

CB World

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APRIL/ MAY 1981
60p

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CBers' handles
CB for Ireland
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It is an offence to operate,
import or install an unlicensed
transmitter in the UK. CB
WORLD realises this and points
out that it is not our deliberate
intention to encourage the illegal
use of c.b. equipment.

COME ON!

□ Well done lady breakers and good buddies, we've made it. On behalf of you all, *CB World* says a big four thank you to Mr. William Whitelaw, Home Secretary. Full details of the announcement legalising c.b. on 27 MHzFM and 930 MHzFM are inside this issue.

□ This is very good news but what about an amnesty for those 350,000 pioneering people using 27 MHzAM sets. They know they are breaking the law but since the Home Office have allowed this to go on for so long they must give everybody a chance to wind down. Not many people will just throw their sets away — why should they? The rigs cost between £80 and £120, some much more. *CB World* said in its first issue, it was not going to take sides in the frequency stakes, but it's going to make a stand on this amnesty business. Ireland (South) have a two-year phasing-in period: we would like the same.

□ *CB World* is going to pat itself on the back. We timed our launch (December 1980) absolutely right. Even in our February/ March issue we went to press putting forward reasons why c.b. should be legalised and now with this issue it's all happening. That's the good news, now the very good news. WE ARE GOING MONTHLY in June. Readers want it, advertisers want it and so do we at IPC.

□ Now for the serious things. One of the most important things we must now have on the c.b. network is channel courtesy (c.c.). Without this c.c. or discipline there won't be fun. There must be no swearing or abuse on the air waves. Used intelligently c.b. can be both a fun thing and a useful thing. For example: the most precious thing we have in life is life itself and c.b. can help to save it. If you are in trouble or see trouble, get on to channel 14 and say "this is a 10-33, please call the police (ambulance of fire) to the XYZ cross roads, there has been an accident". Do not panic, do not speak too fast or get excited, just get your message over clearly and factually. Get back confirmation that a base station is doing something about it, like getting on the telephone to the emergency asked for. Whilst all this is going on other breakers must not interrupt or key the mike — listen if you want to, but leave the action to those who know what they are doing. Some of you are going to disagree with this as you expect us to say, use channel 9 for emergencies. Well, that might be OK when we have REACT or some other organisation monitoring officially but at the moment your plea for help could go unheeded. Use 14 where you know there are listeners.

□ Other things we all want to know: Where can we buy 27 MHzFM sets? Will this give a much needed shot in the arm for British industry or are we going to be invaded again? If the British are to make rigs, then let's get on with it quickly, and market them like they do in America; get those colour brochures out, get advertising and get ready to export too. For all this information stay close to *CB World* — monthly.

□ Don't forget the *CB World Show* at Sandown Park, Esher, Surrey (indoors) on April 4th and 5th — open from 10.00 a.m. to 6.00 p.m. See you there. Gordon Henderson

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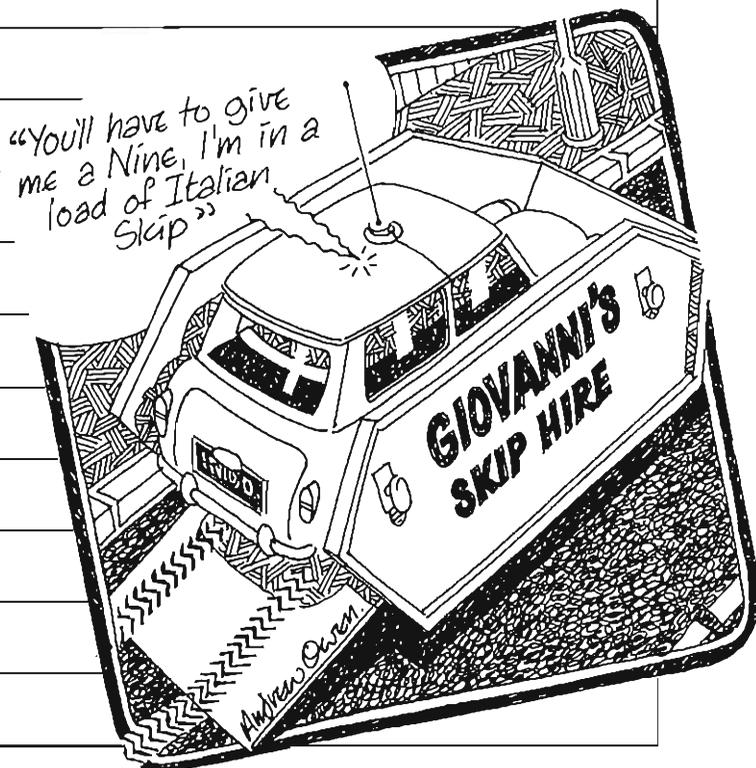
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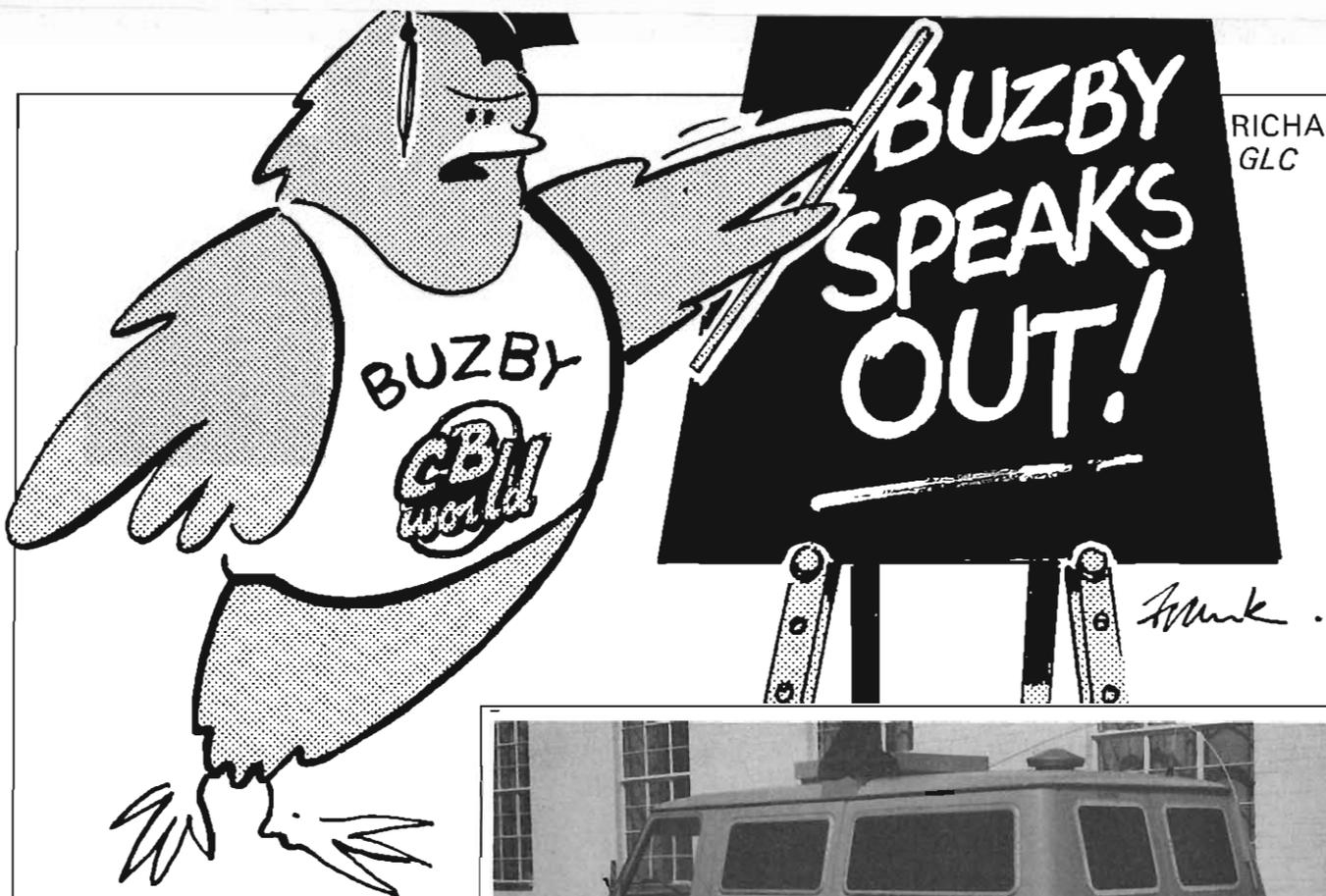
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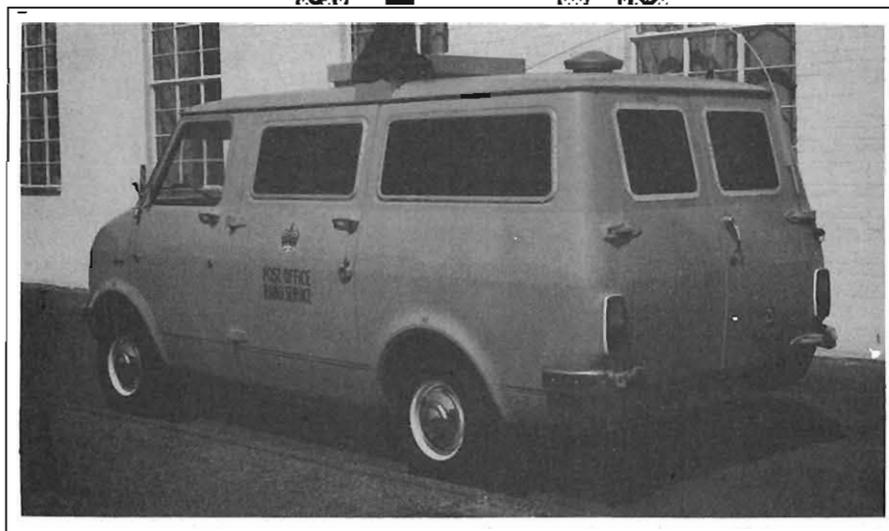
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RICHARD TOWN
GLC

Richard Town goes behind the otherwise impenetrable wall of the Post Office radio interference department and investigates our feathered "enemy" who, with the advent of a legalized citizen's radio service for the UK, could become our feathered "friend," and protect our citizen's band from harmful interference.



One of the GPO detector vans

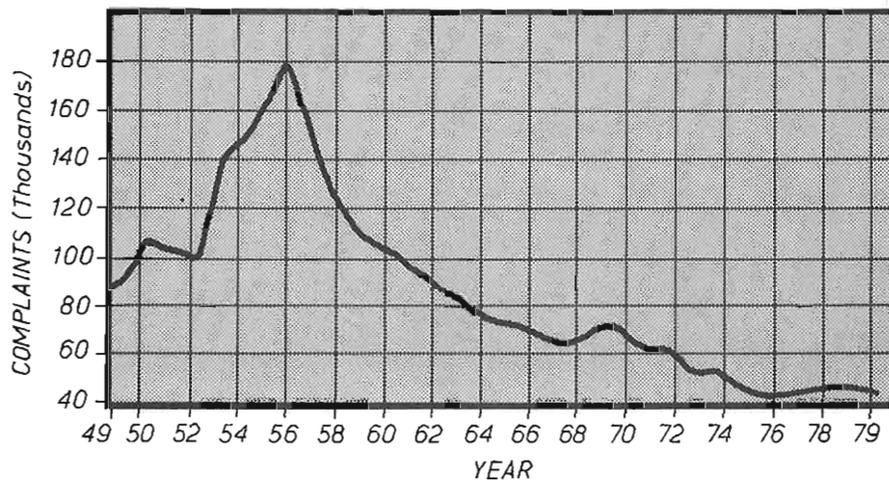
COMPLAINTS of interference to authorized users of the radio waves caused, so Buzby claims, by c.b. equipment, began to surface quite suddenly in September, 1980: this was apparently caused by a large flood of base stations. From the 1st September to mid-November, Buzby claims 1,200 verified complaints; for the period mid-November to the end of December 1980, 1,550 verified complaints; to January 1981, the figure was 1,770.

If our hobby is not to be brought into disrepute, then we should all at least be aware of the possible effects of our transmissions and assist wherever possible if interference is caused. We have a direct responsibility to avoid spoiling the enjoyment of many millions of listeners and viewers.

Interference with a radio signal is caused by radio-frequency energy coming from either natural or man-made sources. The former include thunderstorms and charged rain and there is nothing that can be done to eliminate these, apart from fitting some form of noise-suppression circuit during the manufacture of the receiver.

Man-made interference from four main sources can be identified.

- Interference from other radio systems operating on the same frequency can only be minimized by careful frequency assignment, to provide adequate geographical separation



Complaints caused by unsuppressed equipment

or time sharing between co-channel stations.

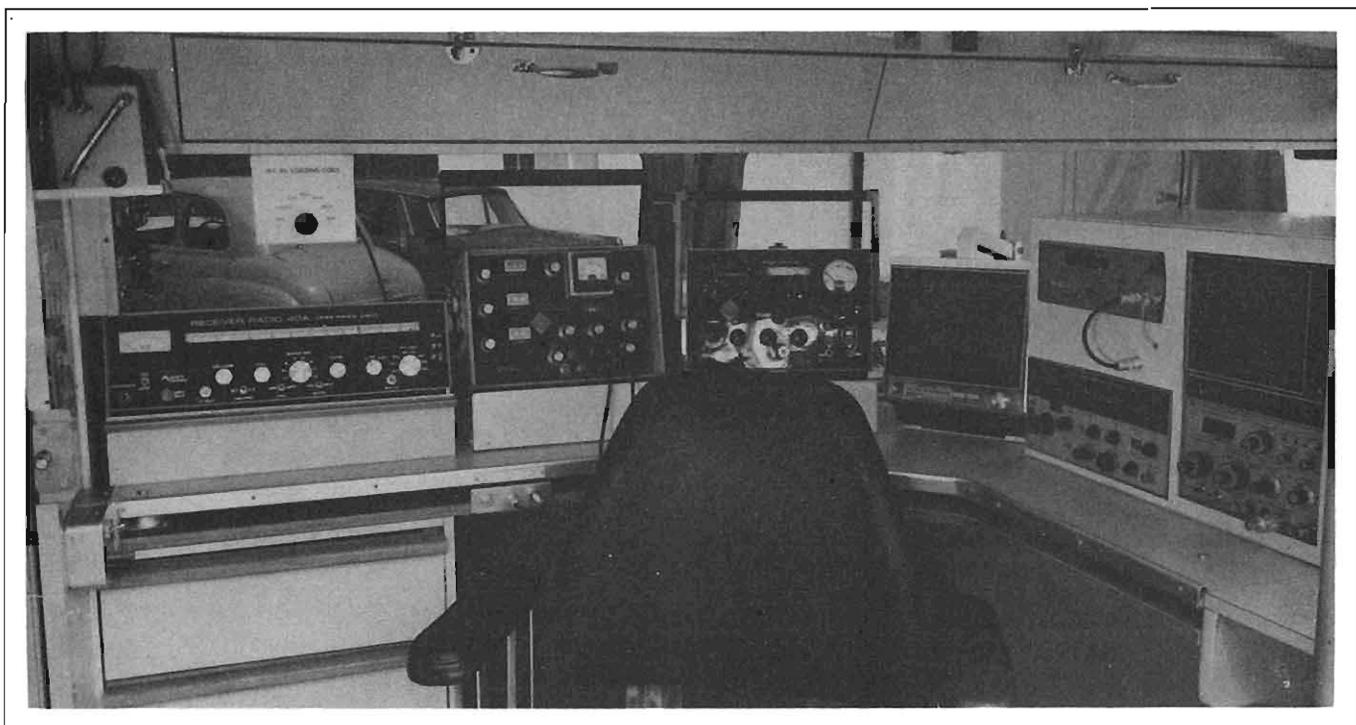
- Interference from spurious, out-of-band radiation, produced by radio equipment. This type of interference can be caused by both transmitters and receivers and can affect other, quite unrelated radio systems.

- Interference caused by electrical equipment, in which radio-frequency energy is deliberately generated for heating purposes, e.g., diathermy, plastics welding and cooking

equipment.

- Interference caused by electrical equipment, which produces r.f. energy as a quite unwanted by-product of its function, such as motor-car ignition, electric motors and switching devices.

The introduction of regulations in the U.K., to encourage manufacturers to suppress equipment and appliances at the time of manufacture, has been a contributory



Interior of the detector van

cause of the fall in the number of complaints of interference, from a peak of 170,000 in 1955 to around 46,000 today.

Field engineers of the Post Office undertake the investigation of day-to-day complaints acting as agents of the Minister. The Ministry takes an active role on national and international committees which deal with interference problems, on the basis that prevention is better than cure.

Investigating complaints

The largest number of complaints come from members of the public, regarding their tv or sound reception. Although the complexity of equipment and its operation has increased, it has been possible to reduce the staff required and to deal with approximately 46,000 complaints in 1979, of which 44½% related to tv. About 300 investigation officers are currently employed.

The first step in investigating a complaint from a listener or viewer is to examine the

receiving installation, to verify that there is enough signal at the location, that a suitable antenna is provided and that the receiver is in good working order and properly adjusted. The table shows that, in about one third of the complaints investigated, these conditions were not met. The interference officer has at his disposal equipment to demonstrate to the owner of an unsatisfactory installation the effect of putting his house in order, at least where the signal is adequate. This includes a telescopic mast and antenna and a small, portable, standard tv for use when the complainant's set is suspected of being faulty.

When a receiver is found to be in good order, the investigating officer will attempt to observe the interference. This is more easily said than done, since interference is usually intermittent in nature. There are no set rules of procedure from now on, except to attempt to locate the source. The type of interference may provide clues; for example, short bursts on both sound and vision are

characteristic of a sewing machine nearby without a suppressor. Interference-tracing receivers are shown in the photographs: separate models are shown for the l.f./m.f., the v.h.f. and the u.h.f. bands, together with a light-weight portable. All receivers have directional antennae for taking rough bearings on interference sources and their field strength. Where it is immediately possible, the investigating officer will demonstrate how the interference can be cleared by means of suppressors or filters.

I enquired as to why interference was still permitted from the line oscillators of domestic television receivers, all but obliterating Radio 4. Radio interference branch still receives 200-300 complaints regarding tv line interference per year, but apparently is quite impotent to cause television-set manufacturers adequately to screen their receivers. Such screening would also cause receivers to become less vulnerable to interference from the harmonics of c.b. radio transmissions.

The radio interference Buzby is activated via either complaints of interference from the general public (usually t.v.i.) or by a general police activity report. This would lead to the tracing of an offender and either a warning or a prosecution. It is only asking for trouble to pull alongside a Buzby mobile, raise two fingers and then transmit. Of course you will get your licence number taken and probably be busted. Similarly, running an afterburner and causing widespread t.v.i. will bring Buzby running. If you want trouble-free breaking, stay clean, don't operate a 23-channel rig: they're made to a lower standard and are big interference generators. Also don't run an afterburner; you'll only amplify the spurious, out-of-band radiation of your original rig.

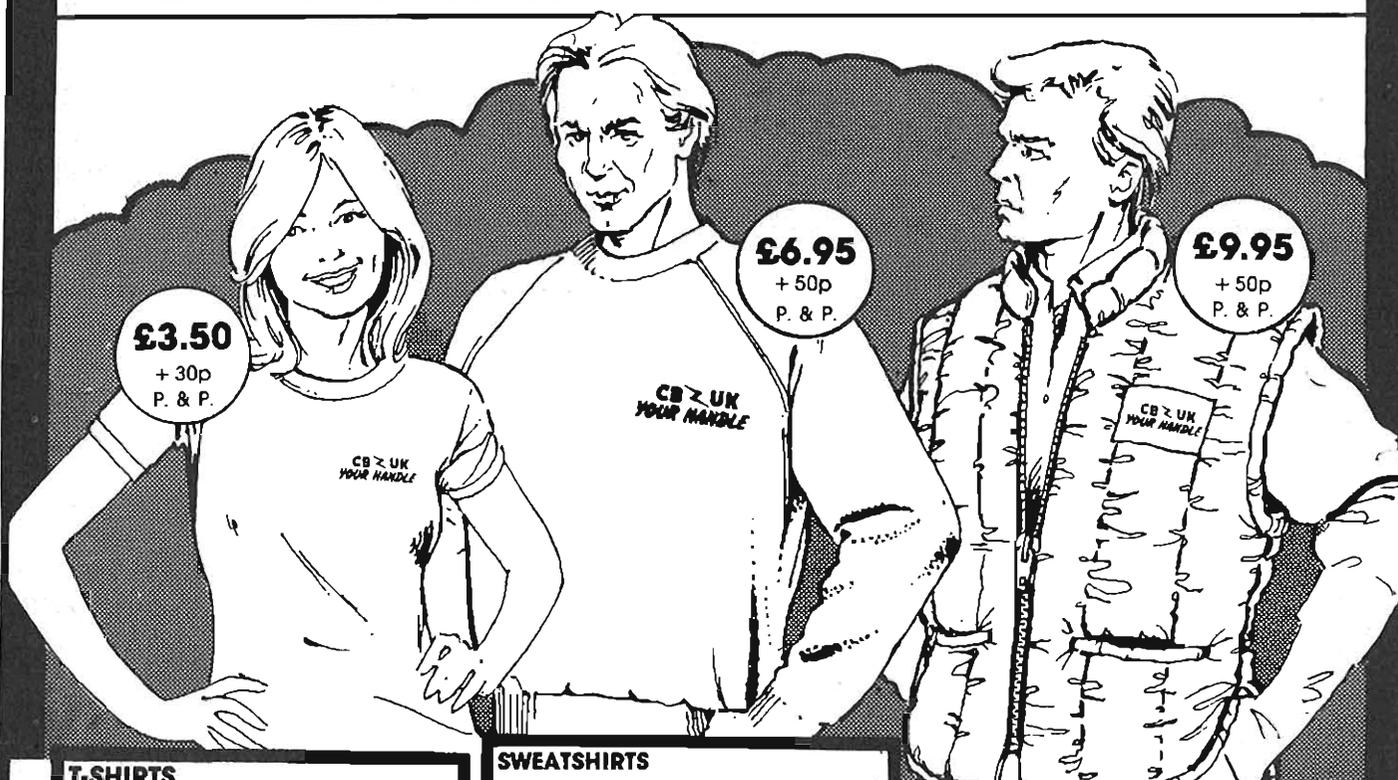
Buzby claims he's only after the interference, not the breaker — at least, that's his claim.

TABLE 1
SIMPLIFIED 1979 STATISTICS OF INTERFERENCE COMPLAINTS

Sources	No. of complaints per service					Approximate % of all complaints
	Sound		Television		Private mobile radio	
	l.f./m.f.	v.h.f.	v.h.f.	u.h.f.		
Inadequate signal	169	76	67	982	5	3.00
Inadequate antenna	733	705	155	2565	27	9.00
Receiver faults or maladjustments	2290	1655	391	5789	192	22.00
Contact devices	5637	2457	235	3072	22	25.00
Radio transmitters in U.K.	162	173	31	523	342	2.00
Broadcast receiver radiation	222	11	17	138	5	1.00
Electric motors	359	134	120	278	7	2.00
Overhead powerlines	139	42	63	32	8	1.00
Discharge lamps and signs	326	19	3	17	3	1.00
Industrial and medical l.f. heating equipment	46	31	21	131	22	0.50
Identified sources other than those above	50	23	1	116	3	0.50
Unidentified	1164	280	47	497	154	5.00

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The adjournment debate on Open Channel Radio held on
Monday February 9th 1981 at the House of Commons

THE CB DEBATE

Mr. Patrick Wall (Haltemprice): I know that citizens' band radio is normally associated with the motor car. It is, in fact, a hand-held telephone with no wires. It has many uses other than installation in motor vehicles.

I first raised the question of the legalisation of this system in the House during the time of the previous Government, but they were clearly unwilling even to consider the matter. After the 1979 general election, the Conservative Government agreed in principle to freedom of the air, although they sensibly entered the caveat that this freedom should not interfere with other people's freedom.

As a result, the parliamentary CB committee was formed under my chairmanship and also a National Committee for the Legalisation of CB Radio to co-ordinate numerous CB clubs and associations which represent over 100,000 CB enthusiasts. Councillor Yard was the first chairman of the national committee. He has been succeeded by Councillor Town.

At this stage, I should like to pay tribute to the Minister of State, who has met both committees whenever we wanted to see him and who has been most helpful and frank about the difficulties he faces in legalising a CB system. However, I cannot understand why he insists upon calling it Open Channel when the general public, brought up on American films and television, always refer to it as CB radio.

There is a strong impression among these interested in CB radio that the officials have opposed its introduction and have been fighting a rearguard action to prevent its legalisation—

Mrs. Peggy Fenner (Rochester and Chatham): And how!

Mr. Wall: —and have sought, if it is legalised, to emasculate it as far as possible. This view is illustrated by a discussion document that was made available last year. Incidentally, it was not obtainable from the Stationery Office, which seems rather strange. The document was studiously vague, except in advocating a frequency of 928 MHz.

The view is further illustrated by a meeting with Home Office officials on 18 December. I have here a copy of the minutes of that meeting, which was called for a time when it was known that the chairman of the national committee would be out of the country, as would its secretary, but the secretary managed to change his arrangements and attend the meeting. The object of the meeting is laid down in the minutes:



Patrick Wall
MC, VRD, MP



Timothy Raison
MP,
Minister of State

"The meeting had been arranged in response to a request made by Mr. Raison, Minister of State, Home Office, on the 11th December by a delegation from the National Committee for the legalisation of CB Radio, for a discussion meeting with Home Office engineers on the technical merits of the delegation's proposals. The basis for the discussion was the National Committee's paper 'CB Independence', a voluminous document, which I have here.

The meeting made little progress in discussing the national committee's proposals, which had been submitted in detail to the Minister. It was confronted with a barrage of reasons why the 41 MHz band, which it had suggested, should not be legalised. If my hon. Friend the Minister studies the committee's proposals carefully, he will see that in fact we proposed a frequency of 42.608 to 43 MHz, with 16 channels, and 43.694 to 44 MHz, with 20 channels. We know that the frequency tested by his officials — 41.5 MHz — causes interference, but we claim that on the frequencies to which I have just referred the interference is minimal. It is clear from the minutes that these frequencies were never tested by his officials.

Perhaps I should say here that the law is very muddled. As it stands, one can purchase a CB set, but one cannot install it, use it or import it. One hopes that these rules will be changed in the very near future.

In view of the statements made in the House last week, I am bound to say that some officials of the Post Office searching for CB radios have adopted what amount to near-Gestapo tactics, by demanding entry at

2 am and virtually pulling a house apart in search of an illegal set. I have statements to the effect that the attitudes adopted might have been suitable for a search for an enemy spy transmitter during the last war.

Mr. John Golding (Newcastle-under-Lyme): Radio investigation officers, members of the Post Office Engineering Union, will bitterly resent the charge of using near-Gestapo methods, when they have to enforce a law that has not yet been changed, after representations from hospitals, fire services and other users. They have been put in an intolerable position, because they have to enforce the law. Conservative Members who would have law and order should do nothing other than to try to persuade the Minister of State to change the law to make it easier for them.

Mr. Wall: I am glad that the hon. Gentleman intervened, because it was he that I had in mind. Of course he is right in saying that officials have to uphold the law. What I am saying is that the way in which they do it is not always in conformity with the normal practice. There are two sides to every question. I shall leave it at that. My hon. Friend the Minister will, quite rightly, defend his officials, but it is only right that he and the House should know that those interested in CB radio have strong feelings on the matter — as undoubtedly do the officials that the hon. Gentleman represents in his trade union.

With that background, I come to the two basic questions that we have to consider tonight. The first is the frequency to be allotted, and the second is the timing of the legislation — or, rather, the legalisation, because legislation is not required.

There are three possible frequencies — 928 MHz, favoured by the Home Office, 42.8 to 44 MHz, favoured by the national committee, and 27 MHz favoured by the large mass of at present illegal operators.

In answer to a question last Thursday, the Minister said:

"we have been reviewing the possibility of introducing a service on a lower frequency, in addition to one around 930 MHz." — [Official Report, 5 February 1981; Vol. 998, c.394.]

I take it that that presupposes that either 42.8 MHz to 44 MHz or 27 MHz will be legalised. I cannot see any other meaning in that answer.

With regard to 928 MHz, the Minister has admitted that the overwhelming number of replies to his consultative document were opposed to this frequency, largely because of the short range in built-up areas and the expense of UHF sets. I understand that the

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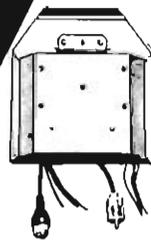


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—	—
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SWR 20 SWR/FS	£9.80
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DM 510 Power	£8.95
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-----------------	-------

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"T" Piece	£1.45
RG58U Co-Axial Cable per m.	£0.75
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Europeans are studying an international automatic car telephone around that frequency, but it will obviously be some time before the study is completed. France recently rejected that frequency completely.

That leaves us with 41 MHz and 27 MHz. We are still in favour of the 41 MHz band. We have submitted evidence to show that, if properly tested, it causes minimal interference and no danger to health. Damage to health is possible on the 938 MHz band, using 25 watts, compared with 8 watts on the lower band. We need a range of about 10 miles or, 15 kilometres, and an automatic identification device. It would clearly be of advantage to the manufacturers if the new frequency was legalised.

In 1973, it was estimated that CB radio could provide work for 2,500 people and would cover a market of about £45 million a year. The Minister's main objection to the 41 MHz frequency, other than interference, is that it would have to wait until black and white television is phased out in three years. That is not our understanding. We understand that the BBC could almost immediately transmit black and white television on four of its transmitters, leaving the fifth available for CB users. That would also be in accord with international agreements.

However, it may now be too late. Eighteen months ago, the Minister was warned that there were an estimated 30,000 illegal sets in this country, operating on 27 MHz. From the study of sales of aerials and other accessories, we believe that that figure has now reached 250,000. The Minister warned that the Government of Australia and the Netherlands were opposed to that frequency but were forced to legalise it because of the large number of sets operating in those countries. That is most unsatisfactory, and I fear that the same situation will develop here.

We backed the Minister in opposing 27 MHz, but we warned him that if action was not taken rapidly he would be forced to legalise that frequency. The police and the Post Office regulatory department have rightly — I emphasise rightly — increased the pressure against illegal operators, and many police forces have now given up as demands on their manpower have been too great. I understand that police constables have been issued orders to that effect.

That is an unsatisfactory situation, but we must face facts. The question now to be asked with regard to 27 MHz is whether AM or FM should be legalised. Many illegal sets that are operating in this country today come from Japan or America, and they operate on 27 MHz AM. Although AM causes television interference, it is clear that some sets will continue to operate illegally whatever decision we reach. That is one of the reasons why the Citizens Band Association now favours AM.

However, 27 MHz FM or CEPT PR 27 FM has now become virtually the official European standard. West Germany has legalised AM and FM. France, the Netherlands, Belgium and Luxembourg have legalised 27 FM. I understand that Ireland is

continued on page 42

Citizen's Band radio approved on 27 MHz FM and 930 MHz FM

27 MHz AM equipment remains illegal

Britain is to have a legal citizen's band radio service. Mr William Whitelaw, the Home Secretary, announced this today in a Parliamentary answer to Mr Patrick Wall, M.P. It is hoped that the new service will be introduced in the autumn.

The new personal two-way service will be authorised on 27MHz f.m. (frequency modulated), and a further frequency will be made available around 930 MHz. Equipment will be required to meet a technical specification, and users will have to buy a licence.

The 27 MHz a.m. (amplitude modulated) equipment currently being used in this country is illegal and will remain so.

Commenting on the introduction of the new service, Mr Timothy Raison, M.P., Minister of State at the Home Office, said today:

"We are offering a new service which we hope will provide enjoyment for many people. It will give as good a service as the illegal a.m. equipment — indeed some of this is already obsolete. It should soon cost about the same and should cause fewer problems for others. The interference which illegal c.b. equipment is causing to tv reception and emergency services is giving rise to concern, and now that the Government has gone so far towards meeting the wishes of supporters of c.b., I hope that we can rely on those with illegal equipment to act responsibly and stop using it."

WHY THIS FREQUENCY?

The Home Secretary said in a written Parliamentary reply on December 18, 1980 that he favoured the introduction of a c.b. facility on a frequency around 930 MHz, but because of public demand for an alternative, he undertook to consider the possibility of legalising additionally on a lower frequency. The final decision had to take into account the need to introduce a legalized service with the minimum of delay; the risk of interference to radio, tv and other authorized services both in the United Kingdom and in neighbouring countries; the availability of frequencies; and the desirability of adopting an international standard. The frequency

selected — 27 MHz f.m. — should give c.b. enthusiasts the performance they want at about the same cost as illicit equipment with far less interference to other users. France, the Netherlands and Germany are among those European countries who have legalised on 27 MHz f.m. equipment and the Irish Republic has recently announced its intention to do the same. The other frequency proposed — around 930 MHz — is going to be adopted in North America and some European countries, and is seen as being capable of giving a good quality service, especially in towns and cities, with the minimum of interference. It offers the prospect of an international market for British manufacturers.

Other alternative frequencies, such as 41 MHz and 450 MHz, were reviewed but none was free of interference difficulties or met the other requirements.

Existing authorised users of the 27 MHz band, for example, hospital paging systems, may be affected by the Government's decision and the implications for them will be taken into account during the planning period.

EXISTING EQUIPMENT AND USERS

Existing illegal 27 MHz a.m. (amplitude modulated) equipment will not be legalised. The volume of interference from c.b. sets using 27 MHz a.m. equipment is increasing — in the last five months alone there were nearly 5,000 complaints of interference to radio, tv and hi-fi which were directly traced to the use of illegal 27 MHz a.m. sets; this represents an increase of about one-third of all recorded complaints of interference from all sources. Emergency services have also been affected. Although recent a.m. equipment of US origin causes less interference to some services than earlier models, its potential for interference to tv remains high.

CB SPECIFICATIONS

Specifications for the new f.m. (frequency

continued on page 44

Antenna connectors and how to fit them

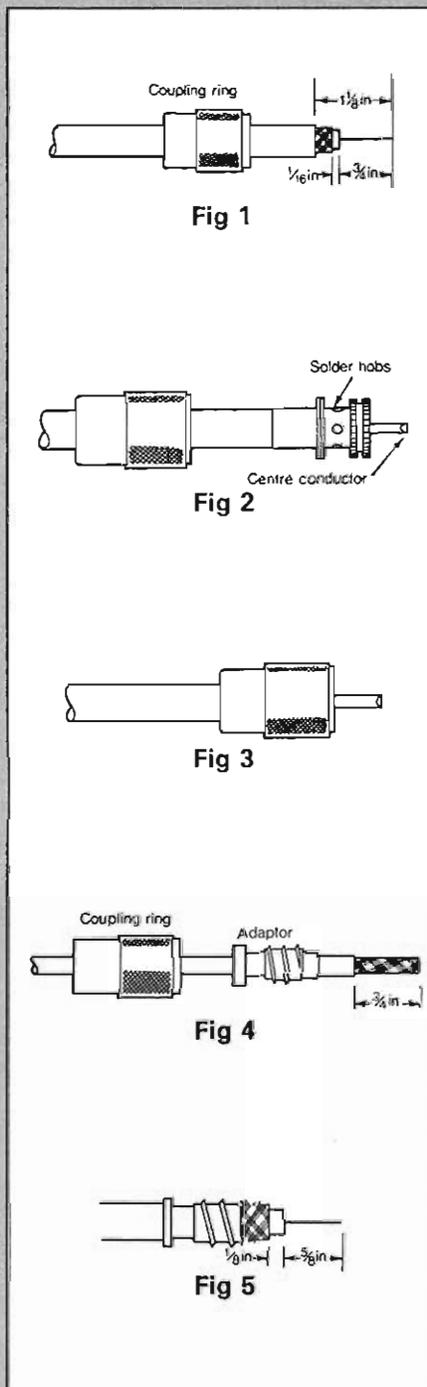
BY PETER E. CHADWICK.

One of the most unreliable components in the electronic world is the connector. Most connector failures in c.b. use are caused by either incorrect assembly, or by mechanical damage in mating the two halves of the connector, including damage caused by trapping dirt and foreign bodies in the connector.

The coax. connectors used in the vast majority of c.b. rigs are of the type known as UHF connectors, and are simple, robust and relatively cheap. These connectors were designed and developed during World War II to provide a reliable connector for operation with coaxial cables at v.h.f. and u.h.f. Before these connectors were available, there were very few other coax. connectors, and of these probably the most used was that known as the 'Pye plug', which was extensively used in the British armed forces. This connector is now very rare and unlamented, being an absolute swine to assemble correctly! It also consisted of a large number of piece parts, and thus suffered the usual problems of such devices that when being fitted in a tank or aircraft, the bits got lost, as did the temper of the radio mechanic!

The development of the UHF-type plug in America brought little change in British equipment, but post-war equipments in some fields used UHF connectors, notably in tv studios for distribution of video and synchronizing pulses. Although not a "good" plug from the r.f. point of view, the UHF series proved adequate for many applications, being simple to fit, having few piece parts and being relatively immune to vibration. Its disadvantages are that it is not weatherproof, has a poor s.w.r. and is not a "quick — disconnect" type of connector. The poor s.w.r. means that it is fairly lossy at very high frequencies, and so should not be used over about 200 MHz. However, unlike the average tv plug and socket, its large mating surface areas mean that it is able to handle large amounts of r.f. power. All these reasons, coupled with its low price and ready availability, have led to the UHF series of connectors becoming standard for c.b., h.f. amateur radio, many v.h.f. mobile radio telephones, h.f. low-cost radio telephones and many tv studios around the world.

The plugs are correctly known as PL259, from the original US armed forces



nomenclature, while the chassis-mounting socket is the SO239. Other parts include the M-358 'T' piece, and the PL258 for joining two PL259's together. There is also the M-359 right-angle adaptor, a screening hood for the SO-239, and two bulkhead-mounting versions of the PL258, one of which has a centre-mounting flange, and the other a screw thread and nuts for mounting through a bulkhead.

It is worth heeding a word of warning here, the 'all female' T piece is a relatively new addition to the range of UHF series parts, while any 'T' pieces found with the '2 female-1 male' fittings, and inscribed M-360 should be treated with caution: these fittings will have one arm of the 'T' marked 'ANT' and the other 'WM', and used for tapping off a small amount of signal from the output of an airborne radar. As a result, the 'WM' connexion is open circuit!

The basic PL259 plug is designed to fit RG8 (American) or British UR67 cable, which is 0.405 in. in external diameter, and can handle about 1250 watts at 27 MHz, which is more than the average linear will give!. By using the adaptors that are available, other cable sizes can be fitted, and the most common one is RG58 (approximately the same as UR76) which is 0.195 inches in diameter, and capable of handling about 600 watts at 27 MHz.

Fitting the Plugs.

First of all, it is necessary to use the right tools. To fit a PL259, you need a sharp knife, such as a Stanley knife, a pair of good side cutters (not the ones used for old nails, piano wire and the like) a big soldering iron of about 50-70 watts and some 16 or 18 s.w.g. cored solder. Using a small iron of 25 watts or so will give poor results, as will a temperature-controlled iron of low temperature and/or small thermal capacity.

The next thing to do is to use good quality plugs. Because the UHF plug is so popular, a lot of manufacturers have rushed into the market with ever-cheaper plugs, and most of them are of ever-decreasing quality. There are some 'no solder' plugs around of good quality, very few right-angle entry ones, and many rubbishy ones. Bad plugs have poor quality or unsolderable plating, and in many cases

thermoplastic insulation. Other faults are bad machining, leading to crossed threads or jamming when the plug is mated to a socket. One good guide to the quality of any parts or adaptors is the number of cutouts for the plug to locate into — see the photograph of the 'T' pieces and compare the mating surface with that of the right-angle adaptor. The greater the number of notches, the more has been spent on machining, and generally the greater the cost because of the higher quality throughout that this means.

The writer has no commercial affiliations with any connector manufacturer in this field, but has had a lot of experience in putting PL259s on cable. From this, the recommended connectors are those made by Amphenol, which although being slightly more expensive, are probably the best available. For those who are putting on a lot of plugs, the 'crimp' variety is recommended, although the necessary crimping tools are fairly expensive.

The first stage in the fitting process is to slide the coupling ring of the connector over the cable, ensuring that it is the correct way round, as in Fig. 1. Then strip back the p.v.c. jacket according to the dimensions in Fig. 1, if using 0.405 in. diameter cable, or fit the adaptor (Amphenol 83-168) if 0.192 in. diameter cable is being used. When using the large cable, it can be helpful to tin the braid with solder after removing the p.v.c. jacket but before cutting; then, when the braid has cooled, it can be cut with the knife, or preferably a tubing cutter. After this has been done, screw the body of the plug onto the cable, as in Fig. 2, or cut and fan the braid over the adaptor as in Fig. 5, and screw the adaptor and cable into the body of the plug, ensuring in either case that the centre conductor of the cable is located in the centre pin of the plug. If the adaptor has been used, it only needs to be finger tight, but it does need to be screwed completely home. Now, solder the braid through the solder holes, as shown in Fig. 2. Using a big iron here allows the job to be done quickly without overheating the cable. Finally, solder the centre conductor.

The last job, once the cable has cooled down, is to screw the coupling ring back over the body of the plug, connect up and off you go.

Some people may tell you that soldering through the solder holes will ruin the cable. This is so if you don't use a big soldering iron. A good check on the installation is to measure with an ohm-meter from centre conductor to outer of the plug, which should generally be an open circuit. Some antennas, however, have a matching coil arranged so as to give a d.c. connexion across the coax. in the base of the antenna, so this is not an infallible test.

Coax. plugs of the UHF variety are really quite simple to instal. There are other types, which are much more difficult, but it is unlikely you will find one on a c.b. rig. Unfortunately, there seem to be very few professional electronic engineers who can put plugs on correctly. Good service engineers know better — but then, they have to cure the troubles, and so generally avoid causing them. So, go ahead, fit the coax. plugs yourself, and avoid trouble by following the instructions.

AIR CALL

AIR CALL beepers are small radio receivers about the size of a pocket calculator. They alert you with a 'bleep' tone and then give you a full voice message so you know who it is that wishes to contact you.

Anyone who needs to contact you (customers, secretary or XYL) simply telephones the Air Call communications centre quoting your personal 'bleeper' number. They then give their message to an Air Call secretary who immediately 'beeps' you and then relays the spoken details. The message is repeated to ensure the 'copy' has been received.

The system operates through twenty two communications centres spread over the U.K. Messages for a subscriber can, via the centre, be fed to a mobile. Messages from a mobile can also be fed back through the centre to a landline subscriber.

Air Calls new service 'Interconnect' provide through the centre a 'patch-in' service providing the facility of direct speech from a car to an ordinary telephone via the Buzby network. But it costs you 85 Green Stamps

per month! You can even 'do it' with people abroad.

The obvious advantage of this system is that time and energy is saved by executives and business people. This is one up on the Buzby system. For example, the National Committee's response to the Home Office consultative paper "Open Channel" carried a letter from the London Raidophone centre explaining that they are "relying on a suitable tranche of additional radio spectrum being allocated. Prospects for this before 1985 are not good and we therefore advise applicants that in our view there will be a five year delay before we can meet orders".

Walter Stephenson, Director of Air Call, and an active member of NATCOLCIBAR said "My companies growth is being stunted by the non-availability of frequencies. The radio frequency spectrum is a freely available, non-depleting natural resource. We recommend its wider application to all civil radio services. In this respect we strongly support and congratulate the users of the new UK Citizens Band Radio Service".

Health risks from 'Open Channel' radio

The National Radiological Protection Board issued the following press statement on 11 December 1980

Objections have been raised to the Government's preferred frequency for a public "Open Channel" radio service (around 928 MHz UHF) on the grounds of possible health hazards. The specific dangers cited are the induction of brain tumours and cataracts in the eyes.

The Board considers that there is no scientific evidence that exposure to microwaves or radiofrequencies will cause brain tumours or other cancers or that there is any evidence which indicates the existence of special hazards from radiation in the frequency range 150 to 1200 MHz.

Exposure to very high power levels of microwaves has been shown to cause cataracts in animals and may be inferred to give rise to a similar effect in humans, but the exposure must be such as to raise the temperature of the eye by at least 4°C for more than ten minutes. The normal temperature of eyes and body fluctuates daily by about 1-2°C, and possibly more under the influence of physical exertion. For hand-held radio transmitters with total effective radiated powers of less than 3 watts, studies indicate that the temperature rise in the eyes will not be more than 1.0°C when their aerials are held no closer than 1 cm to the face, and the transmitter operated continuously for several minutes. Direct comparisons between hand-held transmitters has shown little difference in the total power absorbed by the head at 150 MHz, 450 MHz and 900 MHz or in the maximum values of the power absorption. There is no reason to expect significantly different results at other frequencies in this range.

There is unlikely to be any direct danger to health from hand-held transmitters used for the "Open Channel" communication in any part of the radiofrequency spectrum, when the effective radiated powers are less than 3 watts and the transmitters and their aerials are kept more than 1 or 2 cm from the head. In the case of mobile transmitters with effective radiated powers of 25 watts it would be inadvisable to place the head closer than about 10 cm to the aerial for any length of time.

Reprinted from Radio Protection Bulletin — the journal for the National Radiological Protection Board. January 1981.

MINI OLYMPIC GAMES

LOWESTOFT
September 26 to October 3 1981

Sponsored by CB World for

The International Year
of the Disabled People 1981 

To all Good Buddies, Lady Breakers, Clubs
and Two-Way Radio Enthusiasts

CAN YOU PLEASE HELP

Charity committees all over the country are seeking publicity and financial support, to make 1981 a year to remember for disabled and handicapped people.

The Mini Olympics for the Mentally Handicapped is an event that has been held for the last 2 years. This year we are hoping to have 2000 competitors, all competing as in the real olympics for their gold medals. This will take place on September 26th till October 3rd 1981 at Lowestoft.

The Finance Committee for the Mini Olympics is offering through CB World to give CB'ers in the UK the opportunity to be solely responsible financially for this event, bringing great joy to all the mentally handicapped competitors and obviously good publicity to all CB'ers in the UK.

WHY NOT MAKE THIS YOUR CLUB'S CHARITY FOR 1981

CB World will publish all donations contributed by clubs. All clubs wishing to make the Mini Olympics (of the mentally handicapped) their club charity please write to: **JOHN HARPER, STILLWATERS, ROLVENDEN, KENT** for registration and further details.

CB World have kindly agreed to enter into this good cause and have started by donating this space free of charge.

See our stand at the CB World Show
Sandown Park April 4-5 1981

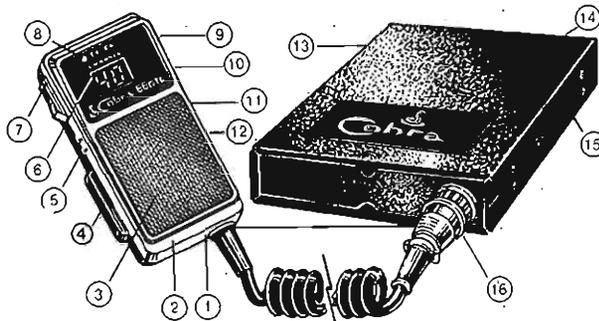


BIG TEST

COBRA 66GTL 40 CHANNEL AM REMOTE TRANSCEIVER



- 1 Automatic Noise Limiting
- 2 Detachable Remote Mike
- 3 Built-in Speaker
- 4 Push To Talk Control
- 5 Instant Ch 9 Switch
- 6 Digital LED Display
- 7 Channel Selector
- 8 LED Transmit/ Receive Indicator
- 9 On-Off Volume Control
- 10 Adjustable Squelch
- 11 Switchable ANL Control
- 12 Switchable RF Gain Control
- 13 Power Lead
- 14 Antenna Lead
- 15 Hide-Away Transceiver
- 16 Microphone Connector
- Monitor Capability
- External Speaker Jack



CB World thanks the American c.b. publication "CB Magazine" — the largest monthly radio magazine — for its help in providing this article which appeared from one of their early issues. The yearly sub rate is \$15 and anyone wishing to take out a sub can do so by writing to us. Make cheques out to "CB Magazine" (U.S.A.)

SPECIFICATIONS

FCC: All transmitter and receiver specifications required by the FCC have been met or exceeded.

Dimensions: 1 $\frac{3}{8}$ " (H) x 5 $\frac{1}{2}$ " (W) x 7 $\frac{3}{16}$ " (D).

Weight: 3.5 lbs.

Power Source: 13.8 VDC Nominal (positive or negative ground).

Frequency Range: 26.965 MHz to 27.405 MHz.

Semiconductors: 21 transistors, 1 FET, 27 diodes, 6 integrated circuits.

Microphone: Plug-in type, dynamic.

Antenna Connector: UHF, SO 239.

TRANSMITTER

Power Output: 4 watts, legal maximum.

Current Drain: AM full mode, 1.5A (maximum).

Modulation Frequency: 300 to 3000 Hz.

Output Protection: Output transistors protected against up to 20:1 mismatch.

Mike Cord Length: 3 ft.

RECEIVER

Sensitivity: Typical 0.5 microvolt for 10 db (S + N) / 1N.

Selectivity: 6 dB at 10 KHz.

IF Frequencies: Double conversion, 1st: 10.695 MHz; 2nd: 455 KHz.

AGC: Less than 10 dB change in audio output for inputs from 10 to 50,000 microvolts.

Adjacent Channel Rejection: 60 dB

Audio Output Power: 4 watts.

Image Rejection: 70 dB, typical.

Current Drain: Squelched, 275 MA; full audio output, 0.92 (nominal).

Power Output: 4 watts into external speaker.

THE COBRA 66GTL is another fine piece of remote control CB equipment. Everything is in the microphone — turn the unit on and volume, squelch, automatic noise limiting, RF gain control, channel changing, instant channel 9, push-to-talk, TX/RX indicator, channel LED read and even the speaker. We were doubtful that such a small speaker in the mike would give us acceptable audio, but we were quite surprised — the audio sounded excellent, with a good sharp, clear readability we needed for a noisy test vehicle.

The mike cord is extremely long — it can stretch out well beyond 8 feet, with three-quarters of the mike cord coiled, and the other quarter straight that attaches to the transceiver remote unit via a round 16 pin connector assembly. Positive tugs on both the microphone as well as the connector failed to pull out any wires. We tried bending the pins, but they're sturdy enough to take abuse without breaking off. The pin connections are also identified by tiny numbers in case of service.

The remote control box itself only has the 16 pin receptacle, as well as the antenna connector, external speaker connector, power connections, and even a relay control jack for an optional speaker break in system

with your HiFi equipment in your vehicle.

An optional 6 foot microphone extension cable is available for installations requiring a longer mike cord than what is already supplied which we judged as more than adequate for most under-seat or under-dash installations.

Power output was a solid 3.8 watts, with over 4 watts of audio output power to an external speaker, and about 1 watt of audio output to the built-in microphone speaker. Lab tests of selectivity indicated 56 db adjacent channel selectivity with sensitivity greater than .4 microvolts for 10 db (S + N)/N. The automatic gain control was judged very good in keeping strong signals from blasting us out of the test lab.

We tried some extensive transmitter torture tests, and they only resulted in the power dropping slightly when the antenna socket was shorted out, and when the voltage was dropped to 10 volts DC. Modulation was right at 100 per cent at 1 inch from the microphone indicating a minimum pick up of background noise under normal conditions.

Tests for noise elimination on alternator noise, ignition interference, and external power line noise were all positive. Alternator

noise was suppressed almost completely, vehicle ignition noise suppressed 80 per cent, and power line noise suppressed 85 per cent. This we judged as very good.

Further tests included heating, cold test, as well as vibration, and none of these tests succeeded in dislodging any components or causing any variance in transmitting or receiving capabilities.

The Cobra 66GTL microphone is convenient to operate, with only now and then an inadvertent change in volume or squelch setting as these controls contacted the lab test vehicle test. They're slightly recessed, but there's still possibility of inadvertent changing. The most convenient switch was the up/down channel changing switch, and the overall feel of the microphone was judged as "not bad". Depending on whether or not you are left handed or right handed and how you hold the mike will give you a good idea as to how you like the feel — under most circumstances, all our engineers had no complaints.

Rarely can so much be packed into a microphone and still give good results — but the Cobra 66GTL certainly did. The CB Magazine lab crew judged this unit as excellent.

BRING IT BACK

IGNORANCE

Having just read through issue 2 for the third time it still amazes me the ignorance surrounding c.b.

The only valid objection to c.b. on 27MHz. a.m. is the vast amount of illegal interference from industrial sources — moving the aeromodel users to 35MHz was a soft option for the Home Office. To clean up 27MHz for c.b. would cost industry millions in fines and investment on screening or new plant.

The big play for 928MHz. f.m. is a con of the first order since the U.S.A., Italy and the World Radio Council intend this frequency for hand sets only with a range of up to 1 kilometre. Any market potential for U.K. manufacturers of mobile rigs at this frequency will end on our beaches!

For EEC comparability the spec is a direct unaltered copy of the U.S.A. specifications to be implemented as soon as the French, Germans and Dutch have replaced their inferior and obsolete tv networks, and re-located a handful of other users currently on part of the 27MHz. a.m. c.b. band.

As for the Green Paper my reply was recognised with a reply numbered 11,385! The contents of this paper are not worthy of comment beyond abuse that is not becoming of the c.b. enthusiast.

The only way to achieve c.b. on 27MHz. a.m. to FCC specification is to write, write then write some more. M.Ps (Westminster and Euro) tv current affairs editors of newspapers. The CBI and TUC have all received letters. In the meantime get your ears on and keep on breaking!

From direct personal experience in Italy there is a very strong case for more than 40 channels a.m., f.m. and s.s.b. on 27MHz even with 20 or 40 channels at 928MHz for local use the connurbations will result in over subscription at 27MHz. Trying to 'break' in the Mileno Torino Roma connurbations is all but impossible. Such a situation would only delight the purveyors of negative waves in the Home Office.

Overuse would be interpreted as an excess of mindless chatter. Then the whole benefit of c.b. would be questioned — users would fall off in frustration till the licence growth all but stopped. The final H.O. Judgement would then be a predictable "we told you so it was only a passing craze of no use to man nor beast".

Italy is probably the nearest equivalent to the U.K. one could find. In the north and the centre are the great connurbations in relatively flat country. Down the centre is a range of fair size hills — like our Pennines and in the south its very

mountainous like our Lake District and Scotland. The average rig pushing out 12 to 15 watts effective radiation is fine for most circumstances but in the mountains there is justification for 50 watt burners in GENUINE EMERGENCY situations to reach help. The local bears understand this and only bust the blatantly irresponsible users despite being illegal. Also the bears have ears and are inquisitive of foreign wheels especially customs like mine. But gain a neat job running clean can break all the construction and use rules in the book and not be busted. The emphasis is on responsible behaviour. It is the irresponsible ones who give us 'wall to wall spaghetti' due to skip or Sporadic-E at 1,300 miles. The notion that skip is peculiar to 27MHz according to the HO is bunkum — as frequency rises, skip range tends to fall so we would end up with wall-to-wall frog or krout instead! The longer the skip distance the weaker the signal so in this respect any 'improvement' on 27MHz would be found at lower frequencies not higher as implied by the H.O. Also lower frequencies have better ground plane propagation/penetration properties — even better local range but would make a nonsense of 40 channels! 27MHz is the best compromise available, that is why the Yanks chose it in the first place.

M. E. J. Wright
High Wycombe, Bucks.

LIVELY LETTERS

Congratulations on a good magazine. We found CB World full of good information and ideas. We enjoyed the lively letters page and one letter of particular interest was that from the Andover 27 Club with which we totally agree.

Now that c.b. is legalised every breaker should register with a Club. This would benefit both the user and non-user of c.b. There will be many problems which will need solving and more heads are better than one.

Our home 20 (Little Village) we break on 14 and can also pick up breakers on 19 on the slabs, so we can receive good copies either way. We do feel also that there should be nationally agreed breaking channels such as 19 for truckers and 14 for others.

If the majority of countries using c.b. are on 27MHz. a.m. surely some enterprising electronics firm could come up with a cheap and easily fitted filter to stop t.v.i and s.t.i. These could be fitted to existing units and also built into the

manufacture of new rigs. Also could you print the names of firms that stock transistors.

A final point. We can see the potential c.b. can offer to a community, to those housebound and elderly. Our local club is at present trying to set up a 24-hour monitoring service on 09 to cover the motorways.

*Flyboy and Maggot
Lymm, Cheshire.*

CB SOCIETY FOR G.B.

I have been in Telecommunications all my life and have had a go at Amateur Radio (ex VS9OC 1960). I did not renew my licence and I failed Part 2 but passed Part I of RAE in Britain, so c.b. is just the thing for me. Anyway, as the government have now introduced c.b. there must exist the CB Society of GB just as there is the Radio Society of GB for the Amateur Radio enthusiasts and other big social organisations.

Having set this up it must be up to the users of c.b. to behave themselves on the air and be respectable. If they don't they will be traced and their licences confiscated. Also if the conduct is not kept up the Home Office could close the whole thing down. They certainly will not waste the country's courts time. The CB Society of GB should black-list these 'turkeys' then most c.berbers would give them the QRT until they toe the line. But we must start off 'CB Britain' on the right footing as it's going to be here to stay.

On the ham bands — VHF in London — we had a lot of 'squeekers' with tapes on them, but alas no action from H.O. So really c.berbers are going to have to look after their own system they cannot rely on the GPO or Home Office when c.b. finally becomes legalised.

I expect the Home Office will make a free bible for licence holders similar to FCC rules in America. Finally I hope the radio trade get the business when it all happens, not the garages.

*Pack Rat
Finchley*

RUBBER BANDER BREAKS

Your magazine is really 10-4 and I'm glad, in the second issue, you printed more advertisements.

I'm a Lagertown breaker myself and I've been on the air just three nights, riding shotgun with the Scarecrow in his home 20.

I had a copy with another Rubber Bander from Sun City

and he told me he was in Lagertown with his family and it really comforted me to talk to him because as he was new, I lost a little mike fright and I'm getting a bit more 10.4 in the scene now.

I really like your selection of QSL cards you featured in issue No. 2 and I myself would like to design one, but I haven't the faintest idea how to.

*The Stranger
Clwyd*

VILLAGE HANDLE

I have just read your Feb/March issue of CB World and was impressed by the response from 'Those who dared' although the number of handles published is only a small fraction of the rig owners on channel it really is a start in the right direction.

What I would like to see in the near future is a set of area directory's listing c.berbers handles with their home 20's, and calling channel. Where I live now, (ex U.S.A. Teamster) we only have a small community of cotton-picker's, mostly truckers on 19 but we all monitor 14 when not pushing our big wheels around. The village has had a nick-name from the year dot, and we are now using it as our code name "The Treacle Mines" calling on 14.

*The Diesel Clipper
Sarratt, Herts.*

DEMO TO CB WORLD

I have decided to sell all my pigeons, stop partaking of all brown bottles etc. etc. to enable Florrie to buy me a chicken box that will cover 20 channels on 27 MHz FM with power output of not more than two watts, then I will bet you my spare tin of pigeon corn that I shall be legal when Willey says his PEACE in the House of Commons.

Our next aim should be to organise one big eyeball outside of "Quadrant House" that's the home 20 of the Publishers of this splendid magazine to force them to publish once a month.

*Andy Capp,
Sillingbourne*

No don't please organise a mass eyeball outside Quadrant House. We promise to go monthly if you don't (see 'Come On'). You owe me a tin of corn — you were only half right. Half a tin will do — Ed.

BRING IT BACK

DESIGN AWARD FOR CB RIGS?

Compliments on a super mag. Many more please!

Now c.b. will become legalised in the autumn there are bound to be many who will jump on the bandwagon of producing inexpensive rigs. I only hope they give a little time to designing the exterior as well as the circuitry. Truckers' cabs usually have the space for the larger equipment; but the poor old family car has barely enough room for the car radio far less anything else.

U.K. electronic whizz kids, come on!
Bill Perryman
Bury St. Edmunds

Talking to some visitors from the U.S.A. they say that the latest sets are smaller now. Small is beautiful they say — Ed.

HAMPSHIRE HIT

After giving my local news stand the once over recently I came across just about the best thing ever to hit Hampshire. Yep, *CB World*. It had penetrated even my own Home 20, it being issue No. 2. Having read it and

reminded myself of getting all future copies I put myself to the task of writing in my congratulations. Flattery aside, I should like to add a few to the "Those who Dared" section. So for the Breakers who motivated my interest — immortality. I caught my ears in Shefford Beds, which leads to my next point. The locals in this area slip into slang and generally it runs like this. Ford being the latter half of most local town names becomes Henry (Ford). Consequently: Sleeping Henry — Bedford, Building Henry — Langford, Cooking Henry — Shefford, came about, so if any breakers passing through get baffled — no worry its the good buddies around confusing Smokey and Buzby. Finally a word of praise for a scheme called 'check back' run by a local c.b. shop. For 50p a year they will register details of a Breaker's rig and give him access to their files plus an up-to-date stolen rigs list. The aim is to trace and deter the stealers of rigs. More power to IPC for a great mag. Well Done.

The Flying Rock,
Odiham

SMOKEY AND CB

If the American Smokeys that are using c.b. whilst on duty say that it doesn't interfere with their

transmissions on Police radio, why then do so many people over here say that c.b. does cause interference on police, fire, ambulance, and heaven knows what else. A recent survey in the U.S.A. said that on average, c.bers help save 2555 lives every year. That means that approximately 7 people could die in this country every day because of the lack of c.b. As proved in your Feb/March edition of *CB World*, lives can be and are saved, within minutes when c.b. is used, and yet we're still being busted heavily. We are not rapists, thieves, murderers or vandals. All we are guilty of is that fact that we talk to each other and help out when needed. Changing the subject please let us have no more of the boring British lorries, bring back the Americans, at least they have style and class in plenty. Keep up the great mag.

The Texan,
Enfield

SMOKEY WITH CB?

I did notice a great shortage of handles and locations in my area, I don't think it's the cost of the postage that's put them off, it's more due to the powers that be stamping around. They appear to chase any car that sprouts a twig and search it to try and find a rig, which is duly confiscated. The smokies appear to be fitting them in their own

jam butties and pandas because several people have noticed that when a stationary smokey is passed, the signal's meter goes over to 9 + . My guess is that they are waiting for somebody to reply "STOP KEYING THE MIKE", and then the chase is on, with the usual result. The rig is confiscated to line another smokey's set of wheels.

So the order of the day or night is keep a very low profile. Black Opaf. I'm gone.

M. Gibbons
Hartlepool

Now would smokey really fit nicked rigs. I chewed up your letter as asked — Ed.

NATIONAL HANDLE LIST

Well well Good Buddies, I've just bought your issue No. 2, I missed the first. Its a good mag and set to be a winner. What a great idea to publish a national Handle List (and for free) without some sly sod making pounds for a so-called registration. I'd be grateful if you could publish my handle as well in your next edition along with a mention for the club, i.e. Milktown Breakers, its obvious why if you think of H"udder"field. Also enclosed is a list of local Yorkshire 20's you might not have.

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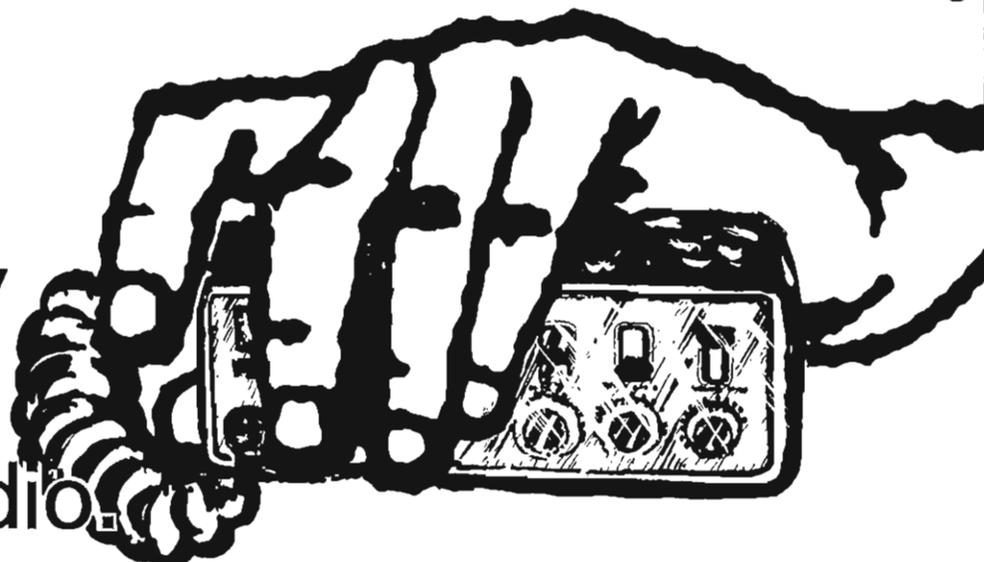
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NOT How to organise a fox hunt

THE REGULAR early Sunday evening customers at the Red Lion, Baynards in Surrey could not quite make out what was happening on this freezing cold night.

Some thought it was a car rally, some said a treasure hunt and some said a ham radio enthusiast meeting. In fact they were all correct as they watched another bevy of breakers in brightly coloured rally jackets rush in from the cold, nod to a friend, stop briefly on their way to the bar or the fire whichever was more pressing.

In the centre of the group — which was growing larger by the minute were one or two fellows who were trying to look official and important. What was going on you may well ask — as did all in the Red Lion.

They were about to organise what has become known as the Great Baynards foxhunt but from the start it was doomed for disaster.

Questions came from all directions, some demanding answers and others requiring rude two finger gestures, seen quite a lot amongst c.bers.

Finally it was on, as the officials satisfied themselves that every entrant had paid their £1 entrance fee. Fear, apprehension and excitement gripped those in that bar as they rushed around downing pints and shorts in readiness for what was ahead. Others were staring out of the windows shaking their heads at the worsening weather conditions.

At that time of utter chaos, one man along stood above all others. This was the breaker known to many as Tarantular. He stood above all others because he was six feet six inches tall. Apart from that he was useless as everyone else.

There was a 30 second lull before the storm and in the electrified atmosphere breakers considered the partner they had been paired with, gave a moment of thought to the safety and efficiency of their cars and rigs, downed more pints and shorts and waited for the off. Tarantular and Soldier Ant were selected as the fox and as they moved towards the door they were given the usual hoot, abuse and good luck signs. As the fox they were given ten minutes start.

During this ten minutes, tension reached fever pitch as even more beer was downed and it became obvious that something had to

give. This kind of tension couldn't last, a release valve had to be opened and in a flash there it was — Mission Control wet himself.

The great moment had arrived and the official of the club announced.

“Wright yoos peepol, ket goink and fint that bloody fox” (he had been downing as many pints as possible).

All hell broke out, some ran for their cars, some ran for the toilets, some ran away, some ran into each other but most found themselves outside in a freezing car park jumping out of the way as cars were pulling out at speeds that made the start of the Monaco Grand Prix look like the London to

Brighton vintage car rally.

The start was not without incident as Sweet Martini's Mini rammed Blue Boy's Land Rover and promptly fell apart. Seven gallons of super glue would not fix it and as it was blocking the entrance to the car park something had to be done.

Fortunately Happy Hippo's Vauxhall ran into Dirty Dogs Rover, which in turn pushed the Lone Ranger's Volkswagen into the crippled Mini reducing it to pieces small enough for everyone to drive over.

It had been previously arranged th at channel 22 would be the foxhunting channel and had you been in that area with your ears



on you would have heard. "Ouch" — "blast" — "turn left" — "turn right" — "don't turn at all" — "keep up" — "turn left" — "is that you" — "this is me" and many other exclamations that indicates to all that a foxhunt is in progress.

Now at this time of total confusion one man stood above all others. But his only virtue was the fact that he was riding shotgun in a bright red London double decker bus — on the top floor.

A voice of authority came over channel 22 and said "Don't speak over the hair if yous don't haf anythink to say". To the intelligent breaker this meant keep radio silence, just monitor.

No one knows how Country Cousin's Fiat came to be upside down in a ditch. He and his partner Angel Eyes (when found was reduced to a gibbering shivering wreck) couldn't explain either. Anyway, they were put right sides up by other helpful breakers and after a rest, carried on as if nothing had happened.

Jerry Hat Trick, who had teamed up with the Milky Bar Kid, were convinced that with all their expertise they would win hands down. They had stuck to tomato juice back at the pub and had fairly clear heads. Mind you, they had with them about a £1,000 worth of c.b. equipment, like radar, night bins, maps, thermos flasks, torches, searchlight, compass and a thing for getting stones out of horses hooves. With all this they were sure the prize was theirs, until they heard the Madman's beach buggy reversing down the country lane at 60 m.p.h. towards them. Jerry Hat Trick threw his car

into escape gear and reversed down the lane just a rig's width in front of Madman's buggy. The Madman was alone (no one wanted to ride shotgun with him) and was so intent on watching his 's' meter he was oblivious to the chaos he had started.

Inside his car Jerry and M.B.K. were panicking. They were flat out in reverse gear and could not see a place wide enough for them to escape through and let Madman pass. A stroke of luck, a gap and whoosh! they were in, letting Madman go by with inches to spare. Jerry asked M.B.K. if it was really Madman and he replied. "I didn't actually see him but I'd recognised that laugh anywhere".

Composing themselves they ventured out again and Bang! They drove straight into the Madman — he was on his way back again.

Mission Control's Dagenham Dustbin was found up a tree. Mission Control and the Major were found in a pub. As Mission Control's black box (flight recorder) was never found, a doubt still hangs round how he crashed. Some say he was just unlucky, others say he was coming in for a three point landing and then suddenly sobered up. It's strange that from that day to this no one has ever got any sense out of Mission Control. Mind you no one got any sense out of him before.

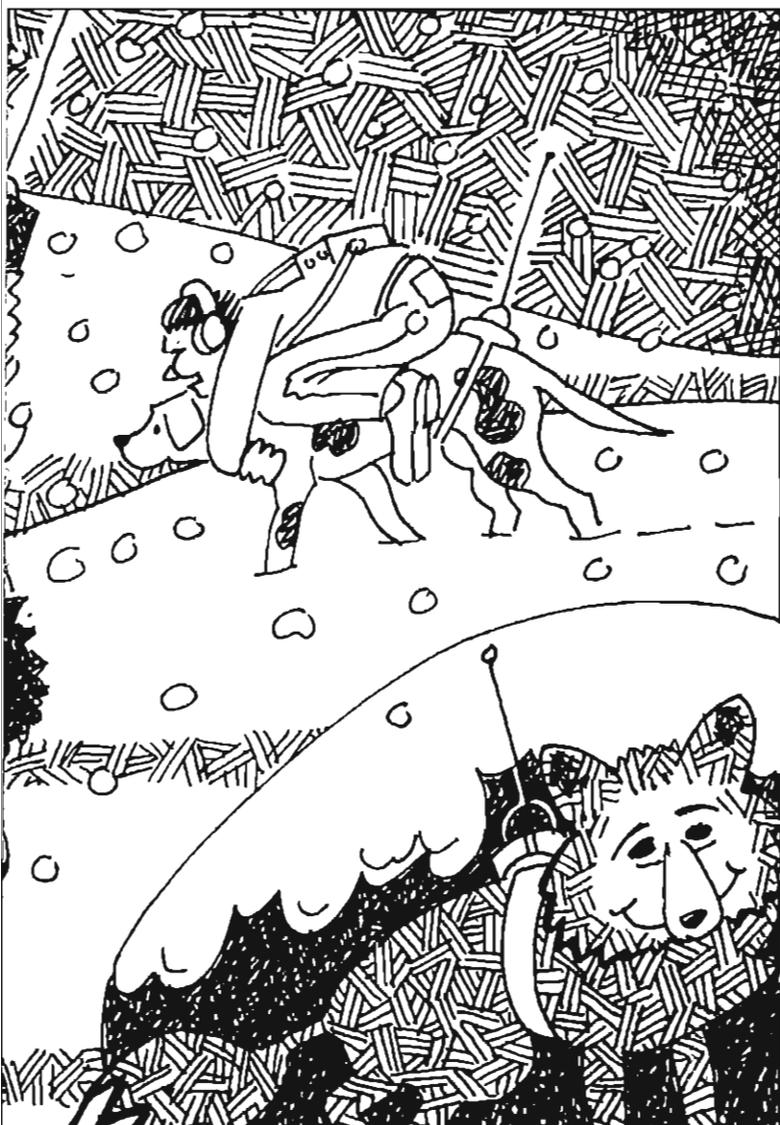
Cars were tearing all over southern Surrey, some were reported at Calais when the word went out that the fox had been caught. At this point the publishers decided to leave out the words expressed by breakers overjoyed at letting someone else win.

Some of the breakers made their way back

to the Red Lion via intensive care units at passing hospitals, others by way of breaker's yards, garages, pubs and mental homes.

Many more pints were downed that night and the swapping of stories and the evening's events will live forever in their memories. So will the name of Spitfire, for it was he who had spotted the fox. He had won the first Baynards foxhunt, his name would be forever immortalised in the Surrey c.b. scene, plus a mention in CB World. One other thing sploit that night. The Professor (The Club's Secretary) was never found. A reward of £10 has been offered by Blue Knight that should he be found before the cut off date then all will be witness to Blue Knight actually shelling out £10 to the finder.

Dear CB World readers. As you can see a foxhunt can be arranged. All it requires is a bit of commonsense. First you decide the ground on which to play i.e. a pub, church or village. The organiser decides that the fox will only 'go out' up to a radius of 3-4 miles. Obviously the fox has a head start and he parks once he has reached the agreed distance. Using a predetermined calling channel the fox transmits every 60 seconds or so. The hounds (Breakers) by watching their 's' meter can gauge, by the poundage, how close he is getting. When a wall-to-wall copy is obtained its pretty obvious your prey is within spitting distance. Once located go up and spit at the fox and you have won. By the way the story above is pure fiction. We suggest you leave the brown bottles out of it if you arrange a foxhunt. **Editor**



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The National Committee for the Legalisation of Citizens Band Radio

NATCOLCIBAR WAS formed in Wednesbury, West Midlands, on 2nd December 1979. Prior to this, excellent local work was being done by the many individual c.b. clubs and organizations around the country. The National Committee represents the consensus view of some 100 clubs and organizations campaigning for the legalization of a generally available Citizen's Radio service. The clubs have a combined membership of some 130,000.

The Technical and Industrial Sub-Group of the National Committee represents the views of major electronic manufacturers and retailers in the U.K. Additionally technical delegates from the campaign clubs provide a valuable input in representing the future market. To date the sub-group has some 30 members.

The National Committee has briefed members of the All Party Parliamentary Working Party on c.b. radio. It has made representations to the Minister prior to the publication of the Home Office discussion document 'Open Channel'. It has co-ordinated a 'Weekend of Action' and 'Free the Airwaves' balloon race in major U.K. cities. It organised the Trafalgar Square Rally. It maintained an exhibition stand at the National Microprocessor and Electronics Centre. It co-ordinated the 120,000 signature national petition. It promoted the campaign theme song 'C.b. Independence' by the country and western group Roadrunner 10-4. It represented the U.K. Citizen's Band Radio movement at meetings of the European c.b. Federation (Hilversum), REACT (Radio Emergency Associated Citizens Teams), International Convention (Atlanta, U.S.A.), Telecommunications Users Association, Communication Users Action Group and the Telecommunications Council (London). We are also proud to be represented at the inaugural meeting of REACT (U.K.) Supporters Club (Bristol) whose aims, through c.b. radio, the National Committee wholeheartedly supports.

The National Committee will also be lobbying future meetings of R22 sub-group of CEPT in furtherance of a trans-European specification.

The National Committee has also been active internally with the three main political parties. At the Conservative Party Conference (Blackpool) in 1979, five Motions were available for ballot and the National Committee and Parliamentary Working Party joined forces to explain c.b. radio to a packed meeting.

One year later, at the 1980 Party Conference (Brighton) the Chairman, Richard Town, G.L.C., represented delegates by sharing a platform with the Secretary of State for Scotland. The case for c.b. radio in assisting post nuclear-attack survival is put through the Chairman's position as Communications adviser to the National Council for Civil Defence (London). A discussion paper was also prepared by the Greater London Area of C.P.C. (Central Office).

This pressure both locally and nationally will continue until a viable Citizen's Band service is legalized in the U.K. Once legalization of c.b. is given the green light the NATCOLCIBAR will become a national protection organization working for a trans-European specification and protecting our Citizen's Band from other, unauthorized users. A decision to this end was taken at the last NATCOLCIBAR meeting held at County Hall on February 20th.

THE LEGAL SITUATION

THE POST OFFICE Radio Interference Service is empowered by the Secretary of State for the Home Department to uphold the conditions of the Wireless Telegraphy Act 1949 and 1967, the latter being supported by Statutory Instrument No. 61 1968. Where c.b. radio is concerned, there are three possible offences. *Installation* — Sect. 1 WT Act 1949 makes it an offence to install apparatus for wireless telegraphy except in accordance with a licence. The offence is the act of installation, not of being in possession of installed equipment. *Use* — also Sect. 1 WT Act 1949. This offence is committed by using the equipment to transmit. It is necessary to establish that the equipment is capable of transmitting. An admission of use is required from the owner or evidence of the content of transmissions proved to be radiating from the equipment. *Importation* — Sect. 7 WT Act 1967 and SI No. 61, 1968. In the majority of cases c.b. equipment is imported for use in this country contrary to the Statutory Instrument and is then subject to action by H.M. Customs & Excise.

NATCOLCIBAR'S VIEW

From extrapolation of Parliamentary questions each prosecution costs in the region of £4,000. To this must be added Police and Customs & Excise time. Yet the application of these statutes is becoming increasingly difficult from an individual magistrate's decision through to apparent non-co-operation of the police makes this sphere of activity increasingly fruitless and confusing. Even the statutory authorities are themselves confused.

Example: This paragraph from the

Official Directive from the Home Office to the Post Office Interference Department, quote, "it emphasises that there is no power under the WT Acts for the Police, Post Office or Customs & Excise to detain apparatus for evidential or any other purpose. Apparatus may only be removed or obtained with the owner's consent" unquote.

Fact: Sect. 139 (3) of the Customs & Excise Management Act 1979 states that any item seized by the Police which is or may be required for use in connexion with any proceedings to be brought, otherwise than under the Customs & Excise Acts, may be retained by them until proceedings are complete or a decision not to prosecute is made.

The latest in a series of statements made by the Minister in that, "We are aware of some problems of enforcement" and "We believe that our proposals will provide a satisfactory alternative. If necessary we shall take steps to ban the sale and advertising of illegal sets". The problem of enforcement, confusion over powers of arrest and confiscation of equipment as well as the need to seek fresh banning legislation plus the cost of the public purse. These problems will only be overcome by the introduction of a viable Citizens Band Radio Service in the United Kingdom. The National Committee and its Technical & Industrial Sub-Group believes that the Home Office proposals contained in its discussion document 'Open Channel' for a service on a frequency above 928 MHz will not provide a satisfactory alternative. The continued insistence of the Home Office of utilizing this frequency will exacerbate the problems outlined. If ever there was a surer way of giving a £45m industry to our main industrial competitors, this is it.

CB QRM*

*(From International Q-Signals, "Are you experiencing interference?")

INTERFERENCE (QRM) to TV sets and hi-fi outfits is a big talking point in the press with the big finger being pointed to the CBers and their 27MHz AM transceivers. But what should the attitude of the CBER be in this matter? Aside from the fact that this CB operation is illegal what are the merits of the two sides in the dispute?

The average CB set, from the US or the Far East, is designed to meet pretty stringent electrical requirements particularly with regard to spurious emissions. On the other hand the average TV set in the UK has almost no in-built circuitry designed to suppress external signals outside the TV band of frequencies. We are talking about the UHF sets, although the old mono sets are not much better.

Hi-fi set-ups are equally lacking in such protection although it would cost the manufacturer a matter of pence to fit the necessary components during construction. So why should the CBER put himself out to cure QRM for which, technically speaking, he is not to blame? This is the crux of the AM/FM controversy. Of course FM will cause far, far less QRM all round which is why the Government has plumped for it. But how do you get 360,000 CB AMers to junk their rigs and get into FM?

With the majority of CB rigs being mobile there is virtually nothing the CBER can do to stop QRM with every TV or hi-fi outfit as he passes through a built-up area. He can get a low pass filter from a CB accessories shop that will let the 27MHz signal be radiated but cut off anything above about 40MHz. This will help but the basic problem is the relatively high signal level, even if only briefly, that gets into the TV or hi-fi and straight on to the input of the transistors. These are then overloaded and work in a non-linear manner thus acting as detectors, and the CB audio goes right through to the speakers on an audio amplifier or interferes with the TV picture, from a faint cross-hatch to complete picture wipe-out.

The main problem with QRM from CBers will come with the proliferation of fixed stations in urban and suburban areas, a problem not unknown to the radio amateur, whose guardian Radio Society of Great Britain has been dealing with this matter for several decades, with a special committee able to deal with member's individual problems. It

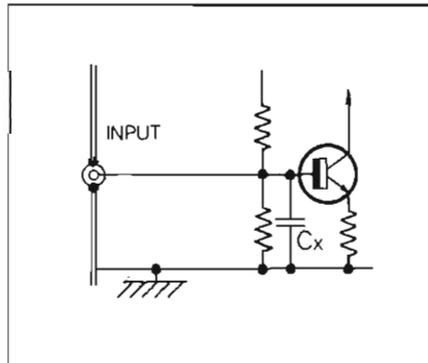


Fig. 1 First step in curing interference in audio amplifiers is to fit a small 270pF silver mica capacitor, C_x , directly between the base of the input transistor and earth by the shortest possible leads.

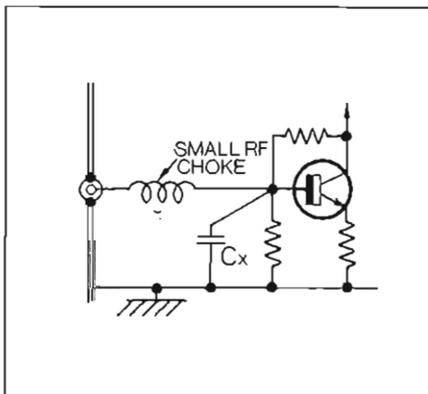


Fig. 2 Better filtering can be got by adding an RF choke immediately on the pin of the input socket in addition to the capacitor. These modifications must be carried out on both channels of a stereo audio system.

is a matter of going round to all those TV set and hi-fi owners and persuading them to let you fix a couple of components or a filter into their equipment. Something which calls for a lot of diplomacy!

The basic cure for an audio amplifier is to

solder a capacitor from the input transistor to the earth of the printed circuit board using the shortest possible leads, Fig 1. The capacitor should be around 270pF in value and of silver mica construction, costing only a few pence each. Don't forget that with a stereo amplifier a capacitor should be so fitted to each of the input transistors, usually from the base connection to earth.

If there is a separate pre-amplifier then fit the capacitors to that first but it won't hurt to fit them to the input transistors of the main amplifier at the same time. Basically the interfering signal gets in through the various input leads, from a tuner, turntable etc and the interconnecting leads between pre-amps and main amplifiers. The leads may be well screened from the audio point of view but for RF they look like sieves!

In stubborn cases it may be necessary to fit extra components such as an RF choke, Fig 2. In this case disconnect the input lead from the input socket itself, right at the panel, and solder the lead to the remaining end of the choke. Both input connections must be thus treated in stereo amplifiers, usually at the same socket.

Even more suppression can be obtained with Fig 3, where a second capacitor is added, also right at the socket and to the nearest earth point, usually the point where the screened lead braid is earthed. In general these modifications will not affect the performance of the audio amp.

In the case of interference to a TV set (TVI) the set is virtually wide open to an interfering signal and a cure can be very difficult to achieve. But try a high pass filter this time which will stop the CB signal on 27MHz and hopefully, pass only the UHF TV signal on to the TV set. The filter is simply connected between the aerial lead and the aerial socket on the TV and is fitted with standard fittings.

The IF stages of UHF TV receivers usually operate over a wide band of frequencies between around 35 and 40MHz which is not too far away in terms of frequency from 27MHz but these stages are frequently well-screened so problems from that direction may be minimal. While the remedies for audio QRM are fairly standardised TV sets tend to be individuals needing individual treatment in the particular circumstances. What may work one set may not work at another place, even with the same model.

← CB QRM

Another important factor with TVI is the local signal strength of the TV channels. The stronger the signal the less chance of TVI. Improvements to a TV aerial system can best be effected by increasing the height of the antenna or the number of elements in the antenna itself. The use of a TV antenna amplifier should be avoided. They can make the TVI worse by amplifying the CB signal and spoil the signal-to-noise ratio even if the TV signal itself is increased.

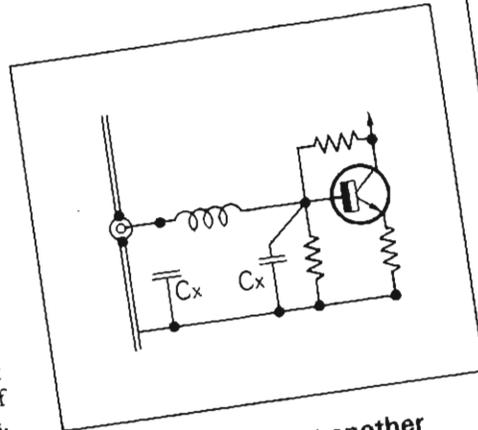


Fig. 3 As a last resort another similar capacitor should be added to the input pin and earth, usually the outer braid of the cable going to the input socket from the PCB.

It behoves every CBER to make sure that none of his fellow CBers break the code of operation by using a power amplifier, (boots, burner), because that is a sure way of gumming up the TVs and audio sets for miles around. Improperly operated they can be lethal, in more senses than one, while a greatly improved antenna system can achieve the same results from the basic transceiver. In any case the afterburner is not going to improve reception one iota!

CB

By Richard Tom

THE LAST major c.b. legalisation rally occurred on St. Valentines Day, February 14th. For the first time the National Committee (NATCOLCIBAR) and the Ballymoney Breakers joined forces for a major march through the town. The guest speakers were Gerry Brizzell — National Officer of Help, Aid and Rescue Personnel — the voluntary monitoring organisation of Eire (H.A.R.P.) and Richard Town, G.L.C., Chairman of the National Committee. The Rally was attended by well over 1,400 members of both Ulster and Eire clubs.

The march was led by a well turned out Plymouth Fury customised as a Californian State Highway patrol vehicle of the 23rd Precinct. Every detail that is, except the number plate which was of New York State origin.

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10,000 people can't be wrong. That's how many British CBers have been sold to date. Here are two more to add to your collection.



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And how here's what you have all been waiting for — County CB Emblems, made of top quality washable material with heavy weight embroidery.



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NEW CB EMBLEMS

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CB BELT BUCKLES

Top quality American made buckles made of pewter with brass overlay.



£3.25 + 25p Post & Package

CB SWEAT SHIRTS AND T SHIRTS

We now have 9 different designs which you can have on your sweat shirts or T shirts. Shirts available in white, black, red, yellow, sky blue, and navy. Sizes S, M, L, Ex. and give alternative colour.



Not Shown:
Channel 19
Channel 14
Licensed CB Operator
Super CB Operator
CB Operator (Union Jack)

Price: Sweat Shirts £6.95
T Shirts £3.25

Have your handle or club put on to shirt. Black or white flock lettering 10p a letter.

CB BOOKS

The Big Dummy's Guide To CB Radio £2.95 inc P.P.
The Best Book on CB £3.95 inc P.P.
Slanguage Language £2.50 inc P.P.
C.B. Lingo Bible 60p inc P.P.

Give 14 days for shipping



HORSE TRADER

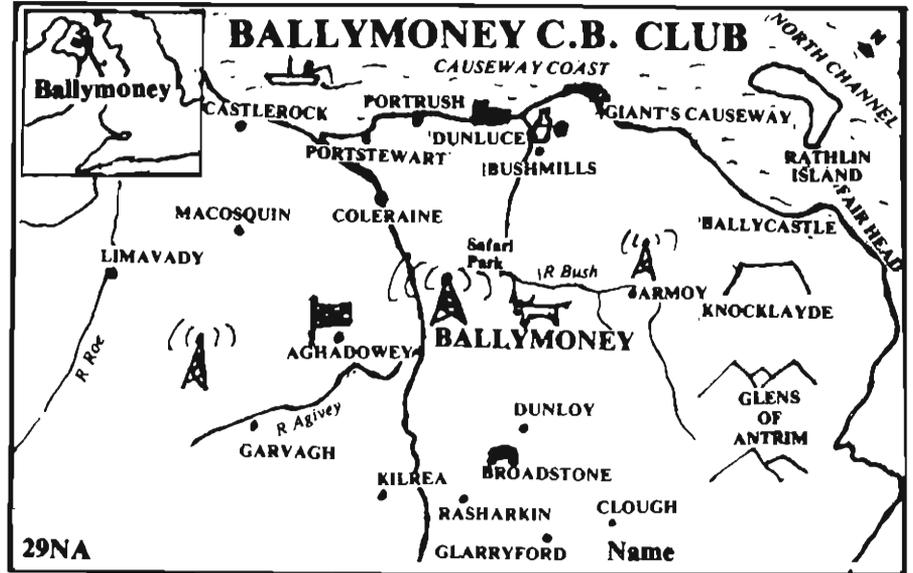
BOB MASSEY CAP AND EMBLEMS

SEAWALLS, PILNING, Nr. BRISTOL Tel: 045 45 2601

AN ULSTER

Sectarian Divide

Great emphasis was laid on the use of c.b. radio in providing communication across the Sectarian divide. The majority of sets in use appear to be fixed in the home rather than mobile, since the Special Powers Act is being used to oust equipment from the Northern Ireland breakers cars. The popularity of base stations is evident from the numbers of Stardusters and Silver Rods antennae fixed atop roofs. I even spotted a Moonraker (cubical quad with eight directive elements) fixed, complete with rotator precariously close to the side of a country cottage. C.b. in Northern Ireland has risen from a minority hobby to a major pastime. C.b. has caused a rebirth of a social consciousness and community spirit which, due to the "troubles" one would have thought long since dead. Ulster C.ber's have marched, formed clubs and raised over £15,000 for charity. At the time of the writers visit to



CALLING ALL CB ENTHUSIASTS Wholesale prices direct to the public

**COMPARE OUR PRICES
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DV27.....	£5.75
MS 264s and 610s, disguised aerials.....	£23.50
Hirshman (with Splitter)	£17.50
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CB Receiver.....	£9.25

Hours of opening
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Full Range
Firestik Antenna

Rigs always in stock

Viceroy's Midland
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5s, President
Adams, Fanon
Fanfairs, Formal
120s, Tristar
747s Concordes

SPECIAL OFFER

SWR Meters incl. free
patch lead.

Usual SWR
Meter Price **£7.50**

~~£8.95~~

Co-axial RG58U

	30p per metre
CO-axial RGS....	70p per metre
K40 Power-mikes.....	£37.50
Turner Powermikes.....	£24.25
Cheap Powermikes from	£5.75
Extension Speakers.....	£4.50
Burners from.....	£25.00
Slide Mounts.....	£4.50
Pre-amp.....	£14.95
Complete suppression kit	£11.95
PL259.....	70p

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10-4
RUBBER
DUCKY

Ulster, the Northern Ireland media's view of c.b. was still mainly against. I asked "Rocky" chairman of the Balleymoney c.b. club about allegations that 27MHz is used to detonate bombs. "Rubbish" he replied, "any frequency can be used for this purpose. Imagine a terrorist with a bomb primed for detonation on 27MHz and then carrying it to a target. With the number of breakers we have here there only needs to be one active c.ber close by and boom — no terrorist!

The Northern Ireland media also claims that terrorists plan raids by using c.b. Says Rocky again "When two breakers are modulating there are at least five or six on the side, listening. The terrorist's plans would, within minutes, be known to more people than as if it has been on the 1 o'clock news. Terrorists need privacy to plan, not publicity."

If there ever was only one reason for legal c.b. in U.K. Northern Ireland is it.

H.A.R.P IN EIRE

by Richard Town

NO, the above is not a well known brown bottle but Help Aid and Rescue Personnel. A voluntary organisation which monitors the emergency — incident channel of citizens' band and also transmits details of requests for assistant to the appropriate emergency authority. Whilst HARP is a voluntary organisation it is well organised on strict professional lines. Members monitor for much of the day with particular attention to the period 20.00-01.00 hours.

Structure

HARP has a board of management consisting of five people responsible for laying down national standards of conduct. They are also working members of various local teams and are very much involved in HARP's day-to-day operation.

Close liaison with other emergency organisations is monitored through the National Officer. He is also a working operator in a field team. Eire is subdivided into eight regions corresponding with Civil Defence areas. Each has a regional officer.

A HARP monitor serves a three month probationary period. During this time it is mandatory to obtain a first aid certificate to the Order of Malta, Red Cross or S. John Ambulance standards. In addition, monitors should be over 21 (18 years for base station monitors). It is the responsibility of team leaders to ensure that a fledgling monitor is not liable to go on an ego trip or panic under pressure in dealing with an emergency.

On receipt of a 10-33 the monitor obtains the exact location of the incident, type of incident, (fire, accident, bomb, etc.) number

of injuries and their extent, whether any persons remain trapped in their vehicles and whether dangerous substances are involved at the scene, such as gas, oil, petrol or acid.

HARP recommends some do's and don'ts for the Emergency/Incident Channel (channel 9 in Eire).

Rules for Channel 9

Do answer all calls for emergencies and Motorists Assistance

Do switch non-emergencies to another channel

Do use the land-line to relieve monitor when you take over

Do as far as possible, ignore non-emergency users on Channel 9

Do when it is necessary, handle emergency calls courteously, remind non-emergency callers that Channel 9 is officially limited to emergency calls.

Do remember, others may be monitoring Channel 9

Don't use Channel 9 for non-emergency communications

Don't argue with other emergency monitors

Don't have prolonged communications on Channel 9

Don't use radio when telephone is available

Don't scold others for abusing Channel 9 rules

The National Committee recommends a combined calling/incident channel to be located nearest to the band centre. Such a channel would not repeat not be used for ratchet jawing.

THE NEW PLACE FOR CB RADIO ACCESSORIES



K40

K40 Mike

The mike that's been described by (US) CB Magazine as "A CB technological breakthrough." Transmitting more power than any microphone made it's guaranteed to out perform any mike on any radio. Hearing is believing!



Rebel 500

CB Mobile Antennas

The incredible Shakespeare pretuned mobile antenna that delivers full 5/8 wave performance with a power rating of 500 watts. Add continuous loading for continuing power with the renowned Shakespeare fibreglass construction and you have a porcupines delight!

8 Furrow Way,

Cannon Lane, Maidenhead, Berks.

Tel: Littlewick Green (062-882) 4338/9.



SWR/Power Meter

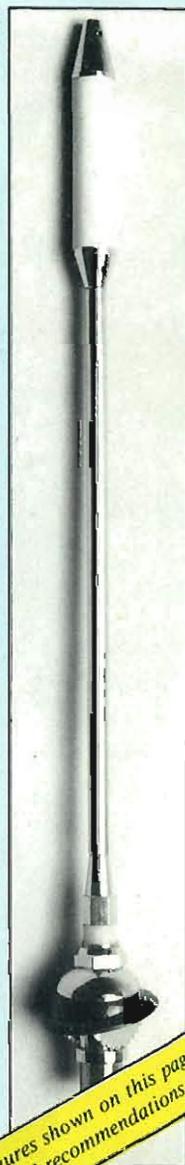
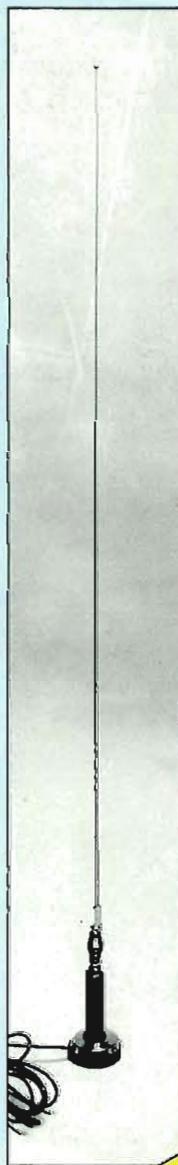
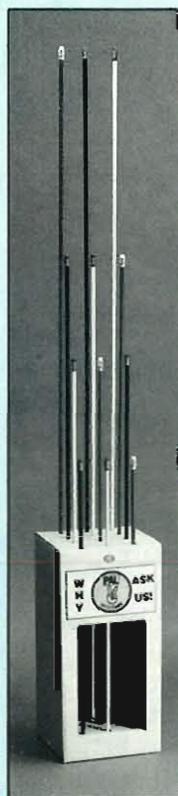
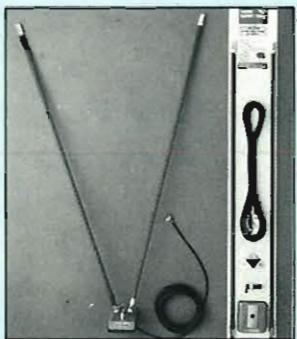
Accurate, beautifully designed meter with on the air indicator, meter illumination and a dual antenna switch — for those who want to use two antennas. The SWR-8 has a frequency range of 3.5-150 MHz.

OPEN 9.30 am-7.00 pm Mon-Sat.
11.00 am-2.00 pm Sun.

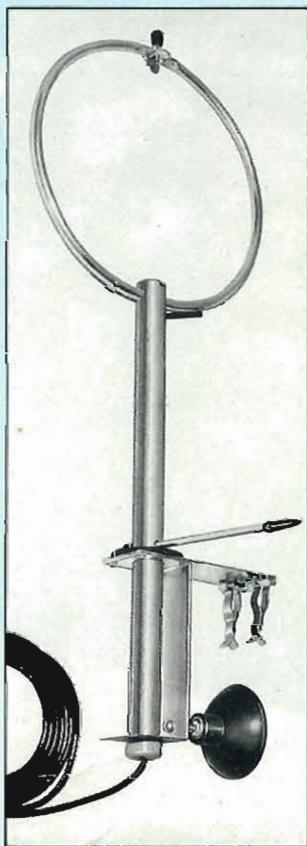
Connexions

Antennae/ Aerials/ Twigs

A selection of twigs and their accessories:



1. Telescopic M264 disguised antenna. AM/ FM/ CB stainless steel. Power handling up to 60 watts. (A.S.).
2. 'Jet Wing' boot lip mount. Can be easily removed to stop theft. Japanese made.
3. 'Rabbits ears' trunk lip-mount (Firestik).
4. Electrically operated antenna for AM/ FM/ CB. Top loaded disguised. Non electric versions also available. Power handling up to 25 watts.
5. Boot-Lip mount. (Firestik).
6. Direction finding antenna (Gold Line).
7. A selection of Firestik antennae.
8. Centre loaded for converting mobile c.b. radio into base station operation. (Gold Line U.S.A.).
9. MR 125 Classic base loaded antenna manufactured in U.K. by Antenna Specialists. It is on a K220 magnetic mount which is an optional extra. Power handling up to 25 watts.
10. Typical centre loaded antenna made in Far East. Power handling up to 25 watts.



Should 928 MHz ever become legal two manufacturers have already produced an antenna one of which we show here. It is a full 5/8th wave and you can see by its size it is very short compared with a conventional c.b. antenna.

Power handling figures shown on this page are manufacturers' recommendations.

Super LawWheels

We have, in the two previous issues, featured trucks from the U.S.A. and the U.K. This time we feature two exotic cars. Should we ever be lucky enough to win the football pools how many of us would include one (or both) of these superb beasts on our shopping list. One thing is for sure, we would have to fit a set of twigs together with a super rig. Photographs and specifications by kind permission of *Autocar*, like *CB World*, an IPC Publication.





**ASTON MARTIN —
LAGONDA V8**
 Engine: 8 cylinders
 Capacity: 5,340 cc
 Carbs: 4 Webbers
 Gears: 3
 Wheels: Pressed Steel
 Tyres: Avon Turbo
 steel tubeless
 Seats: Leather
 Speed: 143 m.p.h.
 0 to 60 m.p.h. in
 8.8 secs.
 13.7 m.p.g.
 Fuel: £40,080 basic
 Price:



THE ASTON MARTIN DASH
 Digital instrumentation, not for show but functional. A glance at the speedo and you see 112 for example. Other digital read outs give, time of day, trip distance, volts, percentage fuel, temperature and oil pressure, air temperature (inside and out). There is even two choices of horn. A mellow sound for town and air horn for country. Seat belt reminder, fog, spots, boot or fuel cap not shut, all these things have lights to warn or remind you. More like a cockpit of a jumbo jet than a motor car. One major fault, there was no warning light indicating that the c.b. set had been left on — curses, back to the drawing board.

FERRARI 512 BOXER
 Engine: 12 Cylinders
 Capacity: 4,942 cc
 Carbs: 4 Webbers
 Gears: 5
 Wheels: Magnesium
 Alloy
 Tyres: Michelin Radial
 Seats: Leather
 Speed: 163 m.p.h.
 0 to 60 m.p.h. in
 6.2 secs.
 15.7 m.p.g.
 Fuel: 4 star petrol
 Price: £22,222 basic

T shirt and cap badge

offer

TOP QUALITY AMERICAN MANUFACTURE
 Please send me the following CB WORLD gear and enclosed find remittance of *£. to cover my order. Cheques and money orders should be made payable to CB WORLD T-SHIRT OFFERS and sent to 10 MARSHALSEA ROAD, LONDON, SE1 1HL.

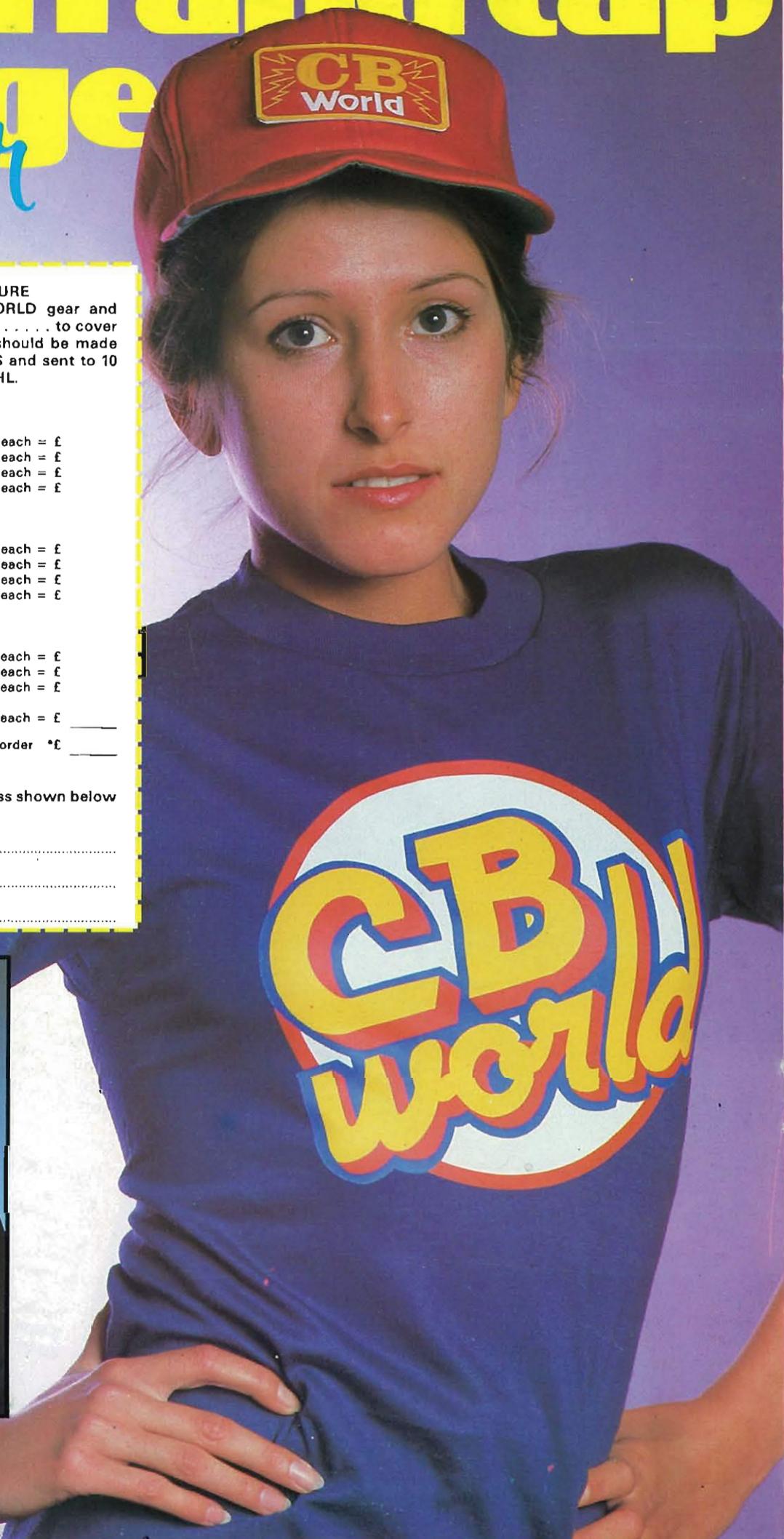
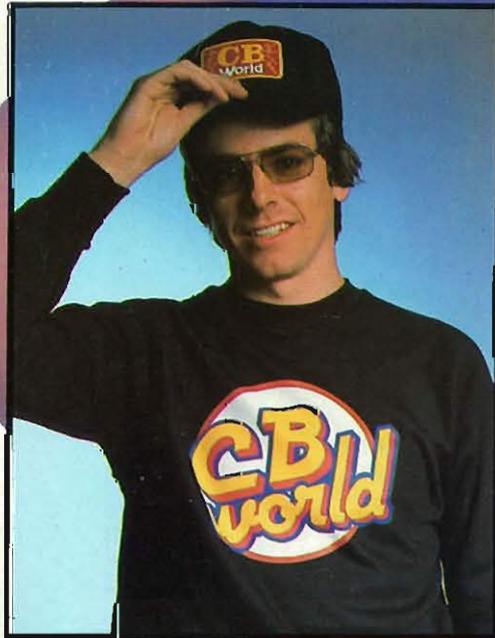
T-SHIRT	<input checked="" type="checkbox"/>	Number Required	
Size 34" - 36"	<input type="checkbox"/>	<input type="text"/>	at £2.95 each = £
Size 36" - 38"	<input type="checkbox"/>	<input type="text"/>	at £2.95 each = £
Size 38" - 40"	<input type="checkbox"/>	<input type="text"/>	at £2.95 each = £
Size 40" - 42"	<input type="checkbox"/>	<input type="text"/>	at £2.95 each = £
LONG SLEEVED SWEAT SHIRT			
Size 34" - 36"	<input type="checkbox"/>	<input type="text"/>	at £6.95 each = £
Size 36" - 38"	<input type="checkbox"/>	<input type="text"/>	at £6.95 each = £
Size 38" - 40"	<input type="checkbox"/>	<input type="text"/>	at £6.95 each = £
Size 40" - 42"	<input type="checkbox"/>	<input type="text"/>	at £6.95 each = £
CAPS (with badge)			
All adjustable			
Red	<input type="checkbox"/>	<input type="text"/>	at £2.95 each = £
Black	<input type="checkbox"/>	<input type="text"/>	at £2.95 each = £
Blue	<input type="checkbox"/>	<input type="text"/>	at £2.95 each = £
BADGES (sew-on)	<input type="checkbox"/>	<input type="text"/>	at £0.50 each = £
			Total of order *£ <input type="text"/>

All prices include V.A.T., postage and packing.

Please send the whole order to my address shown below (please print in capital letters)

Name:

Address:



THIS & THAT

The right connexion

One of the most recently opened c.b. shops around is "Connexion" in Maidenhead. "Connexion", the sole distributor of "Vanco" is a major stockist of "Shakespeare" and "K40" equipment. Not only do they offer good service, but also highly competitive prices. Trade enquiries for all their goods ranging from SWR meters, antennae, power mikes and filters are welcome.

Daniel Clifford one of the firm's directors who has recently returned from the U.S.A. to open the venture told "CB WORLD". "We, like many other firms are pleased about the government's decision to legalise c.b. here in the U.K."

"Connexion" can be found at: 8 Furrow Way, Cannon Lane, Maidenhead, Berks.

CB catalogue from J.W.R.

John Woolfe Racing have produced their own C.B. Catalogue. It is twenty four pages of c.b. goodies, and includes information on c.b. lingo and codes.

The products are grouped for easy identification of the accessory needed and the whole publication is in two colours. As well as covering the Mr. C.B. range, it includes all other items stocked by J.W.R.

J.W.R. now have two c.b. catalogues available to retail and trade customers. The official Mr. C.B. catalogue and J.W.R.'s own. They are both available at 95p each from John Woolfe Racing, Woolfe House, Norse Road, Bedford, MK41 0LF.

CB v Crystal Palace FC

At CB World we see most provincial newspapers and monitor most that is said about c.b. Its incredible how much dribble actually gets in print. Do you know that from these reports, c.b. users are accused of interfering with the following hobbies, appliances and systems. Some of them are feasible but really, some of the others want believing:

Police Signals, TV Interference, Hi-Fi Interference, Model Aircraft, Heart Pacemakers, Hospital Paging, Toasters, Electric Blankets, Audio

Typewriters, Transistor Radios, Cine Equipment, Skin Disease.

Why not add volcanic eruption, weather earthquakes, arthritis, Crystal Palace at the foot of Division One, missed trains, signal failures and Liverpool being knocked out of the F.A. Cup.

CB poet

It's uses to me are quite simple and would lead to no illegal ends, if used for community relations could make lots of strangers new friends.

There are lots of old and disabled that CB could find lots of friends, and a 10-33 on channel 09 could get help from a unit on THAMES.

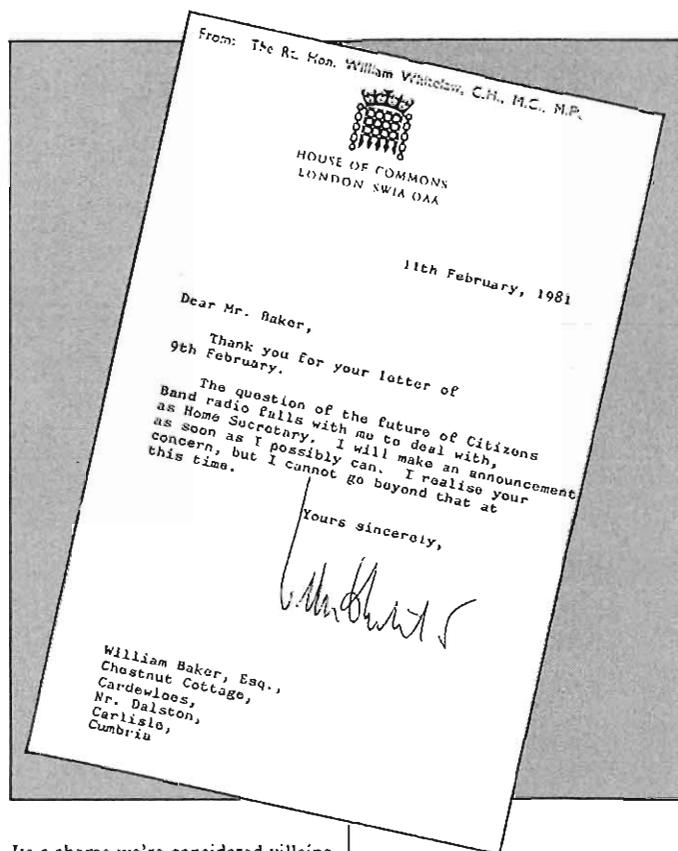
They would not be alone and helpless with a CB set on 09, and even confined to their houses they have help right there on the line.

Citizens Band in Eire

The Republics Minister of Posts announced on February 16th that c.b. is to be legalised in Eire. Fuller details will be published later.

Details so far announced are:- FM, 27MHz. The maximum permitted output will be 4 watts on 40 channels. There will be a two year phasing-in period during which the use of a.m. sets will be allowed but during which import of a.m. sets will be prohibited.

Note: The National Committee for the legalisation of Citizens Band Radio has incorporated into its general policy an amnesty for existing 27MHz AM equipment following the Eire announcement. This policy has also been adopted by the Parliamentary Working Party, the all party group of MPs led by Patrick Wall. As CB World went to press, Richard Town, GLC and Patrick Wall, MP were making representation to the Home Office. We wish them every success.



Its a shame we're considered villains for wanting to talk to friends, or is it the thought that CB could be used for subversive ends.

I am sure if I were subversive CB's the last thing I'd use, as there are so many others who'd hear it it would be just like the 9 o'clock news.

It's the right of each individual to have freedom of speech if they care, you can do it by phone or by letter but you're nicked if you do it by air.

There's so many illegal breakers it must cost the tax payer a mint to send out the men and equipment, on each sad and pathetic stint.

So when you think that CB's illegal, with the chance of a real heavy bust, but it still has thousands of users, we will never be biting the dust.

It's too late to try now to change it and get us to buy something new and throw away the gear that we have, I ask you, honest, WOULD YOU? REMBRANDT - Brockley SE4

Last month we asked for all CB Artists to send us their work (see page forty). Now we ask for CB Poems (not rudes ones please). Send to CB World, IPC, Quadrant House, Sutton, Surrey. Ed.

Home Secretary replies

We reproduce a letter received by Mr. W. Baker from The Rt. Hon. William Whitelaw. Nothing significant in its

content but its nice to know that replies are sent to the people of this country by its Home Secretary. Nice one Sir.

CB tattoo

We have received a letter from a c.b. tattoo artist and he has given CB World his handle to include in our register of c.b.ers. CB World will give away a free t-shirt to the first reader dropping us a postcard giving the code name of this tattoo artist (its not TATTOO by the way). Send the card to CB World, IPC Electrical Electronic Press, Quadrant House, Sutton, Surrey. At the same time put large, medium or small for the t-shirt. First correct answer wins.

27 Megahertz Road

CB World called in to see busy Harry Owen and his partner of SSE (Surrey Sussex Electronics) and in showing us round we saw some amazing gear and prices. They make their own full 1/2 wave dipole (1.1 to 1.3 maximum) for outside use omnidirectional or directional Retail price £12.50

Harry points out that they are now buying direct from the USA and can therefore keep their prices down to the bone. For instance, for £10.95 you can buy Harada pillar-mounted antenna, complete with splitter box. A mag-mount and pre-tuned whip can be had for £9.50. Plus, would you believe, a K40 speech processor mike (we bought one) and a K40 antenna for £24.95 each. We also saw a P.A./extension unit for £4.95. All the examples include VAT.

continued on page 35

CLUB CORNER

EASTBOURNE BREAKERS CLUB

This club was formed on 15th October 1980 and by 1st February 1981 they had nearly 100 members. They meet on alternate Sundays at the Kingfisher Public House, Langley Shopping Centre. Breadman advises that interested breakers wanting to know more about the club's activities should feel free to contact him on Eastbourne 761067.

NEW CITY BREAKERS CLUB (Milton Keynes)

They meet on Tuesdays and the annual sub. is £10 or £5 for six months. Guests are allowed provided they are with a club member. They produce their own mag (competing with CB World eh!) and according to the club secretary — Heartbreaker — any c.ber using bad language or being a pest on channel can be expelled from the club without refund of the club fee. They are proud of their club venue and would not give us the

location. Perhaps they have heard of the drinking reputation of the CB World staff. They are planning to support financially their local hospital because says Heartbreaker — "charity begins at home". From March 1st they are changing their breaking channel to 16 leaving 19 free to truckers using the motorway. The club would be pleased to hear from other clubs so that they can swap ideas etc. Drop a line to NCBC, c/o CB Centre, 9 St. Leger Court, Linford Local Centre, Great Linford, Milton Keynes, Bucks.

DERWENT VALLEY BREAKERS (Stanley)

Started December 1980. Has a membership of over 200. They meet every Wednesday at the Black Bull, Lanchester, Co. Durham and club business (drinking) starts at 8 p.m. The membership fee is a £1 per year and 10p charged at the gate, with 20p for guests. Romeo 2 advises CB World that if anyone is interested in contacting the club for club eyeballs,

sports nights or just social visiting they should contact D.V.B., 10 Prospect Terrace, New Kyo, Stanley, Co. Durham, DH9 7TR.

MUPPET TOWN BREAKERS (Corley)

A very new and small informed club. No annual subs, no entrance fee, they just meet up to discuss c.b. equipment how it is developing, how much sets cost. They meet at the Weavers Arms on Thursdays at 8.15 p.m. and according to Blue Max its on the B4102 between Fillongley and Nuneaton.

MERSEYSIDE '27 CLUB' (Liverpool)

The MERSEYSIDE '27 Club' was formed 18 months ago when c.b. was a relatively new thing in the Merseyside area. The membership grew rapidly as c.b. activity increased. The club was so large and the area covered was so vast it became increasingly difficult to please everyone especially those who had to travel long distance to weekly meets. Consequently, groups of members broke away from this club and formed their own clubs in their area of Merseyside.

Now this club covers north merseyside and its present membership is over 150. In north merseyside the breaker channel is 27 but changes to 19 as you get further in towards Liverpool.

They have weekly eyeballs at different venues where everyone is welcome, and they have closed meetings for members once a month when forthcoming events are arranged, so says public relations Golden Eagle.

WEST MONA BREAKERS

Another new club with approaching 200 members. They meet (we know not where) once a fortnight and pay £2 each a year to join. This is hoarded away by the Secretary, Cameo, for insurance and a bust fund. Indeed a set is replaced with a straight 40 channel job.

CHESHUNT BREAKERS SOCIAL CLUB

Formed at the end of January 1981 this club was created during a brown

bottle or two at a local pub by Lord George, Minder and Scholar. The club already has a membership of over 300. They put on a social event when members were invited to turn up in fancy dress, depicting their handles. The mind boggles at what some of them looked like especially with handles such as Square Eyes, Walrus or even Flasher. (Not in Cheshunt club). They also arrange discos and other music hall acts. Meetings are held every Wednesday at the Cheshunt Football Club, where, Lord George informs CB World, the bar is open until midnight.

W.C.B.C. (Heanor)

Formed in November 1980, they have a membership of 125 and meet at Stamford Club, Nelson Street, Heanor. The meetings are every Wednesday evening at approx 8 bells. They have lively discussions, raffles, promote club pens, club badges and t-shirts. They have their own small charity supporting a local home for mentally handicapped children.

On occasions they arrange discos for club members. The membership is £1.20 initially on joining and then 20p per week. At first they instituted a rig theft fund, but since the club has grown the members asked for any profits to go to charity rather than benefit members. They have a lot of junior members due to the fact that they meet in a social club. They have had car treasure trails, and looking towards the summer months, picnics also. They arranged a Tug-o-War with Bulwell and Hucknall Breakers with the proceeds going to Guide Dogs for the blind. The club also publish a magazine (competing with CB World eh!).

FREE BREAKERS OF NORTHANTS (Northampton)

This club started in December 1980 by three guys. They meet at the Swan and Helmet (we'd love to eyeball the pub sign) on a Tuesday night. Rock Hudson advises that visitor breakers, or passers by are welcome, just shout them up on channel.

SEVERN CITY BREAKERS CLUB (Shrewsbury)

The club was formed at the latter part of 1980. The membership keeps growing and they have to keep finding larger premises for their meetings. Moonraker advises us that they meet at 8.00 p.m. every other Tuesday night but didn't say where! Also they hold a disco every fourth meeting. Anyway the club break on channel 14 and 19 and no doubt info on their secret venue is gladly given to c.bers passing through or living around Shrewsbury.

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- Air-PB-WB Transmissions
 - TV-FM Transmissions
 - CB Transmissions (channels 1 to 40)

Controls
Tuning — Squelch
— Band Selector

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Jack.

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M.G.F. ELECTRONICS
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GLASGOW G43 2JD.
Telephone: 041-637 6109

By Brian Grant

INSTALLING YOUR CB RIG

Take care and preserve your power

NOW THAT c.b. is to start up in earnest in the autumn there will be a considerable number of c.b.ers legally installing and operating transceivers. Sets will be installed in cars and trucks and the results obtained ranging from disastrous to very satisfactory.

Installation is not as simple as fitting an ordinary car radio and unless carried out correctly interference will be bad, the operating range very limited and breakers will be blaming the equipment rather than the installation. Firstly the equipment must be correctly matched for its use and here the experience of the supplier must be relied upon. The user must, from the start, realise that c.b. is a local communication system and not designed for long distance use. Users must also realise that they cannot expect the same quality of reception as Radio 1.

For example there is no point in purchasing preamplifiers or 'burners' if the equipment is to be operated in undulating areas. If a hill or mountain is in the way then there is no way a signal will pass through or over it and down the other side. However, a longer antenna will help in the flatter ground areas particularly where 'non sus' aerials are not giving good results.

These are notoriously hungry for watts, thus signal strength can be decreased by over 30 per cent. Extending antennae also cause problems because unless good contact is made between each section then the signal strength will decrease or crackling noises will be heard.

These antennae should be kept clean to

prevent any leakage where they are mounted and must be well lubricated with a graphite base lubricant and not ordinary engine oil. This will only help to insulate the various sections from each other.

The antenna earth connexion to the body must be clean and tight. Remember that corrosion will occur where there is bare steel so make sure that the joint is watertight. If the antenna is to be attached to a GRP body panel then the earth connexion should be extended to the vehicle's earthed circuit. Remember also that it will be necessary to use a special ground plane antenna because there will be no ground plane to assist performance.

When a long antenna is being used make sure that the mounting panel is man enough for the job. Considerable loads are imposed on the panel and mounting, when the vehicle is travelling at speed.

Also remember that a c.b. antenna works most efficiently when it is mounted vertically and not at an angle of 30 degrees.

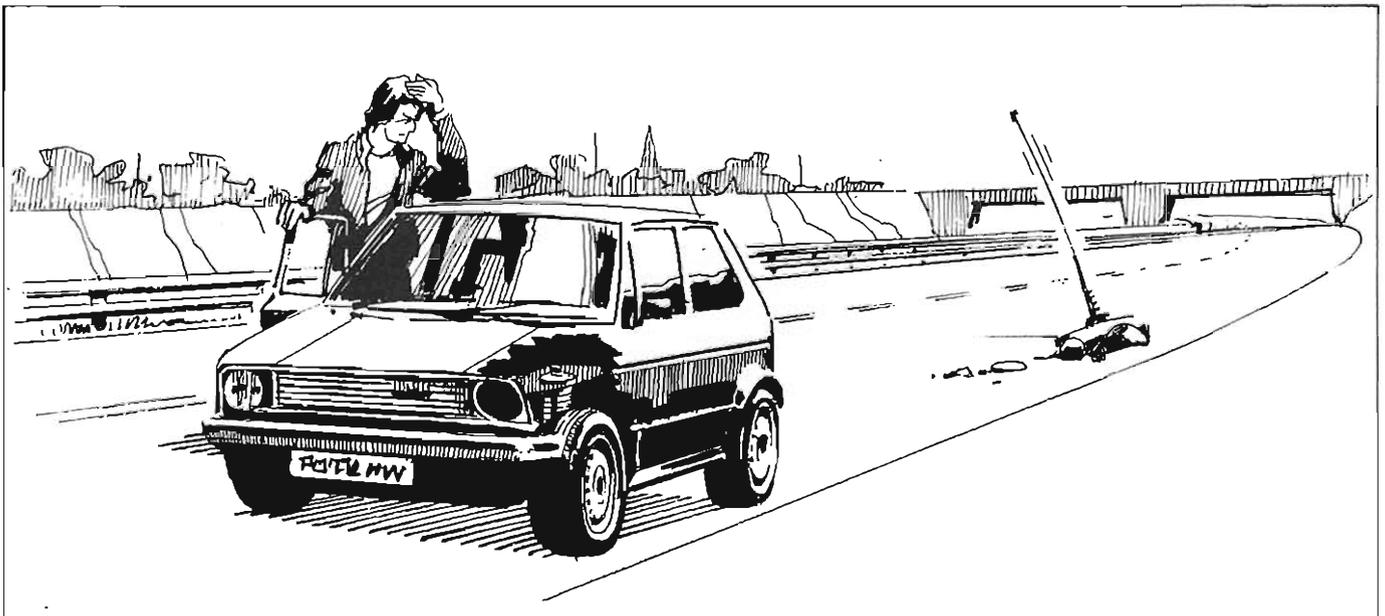
When it is necessary to use an antenna extension lead as when fitting it to a rear wing do not use an ordinary radio extension lead. It will not be made of the correct coaxial cable and there will be a power loss along its length. Use the correct lead which is available from the equipment supplier. All connectors must be well soldered to the inner lead of the coaxial cable. Do not under any circumstances rely on a crimp or pushing a much folded end down the centre contact of the connector.

Keep the antenna lead runs as short as possible and where it passes through any panels always use grommets to stop the external insulation being penetrated. The set must be rigidly mounted to the dashboard or parcel shelf and even though its electrical connexion to the power supply will probably be via two cables, always earth the set as well. This can help in the battle to eliminate electrical interference.

For all standard sets take the power supply straight from the battery and not via the accessory terminal on the control box or fuse box. There will probably be a host of accessories already connected to this supply resulting in a considerable voltage drop when all are in use. Again make sure that where all cables pass through any panels use grommets and for safety fit a fuse holder and fuse into the main feed cable if there is not one already fitted.

Remember to carry a spare fuse specifically for this purpose — normal car type fuses do not fit and in any case are overrated for the job. Before making the final connexion check and then check again that the correct connexions are being made. If made the wrong way round the set will be seriously damaged.

Electrical interference suppression requires patience if it is to be eliminated. Some installations will not require any attention while others will require the attention of experts. Do not rely on normal car radio type suppressors but obtain a special kit from your equipment supplier. Fit



Considerable loads are imposed on the panel and mounting when the vehicle is travelling at speed

INSTALLING YOUR CB RIG

the various parts according to the instructions and the majority of problems will be solved.

It is only with GRP bodied vehicles that serious problems could arise and it will be necessary to visit the local specialist who will start talking about screening some of the electrical equipment.

The location of the antenna is important and for maximum effectiveness with minimum interference it should be located on the centre of the roof or boot lid panels (front engined vehicles). This is where magnetic mounts come into their own. The next thing to be done is that the antenna has to be tuned or matched to the set. For this a s.w.r. meter is necessary. If you have not done this before it is suggested that help is obtained from someone who has. If this operation is not carried out then either the set's output transistors can be damaged or the operating range restricted. Full information on this subject will be found in the instructions supplied with the meter or antenna.

Prospective breakers will hear a great deal of talk about skip noise and general inter-

ference, particularly during certain daylight hours. This is something that has to be lived with unless one can afford the latest up-market sets which cost a small fortune. There is no satisfactory bolt-on equipment available that will completely eliminate this noise yet retain the voice frequencies.

On the subject of equipment performance there are breakers who will want to make long distance copies. This is not really on and breaks the whole spirit of c.b. being a local communication system. Additionally, transmitter outputs will be legally enforced so it is far better to use the equipment for which it was intended.

Several c.b. equipment suppliers are able to offer burners which will boost output to 25, 50 or even 100 watts. This will certainly increase the operational range over flat terrain or when located on the top of a hill but for general use their performance can be disappointing.

Many c.b. clubs frown on the use of burners because their output can bleed over several channels which only spoils copying for other breakers particularly when the number of operational channels is limited.

Additionally unless other breakers have burners then any contact will be very one-sided. Your mouth could be louder than your ears.

Television interference (t.v.i.) is an emotive subject and any prospective c.b.er should, if he has any social morals, fit a t.v.i. filter to his equipment. Suitable kits are available from the local equipment suppliers. By fitting a t.v.i. kit any interference caused to nearby television or stereo sets should be eliminated unless of course the antenna is beside the set. With an anticipated vast increase in the use of c.b. and sets and supporting equipment become more readily available, it will become very necessary for experienced operators to help those without this knowledge and also help to control the number of pirates blasting their 100 watt copies across the c.b. frequencies.

The equipment manufacturers know best. With correctly installed and matched equipment c.b. will be effective and if the operator is not satisfied then he should obtain an amateur radio licence and go international or have a radio telephone installed in his car or truck.

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THIS & THAT

continued from page 31

CB World Meets Big Dummy

In February CB World was visited by White Lightning and String Bean from the U.S.A. Who are they, you may well ask? They are, I reply, Albert Houston and Mark Long. Still none the wiser? Then how about "The Big Dummy's Guide to CB". What's the connection, I hear you all shout. Wait for it, says I, waiting for the roll of drums to subside. They are the partners and authors of the book. BDG to CB was first published in 1977 and since then they have sold 800,000 in the U.S.A. and other countries such as South Africa, Australia, New Zealand and Canada. So far, through Kona Publications, London, they claim they have almost reached 100,000 sales in the U.K.

Going back to Albert and Mark, they are both communications consultants in the U.S.A. They have

designed and installed solar powered c.b. radio systems in Guatemala for emergency communications for the local community. They were both in Europe to see for themselves how c.b. is developing especially in the U.K. They also want to promote further sales of the Big Dummy book through Geoff Weymouth. Mark told Gordon Henderson of CB World, that he was amazed at the enthusiasm shown in this country for c.b. and he did not notice a recession going on. (A Labour Prime Minister said something like that on a return visit from abroad. I think he said "What chaos" or something similar). During their stay in the U.K. they found the enthusiasm amongst breakers overwhelming.

CB on motor cycles?

Keith Bonny wrote to CB World asking us if we knew a firm who specialised in making or fitting c.b. sets to motor cycles. He wants to go to France this year — where c.b. is legal and would like a set fitted to his bike. We hope that he can speak fluent French and we assume that he will be touring on a Triumph Bonneville (Bonny for short). Anyone who can help Keith out, please write to him at 34 Fairfield Road, Shipley, West Yorkshire.

CB World darts competition

CB World will be arranging a national inter-club darts competition. Initially we thought of events for singles, doubles and teams of eight. If you want to enter, firstly send in your request and we will eyeball you later with all the data, rules and venues. Better sharpen up your arrows, this promises to be the big one and that's a big four for sure.

FM modification?

SSE telephoned CB World to inform us that having spent time, money and midnight oil, they have come up with an f.m. modification from a.m. and a.m. to a.m./f.m. According to the technician of the partnership, this incorporates phase-locked loop detector and automatic gain-controlled pre-amp. CB World could not test this claim but SSE have a working model and have even taken orders. That was two days after they mentioned the mod. Also in production is a board for hi channels and a speech processor. Both items designed and tested by SSE. if you don't believe us, telephone or write to SSE, their ad is in this issue.

Radiomobile at it!

Radiomobile writes to CB World to

say that they welcome the government's announcement regarding the legalisation of Citizens' Band. They are extremely enthusiastic and will be in a position to have equipment on the shelves of their distributors and dealers by the autumn. They are studying the Government's technical proposals but cannot provide any firm indication of the price or the detailed specifications of the equipment they will be marketing.

Radiomobile add that equipment suitable for operation on the 930 frequency will be too expensive for the main market requirements and will therefore concentrate on 27MHz FM products.

Town ripped off

Two days after Xmas, Richard Town's house was broken into. Richard at that time was away on his New Zealand assignment. He lost an expensive quadraphonic hi-fi system, also a communication receiver, television, clothes and even his bedside 'Teasmade'. In all, Richard estimates that over £1000 worth of gear was taken. The quad system amplifier was his greatest personal loss. It was a JVC 4VN 990 which he had rebuilt and modified. It would be appreciated if all and sundry kept a beady eye open for this gear, a reward might be forthcoming from Richard.



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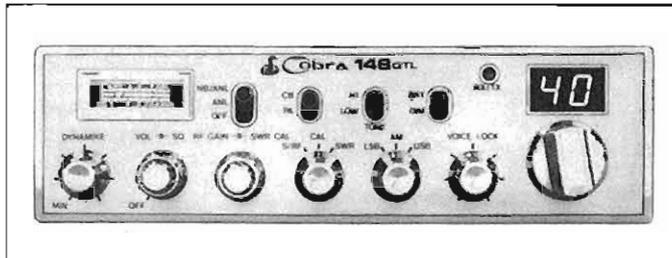


RIGS RIGS RIGS R

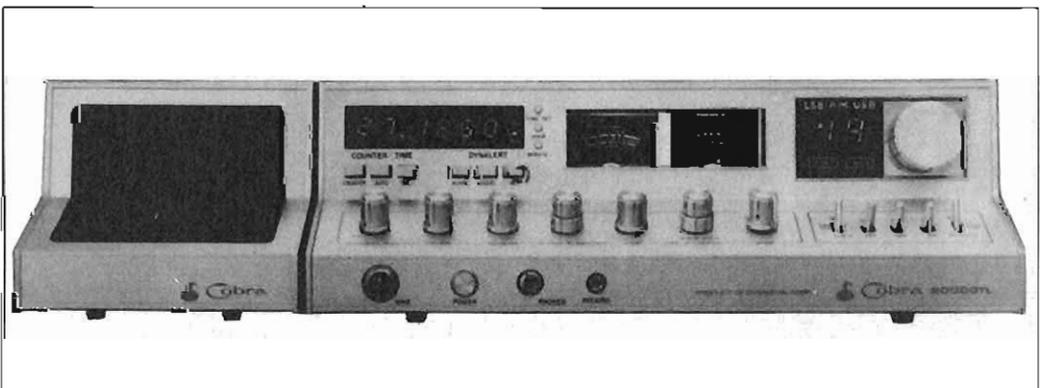
This is the third illustrated review of rigs which are available in other countries where c.b. is legal. From letters received from readers it appears that this feature is very popular indeed. In previous issues we featured rigs from President and Midland. This time CB World features a selection of rigs in the Cobra range, a Dynascan Corporation Company.



◀ COBRA – 29 GTL
40 channel AM mobile transceiver. 4 watts.
Controls: Volume/Off. Squelch. Dynamike/Min. RF gain. Delta tune. SWR cal. Channel selector. Switches: S-RF/SWR/Cal. NB-ANL/ANL/Off. CB/PA. Hi/Low.
Features: S-RF/SWR meter. RX/TX. ANT-warning indicator PA/Spkr outputs.

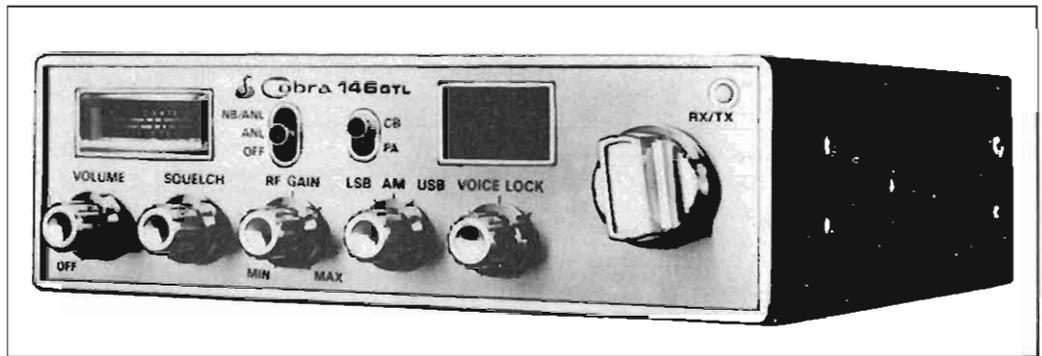


◀ COBRA – 148 GTL
40 channel AM/SSB mobile transceiver. 4 watts AM. 12 watts SSB.
Controls: Volume/squelch. RF Gain/SWR. S/R/CAL/SWR control LSB/AM/USB mode selector. Voice lock. Channel selector. Dyna mike/Gain control.
Switches: NB-ANL/ANL/Off. CB/PA. HI/Low. BRT/Dim.
Features: S-RF/SWR Meter. RX/IX indicator. PA/Spkr sockets.

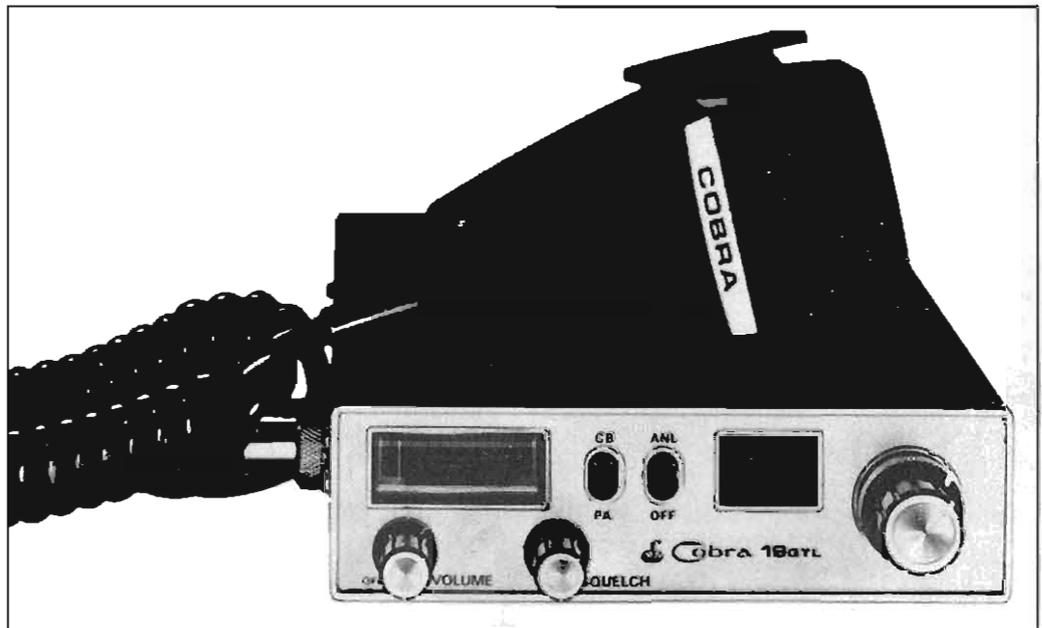


IGS RIGS RIGS RIG

▶ **COBRA — 146 GTL**
 40 channel AM/SSB mobile transceiver. 4 watts AM. 12 watts SSB.
 Controls: Volume/Off. Squelch. RF gain. LSB/AM/USB mode selector. Voice lock. Channel selector.
 Switches: NB/ANL/ANL/Off. CB/PA.
 Features: S-RF meter. RX/TX indicator. PA/Spkr sockets.



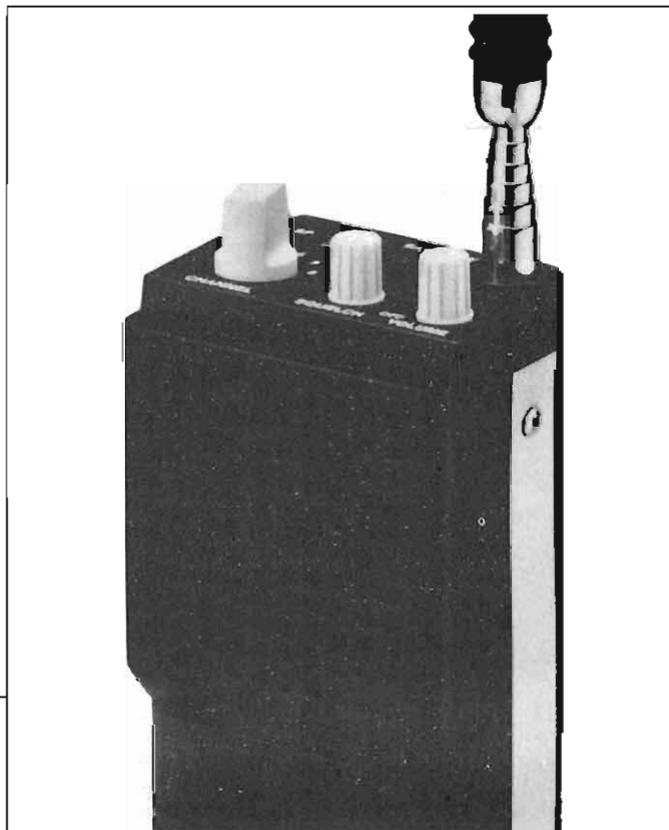
▶ **COBRA — 19GTL**
 40 channel AM mobile transceiver. 4 watts.
 Controls: Volume/Off. Squelch. Channel selector.
 Switches: CB/PA. ANL/Off.
 Features: S-RF meter. PA and Spkr sockets.



◀ **COBRA — 21GTL**
 40 channel AM mobile transceiver. 4 watts.
 Controls: Volume/Off. Squelch. Dynamike/Min. Channel selector.

◀ **COBRA — 25 GTL**
 40 channel AM mobile transceiver — 4 watts
 Controls: Volume/Off. Squelch. Dynamike/Min. RF gain. Channel selector.
 Switches: CB/PA. ANL/Off. NB/Off. BRT/Dim.
 Features: S-RF meter. RX/TX. PA/Spkr outputs.

◀ **COBRA — 2000 GTL**
 40 channel AM/SSB base station. 4 watts AM. 12 watts SSB.
 Controls: Volume. Dynamike/Gain. Squelch. RF gain/SWR. Tone. Voice lock. Mode selector. Channel selector.
 Switches: Aux. Spkr. ANL. NB. PA. SWR. Power (push). Time set. Alarm.
 Features: 6 digit freq. counter. S-RF Meter. SWR Meter. PA and Spkr Sockets. Tape record and head phone sockets.



◀ **COBRA — 6GTL**
 6 channel AM hand-held transceiver. 5 watts
 Controls: Channel selector. On-Off/Volume. Squelch. Hi-Low (5 watt/1 watt). Push-to-talk. Ext. power — charger — antenna jacks. Tele centre loaded antenna.
 Weight 2 lbs 2 oz.

Traffic Signals

NO.2

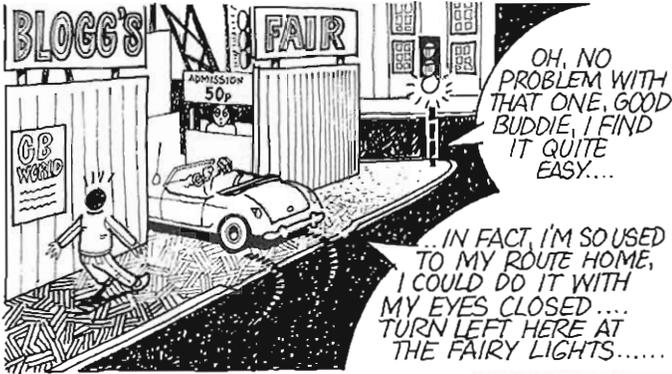
LET'S EAVESDROP ON A COUPLE OF GOOD BUDDIES.....



I'VE GOT YOU THERE, ARMCHAIR DRIVER. YOU'RE COMING THROUGH WALL TO WALL. ARE YOU AT HOME BASE?

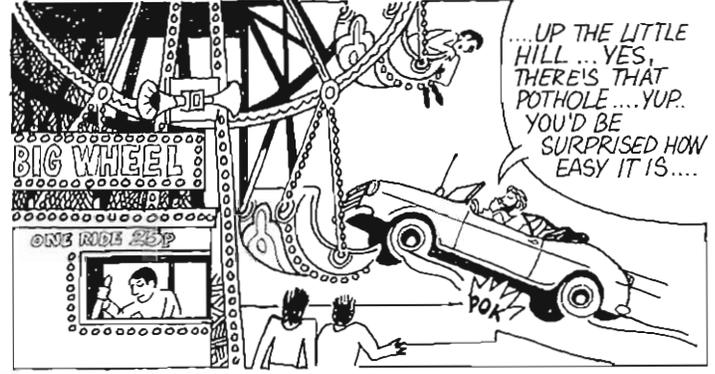


10-4, I USED TO GO MOBILE, BUT I FOUND THAT I COULDN'T CONCENTRATE ON MY DRIVING, AND MODULATE AT THE SAME TIME. IS THAT A FOUR?



OH, NO PROBLEM WITH THAT ONE, GOOD BUDDIE, I FIND IT QUITE EASY....

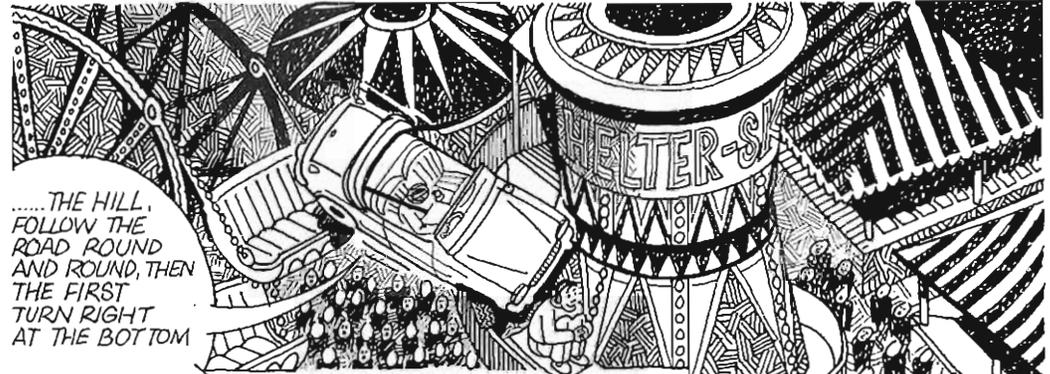
...IN FACT, I'M SOUSED TO MY ROUTE HOME, I COULD DO IT WITH MY EYES CLOSED.... TURN LEFT HERE AT THE FAIRY LIGHTS.....



...UP THE LITTLE HILL... YES, THERE'S THAT POTHOLE... YUP.. YOU'D BE SURPRISED HOW EASY IT IS....



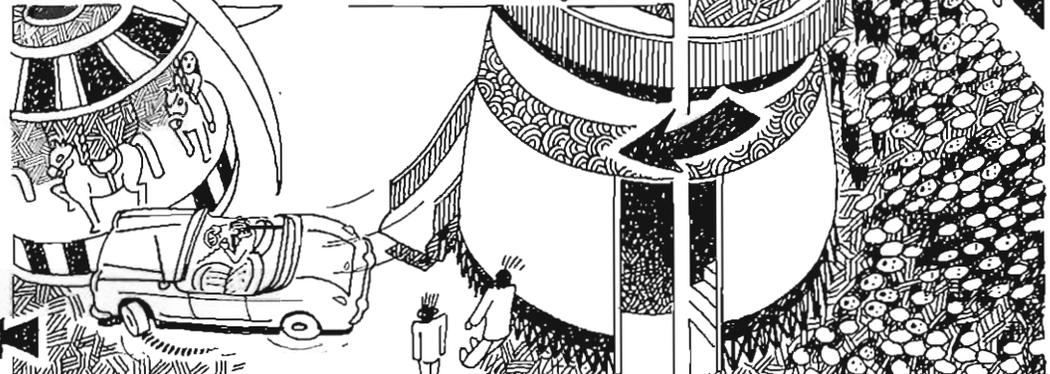
...THAT'S FUNNY, THIS BIT SEEMS A TRIFLE STEEP TONIGHT, ANYWAY, SOON BE AT THE TOP AND I'LL COAST DOWN....



.....THE HILL, FOLLOW THE ROAD ROUND AND ROUND, THEN THE FIRST TURN RIGHT AT THE BOTTOM



COR THIS ROAD'S A BIT BUMPY.... BUT I'LL SOON BE HOME..



AH, THAT'S BETTER, YES, GOOD BUDDIE, THERE'S ABSOLUTELY NO DANGER AT ALL, JUST A BIT OF PRACTICE....



... IS ALL YOU NEED, ANYWAY, I'M NEARLY AT MY HOME 20, 50, I'LL SAY BREAKER BREAK, THIS IS MR MAGOO GOING DOWN, BYE BYE!



YEAH!, BREAKER BREAK.

WHAT WILL MR MAGOO MAKE OF THE **MONSTER** IN HIS MOTOR?? WILL ARMCHAIR DRIVER DISCOVER THE **DARING DEEDS** DONE??... WILL MR BLOGG BASH OUR BUDDIE **BRAINLESS**?? TUNE IN TO THE NEXT **EAR-PINNING** ISSUE!!!

TO BE CONTINUED.....

Andrew Chasen

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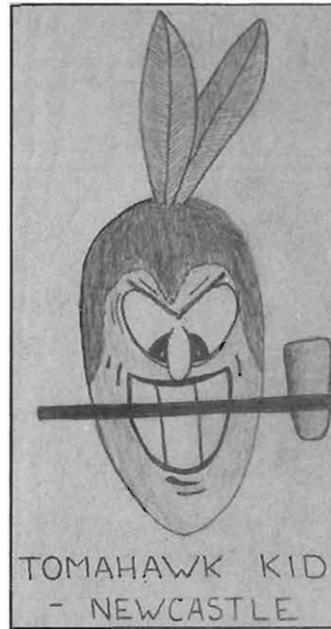
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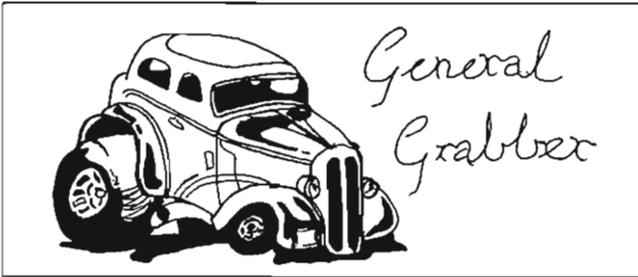
Above: Molesey Open Breakers, Surrey



Above: Tomahawk Kid,



Above: Tasmanian Devil, Pudsey



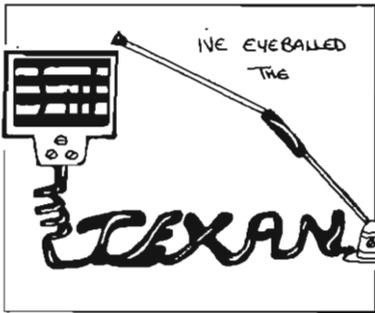
Left: General Grabber, Ilkeston

Right: Swamp Rat, Ewell

Below: The Porcupine, Abingdon



Below: The Texan, Enfield



Below: White Rabbit, Yorks

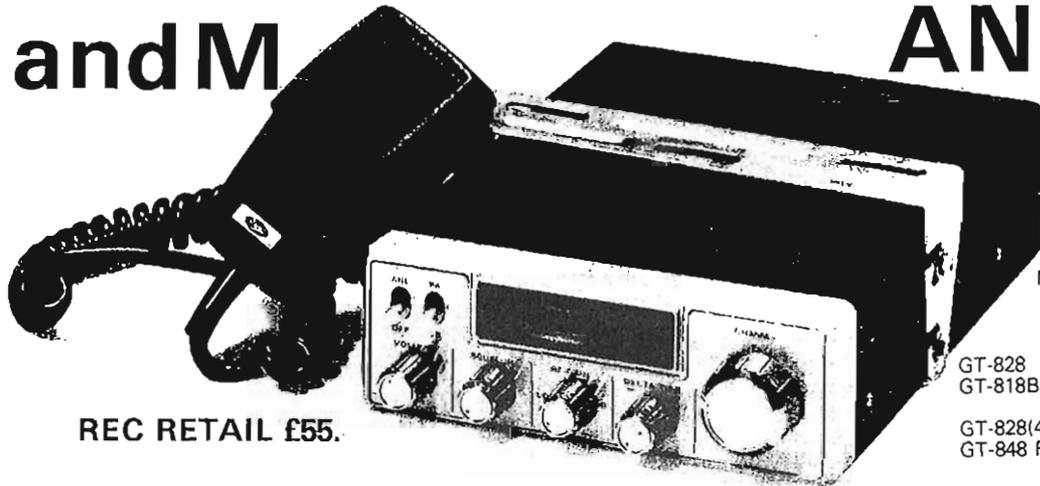
Below: Bilbo Baggins, Wldnes

Below: Jumping Jack, Oswestry



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waiting for our decision. Although it will be a great disappointment to many CB users, the 27 MHz frequency is virtually the European standard, and it should therefore be legalised in this country as soon as possible. Those who have bought illegal sets can hardly grumble if this is done.

One of the objections to 27 MHz was that it would affect model aircraft seriously. I understand that they have now switched to 37 MHz, so that objection is out of the way. Should the Government decide to legalise 27 MHz, I believe that they should keep the 41 MHz band as a possible European standard for the future. Users will switch relatively easily from 27 MHz to 41 MHz, but they are unlikely to switch to ultra-high frequency such as 928.

My final comment concerns the timing. The question is when. Pressure grows every day. There have been demonstrations. More and more sets are being imported illegally, and more and more sets are being used illegally. The position can only get worse unless the Government act at once. On Thursday, the Minister said:

"We hope to be able to announce our conclusions shortly." — [*Official Report*, 5 February 1981; Vol. 998, c.394.]

I hope that "shortly" means within the next three months. This can only be in the Government's and the country's interest.

As regards the administration of a legal system, I am authorised to say that the national committee, the CB Association and the clubs will give the Government every possible assistance in administration. But let us have a final decision before the second anniversary of the 1979 general election.

Mr. Tim Rathbone (Lewes): I am grateful, Mr. Deputy Speaker, for being allowed to support my hon. Friend the Member for Haltemprice (Mr. Wall). I add my own thanks to the Minister for his consideration of the whole question of citizens' band radio, which is in stark contrast to the attitude of his Labour predecessor, who greeted every request for consideration of this subject with a negative response.

The Minister only has to think about the number of hon. Members present to listen to this debate — an unprecedented number for an Adjournment debate — to understand the importance which is attached to it, and this is matched by the numbers of people outside the House physically this evening and outside the House at other times during the rest of the year.

I fear that the Minister has to do battle with his officials in the Home Office, who have taken too negative an attitude over the years to the allocation of a citizens' band radio wave length. The law against citizens' band has been flouted for too long. When any law is challenged in the way that this law is challenged, a Government have seriously to consider changing it.

I hope that the Minister will be able to give the House some reassurance that that change in the law is being considered by the Government right now.

The Minister of State, Home Office

(Mr. Timothy Raison): I congratulate my hon. Friend the Member for Haltemprice (Mr. Wall) on raising this topic. I acknowledge the leadership that he has given in this matter.

As my hon. Friend said, it is just over a year since we last had a similar short debate on this subject, and a good deal has happened in that time. In it, the Government have moved from a position of examining the issues to one of support in principle; we have issued a discussion document on our views, and seen an extremely heavy public response to it; and we are now close to reaching our final decisions. Thus, while my hon. Friends will not be surprised if I say that I cannot tell them what those decisions are tonight, I can say that they will not be long delayed.

There is, of course, no legal open channel service now, but there will be one, and I think that it will be noted that it is a Conservative Government who will be taking this step.

Mr. Dennis Canavan (West Stirlingshire): When?

Mr. Raison: I do not think that my hon. Friend the Member for Haltemprice will expect me to accept his strictures on my officials. I do not myself accept them. They have worked extremely hard under our policy, and I have no ground for reproaching them.

I have always thought that some of the arguments about the advantages and disadvantages of open channel or citizens band radio are sterile, or overstated. I believe that a new service can and will be helpful and enjoyable to many people, just as I am certain that it will cause problems and difficulties to others. But personal freedom matters, and that is the argument that we, as a Government, have always found strongest.

I should like to explain some of the reasons why our decision is particularly difficult and has inevitably taken time. Radio regulation is an extremely complicated business. World conferences reach, by consensus, broad planning agreements designed to provide as much protection as possible to services of various kinds, and all administrations have to work within these in their national planning.

The range of services to be protected is enormous — not just broadcasting or land mobile radio, of which open channel is one form, but radar, maritime and aircraft communications satellites, radio astronomy, radio links for passing digital or analogue information, and hundreds of other applications.

We must remember that radio transmissions can be a source of interference to other radio services. The assignment of a frequency to a new service therefore requires the most careful consideration.

I think, therefore, that it becomes clear that anyone who simply operates outside this carefully planned framework, however desirable his activities might appear to be, is likely to cause chaos. The present illicit 27 MHz transmissions are, unfortunately, a very clear example of this.

I told the house a year ago that illicit users of CB could cause inconvenience and even risk to their fellow-citizens. One of the real difficulties about this is that a CB user generally has no idea of his effect on others. He may therefore think that we are simply crying wolf. But it is my Department that takes the overall responsibility for dealing with complaints of interference, and it therefore monitors closely what is going on.

At present, in a year we expect to have about 35,000 complaints of interference from all sources to radio services. Over 90 per cent of these relate to broadcasting services. In the last four months of 1980 there were more than 2,700 complaints, which were traced to illicit CB 27 MHz transmissions; in other words, a rise of nearly 25 per cent in the total number of complaints. Nearly 2,000 of these were cases of interference to television reception, and nearly 600 to radio or hi-fi equipment. Police, fire, ambulance and hospital paging services were also affected. Our warnings of potential risks are therefore being borne out in practice in a way that can only cause concern. Such interference is expensive. It has to be paid for by the television viewer, the licensed user of radio, or the taxpayer. Moreover, it may cause friction between neighbours.

This interference from 27 MHz equipment comes largely from one of two sources — first, from unsuitable basic equipment; and secondly, from the use of powerful linear amplifiers designed to boost the power output of the equipment many times over. Offending users have been traced, who have been using power outputs of 1 kW or even more — in other words, perhaps twice as much as the power of a local broadcasting station. I remain of the view that open channel must be a short-range personal radio service.

The next significant thing about open channel is that it has to be a countrywide service. The user in the north of England will use the same frequency as his counterpart in the south of England. There are very few radio services of which one can say that. There are different channels for television in different areas. Private mobile radio frequencies are issued individually so that they can be interleaved geographically. A frequency that would interfere with, for example, a particular television channel is not used in the relevant area. But open channel, being countrywide, has to be able to live with and not to harm any other radio service throughout the United Kingdom and in neighbouring countries, such as France and the Republic of Ireland.

Interference can have many causes. It is not simply a matter of one set of radio equipment interfering with another because they are operating on the same frequency. Any equipment when transmitting also emits potentially interfering, spurious signals. Of these, the harmonics or multiples of the tuned and basic frequency are generally most harmful. The fundamental or the harmonic signal may interact with the tuned frequency, with the intermediate frequency or with the frequency change oscillator in a radio or television receiver. Finally,

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interference may be caused simply because a transmitter is used too near the receiver of another service.

This last category can never be eliminated, and it highlights clearly the difficulties that will be caused by open channel because of its mode and scale of use. Open channel will be a social thing. It will therefore be used widely in residential areas and in buildings such as blocks of flats, where it will be far nearer than transmitters of other services to home entertainment equipment such as radio, television, and hi-fi. This gives yet another twist to the interference risks inherent in such a service, and the scale of likely use presents problems of administration and enforcement never encountered in this form before.

Finally, the radio frequency spectrum is finite and heavily used. There is no bottomless bucket of frequencies that we are hiding for our own purposes.

Mr. Eric Ogden (Liverpool, West Derby): Does the Minister accept that almost all his arguments about the difficulties are the same as the arguments used by Departments and services against local radio? Those difficulties were overcome. It should not be beyond the wit of man to overcome these difficulties.

Mr. Raison: I think that the hon. member will understand that we are committed to overcoming difficulties in the way of open channel of CB. [HON. MEMBERS: "He said it."] I have said "CB" several times. It is no good pretending that there are not serious problems, and it is my duty to explain to the House what those problems are. I shall now come on to the question of how we will approach the matter.

What I have said was the background to our discussion document on open channel. It drew a heavy response, which I found heartening, not because it supported our initial views, for it did not, but because it represented a real exercise in consultation, and a reaction that the Government are taking fully into account. It is perhaps not surprising that we did not reach the much larger part of the population who will not use open channel but may be affected by it, and we had to think of those people as well.

Most individuals who responded strongly favoured a frequency of 27 MHz for open channel. On the other hand, all the organisations that commented, other than user organisations, opposed this, but without having any common view of what they would prefer. Little public support was given to our proposal for a service at around 930 MHz. Nevertheless, we still see such a service as viable. It will give not only a better service than is generally realised, particularly in urban areas, but a better quality service. If it were as poor as has been alleged, it is strange that both North America and many countries in Europe are planning to introduce it, thus creating the prospect of a new and large international market. Nevertheless, it was the strong public reaction which caused my right hon. Friend in his answer to a question on 18 December, to undertake to look further at the possibility of introducing

a service on a frequency lower than 900 MHz. Further studies have been made and these are now virtually complete. We have consulted widely on a technical basis with user representatives, manufacturing interests, and organisations such as the broadcasting authorities and emergency services.

We agree that the need is pressing, and that there can be no question of waiting for frequencies which might be available only in a few years. Nor can we put our agreements with our neighbours at risk. Most important of all, we cannot select a frequency which, almost irrespective of the quality of the equipment used, can be guaranteed to cause widespread interference. I emphasise that our findings have been made widely available to those concerned, and no one has challenged on any scientific basis our assessment of the interference risks.

Unfortunately, all the alternative suggestions that have been put to us fall foul of one or other, and frequently all three, of the constraints I have just mentioned. The 41.5 MHz frequency band — part of the band used for transmission of the 405 line black and white television programmes — is a classic example. Our tests have shown that the interference risks to television reception would be higher than with any form of 27 MHz service, and indeed much higher than with one using frequency modulation. Frequencies a little higher than 41.5 MHz would reduce but not eliminate the problems, while the other difficulties would continue to apply.

We also have to recognise that the world has already made its choice; 27 MHz in one form or another is widely used, and, as I mentioned earlier, North America and Europe are planning to introduce a service at around 930 MHz. Any other choice would be a one-off British one which no other country in the world would permit. Thus, one of the wishes of the enthusiast — to be able to take his equipment abroad — would not be met.

One can develop that a little further, the equipment at present illegally used in this country is amplitude modulated equipment on the American pattern, although even then, some of it is obsolete and no longer permitted in America, and has quite simply been dumped here. Few enthusiasts want to take their cars or trucks to the United States, but that AM equipment is not generally acceptable on the Continent. France, Holland and Germany operate 27 MHz FM services, because their investigations and their experience have proved that the performance and the cost are similar, and the interference problems much less.

Our task, therefore, is to make available a service which conforms as far as possible to the aspirations of the large number of potential users and to encourage them to use equipment which does least harm to the even larger number of other radio users. Supporters of open channel have stressed to me their willingness and ability to act responsibly, and they will certainly have to justify that. Before long they should have in their hands a service for their pleasure, and a powerful tool for good or evil. I mentioned



personal freedom at the beginning of my speech. Personal responsibility is the reverse of that coin.

I have commented tonight on the factors that have to be borne in mind in making a judgment. We are quite commonly accused of opposing a personal two-way radio service. That is quite unjust and my hon. Friend acknowledged that. We have not taken sides against it. We have decided to introduce a service, and we have carried out very wide consultations both to explore the difficulties and to hear suggestions. But radio regulation seeks the greatest good for the greatest number and that is what we have to continue to seek until we reach our final answer.

Reprinted from Hansard.

12 ◀ CB APPROVED

modulated) equipment will be drafted to ensure that it causes the minimum of interference to other radio users; standards will be set to which manufacturers, importers and assemblers will conform. The equipment will have to be permanently marked to that a purchaser knows the set he is buying meets these standards. Such specifications are vital to ensure that other radio services (police, fire, aviation) are not adversely affected.

LICENSES

Users of the new service will have to buy a licence, renewable annually, which will entitle them to use equipment on either frequency. Talks are taking place with the Post Office to see if they can issue licences on behalf of the Home Office. It is too early to say what the cost of a licence will be.

CB IN UK WHEN?

It is hoped to complete the arrangements for technical specification, equipment marking and licensing, and bring the new service into operation, by the autumn of 1981.



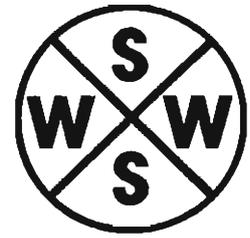
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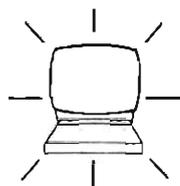
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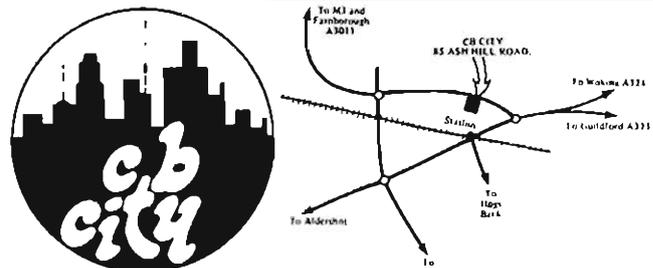
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HANDLES FOR TOWNS

In the last issue of *CB World* we included over 250 towns with their code names and, where known, their breaking channels. On these pages you will find another 250 towns as submitted by readers. If there are still towns missing from the two lists send them to us and eventually we will publish the complete national list of towns together with their code names and, as far as possible, their breaking channels. Send your suggestions to the Editor, *CB World*, IPC Electrical-Electronic Press Ltd., Quadrant House, Sutton, Surrey SM2 5AS.

PLUS
CALLING
CHANNELS

Abergele
Aintree
Aldershot
Allenton
Allestree
Alfreton
Alvaston
Ambergate
Amlwch
Annan
Annersley
Ards
Peninsular
Armitage
Arundel
Ashbourne
Ashby-de-la-Zouch
Barlanoch
Barnaldswick (19)
Barrowford (19)
Bath
Batley
Beccles (30)
Belper
Benllech
Billinghurst
Birstall
Blackbrook
Blackburn (19, 27)
Bodelwyddan
Bookham
Borrowash
Boston (19)
Bourne
Boxhill
Bradford-on-Avon
Breadsall
Briefield (19)
Brighthouse
Brighton
Brinsley
Brownhills (14)
Bugle
Bungay (30)
Burgess Hill
Burntwood
Bury, Lancs (19)
Bury St Edmunds (15, 19)
Buxton
Capel
Cambridge (14)
Camelford
Carmyle

Jaw Town
Iron Town
Red Devil Town
Washington
Alaska
Big 'A'
Alabama
Gas Town
Copper Town
Beezer
Kodak Town
Alpha Papa
Bag Town
The Hill
Zoo Town
Biscuit Town
Garnoch Way
Big 'S'
the Drive
Roman City
Gotham City
Eccles Cake
Oil Town
Sea Side/
Windy City
Dead Fish
Little 'B'
Black Water
Khyber Pass
White Chapel
Hawaii
Florida
Dodge City
Hereward City
Wooden Top/
Cardboard Box
Saxon Town
Priory Place
First Aid Post
Band Town
Big 'B' by the Sea
Little 'B' with a 'Y'
Coloured Hills
Trumpet Town
Bunstop
Painters City
Charcoal Town
Pudding Town
Sugar Town
Spa Town
Leopard
Cycle City
Wet Town
Wee 'C'

Cardiff (14)
Carlisle
Carluke
Castle
Donnington
Castleford
Castletown
I. of M. (13)
Castlewood
Catterick
Chelmsford (14)
Cleckheaton
Coalville
Codnor
Colchester (19) (25)
Colne (19)
Colwyn Bay (19)
Cotmanhay
Coxbench
Cranleigh
Crich
Darlaston
Deal
Deganwy
Delabole
Denby
Douglas
I. of M. (13)
Dover
Dudley (14)
Duffield
Durham (19)

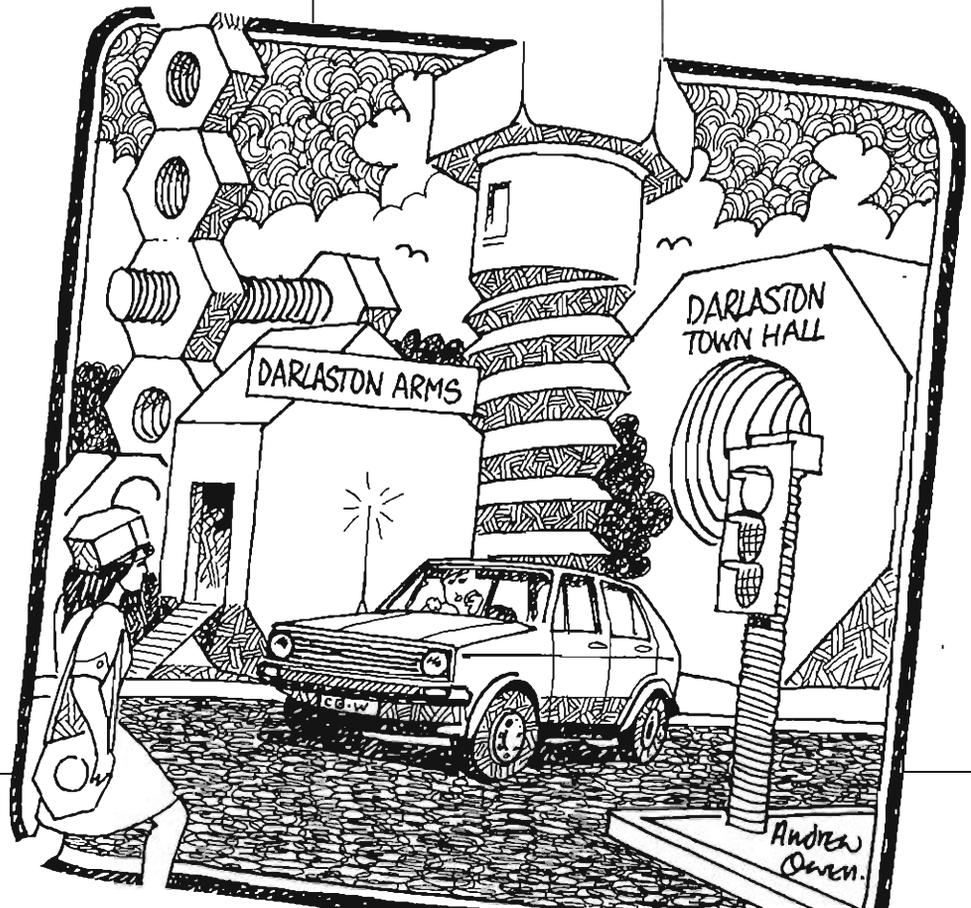
Smokey Dragon
The Big 'C'
Hen Run
Bird Town
Water Town
Bravery
Water City
Soldier City
Hazzard
Country
Crazy Town/
Gotham City
Coal Town
Clock Town
Hazzard County
Hill Town
Crufter County
Little 'C'
The Roost
Roast Lamb
Tram Town
Nuts and Bolts
Little 'D'
Sleepy Valley
Misty
Cup and Saucer
Bright Lights
Castle Town
Zoo Town
Colour Town
Cathedral City

East Grinstead
Eastwood
Edenbridge
Effingham
Elton (19 and 22)
Emley Moor
Ewell (14)
Exeter
Exmouth
Eye
Fetcham
Fowey
Frodsham
Frome
Giltbrook
Grantham (14)
Great Yarmouth (14)
Hailsham
Halesowen (14)
Halifax
Haydock
Haywards
Heath
Hazelwood
Heage
Heanor

Happy Town
Little 'E' with Wood
Bright Lights
School Town/
The Howard
Hughes
Power Town
TV Land
Deep Water
The Big 'E'
The Little 'E'
Meat Pie
Cash and Carry
Deep Water
Helter Skelter
City
Carpet Town
Gold Stream
Biscuit Town
GY
Little 'H'
Big H20
Little 'H'/
Toffee Town
Race Town
Straw MP
Topping Town
Windmill City
Windy City

Heath Hayes
Hebden Bridge
Helsby
Heysham
Hickmondwike
Higham
Hughes
Ferrers
Hill Top
Holbrook
Holmfirth
Holme
Horley
Horsley
Woodhouse
Holyhead
Holywell
Huddersfield (19)
Hull (14)
Huntington
Ilkley
Ilkeston (19)
Ironville
Isle of Man (13)
Jacksdale
Kendal
Kettering (13)
Kilburn (14)
Kimberley
Kirkby

Double 'H'
Tyke Town
Cable Town
Oil Town
Market Town
Red Metal
Space Town
Watermoor
Summer Wine
City
Black Hill
Village
Apple Tart
Little 'H'
HW
Checkout
Holy Town
Milk Town
Bridgetown
Cromwell City
Moor Town
Breaker City
Steel Town
Alcatraz
Topper Town
Mint Cake City
Big 'K'
Little 'K'
Big 'K'
Colditz



HANDLES FOR TOWNS

Kirkby-in-Ashfield	K & S	Mansfield	Stag Town	I. of M. (13)	Gulch	Salcoats	Pepper Town
Knaphill	'Sleepy Hill	Mapperley	Little 'M'	Pendlehill (19)	Moon Base	Salford	Matchstick Town
Knaresborough	Zoo Town	Marchay	Horse Town	Penmaenmawr	Alpha	Salisbury	Lighthouse City
Knottingley	Glass Town	Marlpool	Little 'M' with the Pool	Penrhyn Bay	Granite City	Sarratt	Treacle Mines
Knutsford	Crazy City		Gremlin Town	Pensarn	Little Lump	Scarborough	Candy Floss Town
		Matlock	Blackpool in the Midlands	Pentrich	Little 'P'		Heavy 'S'
Lancing	Knights Road	Matlock Bath	Rubber Town	Peterborough	Diesel City/Big 'P'	Selston	Garden Town
Langley Mill (14)	L and M		Tractor Town		Pirate Town	Shelly	Severn City
Leicester (19)	Big 'L'/Fox City	Melksham	Fruit Cake City	Penzance	Little 'P' with the 'X'	Shrewsbury (14 and 19)	
	Scots Oats	Meltham	Mexico City	Pinxton	Surf One	Shipley	Park Town
Lewes	Three Sticks	Menston	Mole Town	Polzeath	The Branks	Skipton	Castle Town
Lichfield (14)	Cathedral City	Mexbrough	Dust Bowl	Poole (15)	Tower Town	Smalley	Tiny Town
Lincoln (14) (19)		Milford	Golden Gate Bridge	Port Erin, I. of M. (13)		Smallfield	Little Meadows
Little Eaton	Little 'E'	Moorgreen		Port Gaverne	The Landing Point	Solihull (14)	Tory Town
Llandudno	Lumpy Town	Morley			Lobster Pool	Somercotes	Little 'S' with the Cotes
Llandulas	Cape Town	Mount Vernon		Port Isaac	The Potteries		Temple Town
Llanfairfechan	Crazy Kitchen			Port St. Mary, I. of M. (13)		South Normanton	
Llanrwst	Noddy Town/Little 'L'	Nelson (19)	Flag Town	Prestalyn	Pushover City	Spalding	Tulip Town
Loddon (30)	L and E	Newark	Castle Town			Spondon	Smelly 'S'
Long Eaton	Little 'L'	Newthorpe	Little 'N'	Quarndon	Little 'Q'	Stanley	Common Place
Loscoe	Little 'L'	Norwich	Canary City	Quinton (14)	Q Town	Stanton	Pipe Town
Loughborough	Little 'L'	Nuthall	Minto Town			Stockport	Box Town
Lowestoft (30)	Lt			Radcliffe	Paper Town	Storrington	Heavy Bell
Luton (14) (19)	Airport Town	Oldham	God's Acre	Ramsey, I. of M. (23)	Ship Street	Sutton-in-Ashfield	S and A
		Openwoodgate	Timber Barrier	Rawtenstall		Swanwick	Little 'S'
Manchester (19)	Rainy City	Otley	Market Town	Rhuddlan	Four Ways	Sychnant Pass	Busy Lizzie
		Oxshott	Dodge City	Riddlings	Sierra Twenty		
		Padiham (19)	Tripe City	Ripley	Little 'R'	Tadcaster	Brewery Town
		Peel,	Deadwood	Ripon	Big 'R'	Todmorden (19)	Three Valleys
					Church Town/Cathedral City	Toll Cross	Biscuit Tin
				Rothwell	Happy Valley	Trowbridge	Banger Town
				St. Andrews (19)	Golf City		
				St. Minver	Criss Cross	Underwood	Little 'U' with the Wood
						Uttoxeter	Race Town

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HANDLES

In our earlier issues of *CB World* we dared c.b. users to send us their names. Not their real names, of course, but their c.b. code names. For obvious reasons many breakers did not wish to disclose their names, but for those who did, we in turn, dared to print them. We will continue to print them. If your code name has not yet appeared it simply means that either you have not sent it or that we have some catching up to do. We have been absolutely inundated with so many names that you will have to bear with us until your name pops up. But that doesn't mean we don't want more. Please keep sending them in, print your code name and town as clearly as you can. To accommodate as many names as possible in each issue we have dropped the eyeball/copied boxes. We suggest you now underline an eyeball in red and a copy in blue. As before, the address is The Editor, *CB World*, IPC Electrical-Electronic Press Ltd., Quadrant House, Sutton, Surrey SM2 5AS.

Ace Telford, Salop
Acid Box Burton-on-Trent
Ajax Leicester
Al Capone Boston, Lincs.
Alien Bury, Lancs.
Alleycat Tadley, Hants
Ally Cat Walton, Surrey
Anchorman Oundle, N'ants
Angel Bunter Penistone Area, S. Yorks
Angel Eyes New Malden, Surrey
Animal Alford, Lincs

Animal Byfleet, Surrey
Animal Tonbridge
Baby Bonker Hersham, Surrey
Baby Duck Ewell, Surrey
Baby Face Cleckheaton
Bacardi Kingston, Surrey
Backscratcher Telford, Salop
Badger Caldicot, S. Wales
Badger Bob Hull
Bag o' Bones Penistone Area, S. Yorks
The Baker Kirkliston

Bald Eagle Kingston, Surrey
Bambi Daventry
Bambi Sheffield
Bandit One Blaenavon, Gwent
The Barman Slough
Barn Owl Truro
Baron Ardrossan
The Baron Eastwood, Notts.
Bavern Bob Glattbach, Bavaria
Bazooka Joe Farnborough
B.B. New Addington
Beachcomber Beccles
Beachcomber Loughborough
The Bean Isle of Man
Bear Tamer Henley-on-Thames
Beasty Isle of Man
Bed Bug Burton-on-Trent
Bed Pan Minehead/Taunton

Beef Burger Hersham, Surrey
The Beermat Bradford
Beethoven Willoughby
Beezer Annan
Bell Ringer Leicester
Big Boy New Brighton
Big Brother Arundel
Big Butch Blackburn, W. Lothian

Big 'D' Telford, Salop
Big Daddy Cleckheaton
Big Dipper Hersham, Surrey
Big 'E' Bristol
Big 'L' Toll Cross
Big Mama Kilmarnock
Big Man Northampton
Big 'Q' Croydon
Big Sleeper Cheltenham
Big Spender Burton-on-Trent
Big Wolly Eltham
Billy Bun Inverness
Billy Bunter Penistone Area

B.J. Livingstone
Black Angel Daventry
Black Bandit Nottingham
Blackbird Brixton, London
Black Fox Eastbourne
Black Knight Mount Vernon
Black Magic Molesey, Surrey
Black Rat Boston, Lincs
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Black Kidderminster
Scorpion
Black Top Lowestoft
Black Widow Boston, Lincs
Blitz Kid Walton, Surrey
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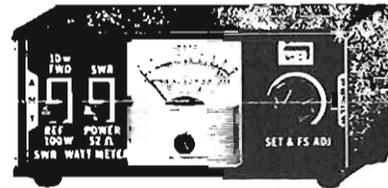
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Sad Sack	Kirkliston	Shadowfox	Llandough	Tiger Moth	Lichfield, Staffs	White	Henley-on-Thames
The Saint	Halesowen, W. Midlands	Shady Lady	Walton, Surrey	Tiger Jaz	Andover	Lightening	
The Saint	Teddington	Sheila Wheeler	Northampton	UB40	Inverness	White Witch	Alford
St.	Penistone Area, S. Yorks	The Shephard	Stirling	UKI	Telford	Wild Beauty	Southampton
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Salesman	Nottingham	Shoestring	Cambridge	Vampire	Ilkeston	Wireman	Walton, Surrey
Sandpiper	Lincoln	Shunter	Burton-on-Trent	Van Boy	Inverness	Witch FINDER	Sunbury, Surrey
Sattelite	Hampton Hill	Shunter	Penistone Area, S. Yorks	Venus	Aspley	General	
Scanla	Bloxwich	Shy Fox	Bourne End, Bucks	Venus	Telford, Salop	Witch Queen	Windlesham, Surrey
Scarlet Fever	Milton Keynes	Side Cutter	Walton, Surrey	Venus Fly	Bloxwich	The Wizard	Norton, Stourbridge
Scissor Jack	Walton	Silent Man	Walton, Surrey	Trap (V.F.T.)		The Wizzard	Carnoustie, Angus
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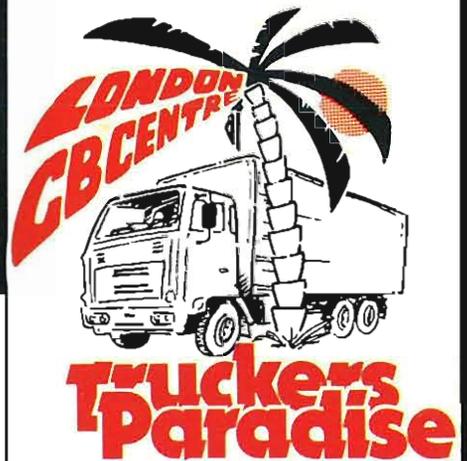
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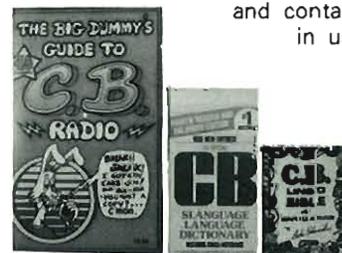
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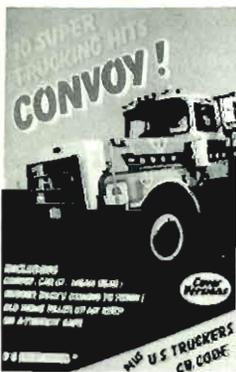
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