

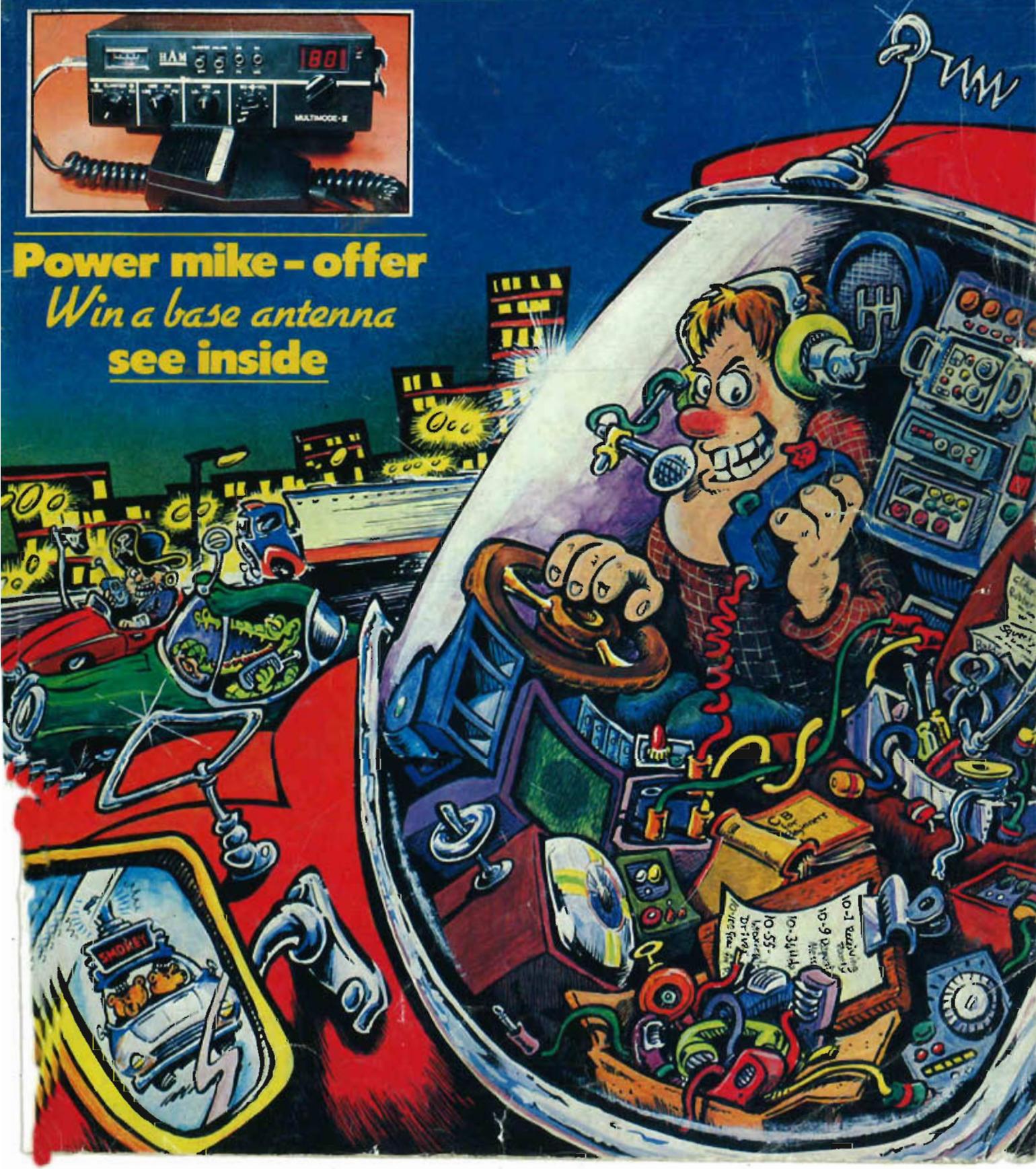
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install, or use such equipment. So,
officially, CB81 must not encourage or
approve of such practices.

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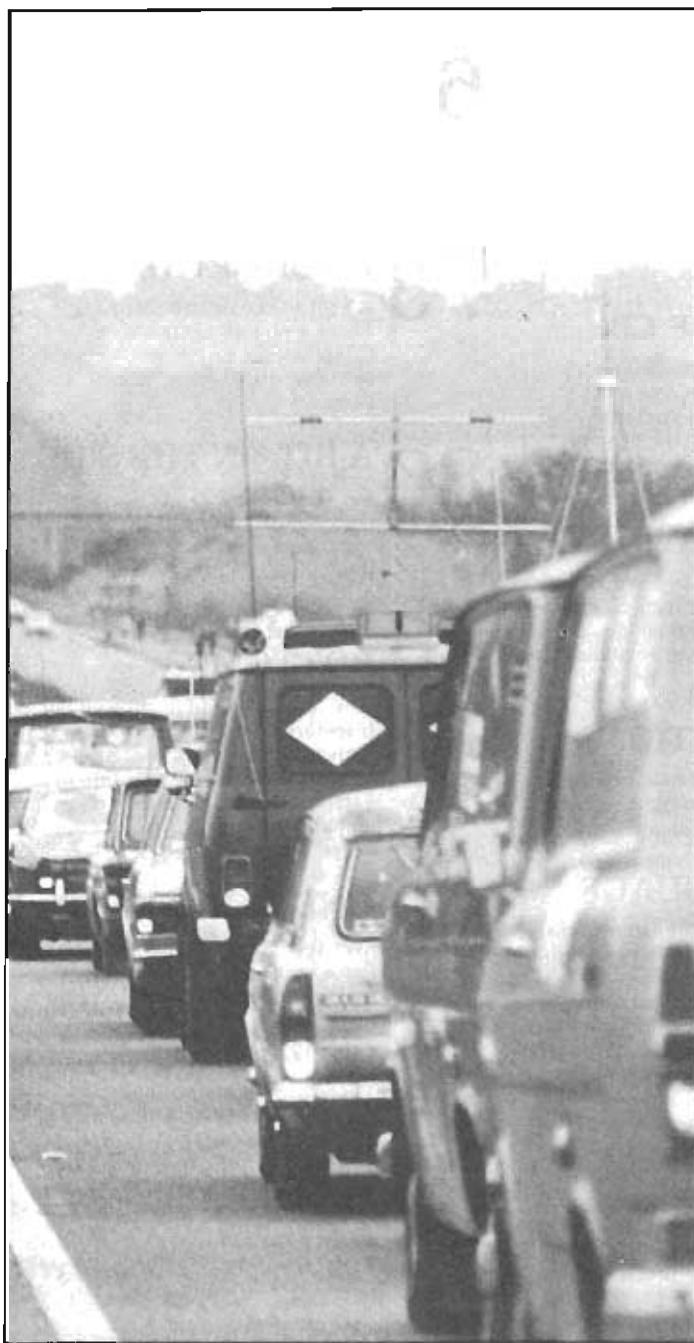
There are CB clubs all over the
country. Here is a small section of
that complete list.

97 WIN A BASE ANTENNA

Complete this CB crossword and
the slogan. You could win a 7ft
base antenna!

IT'S CB81!

Demonstration drives have also been held in support of CB and the introduction of an open channel in the UK. Note the antennae on the vehicles! The situation in Britain has reached a frankly ridiculous point where upwards of a half million (some say more than a million!) are using CB radios illegally, or at least are supporting the cause.



HELLO, and welcome to CB81, rightly called The Best British Guide to Citizens' Band Radio.

It's not for nothing that we can call ourselves exactly that, because on these pages you'll find nearly everything you need to know about the CB scene in the UK.

We have several experts writing on CB, how things stand at the moment, and what is expected in the future. The Radiogram Kid's article from America illustrates how the CB scene is standing at the present time — and the picture's not too bright, as it happens. On the other hand, British CB is now on its way up and there's no reason to believe that it won't become one of the most popular activities in both the car, and your home. Citizens' Band looks set to become more popular than in-car radios because not only does it mean you can talk to other drivers while you're driving (it breaks the monotony and it can provide you with important road condition information — let alone police warnings) but it could also serve as an "official" device for diverting traffic away from hold ups, and so on.

Although CB has a sort of glamorous aura surrounding it, the real truth is that it's just a two-way radio system. Let's face it — it involves simple transmission and reception. However, unlike the common or garden telephone, a CB channel can be shared by a number of people enabling group discussions to take place.

In these cases there must be basic disciplines to prevent breakers interrupting other discussions, and this is where the codes and courtesy signs become a necessity, ie, "Breaker on the side".

Listening in to CB is almost as entertaining as participating, and for the "Mail copier" or CB voyeur there are monitor sets (completely legal to buy and use) available from about £15. See Peter Dodson's CB Shop feature on pages 73 to 79 for information on what's available in the shops nowadays.

Legality, QSL cards, clubs,
and what Mrs Bottoms thinks
of it all . . .

At the moment we know that certain channels will be legally available to breakers in August or September, or thereabouts. On this particular subject you really ought to read the article starting on page 27 entitled "So now we're legal . . . almost" which draws the all-important line between a legal breaker, and a pirate.

Other up and coming subjects in the CB area include QSL cards — now becoming an art form in themselves. CB clubs number many hundreds (if not thousands) throughout the UK, and on page 86 starts a tongue-in-cheek chat show between Mrs Bottoms,

One of the many demonstrations held over the past months. This one's in Glasgow and it brought the centre of the city to a near-standstill.

Charmaine, and Estelle, among others. It might give you an idea of how CB could be utilised in the home, in a few years' time!

CB81 doesn't ignore the outright beginner either. There's an illustrated section on how to fit your own mobile rig, and how to set the antenna's SWR — written by a practical expert who's been fitting rigs and antennae in his workshop for several years now! We've noticed that a large number of breakers have found CB to be undemanding, and they've begun to look for something more. OK then, turn to page 89 where you'll find a special feature on amateur radio and how to get involved.

Try sidebanding, a home base,
and our competition crossword

Among the rest of the features are the following subjects: Sidebanding and DXing, a list of CB clubs and their present addresses, how to set up a home base, a truly magnificent technical article on antennae by expert Fred Judd, and at the end of the Guide, a competition crossword where you can win yourself a Mini GP home base antenna!

Not forgetting the CB81 special offer in the centre pages, and a feature entitled "Codewords" — where we give you a list of all the well known codes (10, 13, Q-codes, etc) and a basic idea of how you should use your CB radio. You know, speech patterns, phonetic alphabets and all that.

Over the past year or two [forgetting the initial introduction of American CB into Britain] we've been whispered to (by nasty people using CB rigs illegally — how awful!), shouted at (by police, GPO and governmental officials — all nice, clean honest people only doing their jobs), and written about (by newspaper reporters who seem to be under the completely erroneous impression that CB radio is Bad For You and even more so to hospital cases, especially those with heart pacemakers or radio controlled aeroplanes!).

We are now beginning to see the wood beyond the trees. We now know that CB is Good For You, and Not Bad for hospital cases, and the Government have given their support in their declaration that it will be legalised later in 1981. Well OK, it might not be the sort of CB most of us want (at the moment) but at least it's a first step in the right direction.

There are cowboys in every business — motoring, flying, motorcycling etc — and in these early days of British CB we'll have our fair share of them. But as time goes by, the rodeo will leave town, leaving us with a majority of responsible breakers and only a thin fringe element of cowboys with which to contend. Some say that along with the cowboys riding off into the sunset, will be the demise of such phrases as "Keep your pedal to the metal and let your motor



"This is Formula One, beating the bushes . . ."

tote'er" and all that rubbish. Far from expanding on the American truck-driving scene with its American-speak, Britain will eventually settle upon its own code and courtesies.

This is where this publication, CB81, comes in. We've endeavoured to guide you through the initial maze of information to explain, as simple as possible, what Citizens' Band is all about.

From this introduction to the CB scene, through to such technical features on rigs and antennae, setting up a home base and so on, you might well be tempted to buy your own CB radio and join a club. And if you're well into the CB scene anyway, there's plenty of reading here to keep you busy, and in any case CB81 is also intended as a sort of work of reference. It belongs on your bookshelf.

Chris Drake

JUST WHAT IS CITIZENS' BAND?

OK, it's a two-way radio, but that's not all. Here, David Lazell's introduction to the CB scene explains what it is all about — from the first basics, through the pirates, to the future.



CB, like Robin Hood and Dick Turpin, could really be called a story of high adventure, enterprise, and giving not quite enough respect to authority.

However, before we join the breakers somewhere in Sherwood Forest, a few terms need to be explained. CB for example, stands for Citizens' Band, a system of two-way short distance radio communication which may be installed in a car (otherwise known as a "mobile") or at home, known to breakers as "base". And "breakers" are those ever-growing numbers of folks using CB, though they may also be addressed as good buddies, or something less complimentary when they are holding up the traffic with one of their demonstrations! Another expression, "skip", refers not to the local scout leader, but to a phenomenon connected with sunspot activity. This enables breakers to bounce their radio signals off the ionosphere and thus to other CB users in lands afar. Whilst the run-of-the-mill 27MHz AM "rig" (the name given to a CB radio) should normally transmit over a distance of say 30 miles, given good skip conditions, it is quite simple to listen in to Italian breakers. There are many kinds of colourful terms given to CB experiences. When Italian CB can be heard loud and clear (through skip) the phenomenon is called "wall-to-wall spaghetti". The official name for a rig, however, is transceiver, since it transmits and receives, and, if you read the colourful CB magazines, you will find ample references to antennae, which are the aerials required for use of any rig.

All this may seem like learning the rules of one of those captivating board games, though we do not yet have a CB equivalent to Monopoly (this may come!). Most people using CB will claim that it gives a lift to life, has valuable social uses, and is fun. But that may do little to explain the phenomenal interest in CB evident in the Old Country. How did that come about? Well, notwithstanding the fact that this kind of research could get someone a Ph.D in sociology, we will try to explain. There has always been a considerable interest in two-way radio in Britain, and the Radio Society of Great Britain has encouraged this through helpful guides and publications. Amateur radio users — hams — take an examination in order to use their radio sets which are far more powerful than the CB rigs. The growing interest in ham radio has been accompanied by other manifestations, like that of re-building pro-war all-valve radios. There is, in fact, a British Vintage Wireless Society. CB is also a reaction to the more passive electronic media — television and video — and it may be significant that many leaders of the CB movement in Britain are relatively young people, more likely to be under 35 than over 40. CB for the enthusiast is a logical answer to many problems — getting help during road emergencies or breakdowns; making friends through joining in the "neighbourhood chat show"; keeping in touch with home ("base") whilst still on the road, and so on. Indeed, the social uses of CB detailed elsewhere in this publication, make an impressive list. Both as a medium in itself, and through local groups of enthusiasts (the CB clubs) Citizens' Band radio has already proved its value in countries where it has been in legal use for some time, the USA, Canada and Australia for example. Critics of the breakers will say that this article is a whitewash job, but no-one can really look at the development of CB and say that it is truly an invention of the devil — though some of the CB antennae look remarkably like the kind of pitchfork said to be clutched by the avil one. The real problem was created to a large extent by the government's delay in doing anything about CB and the emerging interest in Britain. In the process, enthusiasts became impatient, the British audio industry lost potential sales, and breakers tended to get a bad reputation in

those chambers where Great Decisions are Made, or, equally often, Delayed. Their good work in fund-raising for local charities, often quite impressive, was dismissed as self justification, though anyone really interested in the CB movement would have easily discovered that, in the USA for example, helping local causes is part of the breakers' way of life. And CB has long been legal over there.

The struggle between the breakers, personified by Robin Hood, and authority, eg the Sheriff of Nottingham, accelerated during 1980, the year in which CB, like unemployment, became the preoccupation of the media. Few perhaps realise that there had been arguments for the introduction of Citizens' Band radio in Britain, going back at least five years, and perhaps nearer ten. With the increasing number of people visiting the USA and Canada, where CB was seen to be a very useful tool for the motorist — and sometimes a life-saver — it was quite natural that folk would return to the Old Country and ask: "Why not us?" Our cheerful friends in that Mighty Benevolence on the other side of the Atlantic have been using short-wave participatory radio in very many ways, aiding farmers, stock-holders, physicians, ethnic groups and educationists via a CB system.

"... the run of the mill 27MHz AM rig should normally transmit over a distance, say, of 30 miles — given good skip conditions."

The real boom started in the mid 1970's, however, and the flamboyant world of the trucker, the long distant trailer driver hurtling across the USA, entered everyone's life. When the petrol or gasoline (it's called motion lotion in the world of CB) shortage struck the USA in 1973, the truckers used their CB to pass along the good word as to where supplies were available. Car drivers, arriving at shut-up service stations soon got the message: get a CB in your car and listen in to the truckers for the good word. They found out that the truckers, who consider themselves real professionals in a way we might not appreciate from this distance, had other ways of helping each other — advising of road hazards, hold-ups, drunk drivers, and so on. They never had any real antipathy towards the police — called "bears" or "smokeys" — except in one major regard: along with the gasoline, ie petrol shortage, came a speed limit of 55mph. This very low speed appealed to the truckers not one bit, so they generally ignored it — and used their CB to warn each other of speed traps or "bears lurking in the bushes", ie police waiting to slow down speeding truckers. As a matter of fact, the police and CB users now co-operate to tackle real emergencies, and since almost every other car in the US has CB, the medium has obviously become a respected part of the American way of life.

It was inevitable that the truckers, brought into media focus through the growth in CB (and ordinary folk listening in to their conversation) became folk heroes, the subject of films like *Smokey and the Bandit* and a lot of country and western music. Truckers have been called the heirs to the American cowboy tradition, and the media interest has been helped along by the truckers themselves who (having a most

exacting and responsible job, remember) have customised their trucks, given them special paintwork and decor. That is the fun element in the serious business of using CB. When a hit record entitled *Convoy* — about a series of truckers driving in a convoy was released in Britain, it merely added another element to the growing interest in CB. However, the enthusiasm was not based on pop music or pleasant-to-watch films. By the late 1970s, a considerable number of people in Britain were quite knowledgeable about CB, its possible benefits for British users, and to some extent the technical specification for equipment. Indeed, the Labour government of the time must have known about this upsurge of interest, but whilst often discussing the need to make the printed media more accessible to the people, the subject of participatory radio was shelved.

There are considerable difficulties about allocating frequencies to CB in Britain, which being a far smaller country than some individual American states, has to allocate its radio resources carefully. Furthermore, Britain is signatory to international agreements on the use of frequencies, and the challenge of CB obviously posed real problems to the Radio Regulatory Department of the Home Office. The Americans had standardised their CB almost by accident rather than by design, on 27MHz AM. But given the size of their country and the great distances between major cities, this was acceptable to the US government. The FCC (Federal Communications Commission) licences and controls all use of radio and television frequencies over there, and lays down strict guidelines for CB use. Disobey them and you can lose your licence! Given the vast size of the US market, manufacturers of CB rigs in Taiwan, Japan and the USA happily met the boom, though there were clear signs of over-production, and, in the antenna manufacturing field for example, the number of US manufacturers went from somewhere near 100 to about nine or ten by early 1981. You certainly don't need a degree in economics to guess where the CB entrepreneurs hoped to unload some of their superfluous rigs — namely, in that merry little island in the North Sea just above the English Channel!

When the history of CB comes to be written down, the year 1980 will get special fluorescent lettering. This was the year that CB came to Britain, and, alas, quite illegally.

In a society like our own, the upholding of law, to a large extent, has to rest on wide public acceptance. We do not legalise hard drugs, and most people agree with that. However, the law is always changing — there was a time when to open a betting shop would have been the quickest way to the nick. But have you seen your town lately? The problem as far as law enforcement agencies were concerned, was basically that of persuading people that owning and using CB was wrong. People caught operating the 27MHz AM rigs could say that they had made friends through it, and helped people in emergencies. That did not save them from the £200-£600 fine, plus confiscation of equipment, but when the local press reported court proceedings, readers were more likely to be sympathetic than condemning of the breakers. Indeed there is clear evidence, from Australian experience in their pre-legalisation days, that prosecutions reported in the press actually encouraged greater interest in CB. Nowhere did people think that selling rigs was as wicked as selling drugs, for instance, and in socially traumatic times, the idea of having a personal life-line to the world from your sometimes-isolated car was very attractive. This is not to excuse wrong-doing, but merely to explain why the regulations on CB were considered to be a case for early change.

By the time that the Conservative government announced that it was about to

publish a Green Paper on CB radio, there were national and local organisations growing in number daily. Ironically, when the Green Paper was published in August 1980 it did nothing to encourage breakers to observe the law, or even hope for a viable British-made alternative to the US specification 27 MHz rigs. In essence, the Green Paper said "You cannot have CB on the lines of the Americans — there are too many problems. But we think you can have something called **Open Channel** which will operate on 928 MHz UHF." Not since Nelson put his telescope to his blind eye, had there been anything so counter-productive! CB enthusiasts, having read technical manuals, CB journals, reports, for months, knew that there was a great deal of suspicion of the 900MHz frequency range. This is dangerously near the microwave frequency, and one writer put it succinctly when he commented that at 900MHz, radio waves start becoming radar waves, and radar waves are dangerous. In addition to that press reports quoted a major British company in telecommunications as suggesting that at 928MHz, CB would be very limited, and that rigs would cost about £600, as compared with the £100 or so that one might expect to pay for a 27MHz rig. Even socially responsible organisations like REACT-UK (which seeks to have a network of breakers monitoring the emergency CB channel on the lines of the REACT service in the US) saw that 928MHz was clearly unacceptable. Indeed, no-one really had a good word to say for it. After the Green Paper was published, the Parliamentary Committee on Citizens' Band Radio, an all-party group, proposed the introduction of legalised CB on 41MHz AM, though this would mean a possible close-down of BBC 405 line mono TV transmissions, earlier than planned. The BBC was not enthusiastic . . .

Regrettable as it must seem from the standpoint of the British audio industry, the sales boom that followed the publication of the Green Paper was entirely for 27MHz rigs imported (one way or the other) from the US, Europe and Taiwan, etc and the accessories which were legal to advertise and sell. Thus, there was an impressive spread of CB Accessories Shops, offering anything from power mikes to antennae — almost all of them imported. Whilst an estimate of the number of breakers in the spring was between 30,000 and 50,000 there must have been many times that number by the beginning of 1981. Clubs pressing for the legalisation of CB (notably on the 27MHz AM frequency) similarly flourished though they certainly discouraged members from bringing illegal rigs to meetings, (to sell, for instance), and if anything, it emphasised the geniality of their activities. Breakers in Leicestershire raised £500 for a Dr Barnardo Home, for example, whilst enthusiasts in West Glamorgan raised £150 for a spina bifida unit in a local hospital.

This burst of fund-raising was characteristic of CB clubs and will probably remain so since it seems to be a by-product of their natural enthusiasm for doing things. Some clubs get involved in quite energetic sports programmes, so that the general title of "CB club" cannot precisely indicate its range of activities. Probably a minority of clubs become involved in training or academic discussion, but this is a growing area of work. Indeed, if Britain is to have a really useful CB system, helping social and emergency services, the clubs may have an important role in helping train a minority who want to take their hobby seriously. Clubs have also organised "bust funds" which offer assistance to members who are prosecuted for owning and operating rigs, an interesting example of self-help. The American CB scene, clean and legal shows many examples of local CB clubs helping community causes, and encouraging the disadvantaged and disabled, for example.

So, when the situation settles into the kind of order observed after a few years use of a legal system, we will certainly see the clubs assume more importance, and maybe relate to local social services and "civil defence".

The clubs are already tending to develop Codes of Practice for members, and the "bad mouth" who uses profane language on CB or otherwise makes himself a nuisance, is not really characteristic of the CB activist. There are "CB hooligans" along with those who upset things on the football terraces, and (as with Supporters Clubs) the organisations want them either to mend their ways or receive appropriate discipline.

In the US you can lose your licence, with all the attendant adverse press publicity, for omitting to give your official call sign, or ambulating onto the wrong frequency. Legal CB does not have to be a free-for-all, but abuse of any system will be observed by a few. On the other hand, anyone can listen in to CB. It is truly an "open channel" with no secrets — that could be especially appropriate in Britain . . .

CB clubs during the past year or two have organised demonstrations often with the use of long lines of cars, perhaps culminating with an open air rally. For the most part these have been good-natured affairs, and producing no real traffic

"The problem as far as the law is concerned was basically that of persuading people that owning and using a CB is wrong."

problems. However, at times, these may well have been counter productive in getting across the case to a wide public. You cannot stop and talk to someone when you are in a car.

During the campaign to legalise CB in Australia, a basic pattern for an information handbill was produced and distributed by the thousand to people "on the byway". In addition retailers and manufacturers seemed to be more interested in pushing for a legal system, than has been evident in Britain. The ups and downs of the commercial end of CB would be a story in itself, with more than a few firms hoping to make a quick dollar or two but, alas, getting trampled on by bigger companies. One sees familiar brand names in the US, Canada, and increasingly, Britain, showing that CB can enjoy an international market like hi-fi, or in-car stereo, for example. One of the many arguments against the legalisation of the 27MHz rigs brought into Britain was that British companies would stand no chance against a flood of big-name competition. But the government's hopes that Britain would somehow develop CB to new international specifications, at a price that people would be willing and able to pay, seem to have diminished. A conservative estimate is that production runs of equipment specially made for the British market could not start until about a year from the announcement of the frequency. At a time of recession, when companies have little if any development resources to spare, the marketing platform could hardly be less promising. Breakers themselves claim that there are now so many rigs in Britain made to the American specification of 40-channel 27MHz AM four watts output, that it is practically impossible to prevent their use. Many of them also express regret that while personal use has

boomed, the delay in getting a viable and widely accepted frequency meant that the socially-valuable uses of CB have been delayed. A good-deeds organisation like REACT-UK could not operate on illegal equipment even if it wanted to. The question has been posed to many "mobiles" encountering accidents: Should I use my rig to summon help, and in doing so, identify myself as an illegal operator, open to prosecution?

However, if the number of books and magazines on CB is any indicator, the interest in the medium is boundless. Relatively few books relate to British experience, so we will certainly want more handbooks and materials specifically for the British market. In the later 1980's CB is going to overflow into education, with juniors receiving training on the use of CB in emergencies, etc, as well as into consumer initiatives and the grassroots revolution (sometimes known as people power) in Britain. It should be an interesting decade. Yet, while we are discussing CB, it is just part of a wider revolution in consumer electronics, applied to radio. We are at last in sight of the low-power radio station based on the neighbourhood and permitting two-way conversation. Little wonder that two American writers have called CB the fastest growing medium in the service of others.

Sooner or later, Britain will move to a UHF system, just as the Australians have started to enjoy the benefits of 477MHz UHF, in addition to their original 27MHz AM. Within the CB movement in Britain it is sometimes considered as heresy to suggest that all is not well with 27MHz AM, but most perceptive breakers, aware of the strides being made in electronics, would probably see that frequency as no more than a stop-gap. As they say on all the best commercial radio, better things are on the way. The only question I would ask is: "Will they be made in Britain?"

Your final question would probably be: "Is it easy to work a CB rig?" Yes it is, but it takes practice to get the best results, as in using CB competently regarding personal style and using simple controls. If you can use a cassette recorder, and do not get "mike fright" you can certainly expect to handle a CB wall, with a little (off the air) practice. And, providing you are obviously keen to learn, other CB enthusiasts are usually patient and welcoming. The standard AM rig is really a sort of chatterbox of the air. Apart from the important emergency channels, a more specialist system — **single sideband** (found on the better rigs), is being developed for serious conversations and even cultural use . . . where you might expect to meet the Top People in CB. Hope to hear you there someday, when it's all legal and when I have finally overcome my mike fright!!

"Two way radio" is an apt description of CB, since it involves transmission and reception. However, a channel may be shared by a number of people so that a group conversation takes place. To establish basic disciplines of this kind of discussion, breakers have organised their own Codes and courtesies, amply described in the hand books. Breakers are normally permitted to speak for a maximum of five minutes before stopping to allow any new breaker to join in. You can also merely listen in, and many new CB enthusiasts do that. Monitor radio sets for CB frequencies have been widely available, and legal to buy, since they are not transmitters but only receivers: these usually cost between £15 and £25.

Basic details of CB can be found in many US originated books, including the Tab Books series distributed in Britain by W. Foulsham and Co Ltd of Slough — a very good series.

A complete CB book list can be obtained from Z.L. Communications, Centley, Nr Norwich, Norfolk.



CB RADIO



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Open Channel

a discussion document

What does it mean? Where do we go from here? David Lazell thinks we'll settle for 27 FM eventually, if only because the sunspots will disappear in a year or two . . .

ALTHOUGH February 26 (1981) saw the announcement on a legal system of CB in Britain, it will hardly be regarded as Jubilation Day. For whilst the Government announced legal CB on 27MHz FM and 930MHz FM from the autumn and on equipment made to strict specifications, most enthusiasts had by that time become committed to 27MHz AM, the frequency used in major English-speaking countries.

The announcement had been anticipated for some weeks, and proved to be something of an anti-climax. Few of the popular newspapers, aware perhaps of CB users among their readership, were enthusiastic about the frequencies offered, and reports indicated that CB groups in Britain expected to "fight on" for the 27MHz AM frequency.

Estimates of the number of illegal breakers varied — as they so often do — and there was no clear indication of the likely price of the new FM equipment. Few were as hopeful as the official statement that FM would be as inexpensive as AM equipment, given the flood of AM rigs flooding onto the British market. More informed estimates were that FM rigs would cost between £100 and £150 for an in-car (mobile) rig, compared with the £50 normally paid for an AM model. Similarly, the licence fee provoked speculation, for, whilst one newspaper thought that £5 would be appropriate, a fee of something like £20 seemed more likely, given the fact that CB would be regarded as a competitor to the use of the telephone.

Perhaps the most realistic objection was raised by a CB user interviewed on

On licence fees:

"... of something like £20 seemed more likely."

television. He pointed out that, in addition to having to abandon expensive AM equipment, he would be expected to move to a frequency that would be used by very few people. In short, if you want to meet your friends, they are on AM, here and now, albeit on an illegal system.

All this poses considerable problems for manufacturers, who must be aware of the credibility gap between AM and FM, but at least 27MHz FM offers promise for a system for the 1980s. In retrospect, it is unfortunate that it was not offered in the Green Paper, for the originally proposed 928/930MHz was always a non-starter in any commercial sense, at least in the foreseeable future. The British audio industry itself did not want 27MHz AM or 27MHz FM, but had instead proposed other frequencies, all on FM. The major trade magazine, *Electric and Radio Trading*, in an editorial in the issue of February 19, 1981, merely a week before the announcement thought the impending decision, "a recipe for chaos on CB radio. The technical experts have been unanimous that 27MHz as a Citizens' Band in the UK is quite wrong from virtually every viewpoint, and they assumed the support of the Government in this matter," said the editorial.

Earlier the editorial had stated: "It is

rumoured that the 27MHz service may use Frequency Modulation (FM which would be ludicrous, since the hundreds of thousands of CB transceivers already in illegal use operate with Amplitude Modulation (AM) either normal AM or Single Sideband (SSB)." So whilst the electrical retail trade was not exactly enthusiastic about 27MHz FM, the CBers themselves also seemed unimpressed. Even talk about obtaining "conversion kits" to modify AM rigs to FM operation seemed over-optimistic, and a spokesman for one of the CB lobbies appeared on

On the CB boom:

"... true that a large number of old and rather sub-standard rigs were unloaded onto the British market ..."

television to warn innocent breakers about purchasing so-called "kits" from fly-by-night companies. Even if a conversion kit could be offered at the kind of giveaway price that would attract the illegal operators, it is unlikely that the subsequent half-breed rig would conform to the impending government specifications. It is, alas, true that a large number of old, and rather sub-standard CB rigs were unloaded onto the British market during the CB boom of 1980 and early 1981. Whilst veteran enthusiasts were well aware of models and ranges originating in the US and Asia, most CBers were not that well informed, and were "soft touches". Thus, rigs needing repair are often found to be "unrepairable" either because no circuit diagrams are available from the manufacturer, or because spares cannot be obtained.

Many AM rigs, now giving pleasure to illegal operators are, in fact, in the same category, and certainly could not be adapted to FM, with its more stringent specifications for licensing. Thus, club leaders are not exaggerating when they complain that they are expected to throw away their AM rigs and start from scratch. That was precisely what the government expected them to do, when the announcement on impending legalisation on FM was made in the House of Commons. For the foreseeable future at least, there will be two CB

On the future:

"... the revolution consists of far more than handy two-way radio in the car ... consists of a new realm of participatory radio."

systems operating in Britain — the existing illegal frequency on 27MHz AM, and a minority interest on 27MHz FM. At this stage no-one is looking to 928/930MHz FM as a real commercial proposition.

It has been suggested that a two-year amnesty be provided to existing illegal users, in order to phase out 27MHz AM over that period. During that time, there

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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. Streetford,
Lancs.

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

B. J. H. Pines, 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.

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Surname

First Name

Address

Dateline

More than 1,000 people turned up at the Glasgow City Chambers in January, some with slogans, others with parts of their rigs on display. Just right of centre is one chap with a mike "plugged" into his lapel.



would be opportunity for clubs to examine the potential of 27MHz FM equipment, and organise their own educational campaign. The CB club scene is now so large, and so influential — in terms of shaping the outlook of breakers — that no great move to FM is likely without the blessing of the clubs themselves. Since they are made up of quite ordinary citizens, there is no reason to believe that, in the long run, CB clubs would take an irrational, unmoveable view.

On AM vs. FM:
"Serious CB users believe that the basic AM channels are overcrowded and even used frivolously . . ."

The fact is that the CB radio revolution consists of far more than handy two-way radio in the car, and consists of a new realm of participatory radio. FM, in the context, is unavoidable; AM just has too many problems for an expanding CB medium. Also, the popularity of 27MHz AM has been in its ability to "skip", i.e. make contacts across the Atlantic through the sunspot activity which makes signals bounce off the ionosphere. By 1983, this phenomenon will have waned, making one of the "plus points" of AM disappear — along with the sunspots.

The acceptance of FM will not be immediate, and, for about a year after legalisation, one would expect to see evidence of a hardening attitude from the illegal breakers — 27MHz AM or nothing. However, just as people give up their cheap stereo when they hear a neighbour's real hi-fi system, CB users in Britain will finally move to FM. In any case, by the time that FM equipment

becomes widely available, and the basic facts about CB understood by a wider market than hitherto, one would expect to see something of a sales boom. So far, the arguments for CB have come from those great-hearts in the CB clubs, rather than from community organisations and monitoring services who could not afford to be identified with illegal operation. In addition from the American market we see that the move, even in AM, is to more sophisticated equipment. Serious CB users believe that the basic AM channels are overcrowded, even used frivolously, and are moving to the Sideband channels, where more precise control of equipment is required. For such people, FM could be a major benefit.

Within the next year or two we will see the development of Emergency Channel Monitoring, probably by REACT-UK, to help drivers, and the rapid take-up of legal CB by many types of organisation. One estimate of the market is at least £20 million in the first nine months to a year. The success of British companies' initiative here will largely depend on the extent that they use retailers (effectively) as avenues of communication — to explain how CB can help in specific areas of human need or opportunity. Simply because it is not a passive medium — only needing to be watched or listened to — CB will take a certain amount of "good selling" on the part of British companies. Whilst the lower priced rigs, including most of those used in cars, will almost certainly come from overseas, there would seem to be an expanding market for dependable, high quality domestic "base" rigs. The CB scene in Britain will settle down and by 1983 or 1984 we will wonder how we ever got along without it. But it will be on FM, not AM, with more innovations than we might perceive at the beginning of Britain's CB Revolution.

Custom Charlie's Q.S.F. Cards

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Tel: Kidderminster 745669

Chelmer CB Accessories
Chelmsford
Essex
Tel: Chelmsford 87698

Channel 1 CB Centre
Rochford, Essex
Tel: 0702 54055

Clan Car Components
Port Glasgow
Scotland
Tel: 0475 41378

Formula One
Renfrew, Scotland
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Cockermouth, Cumbria
Tel: Cockermouth 824385

J. Stocks & Co
Huddersfield
Tel: 25829

Poole Logic
Poole, Dorset
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Galex Sales
Kilmarnock
Tel: Kilmarnock 317116

Printshop
14 Coldharbour Lane
Hayes, Middx
Tel: 01-848 9241

A & C Harris
Ashted, Surrey
Tel: 27 72290

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Hounslow
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Charlie Bravo
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Tel: Mansfield 882534

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Tyne & Wear
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The Duke (Jim)
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Tel: Godalming 20734

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Stevenage
Tel: Stevenage 811250

CB Equipment Specialists
Walton-on-Thames, Surrey
Tel: Walton-on-Thames 47395

Royd Electronics
7 Moorland Crescent
Mapplewell, Barnsley
South Yorkshire

All enquiries:

PRINTSHOP
14 Coldharbour Lane
Hayes, Middlesex
Tel: 01-848 9241

CARD GAMES

QSL cards have been in use for years, but it's only now that they're catching on in the UK. One of the advantages is that you don't have to be on channel to collect them! Paul Cater reports.

THE person who had the first QSL card printed probably didn't realise just what he had sparked off. Now, thousands (if not more) of breakers are using these often brightly-coloured and brilliantly designed cards.

The term QSL, of course, means "Acknowledge receipt of" and, obviously enough you send it to your radio contact to acknowledge the receipt of such contact. There are long distance CB operators around with QSL cards doubling up as wallpaper — such is the growing popularity of international-speak.

While we also hear that skipping will all but die out in the next couple of years (due to the decline of active sunspots), at the moment QSL cards bring much needed information, and pleasure to the long distance breaker.

QSL cards have been in existence ever since the airwaves first became populated with amateur radio enthusiasts talking to each other; the initial reason for this visual follow-up to a friendly and probably difficult-to-hear chat was to provide technical information to the hams concerned. On the reverse side of the cards are spaces for technical details including transmission recaption, signal strength, interference or static, type of transmitter and antenna used, and if any particular weather conditions prevailed at the time. This, in turn, enabled you to carry out any corrective diagnosis and remedy to improve your equipment. Naturally enough, there were the inevitable spaces for time and place, name and address, and greetings to the family.

In the early days this information was all written out in longhand, and in letter form on the back of a picture postcard. As in the early days, there is still the collector's possessiveness about QSL cards and the greater the distance the more valued the cards. There are even a great many people collecting QSL cards who are not amateur radio participants!

The first printed cards were not unlike the original postcard QSLs. They were pretty basic, normally black on a white card with the necessary information printed. However, over the years they have become an art form in their own right.

I saw my first QSL card 10 years ago and it belonged to two ham friends of mine — G5ARI and G5ARH. Now, to illustrate their call codes they had a picture of a spaceman getting out of a lunar module (both outlined in white on a blue

background), onto the surface of the moon. The design was pretty effective and gave visual expression to both of their desires to be either pilots (USAF) or astronauts. When I first saw it I was more impressed by the design of the card than I was by the intended use. My last look into their radio station HQ revealed a collection of over 5,000 cards completely covering the walls, ceiling, beds, etc.

Since the advent of CB and especially the use of SSB and DX-ing the QSL card has become an essential item of any serious breaker's equipment. American breakers have been talking on the skip for quite a long time and their QSL cards prove this by their developed style and technique. The same is now becoming true of Great Britain.

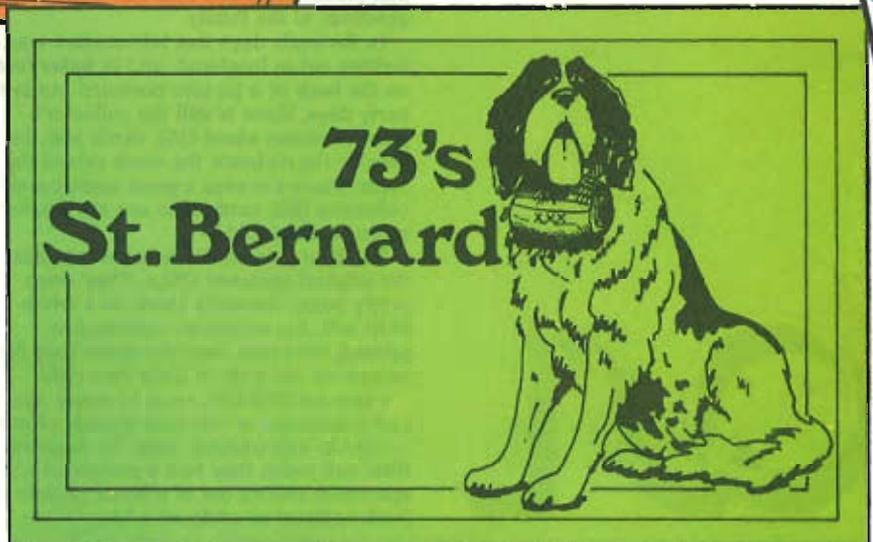
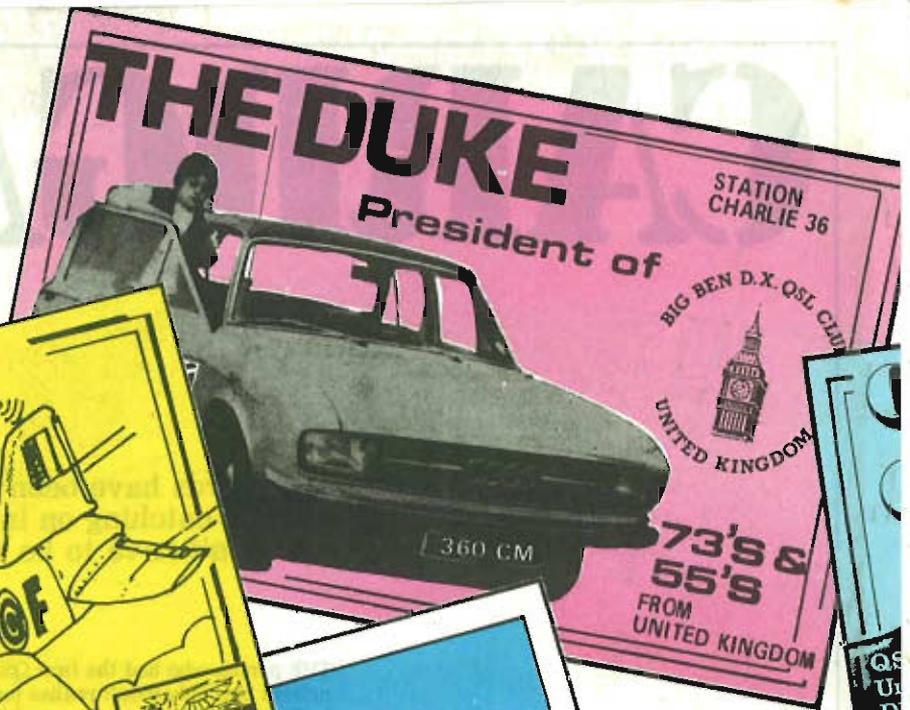
Being now in the business of supplying cards for British and European breakers, I can say that QSL cards seem to fall into distinct categories: The first and most popular type is the **humorous card** whereby the breaker's handle is depicted by a cartoon character doing something funny or amusing; is **Early Bird** picture of a blackbird trying to get the worm but actually getting hold of a twig (antenna) by mistake. The majority of humorous cards tend to have Standard/CB Reverse details printed on them.

The serious breaker tends to have a more informative card that falls into what I would class the **Technical Category**, the front normally giving full details of equipment used by means of a photograph or sketch. It quite often features a map of the breaker's home area with his exact location marked on the map, as well as his DX code and details of channels monitored and at what time.

Club cards fall into the **Exclusive Category**. Breakers who have joined a well organised club or group of DX'ers can normally obtain from their club a card and registration number which proves membership. The cards are normally of high design standards with plenty of blank spaces for each individual member to fill in personal details such as handle and equipment used. There are now a growing number of satellites orbiting the earth to help amateur enthusiasts communicate over long distances, they use the satellites to reflect their signals. These "Oscar" satellite enthusiasts take great pleasure in mentioning "membership of this exclusive club" by having it splashed all over their QSL cards.



QSL



QSL cards are catching on — and they're getting more sophisticated and imaginative as you can see from the selection on these pages.

Most cards will supply the breaker's handle, name and address, and include a little personal info, such as what his hobby or profession is. Technical details are also supplied as are the inevitable High Numbers.

DT 712

TO STATION.....
OPP.....
CH.....
AM LSB USB.....
WATT.....
ANT.....

To Radio	Date	G.M.T	Freq.	R.S	Mode

RDL
TX
ANT.
73's and 61's to you and your Family
Please Q.S.L.

THE VERY BEST WISHES TO YOU AND YOUR FAMILY

To Radio Station.....
Confirming our C.B.
QSO on Frequency.....
Date.....
Time.....
My Equipment is.....
Antenna is.....
Base Mobile
Remarks.....

From: _____
Please send QSL to above D.T.H.
Thank you for your Q.S.L.

This is to confirm our recent C.B.
communication of _____
- Great talking to you
- Heard you on channel
- Received your card from a friend
- Received your name from a friend
- Have your card and thanks
- Please send card and thanks
- Please pass this card to a friend
73's 73's 73's

Printed & Published by F.R.A. HOWELL PRINTERS LTD.
Tel: 01-846 0411

Some of my favourite cards are the rare informative ones. A lot of people go to great pains to pack as much information onto their QSLs as possible. Some give interesting historical details about an operator's home area, or geographical features such as lakes or mountains which surround them. Under the informative label come cards which give hints or clues or even direct reference to the sender's occupation. Often a person's handle will give this away, ie Medic Man. Quite often the design will reveal a picture of a truck or somebody engaged in mending or making something totally disconnected with CB.

Nationalistic cards are always popular and tend to opt for nothing more complicated than a huge flag. The confederate flag of the United States only just taking second place to our beloved Union Jack. The Union Jack is extremely popular all over the world and seems to be revered overseas even more than at home. Even if a card falls into any of the other categories you will often spot a Union Jack or flag lurking around somewhere. Thistles and lions also abound.

QSL clubs are springing up all over the place at the moment. The beauty of these organisations is that you don't even have to be on the air to belong to one. They tend to work like massive mailing centres for QSL cards. Normally you start off by paying a

membership fee which entitles you to all sorts of goodies like club rubber stamps, membership cartificated, etc. By sending in a quantity of your own QSL cards, they will forward your cards to other members and pass their cards back to you, but here you limit the size of your QSL card collection to the amount of members in the club.

This service gives you names and addresses of fellow breakers from all over the UK and the world. The cards are useful as introductions while driving through unknown areas or on holiday in foreign climes. I can't think of any better way of making new friends, and let's face it, that must be one of the main aims of CB. Here are a couple of QSL/DX clubs worth joining:

ENGLISH INTERNATIONAL DX CLUB
225 Erhold Street
Baldon, Tyne and Wear
BIG BEN DX QSL CLUB
14A Bridge Street
Godalming, Surrey

All over the world English (originally American) handles proliferate; another important factor which should be incorporated on any good QSL card is a traditional greeting ie 55's; 73's; 88's; all the high numbers; golden numbers to you and your family; and so on. All these greetings are as international as the handles and Q codes, so if you are getting your first batch printed don't forget to include at least one of these on your card.

With limited legalisation now agreed, the number of new people going on channel (legally or illegally), will result in more QSL cards appearing on the scene. The Americans have had a few years start on us and consequently they are coming up with all sorts of designs and gimmicks. Can

QSL cards fall into several categories — the Exclusive, Technical, Humorous, Informative, and Nationalistic categories. Above are four cards, some of which involve giving much technical information, and others acting simply as a greetings card. It's now fairly big business.

you believe 3D cards? British designs are fast catching up and it won't be long before our designs and techniques are as advanced as the stateside ones. Let's just hope that our sense of taste and humour prevails.

Don't forget that to get your card remembered and pinned on the wall it must be informative and look good at the same time. If you can afford it have something custom-designed to suit your handle — then it won't be confused with anybody else's. Multicolour (etc) printing can be expensive but once again it will get you and your card remembered.

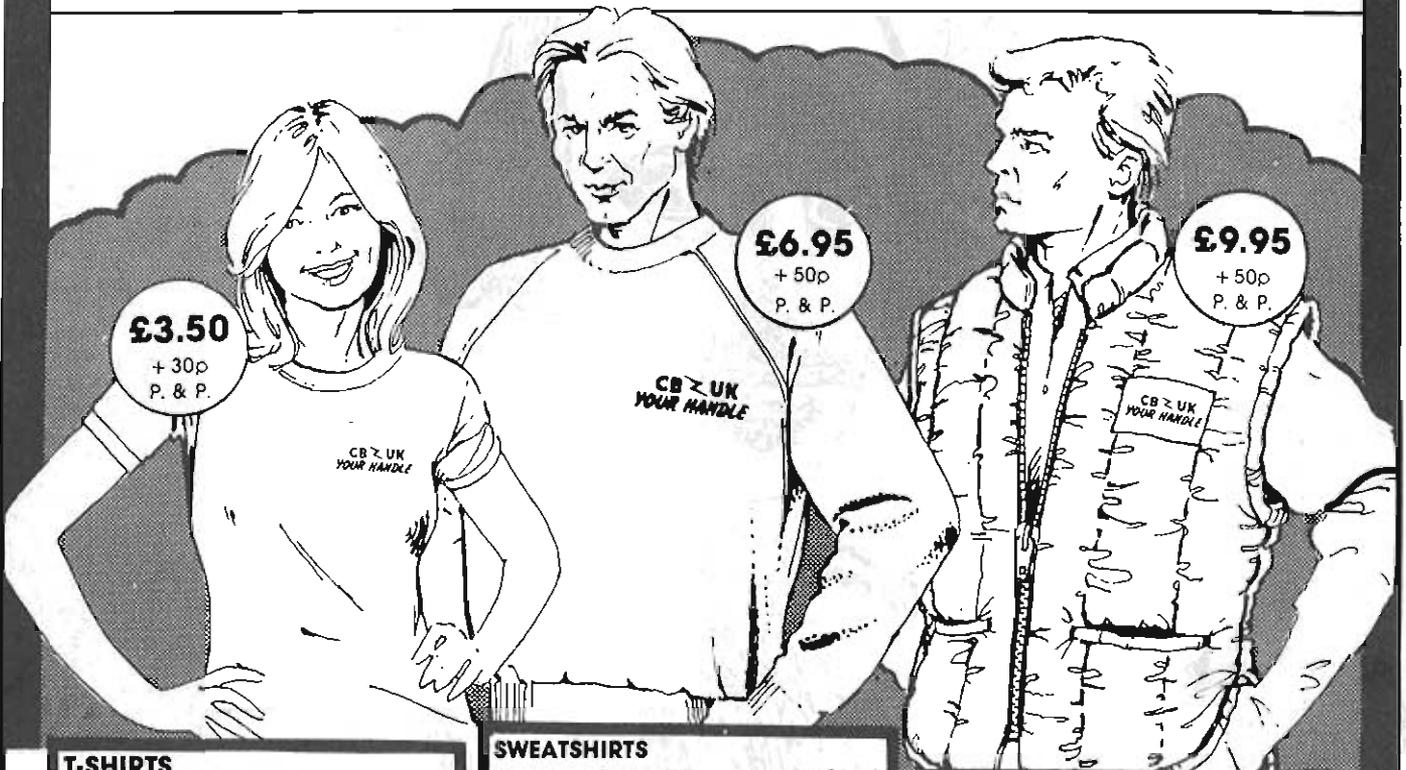
The golden rule is QSL 100% — there is nothing worse than sending out your favourite QSL and getting nothing in return. When sending cards after DX-ing try sending out more than one and you will find that your card will get passed on to other enthusiasts and you in turn will receive their cards.

As you can see, card collecting opportunities are almost endless and if you take QSLing as seriously as talking on channel you will be rewarded with a worthwhile extension to your hobby. Note: Paul Cater is a director of F. R. A. Howell (Printers) Ltd, of 14 Coldharbour Lane, Hayes, Middlesex, which produces a large range of QSL cards. See page 16 for further details.



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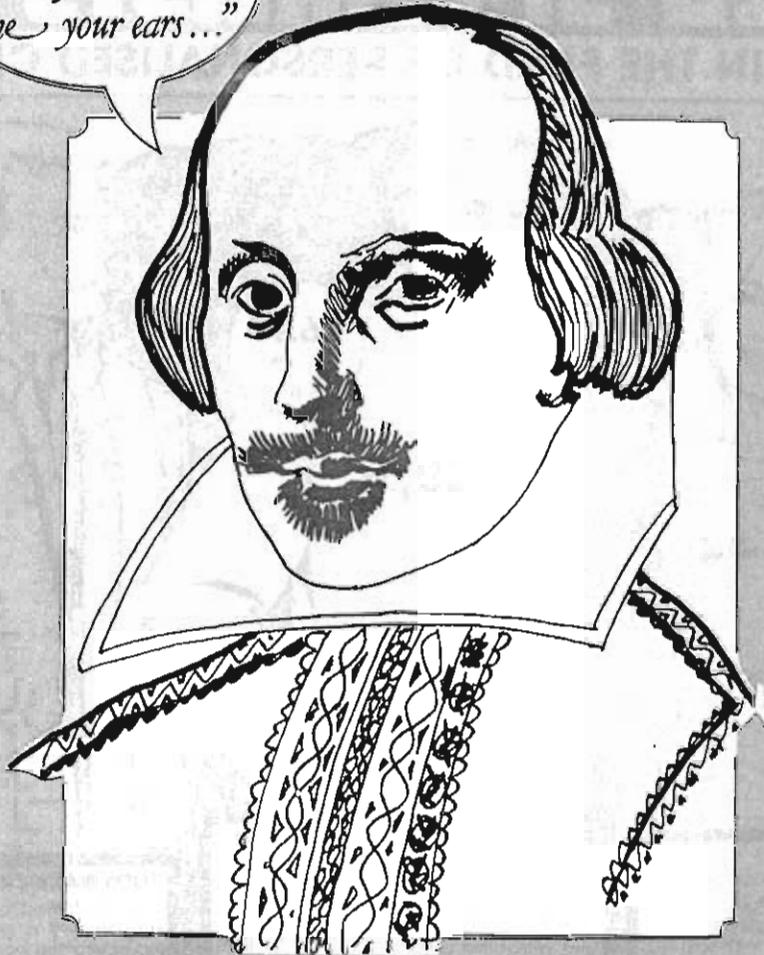
CLUB SECTION CLUB SECTION CLUB SECTION

BASEBALL CAPS MINIMUM 12
T-SHIRTS MINIMUM 12
LAPEL BADGES MINIMUM 100
CIGARETTE LIGHTERS MINIMUM 100
CLOTH BADGES MINIMUM 100
KEY RINGS MINIMUM 100
SUNSTRIPS MINIMUM 25
STICKERS MINIMUM 100
BOOKMATCHES MINIMUM 100
BODYWARMERS MINIMUM 12

The above items can be purchased with your CLUB name or design in the minimum quantities stated. Orders of minimum quantity or above will receive maximum club discount. All specials are subject to a one-off organisation charge to cover artwork and screen preparation. Specifications of all items (colours, sizes) as in catalogue.

For further details, prices please phone or write to our CB Sales Department at Northampton (0604) 30804. Trade enquiries also welcome.

*"Friends, Romans,
Countrymen, lend
me your ears..."*



HOW CB CAME TO BRITAIN

It was the transistor — invented in 1948 — that turned amateur radio into CB, in America. By 1977 there were more than a quarter of a million breakers in Britain. Here, Peter Dodson picks out the important stages in the arrival of CB to this country. Nowadays, "expert" estimates have put the number of CB operators in Britain at anything from half a million, to two million plus!

ALTHOUGH it is only within the past decade that the vast majority of the British public has come to understand such bizarre terms as "bears in the air", "bodacious" and "clean and green", the origin of these expressions goes back 20 years or so. Citizens band radio, which operates on what was originally an American amateur radio frequency of 27MHz, was born of truckers on the long lone highways of the United States. Unlike the operators of ham radio who pursue their hobby with the avowed intention of reaching as far round the globe as possible, CB "breakers" original concept was of a personal two-way communications system within the limited range of their four-watt transmitters.

And from this desire to communicate evolved a language. Extravagantly American with thinly veiled pseudonyms for "representatives of law and order", today's breakers used flamboyant lingo to advise their good buddies of traffic jams, traffic hazards — and the bears.

Understandably, the advantages of this system which was relatively cheap to install and virtually free to use, found favour with those who lived in the sparsely populated areas of the States — as little as £30 could put a breaker in business. But it wasn't long before the concept of CB radio had changed from that of a necessary convenience to a plaything — an extension of in-car entertainment. By 1975 it was estimated that 25 per cent of American cars were equipped with CB.

Quick to seize on a unique business opportunity, the radio trade cashed in on the craze, not only by supplying an expanding market, but in creating new and wider parameters to CB. The single channel transmitter was being replaced, firstly by the 23 channel, and later the 40 channel job. The linear amplifier (illegal in the USA to this day) and the power mike grew in popularity, giving breakers more power to play with. Designed almost exclusively in America, CB equipment was soon to be made under licence in Japan, who in turn subcontracted to Taiwan and Korea. But the side effects of CB were becoming apparent. Distress calls from motorists stranded in isolated situations attracted villains intent on a soft rip-off; murder had been committed over the occupation of a band; and the first CB call-girl had made her voluptuous appearance!

As the interest of commerce was aroused, so CB went international. But in this respect it was transgressing not only

laws governing the use of transmitting equipment but also those of importation. Nevertheless, where there's a will there's a way, and where there's a buyer, there is inevitably a seller! Although the Americans still marketed CB equipment, delivery was from the Far East via all points in between. And faced with the impossible task of enforcing an unenforceable radio transmission licence law, the Australian government, for one, reluctantly sanctioned the use of CB by a nation already heavily into it. By 1976 CB had reached Europe, ready poised for its major impact on the United Kingdom.

Within a year or so a quarter of a million breakers were operational in Britain, and the late 1970s saw their introduction to the sideband transmitter. This system of transmission split the normal 10KC channel into three parts, using upper sideband and lower sidebands with a straight AM channel sandwiched in between. Not only did the introduction of this technology provide more channels, but it also increased power to around 12 watts, and provided a degree of selectivity from "straight" breakers. Already, a class distinction between sideband breakers and "the rest" was beginning to emerge.

In the knowledge of their somewhat precarious legal situation, British breakers formed themselves into local clubs and were represented by national associations. Andy Donovan of Clapham formed the biggest of these groups under the name of the United Breakers Association, and the Citizen's Band Association was brought into being by Jim Bryant, BSC — himself something of an electronic wizard.

Through these associations, a national campaign advocating the legislation of CB was mounted; the desire of breakers to act within the law could not be denied.

Clubs, on the other hand, maintained a line of communication with the public and all other users of HF radio equipment and instances of radio interference with a Gloucestershire hospital call system, to quote just one instance, were remedied through a CB club. Legal representation was provided for members who did fall foul of the law, by members of the legal profession briefed in the ways of CB. Some British CB clubs would ensure the replacement of any confiscated rig on payment of a nominal subscription — perhaps the only example of insurance against a felony, in existence!

Aware of the monumental task of

curtailing the illegal activities of 250,000 breakers, the authorities with their limited facilities maintained a relatively low profile, often content with noting the car registration numbers of CB users. And indeed, breakers made (and make) little or no attempt to conceal the fact that they were (or are) carrying transmitting equipment. Nevertheless, incidents reported from the north west of England in late 1980 tell of violence being used against authorities acting in the execution of their duty in apprehending breakers. These regrettable incidents are most definitely NOT in the best interests of attaining legality for CB, and brought disrepute to the cause and alienated the very public opinion it was attempting to attract.

Opposition to CB by the majority of the public was minimal, apart from a vague moral disapproval of its illegal use. A section of the "Amateur" radio fraternity expressed resentment. Enthusiasts of radio controlled models also working on a frequency of 27MHz protested, but by early 1981 the attitude of the man-in-the-street was "Why not?". If communications systems of this nature could alert emergency services, reduce violence or help OAPs in need, what's the problem? Furthermore, a hard-up government missing a God-sent opportunity for collecting licence revenue from a quarter of a million or so souls, begging to pour their money into the public coffers. And the biggest rake-off of all would be the VAT they would pick up from the legal sale of CB equipment.

And so, in February of 1981, the Thatcher administration finally gave a begrudging go-ahead to British breakers — but with a sting in the tail. CB would be legal in the autumn, but on 27MHz FM. Yet again, Britain is going to be the odd man out, as many countries, including America, Italy Australia and the Far East were AM — only Europe was FM. The delight of breakers in achieving legality, therefore, was over shadowed by the fact that their AM equipment was unsuitable, and that to continue to use it would render them still outside the law.

But what of the future of CB? For one thing, the manufacture of equipment in the UK, hitherto illegal, can now have official blessing — and VAT. And in the Breakers Yard in Cheltenham, John Barker lit himself a big cigar and attended to the enquiries from a shop full of would-be (or will be) CB enthusiasts!

A GUIDED TOUR

Peter Dodson takes you on a guided tour of your standard 40-channel rig. All about transmitters and receivers, and things.

AS one whose understanding of technology is limited to that of a wheelbarrow, it occurred to me that I might not be alone in my abysmal ignorance of how things worked in this miniaturised, transistorised electronic world in which we live.

When you consider the repidity with which development in these fields has been conducted as a direct result of projects like space travel, it is little wonder that we cannot keep up with advanced technology. We accept with blind faith that our domestic gadgetry will function so long as we push the right buttons at the right time, but anything more sophisticated than that is strictly a matter for the experts.

Either by accident or design, radio has always been cloaked in mystery. And with the popularity of CB mounting by the month, there must be hundreds, if not thousands of breakers pushing buttons with gay abandon without the faintest idea of what is happening inside that cute little box under the dash! I determined to find out exactly what wonders of modern technology lurked within a radio transmitter and receiver.

All transmitters require alternating current to drive them, so if I describe the workings of a mains set in the first instance, we can then progress to the more sophisticated aspects of mobile rigs.

Alternating current mains works on a "frequency" of 50 cycles, which means it changes polarity 50 times every second. But for this to be of any use whatsoever to a CB transmitter, it must be increased to 27,000,000 cycles by the use of a transistorised oscillator circuit.

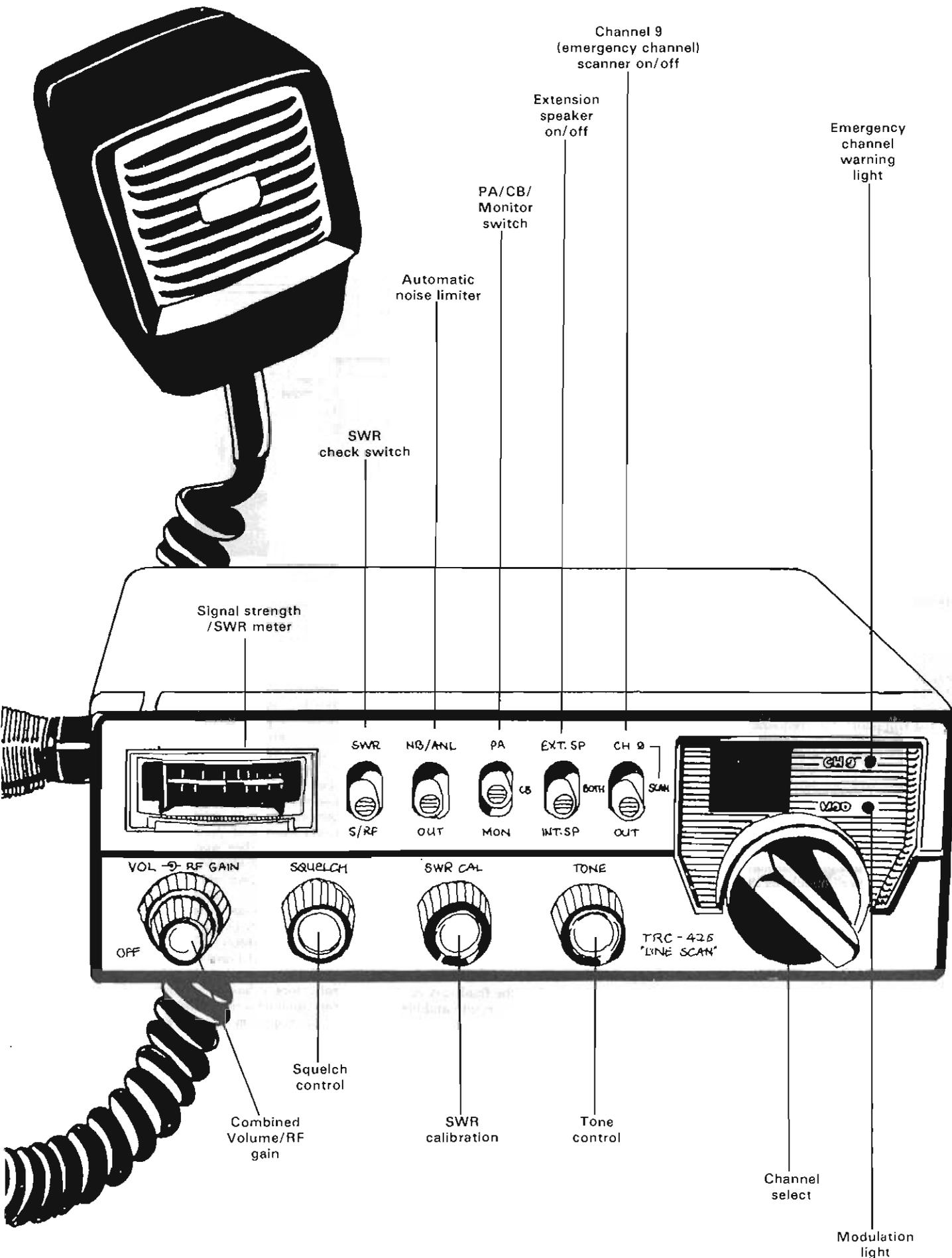
The resultant "radio frequency" of 27MHz is known as a "carrier" and, as its name implies, it "carries" the transmitted speech to its destination. But before it can proceed along the signal path (its route through the transmitter) the 27MHz RF (radio frequency) must be amplified in an "RF amplifier" to give it extra strength. Indeed, amplifiers abound in both transmitters and receivers, but their purpose remains always the same in that they boost the signal. Having provided the vehicle upon which the speech will be

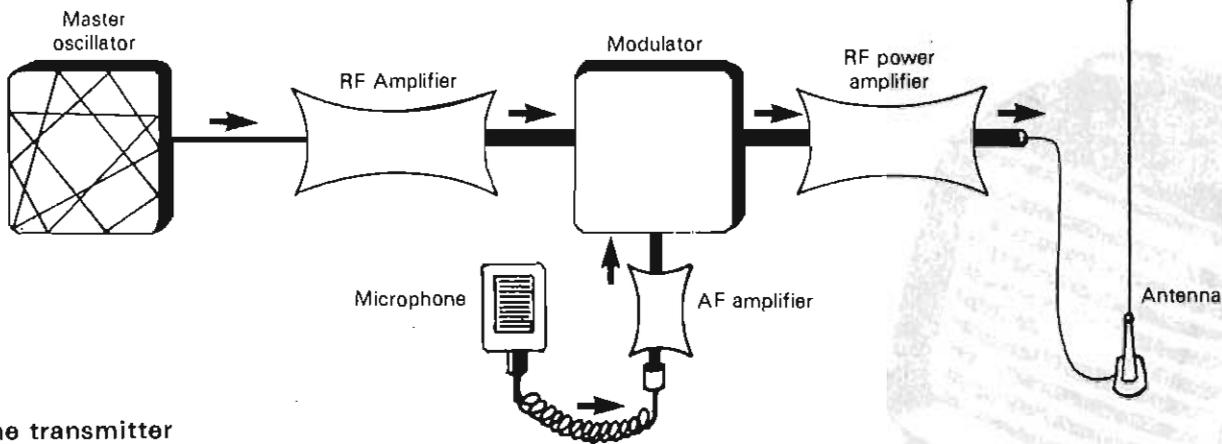
carried, the problem now is to mix the sound with the carrier — a process known as modulation. Speech in a microphone is converted from sound waves into variations of electrical current. This current, which is called "audio frequency" and is below 20,000 cycles, must first be amplified before it is "mixed" with the RF carrier in the "modulator". Now modulation means change. And the change in this instance is accomplished by superimposing the audio frequency upon the radio frequency and producing an "amplitude modulated wave". Still lacking in strength, this amplitude modulated wave is then boosted by the RF power amplifier before it passes to the aerial or antenna and out into the big wide world beyond.

The band used by breakers extends from 26.965 to 28.305MHz and can include as many as 120 or more channels, each of 10KHz. However, for the majority of breakers, only forty of these channels are used and the selection of channel is achieved by the use of a "cone generator" — and the inevitable push-buttons which appear to dominate so many aspects of modern life. Power for a car-mounted transmitter, of course, is provided by a battery with an output of 12 volts direct current (DC) instead of 240 volts AC as found on domestic mains. This 12 volt DC supply must therefore be converted to alternating current by a transistorised unit designed for the purpose, which, in its turn pushes up to 27MHZ, and that's where we came in!

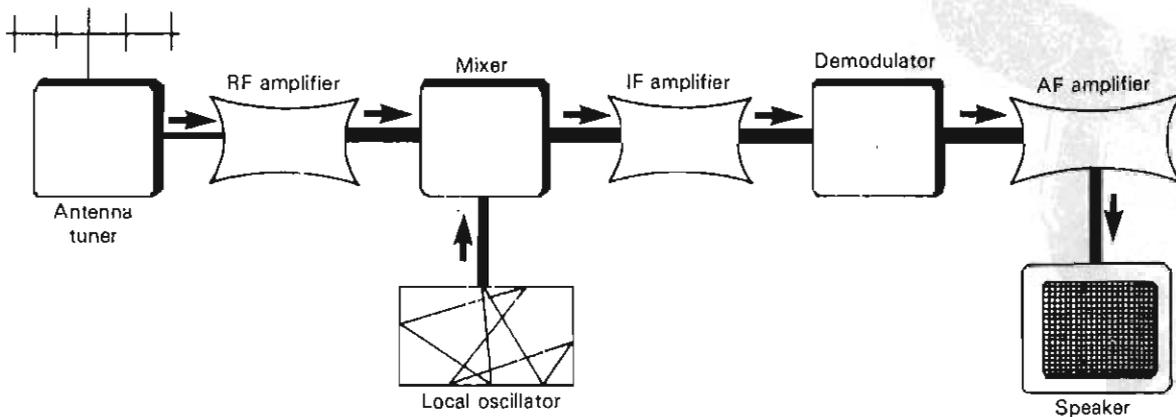
Receivers, on the other hand, take a little more in the way of explanation. By and large a receiver will accept all signals within the scope of its aerial and band-range; the trick is to select, from the mass of incoming radio frequencies, the exact signal that you want, and is known as a process of "selectivity".







The transmitter



The receiver

The first stage in this selection process is an aerial tuner in the form of a "tuned circuit". This is controlled either by a dial or yet another example of push-button pre-tuning, and will match the frequency that you want and so extract the required signal from the incoming radio frequencies. Yet again, the strength of the selected RF is barely perceptible and must be put through an RF amplifier to boost it. This component is often variable on communication receivers and is more commonly known as "RF gain".

The signal path now leads through the receiver to the "mixer" which, as its name implies, mixes the amplified RF with a locally generated frequency source known as the "local oscillator" (or signal generator) of predetermined value. The purpose of this mixing of frequencies (known in the trade as heterodyning) is to produce two frequencies and the radio frequency plus that of the local oscillator, and the radio frequency minus that of the local oscillator. The two frequencies that will be produced on a receiver tuned to 27MHz will be therefore $27.5 + 27 = 54.5\text{MHz}$ which is outside the scope of the receiver, and 500KHz which is the intermediate frequency (or IF) that will continue along the signal path. The purpose of this mixing of frequencies is a further step in the selection of signal process, and makes the difference between a "superheterodyne" receiver and the old "straight" sets of yesteryear. And with a strange feeling in my water that I am about to lose half my readership, I must inform you that there are also "double superheterodyne" receivers with two local oscillators, which provide even greater

selectivity by the elimination of second and adjacent channel interference!

Meanwhile, the intermediate frequency, having been boosted in the "IF amplifier", passes to the "demodulator". And if this term has a familiar ring about it, the reason is that we have already covered the function of a "modulator" as applied to transmitters, and this gadget merely reverses the process. At the possible risk of oversimplification, the demodulator "separates" an audio frequency signal from the intermediate frequency (which is the product of the original RF). If I am not, by now, talking to myself, the "audio frequency" which emerges from the demodulator has a penultimate boost through an AF amplifier (another variable component known on some sets as the "AF gain") before passing to the loudspeaker in the form of variations in electrical current. The speaker then has the final task of converting these variations into audible signals.

These explanations of the functions of transmitter and receiver are, of course, basic in the extreme — for one thing, on a CB rig, both pieces of equipment are housed in the same "box". And yet, strangely enough, although many breakers have an extensive knowledge of the more sophisticated accessories, many others lack insight into the nuts and bolts of basic radio principles. They may not know Ohm's law from common law, but they can prevaricate at length on the relative advantages of linear amplifiers that can boost a transmitter output to phenomenal power (and drain a battery just as quickly!) and wax eloquently on the singular merits of power mikes!

But a transmitter or receiver can only be as good as its antenna and the length of an antenna is critical, being directly related in length to the wave-length of the signal being transmitted. But as the critical length of an antenna to match a 27MHz transmission is about 40 feet, the fitting of a "whip" to a vehicle could give it a life-span that would only last as far as the nearest railway bridge! The usual compromise is to mount a unit that is an exact fraction of the critical length, and the wire is either wound round a glass fibre whip, or stowed in the base of it. These are known as "helically wound" or "base mounted" antennae.

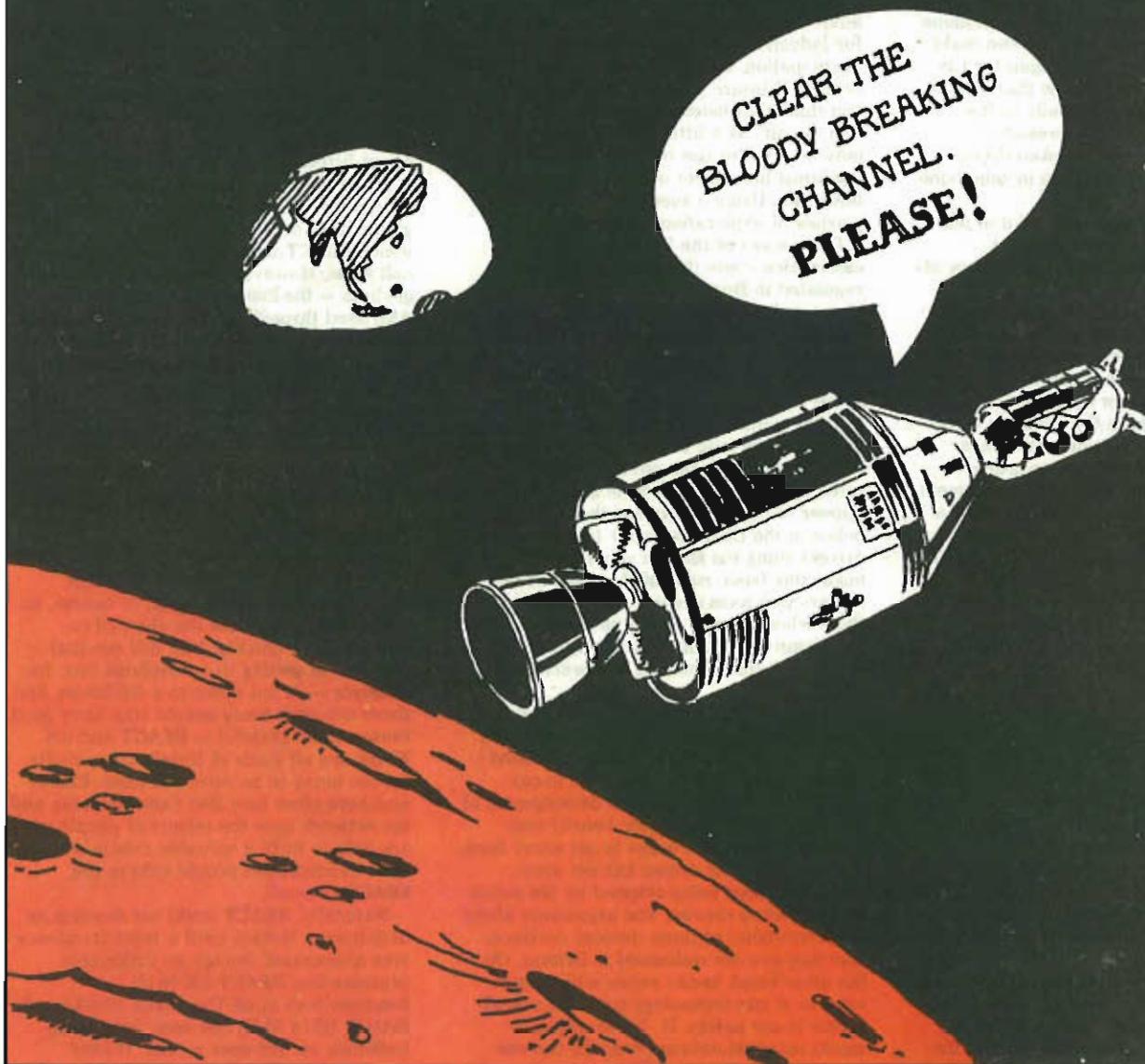
The directional properties of antennae depend largely on the shape, and for the ultimate in directional aerials you have only to look at those used for TV reception. With its precise length, guides and reflectors, it has been designed for reception on a particular frequency emanating from a known source. Parabolic or dish aerials as used for satellite and space communications have been higher directional properties with particular sensitivity for weak signals.

Breakers, on the other hand, who prefer to talk to the world in general rather than in one particular direction use whip aerials which are *omni-directional* and, as a result, produce correspondingly weaker signals in any specific direction.

And so, having banished for ever the myth that the secrets of wireless are forbidden to all but the high priests of the telecom manufacturing industry and the repair men, it's back to the day job for me! I design supersonic fuel-injected micro-chip computerised wheelbarrows!

CITIZENS' BAND 1990

Many things have been written about how CB will fit into the 1990s and beyond. Here, CB81 takes a good look at the possible ways that two-way radio can be useful in years to come. We all know that CB has uses for ship-to-shore, car-to-base stations, but how about the local Post Office selling CB stamps? And what about CB clubs having a whip round to buy the local police station a new rig?



CITIZENS BAND 1990

TRYING to assess the future of CB is rather like the young preacher who promised a short sermon on the past, present and future of the human race. But we'll try. Most people in Britain have read about CB primarily through the fund-raising activities of local clubs, the occasional prosecutions of breakers for using illegal equipment, and the colourful trucker's language which seems to have fascinated absolutely everybody.

Estimates of current users of 27MHz AM equipment range from 250,000 to a million or more, but even this is probably a mere "drop in the eyeball" compared with the kind of use CB will be enjoying in a few years' time — a legal system, with equipment made to high standards, along with national organisations encouraging community use of CB radio. One might adapt the old slogan, "You are never alone with a Strand Cigarette", to Citizens Band. The truth is that you need never feel alone if you have a CB radio, and you can make friends though it. Our own slogan for CB radio in these 1980s would be that it is a **Friendship Life-Line**, especially in the moments when you have a pressing problem, eg your car has broken down miles from the nearest garage or telephone kiosk.

Naturally, we have shaped a lot of our attitudes from the USA, where that particular adventure began. The history of radio in that Great Benevolence on the other side of the Atlantic is fascinating, and quite different from our own in Britain. Despite our occasional opinions of the more torrid plays put out by Auntie BBC, we really do have the best broadcasting system in the world in terms of all-round quality. However, that has been created by a system of regulation through state corporations and government agencies. In the process there has been a certain amount of inflexibility. One only has to recall how the popular pirate radio stations, broadcasting from ships anchored in the North Sea, captured a wide audience despite the disdain of their "wisers and betters". In the end the BBC took the message and started Radio One.

One of the merrier stories from past decades has to do with a well known lady preacher who broadcast from her own station high up in a skyscraper building. Unfortunately, the technical side of the operation was not too precise, and her programmes caused interference on other frequencies. When reprimanded by a government official, she retorted that it was nothing to do with her — the devil was causing all the trouble, and pushing her frequencies about. This would not seem to be a very good legal defence for any British breaker hauled into court, charged with causing TV interference with his AM rig!

This interest in radio is seen in many ways. For example, a booming part of the

CB business in America is in scanners or scanning transceivers which combine the basic characteristics of a CB rig with the ability to listen in to vast numbers of frequencies used by the police, fire, ambulance, industrial companies, small groups sharing CB on a regular basis (farmers, stock-holders, ethnic groups, etc) and many others, including government agencies. These sophisticated units usually come equipped with a keyboard that enables you to quickly pick up any user you want — and also some you did not know about. Electronic memory records any channels you may wish to return to, and there are various organisations in the US that encourage the use of scanners. As a good scanner will cost perhaps seven hundred dollars or more, plus cost of antenna etc, this is a serious hobby, and an interesting aspect of US involvement in "person to person radio." However, although scanners can be purchased in Britain for about three hundred pounds or more, they have not yet become really popular.

"Almost every other car in the States has CB radio . . . the shape of good things to come."

Given that CB radio will be used by community groups for neighbourhood advice and information, with development for industrial and professional participation, scanners may be part of the bright CB future just ahead in Britain. If you think that listening to ordinary people "on the air" is a little old hat, recall that it may be a better use of time than gazing at the latest instalment of the soap opera on television. Using a scanner can be a journey of exploration, radio-wise.

One aspect of the US consumer electronics scene that will be strictly regulated in Britain is that of in-car radar. Yes, we did say "radar" and not "radio", and there have already been one or two legal cases involving sale of equipment in Britain. The reasons for the popularity of in-car radar are probably quite complex; at heart it is another shiny gadget to play with on those long and sometimes boring trips. It relates to the natural interest in radio that most great-hearts in the US appear to possess. Because the highway police in the USA use radar to track down drivers going too fast, or otherwise neglecting basic rules of the road, some drivers purchase in-car radar that warns them when a radar device is being used in the vicinity, or directed against the car itself. So it also works as a powerful foot-lifter.

Of course, the trucker's jargon has always included colourful warnings about "bears in the grass", ie police concealed and using radar speed traps. So in-car radar is just a technological development of basic CB. In-car radar can benefit real criminals, however, eager to get away from the scene of their crime, but not over-enthusiased about being stopped by the police on a speeding charge. The arguments about the desirability of these devices continue, and they are not welcomed in Britain. On the other hand, in-car radar with other aspects of car technology could be a great factor in car safety. If, for example, a signal received automatically by the car

warned of impending traffic hazards, and stopped it from going above 55mph, say, whilst the signal was in operation, this would obviously stop some of the tearaways we see on the motorways. Shades of Big Brother.

Most of the folklore surrounding Citizens Band relates to its use on the road where its value is most appreciated. The truck driver hits on records performed by country and western stars, and most catalogues of equipment emphasise in-car use. We have yet to appreciate how valuable CB will prove to be. In the US and Canada (as in other countries) the Emergency Channel is monitored by voluntary groups 24 hours a day in order to direct help fast to drivers in trouble. Even now many police stations in America do not appear to have CB — though obviously police cars (mobiles) are equipped.

There are reports describing fund-raising by local CB clubs in the US in order to present the local police station with a good base rig! That will certainly surprise some British breakers — but you never know, in a year or two we might be doing something along the same lines.

The best-known of the US monitoring networks is REACT, described as "an independent non-profit public service organisation providing organised citizens' two-way radio communication in local emergencies". Since it was launched in 1962, REACT has grown to almost two thousand teams and with more than 210,000 members active throughout the US, Puerto Rico, the Panama Canal zone, West Germany, seven of the Canadian provinces, Mexico, Guam, Venezuela, South Africa and Australia. The scope of their work is reflected in the fact that since the launch of REACT, some sixty million emergency calls have been handled, these including about fifteen million highway accidents.

If, for example, you are a regular driver across the US, you will use a handbook giving brief details of towns, cities, etc in which REACT units are based and their CB call signs. However, you do not need that to get help — the Emergency Channel 9 (on AM, used throughout the US and the other countries mentioned above) is sufficient. You only need to know how to tune the rig to that channel.

"With a base station the blind or handicapped person can exchange conversation with a group . . ."

The person involved in an accident cannot always summon help, of course, so that other drivers use the channel to summon help quickly. You will see that delay — in getting to a telephone box, for example — is cut down to a minimum, and there are very many people who have good reason to be grateful to REACT and CB. There are all kinds of beneficial spin-offs, far too many to be recorded here. REACT members often take Red Cross training and the network uses the talents of people who are able to fulfil a valuable role in society. Even handicapped people help in the REACT network.

Naturally, REACT could not develop its activities in Britain until a legal frequency was announced, though an embryonic organisation, REACT-UK (with headquarters at 28 The Coots, Stockwood, Britsol, BS14 8LH) has been publishing bulletins, etc for over a year. Whilst

REACT-UK did not believe that the Green Paper's proposals, for 928MHz, would work for their kind of operation, we may look forward to a legal system based on 27MHz FM. The task of building up teams in the UK is going to take time, but the energetic people who have accepted the task of organising REACT-UK are optimistic.

How will existing CB clubs relate to the new opportunities? Originally, the clubs, developing rapidly in Britain throughout 1980 especially, worked for the legalisation of 27MHz AM (the US standard). In the process, they have developed a certain amount of technical expertise, and drafted their own "club ethics" for the use of CB. The problems of interference, on domestic TV for example, were well recognised by the clubs, and they often worked hard to prevent these problems.

"Since the launch of (US) REACT, some 60,000,000 emergency calls have been handled, including about 15,000,000 highway accidents."

There may also be, on the lines of national conferences held in Australia, annual eyeballs inviting serious CB users, experts from Telecom and government agencies, to talk about the future use of personal radio. It is, after all, one of the most significant aspects of British life, indicating a welcome renaissance of the "hure to help" spirit (though that has never been absent from the overwhelming majority of British people).

In looking at the future of CB, it may be in this area of social regeneration — people using CB to help one another — that we should look.

Visually impaired and disabled people have obviously benefited from the advent of CB in other countries and some products are now designed with the needs of blind

people in mind, eg with controls marked in Braille. These are base stations for the most part, though some handicapped people are also glad to have CB in their specially-adapted cars. With a base station the blind or handicapped person can exchange conversation with a group of other people, remembering that CB does permit small group use, not merely one person speaking to another, as is the case on the telephone.

There is also opportunity to keep up to date with news of the neighbourhood simply by listening to conversations on CB — and this can be very important to people whose opportunities to leave their immediate vicinity are impaired by illness or disability.

In addition, educational groups will be interested in CB, and parent-teacher groups will no doubt be raising funds for a school CB in the near future. The school base station would have many uses, relating to teaching in social studies, communication and self-expression etc.

Maybe this is taking CB a little too seriously, since many people say that CB helps add fun to life. However, the people who claim this are often those involved in fund-raising for local charities by the CB club. They would no doubt say that fund-raising is fun, even if the ideas for raffles are sometimes hard to come by; treasure hunts, bus-pulling and sponsored walks are among other fund-raising projects. Veterans in the CB movement also say that "CB is all about friendship" and has helped to break down the sense of isolation often felt by people in our pressurised society. Certainly as CB develops in Britain, there will be **Breakers' Weeks** at holiday camps, maybe even a CB holiday at Butlins.

Despite the marvels of electronics applied to video and the onward march of television it is doubtful that CB-TV will ever be all that popular, even if it were possible. The attraction of CB radio is that it is informal, helpful, can be used more or less anywhere, and does not demand too

much of the user. It is a reaction to the more passive, if entertaining areas of consumer electronics — television, radio etc. The impact of CB on telephone use and thus the income of Telecom is another matter, perhaps, and it would seem appropriate if Telecom in these enlightened times started marketing high quality CB (as indeed it may).

"When reprimanded . . . she retorted that it was nothing to do with her. The devil was causing all the trouble and pushing her frequencies about."

The market would seem to be considerable since a high percentage of telephone users would be strong sales possibilities. The US, considered with Japan to be the most enthusiastic users of the telephone, are also the keenest users of CB, proving that there is no need to think in terms of competition between the two. The special advantages of the telephone are clear and unassailable — relative privacy, and the ease of selective person-to-person communication, long distance and international. CB radio cannot offer any of these, but it does offer freedom from cables and fixed site, as in the home or telephone kiosk, CB makes the car easy to contact — far less isolated, and safer. Since almost every other car in the States now has CB radio, we may take that as a clear indication of the shape of (good) things to come.

The more professional use of radio by the hams or amateur radio users will in the long run benefit from the advent of legal CB, and make it a more popular hobby, with more entrants to the examinations which all hams have to take. As for the broadcasters, we will see the use of CB by local radio stations, by approved brokers sending in on-the-spot news of traffic, weather, sea conditions etc remembering that the marine use of CB has hardly been touched in this chapter.

So there is a great deal of reason to be optimistic about the future of CB in Britain. While 27MHz FM equipment, made to strict specifications, will be more expensive than AM rigs, this is a standard that we can use and develop quite happily. It's time to start saving those pennies, until our friends at the local Post Office start helping us save by offering CB Stamps. It could happen . . .

231 Radio Telephones

Competitors are reminded that the use of Radio Telephones is illegal unless covered by the relevant Home Office Licence. 'CB' type radios must not under ANY circumstances be used. Radio Telephones are being used on this event for emergency and safety reasons, and these services, if on the same wavelength as a competitor, MUST be given priority.

Extract from the Additional Supplementary Regulations of a recent motor rally. While the warning is definitely there, it does appear that the organisers of the rally are aware that CB radio use does happen! CB could find a home in rallying and racing cars.



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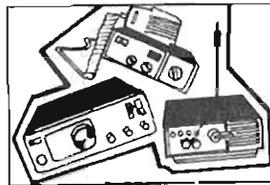
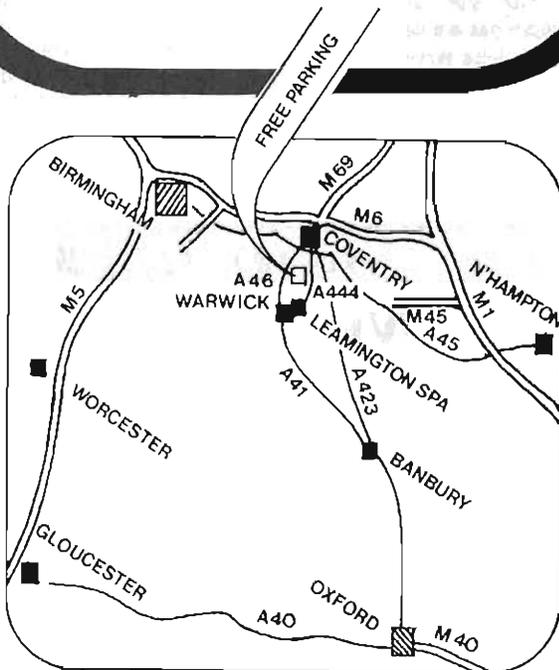
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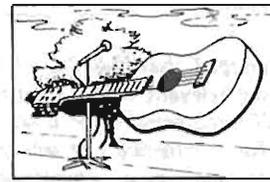
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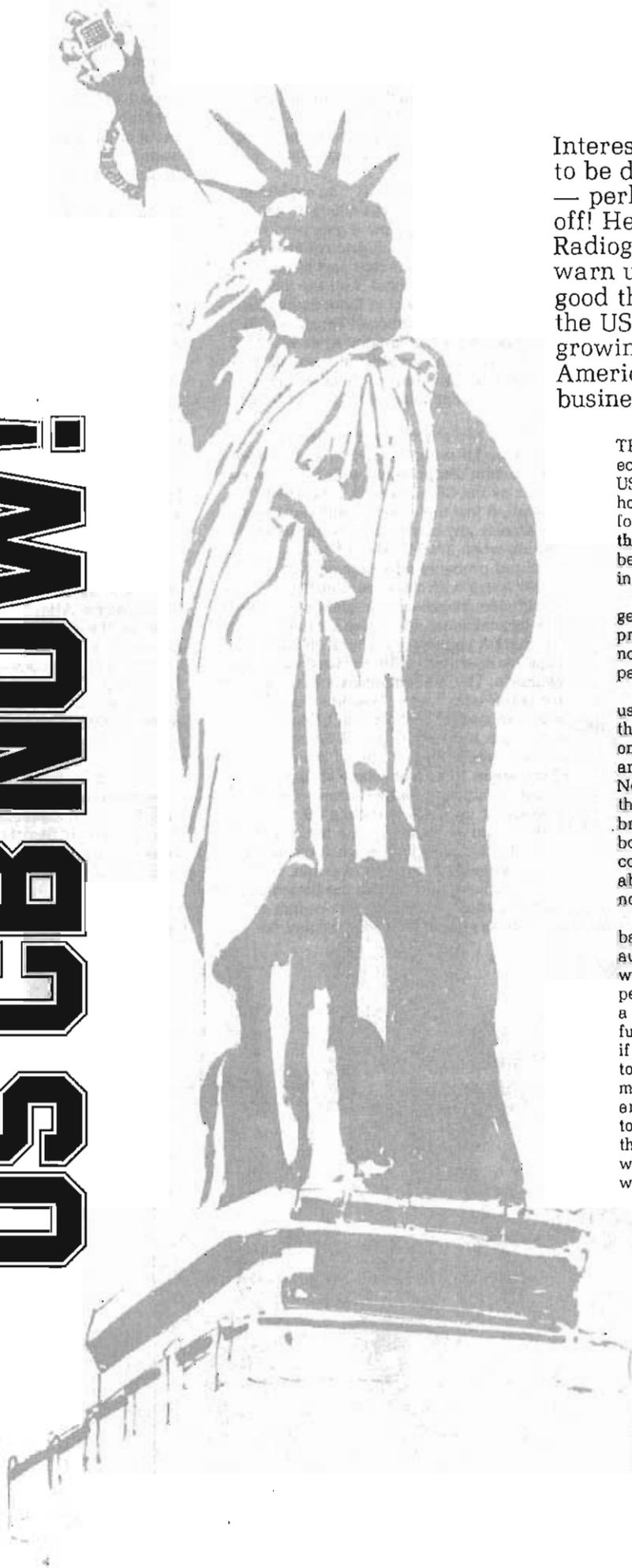
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US CB NOW!



Interest in CB in America seems to be drifting off at the moment — perhaps the novelty has worn off! Here David Lazell and the Radiogram Kid get together to warn us of the pitfalls, and the good things coming from the US of A. Will Britain's growing interest in CB revitalise America's enthusiasm for the business?

THIS article started out as a serious economic analysis of the CB scene in the USA. However, **The Radiogram Kid** got hold of it and as he has been going west for years, offered to produce **Gunfight at the CB Corral**. We're not sure if the story below will ever be filmed, but at least it is in the Kid's own words.

'Well now, you folks must have the general idea that CB is blossoming like the prairie rose in the US of A. Business right now is more like a plate of grits — good in parts.

Teke, for example, the CB antennae that used to occupy more conversation round the kitchen table than who shot JR — at one time there were more than 100 CB antenna manufacturers across the USA. Now the figure's about 10. The recession in the USA has had more problems than the breaker trying to find a valve in his despair box (ie, the box in which spare CB components are kept). Folks don't think about trading in their CB radio if they're not going to trade in the family car as well.

The only thing that is likely to get CB back to the boom years is a rig that automatically tunes to a bank manager willing to give you a loan at 10 per cent per annum. Or maybe even the address of a good pawnshop! CB business is pretty fundamental to the well-being of the hobby if only due to the fact that true CBers love to look at the adverts for new rigs — maybe even play with them at the store — end go in for a form of self-torture. I used to think that if the manufacturers could get that nice Mister Liberace to advertise a rig with a candalabra on top, it would be a winner.

!NOW ON CB S

Look at it this way: CB is now so much part of American life that most motorists think of it as a sort of first aid kit, to be stacked under the seat or in the boot, and brought out only when really needed. I spoke to a nice friendly man about this whole affair, and despite the fact that he had a car at least two years old, he did not seem too depressed by the economic outlook.

"When we first had CB," he explained, "it was handy to find out where to get gasoline in a hurry. Now it gets used to complain about the high price of energy. I don't need CB to hear that sort of thing. My wife grumbles about it all the time." He even advocated a sort of Emergency Cheer Channel, to which subdued drivers could tune, and get a few laughs. After all, W. C. Fields, one of the greatest of them all, had figured out a few happy "handles" long before CB, using outrageous names in his films.

One or two observers from Britain, otherwise known as the Old Country, have been a little disappointed with the US scene as far as the CB element is concerned.

Well, it just ain't singing and dancing in the streets any more, like it might be in Britain when 27MHz AM is finally legalised probably sometime around AD 2099! Along with the impact of the worldwide recession, you might say that CB has become more specialised. At one end of the market you get casual use and ding-a-lings (ie, operators with no class) using the channels. The real enthusiasts have gone in for better equipment, these are a small selective market who wouldn't think of wearing a trucker's cap or a fancy patch on their jeans. As a matter of interest, there seems to be a shortage of high quality equipment and we heard of one wholesaler until now handling CB rigs and nothing else — these days he has to carry a lot of other lines to keep cash coming in. Toys and teddy bears, for example, so that you don't have to return to the homestead empty-handed just because he cannot sell you a base station with LED display. In

some places they say: "If it's worth getting, you can't get it" but that's maybe an exaggeration. Good things are worth waiting for, as W. C. Fields drewled when he heard that the stage bringing Miss Mae West had been delayed by outlaws.

Maybe I should point out that interest rates in the US of A have been very high, even higher than those thrust upon Brits by banks ready to let you sign a cheque or two. That being the case, firms ran down stocks, and there was also quite a bit of what economists call "retionalisation". That's a fancy word for some firms going out of business and other firms gobbling them up. High quality walkie talkie rigs remain popular, remembering the outdoor life pursued by many a good American. And as we all know quality base rigs have a definite market.

Where the decline seems most evident is in the mobile market, though the truckers just keep on trucking. And breaking. They often wonder what all the fuss was about. As one veteran flyer of the freeway put it: "The way you magazine folks talk about CB, we figure you just found out how to put air in your tyres." Real philosophers, those trucking men and their insights into life don't cost you a penny. Strangely enough, it may be that the Old Country, for all its problems, might even generate life into the US CB scene. After all, the country that invented the steam engine must know something about CB and GB's departure into FM will make some Americans wonder if they ought to get something entirely new. Many a worthy native of Texas knows that handling 928MHz can be just as tough as riding a motorbike across the Grand Canyon.

What CB Stateside could use right now is maybe a touch of tradition and high style from Europe. If someone opted to export CB rigs made in Stratford-on-Avon it could transform the US market! Except remember that 'Shakespeare' just happens to be the brand name of a distinguished range of antennae from the USA!



The CB club scene in the USA is still very active but like other aspects of CB, it has settled down, grown up, and maybe sprouted a few grey hairs. These days, clubs have a real family involvement, and members have been using CB for a long time. It's not so easy to get new young members as it once was, though no-one is saying (yet) that CB has got MA (Middle Aged). With its good buddy outlook, CB clubs are noted for their fund-raising efforts and general good deeds. We haven't heard of any cluo marching yet for the introduction of a 928MHz service, but it could happen. There are various conventions, sometimes held on a state basis, and eyeballs are relatively frequent. But here again it seems to be more in the nature of nice folks having a good time keeping up friendships, than promotions. Maybe that is because the number of new rigs coming on to the market is so few, also that manufacturers are not so able to use eye balls in their public relations programmes. Economics is the name of the game. As Old Stiffkey Special, our Laughing CB Economist said the other day: "The recession is like having teeth out without gas. It doesn't really last for ever — it only seems that way."

"... accepted as naturally as sex."

Naturally, the various voluntary groups working for road safety, and help in tough situations, remain an important feature of CB life. Handbooks often list REACT groups, their situations and call signs, etc. The CB magazines underline a more technical approach to the hobby, with perhaps the most famous monthly, **S9 Hobby Radio** incorporating in-car radio, in-car stereo, ham radio and other aspects of the medium as well as CB itself, it also includes reference to "in-car reder" which we are not likely to see in the Old Country. Another popular monthly is **CB Magazine** edited from the other side of the USA in Costa Mesa, California. Here, a wide

interest area is covered. Maybe this shows that CB, on its own is not sufficiently important an interest to merit publications on its own. Or maybe it proves that CB gets people interested in other aspects of radio communication.

Well, this humble report about CB in the USA may not exactly have the impact of an MGM movie. But remember that the Americans developed CB for ordinary people at a time when our wisers and betters in Britain were still sitting on it. They developed it as an integral part of everyday life, to be accepted as naturally as sex. Whilst specialist interests like sideband, scanners and radar are growing, American CB is today so much a fact of life that most tend to wonder why Britain has become so excited.

That other splendid country with wide open spaces, Australia, could be as interesting a study as the USA. For while Australia started out with 27MHz AM, legalised after a vigorous campaign, there is now a real interest in UHF, with use of 477MHz UHF, especially by specialist groups.

Marine users are abandoning 27MHz AM and going for UHF as a more useful frequency. Philips in Australia have already installed many UHF rigs in craft used for life-saving emergencies. In addition, a Melbourne radio station is establishing a UHF CB network to obtain accurate weather reports from stations around the two bays at Port Phillip and Westernport — and this certainly seems to be a development for the future. Australia has its own road safety monitoring network called CREST. And maybe those hard-working breakers use that famous make of toothpaste, too!

Yet even in Australia, CB, according to some, "ain't what it was". There has been a decline in the number of users and a fast disappearance on the part of some companies who originally saw CB as a BD (Businessman's Dream). Only it wasn't. Australia has Citizens Radio Repeater Association (CRRA) devoted to the cause of

CB on UHF, as well as its National Citizen's Radio Association of Australia (NCRA). Australia's major CB monthly, **CB Action**, published from Melbourne, covers the activities of these and other CB groups, including CREST (Citizens' Radio Emergency Service Teams). However, **CB Action** is a vigorous magazine still speaking its mind and suggesting a more youthful audience than most of the US CB publications — however, this is just guesswork on the part of the **Radlogram Kid**.

From reports of the early days of CB in Australia, one wonders why it was not written up for the movies. In a back issue of **CB Action** (quoted in the British **CB News**, March 1981) a writer called for more standards to be laid down by the Australian government: "CBers have seen no particular action from the Post and Telecommunications Department, and anyone who has sent five minutes listening to CB in a large city knows that the air waves are chaos. People swear, music is being played, people use illegal frequencies — in fact, there's not much that doesn't go on. . . . Bullets fired through doors, CBers getting beaten up, CREST base stations being set on fire, and all in one night in Melbourne. Sydney (we understand) is just as bad. Where is the Post and Telecommunications action?" Maybe CBers need the cavalry, not just the Post and Telecommunications Department.

Fortunately, that kind of CB action has largely dropped into history. From June 1980 to October 1980, the number of licensed CBers in Australia dropped from 78,000 to 73,000, though this does not include those who avoid the licence formalities. The figure does not seem very large (given the size of Australia); on the other hand, Australians use radio in other ways. Look at the possibilities of other forms of short-wave communication. One lesson that British breakers are learning is the need to have good basic standards for equipment. CB equipment in Australia has to meet government-approved standards

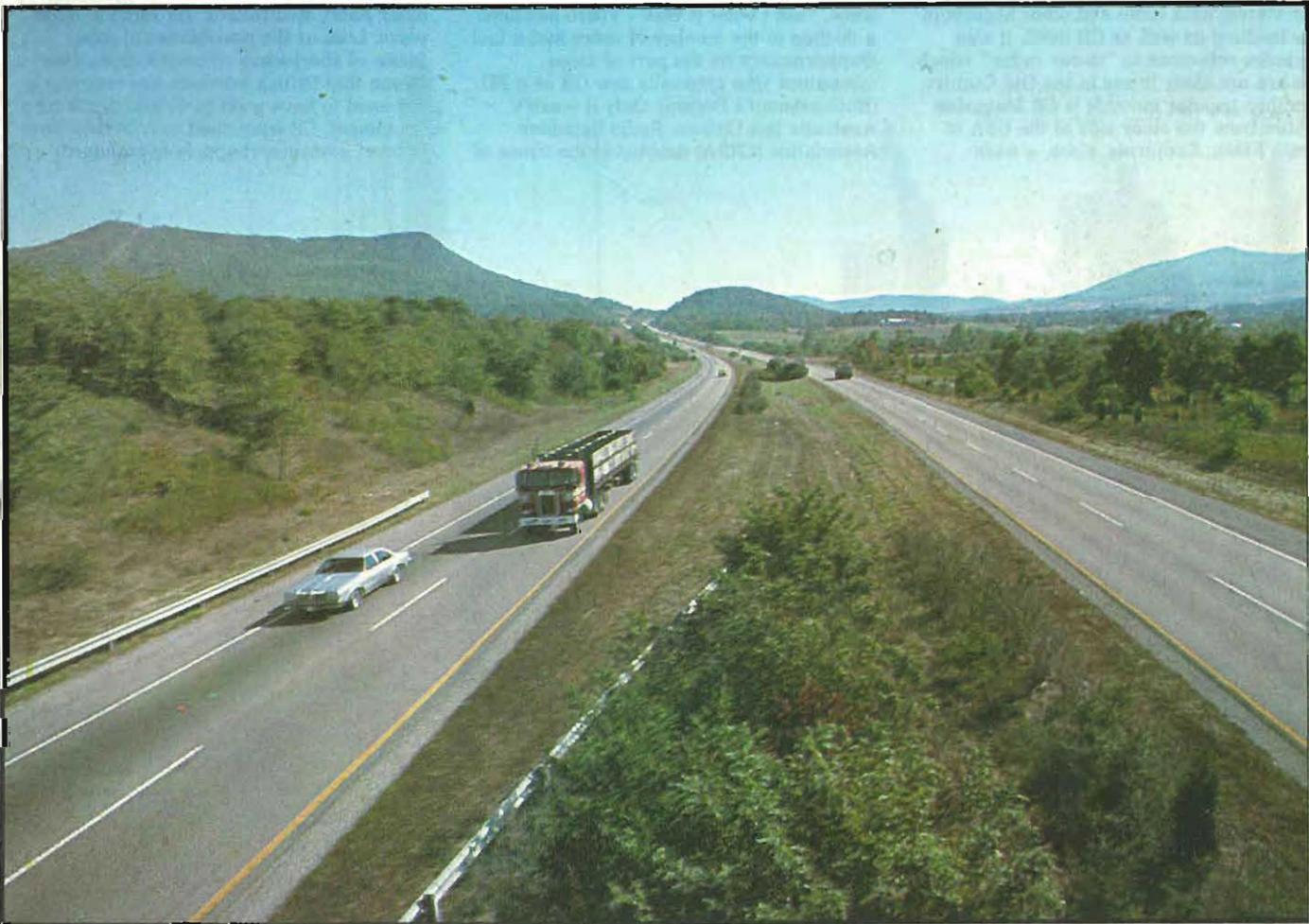
US CB NOW!

and given the number of rough rigs unloaded onto CBers in the early days, it seems to be a generally popular move. The future in Australia has many possibilities, including the development of ATIS (Automatic Transmitter Identification Signal). With ownership and rig-type fed into a government computer at Canberra, it will be possible to trace the owner of any rig heard upsetting the tranquillity of Breaker Country. Australians have been warned that they will have to carry the cost of this system. Echoes of warnings offered to aspiring CBers in Britain, once given a legal and supervised system.

One great benefit from the US though has been in country-and-western style music, growing from the interest in CB. Australians may have one or two song titles themselves, including the title, **Keep Your Woolly Skull On**, recorded by a Mr Buster Noble long before CB got that popular. So far, we have not grown that kind of music in Britain, though maybe the Wurzels could oblige. After all, the interference from a local breaker may well convince neighbours that AM stands for Awful Muckspreader. One thing's sure; people interested in CB in Britain can make some friendly contacts in the US and Australia on their journeys, via organisations listed in the magazines. And there's plenty of scope for QSL card swapping in both of those great nations.

If QSL cards had been invented in the early days, Wells Fargo would have made a fortune. Also, the Deadwood Stage would have had Calamity Jane using the CB and telling Wild Bill what to do with his lollipop (ie, microphone). The history of the Old West could have been a lot different, but where would you have put an antenna on your horse?

A multitude of two-way radio equipment is available to American breakers. Like the rig and hand-held units pictured below. The picture at the bottom of the page shows just how lonely the interstate highways can be!







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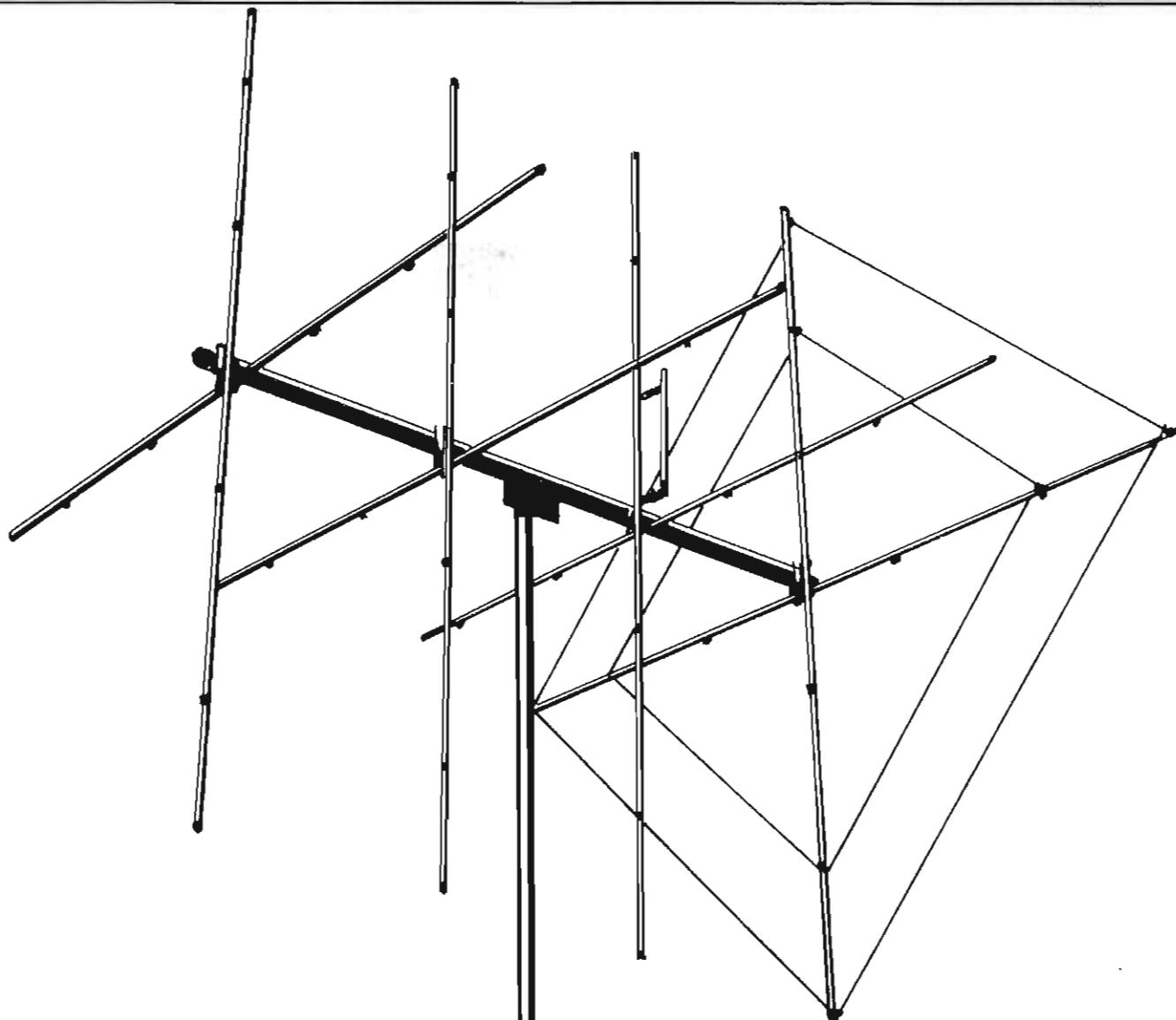
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By Russell Fisher



SSB Yaesu transceiver FT707 with SWR and power meter.

BASE STATIONS



IT was the truckers' fault, all those years back in the beginning when they stamped their unmistakable trademark on the world of CB radio. Since then, anyone with a rig, especially in the country, has inevitably been branded as being both a nutter and worse still, a motoring freak.

Taking into consideration the fact that 90 per cent of the rigs currently used in this country must be mobiles, the above assumption isn't really surprising, but with the growth in popularity of the pastime, the growth in number of rigs installed in the home has increased accordingly. Base stations are here to stay.

Owning a CB can mean a great number of things, but it would take a breaker with very strong willpower to resist the temptation of perching his car on top of a lonely hill in the middle of the night to spend a few hours chatting to his friends on the air. All in all it's an addictively inhospitable business which could very well lead to a few weeks in hospital due to pneumonia. And the idea of jaw-jacking from a comfortable armchair in front of a toe-warming fire should appeal to everyone but the hopelessly masochistic.

Dual purpose

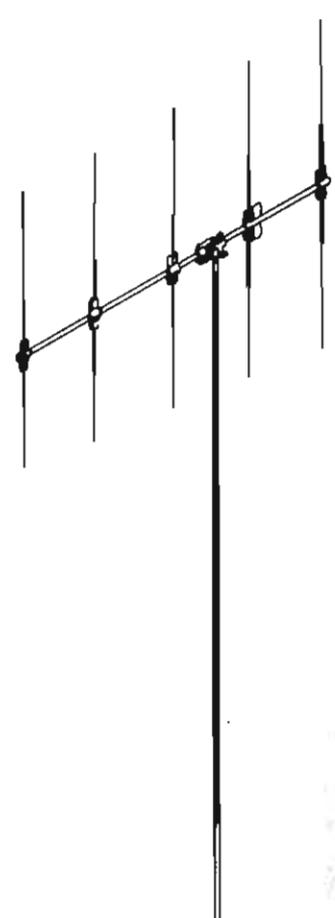
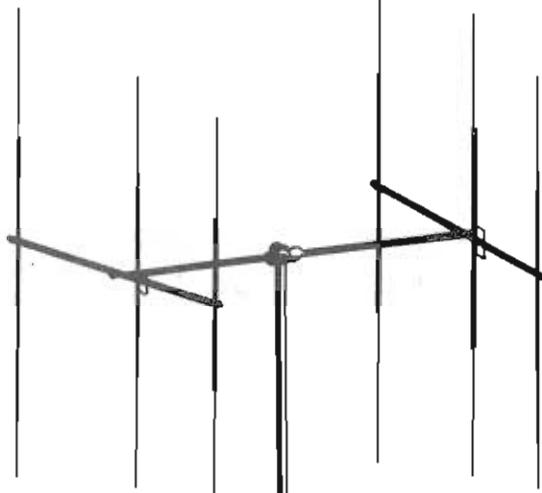
To the uninitiated the words "base station" probably conjure up images of masses of knobs, dials and meters, but in actual fact such a set-up can be simplicity itself to install and operate. It can often double as a mobile, too. At the moment this is often the case in Britain, as very few of the specially-built home base sets which run straight from a mains supply have managed to filter through the usual channels, and breakers have been left with little other choice than to use the rig they first bought to use in the car or a more expensive (although still mobile) sideband set. Mobile rigs are often designed for that specific use, but once installed in the home with a half-decent twig up in the eaves, they will push out a signal far better than they ever could do in their intended position in a car.

If you do plan to carry on in this civilised manner, then you will need a number of basic bits and pieces to get off on the right foot. A rig of almost any shape or size, a form of power supply continuously feeding the rig with 12 volts DC (Direct Current), a mains-fed battery charger to ensure the power flow is consistent and, of course, an indoor or outdoor antenna. The above items aren't exactly going to thrill your nearest and dearest when she trips over them in the middle of the lounge, so it's usually a very good idea to give a bit of thought to the most sensible place to site your base. You've obviously taken the rig out of the car because of the sub-zero temperatures outside, so pick a nice warm spot in the house where you're least likely to annoy your fellow occupants by bellowing "10-4, Good Buddy" during a crucial moment in *Crossroads*. Setting aside a separate room purely for using your rig is ideal, especially if that room is on the upper storey of the building and will mean a relatively short antenna co-axial cable and ease of fitting. Strive to position the rig next to an outside wall, again to ensure that you aren't pestered by yards and yards of cable winding its way throughout the house before it reaches your twig on the roof; winding co-axial cables can mean the difference between a good or a bad swr and in any case, cables aren't particularly attractive in the first place.

Avoid TVI

Try to avoid other electrical appliances which may cause interference to incoming signals and give your fellow householders and neighbours a thought when transmitting during peak television viewing hours — CB has received its fair share of bad publicity as it is, and hostile neighbours certainly won't help. Special TVI (Television Interference) filters are now on the market but I'll leave someone else to discuss those elsewhere in *CB81*.

OK then, now that we've got you sitting comfortably with feet up and coffee cup in hand, we'll tell you how to screw and



Typical examples of vertical beam-type base antenna.

BASE STATIONS

crimp it all together. As you're more than likely to use a mobile rig, remember to prop up the front with some small object such as a piece of wood — speakers are invariably mounted facing downwards, therefore sound will be blocked if the rig is placed flat on top of a coffee table or whatever. You could, of course, play the real professional and build yourself a small unit to which you could bolt the rig in a normal hanging position. Lezy, eh? Well, just prop it then.

Power mad!

Power for your home base will probably come from a car-type 12 volt battery, a secondhand example of which is easily obtainable from almost every scrap yard, although try to go for one of sensible proportions. Car batteries aren't the most petite objects and can get quite messy, so a quickly knocked-up container could be the solution, or if you've money to throw around shop for the specially made plastic boxes which caravanners and boating enthusiasts often use. Check the condition of the battery regularly, especially if it's secondhand, as acid can make rather large holes in your beautiful shag pile, or as an alternative you could try one of the new sealed cell types. Batteries can also give off dodgy fumes. Whichever power supply you go for, a fully charged battery, even without a trickle charger linked in, should keep a rig running for between a week and a fortnight when in normal evening use.

Talking of trickle chargers, do not let this term confuse you — a trickle charger is simply an everyday car battery charger which can be picked up from any motor accessory shop for a few pounds, and this should meet your every requirement. When in operation the charger takes 240 volts AC from the mains power supply, feeding the battery which in turn feeds the rig with a continuous 12 volts DC. Apart from its mains cable, the charger will have two small leads coming from it, red and black, each with crocodile clips fitted. Red, of course, is positive and should be attached



A Turner Expander 500 base mike with its mobile counterpart.

to the positive terminal, etc. This colour coding is the simplest thing in the world to overlook, therefore it's often best to label each of the leads to avoid nasty accidents and burning smells. Whilst on the subject of smells, position your battery and its charger in a well ventilated position, as when it is being charged the cell will give off explosive, noxious gases. Whether you hope to use either a battery or a transformer, you will need to locate your rig reasonably close to a mains electricity supply point.

Most large CB equipment specialists will be more than pleased to show you their range of transformers, but whatever your choice, make sure you buy one with at least a three amp regulated DC current which pushes out 12-14 volts. Apart from a small light to indicate when it's on, the transformer will require little more fiddling around with, and is surely well worth the extra expense. Do not take any unnecessary risks by trying out your old train set or Scalextric transformer — they may look more or less the same, but unless you're fairly well up in the world of amps, ohms and volts, you may not spot the subtle

but crucial differences.

So there you are — you are now the proud owner and constructor of a simple home base CB set-up, and all that remains is to pull up your favourite armchair, take a sip of that boiling hot cup of coffee, a puff of the pipe and then venture forth into a new world of breaking without the worries of unidentified approaching headlights, engine interference and the many other drawbacks of mobile CB.

Twig confusion

Click! "Ssfunny . . . just switched on and nuthin's 'appened . . . little lights are all workin' but there's no hiss and crackle comin' out. Wot's wrong with me new 'ome base, then?"

The gentlemen above has just reached the first stages of panic and will soon start unscrewing the back from his rig. He has made one fundamental mistake — he's forgotten about an antenna, the most important piece of equipment he's ever likely to buy and the one which causes the most confusion and clashes of opinion.

BASE STATIONS

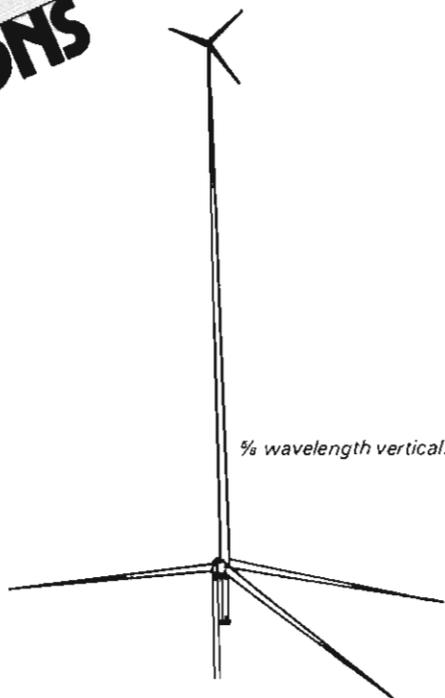


To begin with, however, the home base CB user has a head start over anyone else, in other words the roof of his house or castle is likely to be many more feet off the ground than that of his car and he's got a much wider choice of positions in which to fix his antenna. This means that home base twigs have a much easier task to perform without added complications and therefore are very often much cheaper and more simple than their smaller and much less efficient mobile counterparts. **Do not** even attempt to key your mike without some kind of antenna connected as your rig will almost certainly be seriously damaged! As mentioned before, the higher your antenna the better, therefore look for a good spot either on the chimney or on the highest point of the eaves.

Although length of a mobile antenna has to be restricted for reasons of practicality, the sky's more or less the limit with a home base twig and a wide variety of designs are available on the market. One of the most popular and cheapest of these is the "¼-wave vertical", which can be used either indoors or outdoors. This twig consists of a vertical pole usually with three radials which resemble a tripod and act as the ground plane — this antenna can either be mounted on a pole attached to the roof which extends its height; it can be sat flat on the ground or any other surface by means of its radials, or it can be positioned in an attic or spare room within the house. Such a twig usually has a db gain of one and will therefore multiply your outgoing power by about 1.2.

A few quid

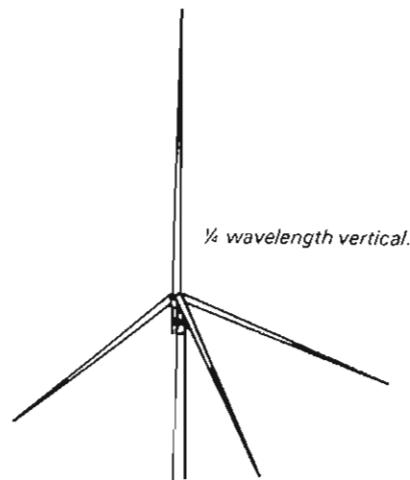
It's usually in this format that a mobile antenna can be used for a home base, bolting upright from the three radials which take the car's place as a ground plane. ¼-wave antennae range in price from about £20 (at the time of writing), but because of the simplicity of their design a home-built version can usually be knocked up very quickly for only a few pounds. Believe it or not, even the good old DV27



will give an adequate base station performance when rigged up in this way!

Gain is the key word as far as base antennas are concerned, and because the simple ¼-wave antenna boasts a db gain of one, rising standards of performance farther up the range are still measured in this way. I'm not about to start explaining to you just exactly what this db gain thing is (someone else will elsewhere in this mag), but just work under the assumption that the more db gain your antenna gives you, the farther your signal will push out, OK? Confucius, he say, the plot it thickens, as now we start to encounter the choice which exists between using what are known as directional or omnidirectional antennae. I've discussed the ¼-wave twig first of all because it should feed you with a basic understanding (very basic) of what an omnidirectional antenna is; in other words one which pushes out your signal equally in all directions. A directional antenna concentrates the signal in one direction and is therefore more likely to reach farther.

Directional twigs, often known as beam antennas, are the ultimate for the home base transmitter, especially if they are fitted with a base rotator with which its operator can point the antenna in any direction he wishes. If you really want to



know how mind-boggling these things can be, ponder over the fact that a 20db gain figure is easily obtainable at the top of the range . . . in simple terms (if such a thing exists at this level) it means that your signal would be multiplied in power by around one hundred times! If you think back to the times when television aerials weren't litchy little things, then you'll get an idea of what a directional beam looks like — a vertical pole with a horizontal pole attached in a T-joint at the top with lots and lots of up, down and sideways bits and pieces emanating from it . . . one's neighbours will think one is still tuning in to the days of *Watch with Mother* and *Muffin the Mule*. What? These bits and pieces coming from the horizontal part of the antenna are generally known as elements by those in the know, and beam antennae have at least three or more

The juice is fed through the co-ax cable into the first of these elements known as the driven element, which does all the work and leaves the others farther along the line to either reflect, concentrate or focus the signal. The more elements an antenna has the more gain it will have, end so on. Remember when mounting that these beam jobs can be heavy old beasts and will require quite a bit of tying down or you'll find it taking off stateside-direction with the aid of a force ten gale.

Radio waves also travel in a vertical or horizontal direction (which is known as polarisation), although most British breakers would be well advised to steer clear of horizontally-polarised beam antennae as they are still somewhat rare and are not completely compatible with signals generated from a vertically polarised twig such as mobile or normal beam.

Quad beams

Progressing farther up the scale we come to quad beams (what?) which look much the same as a normal beam apart from the delicate stretches of wire running from the ends of each element. These pieces

BASE STATIONS

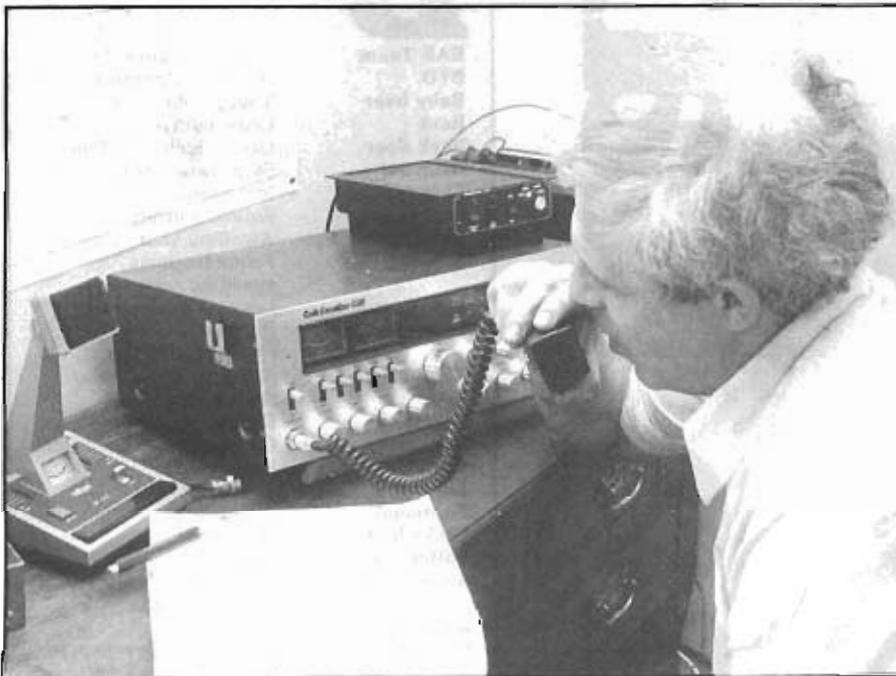
of wire are used to help the antenna to drag in other stations signals rather than to boost your own, and these are likely to be the most expensive form of antenna you'll come across in your travels through CB land.

Nowt much else really to be said on the technicalities of antennae without delving too deeply, but most specialists should be able to give you the majority of the facts if you're prepared to ignore the inevitable sales jargon.

The most important factor to keep in mind when mounting your twig is strength and durability. Kits come with most base antennae for mounting and instructions should be followed to the letter, and it may be a good idea if you want to supplement the manufacturer's mounts with more of your own, to visit a local television repair shop — they should stock a wide variety of fittings and will also pass on dozens of helpful tips to ensure that (a) you don't fall off the roof; and (b) the antenna stays on the roof. Remember that if you use metal guy wire to hold the antenna rigid make sure that you fit in-line insulators every three feet or so or the signal will be interfered with.

Antenna co-ax (and definitely use antenna co-ax, not television stuff) should be fixed to outside walls with small studs which you will again be able to pick up from your local TV repair men, and try to make the length of cable used as short as possible to avoid loss of power. If you work on the principle that your antenna will have to withstand Hurrican Daphne and everything else the weatherman deems to fling at it, then everything should be OK.

So there you are, you molly-coddled breakers . . . no more frozen tootsies in a nasty, 'orrible car, and maybe even one of these deys you'll fling out that monstrosity of a battery and lesh out the pennies for a plug-in-the-wall, purpose-built home base rig with more knobs and diels than the wife's microwave oven. Come to think about it, if it's going to be 928 at some time in the future, then you'd be just as well plugging the antenna co-ax into the back of the microwave . . .



Typical British home base rig with other important pieces of equipment — choice of mikes, 100-watt linear amp, 12 volts DC car battery and maps. Bag packet and wooden prop are left to the breaker's own discretion.

BASE STATIONS

The Language

A

Ace	The MAN; important breaker
A little help	Additional power
Affirmative	Yes
ANL	Automatic Noise Limiter
Acne	Rough road
Advertising	Police car with flashing lights
After burner	Linear amplifier
Alligator station	Big mouth/incessant talker/a radio station that transmits but doesn't receive
Anchorman	Vehicle ahead reporting on conditions
Anklebiter	Kid
Appliance operator	Breaker with no rig knowledge
Apple ears	Breaker who just listens
Arty cart	Customised van
Anchored modulator	Home base station
Anchor bodles	Wife and kids
Abstively and Posilutely	Definatebly and Indubinatev
Adios/Adieu	Signing off
Air jockey	Pilot
Alice in Wonderland	Confused or lost driver
All the flowers	Best wishes
All washed out	No police ahead
Apple	Core of the city, or old time breaker
Aviator	Fast driver

B

BAR Team	Tough truckers
BTO	Big Time Operator
Baby bear	Young policeman
Back	Come back, reply
Back door	Last vehicle in a line
Back out	Stop transmitting
Background	Interference
Backslide	Return journey
Back to you	Awaiting your reply
Bagging	Police trapping speeding cars
Bailing out	Leaving the highway
Base station	Rig based in one location, ie at home
Bambi	Naive driver
Band aid	Ambulance
Bareback	Driving without CB
Barefoot	CB without an amplifier
Barley pop	Beer
Barnyard	Truck with livestock
Basement	Channel One
Basketball	Monitoring
Battery acid	Coffee
Bean Hauler	Carrying vegetables/fruit
Bean pub	Coffee shop
Bean store	Restaurant/service area
Bear	Policeman
Bear bait	Speeding vehicle in front
Bear bite	Get a ticket
Bear cave	Police station
Bear in the air	Police in aircraft
Bear in the bushes	Speed trap
Bear meat	Speeding vehicle without CB
Bears extinct	No police around
Bear taking pictures	Radar trap
Bear trap	Radar trap
Beast	Faulty CB rig
Beating the bushes	Flushing out radar traps
Beaver	Female
Beaver cleaver	Womaniser
Beaver hunt	Looking for women
Beaver with a kick start	Long haired male
Bedbug	Volkswagen camper
Bedsheets	Overmodulation
Bedbug hauler	Removals van
Beer town	Burton-on-Trent
Better cool it	Stop transmitting
Big apple	London
Big circle	North Circular Road
Belly up	Overturned vehicle
Bench	CBer listening in
Beany chaser	Strong coffee
Big brother	Home Office, police, GPO
Between the sheets	Sleeping
Bible	Log book
Big daddy	Home Office, GPO
Big four	Yes
Big mama	9 foot whip antenna
Big slab	Motorway
Rig switch	On/off switch
Big teapot	Service area
Bird cage	Liverpool/Heathrow airport
Bird seed	Food
Bird town	Liverpool
Birdyback	Delivering or collecting from aircraft
Biscuits and gravy	More food
Bit on the breeches	Stopped for speeding
Black box	Hearse
Black city	Crowthorne
Black gold	Oil
Black water	Coffee
Bleed over	Breaking into other channels
Blinking winking	School bus
Blinky	One headlight on
Bloodbank	Redhill
Blood box	Ambulance
Blowing me out	Receiving loud and clear
Blowing your doors off	Overtaking you
Blown doughnut	Punctured tyre
Blue light	Police car
Blue note	A5 road
Bluesville	Ipswich
Bodacious	Receiving well
Bog off	Please go away
Bone box	Ambulance
Boom town	Wigan
Boob tube	Television
Boots	Linear amplifier
Bootlegging	Using someone else's CB
Boot rest	Accelerator pedal
Bottle popper	Beverage truck
Boulevard of broken dreams	Road with speed traps
Box on wheels	Hearse
Boy scout	Young CBER
Brain bucket	Crash helmet
Brands Hatch	Cuildford
Breaker	Cutting into a channel
Breaker busted	Caught by Big Brother
Breaking up	Signal cutting out
Brew	Tea
Bring it back	Call for a reply
Brown ale	
country	Newcastle upon Tyne
Broken tongue	Liar
Brown bottle shop	Pub
Brush teeth and comb your hair	Police ahead
Bubblegummer	Teenager
Bubble gum machine	Police car

Bubble trouble
Bucket mouth
Bull jockey

Bumble bee
Bumper jumper

Burn your shoes
Busted zipper

Puncture
Obscene talker
Someone who talks nonsense
Motorcycle
Vehicle following close behind
Walk
Unlocked/open rear door

Crackerbox
Creepy town
Crocodile station
Crossing the hump
Crank your handle
Cruising

Crumb snatchers
Curtain climbers
Customers
Cutting loose
Cutting some zeos
Cut the co-ax

Small car
Crawley
Someone who listens

Driving over the hill

What's your handle?
No particular destination
Kids
More kids
... for speeding tickets
Stopping transmission
Getting some sleep
Signing off

Electric teeth
Envelope
Erector set
Evel Knievel
Evel Knievel smokey
Everything is slick
Eyeball

Police radar
Unmarked police car
Bridge
Motorcyclist
Police on a motorcycle

The road is clear
To meet another CBER in person/to see another CBar

C

Cackle crate
Crackberries
Cactus juice
Can
Cancer stick
Candy store
Camera
Cardboard package
Carpet crawler
Carpet monkeys
Cartel

Cash register
Catch you come later
CB land
Cell block
Cement mixer
Ceramic falls
Channel jockey
Charlie
Charlie Brown
Charlie's Angels
Charlie town
Check seat covers
Cherry
Chew and choke
Chick
Chicken box
Chicken shack
Chief bonnet lifter
Choke and puke

City of concrete cows
Chopped top
Christmas card
Chrome dome
City kitty
Clean
Clean and green
Clear
Clip joint
Clug town
Clothes tree
Clouds
Coal bucket
Co-ax is ringing
Coffee pot
Coke stop
Cold coffee
Come back
Come on
Confetti
Convoy

Cooking
Cool it

Copy
Copying the mail

Cortina
Coupon
Covering ground
Cow pie
Cowboy

Truck carrying poultry
Eggs
Alcohol
CB rig casing
Cigarette
Stop for refreshment
Radur trap

Box Hill, Surrey
Kid
Kids
Group of CBERs on channel
Toll bridge/road

Talk later
Network of CBERs
Home base location
Noisy engine
Shower
CBER
Home Office
Yes
Police women
Canterbury

Look at lady passengers
Police light
Restaurant/service area
Woman/girl
CB rig
Bognor Regis

Chief mechanic
Motorway service area/road cafe

Milton Keynes
Short antenna
Speeding ticket
Roof aerial
Local police
No CB in car
Clear ahead
Signing off
Hairdressers
Bolton
Railway crossing
Reigate Hill
Carrying coal
Call for a specific CBER
Restaurant
Rest stop
Beer
Your turn to talk
Your turn to talk
Snow
Line of vehicles in CB contact
Driving
Slow down/watch out police
Receive
Listening to other breakers on the CB
Guildford
Speeding ticket
Speeding up
Muddy area
Flashy character

D

DDT
DX
Dagenham dustbin
Dandruff
Dead foot
Dead heading
Dead wheel
Decoy
Diamond in the rough
Dickless Tracy
Diesel digit
Dime channel
Dinosaur juice
Dirty thirty
Dirty with bears
Dixie cup
Dog biscuits
Do it to it
Do you copy
Donkey
Don't feed the bears

Doughnut city
Doughnuts
Double barrel

Double 88's
Double L
Double nickel lane
Down
Down and gone

Down on the side

Dragging wagon
Dream city
Dreamer
Driving on the peg
Drop the hammer down

Don't do that
Long distance

Ford car
Snow
Slow vehicle
Low on petrol
Flat tyre
Unmanned police car

Stopped police car
Policewoman
Channel 19
Channel 10
Petrol
Obscene word
Area full of police
Lady CBER
Decibels (dB)
Drive very fast
Do you read me
Rear

Don't get caught speeding
Basingstoke
Roundabouts
Police radar on both carriageways
Love and kisses
Telephone

Passing lane
Stopping transmission
Stop transmission and switching off
Stop transmission end standing by
Towing truck
Oxford
Hitch hiker

On the speed limit

Accelerating

F

Fancy seat cover
Feather foot
Feed the bears
Feed the ponies

Feet
Fender hender
Final
Fingers

Fireworks

First sergeant
Fishing pole and a partner
Fishtank
Five by five
Five finger discount
Fixed station
Flag town

Flap jaw
Flappers
Flaps down
Flat side
Fleas on you
Flicks
Flip flop
Flop box
Flop stop
Flower
Fluff stuff
Flyboy
Flying town
Footrest
Four warmer
For sure
Forty-fours
Forty roger
Four
Four eyed bear
Four legged beast
Four legged go-go dancers
Four wheeler
Four wheeler with fire in his tail
Fox hunting

Pretty girl
Driver going too slow
Get a speeding ticket
Lose money on horse racing
Tyres/linear amplifier
Accident
Last transmission
CBER who changes from channel to channel
Police car with flashing lights
Wife

Duel antennas
Bus
Good signal

Stolen goods
Base station
Roadworks/Nelson, Lancashire
Constant talker
Ears
Slowing down
Sleep
Three's on you
Cinema
Return trip
Bedroom
Overnight stay
Woman
Snow
Speeding driver
Preston
Throttle pedal
Linear amplifier
Yes
Children/kisses
OK
Abbreviation of 10-4
Police with radar
Horse

Pige
Car/small van

Speeding car
Home Office trying to catch CBERs/waisting time
CBER with a sexy voice

Underpass
Road clear of police
Attractive women
First vehicle in a convoy
First vehicle in a convoy
Dangerous bends in the road
Big engine/strong signal
Driving very fast
Joking

Mobile home
Radar detector

E

Ear ache
Ears
Ears on
Easter bunny
Easy chair

Easy greasy
Easy piece
Eat-up-stop
Eighty-eights
Eights and the other good numbers
Eighty six
Electric pop gun

Problem with antenna
CB radio or antennae
CB switched on
Naive motorist
Middle vehicle(s) of three or more
Icy road
Prostitute
Restaurant
Love and kisses

Sign off
Change subject
Police radar

The Language

G

Galoshes Linear amplifier
 Gang plank Bridge
 Gaping skirt Unlocked or open rear door
 Garbage Interference
 Garbage head CBer who talks too much
 Garbage mouth CBer who swears
 The Garden Reigate
 Garrison City Colchester
 Gating Driving very close to vehicle in front
 Gear banger Driver who grates the gears
 Gear jammer Truck driver
 Gear teasers Teenage girls
 Gearologist Truck driver
 Gestapo Home Office
 Get a transfusion Stop for petrol
 Get 'em off Motorway exit
 Get 'em on Motorway entry lane
 Give it the message Speed up
 Get horizontal Go to sleep
 Getting out Good signal
 Ghengis Khan Bad mechanic
 Ghost talking Only hearing one side of CB conversation
 Swindon
 Ghost town Petrol
 Giggle juice Wait a few minutes
 Gimme five Newmarket
 GG Land Go ahead speak
 Go breaker Fuel
 Go-go juice Turning off CB
 Going down Signing off but still listening
 Going down on the side
 Going into the sunset Heading west
 Goldilocks Woman with blond hair
 Good buddy Anyone who has a CB
 Good lady Female good buddy
 Good numbers Best regards
 Goodies CB accessories
 Got a copy Do you read
 Got his shoes on Full speed linear amplifier
 Got my foot on it Speeding up
 Got your ears on Is your CB on
 The grandma lane Left hand lane
 Gravel agitator Hitch-hiker
 Greasy Icy road
 Geasy side up Overturned vehicle
 Greasy spoon Restaurant/service area
 Great big sprocket Large engine
 Green apple Inexperienced CBer
 Green light Road clear of police
 Green Shield stamps Money
 Grizzly Police
 Grounded Driver outside vehicle
 Gunny bag Stop working
 Gunny beggar Friendly name for a CBer
 Owner driver trucker

H

Hag feast Female always chatting up on channel
 Haircut place Low bridge
 Hairy city Wigau
 Hammer Throttle pedal
 Hammer back Decelerate
 Hammer down Accelerate

Hammer down lane Right hand lane
 Hammer off Slow down
 Hammer foot Fast driver
 Handle CB code name
 Hang out Monitor a channel
 Hang ten Speed up
 Hanger Garage
 Happy Island Isle of Sheppey
 Happy numbers Best regards
 Happy town East Grinstead
 Harvey
 Wallbanger Very rockless driver
 Hash Interference on channel
 Hatters town Luton
 Hauling stale air Driving a refrigerated truck without cargo
 Fleet, Hampshire/Fife, Scotland
 Hazard County
 Have a 34-26-34 tonight Sign off
 Hawaii Hinkley, Leicestershire
 Heater Linear amplifier
 Heading for the barn Travelling home
 Hen fruit Eggs
 Henry's Ford vehicles
 Hiding in the bushes Hidden police vehicle
 High rider Truck driver
 Highway princess Prostitute
 Hit the sheets Go to bed
 Hole in the wall Tunnel
 Home free Arriving at destination safely
 Camper
 Home on its back Base location
 Home port Base location
 Home 20 Police woman
 Honey bear
 Honey on the road Police are everywhere
 Horizontal Asleep
 Horizontal mama Prostitute
 Hot foot Linear amplifier
 Hot load Cargo carried in a rush
 Hot 'n' heavy Good signal
 Hot stuff Coffee or tea
 Hot to trot Seat cover/very attractive woman
 Break for a specific CBer
 How about you?
 How am I hitting you?
 Hump How do you read me?
 Mountain

I

Ice box Jail
 Idiot box Television
 In a short In 5 minutes
 In a short short Very soon
 In to the dog house Under the bonnet of a vehicle
 Stopped or arrested by police
 In the hole Bad transmission
 In the mud CB not in use/parked up
 In the pen Neighbours who have TVI (television interference)
 Indians Police radar
 Instamatic

J

Jabber Jaw CBer who talks too much
 Accelerate
 Jack it up CB radio
 Japanese Toy Talking on CB
 Jaw jacking Alcohol
 Joy juice Fuel
 Juice Petrol stop
 Juice stop

Jump down Switch to a lower channel
 Jump up Switch to a higher channel
 Junk buzzard Tramp
 Junk yard Place of employment

K

Keeping between the ditches Drive safely
 Keep on trucking Sign off
 Keyboard Dials on a CB radio
 Keying the mike Pressing the mike button
 Blackburn
 Khyber Pass
 Kick the doughnuts Check the tyres
 Kicker Linear amplifier
 Kiddie can School bus
 Kidney buster Rough ride
 Kings Gate Dorking, Surrey
 Kneebiters Children
 Knocking on your back door Coming up from behind
 Knuckle buster fight
 Kodak Police radar
 Kejak with Kodak Police with radar
 Kool aid Beer

L

LSB Lower sideband
 Lace city Nottingham
 Lady breaker Female CBR
 Land line Telephone
 Last year's fun on wheels Baby in a pram
 Latrine lips CBR who swears on channel
 Lay down Stop transmitting and going down on the side
 Accelerate
 Lay it to the floor Stop transmitting but still listening in
 Tenterden, Kent
 Lay over and listen Fast driver
 Lazy T
 Lead foot Fast driver
 Leaning on the mailbox Listening in
 Left West
 Left shoulder Behind you
 Legalising east/west Driving east/west at the maximum speed limit
 Accelerate
 Accelerate
 Let it go Drive fast/road ahead clear
 Let it roll Accelerate
 Let the hammer down Drive fast/road ahead clear
 Accelerate
 Let the pedal hit the metal Accelerate
 Let your flaps down Slow down
 Lettuce Money
 Licorice stick Winding road
 Lie sheet Lorry driver's log book
 Light footing it Driving at the maximum legal speed
 Road ahead clear of police
 Lights green CBR with loud voice
 Linear lungs Alcohol
 Liqu'd frequency Alcohol
 Little box Linear amplifier
 Little foot warmer Linear amplifier
 Little lights Morccambe, Lancs
 Little mama Short antenna
 Living dead Driving too close to vehicle in front
 Living space Home

Loaded for bear CBR who has police radio listening equipment
 Local smokel Police in panda cars
 Lollipop Homosexual/microphone
 Looking thataway Call for police whereabouts
 Burnley
 Lords town
 Lost the blues Out ran the police
 Loud and proud Clear reception
 Lovelies Attractive young woman
 A low loader
 Slow down

Law boy
 Lower flaps
 Luxury apartment Mobile home/caravan

M

MOL My old lady
 MOM My old man
 Mafia squad Tough group of truck drivers
 CB radio
 Magic metal box Best wishes
 Magic numbers on you Change channels
 Make a trip Sending out a good signal
 Making the trip
 Malfunction
 junction Traffic jam
 Moma Wife
 Man in white Doctor
 Maniac Garage mechanic
 Mars Bar town Slough
 Matchstalk town Salford
 May day Distress call
 Maxi taxi Bus
 Meany men Home Office/GPO etc
 Mean machine CB radio
 Meat man Butcher
 Meat wagon Ambulance
 Meeting twenty Meeting place
 Mercy sakes 'kin 'ell
 Micro bus Van
 Midnight South
 Midnight cowboy Homosexual
 Midnight shopper Thief
 Mike Microphone
 Mike fright CBR nervous about using microphone
 Girl, woman
 Mini skirt Barman
 Mixerologist Confusing road junction
 Mixing bowl Vehicle/CB radio
 Mobile Car pulling a caravan
 Mobile mattress
 Mobile parking lot
 Mobile rig Car transporter
 Modulating CB in vehicle
 Modulation Talking on a CB radio
 Monitor Voice/conversation
 Listening to the CB
 Monkey looking for bananas
 Moonlight
 Mottball
 Motion lotion
 Motion lotion city
 Motion potion
 Motivate
 Motoring on
 Motor mouth
 Moustache to moustache
 Mouthpiece
 Move
 Movie camera
 Movies
 Moving motel
 M20
 Mud
 Muff
 To meet personally
 Microphone
 Vehicle driving along
 Vascar
 Police with Vascar
 Caravan/mobile home
 Meeting place
 Collision interference on channel
 Girl, women

Muffin Attractive girl/woman
 Mushy Bad signal

N

Nap trap Motel rest area
 Natives Local CBR
 Natural confetti Snow
 Nature call Halt
 Nazi go kart Volkswagen
 Nazi Volkswagen
 wheelbarrow
 Negative No
 Negative contact CB called does not respond
 Negative copy No answer/answer is not understood
 Negatory No
 Nerd Twit
 Nerve curve Bad bend in road: road with many bad bends
 Nickel bridge Toll bridge
 New York Nuneaton
 Night crawlers Police are everywhere
 No sweat, no pain Road ahead clear of police etc
 Noise blanker Part of a CB that helps to reduce interference
 Noise limiter Basically same as above
 Nor' boulder Vehicle heading in a northerly direction

O

OK Sign off
 OM Old man/husband
 OW Old woman/wife
 Oasis Truck stop/layby cafe
 Off stop watch Late/not on time
 Off your tail pipe Vehicle heading in the opposite direction
 Oil burner Vehicle with smoke coming from exhaust
 On skip Faint signal
 On standby Listening in
 On the by Listening in
 On the fly Driving fast
 On the peg Driving at maximum legal speed
 On the shore On the side of the road
 On the side Listening in
 On the stop watch On time
 On your mudflaps Driving very close behind
 One armed bandit Petrol pump
 One eyed monster Television
 One way camper Hearse
 Open season Police everywhere
 Other half Husband/wife
 Our nickel is up Sign off
 Out Stop transmitting
 Out stripped me Passed by a very fast vehicle
 Not answering
 Out to lunch
 Over your shoulder The road behind
 Over modulation Talking too close to the microphone
 P&Ds
 PC
 PF flyers
 Pick ups and deliveries
 Printed circuit
 Truck wheels

P

The Language

PTT switch	Push to talk switch on microphone	Portable barnyard	Truck carrying livestock
Pacer	Vehicle which goes first to locale police	Portable can	Tanker
Pajama wagon	Truck with sleeping facilities	Portable gas station	Petrol tanker
Pan handlers	Nurses	Portable parking lot	Car transporter
Panic in the streets	Home Office tracker vans in area	Portable rig	CB that can be carried or moved with own antenna and power source
Pants on fire	Getting stopped for speeding	Portable waiting room	Bus
Panty stretcher	Fat person	Positive	Yes
Paper	Parking ticket/money	Pository	Yes/affirmative
Paper bag case	Ugly woman	Postage stamp	Female
Paper hanger	Policeman stopping someone for speeding	Potato juice	Vodka
Paperway	Postal service	Pound meter	"S" meter
Park your mouth	Be quiet	Pounds	Meter reading in "S" units
Parking lot	Traffic jam	Pour on the coal	Speed up
Party bat	Lights on roof of a police vehicle	Pregnant roller skate	Volkswagen
Party pooper	Police rader	Press some sheets	Sleep
Pass the numbers to you	Best wishes	Pressure cooker	Sports car
Pause for a cause	Rest area	Prime time	Time spent with wife or girlfriend
Pavement princess	Prostitute	Professional	Truck driver
Peak power	Maximum wattage	Puddingtown	Bury
Peaked up	CB radio putting out more than standard watts	Puke	Unwanted CBer
Peanut whistle	Low powered CB set	Pulling 'em down	Police pulling vehicles to side of road
Pedal to the metal	Driving fast	Pulling the plug	Turning off the CB
Pedal down	Speed up	Pump	Linear amplifier
Pedal pusher	Cyclist	Pumpkin	Flat tyre
Pedalling dead and blind	Driving slowly due to poor visibility	Pumpkin patch	Tyre fitting bay
Pedalling with both feet	Driving as fast as possible	Pushwater	Petrol
Peel off	Turn	Pushmobile	Vehicle moving very slowly
Peppers	Police	Pusholine	Petrol
Peg leg	Driver who keeps braking when not necessary	Put an eye ball on you	See you in person
People car	Bus	Put on the feedbag	Eating
Persuader	Linear amplifier	Put the good numbers on you	Best wishes
Photographer	Police with radar	Put the hammer back in the tool box	Slow down
Pick a clean one	Change to a channel with less interference	Put your shoes on	Turn power up/amplifier on
Pick 'em up truck	Pick up/tipper lorry	Q	
Picnic	Drinking party	Q code	See listed "Q" Code
Picture box	Police rader	Quail	Desirable girl under legal age
Picture taker	Policeman with radar	Quiz	Breathalyzer
Pier town	Wigan	R	
Pig on a bog	Policeman on a motorbike	Rf	Radio frequency
Pig pen/pig sty	Police station	RVM	Rear view mirror
Pigeon	Person who is caught speeding	Ratchbet jaw	CBer who talks a lot on channel
Pigeon plucker	Policeman pulling in speeding motorists	Rack	Bed
Piggyback	Small trailer	Radio	CB radio
Pinball machine	Vehicle with flashing light	Rag top	Convertible car/soft top
Pink panther	Unmarked police car	Rags	Bad tyres
Pitstop	Layby cafe; rest area	Rain locker	Shower room
Plain brown wrapper	Unmarked police car	Rainy town	Manchester
Plane pit	Airport	Rake the leaves	Last CBer in a line of two or more
Play dead	Stand by/listen in on CB	Rattler trail	Railway lines
Playing in the sandbox	Using toilets at rest area	Rattle snake	CBer who swears on channel --
Pokey	Prison	Read	Hear
Polaroid	Police radar	Reading the mail	Monitoring
Polo mint	Roundabout	Rebound	Return journey
Pop eye	Vehicle with only one headlamp	Rectum rocket	Fast moving vehicle
Pop top	Truck carrying drinks		
Popcicle	Motor bike		
Poppy town	Kettering		
Porcupine	Vehicle with several antennas		

Red box	Ambulance	Scanner receiver	Automatic channel tuning CB set	Slappers	Windscreen wipers
Red City	Warrington	Scatterstick	Vertical antenna with ground plane	Slaughter house	Channel II
Redneck radio	CB conversation using only CB slang	Scratchin'	A vehicle moving as fast as possible	Sleep it off tank	Jail/prison
Reefer	Refrigerated lorry	Screamin' smokey	Police vehicle with sirens going	Sleeper	Truck that has a sleeping compartment
Relocation consultants	Removal vans	Seat cover	Attractive girl or woman passenger in vehicle	Slick and clear as a spring day	Road clear of police
Rembrandt	Painter and decorator	Second City	Birmingham	Slick tennis shoes	Bald tyres
Rent-a-bear	Private security guards	Set it down	Stop quickly	Slider	Between channels/sliding bracket for CB radio
Rib	Wife	Set of dials	CB radio	Sliding my wheels	Slowing down
Ride shot gun	Be a passenger	Set of doubles	Truck with trailer/artic	Slip and slide	Slippery road
Rig	CB truck	Seven threes	Sign off	Slob town	Slough
Rig rip-off	Stolen CB set	Seventy three	Best wishes	Slop	Bad fuel
Right	East	Shack	Room where CB set is installed	Smashed	Overpowered by a stronger signal
Ringing your bell	Someone's calling you	Shady lady	Prostitute	Smile, comb your hair	Police speed trap ahead
Rinky Dink	Small CB radio	Shag	Small trailer	Smoke	Police/London
Rip strip	Motorway	Shake the bushes	Lead CB vehicle looking for police	Smoke city	London
River crossing	Thetford, Suffolk	Shake the leaves	Lead CB vehicle looking for police	Smoke 'em out	Speed slightly to bring police vehicles out of hiding
Roach coach	Dustbin lorry	Shake the lights	Flash lights to warn of police	Smoko 'em up bear	Police
Road tar	Coffee	Shakey town	Stratford-on-Avon	Smokey report	Police location
Robin Hood City	Notttingham	Shaking the windows	Receiving clear signal	Smoke signals	Police in area
Rocking chair	Middle CBer in a line of three or more	Shanty town	Sudbury Town	Smoke screen	Police radar
Roger	Yes/affirmative	Shleep herder	Hopeless driver	Smokey bear	Police
Roger D	Message received and understood	Shim	To boost power of CB radio above normal limit	Smokey beaver	Policewoman
Roger dodger?	Do you understand?	Shoe box	Car/van	Smokey chopper	Police helicopter
Roller derby	Accident; wrecked car	Shoe burner	Pedestrian	Smokey dragon	Police
Roller skate	Small car	Shoe city	Licaster	Smokey dozing	Parked police car
Rolling	Moving	Shoes	Linear amplifier	Smokey on the ground	Policeman on foot
Rolling bears	Police on the move	Shoot the bull	Speak/talk	Smokey on the move	Police vehicle patrolling
Rolling pin	Truck with a wide load	Short short	Soon/rest room stop	Smokey with ears	Police with a CB set
Rolling road block	Vehicle travelling under speed limit and holding up traffic	Shot an eyeball on it	Saw it	Smokey's thick	Police are everywhere
Roman City	Bath	Shot down rig	Sub-standard CB set	Smokey's trackin'	Police using radar
Roundy-roundy	Roundabout	Shot gun	Passenger	Smoking with the devil	Drive too fast for road conditions
Rubber duck	Lead CBer in a line of two or more vehicles	Shoulder boulder	Abandoned vehicle parked on side of road	Snafu	Situation normal all fouled up
Rubber lips	Someone who talks too much	Shoval coal	Accelerate	Snake	"S" curve on road
Rubber band going	Building up speed	Show off lane	Overtaking lane	Snake den	Fire station
Rubber neck	Slow down to look at accident	Sick horse	Bad running truck, underpowered	Sneaky snake	Hidden police vehicle
Rude dude	Reckless driver	Side door	Overtaking lane	Sneaky snake's laying eggs	Stopped police vehicle
Rug rats	Kids	Silly side	Single side band	Sniper	Hidden radar trap
Run out of road	Accident/wrecked vehicle	Sinking ship	Vehicle running low on fuel	Snooperscope	High antenna
Runner	Police chase car	Singing waffles	Radial tyres	Snoreshelf	Bed
Running a boot	Use of linear amplifier	Sissy squad	Two or more homosexuals	Snow White and the Seven Dwarfs	Wedding procession
Running bear	Police on the move	Sister	Accompanying vehicle without CB	Socks	Linear amplifier
Running by the seat of your pants	Very low on petrol	Sit on it	Be quiet	Soda fountain	Truck carrying bottled gas
Running shot gun	Driving partner	Sit rep	Location report	Sore foot	Flat tyre
S		Sittin' by	Stop transmitting to allow another CB to use channel	Sou' boulder	Vehicle headed in southerly direction
"S" Meter	Meter which measures level of signal	Sittin' in the saddle	Middle vehicle in a line of three	Sounding choice	Clear reception of signal
SSB	Single side band	Sitting under the leaves	Police vehicle in hiding	Spaghetti bowl	Motorway intersection
SWR	Standing wave ratio	Six ten	Make love	Sparky	Electrician
Safe truckin'	Drive safely	Sixes and eights	Best wishes	Sparky town	Flint
Sailboat fuel	Driving an empty tank	Skate jockey	Driver of small high performance vehicle	Spin out	Spin/skid
St Bernard	Breakdown team	Skating rink	Slippery road	Splat bat	Crash helmet
Salt mines	Place of employment	Skin clock	Watch	Splash	Spill over from one channel to another
Salt shaker	Road gritting vehicle	Skins	Tyres	Splashed on	Interrupted on channel by someone breaking in
San Quentin	Good looking girl under the legal age of consent	Skip	Communication reflected by ionosphere	Splatter	Interference on channel
Sand bagging	Monitoring; listening in on a CB radio	Skipper	CBer who transmits long distance	Slave centre	School
Sand blaster	Road gritting vehicle	Skunk	Police vehicle	Split	Motorway intersection
Sandbox	Bathroom	Sky bear	Police helicopter	Spot the body	Park the trailer
Sandy city	Southport, Merseyside	Sky hook	Base station antenna	Spring water	Beer alcohol
Satellite town	Small towns around large city	Slab	Motorway	Spy in the sky	Police helicopter
Savages	CBers who hog the channel	Slanty eyed	Japanese vehicle	Square wheels	Parked up
Say again	Repeat the transmission			Squawk box	CB radio
Scan the channels	Looking for a free channel			Squeeze her easy	Slow down
				Squelch	Unit which cuts out interference on a CB
				Stack	Exhaust on a diesel vehicle

The Language

Stag town	Mansfield	The man	An official
Stage stop	Truck stop	Thermos bottle	Milk tanker
Stand by	Hold on/weit	Thick stuff	Fog
Starve the bears	Don't let the police catch you speeding	Thin	Weak signal
	Sheffield	Thin man	CBer who gives out a weak signal
Steel city		Third railer	Vehicle involved in accident ending up on centre reservation
Stepped all over you	Interrupted transmission		Wires on a CB set
Stepped on	Conversation interrupted by another CBER	Thread	
Stick	Mobile CB antenna	Three legged beaver	Homosexual
Stomped	Overpowered by a stronger signal	Threes	Best wishes
Stop to get groceries	Stop and eat	Threes and eights	Best wishes/sign off
Straight shot	Road ahead clear of police	Threes on you	Best wishes
Strangle	Turn off	Thirty seven bad	A nasty day
Strapped for time	Late	Thousand voltage mouth	Loud signal
Streaker	Speeding sports car	Throw a shoe	Get a flat tyre
Streaking	Full speed	Throw that back at me	Repeat
Strip her	Unload truck cargo	Throwing	Transmitting
Stroller	CBer with a walkie-talkie	Thunderstick	9ft whip antenna
Struggling lane	Left hand lane	Ticket window	Traffic offence court
Stuffy	Congested channel	Tied up	Slowed down or stopped on the road by an obstruction
Sucker brakes	Air brakes	Tiger in tank	Linear amplifier
Suds	Beer	Time on the time	Time of arrival at destination
Sugar town	Bury St Edmunds	Tin bender	Sheet metal worker
Suicide cargo	Dangerous cargo	Tin can	CB radio
Suicide jockey	Truck driver carrying a cargo of explosives	Toe nails in the radiator	Full speed
Suicide sleeper	Truck with a sleeping compartment above the cab	Toilet mouth	CBer who uses bad language on channel
Sunbeam	Comedian	Tooled up	Boosted CB set
Sun city	Prestatyn/Rhyl	Toothpicks	Telegraph poles
Super cola	Beer	Top of the shop	Channel 40
Super skirt	Girl, woman	Tower town	Bleckpool
Super slab	Motorway	Tractor	Lorry without a trailer
Superstructure	Bridge	Trading stamps	Money
Sweep the leaves	Last CB vehicle in convoy	Training wheels	Provisional licence
Swimming pool	Pond/lake	Trampoline	Bed
Swindle sheet	Truck driver's log sheet	Transceiver	Combined radio transmitter and receiver
Swinging beef	Frozen meat in a refrigerated lorry	Trash	Noise on channel
		Travel	Switch channels
		Travelling zoo	Truck carrying livestock
		Trousers and skirts	Bisexual
		Truck 'em easy	Drive safely
		Trucker's Paradise	Soham, Cambridge
		Truck jockey	Lorry driver
		Truck on	Move on
		Truck train	Tractor pulling two or more trailers
		Truckin teenager	Teenage hitch-hiker
		Trucking queen stop	Rest area with facilities for women drivers
		Truck loads of 88s	Lots of kisses
		Tuck it in	Move into the left hand lane
		Tuned up	CB putting out more than 4 watts
		Tunnel of love	Road where conditions cause interference on CB
		Turkey	Friendly insult
		Turkey area	Rest area
		Turkey town	Malvern
		Turn up ten toes	Go to sleep
		Turtle	Slow moving vehicle
		Twelves	Company present
		Twenty	Location/position
		Twin huskies	Dual antenna
		Twin mamas	Dual 9ft antennas
		Two metres horizontal	Sleep
		Two stool beaver	Very fat woman
		225 Sale	Sale of illegal or stolen CB sets

T

TR Switch	Transmit/receive switch
TVI	Television interference
TX	Telephone
Tags	Number plates
Tailboard artist	Someone who thinks he drives perfectly
Talking candle	CBer who uses radio to help others
Talking skip	Talking to someone at a great distance due to a reflected signal
Tango whiskey	Tunbridge Wells
Tar	Coffee
Tear drops	Onions
Ten hie-bye	Sign off
Ten code	Abbreviation code
Ten four	Yes
Ten pounder	Excellent reception
Ten roger	Message received
Ten seven and gone to heaven	Dead
Ten ten	Stopped transmitting but monitoring
Ten up and ten down	Stopped for the night
Thanks for the flowers	Thank you for the compliment
That's a copy	Message received

U

URO Unidentified rolling object
USB Upper sideband
Unburied flick Film with no story line
Unclamping whipper Removable antenna
Under the bump Tunnel
Under the thumb Unable to pass
Undressed Unmarked police vehicle
Ungowa Bwana OK!
Used food van Dustbin lorry

V

Van Tractor
Victory land Southampton area
Vocal chords CB set
Voice check Radio check
VOX Voice operated relay

W

WT Walkie-talkie
Wagon train Parade
Wagon wheels Leyland, Nr Preston
Walk it back Repeat/answer back
Walked all over Overpowered by a stronger signal
Walked on Interrupted by someone breaking in
Walking with boots Using linear amplifier
Wall to wall Good signal on the CB
Wall to wall and tree top tall Good signal
Wall to wall bears Police everywhere
Warden Wife
Washboard Bumpy road
Watch the pavement Drive safely
Watch your donkey Watch out for police coming up from behind
Water hole Rest area
Wax palace Gatwick
We down, we gone, bye bye Sign off
We gone Sign off
Wearing socks Using linear amplifier
Weight watcher Weigh bridge worker
Wierdy A home-made CB set
Welfare station A CB bought with dole money
We're clear Sign off/road ahead clear of police
We're down Sign off
We're down, out, on the side Stop transmitting but listening in
Wet confetti Sleet
What am I putting on you? Request for a meter reading
What are you pushing? What are you driving?
What are you wrapped in? What kind and colour of vehicle are you driving?
What kind of copy? Request for a meter reading
What s your duty? What's your occupation?

What's your eighteen

Where the flavour is Woodstock, Oxford
Whimp Coward
Whip Rod for mobile antenna
White Northwest
Who do you pull for? Who do you work for?
Whomping on you Interrupting transmission
Wide Side Empty lane on right
Will you 10-88? Will you marry me? (Foolish statement)
Willy weaver Drunk driver
Wind whipper Long CB antenna
Wind jammers CBers who talk too much on channel
Window shopping Looking at pretty girls
Window washer Storm/cloud burst
Wipe the windscreen Rest area
Wiped out CB signal overpowered by stronger signal
Wobbly box Mobile home on a trailer
Wood chuck Truck driver low in seniority in firm
Wood pecker Carpenter
Woolly bear Woman
Word nut Student
Work twenty Place of employment
Wrapper Car
Wrinkle Uneven transmission

X

XL Unmarried woman
XY Spouse
XYL Ex young lady
XYM Ex young man
XYN Male
XYZ Homosexual
X rated roadway Trucks prohibited
X ray machine Police radar
Xerox? Do you copy?

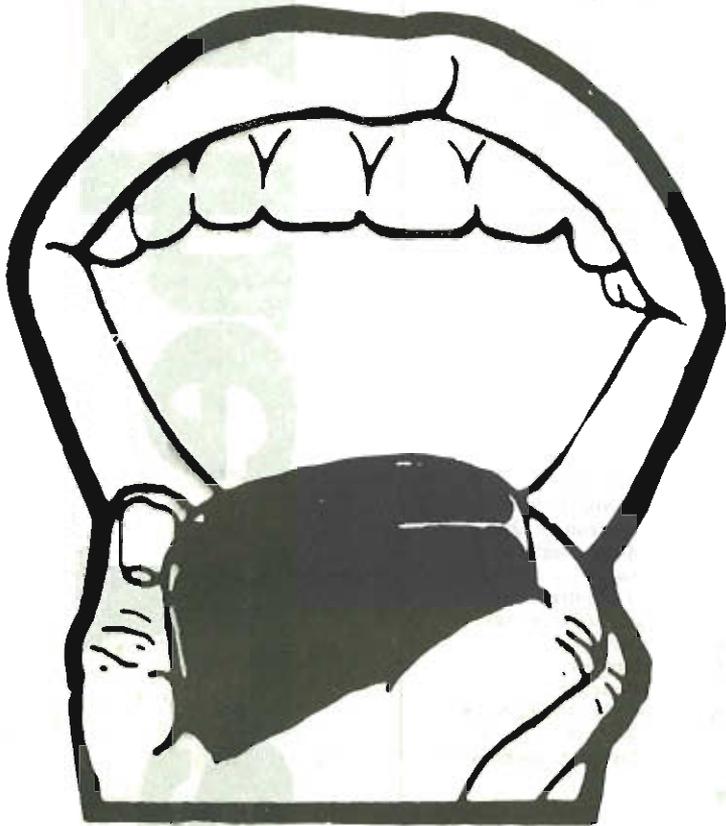
Y

YF Wife
YL Young lady
Yo Yes
Yodel Give me a call on the CB
You got it Permission to speak on channel
You gotta copy on me? Are you receiving me?
Youngville Children on channel
You're looking good Clear reception
You're not the only one on the road Police in the area
Yo yo mouth Someone who talks too much

Z

Zapped Over modulation from a nearby CBER using a linear amplifier, causing damage to your set
Zoo Police station
Z's Sleep
Z'sville Sleeping

The Language



CB Spe

SUPPLIERS OF
EQUIPMENT TO

SPECIAL C

TO READERS OF

CB-81

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ANTENNAE
HAVE YOU TWIGGED?

Fred Judd knows more about CB antennae than anyone we know. And with something like 20 letters after his name, he really ought to! Here he introduces us to the basically simple, (but eventually technical) subject of CB radio antennae — or twigs as they are known in the trade. There's no point in buying a good rig if you're not going to fit a good antenna. Let's face it, you could ruin the reception with a substandard or badly fitted twig.

Mr F. C. Judd's letters? They are: FISTC, MIOA, Assoc IPRE, A.Inst.E.

CITIZENS' Bend Radio will be legal later this year, and we now know what our frequency allocations will be, but regardless of whatever they might have been, certain things will always remain the same.

Like transmitting antennae and radio wave propagation — these both have fundamentals that are constant and nothing can change this. Nevertheless, in all radio communication systems the antenna is a very important component, and without it, communication by radio is impossible. Because a lot of money may well be spent on transmitting/receiving equipment, it is obviously wise to obtain the most suitable and the most efficient antenna that one can afford.

In short, that's the best advice that can be given regarding antennae. However, it is equally important to know something about the numerous types of antennae and how they function, and also about radio wave propagation, ie, how radio waves behave after being radiated by an antenna. Although all antennae work in much the same way, irrespective of the transmitting and receiving frequency of operation, there are many other factors concerned not only with performance of antennae themselves at various frequencies, but also with the propagation conditions at different frequencies or within different frequency bands. For example, very high and ultra high frequencies are not suitable for long distance (DX) operation to countries as far away as America or Australia etc. The normal ranges at ultra and very high

frequencies (UHF and VHF) are mainly local; for example up to around 50 miles or so depending on tropospheric (lower atmosphere) conditions and of course, the transmitted power and type of antenna.

At average high frequencies (which includes 27MHz) real long distance operation is of course possible depending in this case on ionospheric (upper atmosphere) conditions, plus, of course, the transmitted power and the antenna. With the right conditions plus a good antenna and transmitter etc, two-way communication at distances of up to around 10,000 miles, ie, halfway around the world, can be quite commonplace at 27MHz, although such conditions do not prevail all the time.

One of the ultra high frequencies proposed for CB radio in the UK is 927MHz, but because of the very high rate of attenuation due to buildings, trees, ground absorption and environmental conditions generally, working ranges of little more than a mile or so could be obtained with conventional types of antennae. In fact, tests carried out by the writer and others involved with UHF bands radio communication have proved this to be the case. There is also the possibility that at this very high frequency, parts of the human body can be damaged due to close proximity to antennae where the radiation field is, of course, at its highest level. There is however, virtually no risk whatsoever at frequencies such as 27MHz or even in the VHF region from about 100 to 500MHz.

ANTENNAE

Radio waves

To understand the function of communication by radio some knowledge of the behaviour of radio waves and propagation through the atmosphere is essential and which, in turn, will help clarify to some degree as to how radio antennae work. The subject as a whole is complex and not easy to explain in very simple terms. For instance, much of the work involved in the design of transmitting aerials is purely mathematical. The same applies to the actual function of an antenna and also to radio wave propagation itself. However, for the purpose of this article, the "maths" will be reduced to the simplest possible level.

A radio wave is a combination of electric and magnetic fields with the energy divided equally between the two, and if the waves were originated at a point source in free space, they would spread out over an ever increasing area travelling at the speed of light. In empty space, the speed of radio waves (like light) is usually given as 300,000,000 metres, or 186,000 miles per second. A wave far enough from its original source has a flat formation, and because of this, is usually called a **plane-wave**. A wave originating from a localised source, ie, a transmitting antenna, also has what is called a **wave front** but because it is widely spread, the relatively small area of its surface occupied by a receiving antenna can be regarded as being perfectly flat. As the wave passes any fixed point, the field strength varies periodically at the frequency of transmission. As the velocity of radio waves is always constant at 300,000,000 metres per second, the frequency can be determined from

$$f = \frac{V \text{ (velocity)}}{\lambda \text{ (wavelength)}}$$

where f = frequency, V = velocity and λ (lambda) is the wavelength. Therefore, at a wavelength of one metre the frequency would be 300,000,000Hz or 300MHz.

Wave propagation

Radio waves tend to behave differently according to the frequency in use, and also because of the polarization of the wave as it leaves the transmitting antenna. For example, vertically polarized waves at low frequencies from a vertical transmitting antenna travel close to the surface of the earth. This is commonly called **groundwave** propagation. The distance for reliable transmission and reception is limited because the wave gradually becomes absorbed by the ground over which it travels. At higher frequencies (shorter wavelengths) radio waves can be made to travel outwards at a low angle away from the earth itself, but they are then reflected to earth again at some distant point by a region of the earth's upper atmosphere called the ionised layer. This is known as **skywave** propagation, and is common at frequencies ranging from about 3MHz and up to about 30MHz and, of course, at 27MHz, which is why CB operators are able to work long distances at this frequency.

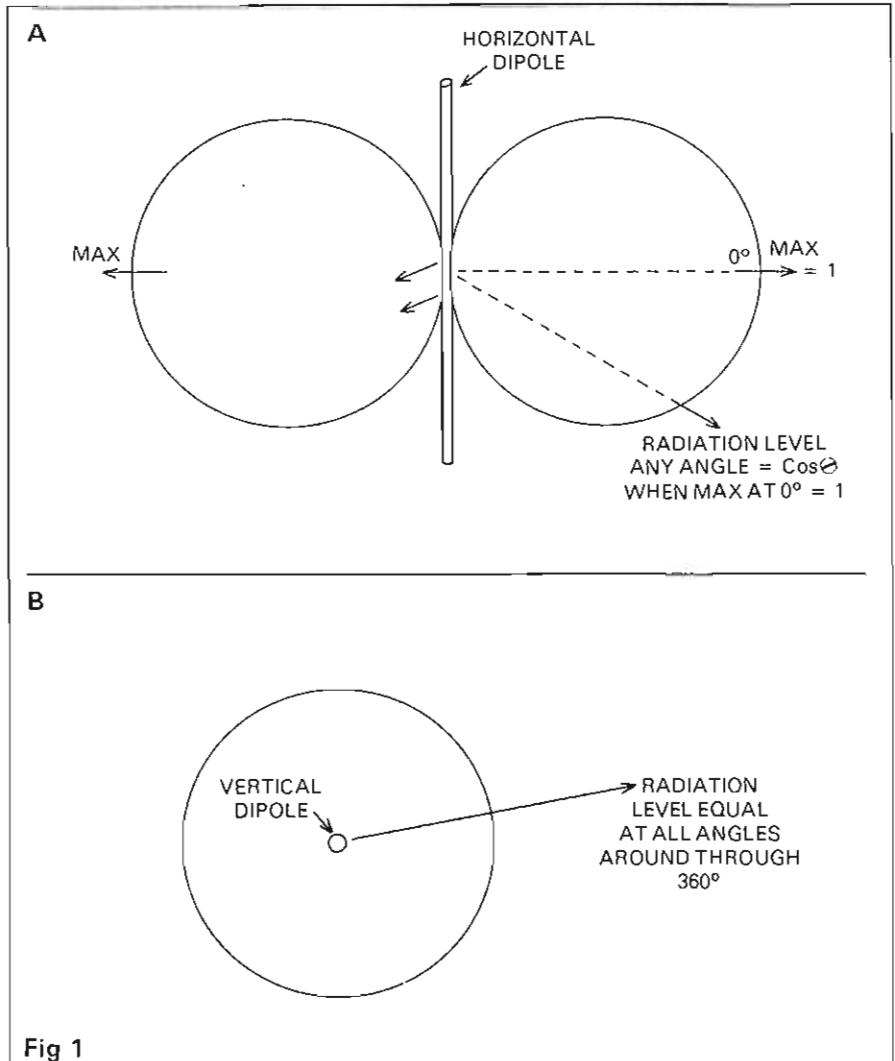


Fig 1

There is a point, however, when radio waves at higher frequencies, ie, above around 30MHz, are no longer reflected by the ionised layer, and this is when transmission comes into the VHF (very high frequency) range. Wave propagation then, becomes what is often called **line of sight**, and means that the receiving antenna must more or less "see" the transmitting antenna. This latter mode of propagation is one that would prevail for CB operators at any frequency ranging from about 50MHz, and up to and beyond 900MHz.

Antenna fundamentals

All radio antennae behave in exactly the same way, for example, a half-wave antenna for 27MHz functions in precisely the same manner as a half-wave antenna for any other frequency, including the very high frequencies, but to ensure efficient transmission and reception, all antennae, must be tuned to the frequency of operation, ie, they must be **resonant**. This can be done by making them exact fractions of a wavelength, such as a half-wavelength or even a quarter wavelength, or a complete number of whole wavelengths depending on application. The length of an antenna at resonance is however, not exactly related to the wavelength itself, because conducting materials slow down the velocity of radio frequency currents flowing along them. For example, for the commonly used half-wave or dipole, the formula for resonant length is:

$$(A) \text{ Length (feet)} = \frac{490 \times K}{f \text{ MHz}}$$

$$(B) \text{ Length (inches)} = \frac{5905 \times K}{f \text{ MHz}}$$

$$(C) \text{ Length (metres)} = \frac{150 \times K}{f \text{ MHz}}$$

K equals the velocity factor which takes into account the length/diameter ratio of the conductor used to make the antenna, and which for most practical purposes, is 0.95. The symbol "f" stands for frequency. So taking the formula (A) as above for example, a half-wave or dipole antenna for 27MHz would be:

$$\frac{492 \times 0.95}{27.15} = 17.2 \text{ feet}$$

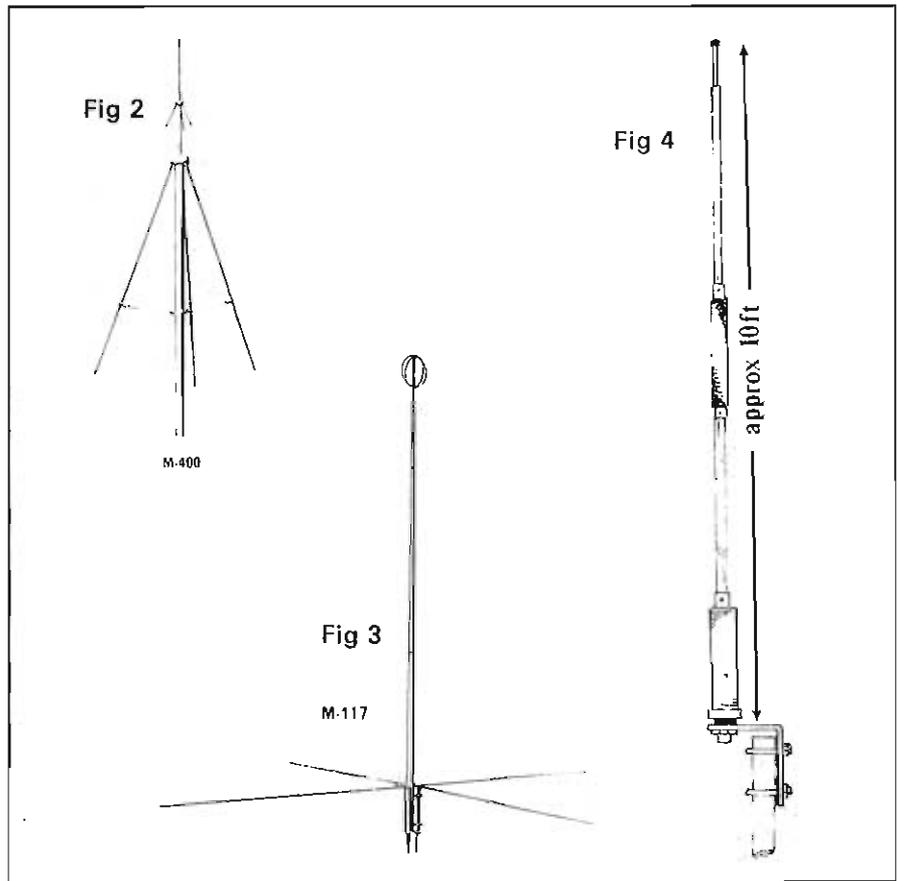
A quarter wave antenna for 27MHz would therefore be half the above length, ie, 8.6 feet, whereas a full wavelength antenna (two half-waves end to end) would, of course, be 34.4 feet.

Directivity

The antenna has another special property known as **directivity**, which means that its ability to transmit or receive signals is never the same in all directions around it, and radiation or reception may, indeed be zero in certain directions. For example, a half-wave antenna in free space

has a transmission (or reception) pattern, which although constant, differs according to whether the antenna is horizontal or vertical. In horizontal mode, the pattern is like that shown in fig 1A. In the vertical-mode, the radiation is equal in all directions from the antenna, so it is then considered as being **omni-directional**, (see fig 1B). In its horizontal mode, a half-wave dipole is considered as a **bi-directional** antenna, as the figure-of-eight radiation pattern suggests.

Directivity **gain** from an antenna is normally obtained by increasing the number of radiating elements, such an antenna being called a multi-element array. The most common type of such arrays employ a single driven element (usually a dipole) plus a parasitic reflector and a number of parasitic director elements, these being known as parasitic arrays or beam antennae. With active element arrays, all the elements in the system are driven, but such antennae are rarely used, except by professional radio stations. Although parasitic type arrays are the most popular, active arrays known as **collinears** are frequently used by radio amateurs, and could well become popular with CB operators as well.



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ANTENNAE

Polarization

This is another important property of all transmitting/receiving antennae, and one which often plays a major role in determining the distances over which communication by radio can be established.

The polarization of an antenna is always the same as the direction of its axis when the distance away from it is great enough for radiation to be considered as a plane wave. Polarization simply means that the electric field has the same orientation as the antenna itself. **Vertical antennae, therefore, radiate vertically polarized waves, and horizontal antennae radiate horizontally polarized waves.** Antennae that have a number of half-wave elements all laying in the same plane will be polarized in that plane. Some consideration must, however, be given to polarization with respect to working long distances at high frequencies. For example, at 27MHz, investigation has clearly shown that horizontal polarization is far superior.

For relatively short distances, signals that are vertically polarized, although more prone to ground path attenuation, are more convenient particularly, of course, for mobile operation. For this reason, vertical antennae are used for virtually all base station to mobile and/or mobile to mobile communication.

Types of antennae

Probably the most used antennae at present (at least for 27MHz) are the vertical omni-directional types such as ground-planes or half-wave dipoles, because they radiate equally in all directions around. Although the half-wave dipole is the most simple of all antennae, it is not necessarily the easiest to match to a typical CB radio transmitter because the feed point impedance, at the centre, is nominally 72ohms, whereas virtually all transmitters for CB have an antenna input/output impedance of 50ohms. This means that the antenna used and also the feed cable to it, must have the same impedance. However, as most half-wave antennae are used in the vertical mode, they are fed at the bottom end via some form of impedance matching system to provide the requisite 50ohms impedance connection. Half-wave antennae vary in physical length, some being around 17 to 18 feet long and therefore naturally resonant, whilst others are shorter but are inductively loaded to make them resonant. A popular half-wave omni-directional type is the ASP Starduster model M400 shown in fig 2, although this is something of a hybrid design due to the folded down ground-planes. It might even be considered as a form of sleeve dipole. A typical ground-plane is the ASP M117 Megnum shown in fig 3. Both these antennae are distributed in the UK by Telecommunications Accessories Limited, and are intended for base station operation.

Another omni-directional base station vertical that has become popular and is British made is the Big Jim 27 shown in fig 4. Manufactured by Wrenpro Systems, this is an inductively loaded half-wave antenna

about 10 feet long, and is matched for 50ohms by a helical stub system at the base. The antennae so far illustrated are typical of literally hundreds of different makes available, and are suitable for roof top or mast mounting at home. Being omni-directional they provide coverage all around, ie, over 360 degrees. **None of these types of antenna have any directivity gain.** All dipole or half-wave antennae and some ground-plane types have **unity gain**; in fact, the dipole itself is used as a reference by which the performance of antennae with directivity gain is compared. For example, a two-element parasitic beam antennae has a directivity gain of about 3.5dB with reference to a half-wave dipole, this being given the reference of unity or 0dB, ie, no gain. The decibel or dB is simply a logarithmic ratio of two powers, so the effective power gain achieved by directive radiation from the two element beam mentioned above, ie, 3.5dB, actually represents a power gain of about 2.2.

Parasitic arrays or beams do, however, take up a lot of space and because they are directive, it is necessary to be able to rotate them as well. A typical three-element beam for 27MHz by Shakespeare is shown in fig 5 and oriented for operation on the vertical mode. Such antennae are more often used in horizontal mode, particularly for long distance working. The radiation polar pattern of this antennae is shown in fig 6. This pattern would be similar whether the antennae was used vertically or horizontally, and the directivity gain for either mode would be about 5.5dB. Incidentally, parasitic beams of this nature are often known as Yagi antennae after the Japanese designer, Dr Yagi. Another typical parasitic beam is the four-element model M201 by ASP, as shown in fig 7.

All antennae need to be as high as possible and beam antennae have to be rotatable. The photograph, fig 8, shows the antennae used by the writer for amateur radio band operation. The large two-element beam (about 15 feet across) is for the 28MHz amateur band. Such an antennae would be slightly larger for CB operation on 27MHz. Above that is a 12-element two-metre band (VHF) beam antenna, and above that an omni-directional two-metre antenna. The rotator can be seen just beneath the antennae.

Antennae for mobile operation

Most antennae at present available for mobile use rely on the ground-plane effect, ie, the metal body of the car acts as a ground-plane. For obvious reasons, such antennae also have to be physically short, and are therefore, often inductively loaded to resonance at a quarter-wavelength. The short physical length of such antennae, together with the small ground-plane area of even a large vehicle, has the effect of reducing the overall efficiency, that is by comparison with a full length vertical half-wave. Two typical mobile antennae by ASP are shown in figs 9 and 10. Another type, illustrated in fig 11, is one designed for bumper mounting.

Mobile antennae intended to operate as

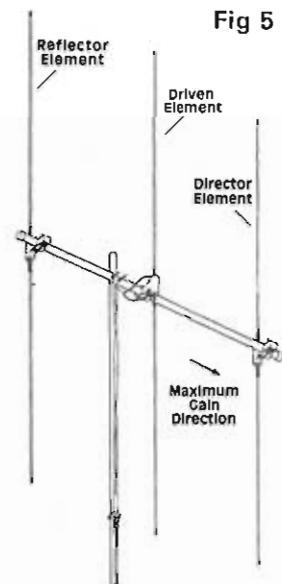


Fig 6

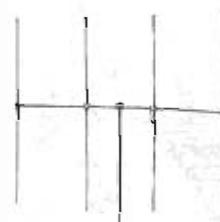
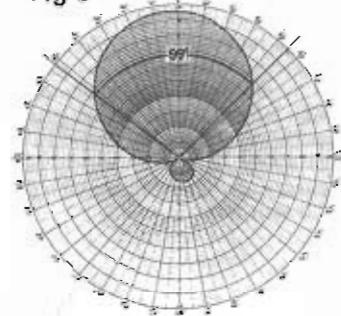


Fig 7

tuned quarter-wave ground-plane types will not function on cars, caravans, small boats, etc, made of glass fibre. In order to function at all, such antennae must have a relatively large area of metal beneath them. For the same reason, they will not operate efficiently on motor cycles because of the very small ground-plane area. Where there is either insufficient, or no ground plane area at all, the only suitable antenna is a physically small "free space" type inductively loaded to resonate as a half-wave and with some form of inductive matching system at the base to provide the necessary 50ohms impedance match.

Indoor antennae

Whilst there are a few antennae designed for indoor use (some ground-plane types will operate reasonably well in a loft space) results may not be very satisfactory owing to the attenuation of both transmitted and received signals by brick walls and roof tops, etc. Such attenuation

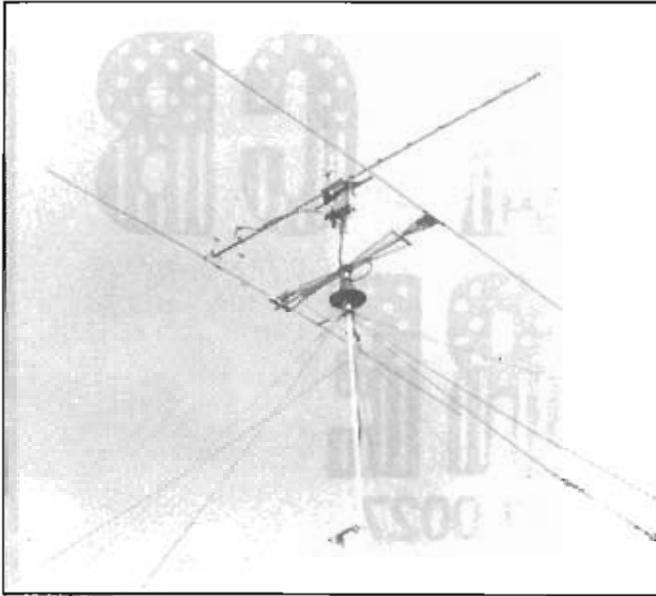


Fig 8

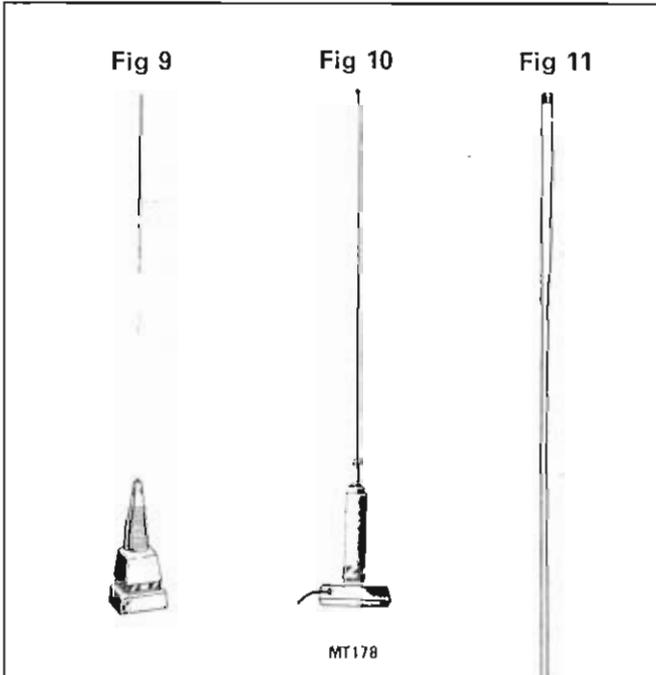


Fig 9

Fig 10

Fig 11

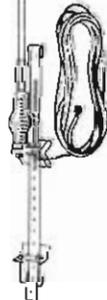
MT178

can be quite high and therefore working ranges will be restricted.

Conclusion

Finally, it is worth noting that any antenna intended for base station operation should be outside the house, as high as possible, and well clear of walls and anything that will conduct, eg. metal water pipes, gutter and metallised roofing. Remember also, that antennae can be blown down by high wind, so it is always advisable to take safety into account, and possibly be insured against damage to your own and other people's property in the event of a large antenna coming off a roof or mast.

Much more could, of course, be written about antennae; enough, in fact, to fill this entire year book. It is therefore, worthwhile obtaining one or two books devoted to the subject as a whole. An efficient, well-sited and safely-installed antenna is the real key to successful communication by radio.



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Handle Yourself

NO, it doesn't mean that. It means get yourself a CB name that will both identify you as a person, and possibly tell someone a bit about yourself.

For instance, a bank official might be called the Loan Arranger, a news reporter might be Newsboy, or His Nibs, etc. Young ladies might call themselves things like Easy Lee, Passion Fruit, while you might be surprised / offended / pleased / tempted to throw up, if you asked your "friends" to suggest a handle for you!

Remember that disgusting handles, or those with ambiguous meanings (no matter how subtle you think it is) could possibly put you in the dock on a charge of using obscene language over the air . . .

Anyway, here is our list of known, unknown, suggested and well used handles. Nobody has yet registered breaker handles, and we don't think they will. And this leaves you open to choose the handle you want, without the problem of coping with another Red Fox at the other end of the country. It also means you can give yourself a funny handle for those one-off

situations that arise now and again. Like this:

"Breaker one-four for a copy."
 "Go, breaker. You got Trouble here."
 "For sure for sure. How come?"
 "No. The handle's Trouble. What's your handle?"
 "The handle's Handy Andy, Trouble."
 And:
 "Breaker one-four, on this side."
 "We got ynu breaker. What's your handle?"
 "Prince of Wales here, and we're on the side."
 "Yeah we got that Prince. You got something to say?"
 "Yeah for Chrissakes. We're on the side. We had an accident, and the cer's on the bloody side . . ."
 It takes time, but it gets through eventually . . .
 So, two conversations; one where you can have fun with the odd handle, and the other where even the most accepted expression can lead to confusion.

For the young woman

Tutti frutti.	Factory hen
White swan	Alley cat
Tweedie pie	Angle eyes
Stardust	Baby sunrise
Silver lady	Barmaid
Seabird	Black Beauty
Red ruby	Black lace
Mary Poppins	Cat woman
Mini mouse	Coffee queen
Moonshine	Charity
Mindy	Sexy lady
Looby Loo	Loose goose
Ladybird	Sweet Martini
Lady butterfly	Devon maid
Riding Hood	Sweet potato
Hazel eyes	Jilly Cooper
Free bird	Fag ash Lill

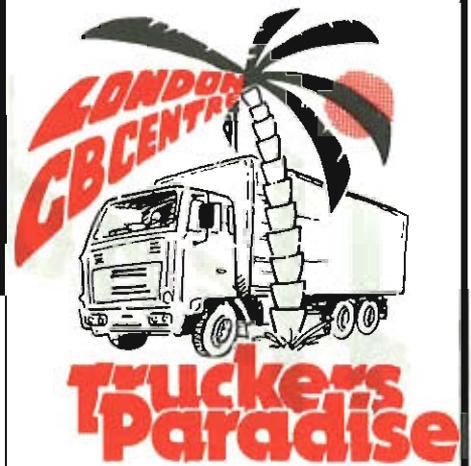


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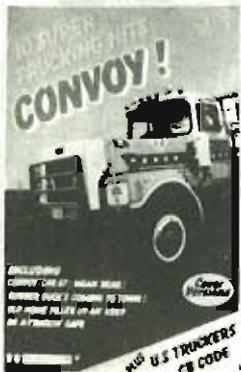
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Slanguage Language.....	at £2.50	£.....
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Opposite lock	Jet setter
Turbo	Minute man (?)
Vampire (heh heh)	Fozzy bear
Stud	Kermit
Spot light kid	Easy rider
Space monkey	Lone ranger
Sleeper	Hedge hopper
Silver surfer	Ginger biscuit
Road Runner	Grasshopper
Red Rum	Cruiser
Red leader	Philanthropist
Rancid rabbit	Bar propper
Ram	Beaver squeezer
Pussy hunter	Bogtrotter
Pocheen	

Handles designed to give away your profession

Night watchman	Movie man
Nut'n bolt	Mason master
Spannerman	Locksmith
The painter	Jack hammer
Pipe bender	Iron man
Pink gin	Ice maker
Road runner	Grease monkey
Rifle man	Gypsy
Steam hammer	Gas man
Slave man	Electrician
Silicon chip	Agent
Sharp shooter	Ayatollah
White charger	Barmaid
Vicar	Big oiler
The warlock (?)	Blue circle
The vampire (??)	Boatman
Two star	Bowler hat
Tin man	Bulldozer
Night nurse	Carpenter
Newsboy	CB priest
His nibs	Chopper man
The publisher	Coachman
The editor	Coffee queen
Motor mender	Criminal

For the true confessor!

Rabbit habit	Blind man
Almost grown	Blusher
Criminal	Wind breaker
One rowlock	Valve bouncer
Chopper man	Rooky cook
Alley cat	Minute man
Bald eagle	Lady Godiva
Black beauty	Desperate Dan



"Have you got an eyeball on us yet, Huggy Bear . . . ?"

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CODEWORDS

Codes, digits, letters, dots, dashes. How to use them, say them, and spell them.

OK, it's all very well chatting together in the CB lingo, but there is still a lot of mis-hearing and requests for message repeats. Not only does this waste time, annoy people who don't copy the message, but it could, in the extreme, cost lives. After all, the codes were originally produced in order to cut down transmission time, and to prevent misunderstanding. So, on these pages, we have listed the codes in common (and not so common) use in Britain, and useful aids, including the phonetic alphabet, and other friendly words of advice to breakers.

Standard radio talk procedure covers seven main points and they are as follows:

1. Transmissions should be kept uniform to prevent misunderstandings.
2. Use clear and concise, and consistent speech.
3. Keep messages simple.
4. Note "known" repeat phrases, and maintain this consistency.
5. Learn and use the phonetic alphabet.
6. Ditto the 24 hour clock.
7. Use standard phrases for ease of

understanding.

There's another thing that will help enormously to make sentences easily understood; use simple sentences, and do not speak them one word at a time. By the time you've finished your sentence, the other chap might have forgotten the first few words! Use a good, steady speed, and don't vary your rhythm of speech.

Especially on a poor signal, you should use known phrases, like "Roger" or "10-4" where appropriate, and if you need to hear a message repeated, then say "Read back" or "Say again" but only use one phrase.

Using more than one phrase to say a single thing can be confusing.

A request for how good your outgoing signal is, might be responded to in words or figures. This explains the answers to a "Do you read me?" request:

Strength 5 — Loud and clear;

Strength 4 — Clear, fairly readable;

Strength 3 — Difficult to read;

Strength 2 — Poor, barely intelligible;

Strength 1 — Intermittent. Very poor.

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	Foxs-trot	..—.
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	Roh-mee-oh	—.—.
S	Sierra	See-air-rah	...
T	Tango	Tang-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.

THE 10-code has been used by CB operators for several years now, and by what are quaintly known as law enforcement agencies for many years. But the code came originally from America to deal with emergency services and requirements. Over the past months, Britain has adopted the 10-code generally, although, naturally enough, some have been modified to cope with "home" use. For instance, 10-91 as used by police means "Pick up prisoner" but to the CB operator in lil ole GB it means "Talk closer to the mike". And who, among CB people need to know a breathalyser report? Where to investigate a suspicious vehicle? or, the

location of a mental defective . . . oh, I don't know . . .

Anyway, the 10-code list below is said to be the most accurate GB 10-code as used by CB operators in Britain currently. Incidentally, it might be as well to explain to those not in the know, that the 10-code was originally created as an abbreviated language intended to cut down expensive and critical transmission time, and eliminate confusion and the need to repeat what might be a wordy and complicated message. Mind you, it does mean that both breakers need to know the language to make it work properly!

- | | |
|---|---|
| 10-0 Take care/caution. | 10-44 Message for you. |
| 10-1 Poor reception. | 10-45 Anybody within range? |
| 10-2 Good transmission. | 10-46 Assist motorist. |
| 10-3 Stop transmission. | 10-50 Break channel. |
| 10-4 OK. Message received. | 10-53 Accident — road blocked. |
| 10-5 Pass message on. | 10-60 Next message number? |
| 10-6 Busy — stand by. | 10-62 Can't copy — use phone. |
| 10-7 Out of service. | 10-63 Network directed to |
| 10-8 In service — open to calls. | 10-64 Network clear. |
| 10-9 Repeat message. | 10-65 Next assignment/message? |
| 10-10 Message completed — waiting. | 10-66 Cancel message. |
| | 10-67 All units comply with |
| 10-11 You're talking too fast. | 10-69 Message received. |
| 10-12 Visitors present. | 10-70 Fire at |
| 10-13 Advise weather/conditions. | 10-71 Proceed with message. |
| | 10-73 Speed trap at |
| 10-14 A party at | 10-74 Negative/no. |
| 10-15 Disturbance. | 10-75 You are causing interference. |
| 10-16 Collect at | 10-77 Negative contact. |
| 10-17 Urgent business. | 10-81 Reserve hotel room for |
| 10-18 Anything for me? | 10-82 Reserve lodgings. |
| 10-19 Return to | 10-84 My telephone number is |
| 10-20 My location is | 10-85 My address is |
| 10-21 Phone me. | 10-88 Advise telephone number of |
| 10-22 Come personally. | 10-89 Radio repairs needed. |
| 10-23 Stand by. | 10-90 I have TVI. |
| 10-24 Assignment completed. | 10-91 Talk closer to the mike. |
| 10-25 Get in touch with | 10-92 Adjust your transmitter. |
| 10-26 Disregard message. | 10-93 Check my frequency. |
| 10-27 Moving to channel | 10-94 Give me a long count. |
| 10-28 Identify yourself. | 10-95 Transmit dead carrier 5 seconds. |
| 10-29 Time up for contact. | 10-96 Subject is mental. |
| 10-30 Illegal use of radio (?) | 10-97 Check (test) signal. |
| 10-31 Crime in progress. | 10-99 Mission completed, secure. |
| 10-32 Radio check. | 10-100 Going for a pee. |
| 10-33 Emergency! | 10-200 Police needed at |
| 10-34 Trouble here, help! | 10-400 Drop dead. |
| 10-35 Confidential info. | 10-500 Phone me. |
| 10-36 Correct time is | 10-1000 Homosexual. |
| 10-37 Breakdown at | |
| 10-38 Ambulance needed. | |
| 10-39 Your message delivered. | |
| 10-41 Change to channel | |
| 10-42 Road accident. | |
| 10-43 Traffic jam at | |

K40



CB

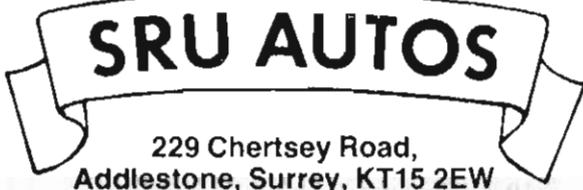
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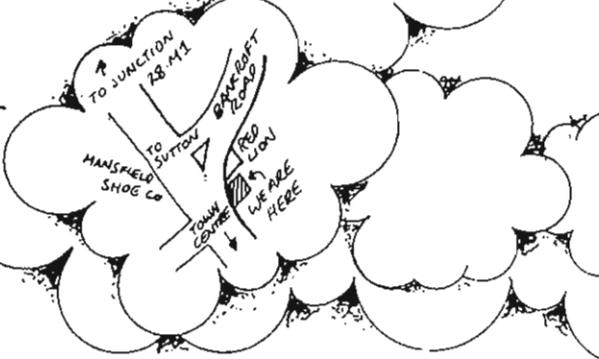
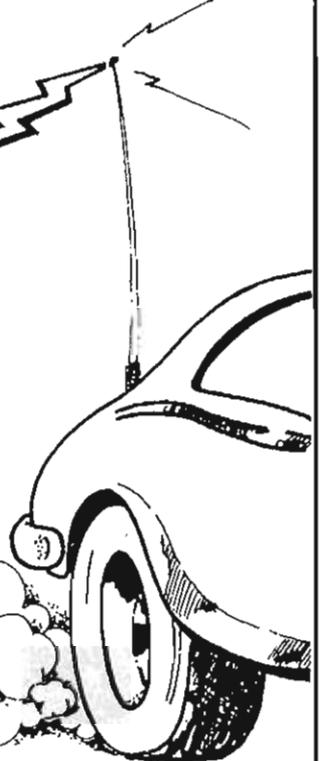
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**BREAK!
BREAK!**
I got my ears on!
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down to
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yet?
c'mon.



ALTHOUGH 13-codes are popular in the US, they've not caught on in GB for several reasons. At present they might confuse the issue, and in any case they are considered unnecessary; on the other hand, they're a glorious put-down to another breaker. Read them and see what we mean. A number of sources of the 13-code vary in their

interpretations, and although we produce one such list below, they could well mean something else who has read another, possibly American-based list.

To sum up, we have produced this list more as an amusing but very rough guide, rather than a bona fide code that's known and used by all breakers.

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

WHILE the 10-code is specifically for CB operators, the Q-code has been in use for several years by hams and amateur radio enthusiasts. Nowadays it's used widely by CB operators who are DXing, or skipping, ie. communicating over long distances.

The Q-code can be used as either questions or answers, while the 10-code is

more limited in its use, and is less likely to be understood by hams, contacts abroad, and other SSB (Single Side Band) users. The Q-code is an asset when talking "advanced" DXing, although a lot of British SSB and DX operators get along without using any Q-codes save for the introduction.

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

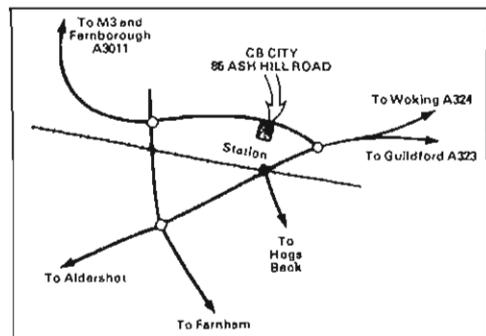


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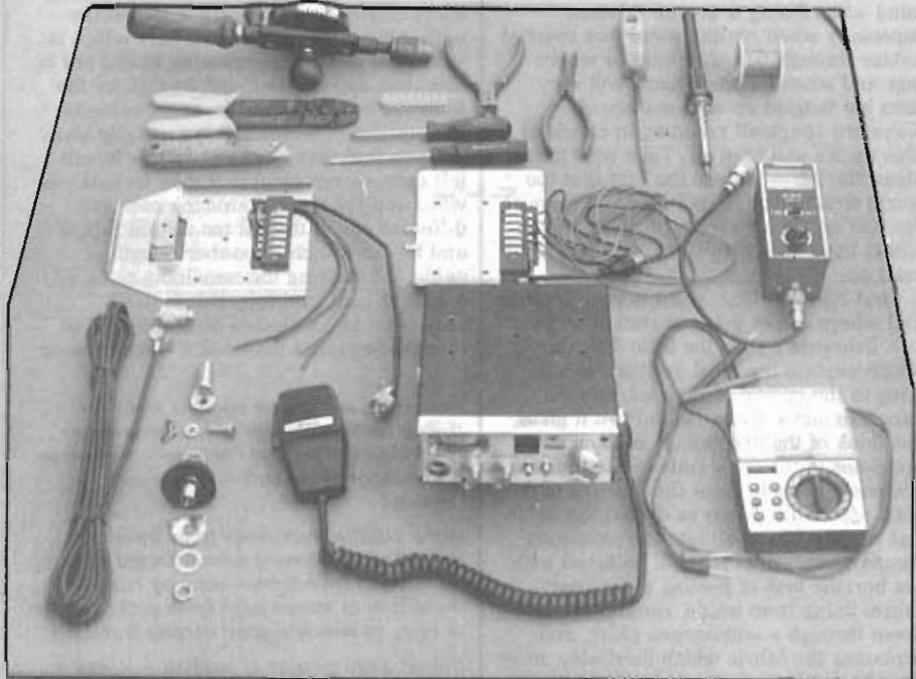
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Do your screws go in properly?
Does the sight of your car's electrics make you tremble at the knees?
Do professional rig fitters kick sand in your face?

If your answer to all these questions is yes, then you definitely need a lesson in the gentle art of installing your own mobile CB, an operation tackled here in the pages of CB81 by Eric Smith (Sparks) of Witney Electrics with wordsperson Russell Fisher breathing attentively down his neck.



DO IT YOURSELF DO IT YOURSELF

Such is the nature of the world of CB radio, the sight of a badly fitted rig is an all too common one; indeed if you have ever owned a CB then you will understand why — arriving home with your brand new, straight-out-of-the-box communication goodie, the urge to bodge it in with all the loving care of a bear with a bad head is a strong one. Time is of the essence, after all, and another minute or so off the air is another minute of your life wasted!

Hand in hand with this comes the problem of where to site your rig, although with the imminent arrival of legalisation and leniency of the authorities, tucking it away extremely temporarily is less important nowadays. Until legislation is passed, however, it would be rather foolish to stick your neck out too far.

The most important factor to keep in mind when fitting is overall tidiness, especially when routing wires and co-axial cables through the car's interior where legs and other flailing objects will very soon get tangled up with masses of wayward spaghetti resulting in clouds of blue smoke and blue air. Take your time about the job — accept the fact that the world won't come to its knees just because you are on the air an hour later than you would have been after a hatchet job. Now read on.

First thing to think about is your antenna end where you're going to stick it on your car. Everyone's seen the little diagrams which explain the ideal position, smack bang in the middle of the roof, and the excellent signal radiation pattern it gives, but think of the practicality of such a set-up. Holes in the car's bodywork are obviously going to raise the chances of a leak, especially if they're drilled through a flat surface (the roof) into the passenger compartment. Also you will be faced with the horrific task of peeling away your fabric lining from inside, running the co-ax down through a windscreen pillar, and replacing the fabric which inevitably never goes back without an epic battle of brawn and brain.

Avoid such hassle by using the bootlid or rear/front wings. The signal from an antenna mounted in either of these positions will be slightly directional, but this is often a good thing.

For this demonstration we used a Firestik-style antenna (not an original PAL item) mounted conveniently on a DV27 base. The reason for the DV base was for ease of angling the Firestik, impossible when using a Firestik fixed mounting, although if your surface is relatively flat this isn't so important. Explore beneath your chosen area before attacking it with a drill just in case there is a chance of filling the fuel tank full of neat little holes. Take note of the piccy we've featured of our own particular antenna site and the two crossed pieces of insulation tape stuck across it. These will prevent your drill from performing pirouettes across the shiny paintwork, especially if a hand-operated drill is used. Always use a smaller size of drill than will allow your base to immediately slide through, as it's much safer to enlarge the hole with a small file, and avoid heaving the nut on the mounting up that tight that the claws which grip the

lower surface of the car bend and eventually loosen off.

When using an antenna such as the Firestik which is by no means a lightweight twig it may be a good idea to add extra panel strengthening with a small sheet of metal fixed between the mounting and the body, therefore spreading the stress when the Firestik flexes in the wind.

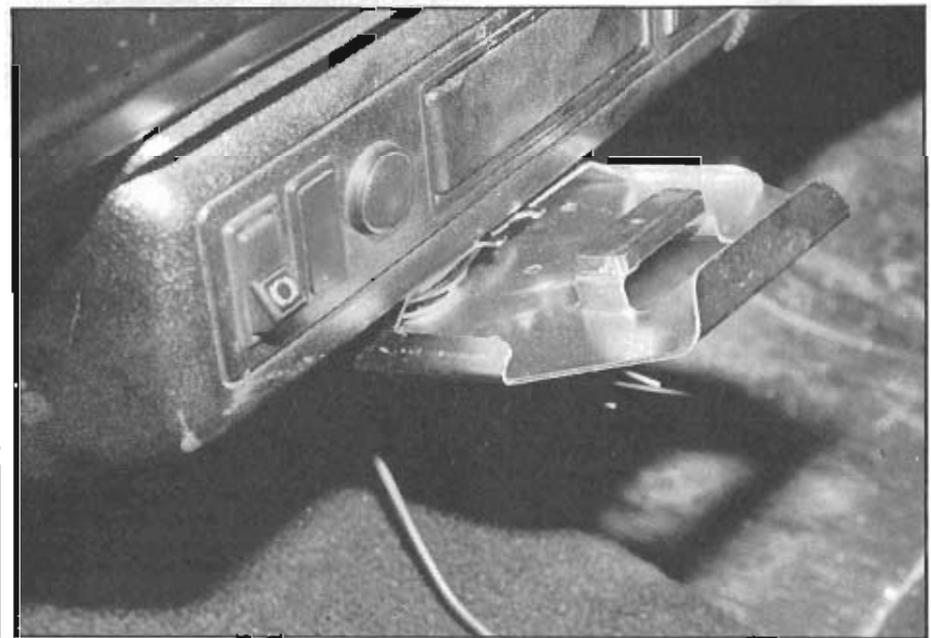
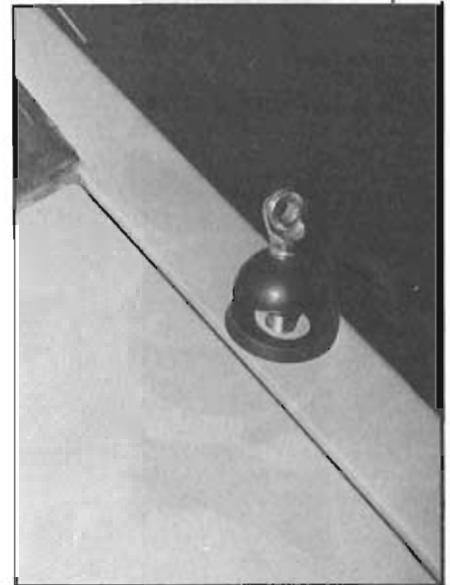
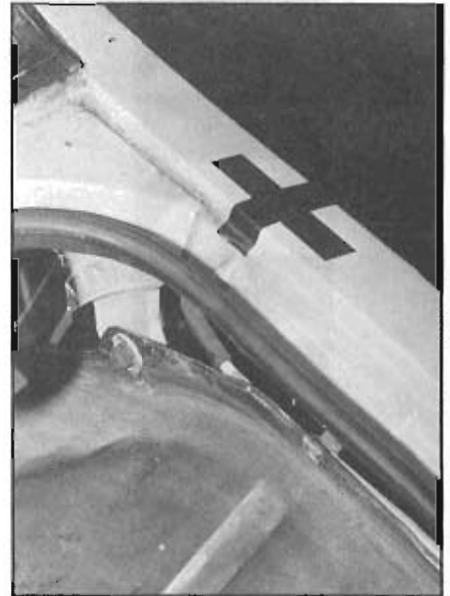
Feeding the antenna co-ax cable through the car is very much a case of searching for those hidden nooks and crannies which will allow access into the car's interior without creating any more holes. In the Escort we found that there was adequate amount of space between the car's side and the rear seat back, via which the cable was led down to floor level and along behind the plastic panelling by the sills.

No matter how much hassle this tucking away causes, it's all worth it, especially with a two-door car such as ours which is subjected to much clambering in and out by less than delicate feet and legs. If, by the time you have brought the co-ax cable to the position in which you hope to site your rig, you find that you have quite a length left over, do not chop it. It may be that you will swap the rig and antenna over to a different car in the not too distant future and be stuck with a too-short length of cable. When tying the remaining co-ax up, double it back and forward on itself somewhat like a clothes line, and tie it in the middle rather than coil it — coils mean

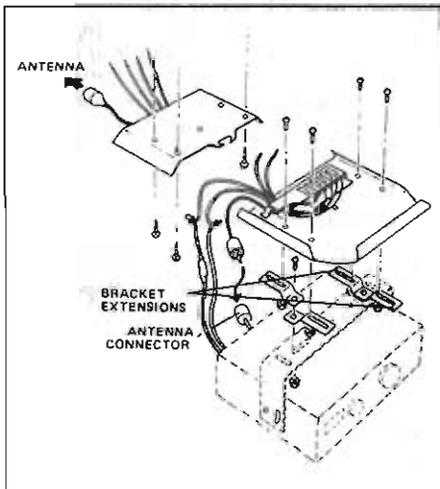
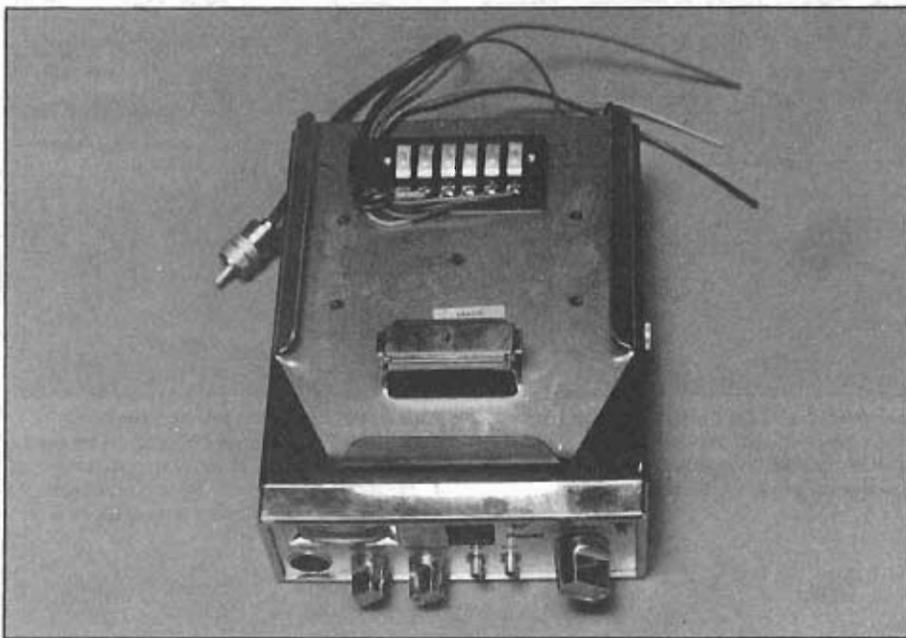
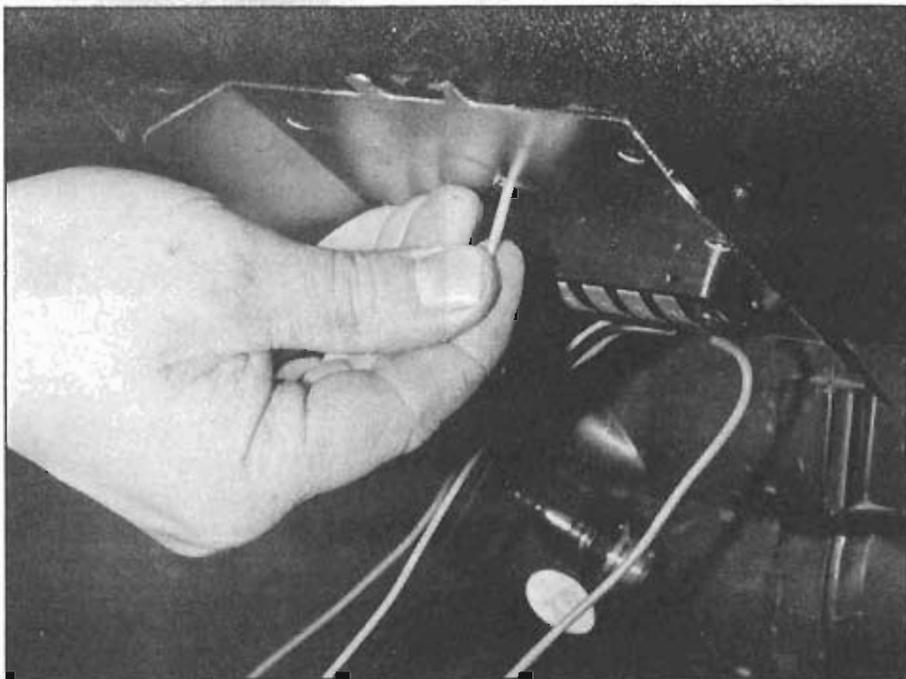
Top: Proposed site for antenna ready for drilling with two pieces of insulating tape stuck down to prevent "skating". Note close proximity of petrol tank — much care required!

Right: DV27 mount ready to be bolted up, the drilled hole having been enlarged with file. Do not over-tighten securing nut and make sure to scrape paint from under surface of body to ensure a good contact is made.

Below: Slide mounts in position — check it doesn't foul anything by sliding half out with top plate held temporarily in place.



DO IT YOURSELF DO IT YOURSELF



Top: All the weight of the rig and its mount is taken by these screws, therefore make sure they have a good grip and won't work loose.

Above: Lower half of the slide mount on the upper surface of the rig — this method of mounting was unavoidable in this particular application, but it's best to use the original rig bracket where possible.

Left: Recommended method of mounting slider plate to rig.

resistance and resistance will mean a loss of power and a resultant bad SWR.

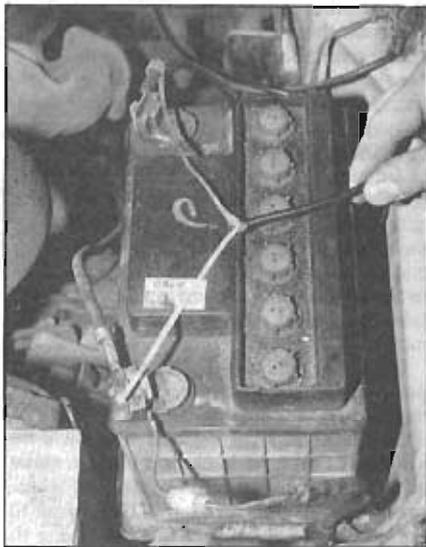
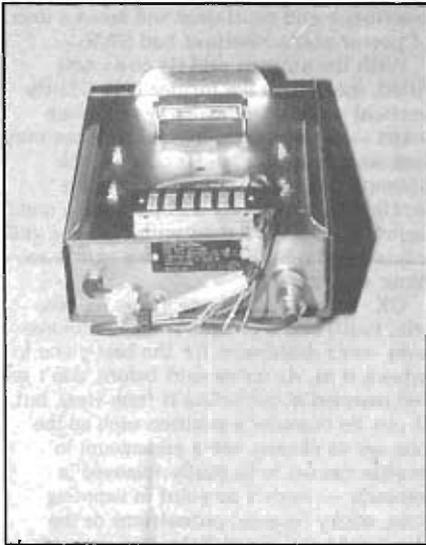
With the antenna and its co-ax now fitted, make sure the former is in a fairly vertical position without any ridiculous leans — a backwards leaning antenna may look aerodynamically effective for the 100mph boy racer, but when pointing straight to the skies it will push out a much better signal. We'll deal with checking and adjusting the SWR later in this article so hang around.

OK, now one takes one's squawk box (rig, twit!) and one casts a thoughtful eye over one's dashboard for the best place to whack it in. As we've said before, don't get too worried about hiding it from view, but if you do consider a position such as the one we've chosen, use a slidemount to enable the set to be easily removed in seconds — there's no point in tempting fate, sticky-fingered pedestrians or the downright dishonest! Take into account the fact that you're very likely to use it while on the move, therefore if there is the space available, try to squeeze it in somewhere to the right of the wheel where you can see it without leaning across the passenger side of the car and the mike will be within easy reach of the right hand. Unfortunately the bonnet release catch on the Escort was in such a position as to make this completely impossible and the next best place just had to be in the middle. Dashboard panelling was plastic here but proved to be sufficiently strong to take the weight of the rig and its slide mount.

Before drilling any holes, offer the two parts of the slide mount up to the dashboard and holding the top part to the dash surfaces, slide the half which will be attached to the rig back and forth to make sure that it will not foul on anything when removing the rig. Ours came quite close to the gearstick, but an investigation using the above method revealed that it wouldn't be too close for comfort.

Thanks to this tight fit, however, we had to discard any idea of fixing the slide mount to the rig by means of the usual mounting bracket which comes with the unit, instead drilling the required number of holes through the top of the rig and bolting the slide mount straight onto the top surfaces. Avoid using this method unless really forced to, as the chances of knacker your rig's innards are pretty high. Be especially careful not to touch the printed circuit board with any of the nuts as this could cause a fatal (for the rig) short when in use. Once the bottom half of the slide mount has been attached, carefully (very!) replace the top of the rig and set about the task of matching up the live and earth wires from the back of the set to those on the slide mount. This is just a simple case of matching colours but make sure the joins are well taped up, or preferably use bullet connectors or another recognised form of connector. The slide mount will come with its own PL529 which should be plugged into the back of the rig, the power source and antenna coax plugged into the other half of the mount attached to the dash. The rig should now slide easily onto its mount under the dash and once the power source has been found

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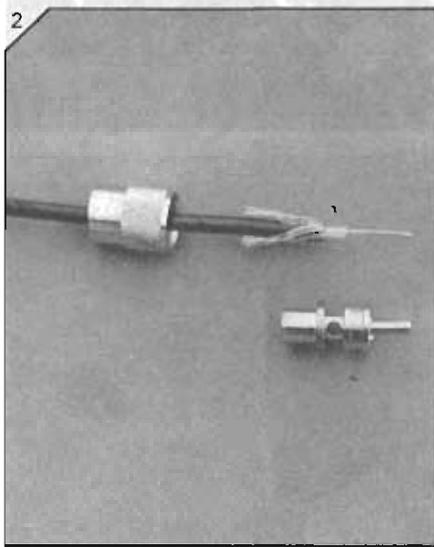
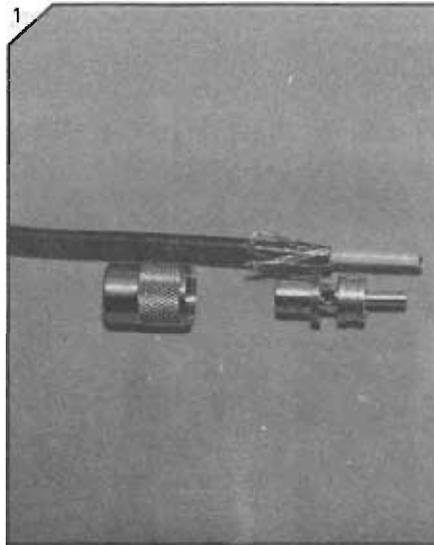


Top: slider plate has now been bolted down to the rig's upper surface and wired up.

Above: It may look a little crude, but this is the safest way of obtaining power straight from the battery and avoiding as much electrical interference as possible. Cable used is RG58U antenna co-ax with outer braiding "combed" back.

and the relevant wires routed and matched up, all systems should be go.

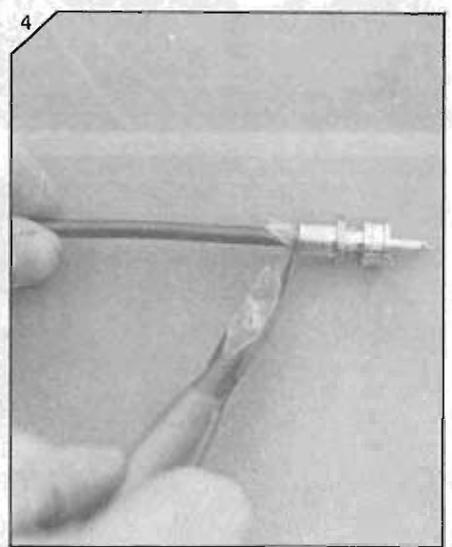
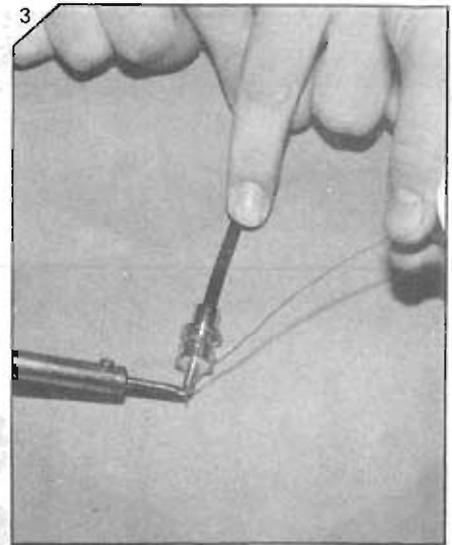
Power should be taken straight from the battery, the reason for this being that much of the interference created by the vehicle's other electrical gadgets and ignition system is avoided. Splash out yet again (if the wallet or wife allows) and buy yet another length of antenna co-ax cable. Yes, this may sound rather strange stuff to be using as power supply wire, but it's a little known fact that it will also act as an interference suppressor. With the outer braiding acting as the earth wire when connected to the negative battery terminal as shown in the picture and the inner copper wire going to the positive terminal, the outer wrapping will also act as a capacitor and shield the positive cable from outside interference. The outer cable can be pulled back by a method known as "combing", in other words fraying it and



Connecting a PL529: 1. Outer braiding has been exposed and combed back. 2. Outer half of the PL529 is pushed back over co-ax once inner cable has been stripped.

rewinding after it has been freed. Route the co-ax cable (we'll call it by its proper name "RG58" to avoid confusion with the antenna cable) through one of the many rubber grommets in the engine compartment bulkhead, although you will probably find that they are a tight fit and a small hole will have to be pierced through the rubber. The RG58 is then brought down through the dash to the top half of the slide mount where extra special care should be taken when connecting as there is obviously no colour coding with this type of cable.

Do not relax, dear reader, for there's a hell of a lot still to do before you can start waffling across the airwaves, indeed now we come to the skilful task of fitting a PL259 antenna co-ax connector plug, you know, the one which screws into the back of your rig, or in this case the female connector in the top half of the slide mount



3. Once your RG58 co-ax has been threaded through PL529, inner wire should be secured by delicate soldering at tip of connector. 4. Finally, trim remaining braiding and slide outer half of PL529 up and over to complete job.

Your PL259 will come in two bits as shown in the piccie, we'll call them the outer and inner for the purposes of this article. Take the co-ax cable and peel back about an inch of the black outer plastic covering to reveal the same length of silver-coloured wire braiding. Comb this back in the way already described and push back across the outer surface. Strip off around three-quarters of an inch of the almost transparent white plastic coating beneath the braiding to reveal the same length of inner copper wire. At this point the outer part of the PL259 should be slid back over the cable and pushed out of harm's way for the moment.

Taking the co-ax in one hand and the inner part of the PL259 in the other, push the co-ax through the inside of the PL259 until the edge of the braiding just begins to show through the small hole in the side. Twist the co-ax cable when pushing it into

DO IT YOURSELF DO IT YOURSELF

the PL259, as this will secure it tightly on the thread cut into the inside on the connector. When this is done a small length of the inner copper wire should be sticking out from the very tip of the PL259 — snip this until it is flush with the end and secure with a small blob of solder. Once this has solidified the remaining ends of ragged braiding can be neatly snipped where they protrude from the PL259 and the outer part screwed back over the inner. The PL259 and accompanying co-ax cable can now be connected to the slide mount in the approved fashion.

With everything bolted and screwed in its proper position, the time has come to twiddle the knob marked on/off-volume and hopefully a series of little lights will twinkle and the speaker will crackle and hiss. Curb your enthusiasm to blast on regardless, however, as last, and most certainly not least the SWR has to be checked and adjusted. Taking an SWR meter, examples of which can be purchased for anything upwards of £7, and a patch cable, the antenna co-ax should be connected to the end of the meter marked "ant" or similar, and the patch cable coming from the meter should be plugged into the back of the slide mount or rig. The meter should now be connected "in line" with the antenna. Make sure the car is parked well away from any large objects such as buildings and with the switch marked "Iwd-ref" switched to "forward".



Rig and slide mount in position with SWR meter connected in line ready to give SWR reading.

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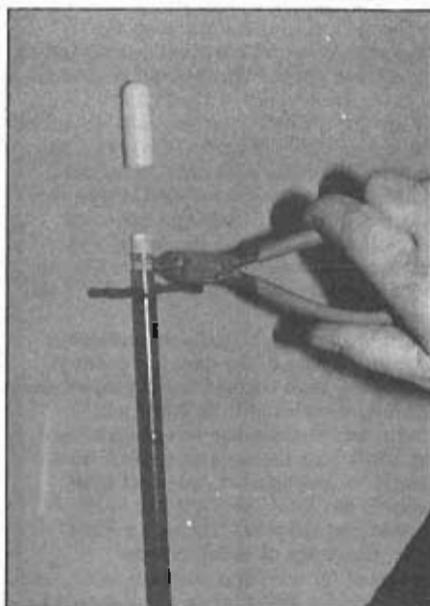
key the mike with the rig tuned into channel 20. the needle will immediately leap up the scale, but the mike button pressed in at the same time turning the knob on the meter until the needle is giving a maximum reading. Then release the mike switch and switch to "reflected". Key the mike yet again and the meter should give you an SWR reading. Any reading below 2:1 is fine, but if it reads above this then adjustment is required. If so, the next step is to check the readings on channels 1 and 40. If the SWR reading is higher on channel 40 then the antenna needs shortening and by the same reasoning it's higher on channel 1 then it needs to be lengthened.

Trimming an antenna such as the popular DV 27 is sheer simplicity, as a small slider is provided in the tip with a locking nut — slide this up or down to shorten or lengthen. With a twig such as the Firestik, the operation is a little more crude — the plastic covering on the antenna should be peeled back slightly to expose the copper coils which can then be attacked with a pair of wire snips as shown in our glorious black and white photograph. Take your time when attempting to SWR an antenna of this variety, as it's very easy to cut too much off and be left with a useless length of brightly coloured fibreglass! Once you have removed the required number of coils and

obtained a satisfactory SWR reading, bind the end of the Firestik with a small length of insulating tape to hold them in place and replace the plastic tip.

If you are adjusting the antenna with a friend, you may find that the reading will be affected when he moved his hand towards the loaded part of the twig. If this is so, then you probably find that if the reading goes up when his hand is close to the loading, then the tip needs shortening, and lengthened if the reading goes down. Remember to re-set the SWR meter with the switch in the "Forward" position every time you take a new reading, and make sure you don't hold the mike button in for any longer than around 10 seconds when adjusting. Attempt to obtain the lowest SWR reading on the channels you are most likely to use most often, as the more reflected power your rig is subjected to, the more likely it is to kick the bucket thanks to a form of transistorised cardiac arrest.

So there it is in black and white — by now you should have gained the knowledge required to fit your own little rig with the minimum of hassle, bruised knuckles and swear words. Yes, we know that we've told you how to fit an illegal rig into your car, but note that it's HOW and that we're not actually encouraging you to commit an illegal act...



Trimming a Firestik-style antenna, not the easiest of jobs at the best of times and one which great time and care should be taken over — don't cut too much off!



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CB81 takes a trip round the CB shops, and talks to people with rigs for sale!

Hand-held units, and below, K40 equipment, SWR meter, CB converter.



Story by
PETER DODSON

TIME, it has been said by those who don't have a lot of it, is money. And if this line of argument is followed to its logical conclusion, leisure time is big money, and in this respect CB is no exception.

All over the country, CB shops are doing a roaring trade on the principle that breakers are human beings and as such they consider that perfection is just one more piece of radio equipment away.

And what an assortment of accessories there is to choose from! Cheapest by far in the way of receiving equipment was one at £19: A multi-band job, with telescopic antennae and wrist strap, this receiver could also reach CB frequencies.

On the other hand, the cheapest transmitter for sale was a 49MHz unit with a range of about 400 yards — although the chances of finding a fellow breaker within that distance (or, for that matter, on 49 Megs), must be pretty slim. Pictured is an assortment of CB equipment accessories.

But for the real thing, the **CB Master 20/40**, (P.78) retailed at around £60. Neat and compact as a car radio, this transceiver has the standard 40-channel capacity. And on the subject of car radios, a gadget to convert a standard set to CB reception is shown on P. 78, along with a generator filter to eliminate TV interference.

Antennae are, indisputably, of vital importance to the successful breaker, and on P. 77, is a selection of those currently available in helically wound form, or as base-loaded units. And to test your ears there is a variety of equipment. Page 79, for instance, illustrates a meter incorporating the capacity to measure standing wave ratio, (SWR), field search and to match power and antennae. Also shown is a standard SWR meter and a SWR power and field search meter. Three multi-way antenna switches and dummy load are also available.

But the ultimate in mobile-type antennae is shown on P. 75. Choose the **Harada TX-10** retractable unit. It may represent a luxury, but is guaranteed to frustrate those playful idiots who get their kicks from ear-bending.

At the other end of the rig, of course, is the microphone, and on P. 75 are a base

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Below: Base station mike and hand-held power mike.
Bottom: Quality retractable antenna we just found leaning against this old log!



power mike and a hand-held unit. Similarly available are standard base microphone together with a hand-held power job. And if you get turned on by turning on the power, then it can be attained by boosting incoming signal transmission. Both of these capabilities are contained in 50 watt linear amplifier not shown here. On the other hand, if you value your car battery and want receiver preamplification alone, other units are capable of giving up to 20dB gain.

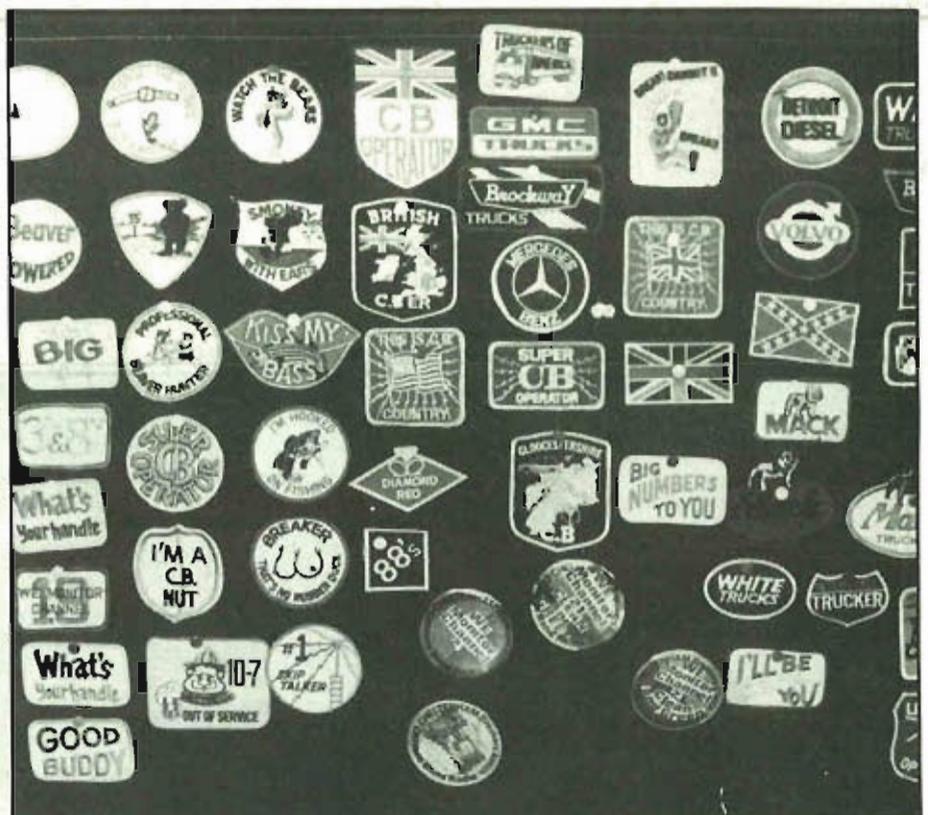
For those breakers who prefer to pursue their hobby close to woman, home and (if they're lucky) beauty, P78 depicts a base power supply unit for domestic use. With it is a base station extension speaker so that the home-loving breaker doesn't have to miss anything — even in the loo! And for the odd occasion when he does go mobile, the radio/CB antenna splitter, also shown enables him to use the same unit for radio and CB. The PA horn on P73 is invaluable should nature demand his temporary absence from car and rig . . .

From the political to the downright lewd

For the more extrovert breaker, there is plenty in the way of CB regalia; P76, for example, demonstrates an array of sew-on badges with which he can embellish every item of clothing from leather coat to long-johns! Similarly available is a selection of key fobs bearing suitable, if obscene CB-type inscriptions, approved breaker head-gear and belts. Suffice it to say that the weight of the huckles might necessitate the supplementary support system of a pair of braces! One technical item you can buy is a Roger "Bleep" unit which, for ten quid, will emit just what it says at the end of every transmission.

There is a wealth of literature available to breakers — and this, incidentally, includes ear stickers that vary in content from the political to the downright lewd. Books on the subject range in technical depth from *The Big Dummy's Guide to CB Radio*, to others which require a theoretical knowledge of radio far in excess of anyone I know. And this is the thing about those in the breaker-biz — any amount of advice (often free) is available. It could be that the shops, etc, are on the crest of a wave, and/or on the brink of a major killing in radio sales.

You simply have to glance at all the advertisements on the pages of CB81 to appreciate just how many products are available today. At the time of writing it's still not legally permissible to sell, buy or own/use a CB rig in this country. But when CB is legalised, we're sure the market will be flooded with FM and UHF rigs.



Above: Hundreds of sew-on badges for the breaker.

Left: Citizens' Band and multi-wave receiver, priced at around £20.



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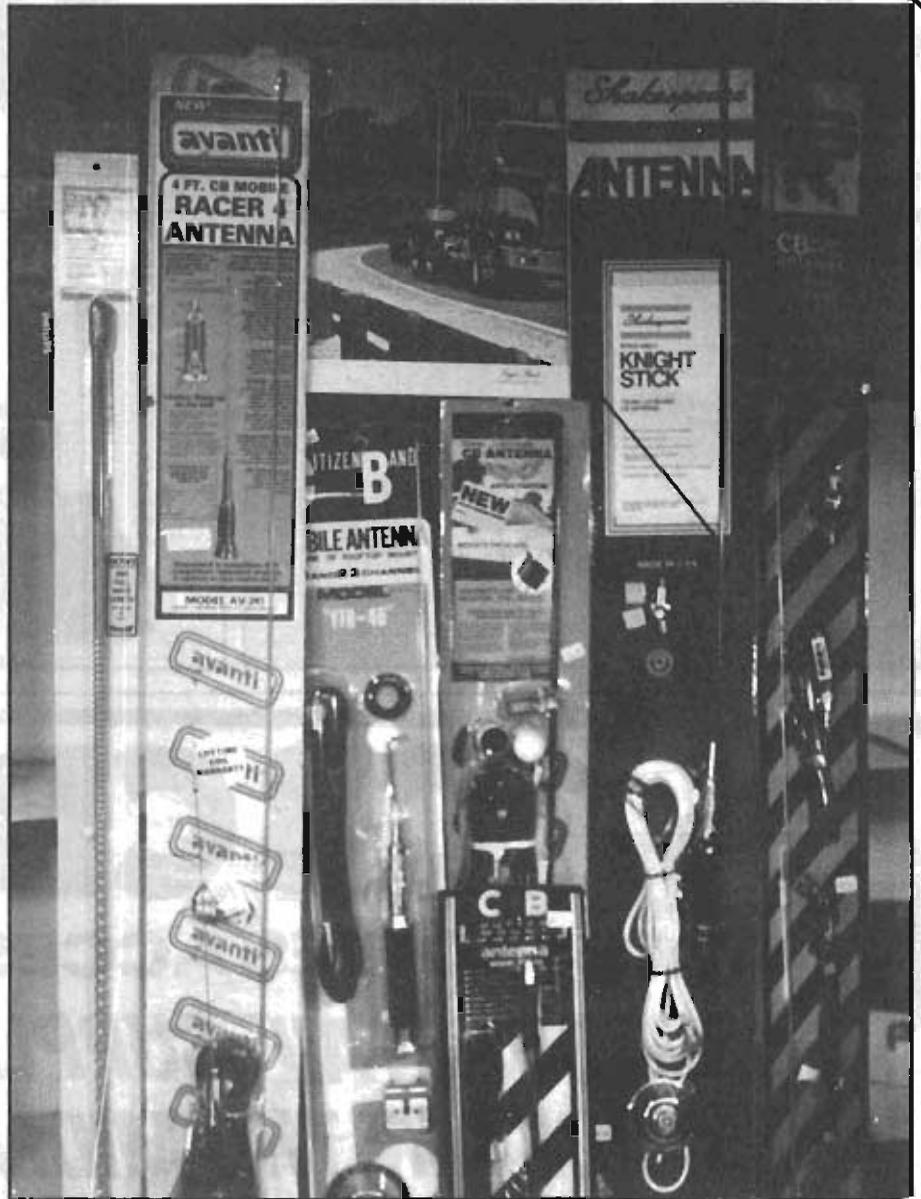
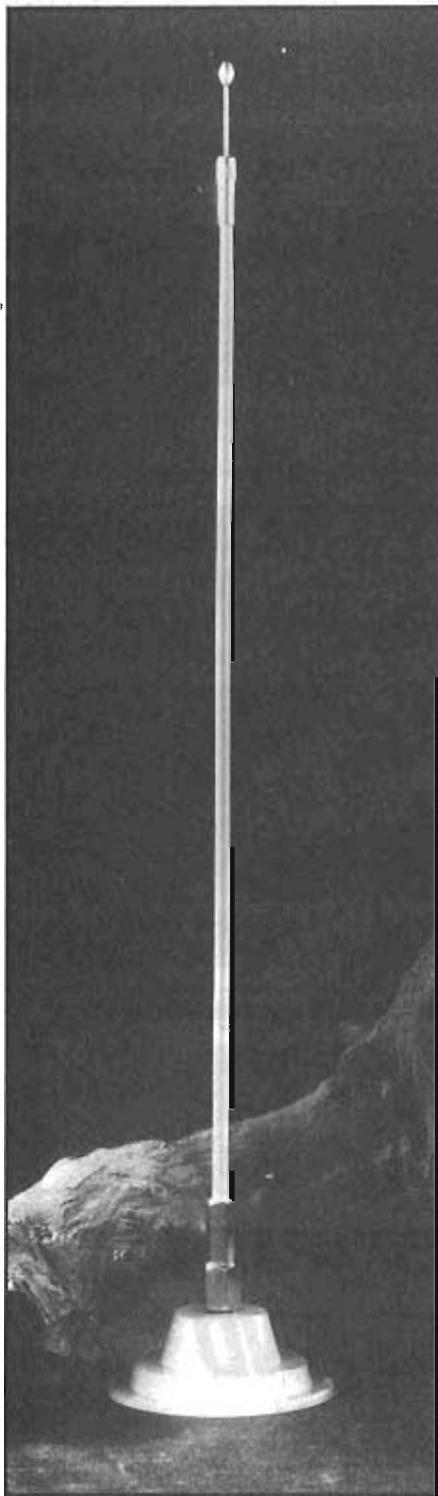
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Left: Yet another antenna standing by a piece of dead wood!

Below: Bunch of packaged antennas at the Cheltenham Breaker's Yard shop.



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Opposite: Clockwise from top left, short range 49MHz transceiver alongside a child's CB receiver, and assorted CB plugs and sockets. Home base power supply unit with car radio/ CB antenna splitter, and base station extension speaker. CB Master 20/40 channel transceiver, CB/ham generator filter and AM/CB converter for car radio.
Below: From left to right, SWR/Power/Fieldsearch meter, SWR meter, and Power/SWR meter.



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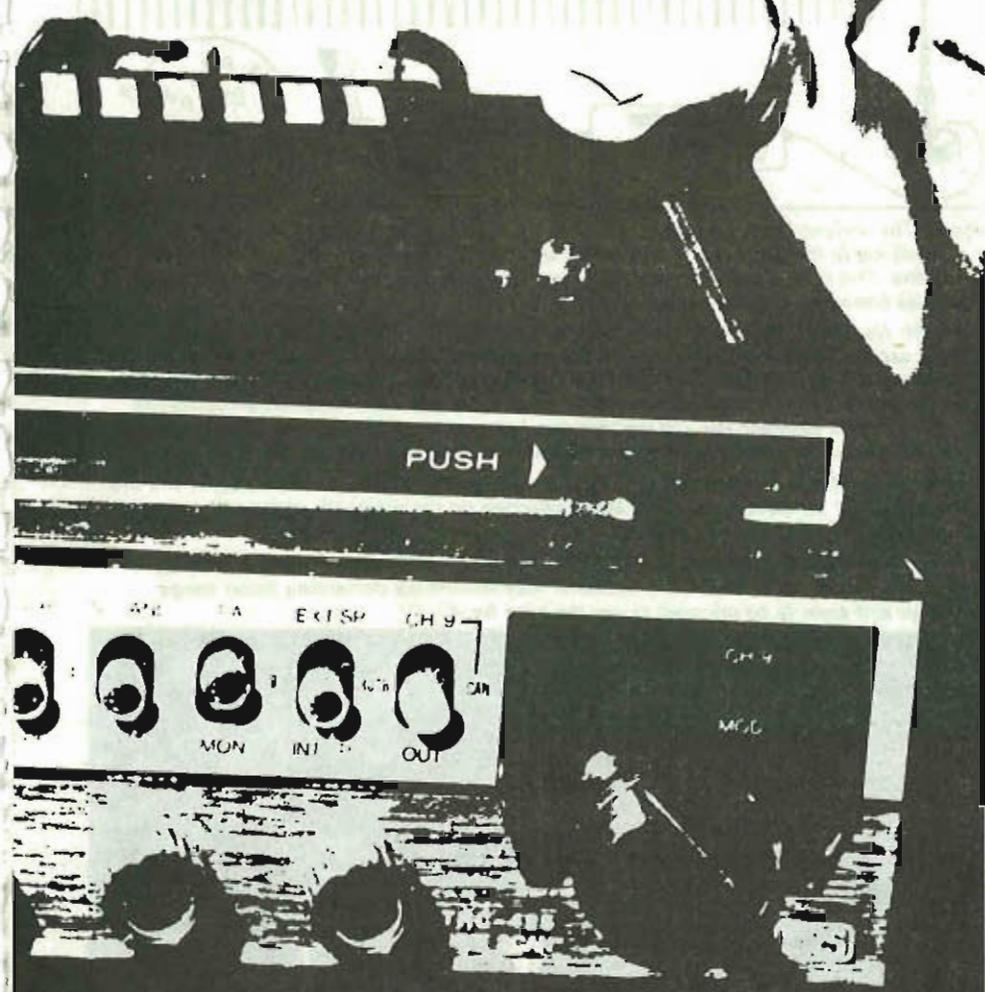
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High quality scanning receiver made in the US but to British specifications. The ARF 2001 is said to be the most sophisticated receiver of its type and comes from ARF Products Ltd, of New Mexico.



CB81 looks closely at Single Sideband, or SSB as it's better known. Is it the snob's channel? Or will it become the place for responsible breakers to chat? In any case, it's got to be the next step up from the standard 40-channel rig.

ARBITRARY SIDE ON THE SIDE

A BIT ON THE SIDE

The reel mark of the CB enthusiast is his dedication to the cause of Sideband, and in case that baffles you read on . . .

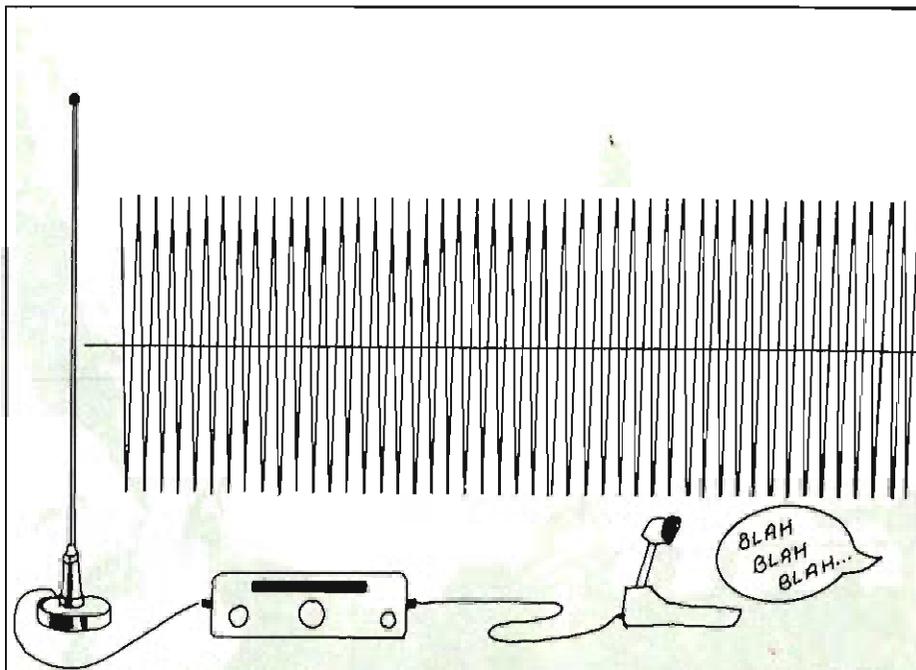
Basic rigs in America and those used illegally in Britain operate on AM (Amplitude Modulation). In Britain our legal system will operate on FM (Frequency Modulation) for "generally better reception and less interference." Anyone owning a radio receiver or radio cassette recorder with AM and FM can check the difference in quality by tuning into BBC stations on AM (roughly equivalent to Medium Wave) and then those on FM (equivalent to VHF).

AM rigs, built to US specifications have 40 channels, on which conversations can be carried out, given that a few channels are reserved for emergency communication. At this stage we are not sure how many channels the British 27MHz FM system will have but it may be 23 initially. Plus the Sidebands, of course. AM rigs have proved inadequate by serious users who wanted good conversation than was possible in the everyday and sometimes trivial use of ordinary AM. So they moved to Sideband operation, and that has proved to be the beginning of a CB revolution.

"On an ordinary rig, SSB transmission would sound double Dutch"

This is a technical subject, and there are some useful guides that you can obtain, remembering that most of the CB handbooks on sale at the moment are designed for users of AM rigs. Because Single Sideband (SSB) only takes half the "airwave space" of an ordinary AM signal, it is possible to have twice as many Sideband channels as those on AM. So a rig that has AM and SSB will have 40 channels on AM, plus 40 channels on Lower Sideband (LSB) and 40 channels on Upper Sideband (USB). All the power transmitted by the rig is put into a more compact signal, which has almost twice the range of a usual AM signal. That being the case, you might expect sideband to get swallowed up by ordinary CB users.

However, there are one or two problems. Sideband transmissions can only be received by another Sideband user. On an ordinary AM rig (without Sideband facilities) the transmission would sound double Dutch. In addition, although some mobile rigs have Sideband facilities, AM is far more suitable for the road. If you use Sideband while travelling in a fast car it's quite likely that you will have to adjust the controls from time to time to keep your signal strength. However, given the rapid advances in technology, mobiles may use Sideband more often in the later 1980s. In the meantime AM is used for most



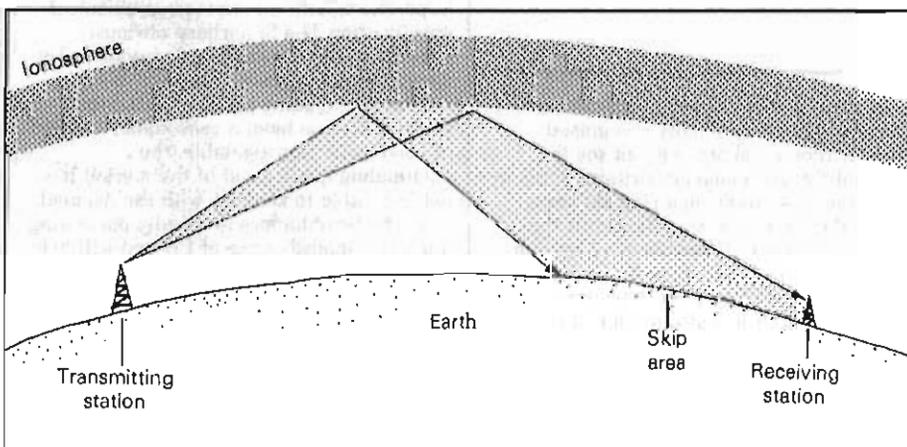
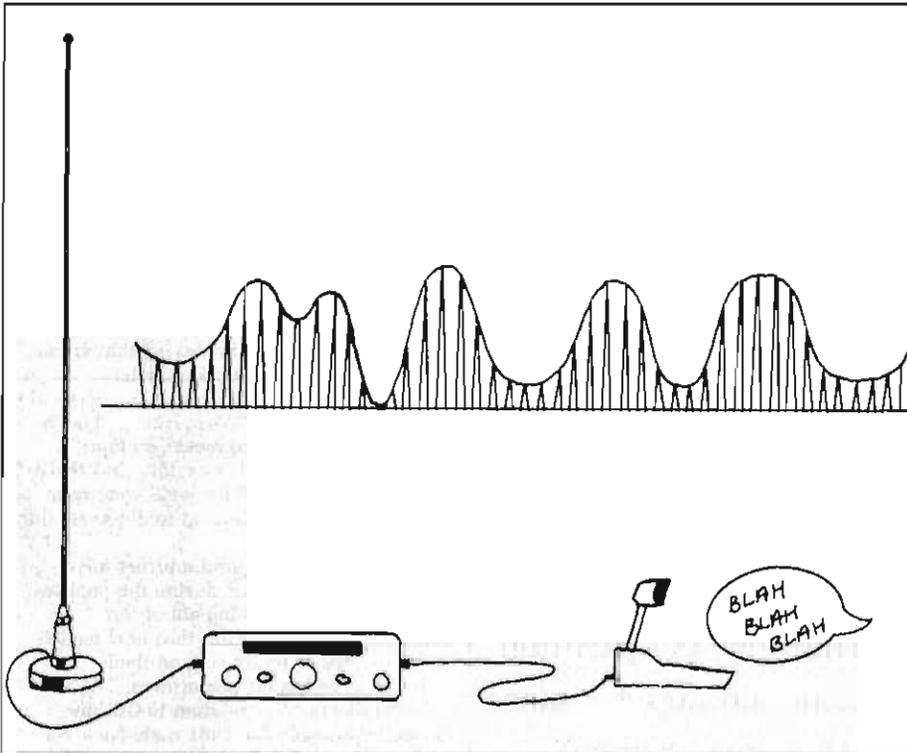
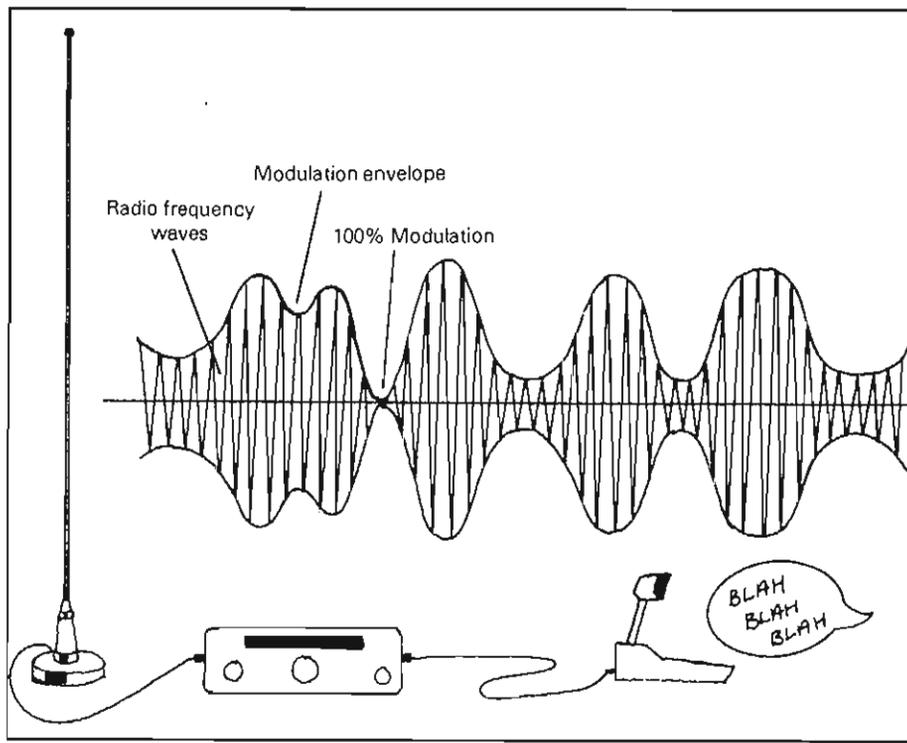
Above: The unmodulated radio wave, ie without speech or any other normal sound. The wave is symmetrical to the centre line so the crests are equidistant between each other and the centre line. This is how the wave appears (if you could actually see it), leaving the antenna. Otherwise known as a carrier wave.

Top right: Now, add speech and you get a modulated wave. When you talk into the mike the signal is excited electronically and the patterns change accordingly. These patterns are, in fact, word pictures. There are two types of modulation that concern breakers — AM and FM. AM signals tend to distort and leap around wildly, overflowing into other channels on occasions. FM signals stay a constant size and are therefore better equipped to produce quality sound — that's why stereo transmissions are always on FM, for instance.

Right: It is possible to transmit just the upper or lower halves of the modulated signal and this is where you get the sidebands. There are 40 channels on the sidebands giving you a total of 120 channels in all on the basic SSB rigs.

The Ham International Multimode II SSB rig (also pictured on the front cover) is probably among the cheaper high quality units available. Sidebanders are demanding better things nowadays and seem to be prepared to pay the extra for it.





community and road safety monitoring uses in the US, just as FM will in Britain.

To be of any value in emergencies, CB radio has to use the most popular channels — keeping Sideband for the specialists. For another factor has certainly been the cost involved in buying a CB radio for Sideband operation. Base station equipment offering AM and Sideband is usually expensive, with a range of technical facilities. One can pay hundreds of dollars, (£250 to £380) for an advanced rig in the USA. This is an indication of the way in which CB has grown up for the real enthusiast, and it's likely that in those cases it acts as a bridge to amateur ham radio.

The growing importance of Sideband in the US is shown in many ways, including the new specialist Sideband Clubs. Anyone can use CB, and although you have to be 18 to hold a CB licence in the US, rigs are used by all the family. This does not diminish the value of CB for road-users, community leaders and others, but can provide some problems for the enthusiast who lives in a city, for example where available AM channels are overcrowded. Because breakers moving to Sideband want to protect their more restricted CB channels, they have adopted various codes of use, currently being followed in Britain too. The use of handles is discouraged in favour of a more appropriate identity. Indeed, to get into any kind of conversation on Sideband in the USA, you really need an identification call sign, usually a number prefixed by a couple of letters, eg SS and then a number, which is supplied by one of the specialist clubs. So, when you start using Sideband, you have to indicate your identity number and, from that, which approved Sideband organisation gave it to you. Otherwise you are in danger of getting a CB Cold Shoulder. Your application for membership of the Sideband organisations has to be carefully completed, and although there is no hint of the kind of investigation that a credit agency might carry out, you need to indicate that you are a serious user. There is a real CB Establishment atmosphere among Sidebanders. They want to keep the clamour and the kids out of their CBI!

“The cost involved in buying a CB radio for Sideband operation”

Although there has been a decline in the booming business of CB, there is a move towards quality, both in equipment and in the use of CB. Despite the continuing arguments for 27MHz AM in Britain as distinct from the 27MHz FM which we are to have, it looks as though having a quality-sound system on FM will give us a major advantage over those good buddies in the US. Britain already has its first Sideband organisation, the British Sideband Network founded in Britain by Mr Albie Vickers of Crawley, W. Sussex. The application form notes: “The British Sideband Network will accept enrolment only those operators

A BIT ON THE SIDE

committed to thoughtful, considerate and responsible operation of SSB." Well said! A modest registration fee is charged and there are plans to offer instruction programmes (one or two-day) in the use of Sideband. Many serious Sidebanders are interested in DXing — using their rigs for long-distance communication. Since illegal rigs brought into Britain during 1980 and the early part of 1981 worked on the US standard, a certain amount of trans-Atlantic DXing has been possible. Indeed, this is one reason why some CB users felt so strongly about retaining their AM rigs. However, the sunspot conditions permitting DX operations will not continue for more than a year or so so that Sideband, like other aspects of CB will return to the original concept of short-distance communications, probably up to 10 miles on 27 MHz FM.

"SSB acts as a bridge to amateur ham radio"

The British Sideband Network is affiliated to the oldest CB SSB club in the world, and naturally this is based in the US. The SSB Network of Smithtown, New York, was launched in 1964, and has adopted a zealous outlook in the use of Sideband. A recent advertisement in an American magazine contained these words: "Sidebanders! Old Timers, Newcomers, Future Operators! Do you care what happens to Sideband? We do, too!" The advertisement urged membership of the organisation, which obviously fosters high standards of CB use. Members obtain an identification number on the lines already described, and you obviously get a warm welcome when you get into Sideband, if you are able to indicate your membership, a true badge of CB approval. Some Sideband organisations are less well known, and sometimes exist only to provide identity numbers and a very basic vetting service to keep out the occasionally frivolous users of CB. It may be ironical to state that because Sideband has so many obvious advantages, it may become overcrowded sooner or later. An article in *S9 Hobby Radio Magazine* of New York early in 1981 invited readers to consider the possibilities: "SSB — It's Better Than Ever, No Kids, No Lids, No Space Kadets" In short it is an adult medium in the best sense.

That Sidebanders are reminded of their responsibilities is evidenced by the approach of the *SSB Network*, which for a fee of five dollars (about £2.30) provides an SSB Network Identification Card, and a personal Network Identity Number. A further five dollars brings an SSB Network Wall Certificate (which can be a lot more help than a Ph.D if you want to get into

Sideband) and you can also purchase a fine rubber stamp with the SSB emblem for your mail for another four dollars! You can also obtain (for a further four dollars) an SSB Network Patch — something like a blazer badge, for stitching onto a suitable item of clothing. Not that the Sideband groups are really commercially-minded; it's doubtful that they would exist at all but for a lot of voluntary help.

This inevitably brings us to the social significance of the Sidebanders. They disdain the popular trucker's jargon, the handles, and much of the fizz of everyday CB — probably because they grew out of it! Someone suggested that the Sidebanders are working hard to be snobs, but that is not really an adequate appraisal of their role. Ken Morrissey, in the *S9 Hobby Radio Magazine* issue dedicated to the subject of Sideband, commented: "Many Sidebanders seldom even refer to themselves as CBers. They feel that they have found a mature oasis amidst the chatter and clatter of the AM channels." You may get a florid picture of CB in the US from Mr Morrissey's comments: "Mostly, Sidebanders are operators who started out with an AM rig and eventually came to feel that the AM channels were too crowded, too noisy, too many people playing music, too many kids making dates and doing homework, too many hassles, too many people establishing themselves as channel masters in order to dictate who can and who can't use "their" channel, too much foul language and generally too much of a three-ring circus crashing down upon their ears and piece of mind."

From that, you would imagine that the older CB enthusiasts would head for Shangri-La not merely for Sideband. Maybe the courtesy and elevated conversation you get on Sideband is like the House of Lords, with the more noisy AM more like the local disco at closing time. Maybe the fact that serious CB is a family hobby has something to do with the Sidebander's Movement. While run of the mill CB is used by everyone, there is an impression that Sidebanders are more likely to be men, married and mature.

"Sunspot conditions permitting DX operation will not continue for more than a year or so"

As America gets a national Sidebander's Movement, with nationally recognised identification numbers, we can see the shape of things to come in Britain. Radio in all its forms — from repairing old valve sets in the back shed to showing off the new car receiver — has always been the preoccupation of the native Briton. It will be surprising if CB proves to be any exception, and it is just a matter of time before all kinds of companies climb onto the bandwagon, with the launch of "Mature CB Tobacco", "Sidebander's Hair Restorer", and "Old-Time CB Users After Shave" ...

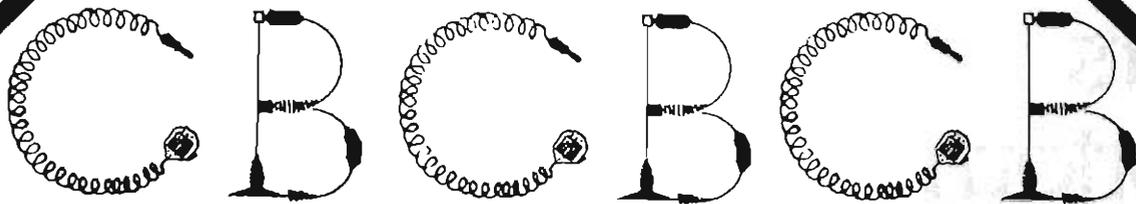
The delayed introduction of a legal system for Britain poses some interesting questions. Since many potential Sidebanders are those who would want legal rigs (especially as they will normally be situated at home, rather than in the more elusive car), will the new 27MHz FM system offer a sort of paradise on earth, at least until most people switch from 27MHz AM? After all, given that DXing on 27MHz AM has a limited future, the FM rig with its greater clarity of signal and general all-round sophistication may be the ideal rig for the user who wants truly serious CB. Unlike our chums in the US we do not necessarily have to move to Sideband to escape the clamour on AM — we can simply move to FM and later to the Sidebands that will come with the British frequencies. This is certainly a question that the embryonic Sidebanders Movement in Britain will have to consider, for many potential enthusiasts are still committed to legality, and will never buy an AM rig (unless the Government gives in on that point — unlikely).

"Sidebanders are pioneering a more responsible use of CB"

Our own studies confirm that many older potential users say that they want to use CB seriously and legally. One can hardly blame aspiring purchasers of a base rig costing £200 or more for taking that stand. In short, we may see a Sidebanders organisation for legal users on 27 MHz FM as well as those on 27MHz AM — though "ne'er the twain could meet" on their differing equipment. It's certain that there will be a good market for well-made base rigs offering good Sideband facilities on the legal frequency.

While American manufacturers have certainly had problems during the past two year or two, with the impact of the recession, it is significant that new models include those virtually sold on their benefits as Sideband performers. The General Electric (no relation to GEC in Britain) catalogue for 1981 includes a very high quality rig for American users — The Superbase. With an impressive technical specification The Superbase obviously appeals to Sidebanders as a major market. Quality rigs for quality people!!! If anything, one gains the impression that, while there has been a reasonable number of good basic rigs available, the outstanding quality end of the market has not been able to keep up with the demand.

So the Sidebanders are really pioneering a more responsible use of CB and will help shape all our attitudes to the medium in the coming decade. Certainly, if you are planning to buy an FM rig for imaginative use of CB, make sure you get Sideband facilities too. It may cost you something extra in terms of cash (or credit card) but it will be the kind of CB you'll be happy to live with for a long time.



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If you're interested in CB, you might well be interested in motor sport, and in particular rallying where two-way radio is widely used.



RALLY SPORT magazine is Britain's leading monthly on rallying, and its contents might well include the following subjects during the year: How to drive in rallies, navigation, co-driving, build a project rally car, technical features, and product surveys, specialist articles on rally tyres, brakes, suspension and engine tuning.

Rally Sport — 50p monthly, available at your local newsagent.

THE GYMNAST

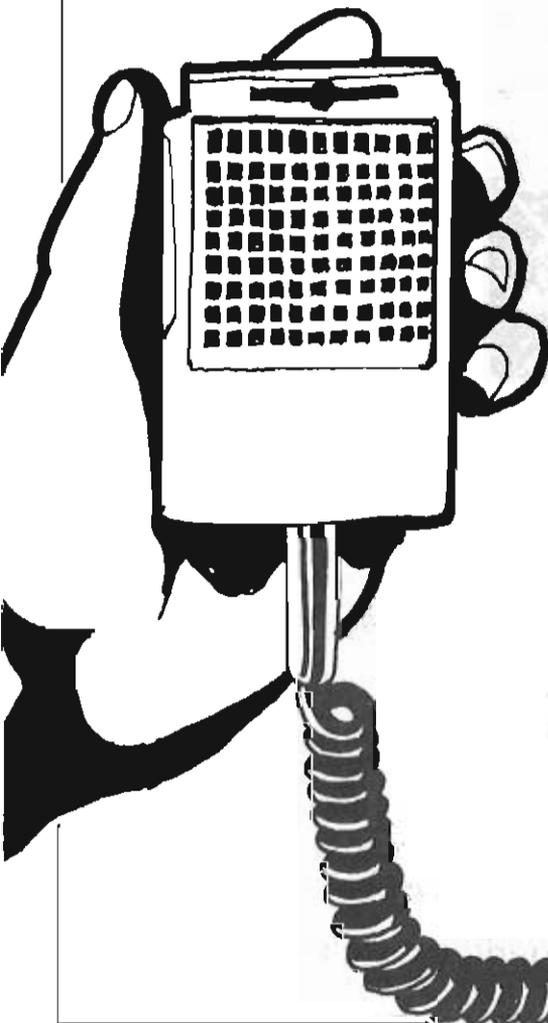
GYMNAST is another leading monthly magazine, covering all aspects — national and international — of the popular sport of gymnastics.

Gymnast — 50p monthly, also available at your newsagent.

Like CB81, both Rally Sport and Gymnast are Goodhead Publications.

Really, Mrs Bottoms...

(Don't laugh
it could be
you in a
few years
time!)



CB SHOULD certainly make for happy families, unless, that is, the man of the house spends too much time in his den, trying to DX across the ocean!

Most of the really well organised CB clubs in Britain have ladies acting as their secretaries, we're not sure whether this has to do with their ability at typing, or at selling raffle tickets. However, as a tribute to them, and to show what life may be like quite soon, we thought you would like to look in at the Weekly Eyeball of the Lady Breakers in a town we might mention, but won't.

Eyeball, as a few readers may not appreciate, is a meeting of CB enthusiasts and is also known as a Coffee Break. Although time and time again the ladies have proved themselves very competent users of CB, there's something about a chat over the tea cups that will never be out-dated, not even when we have CB TV on our wrists like Dick Tracy, the comic strip detective had long years ago.

The Lady Breakers meet once a week to share a meal, and occasionally to pass along ideas on using the CB. Naturally, all these ladies have legal rigs, licensed and approved — so you may take it that the narrative is set in the very near future...

"We were talking about the best prices for groceries this morning," smiled Estelle. "It's something we decided to do every Tuesday on Channel 11. We call in one or two of the local stores as we talk."

"I heard about the neighbourhood consumer advice programme on the CB," commented Rosie, like Estelle, a young housewife. "I didn't realise you were organising it."

"She gets pushed into everything," sniffed Mrs Bottoms, Estelle's mother, who did not think very highly of modern consumer electronics. "When I was shopping for a family, we used to walk round and check prices... none of this CB lark."

"Mum pretends she doesn't like it," smiled Estelle. "But you should have heard her on the mobile when we went to London last week. She must have told all the truckers between Tooting and Luton what to look out for."

"It was a wet day," sniffed Mrs Bottoms. "And misty. What's a CB for, if it's not to keep people informed?"

Charmaine — who keeps the local CB club organised (no mean feat for such a petite lady) — came in with a rather colourful cake. "We decided to have a cake competition in the club," she said. "It's a fund-raising idea for charity. The idea is to make a cake that looks like a rig. Well, this is the right shape..." She looked thoughtfully at the cake, square and rather chunky, but embossed in pink and white icing.

"Do you think anyone makes a pink and white rig?" sighed Charmaine. The cake was placed on the table.

"It's only a matter of time," said Annette cheerfully. Annette worked in marketing, and kept her eye on all the trade magazines. "I reckon these manufacturers forget that ladies use CB. Haven't you noticed that all rigs have a distinctly masculine appearance?"

"Why, yes," agreed Estelle. "And the same goes for hi-fi. None of it is really pretty..." Mrs Bottoms sniffed.

"Country would be a lot more sane if they had women as engineers," she said. "Men don't know how to make anything look pretty."

"Well, at least some of the CB clothes are a step in the right direction," said Estelle. "We went to a CB jamboree last weekend and it was a real treat to see people getting away from everyday suits and skirts. Cowboy clothes mostly. It was like a little Nashville... even Eric dressed up."

Eric, Estelle's husband, is an accountant and very traditional in his outlook. He even handles the CB as though he is wearing a dinner jacket, like the BBC announcers used to do all those years ago.

"And do you know what was so funny? On the way down, we had an emergency call come through the car CB, so we went to help. A fellow had gone right off the road... but fortunately hadn't any more problems than a bad shaking up. Eric went to help him, and of course he was dressed up as the Lone Ranger. The other driver looked up from where he was sitting and said: "Thanks for coming. You brought a fresh horse?" We couldn't help laughing."

Mrs Bottoms, who is in her sixties gazed heavenwards, expressing her doubts as to Eric's sanity, from her appearance.

"And what about you, Mrs Bottoms?" smiled Rosie. "What do you do at these CB jamborees?"

"I take my knitting!" Mrs Bottoms was very definite.

"It's surprising how often the Emergency Channel is used these days," said Charmaine. "We have been raising money to present a CB base radio to the local school. Then we are going to arrange training sessions for the older children, so that they know how to use it in an emergency."

"There was a case recently, where a youngster, left alone in the house, was able to summon help when someone tried to break in," added Rosie. "It's surprising how children often seem more at home with the rig than the telephone — I suppose it can be easier to use for straightforward emergency calls."

"CB clubs seem to be able to get across to youngsters," agreed Annette. "Maybe it helps to give them ease in talking to people. The fact that a number of children can all

use the CB at the same time, and have a group discussion is a great advantage over the telephone. Wish we'd had CB when I was in school . . ."

Charmaine looked at the cake again. "I sometimes wonder what I did with all my spare time before I was elected secretary of the CB club" she said. "But what I really like about the club is that it gets people in who have never belonged to anything else . . . CB is a sort of reason, or excuse, for getting out of the house."

"A doctor friend of mine said that he found CB a wonder worker for some people," Annette remarked. "People who are inclined to get depressed or isolated can just turn on the rig and listen to people just along the road. It's a permanent reminder that they're not on their own, and that help is really just at the drop of a microphone."

"Eric says the same thing about driving," said Estelle. "It really does remove the sense of being isolated when you're driving, especially at night."

"I'm going to cut the cake," Charmaine decided. "It's not the right colour for a rig. I should have used chocolate icing."

"She was only looking for an excuse," said Mrs Bottoms, with a smile of eager anticipation. "Whenever I go down to the CB club, I am astonished at how much they eat when it comes to refreshments. I'd heard that they enjoyed the occasional drink . . . but I never realised that CB stimulated the appetite."

Charmaine cut the cake and handed slices around on the new tee set she had won in a recent club raffle.

"Another idea we have," said Estelle suddenly, "is to use CB to save our shopping trolleys. Every morning at half past ten, we call in on Channel 11, and see who's going shopping, and if anyone needs anything. Then whoever is running the CB Shopping List calls the Superstore and has the order prepared . . . saves a lot of time. Mr Ferguson the Store Manager says his business has gone up by 20% since he got CB installed."

"Well, I hope he bought British," sniffed Mrs Bottoms. "Any more of that cake

left?" She tucked into another slice. "When ere they judging the Cake Contest at the club?" she asked. "I wouldn't mind coming along to that." Immersed in her second slice of cake, the elderly lady did not notice her daughter approach with a handsome trucker's cap. Estelle placed it, gently, but with a flourish on her mother's head. Mrs Bottoms looked a little discomfited, but continued eating.

"There," said Estella. "Number One Lady Breaker". Everyone calls her Number One these days."

"I didn't realise you were so involved with the CB club, Mrs Bottoms," said Rosia.

"Well . . ." Mrs Bottoms straightened the trucker's cap. "Someone has to keep them in order."

The handsome base rig in the corner broke into the conversation. Charmaine's husband Richard was calling in to say that he had been delayed by the traffic, and would not be home until late in the afternoon.

"The mobile rig certainly saves a lot of worrying," said Charmaine, after closing down the CB. "We bought one of these new ones for Richard's father. It's packed in a suitcase for emergencies. When you need help quickly, you just remove the antenna, clip it to the car roof then use the Emergency Channel. He hasn't had to use it yet, I'm pleased to say, but it's wonderful to know he has it handy, just in case."

"I think I'll go into the other room," announced Mrs Bottoms. "There's a Bette Davis film on television."

"We moved the TV set into the other room," Estelle explained. "We don't use it so much these days. Not with the CB, and the club . . ."

"No wonder the companies who spend all that money on TV commercials are beginning to wonder if they ought to have commercial CB," smiled Annette. "Just as well there are restrictions on the commercial use of citizen's band, isn't it?"

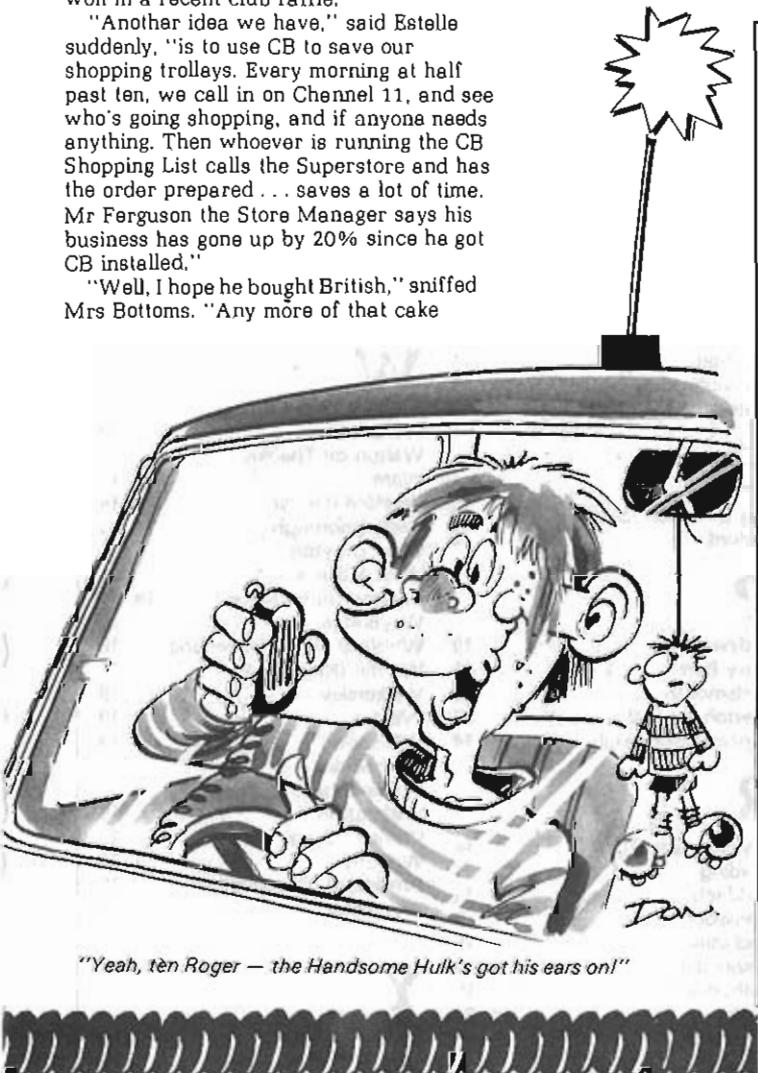
"You'd be surprised how many tourist places use it to welcome drivers to stop by for a meal," Estelle commented. "When you come into transmission range, you are quite likely to hear a friendly voice saying that the town would like to see you. Of course, that's as much as they're allowed to say . . . but it's very cheering to have a friendly voice like that in your ear."

"By the way," said Charmaine suddenly. "Would anyone like to buy a raffle ticket? The club is raffling a holiday tent in aid of local charity," Annette smiled. It was time for the Eyeball to close and for the ladies to return to their homes (and to their base rigs).

"You always know when it's time to go home," she said. "Charmaine brings out the raffle tickets."

After the Eyeball was over, Mrs Bottoms returned to see if any of the rig-shaped cake was left, because as she said, she didn't want to see any of it wasted. Estelle asked her mother if she would like to do the washing up.

"Well, I wouldn't mind," said Mrs Bottoms. "but I said I'd meet someone on Channel 12 at half past four . . ."



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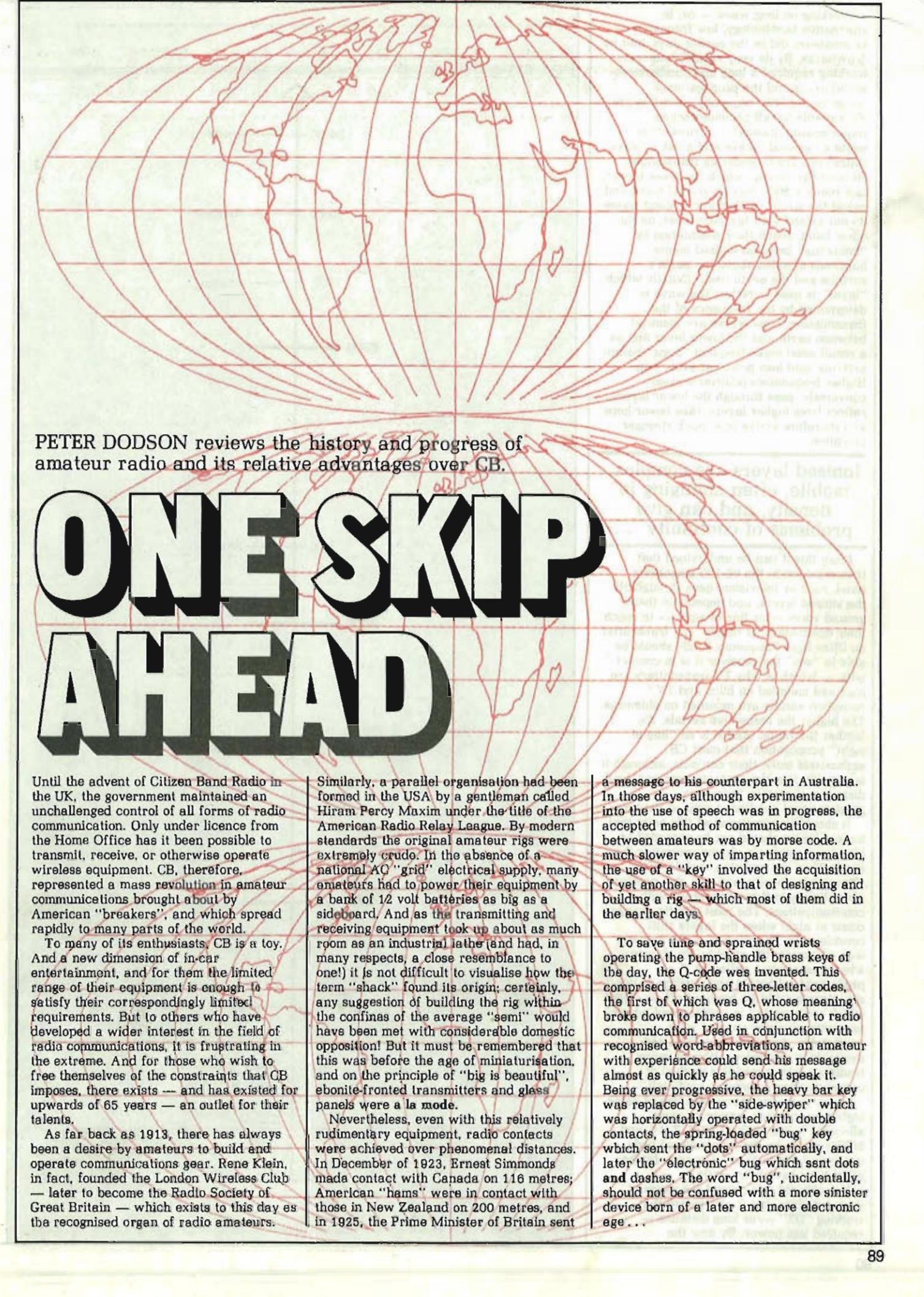
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Aberdeen	19	Daventry	14, 19	Laggan	30	Seaford	19
Abergavenny	19	Dearne Valley	14, 19	Laindon	14	Seawall	19
Abingdon	19	Doncaster	17, 19	Langley Mill	14	St Austell	14
Accrington	19	Douglas (Isle of Man)	13	Leatherhead	14	Sheffield	5, 19
Altrincham	19	Dumbarton	14	Leeds	19	Shepperton	14
Amersham	14	Dunstable	14, 16	Leicester	19	Slough	14
Anglesey	19	Durham	19	Leigh (Lancs)	19	Solihull	14
Ashton	14			Leyland	27	Southampton	19
		E		Lichfield	14	Southend-on-Sea	14
B		Eastleigh (Hants)	19	Lincoln	14, 19	Stamford	19
Barnet	14	East Molesley	14	Lisburn	30	Stechford	19
Barton-on-Humber	19	Edinburgh	19	Littlehampton	14	Stevenage	19, 25
Basildon	14	Erdington	14	London	14	Stockbridge	19
Basingstoke	14			Longbridge	14	Stoke	14
Bedford	16, 19	F		Luton	14, 16, 19	Stoke-on-Trent	19
Belfast	30	Farnborough	14			Stone	14, 19
Benfleet	14			M		Stranraer	15
Berwick-on-Tweed	19	G		Macclesfield	19	Strathclyde	14
Billericay	14	Gateshead	19	Maidenhead	14	Streatham (Cams)	14
Birmingham	14	Gerrards Cross	14	Maidstone	14	Sunbury-on-Thames	14
Blackburn	19, 27	Glasgow	14	Manchester	19	Sunderland	19, 25
Blackpool	19	Glastonbury	14	Marlow (Bucks)	14	Sutton Coldfield	14
Blackwood	14	Godalming	14	Medway (Kent)	14		
Blandford	19	Gosport (Hants)	19	Milton Keynes	14, 19	T	
Bognor Regis	19	Grantham (Lincs)	14	Morecambe	27	Tamworth	14
Borehamwood	14	Grays Thurrock	14	Morden	14	Telford	14
Bourne End (Bucks)	14, 27	Guildford	14			Tonbridge	14
Bournemouth	19	Gwynedd	19	N			
Bovington	19			Nelson (Lancs)	14, 19	U	
Bracknell	14	H		New Malden	14	Ulverston	14
Bradford (W Yorks)	19	Hale	19	Newbury (Berks)	14		
Bramhall	19	Halstead (Colchester)	14	Newcastle (Staffs)	14	W	
Bristol	14	Handforth	19	Newcastle-on-Tyne	19		
Brough	19	Harlow (Essex)	14	Newcastle-under-Lyme	14		
Burnley	19	Hartington	14	Newport (Gwent)	19		
Bury	19	Hatfield (Herts)	14	Northampton	19		
Bury St Edmunds	15, 19	Haverhill	19	Northolt	14		
		Hayes	14	Norwich	19		
C		Harlington	14	Nottingham	14, 19		
Caister	14	Herne Bay	19				
Camberley	14	High Wycombe	14	O			
Cambridge	14	Hillingdon	14	Old Coulsdon (Surrey)	14		
Canterbury	19	Hoddesdon	14	Oxford	19		
Cardiff	14	Huddersfield	19				
Chalfont St Peter	14, 19	Hull	14	P			
Cheadle (Cheshire)	19			Padiham	19		
Cheadle (Staffs)	19	I		Perry Barr	14		
Chelmsford	14	Ilkeston	19	Portsmouth	19		
Cheltenham	21	Inverness	19	Preston (Lancs)	27		
Chester	19			Princes Risborough	14		
Chesterfield (Kent)	19	J					
Chichester	19	Jarrow	14, 19	R			
Chigwell	14			Rayleigh (Essex)	14		
Cinderford	14, 19	K		Reading	14		
Clacton-on-Sea	19	Kettering	13, 14	Redditch	14		
Cleveleys	19, 27	Kingstanding	14	Ringwood	14		
Colchester	19, 25	Kirkham	19, 27	Rochdale	2		
Colwyn Bay	19	Knowle	14	Rossendale	19		
Coventry	19			Rotherham	19		
Craigavon	30			Rugby	14, 21		
Croydon	14			Rugeley	19		
						Y	
						York	13



PETER DODSON reviews the history and progress of amateur radio and its relative advantages over CB.

ONE SKIP AHEAD

Until the advent of Citizen Band Radio in the UK, the government maintained an unchallenged control of all forms of radio communication. Only under licence from the Home Office has it been possible to transmit, receive, or otherwise operate wireless equipment. CB, therefore, represented a mass revolution in amateur communications brought about by American "breakers", and which spread rapidly to many parts of the world.

To many of its enthusiasts, CB is a toy. And a new dimension of in-car entertainment, and for them the limited range of their equipment is enough to satisfy their correspondingly limited requirements. But to others who have developed a wider interest in the field of radio communications, it is frustrating in the extreme. And for those who wish to free themselves of the constraints that CB imposes, there exists — and has existed for upwards of 65 years — an outlet for their talents.

As far back as 1913, there has always been a desire by amateurs to build and operate communications gear. Rene Klein, in fact, founded the London Wireless Club — later to become the Radio Society of Great Britain — which exists to this day as the recognised organ of radio amateurs.

Similarly, a parallel organisation had been formed in the USA by a gentleman called Hiram Percy Maxim under the title of the American Radio Relay League. By modern standards the original amateur rigs were extremely crude. In the absence of a national AC "grid" electrical supply, many amateurs had to power their equipment by a bank of 12 volt batteries as big as a sideboard. And as the transmitting and receiving equipment took up about as much room as an industrial lather (and had, in many respects, a close resemblance to one!) it is not difficult to visualise how the term "shack" found its origin; certainly, any suggestion of building the rig within the confines of the average "semi" would have been met with considerable domestic opposition! But it must be remembered that this was before the age of miniaturisation, and on the principle of "big is beautiful", ebonite-fronted transmitters and glass panels were a *la mode*.

Nevertheless, even with this relatively rudimentary equipment, radio contacts were achieved over phenomenal distances. In December of 1923, Ernest Simmonds made contact with Canada on 116 metres; American "hams" were in contact with those in New Zealand on 200 metres, and in 1925, the Prime Minister of Britain sent

a message to his counterpart in Australia. In those days, although experimentation into the use of speech was in progress, the accepted method of communication between amateurs was by morse code. A much slower way of imparting information, the use of a "key" involved the acquisition of yet another skill to that of designing and building a rig — which most of them did in the earlier days.

To save time and sprained wrists operating the pump-handle brass keys of the day, the Q-code was invented. This comprised a series of three-letter codes, the first of which was Q, whose meaning broke down to phrases applicable to radio communication. Used in conjunction with recognised word-abbreviations, an amateur with experience could send his message almost as quickly as he could speak it. Being ever progressive, the heavy bar key was replaced by the "side-swiper" which was horizontally operated with double contacts, the spring-loaded "bug" key which sent the "dots" automatically, and later the "electronic" bug which sent dots and dashes. The word "bug", incidentally, should not be confused with a more sinister device born of a later and more electronic age . . .

Working on long wave — or, in alternative terminology, low frequency — as amateurs did in the earlier days, had its drawbacks. By its very nature, long-wave working required a long and cumbersome aerial array and the propogational properties of low frequency operation are not suitable for all communications requirements. Basically, a transmitter emits a "ground" wave and a "sky" wave. Unless you are considering transmitting stations like Rugby, which, by sheer power, can reach 1,500 miles on ground wave and round the world on skywave, ground waves do not extend very far. Skywaves, on the other hand, reach their destination by "bouncing" between ionized layers hundreds of miles above the earth's surface and the earth itself. Exactly which "layer" is used to reflect the wave is determined by the frequency of the transmission. Long waves are bounced between earth and the lower layer and as a result must make frequent "hops" before arriving, and lose power at every hop. Higher frequencies (shorter waves) conversely, pass through the lower layers, reflect from higher layers, take fewer hops and therefore arrive in a much stronger condition.

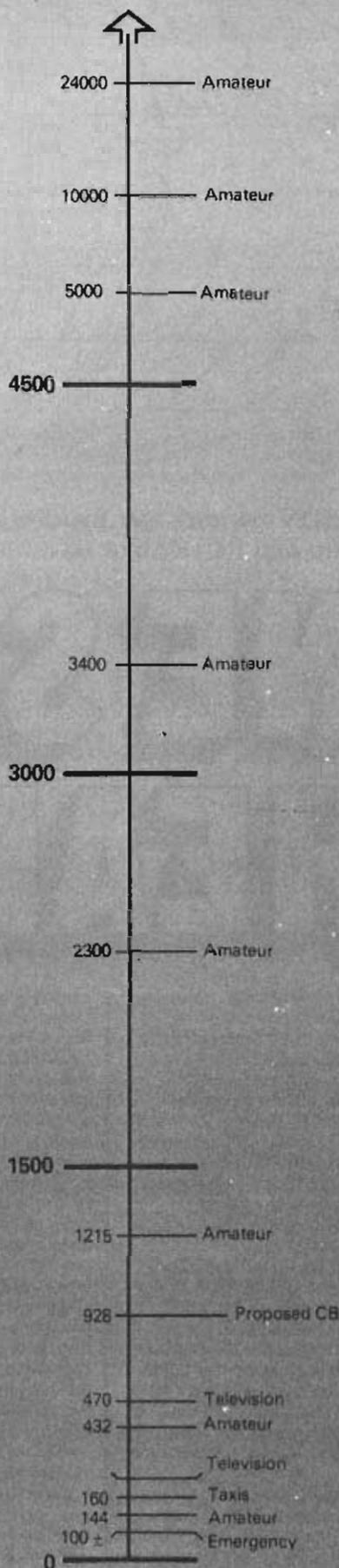
Ionised layers are complex, mobile, often changing in density, and can give problems of continuity . . .

From this it can be understood that transmissions in the 90-100 megahertz band, such as television, pass through all the ionized layers, and depend on their ground wave — or line of sight — to reach their destination. In theory, any transmitter on Ultra High Frequency (UHF) should be able to "see" the receiver it is in contact with — which is why TV transmitters are high and mounted on hills, and TV reception aeriels are mounted on chimneys. The higher the respective aeriels, the farther the range. And it is on "line of sight" propogation that most CB enthusiasts make their contacts, although it is possible to make contaots over very long distances if certain temporary propogational conditions exist at the time.

It should be mentioned at this point that ionized layers should not be regarded as king-sized rainbows circumnavigating the earth. They are complex, mobile, often changing in density, and can give problems of continuity to those concerned with communications. The most drastic changes occur at night when the layers shift considerably. The answer to the problem was, of course, the satellite. By placing what amounts to a reflector at a predetermined height and position in the sky, signals could be bounced off an object which never varied in position and whose properties in every respect were predictable. And these satellites are available to amateurs, although many traditionalists regard this method of communication somewhat artificiall

Quick to realise the advantages of using higher frequencies, amateurs were allocated bands in the 3.5KH, 7, 14, and 28KHz bands by the international body concerned. Since then, of course, further allocations have been made.

Not only did this extend the range of their activities, but it also meant that working "DX" — or long distance — required less power. By now the



"superhet" receiver had arrived which gave greater selectivity of signals (to be superseded by the double superhet) and resultant ease of operation. Possibly as a result of advances made in radio communications techniques during the Second World War, the physical dimensions of receiving and transmitting gear had been reduced. Portable (albeit with considerable difficulty and a 15cwt truck!) British transceivers had been produced, and the first step towards miniaturisation had been taken. Perhaps an even better example of this was the "suitcase" transmitter/receiver. These

NOT the general rule, but amateur hams appear to be using the area around the 28MHz region for teleprinter and satellite operation, while the full area up to 28MHz is utilised for voice work. Between 144MHz to about 1215MHz is widely used by hams with SSB, while above this — at the 3400 mark, computerised systems operate.

were used for the nefarious activities of gentlemen in long raincoats and floppy hats who had a singular aversion to publicity. Furthermore, the American forces were using hand-held transceivers which, despite a similarity to holding a Wellington boot to your ear, were to further the cause of "little is lovely!"

Amateur radio, of course, was banned during the Second World War for obvious security reasons, and the enthusiasts returned to the ether with a renewed enthusiasm and a wealth of development to assist them. Ex-WD parts were in abundance and the service training of many amateurs had widened their expertise and skill in the field of communications. The use of speech instead of morse which had been gaining popularity prior to the war years, became common, and even more sophisticated techniques were emerging. Not the least of these was the use of the "side bend" which effectively condensed a speech

transmission to a narrow band of frequencies with a correspondingly increased signal power. It must be said, however, that although ex-WD receivers were in strong demand, service transmitters were not considered good enough for amateur use!

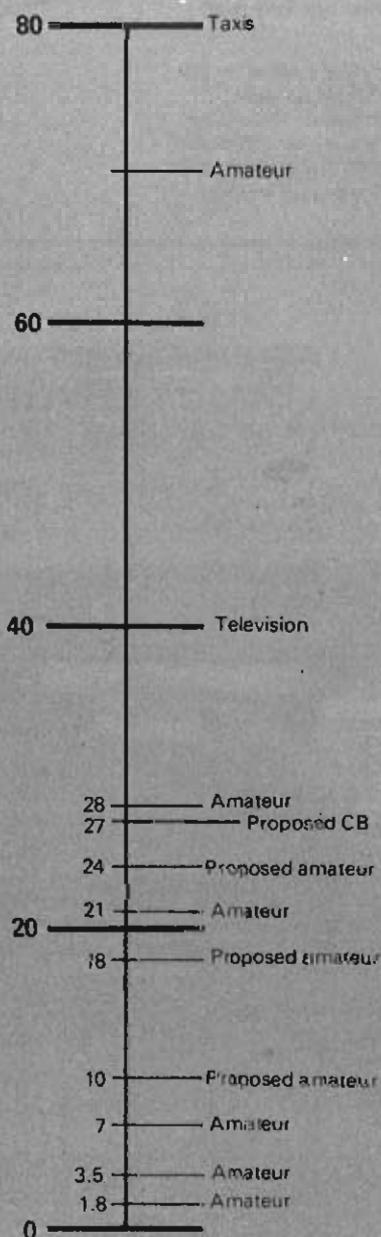
Amateur radio of course, was banned during the second world war for

But the early post-war years were times when commercial empires were beginning to emerge, and the commercialisation of amateur radio was no exception. Realising a ready market for radio parts, astute traders began to sell transmitters and receivers in kit form or, for that matter, as over-the-counter rigs. But by far the greatest innovation, not only for amateurs, but for the world, was the introduction of the transistor. Almost ready for commercial use at the outbreak of war, its impact on the world of amateur radio was, to say the least, phenomenal. Capable of performing all the duties of thermionic valves as well as other radio parts with equal efficiency, these minute, robust semi-conducting components ran at lower temperatures, lower voltages and took up a fraction of the space required by their older and bigger brethren.

Together with printed circuits which all but obliterated the necessity of wiring by amateurs, and a generous American administration which put a Japanese economy on its way to a killing in the electronics industry, miniaturisation had arrived. Overnight, amateur equipment occupied only as much room as a record player; amateur enthusiasts could now drive their transistorised gear from a 12 volt car battery and "go mobile". Transceivers of doubtful origin, the size of a domestic calculator driven by a couple of torch batteries, emerged cautiously on equally dubious markets. The age of CB was nigh!

Many amateurs regard the arrival of CB with ill-disguised contempt as an invasion of their exclusive domain.

Many amateurs regarded the arrival of CB with ill-disguised contempt as an invasion of their exclusive domain. Despite the fact that many amateurs were also buying ready-made rigs, they retained the technical ability to understand how it worked, how to maintain, repair and modify it. They had passed the necessary exams to warrant a callsign which, they felt, maintained a certain dignity when compared with some of the way out titles assumed by many breakers! Furthermore, they were within the law. The validity of these sentiments may well be open to question, but the amateur retained one undeniable technical advantage — a choice of transmitting/receiving frequency and the ability to transmit across a far greater distance-range than breakers, with continuity and predictability. And when you consider that the equipment used by some amateurs includes teleprinters and even television, not to mention bouncing their signals off satellites, perhaps they



have reason for their somewhat superior attitude!

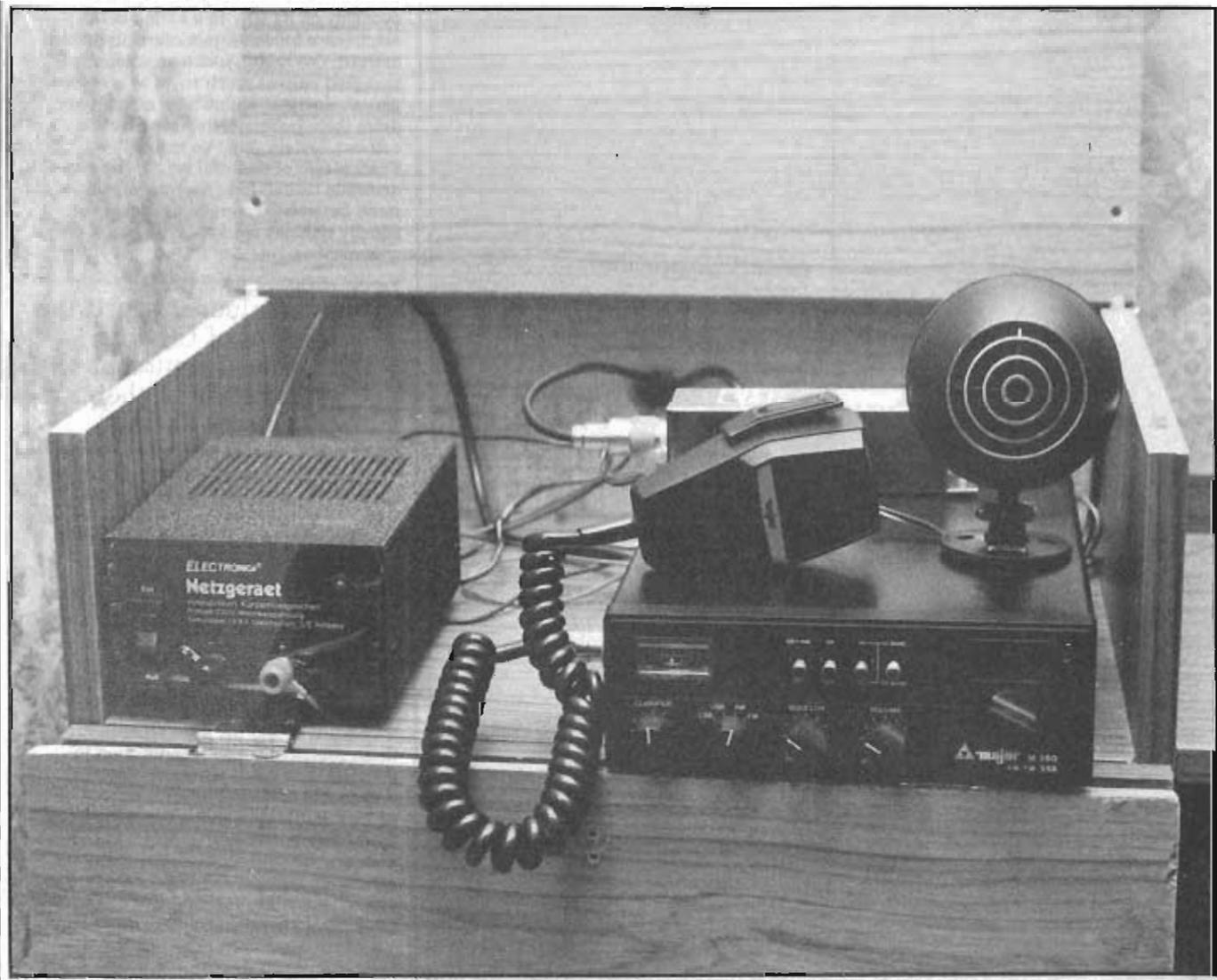
If any organisation is truly international, amateur radio by its very nature can claim that distinction. It is by no means a lazy man's hobby. As the sun has a disconcerting habit of rising and sinking at different times in different parts of the world, so the amateur must pursue his pastime at all hours of the day and night. As "hem" language is universal and Q-code is international, communications between countries causes no linguistic problems. Nevertheless, each radio contact must be "logged" and confirmed by the sending of a "QSL" card to acknowledge the "sked". Some QSL cards are really works of art and a measure of an amateur's operating ability and/or equipment efficiency can be measured by a look at the origin of his cards on the wall of his "shack".

Sadly, environmental standards have demanded that this centre of leisure activity, this shrine to his god of communications (if not his sanctuary from misunderstanding relations) is no longer a shed in the garden. In these days of highrise flats and shrinking properties, the amateur's shack is the spare bedroom. Here, on a small table between the Hoover and the pram is his transmitter. On the walls are his QSL cards — the treasured citations to his skill must stay, cheek by jowl with his son's posters, one of which will almost certainly be of that ghastly yellow bird, bearing the message "It doesn't cost much to keep in touch!"

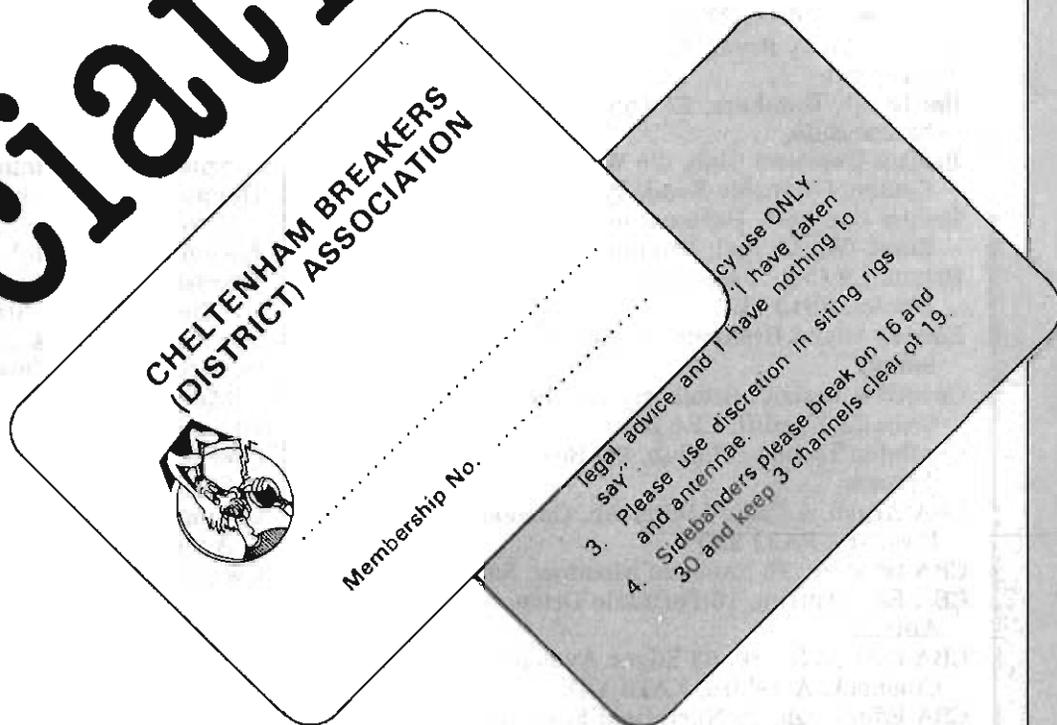
Channel No	MHz	Channel No	MHz
1	26,965	21	27,215
2	26,975	22	27,225
3	26,985	24	27,235
4	27,005	25	27,245
5	27,015	26	27,255
6	27,025	27	27,265
7	27,035	28	27,275
8	27,055	29	27,285
9	27,065	30	27,295
10	27,075	31	27,305
11	27,085	32	27,315
12	27,105	33	27,325
13	27,115	34	27,335
14	27,125	35	27,345
15	27,135	36	27,355
16	27,155	37	27,365
17	27,165	38	27,375
18	27,175	39	27,385
19	27,185	40	27,395
20	27,205		27,405

This is the American-based chart which, naturally, is used by all CB breakers in Britain mainly due to the fact that rigs have been imported from the US.

Below: This home base rig is a Major M-360 120 channel AM/FM/SSB set up with Netzgeraet 240V-B8V (3.5amp). There is an XLP150 low pass filter and a Kraco CBS-140 extension speaker. A GPB27 antenna is used. Total cost for the whole set up is around £250 currently.



Clubs and Associations



SEVERAL things ought to be borne in mind while studying the following lists of clubs and associations. First, due to the current precarious nature of the CB scene, a small number of clubs might have either disbanded or formed without our knowledge, or indeed, in between formulating these lists, and CB81 going to press.

Here you'll find two major lists. One, which includes addresses of club headquarters, and two, which doesn't have this information. It was decided to withhold addresses because the CBIC felt it was a breach of confidence to the clubs concerned. Well OK, but if readers want to get in touch with a particular club they can obtain the address from Bill Ridgeway, Citizens' Band Information Centre, 7 Sandringham Crescent, Harrow, Middlesex HA2 9BW. Telephone 01-422 7570.

The list **with** addresses has been kindly provided by James Bryant, President of the Citizens' Band Association.

NATIONAL ASSOCIATIONS

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.

CBA list

- Andover 27 Club, 7 Sarson Cottages, Ampport, Hants.
Avon Breakers Club, 184 Hawthorn Road, Bognor Regis, Sussex.
Aylesbury Breakers Club, 8 Dover Hedge, Aylesbury.
Bat Breakers, 6 Woodlands Close, Tring.
Barnstaple Breakers Club, 36 Field Close, Braunton, N. Devon, EX33 1EP.
Black Country Breakers, 21 Spring Hill, Birmingham, B18 7BH.
Bottle City Breakers, 22 Robinson Place, St Helens, Merseyside.
Bricket Breakers Club, c/o Wetford Component Centre, 7 Langley Road, Watford.
Bristol Breakers, Bartonvale Social Club, Barton Road, Old Market, Bristol.
Bristol CB Club, 1A St Peter's Rise, Headley Park, Bristol, BS13 7LU.
Canvey Island Breakers, 15 South Parade, Canvey Island.
Cardiff & District Breakers, 12 Aberdored Road, Gabalfa, Cardiff, CF4 2SR.
Castleton Tyrone CB Club, PO Box 44, Dungannon, Co Tyrone.
CBA Argyll, 9 Coille-Mhinnean, Cumladden, Furnace, Inverary, PA32 8XY.
CBA Borders, 26 Raeburn Meadow, Selkirk.
CBA East Antrim, 16 Ferndale Drive, Glengormley, Co Antrim.
CBA East Ayrshire, 83 Edgar Avenue, Barshare, Cumnock, Ayrshire, KA18 1ID.
CBA Edinburgh, 16 Northfield Farm Road, Edinburgh.
CBA Fife, 32 Balmaise, Leven, Fife.
CBA Glasgow, 3 Erskine Road, Whitecraigs, Glasgow.
CBA Grampian, 12 Whitehorse Terrace, Balmedie, Aberdeen.
CBA Manchester, 21 Westwood Road, Stretford, Manchester, M32 9HX.
CBA Moray Firth, Balmackiver, Clunas, Nairn, Invernesshire, IV12 5JT.
CBA North Lanarkshire, 78 South Commonhead Avenue, Airdrie, Lanarkshire.
CBA North West Highlands, Morven, Achiltibuie, Ullapool, Ross-Shire, IV26 2YS.
CBA Orkney, Burnbank, Hillside Road, Stromness, Orkney, KW16 3HR.
CBA Perthshire, c/o Blairgowrie House, Manor Gardens, Blairgowrie, PH10 6JP.
CBA Scotland, 10 Manse Road, Stonehouse, Lanarkshire.
CBA South West, 7 Wookey Hole Road, Wells, Somerset.
CBA Stirling, 5 Carronvale Avenue, Larbert, Stirlingshire.
CBA Sussex, 15 Buckingham Mews, Shoreham-by-Sea, Sussex.
CBA West Ayrshire, 4 Carrick Park, Ayr.
CBA West Dumbartonshire, 64/6 Windsor Crescent, Clydebank, Dumbartonshire.
CBA West Lothian, Boghall, Bathgate, West Lothian.
CBCB, 103 Southwood Road, Downside, Dunstable, Beds.
CB Cruisers Club, Brackenrigg, Deganwy, Llandudno, Gwynedd.
CBNE, PO Box 61, Sunder, SR3 1EZ.
CB Radio Action Group, 55 Dartmouth Road, Forest Hill, London, SE23.
Cheesey Breakers Club, 116 St Christophers Drive, St Martins Estate, Caerphilly, Mid-Glam.
Circle City Breakers, 3 Rose Cliffe Mount, Leeds, 13.
Clogtown Breakers, 33 Pendle Court, Astley Bridge, Bolton, BL1 6PY.
Clyde Coast Breakers, c/o Island Hotel, New Street, Stevenston, Ayrshire.
Cotswold Breakers, Salcot, Horsley Road, Nailsworth, Glos.
Daventry Breakers Club, 33 The Wye, Daventry.
Dragon Breakers Association, 96 Leaffield Road, Hunts Cross, Liverpool, 25.
Dunfermline CB Legalisation Club, 77 Shearer Square, Dunfermline, Fife, KY11 3BD.
Dungannon CB Club, PO Box 44, Dungannon, Co Tyrone.
East Antrim CB Club, PO Box 4, Antrim, N. Ireland.
Edinburgh CB Radio Club, 22 Ross Gardens, Edinburgh, EH9 3BR.
Flixton, Urmston & Davyhulme Good Buddies Association, 8 Chislehurst Avenue, Davyhulme, Manchester, M31 1SG.
Glasgow CB Club, 147 Trossachs Road, Glasgow, G72.
Good Buddies Association, Coronation Service Station, Middleton Road, Heywood, Lancs.
Grampian Breakers Club, 59 Jasmine Terrace, Aberdeen.
Gwent Breakers Club, 101 Alexandra Road, Newport, Gwent.
Harrow & Wembley CB Group, 26 Greenway, Kenton, Middx, HA3 0TT.
Hinckley Breakers Club, 8 Gladstone Close, Swallows Green, Hinckley, Leics.
Ilkeston Breakers Club, 21 Heather Close, Newthorpe, Nottingham.
Independent Breakers Association, 113 Biscot Road, Luton, Beds.
Isle of Man CB Club, Lower Ballaclucas Farm, Marown, IoM.
Kent & Essex Breakers, 24 Mill Lane, West Thurrock, Grays, Essex.
Lagan Valley CB Club, Halfpenny Gete Pub, Nr Lisburn, Co Antrim.
Leicester City Breakers, 6 Acres Road, Leicester Forest East, Leicester.
Leicestershire CBers, 68 Narborough Road, Leicester, LE3 0BR.
Medway Breakers, 56 Playstool Road, Newington, Sittingbourne, Kent.
Midlands CB Radio Club, Unit 2, 72 Oval Road, Erdington, Birmingham.
Moorland Riders CB Club, c/o Monts Transport Cafe, Shute Park, Liverton, Devon.
North Birmingham CB Club, 58 Fowlmere Road, Birmingham, B42 2EA.
North Cotswold CB Club, 25 Greenhill Street, Stratford-upon-Avon, Worcs.
Northern Ireland CB Association, 20 Clivedon Crescent, Belfast, BT8 4ND.
North London Breakers Club, 46 Sunbury Avenue, London, NW7.
North Manchester CB Club, c/o A. E. Smith Ltd, Clifton Street, Miles Platting, Manchester, 10.
North West CB Club, 104 Duke Street, Southport, PR8 5DE.

Open Channel CB Club, 17 Coronation Street,
Blackburn, BB1 1BS.

Plymouth CB Club, 354 Blandford Road, Plymouth,
PL3 6HZ.

Rolling Road CB Club, c/o R. Bacon, West Lynn, A30,
Blackwater, Nr Truro, Cornwall.

Runcorn CB Club, 124 Shepherds Row, Runcorn,
Cheshire, WA7 2LQ.

Sandwell CB Club, 80 Salop Street, Bilston, W.
Midlands.

Seven Towers CB Club, 15 Carnduff Drive,
Ballymena, Co Antrim.

Silly Breakers, 107 High Street, Teddington, Middx.

South Birmingham CB Club, 14 Delrene Road, Shirley,
Solihull, B90 2HH.

South Manchester Breakers Club, El Pateo, Stretford
Arndale Centre, Stretford, Manchester.

Steel City CB Club, 282 Eccleshall Road, Sheffield,
S11 8PE.

Surf City Breakers, 23 West Park Road, Bude,
Cornwall.

Tameside 99 Club, 38 Tarbert Road, Dukinfield,
Tameside, SK16 4BE.

Ten-Four Club, BM/Ten Four, London, WC1 6XX.

Twenty-One Breakers Club, 4 Chesterton Place,
Chester Road, Newquay, Cornwall.

Tunbridge Wells CB Club, 30 Upper Grosvenor Road,
Tunbridge Wells, Kent.

UBA Essex, 24 Bryony Close, Witham, Essex.

UBANE, 53 Mayfield Avenue, Lancaster.

Victoria Breakers, c/o Victoria Arms, Eastway,
London, E9.

Wessex Open Channel Club, 48 Holsom Close,
Stockwood, Bristol, BS14 8LX.

West Glamorgan Breakers Association, 25 Plas
Newydd, Baglan Moors, Port Talbot, SA12 7DF.

Weston Breakers, 84 Drove Road, Weston-super-
Mare, Avon.

Weymouth CB Club, 39 St Thomas Street, Flat 1,
Weymouth, Dorset.

White Mountain Breakers, Little Trenance, St
Austell, Cornwall.

Worth Valley Breakers Club, 19 Woodhouse Drive,
Keighley, Yorks.

Wye Forest Breakers, 19 Chawson Pleck, Chawson
Estate, Droitwich, Worcs.

Yate & District Breakers, 79A Grove Road,
Fishponds, Bristol.

Blackpool Breakers Club, 168 Ashfield Road,
Bispham, Blackpool.

Big Eyeball Breakers, 53 Church Crescent, Finchley,
London, N20.

Big Four Club, 40 Brunswick Square, Hove, BN3 1EF.

Big H Luddites, 6 Fieldhouse Road, Huddersfield,
HD1 6NX.

CB Musketeers, 61 Gibbwin, Great Linford, Milton
Keynes.

Copy Cats Club, Martholme Grange, Altham,
Accrington, Lancs.

Craigavon CB Club, Room 101, Country Club,
Craigavon.

Hart of England CB Club, 58 Clarendon Road,
Hinckley, Leics.

Mid-Kent CB Club, 18 High Street, Charing, Ashford,
Kent.

National 10-44, Limeburners Arms, Park Lane,
Kirkby-in-Ashfield, Notts.

Ness Point CB Club, 77 Ship Road, Lowestoft.

Pennine One Nine Club, 29 Legrams Avenue, Lidget
Green, W. Yorks.

Redditch CB Club, 80 Heronfield Road, Churchill,
Redditch, Worcs.

St Helens CB Club, 33 Broadway, Grange Park, St
Helens, Merseyside.

Telford CB Radio Club, 192 Bishopdale, Brookside,
Telford.

Untouchables, 299 Manchester Road, Kearsley,
Bolton, Lancs.

Victory Breakers, 9 Mayhall Road, Copnor,
Portsmouth.

CBIC list

BA Breakers Association
BC Breakers' Club
CB Citizens' Band
CBA Citizens' Band Association
CBC Citizens' Band Club
CBRC Citizens' Band Radio Club
CBSC Citizens' Band Supporters' Club
GBA Good Buddies' Association
MC Modulators' Club
RC Radio Club
RS Radio Society
SC Social Club

Aire Valley BC (Selby)
 Amalgamated BC (Southport)
 Apple County BC (Ilminster)
 Ardudwy BC (Talsarnau)
 Armagh RS
 Aston BC (Birmingham)
 Auchterarder CBC
 Ayrshire BC (Ayr)
 Ballymoney RC
 Ballynahinch BC
 Ballyward CBRC (Castlewellan)
 Band Town BC (Brighouse)
 Bann Valley CBC (Ballymena)
 Barnsley BC
 Barwell CBRC (Leicester)
 Basingstoke BC
 Bassetlow BC (Retford)
 Bay City BC (Coleraine)
 Belfast CBC
 Benbradagh CBC (Londonderry)
 Big C BC (Caernarfon)
 Big O BC (Stockport)
 Big S BC (Colne)
 Big Tree BC (Mansfield)
 Biggin Hill Reps Club (Westerham)
 Biscuit Town BC (Reading)
 Bootleggers' BC (North Berwick)
 Border BC (Jedburgh)
 Border BC (Plymouth)
 Bournemouth Independent BA
 Box Town BC (Stockport)
 Bracknell BA
 Bradford BA
 Breakaway BC (Washington)

clubs and associations

Breaker Alley BC (Newmilns)
 Breakers Town CBC (Carshalton)
 Breckland BA (Brandon)
 Britannia BC (Bangor, Gwynedd)
 Bromsgrove BC
 Bulwell & Hucknall BC (Nottingham)
 Burns BC (Ayr)
 Burton & District RC (Burton-on-Trent)
 Bury BC
 Caithness BC (Wick)
 Cake Town BC (Banbury)
 Camel BC (Wadebridge)
 Canyon BC (Bacup)
 Caradon BC (Liskeard)
 Carlisle Truckers' Club
 Carrick CBC (Maybole)
 Carshalton CBC
 Cefni BC (Llangefni)
 Cement City CBSC (Clitheroe)
 Central Birmingham CBC
 Central Scotland CBC (Larbert)
 Chase CBRC (Cannock)
 Chesterfield BC
 Chicken Chokers RC (Burton-on-Trent)
 Chocolate City BC (Slough)
 Chorley United BA
 Christian Buddies CBC (Dunstable)
 Cider Town BC (Taunton)
 Circle Breakers' CBC (Hamilton)
 Cirencester United BA
 CBA Liverpool
 CB Cleveland Club (Billingham)
 CB Fox Club (Newport, Isle of Wight)
 CB Popular Front (Rhyl)
 CBRC North East (Washington)
 Clogher Valley CBRC (Dungannon)
 Club 27 (Bangor, Co Down)
 Club 27 (London SE)
 Clwyd Valley BC (Denbigh)
 Concrete City BC (St Helens)
 Conference City MC (Harrogate)
 Country BC (Newark)
 Country BC (Seascale)
 Country BC (Enniskillen)
 Cranham, Hornchurch & Upminster BC
 Craven CBC (Skipton)
 Crawley United BA
 Crewe BC
 Crimson Water BC (Carnforth)
 Cromarty BC
 Croydon BC
 Darwen Sunday Club
 Delta Echo Club (Huntingdon)
 Derwent Valley BC (Stanley)
 Dixie Town BC (Nottingham)
 Droitwich BC
 Dronfield CBC (Sheffield)

Dukesville BA (Worksop)
 Dumfries BC
 East Coast BA (Ipswich)
 Eccles BA (Manchester)
 Elite BC (London SE)
 Essex CBC (Witham)
 Evesham CBC
 Fair City CBC (Perth)
 57 Club (Manchester)
 First Aid Post BC (Nelson)
 Flag Town CBSC (Nelson)
 Foyle Cross Border BC (Londonderry)
 Foyle Valley CBC (Londonderry)
 Friendly Breakers' Incorporated (Ashford, Middx)
 Fugitives Club (Llandudno)
 Furness BC (Barrow-in-Furness)
 Garnock Valley VC (Kilbirnie)
 Girvan BC
 Gloucester BC
 GBA of Harlow
 Good Buddies Club (Kilwinning)
 Grantham BC
 Hazard County BC (Derby)
 Hazard County BC (Llanfairfechan)
 Highland BC (Inverness)
 Inverness CBC
 Jail BC (Bodmin)
 Jail Set Club (Burton-on-Trent)
 Jolly Roger Club (Belfast)
 Jolly Roger Club (Kirkcaldy)
 K19 Club (Troon)
 Kilkeel RS (Newry)
 Kilmarnock K19 Club
 Kilsyth CBC (Glasgow)
 Kings North CBC (Birmingham)
 Kirkintilloch BC (Glasgow)
 Lakeland Breakers CBC (Enniskillen)
 Leeds GBA
 Leyland & District BC (Preston)
 Lifford Cross Border CBC (Strabane)
 Lochneagh DX Group (Antrim)
 Lune Valley BC (Lancaster)
 Luton & Beds BA
 Meon Valley BC (Fareham, Hants)
 Merseyside 27 Club (Ormskirk)
 Mid Ulster CBRC (Dungannon)
 Middlesex BC (Feltham)
 Midnight BC (Harrow)
 Monklands BC (Airdrie)
 Morecambe & District MC
 Music City BC (Newtownards)
 New Breakers Inners Club (Carlisle)
 Newark BC
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 99 Club (Hyde)
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 Northampton BC
 Northern BC (Invergordon)
 Northfield & Surrounding Area Club (Birmingham)
 Northside BC (Belfast)
 Nottingham Area Club
 Ogwen BC (Bangor, Gwynedd)
 Oldham BC
 Open Channel Club (Coventry)
 Orkney Airforce BC (Kirkwall)
 Outer City BC (Sheffield)
 Over Wyre Wind Up Club (Blackpool)
 Padiham CBSC (Burnley)
 Papa India Club (Carrickfergus)
 Pendle CBSC (Burnley)
 Pier Town BC (Wigan)
 Pimpernell BC (Holyhead)
 Plum Town BC (Pershore)
 Ram City BC (Derby)
 Red City BC (Warrington)
 Renfrew & District CBC
 Ribble BA (Preston)
 Roadrunner Club (Exeter)
 Rochdale & Littleborough BC
 Rocky Mountain BC (St Austell)
 Roe Valley CBC (Limavadey)
 Roman City BC (Chester Le Street)
 Scottish DX Club (Glasgow)
 Seahaven BC (Prestwick)
 Shetland BC (Lerwick)
 Shirebrook BC (Mansfield)
 Single Side Band Club (Swansea)
 Slough's Lot of BC
 Smellytown BC (Bridgwater)
 Smog City Breakaways Club (Northwich)
 Smoke City CBC (Belfast)
 Solway BC (Whitehaven)
 South Coast Area BC (Brighton)
 South Derbyshire BC
 South East Essex BA
 South Fork BC (Morecambe)
 South West Breakaways Club
 South West Lancashire BC
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 Spa Town BC (Buxton)
 Stratford County BC
 Strule Valley CBRC (Omagh)
 Styx County BC (Burton-on-Trent)
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 10-4 Club of Greater Manchester
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 Warrington Breakaway Club
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