottish CB Committee.
Ulster CB Council.
United Kingdom CB Federation.
West Scotland Federation of CB Clubs.
Yorkshire CB Action Group.

National organisations:

Association of FM Users.
Big Ben DX QSL Club.
Big Wheelers Association.
Britannia International Sidebanders Club.
British Sideband Network.
Citizens' Band Association.
English International DX Club.
Holland Duck Club.
International DX BC.
National Federation of FM Breakers.
Truckers of GB CB Radio Association.
United Breakers Association.
United Kingdom (International) Radio
Group.
Yankee Mike International 100 DX Group.

D: EMERGENCY ORGANISATIONS

Doncaster Emergency Control Organisation
(DECO).
Emergency Action Radio Service (EARS).
Long Eaton and District Emergency Radio
(LEADER).
National Emergency Service (NES).
Radio Emergency Associated Citizens
Teams (REACT) UK Supporters Club.
Radio Users Send Help (RUSH) (Brighton).
Traffic Help Accident Monitoring
Emergency Service (THAMES).
Watchdog (Grantham).

If readers want to get in touch with a particular club they can obtain the address from Bill Ridgeway, Citizens' Band Information Centre, or the United Breakers Association, President: Andy Donovan.

Citizens' Band Association (CBA)

President: James Bryant, 16 Church Road,
St Marks, Cheltenham, Gloucestershire GL51.

United Breakers' Association (UBA),

President: Andy Donovan, 50 Gaskell Street,
London, SW4 6PJ.

Citizens' Band Information Centre,

Bill Ridgeway, 7 Sandringham Crescent, Harrow,
Middlesex HA2 9BW. Telephone: 01-422 7570.

Citizens' Radio Information Service (CRIS),

Director: Mrs Louise Briscoe, 55b Brook Drive,
Southwark, London, SE11 4TU.
Telephone: 01-582 9479.

REACT UK Supporters' Club (Radio Emergency Action Citizens' Teams),

28 The Coots, Stockwood, Bristol, Avon BS14 8LH.

British Sideband Network,

President: Albie Vickers, 15 Carman Walk,
Broadfields, Crawley, Sussex.

Traffic Help Accident Monitoring Emergency Service (THAMES),

9 Selsdon Crescent, Croydon, Surrey.

English International DX Club

Lez Carroll, 225 Arnold Street, Boldon, Tyne and
Wear NE35 9BA.

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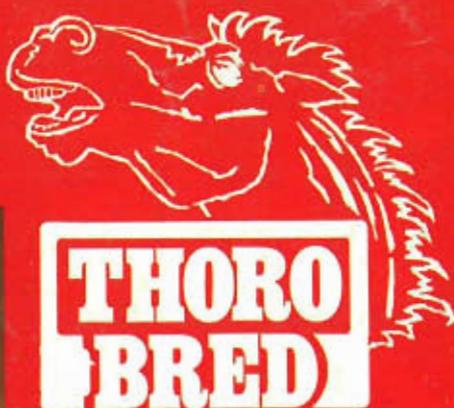
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