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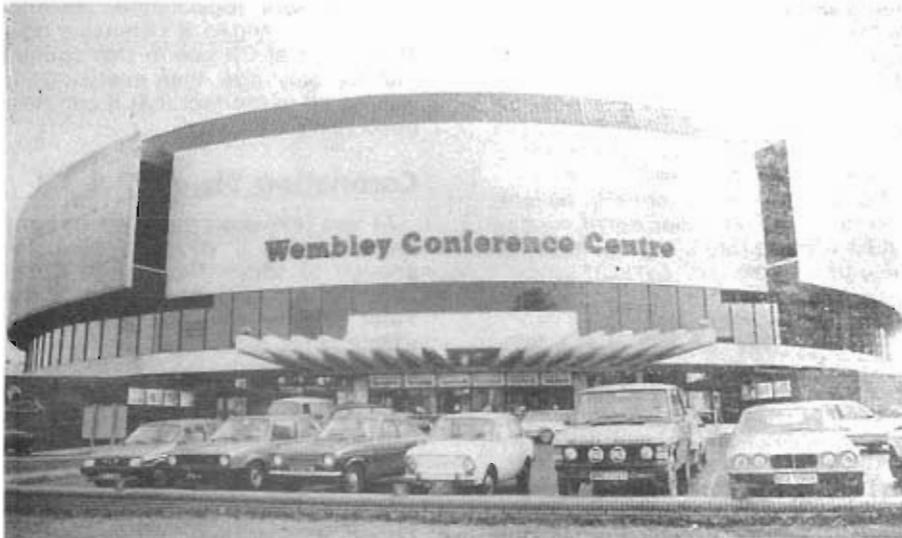
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# CB RADIO



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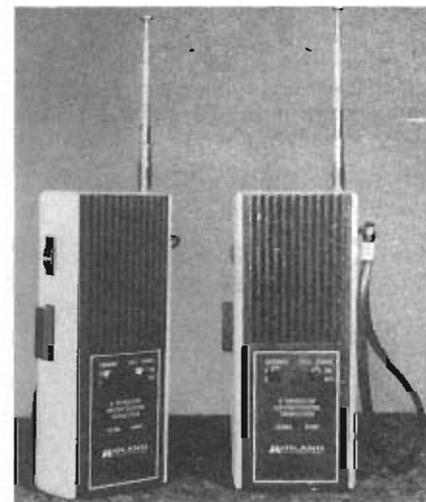


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OK, we know it's a CB show but as a little extra for the Easter weekend, there's going to be a huge, big Easter egg and some goodies each day as a prize for the craziest hat at the Show.

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# Attitudes

## The Public Face of CB

Quite a few things have happened in the last month which have given me some encouragement about the future of CB in the UK.

### The Lonely Pensioner

When reading last months News Review I was quite moved by the plight of pensioner Albert Dawson who, finding himself alone, decided to buy a CB rig and then couldn't get anybody to talk to him. I must admit that my opinion of breakers plummeted to an all time low when I read on and discovered that people were not just ignoring Albert but actively extracting the wire.

I'm under no illusion that senior citizens are the easiest people to converse with, and sometimes one needs to be pretty patient especially if a little old lady has just stabbed you in the ribs with her umbrella, run over your toes with her shopping trolley and then nicked your place in the Post Office queue. All said and done, I thought, pensioners are human and Citizens Band is Citizens Band even Senior Citizens Band at times.

My depression was lifted and my faith in breakers restored by one phone call. The phone rang in the office and on picking it up I was talking to somebody who identified himself as a new breaker. Now

Eddie Yates (Slim Jim) at an eyeball with Marion Willis (Stardust Lil) from Granada's Coronation Street. Are all eyeballs as tense as this?

normally when a new breaker phones our office he or she normally wants information on SWR'ing or which twig to buy or things related to problems. This particular call was totally different.

"I've got a rig, I've got a twig it's all working fine. Can you tell me where Albert Dawson lives because I want to talk to him on channel?"

I almost fell off my chair in delight. This unidentified caller made my day and I wish to thank him for his kind thoughts.

### CB and the Media

If you read last months and this months New Reviews and have been watching television recently you might have noticed a change in attitude by the media towards CB.

Only a matter of months ago the national papers, when they bothered covering CB, were really dredging the depths for all the bad news they could possibly find about the subject. Such headlines as "CB Rapist knocks vicar off bicycle and then starts riot", were commonplace.

Today, thank goodness, stories with titles like "Kidney boys good buddies", "Big Four to CB Radio" and "CB fans rescue 12 from drifts" are the norm. rather than the peculiar. I don't know why this change of emphasis

has taken place. Perhaps more journalists are becoming breakers or perhaps, with legalisation, editorial policy has changed. It's amazing how, after years of CB use in this country that its only now that everybody is waking up to the fact that it can be a good thing.

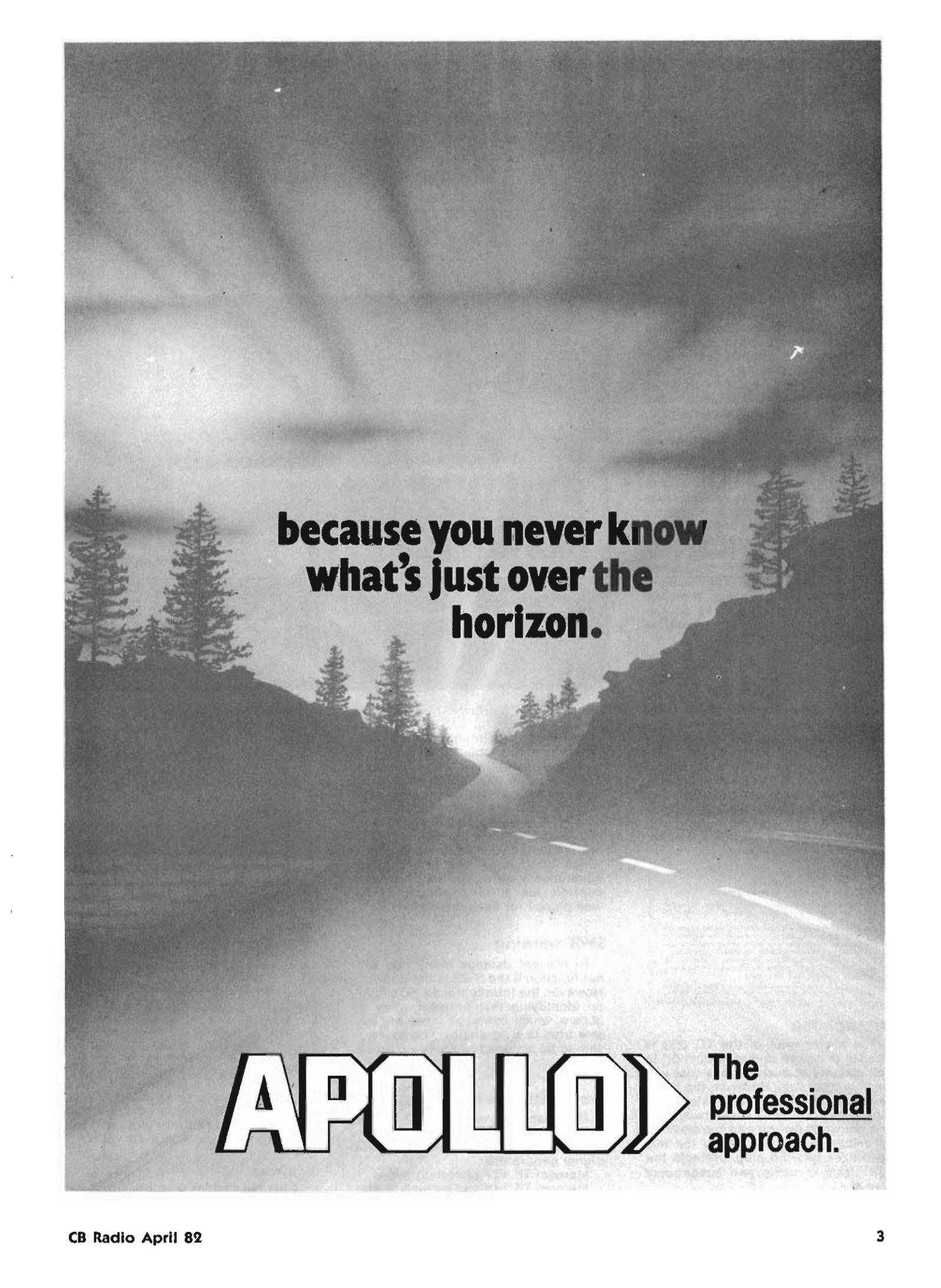
### Coronation St., OTT & CB

At last television has also become aware of CB. If you've been brave enough to watch Coronation Street recently you will have seen Eddie Yates chatting up a lady breaker on a walkie talkie. You might contend that this sort of programme doesn't exactly show CB in it's best light, but at least the TV company acknowledge the existence of one of Britains most popular hobbies. Through programmes such as Coronation Street and OTT (where rigs have been given away as prizes for the last few weeks), the general public will be informed about CB, in an everyday context, which will not only help rig sales and the industry generally but give people incentive to try it out for themselves.

The nett result of all this publicity might encourage enough new people to use CB that the Government may be faced by popular demand, to substantially increase the amount of channels available. You never know!

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horizon.**

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# Rig Test

## INTERCEPTOR TC300 40 CHANNEL 27 MHz FM IN-CAR TRANSCEIVER

### Interceptor TC 300

It's quite a pleasure to be able to write about the Interceptor at last as it's been some months since details of these rigs were first launched. Judging by the external features of this set and the test results we obtained, the Interceptor TC 300 has been worth the wait. Manufactured in Korea on behalf of Chelsea CB and an associated company, Parkingtons, the Interceptor has been on the drawing board since well before Legalsation Day.

The set has been delayed to assure that every stage of its manufacture could be monitored by Parkington's Korean office. It is fairly unusual for an intending importer to actually have offices in the Far East. Finding a reliable supplier by Telex or on a short visit to the Far East can often result in below-standard rigs being supplied. Through Parkington's offices on the spot in Seoul most problems could be eliminated prior to delivery.

### Our guarantee

CB Radio Magazine is the only publication which guarantees its rig tests to both its readers and the company supplying the rig. Our testers are a totally independent company of electronic whiz kids who have no axe to grind either in favour of or against a particular company of rig importers or manufacturers. The results and opinions we publish here are our testers' and not ours, unlike many other CB publications you might see.

#### GUARANTEE to readers and manufacturers

Any information printed as a review bearing this guarantee will have been carefully obtained and based on facts. The equipment tested will have been inspected to ensure it has not been tampered with or modified to improve its performance in any way. Any faults and/or modifications will be noted and depending on the severity reported on. Equipment for testing that was found to be seriously faulty will not be reported on and the manufacturer will be asked to supply a second item for testing.

In all instances care will be taken to avoid repetition of errors. However, if a duplicate does ever slip by, the following notice will have an update with the correct information.

### Microphone

The microphone of the TC 300 is similar in design and construction to the majority of microphones that you find on other sets. However, the Interceptor mic is of the screw-fixing type, which means it won't come away from the set when driving and the addition of a thick pvc sleeve where the mic lead fixes into the plug, protects the lead from creasing and subsequent damage.



### Construction

Externally the Interceptor TC 300 bears little resemblance to anything we have tested before. A lot of thought has gone into the design of the TC 300 and the combination of silver and black which makes up the modern fascia result in a very stylish rig. Power, signal and 'SWR warning' indicators are presented as bar formation LED's which once again are unusual but aesthetically pleasing. The four main controls are all clearly marked and well placed for easy adjustment.

### SWR warning

To prevent damage many rigs will not function if the SWR is not correct. However, the Interceptor's LED's light up identifying this problem when it occurs, which can save many expensive trips to a rig doctor. This feature should be included as standard on all rigs!

### Transmitter test

The standard equipment used for this test was:

The Racal 9081 and a Racal 9082 signal generators  
Marconi TF 42F distortion meter  
Marconi TF 340 audio power meter

Racal 9916 frequency meter  
Racal 9101 and a Bird 43 power meter  
Racal 9009 modulation meter  
Levell TG 150D audio generator  
Solartron AS 1412 power supply.

### Power output

As usual we tested the output of the Interceptor TC 300 at varying input voltages to show up the different levels which can be achieved by car batteries with varying charges. The contentious attenuation switch is something we always test even though we have yet to meet anybody who has ever used this facility.

#### Power Output and Attenuation

Atten.	10.8v	13.2v	14.5v
High	0.4W	3.6W	4.0W
Low	0.007W	0.3W	0.5W

As you can see, transmitter output power with a voltage input of 10.8v is rather low. This is by no means a serious problem when you consider that the average car battery (not new) will normally push out about 13 volts.

### Frequency

Channel spacing was measured and

found to be 10KHz, which is 100% accurate. The TC 300 is on frequency to Home Office specifications and our temperature stability tests showed up very little difference in the transmitter's performance.

Temperature Stability		
Temp.	CH1	CH40
48°F (cold morning)	27.60159	27.99159
68°F (room temp.)	27.60148	27.99148

### Modulation

The test for modulation is designed to pinpoint the way in which particular sets (in this case the Interceptor TC 300) reproduce the human voice. For this test the peak deviation is measured via an audio tone fed into the microphone connections.

The following figures indicate that good speech reproduction can be expected from the TC 300.

Modulation			
Input Level	Input Frequency		
	500Hz	1125Hz	2500Hz
0.5mV	0.70KHz	0.55KHz	0.20KHz
1.0mV	1.10KHz	1.10KHz	0.40KHz
2.0mV	1.50KHz	1.30KHz	0.80KHz
50mV	1.80KHz	1.35KHz	1.10KHz
200mV	1.90KHz	1.40KHz	1.20KHz

### Receiver test

#### Audio output

Measuring into an 8-ohm load powered at 13.2v with a 1KHz signal being fed in is how we test for distortion. The manufacturer's expectations of power output for this set are 2 watts with 10% distortion maximum which we proved on test. We did manage to get another 0.5 watt out of the TC 300 but this really isn't needed.

Measured Distortion	
1.5 watts	5% distortion
2.1 watts	10% distortion
2.6 watts (max)	23% distortion

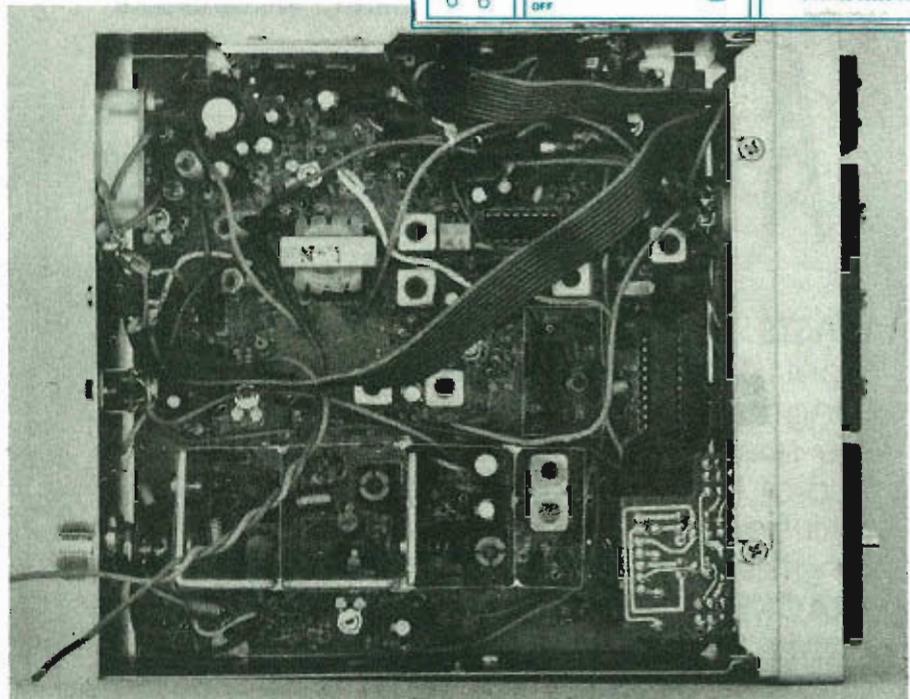
#### Squelch level

Threshold - 0.12uV.  
Fully muted - 0.19uV.

Similar in performance to the DNT M40, which we reviewed last month, the TC 300 squelch control doesn't offer much variability. When the RF gain control is utilised, however, the squelch range can be improved. As we pointed out last month, a low variability can be seen as either an advantage or disadvantage depending on your individual requirements.

#### Receiver sensitivity

Sensitivity	
10dB quieting	0.24uV
20dB quieting	0.61uV
30dB quieting	1.40uV

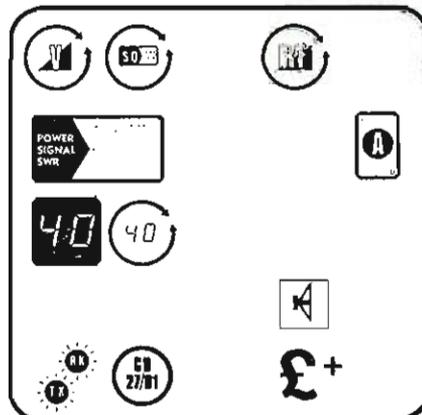


The Interceptor's receiver falls well within the expected sensitivity requirements for an FM rig or in other words the results achieved were good.

#### AM rejection

A result of 32dB was measured on the TC 300 by feeding a fully-limited FM signal (10uV) into the receiver, this is artificially modulated with a 1KHz tone (1.5KHz deviation). At this stage the receiver's audio output is noted. Then the modulation is changed from FM to AM but with 30% modulation. Now the audio output is measured again and a figure relative to rejection is obtained.

The TC 300 again managed to give a good result, although once more one must understand that the rejection is normally of signals that are exactly on frequency, not AM signals that are off frequency - they would give a different result.



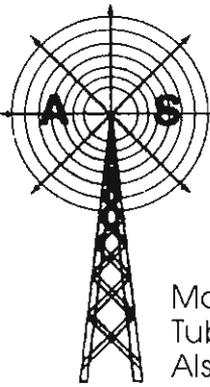
#### Adjacent channel rejection

Obtaining a relative indication of rejection by feeding two signals into the set, one on channel 19 the other on 20, the output of one generator can be gradually increased until the receiver starts to hear a deteriorating unwanted signal of exactly 3dB. This is readable on the generator's output and gives good indication as to the set's capability. 81uV for 3dB is the reading for the TC 300 and once more this figure is considered to be good.

### Summary

Not only a good looker but a good performer. The SWR protection indicator and the cleanness of design and construction on the TC 300 make it a good purchase at the £70-£80 being asked for it.

Manufacturer's Specifications	
<b>General specifications</b>	
Frequency coverage	27.60125 to 27.99125MHz in 40.10KHz channels
Power source	13.2V negative earth only
Frequency tolerance	±1.5KHz
Operating temperature	-10°C to +55°C
<b>Receiver specifications</b>	
Sensitivity	0.6 microvolts for 20dB quieting
Audio power output	2.0W at 10% THD into 8 ohms
<b>Transmitter specifications</b>	
Power output	4 watts
FM deviation	2.5KHz
Spurious emissions	Less than 0.25 micro watts overall



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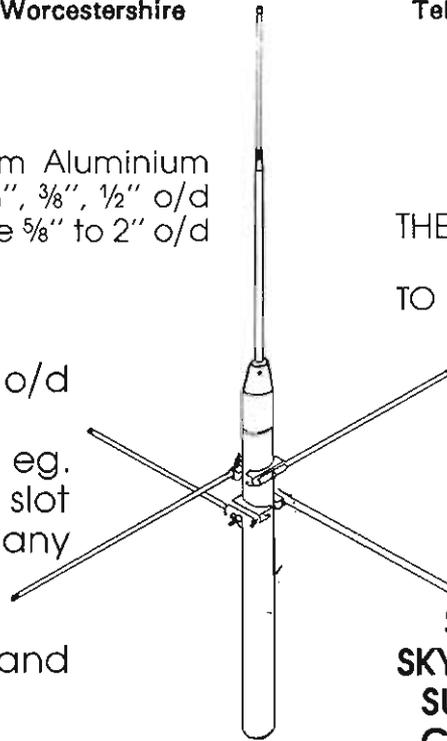
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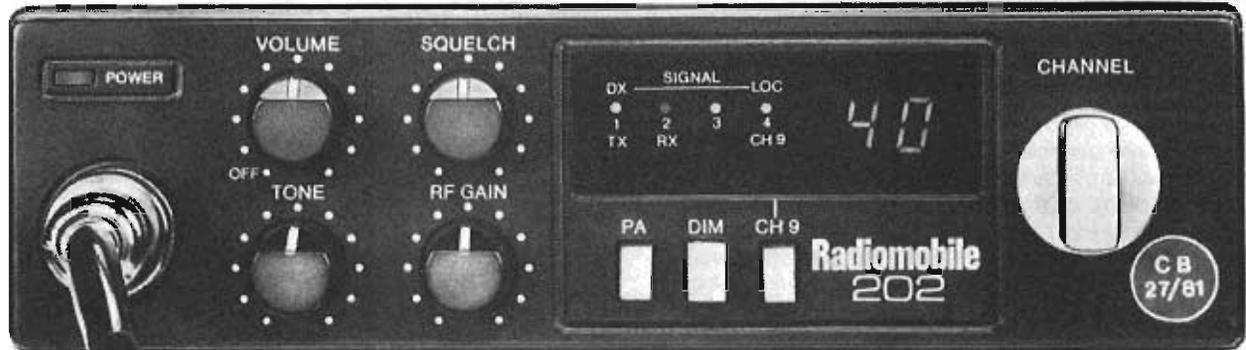
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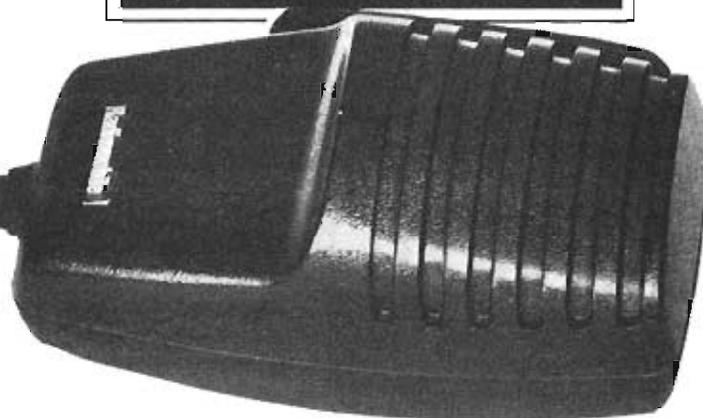
They'll probably mention the squelch tone, the RF gain and LED channel read out. And they may go on about the 4 digit LED S/Rf power meter and the transmit, receive and power-on indicators all with dimmer control.

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# PRACTICAL ANTENNAS

## Part 2 – Indoor Antennas by F. C. Judd

As many have no doubt discovered, some Council authorities will not give permission for the erection of outside rooftop or mast-mounted antennas of any description, however inconspicuous they might be. Flat dwellers, too, could be faced with a similar problem, although in this case it may be possible to use a wall-mounted outside antenna as will be shown later.

Enclosing an antenna within four walls, or a loft space, does not impair performance too greatly, although both transmitted and received signals are attenuated. Operation is still possible over reasonably acceptable distances. The greatest attenuation would be due to concrete walls reinforced with steel mesh as often used in the construction of multiple-storey blocks of flats.

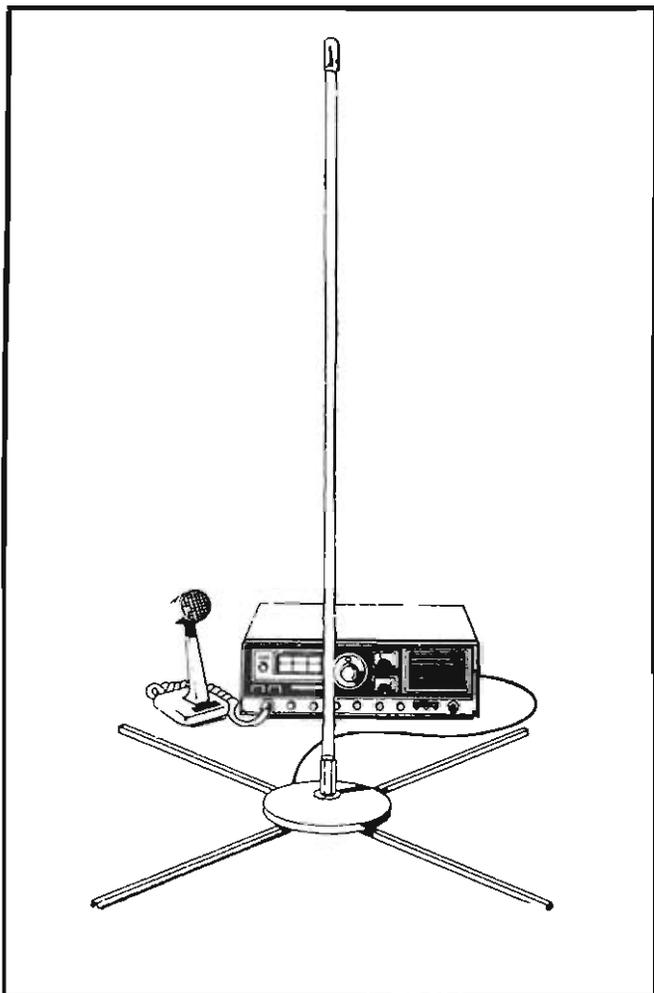


Fig. 1  
A portable indoor antenna, the Firesnik Macho for 27MHz (see text).

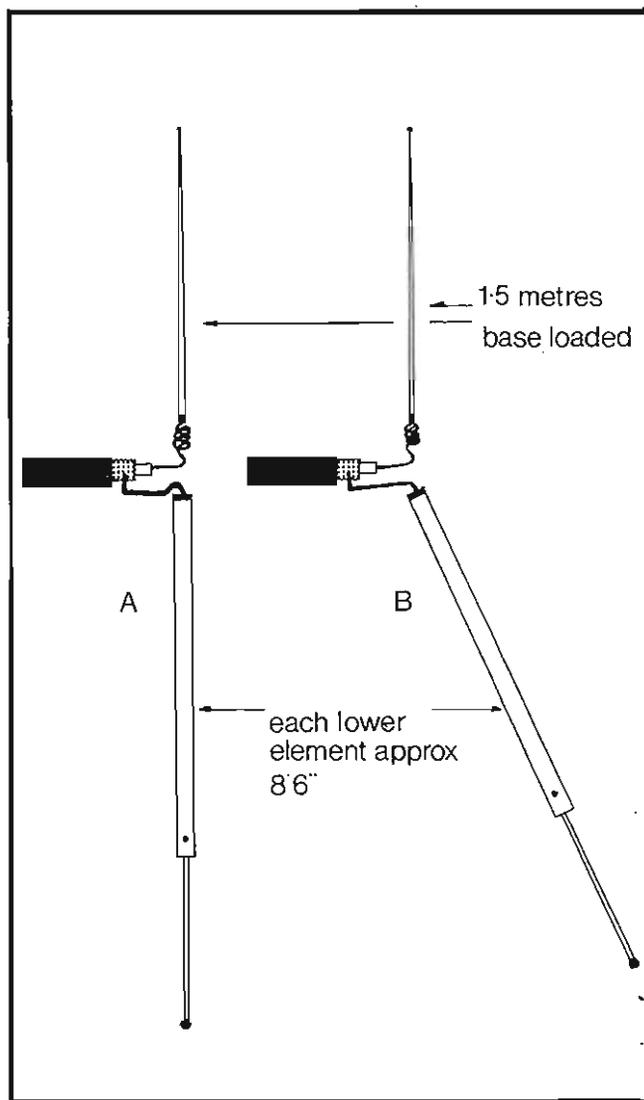


Fig. 2  
(A) Arrangement with a single 'ground-plane' but which makes this configuration a true dipole even if the lower element is slanted as shown (B) (see text).

Whether an antenna is used indoors or outdoors, height is the important factor. In a bungalow there is only the loft space giving a height above ground of around 8-10ft. In a two or three-storey house there is the loft space or, if this is not accessible, an upstairs room or landing space might be utilised giving a height above ground of between say 10 and 30ft. The remaining problem is the affect of electrical wiring and metal waterpipes which can be offset by siting the antenna as far from these as possible.

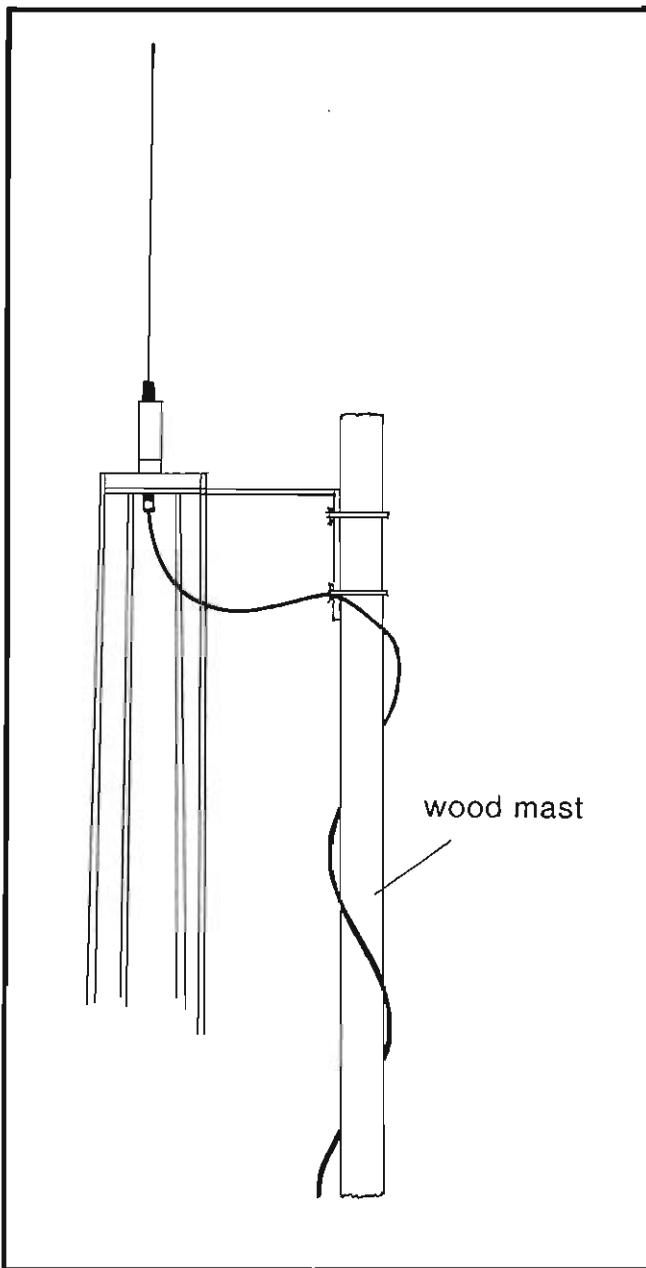


Fig. 3  
If the four radials of a normal ground-plane are folded down parallel to each other the antenna does in effect become a dipole.

### Choice of antenna

One possibility is, of course, a ready-made indoor antenna, complete with radials that also function as a floor stand. The 'Firestik Macho', shown in fig. 1, is typical of this type but since the radiating section is helically wound it may not be considered legal according to the UK CB licence. Such an antenna would otherwise be suitable for use in an upstairs room and probably capable of quite good results. Antennas that operate on this basis have in fact been made by using a standard 1.5-metre base-loaded antenna in conjunction with four helically-wound mobile antennas these being used purely as resonant groundplanes, a configuration that would, of course, be perfectly legal although a little expensive and difficult to construct.

One of the special features of a ground-plane type antenna is that the ground-plane elements should be as near resonance as possible and at 27MHz this means a physical length of about 8ft. 6ins. for each

radial and which, electrically, is a quarter-wavelength. It is possible to produce a hybrid antenna consisting of a 1.5-metre base-loaded antenna in conjunction with a single 8ft. 6ins. element which is used vertical, or near vertical as shown in fig. 2(a). This simply makes the whole system a half-wave dipole with one portion inductively loaded and therefore tuned to a quarter-wavelength, the other half being a natural quarter-wave of full physical length. According to the Home Office such an arrangement is not legal even if the lower quarter-wave section is set at some angle between fully vertical and horizontal as in fig. 2(b). Such an antenna would, of course, operate with reasonable efficiency and could be accommodated in a loft (space permitting) or mounted on a wall bracket outside. This could be a suitable antenna for flat dwellers.

This does raise an interesting point, however. When does an extension of the Home Office-specified antenna actually become a ground-plane? After all, the radials of a ground-plane are an 'electrical' part of the whole antenna whatever their length or number. For example, if you take a four-radial

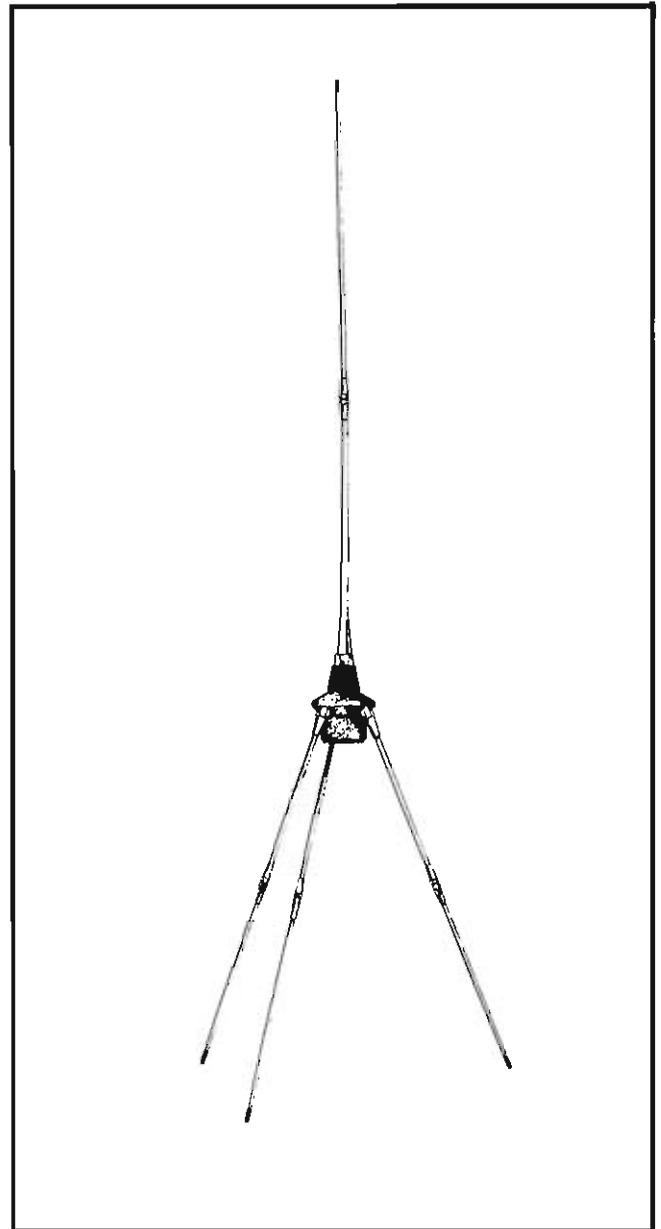


Fig. 4  
Base station ground-plane antennas often have the radials folded down part way to improve radiation at right angles to the antenna.

# PRACTICAL ANTENNAS

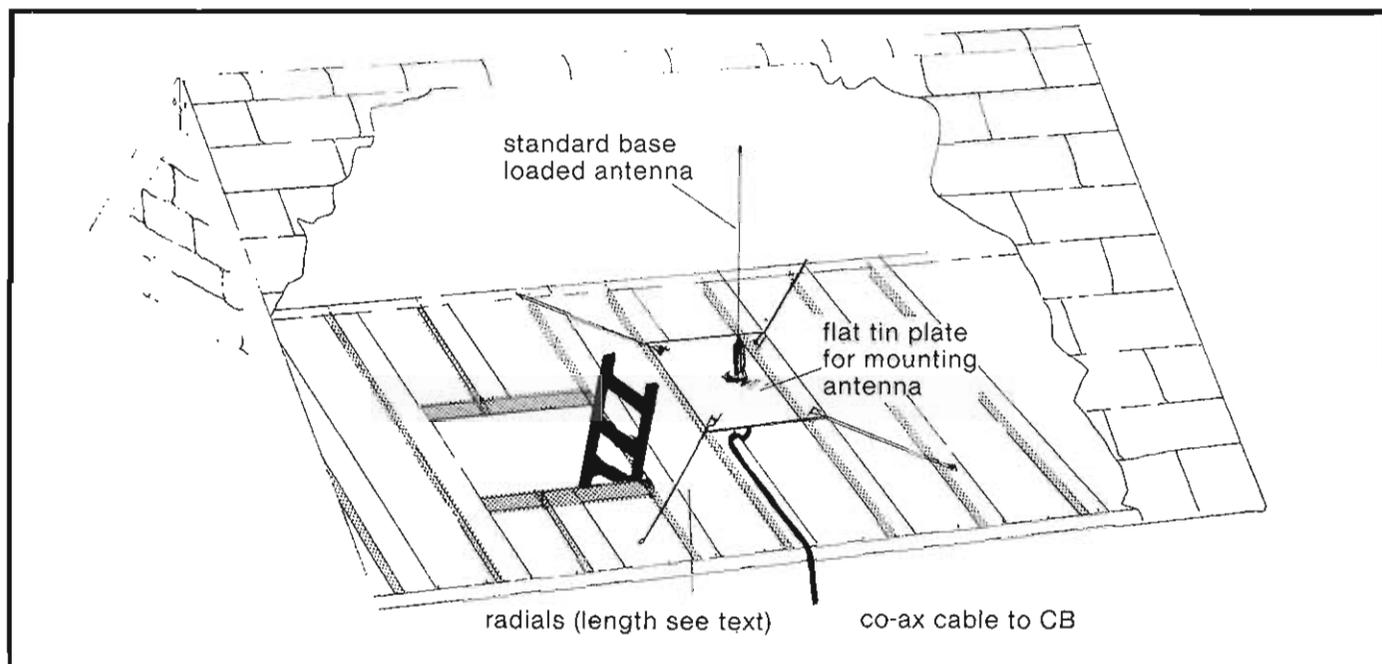


Fig. 5  
Arrangement for a loft antenna using a standard 1.5-metre base-loaded antenna with a four-radial ground-plane system (see also fig. 6).

ground-plane system and fold the radials down in line with the antenna as in fig. 3 you have in effect formed a dipole. In fact ground-plane radials are often folded down in order to achieve better radiation at lower angles. This is done on the GP27 (not legal) shown in fig. 4. A British-made base antenna called the 'Stingray' which recently appeared on the

market employs a similar arrangement but this has a small radial capacity hat at the top of the radiating element to facilitate adjustment of VSWR. Such an antenna could be accommodated in a loft where the roof peak is high enough.

## Some practical arrangements

First let's consider an arrangement for a loft antenna using a standard 1.5-metre base-loaded

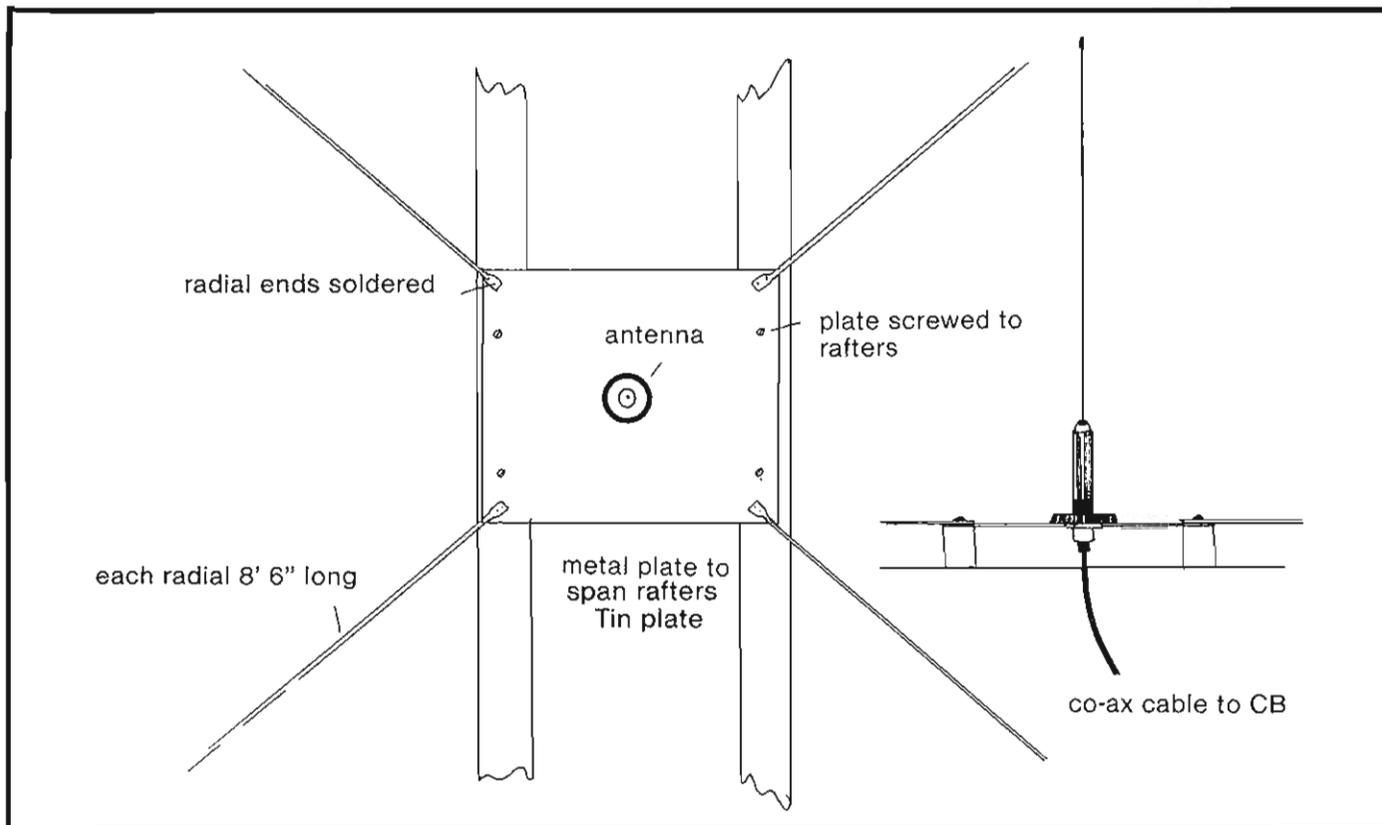


Fig. 6  
Further detail concerned with the loft ground-plane arrangement shown in fig. 5.

and HO-approved antenna such as a Half Breed, K40, Whiplash or one of the ASP range. The illustration fig. 5 gives a good idea of siting the antenna in a clear space in an attic. The antenna is mounted on a sheet of tinplate and the four wire radials are attached to this by soldering. If possible each radial should be 8ft. 6ins. long but may be a little shorter if space is limited. The diagram in fig. 6 gives more detail concerned with mounting the plate and antenna and the angles of the radials from the base. The antenna is adjusted for optimum VSWR in the normal way.

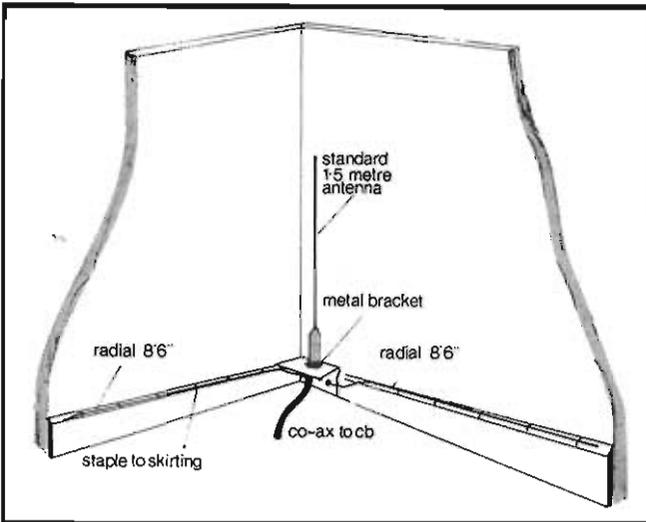


Fig. 7  
Wall corner arrangement using a standard 1.5-metre base-loaded antenna with two ground-plane radials (see also fig. 8).

### A corner antenna arrangement

This may be quite suitable for a room above ground level, as in a block of flats, or a two- or three-storey house. Again a standard 1.5-metre base-loaded antenna is used and this is mounted on a

small tinplate bracket as shown in fig. 7 and to which two radials, each 8ft. 6ins. long, are soldered. The radials, which may be solid copper wire, or insulated stranded wire, are stapled to the skirting board and run out at right angles to the base of the antenna. More detail concerned with the antenna mounting bracket is shown in fig. 8. Avoid using a corner

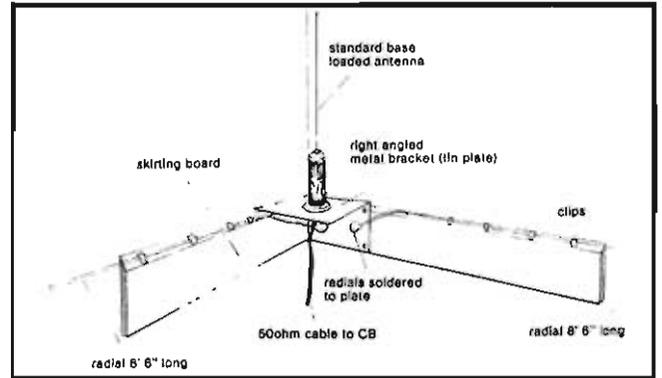


Fig. 8  
Further detail concerned with the wall corner antenna arrangement as in fig. 7.

where metal waterpipes or electrical wiring may be hidden and which could affect the performance of the antenna.

### For flat dwellers

If you live above a first or second floor, a fairly inconspicuous antenna arrangement could be set up as shown in fig. 9. The antenna has two radials, preferably 8ft. 6ins. long and to be self-supporting should be made from aluminium tube of about half-inch diameter. Shorter radials could be used but then much will depend on whether the VSWR could be adjusted down to an acceptable level.

The platform should be extended sufficiently so that the antenna is about 18ins. out from the wall or window.

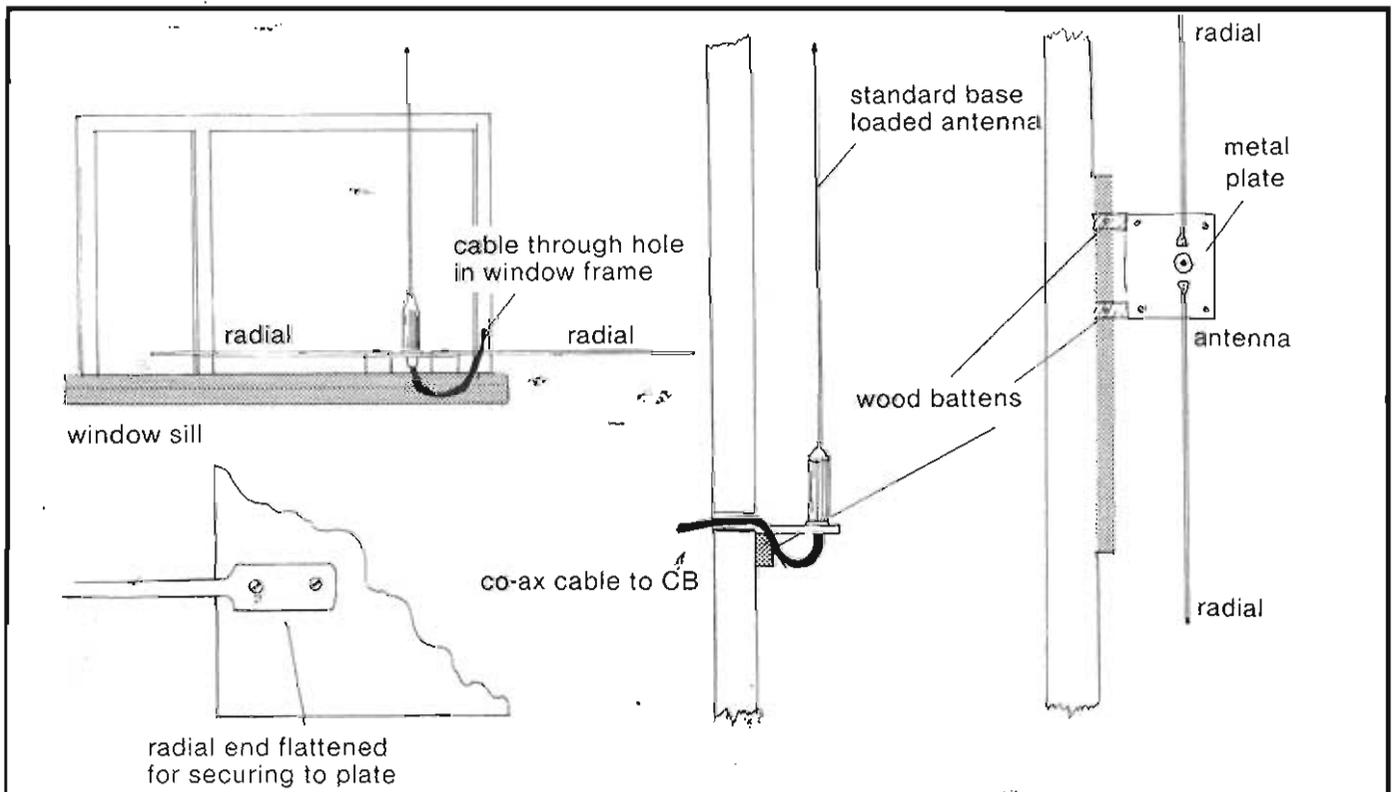


Fig. 9  
Arrangement using a standard 1.5-metre base-loaded antenna with two radials mounted on a platform attached to a window ledge.

# CHiPs & CB



## Does CB play a practical role in helping the Californian Highway Patrol

Last month we looked at how the CHiPs operate and the general attitude of the American law enforcement agencies with respect to motoring. Having seen the frankness with which serving officers were allowed to communicate with the press and discovered the frequency, range and type of radio equipment employed by the motorcycle division of the California Highway Patrol (42-46MHz, 25 watts with 50 to 55 miles range, made by Motorola and employing either Firestik or Shakespeare antennas) I was now interested in discovering their attitude to CB and if it had in the past played a vital role and/or if it still did. For those members of REACT reading, or their supporters, there may be a few comments made by the officers, as their proven opinion, which may either send your blood boiling or perhaps help to prevent similar comments from British police officers.

### Only a drunk driver

Whilst Californian police officers may choose to stop a motorist tailgating, yet ignore a vehicle without a number plate and no wings, one thing they are really hot on, apart from speeding, is drinking and driving. To this end the CHP has launched various campaigns to prevent the public, or rather dissuade them, from committing the offence.

The restrictions against drinking and driving are very severe - legislation even covers carrying alcohol in the vehicle.

In Britain similar campaigns have been launched and most Britains are familiar with the "Don't ask a man to drink and drive" slogan, followed by the recent series this year and last, pointing out some of the after effects of losing your licence.

"California has had enough" is understood in much the same way by its residents, so much so that it has now been abbreviated to one word 'Enough!' But back to the point; one or two of the officers I spoke to at the Central Communications Control, when asked about CB and if it had ever helped said, "Only to catch drunken drivers". Evidently the American CB'er, as has often happened in Britain, will announce a 10-55 with its location, destination and description. Consequently on a few occasions police officers with a CB installed were able to apprehend the offender.

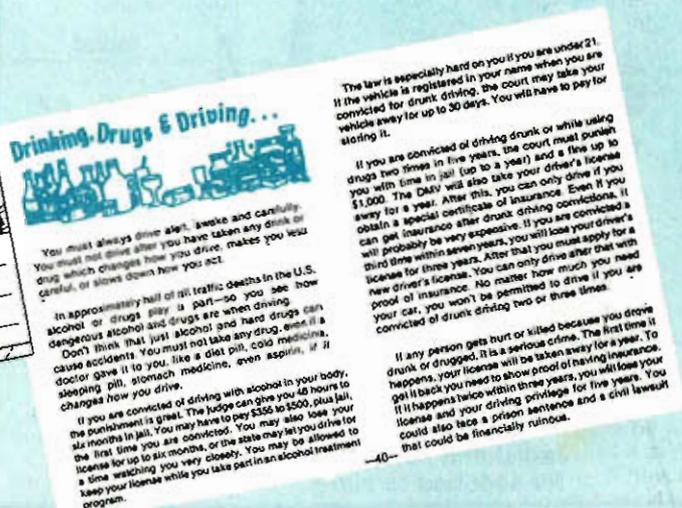
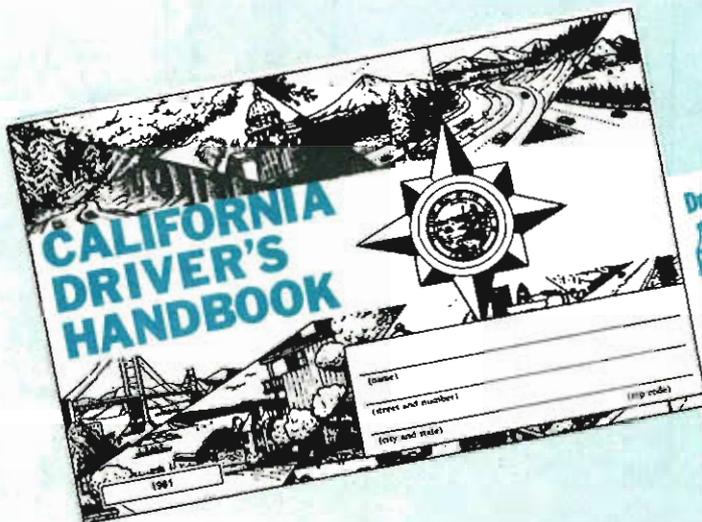
### Police installed CB's

Even at the height of the American CB craze out of the 1500 patrol cars the LAPD had at their command only 250 had state purchased and installed CB sets. Most of these vehicles were in the outlying areas, for as is the American way everything the police force does is very strictly evaluated for cost effectiveness. Quite simply they found that in Los Angeles itself the

close proximity of law enforcement stations made it totally counterproductive to monitor or use CB. Add to this another Americanism of a public telephone on practically every street corner and hardly any households without a phone, plus as discussed last month a computerised central despatch station controlling the whole of LA county. Then one can understand that in contrast to Britain's vandalised few-and-far between call boxes, America had no need for yet another form of communication. That is not to say that CB was not appreciated - it was just not monitored by the police departments in LA Central.

Thus only 250 patrol cars had transceivers operating on 27MHz installed, their use was covered by a blanket licence that allowed any officer of the CHP to utilise a CB set. During those early days most of the officers found CB to be an extension of their communications ability and it was soon realised that an officer could not take an active role at an accident. But if enroute, or monitoring the public conversations, he could ensure that false reports or unwise advice were not transmitted and acted upon. In accidents CB soon became a useful tool for keeping the CB'ing public away from the scene and thus avoiding further traffic congestion.

However police officers were to



realise that whilst as trained officers they could relate their exact position correctly and understandably, few if any members of the public could.'

## False reports

Perhaps as members of the public armed with a CB and the intent to do something useful, over enthusiasm becomes the enemy. For in many reported accidents received in America via the airwaves there was actually no accident, but merely two motorists arguing and an over enthusiastic CB'er present who made the report. Indeed this has happened in Britain on more than one occasion - a CB'er has called for assistance unnecessarily. To the extent that in some areas prior to legalisation hospitals receiving a call reported by a CB'er, either felt sceptical or simply awaited confirmation by someone other than a CB'er.



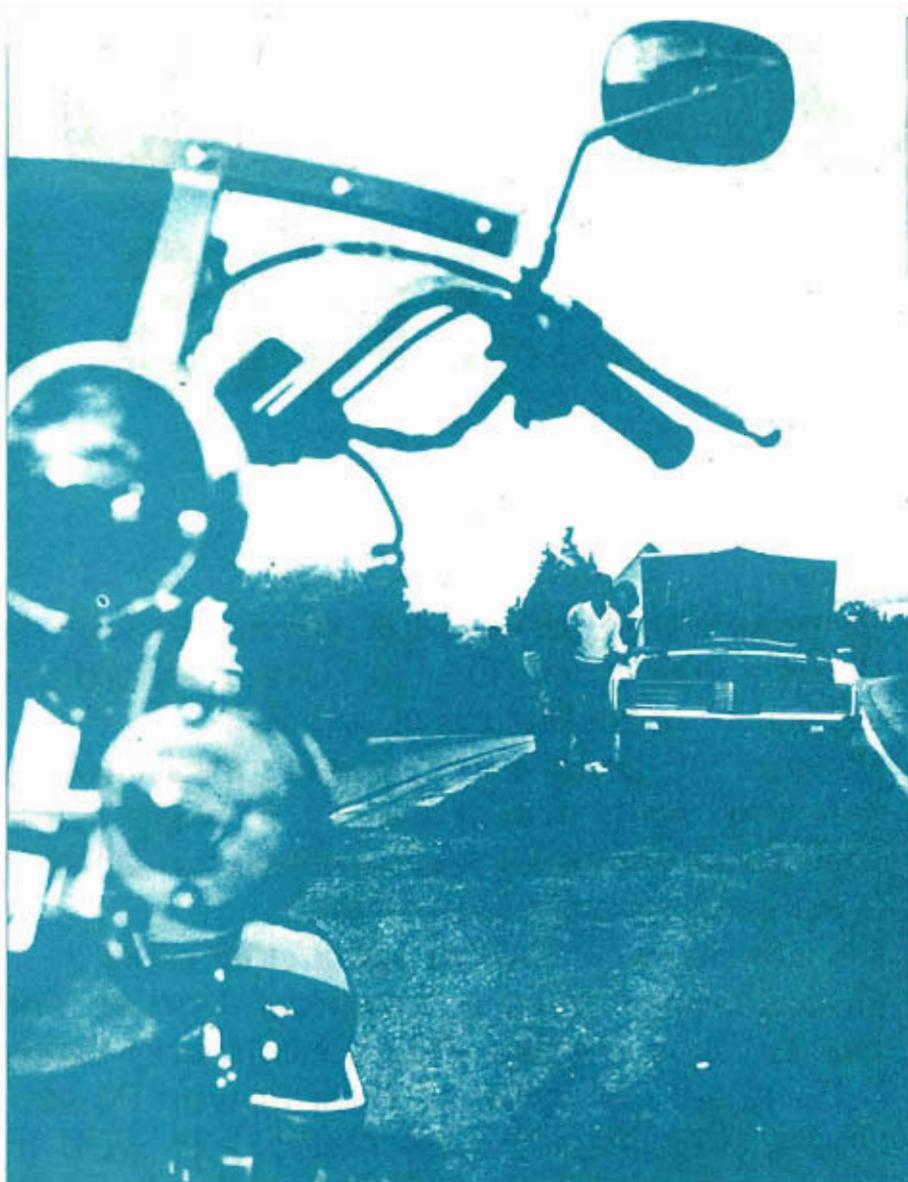
The problem with this is obvious whilst there may be a few over enthusiastic reports made, sooner or later a call put out over the CB could save a life, if it was not ignored. However the quantity of false reports received in California was so high that the CHP have their own little slogan that is attached to reports from REACT . . . 'If a call comes in from REACT - don't react'.

As was stated at the outset of this article many React supporters will not appreciate the officers opinions, some may even think our publishing the American opinion of a well meaning organisation in such a bad light irresponsible. But the fact remains that false reports are often given to the emergency monitor and regardless of his good intention, he or she has little or no way of substantiating the report.

## Disposed of CB's

With the increasing use of high power and the high volume of CB users those state owned vehicles with transceivers fitted started to find their effectiveness reduced. Quite simply the amount of users on one channel and the irresponsible idiots that plague some areas made most officers leave the set switched off. So whilst CB had helped on many occasions the sheer number of users was becoming counter productive.

Thus all the state owned sets were removed from the police vehicles and sold. Now if an officer wishes to use a CB to aid him or as an accessory, he must purchase it and apply for his own



licence, the latter is no real hardship as the American CB licence is free of charge.

Of course the problem with the disposing of all the sets is one which will no doubt appear in Britain at a later date. When CB was first latched onto as a craze in America, there was an exceptionally high volume of users. Most of which used the airwaves as a novelty communication, by this I mean talking purely for talkings sake. Thus a lot of people with nothing in particular to say but determined to prove that their sets worked, made the channels unusable for anything other than irrelevant speech. However, nowadays this childish attitude to CB has died with the craze and decent sensible conversations can be held for long periods of time, without the tweety - whisper - what's your rig - what's your twig - bye bye I am gone - one four for a naked lady, brigade.

Now in California CB could really help the stranded motorist and the police vehicle, unfortunately the stigma of the "craze days" still remains. Thus whilst sensible people now use the air, the police no longer have sets, apart from the odd die-hard enthusiast.

In the outer regions of LA many of

these die hard officers still use sets, but they often find colleagues taking the mick when they relate occasions when CB has aided them.

As in Britain most of their joking pokes fun at the lingo, yet in America now most users of a rig use plain speech and on the whole most of the lingo enthusiasts are truckers. Let's fact it, they invented it, so it's their right not to give it up.

Perhaps one could say that CB in the states has almost gone full circle, from just truckers and enthusiasts, to overcrowded frequencies, to just truckers and enthusiasts...

Next month in our look at America and CB it is the trucker we intend to concentrate on, unlike previous reports by some magazines this will not be lavish full colour photos designed to fill the page. But a report aimed at the British truck driver which we hope he will find of interest...And on that note...British truck drivers may like to comment, or send in information for a spot the Cotswold Truckers Club have suggested, they and their members feel that CB and the professional driver is ignored....

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# CB for the community

## Colham Green Adult Training Centre

Colham Green ATC is situated in the London borough of Hillingdon and occupies new purpose designed premises. It caters for approx. 170 mentally handicapped adults and has 30 plus staff to deal with a wide range of disabilities and capabilities. Although one of the largest such centres in the country it is typical of the compassionate but institutional care provided by the Welfare State.

The centre, although offering care and a release for parents, also tries to teach more able trainees some basic skills and in fact local businesses utilise the centre for packing and collating. This work helps improve co-ordination and pays a small weekly wage which is important to the self respect of the trainees involved. The other important aspect of this light industrial work is that it involves the centre in the community and gives outside contact with people other than the centre's staff.

This lies at the centre of the staffs concern. Although well trained and caring people they cannot provide the variety of experiences and social contact that help the trainees develop social skills and widen their limited scope. Although the staff take the more able swimming and horse riding it is very labour intensive - for example for one handicapped adult to ride it really needs 2 supervisory staff to ride either side and one to lead the horse.

Bob Goghan, retired police officer and engineer, is an instructor at the Adult Training Centre and has been interested in CB since his police days. Looking for another subject to interest his group in his own hobby of CB suggested itself and Bob obtained the managers permission to erect an aerial and to try CB as an experiment.

When I visited the centre Bob had been operating the scheme for only a few weeks but by the time you read this almost two months will have gone by. Bob has a small group of about six trainees using his equipment and has so far had great success, CB has provided a great incentive to improve speech and co-ordination. The effort involved in pushing the PTT button and speaking, then letting go of the button to listen seems minimal to an able breaker but for a mentally handicapped person it requires great concentration and co-ordination. It also encourages speech clarity and has helped develop a more active

conversation - rather than 'yes' or 'no' answers.

The Alpha Tango Charlie Club, as it has christened itself is regularly on channel each day between 11am - 12 noon and now has an established group of people to talk to. Because of the time of day many of these are housewives, shift workers and the unemployed who have the time and patience to spend with the ATC group. They are very sympathetic to the Alpha Tango Charlie breakers and realise their limitations without being patronising or offensive. Although there is an established group of contacts Bob and his group will speak to any breaker in the area willing to chat to them.

Apart from the benefits to the individual at ATC CB is also having unexpected results. Society as a whole shrinks back from the mentally handicapped, afraid of their own reactions to the severely disabled. But CB is beginning to break down the barriers even if only in a local sense and helping ATC's club members, like Black Cat, Brown Sugar, Fozy Bear, Long John, Blondie and Big Julie to become socially acceptable. The centre is also receiving a lot more visitors - local breakers who are just calling in to say 'hello'. The staff are hoping that this will continue and that people may become voluntary helpers and assist with activities both inside and outside the centre.

One of the members of staff mentioned to me that the public opinion of the mentally handicapped

is as '5th class citizens - people who don't matter. The more people who see the handicapped as they are and help them become a better part of the community the better.

I came away from Colham Green ATC with one particular thing sticking out in my mind - the look of delight and pleasure on the faces of the trainees as they talked and joked with the other breakers on channel. I talked to two local lady breakers who regularly speak to the Alpha Tango Charlie group, Kay and Yvonne (better known as Cleopatra and Dietician). Both say they enjoy their conversation and that they have never heard adverse or unpleasant comments from other breakers about the ATC group. They have also visited the centre and hope to go again.

It's nice to be able to write about a positive side of CB, as once again the press reports have not been favourable on breakers and their activities. This is one of the aspects of CB that will grow with continued use and is surely what CB is all about.

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The centre is using Bob Goghan's personal equipment, which is not very suitable for the job as you can see from the photo. If local CB clubs are looking for a cause to help then the ATC is in need of more suitable equipment particularly a legal home base antenna. The centre would also love to see some visitors especially those prepared to help with activities.

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# The Forgotten Frequency

## 934MHz – the future of CB?

In the past, like most people concerned with the way citizens' band radio was to go, we were very dubious of the Government's original proposals for the 'Open Channel' system in the 900MHz region. In fact, we published in the October 1980 issue an article by Rick Vincent, President of the Firestick Antenna Corporation, where Rick expressed his doubts about the efficiency and safety of this Ultra High Frequency. Rick's opinion was that to have any effective range a lot of power would be needed and that this large amount of power could prove unsafe.

We can only believe the Government's assurances that there are no health hazards associated with 934MHz – and to give them their due, I cannot credit that the authorities would permit the use of something that causes damage to the population even at the risk of losing face.

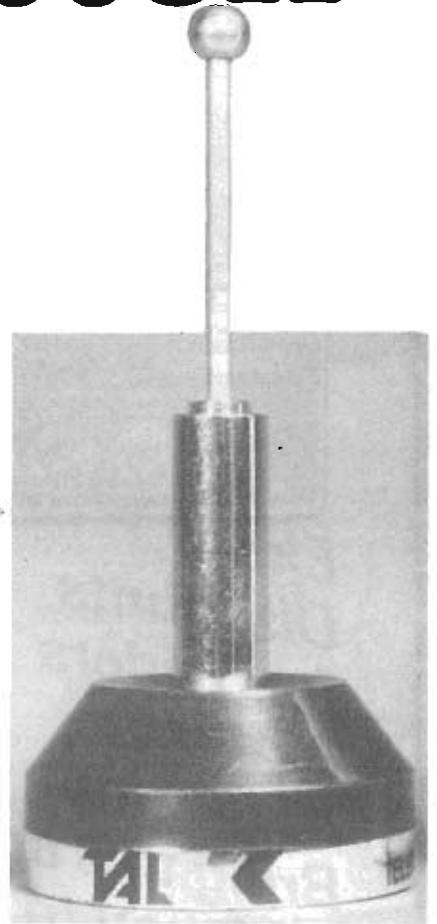
But just why did the Government choose 928MHz in the beginning and go on to include 934MHz in their final decision? One factor influencing the decision must have been the consideration by other countries of the 900MHz region as a suitable CB frequency. The USA, Australia and CEPT (the European Conference on Post and Telecommunications) have all investigated the use of 900MHz and there are definite international moves to adopt a UHF CB system.

Another unkind suggestion is that the Government were obliged to legislate for 934MHz to save face after the original suggestion was met with such derision. However, it appears that at

least some of the derision was unjustified, as the original claim of lack of distance, expensive equipment, etc., have not been proved. Fred Judd, our technical adviser, has pointed out the advantages of 934MHz several times in his series of articles 'Antennas and Transmissions on CB Frequencies' and tests using the amount of power permitted show a range of up to four miles in urban areas – something that would be difficult to better with 27MHz CB.

Many people are beginning to look to 934MHz as an alternative to the accepted CB system (either AM or FM) currently in use. When you consider that 934 will be free from skip, DX'ers, hi banders, etc., and channels will be less crowded it becomes an attractive proposition. The possibility of repeater stations to extend the range also needs to be explored and is quite likely if the Government are impressed with the sensible use of the frequency.

This expected 'sensible use' is the major point of attraction for the people hoping to use the system. Because it will not be as prone to the preconceptions of 27MHz its likely that the codes and slang will not be popular although since the Government has made no provisions for call signs it is not immediately obvious how people will address each other! We already have details of a new club, part of the Alpha Whiskey One Club, called the 934 Group, who will be entirely devoted to the higher frequency. They are expecting 934 to be superior to the 'over-used and abused'



Almost to scale — a 934MHz antenna

27MHz band and hope to be welcoming the mobile businessman to their ranks.

The other main 'plus' of the system, which featured strongly in the Government's considerations, is the lack of interference to other users of the radio spectrum. This has always been the stumbling block for 27MHz and I would not be surprised if the Government were to actively encourage the use of 934MHz and that they would eventually like to phase out 27MHz.

So all this aside – where are the sets? This has been the biggest problem of all. Few companies have been prepared to risk the development time and research costs for an almost new technology. After a few false starts, Reftec hope to have sets available by the time you are reading this. They hope the sets will retail at about £200 (including a matched and tuned aerial). At the moment I know of no other sets 'in the pipeline'. The cost doesn't appear to be prohibitive, as the 27MHz market has shown that people are prepared to pay for what they want.

So will 934 be the CB of the future? There are indications that this may be the case. It would, in any case, take many years for 27MHz to die out but in the long term the superior technical capabilities of UHF may win the day.

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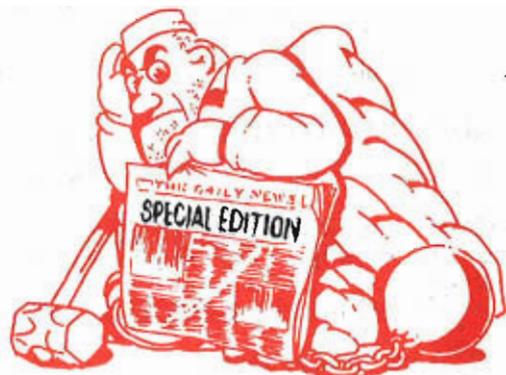
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# NEWS REVIEW



## Charity events still predominate the headlines

The benefits of CB radio to disabled and handicapped people have already been covered in this and many other publications, CB-related or otherwise. Nevertheless it is still reassuring to find that CB clubs and associations from all over the country are still devoting a vast amount of their time to the raising of money for charities and hospital funds. This community spirit is absolutely essential if CB is to work for the good of the public in general.

An item that has been a direct result of our recent severe weather conditions is that Devon County Council are to adopt the use of CB radio as a method of improving staff communications and to help cope with future emergency situations. It will be of great interest to see if any other local authorities follow their lead.

## Western Morning News Council to save on CB

Despite fears by senior council members, Mid Devon District Council will use CB radio to improve communications between staff. The council's committee in control of finance and management decided unanimously that the substantial savings made by using CB rather than radio telephone equipment outweighed the disadvantages. The council's District Engineer estimated that it would cost £2,850 to install a CB system as opposed to £24,000 to install a radio telephone system. The council's Chief Executive said the management team of officers supported the use of CB radio but were concerned by its lack of confidentiality. He said that staff using CB would, in effect, be performing in public. Errors or careless remarks could

result in bad publicity which would be totally unjust. In reply, the District Engineer said that any operator could be asked to use the nearest telephone if confidentiality was required.

## Sunday Mercury Cowboys jam CB

CB enthusiasts who run an emergency network for long-distance lorry drivers, say that cowboys are deliberately jamming the system. As you are well aware, under the Home Office's code of practice for legal CB, channel 19 is for the use of lorry drivers who want to find out or pass on vital information about crashes, road conditions and calls for help. John Gurnhill and his wife, Edina, run a monitoring service and pass on vital information from their home in Castle Vale, Birmingham. They said that the cowboys are trying everything to stop drivers using channel 19.

## Western Mail Jaws II calling from hospital

Whilst most CB enthusiasts are mobile, 44-year-old Mike Moses is immobilised in hospital. Mike's enthusiasm for CB radio is so great that doctors have allowed his CB radio equipment to be installed beside his bed. Doctors think that the radio will be therapeutic for Mike, who has a severe chest condition. Now lorry drivers have been talking to Mike as they pass through Brecon. A hospital spokesman said that Mr. Moses has been very ill. "When he asked to have CB radio installed beside his bed we decided that it could be a great tonic for him."

## Western Daily Press Brothers go to aid of six hurt in crash

Brothers James, William and John Clark went to the rescue of six people who were injured in a collision on the A39 near Street, Somerset. They were returning home after a tobogganing expedition when they came across the wrecked cars, one with a family of four trapped inside. The three boys, aged 14, 11 and eight, used their hand-held CB radio to raise the alarm and call the emergency services. When the police arrived in their Land-Rover they could not get their two-way radio to work and relied on the three brothers to pass on messages with their CB radio. The brothers, Earth Mover, Big Bun and Hazelnut, also helped to look after the injured until the two ambulances could get through to take them to hospital. All the victims were said to be recovering from their injuries and were expected to be going home soon.

## Daily Mirror CB boost for the kids' unit

Britain's CB radio fans are being urged to send cash to help a medical unit credited with saving 30 young lives a year. The appeal to help the London University unit is being launched by lorry driver Tom Burnell. He wants to boost the £40,000 promised by the National Medical Research Fund to save the unit. Government cuts were threatening its work on the treatment of vitamin B12 deficiency in children. Tom, who is backed by a Harrogate CB club, will be making his

## 'BREAKERS' CAN HELP OUT IN EMERGENCIES

DEVON County Council plans to join the CB network as part of a four-point plan to cope with future emergencies such as the recent blizzards. The council, which is buying a number of CB sets, believes the network has an important role to play in emergencies.

In addition to the CB plans the council is to encourage more self-help in local communities and is to produce an emergency pamphlet giving details of who householders can contact in emergencies.

It will also consider buying a mini-computer

## County tunes in to CB network

to store information at the county's emergency control room in Exeter.

Details of the plans were revealed at yesterday's meeting of the public protection committee in Exeter.

County emergency officer Mr. John Basson praised the "excellent response" from

voluntary organisations during the two emergencies in December and January. "No praise can be too high for what they did for us," he said. He felt they had to try to push as hard as they could to get communities to look inwards to themselves to give initial self help.

Mr. Basson suggested the production of a

county emergency pamphlet giving a clear picture to householders of who to go to in an emergency — who they could contact for example if drains became blocked and water started to pour into their homes.

Mr. Basson said they were looking into the possibility of coming in on the CB network. There were thousands of CB users and it was felt the network was one way of improving links.

Committee chairman Mr. Roy Stanbury, who also paid tribute to emergency services and voluntary organisations, was concerned about the BBC transmitter failure which had cut the service to North Devon.

He said people in North Devon could not really find out what was going on and he felt that the BBC should be asked to try to ensure that the transmitter could continue operating.

appeals as he travels up and down the country in his lorry. He will urge other CB'ers to contribute and pass the message on.

## Glasgow Herald

### Salmon poachers switch on to CB radio

The Scottish Fisheries Protection Fleet may have to be equipped with CB radio sets to combat inshore salmon poaching.

The poachers, who operate mainly in the lucrative Tweed fisheries area, are using CB on a large scale and posing new problems to the Department of Fisheries. Fishermen close to shore, using gill or drift nets — both illegal in Scottish waters but legal a few miles away in English waters — maintained radio contact with each other and with fishing vessels farther out to sea, giving them an effective early warning against the approach of Protection vessels. Scottish Minister Lord Mansfield said that CB is readily available in radio shops and that these fishermen have not been slow to adopt it. It is particularly suitable for small boats and carries well over water. Equipping our vessels with CB radio is something we must consider.

## Manchester Evening News

### Heart patient's 850-mile walk

Heart patient Greg Graham is stepping out for charity. The 34-year-old disc jockey and CB enthusiast from North Yorkshire hopes to raise £10,000 for heart monitoring equipment by walking the 850 miles from Lands End to John o' Groat's. Greg suffers from an inflammatory heart complaint and hopes to raise the money for East Riding General Hospital. Along the way he is collecting signatures for a petition to legalise the use of AM CB equipment.

## Wiltshire Times & News

### Breakers join hunt for handbag snatch

A call for help after a late-night handbag snatch in Westbury brought

an enthusiastic response from local CB'ers. Less than two hours after the incident, outside the Town Hall, the grateful lady was once again in possession of her handbag.

Once local breakers received the call for help, they speedily rallied around to search for the missing bag keeping in touch by using their CB radios. The woman, whose identity has not been released, said that she did not know what she would have done if it hadn't been for CB radio.

## Daily Telegraph

### Paint poured on car after CB insult

A CB radio user poured grey paint over a Pontiac car after its owner, whose call sign is Judge, called the labourer's fiancée a 'slag' and a 'bucket mouth' over the air. Mark Moffat, 18, of Harford Street, Stepney, confronted Mr. Eric Parish in Duckett Street, Stepney and threw paint over his car rather than use violence.

Mr. Moffat admitted causing criminal damage and was fined £25 and ordered to pay £430.10 compensation by Thames magistrates.

## Western Daily Mail

### Kidney boy Mark goes on the air

Mark Gardiner, aged 13, is now at home after two months in hospital following a kidney transplant. He spent his first day at home thanking his friends on his CB radio. The set was given to Mark by Gloucestershire breakers as a Christmas present but he hadn't seen the set until he came home. Mark was given a new kidney after having suffered with renal problems since he was a baby. Mark has received hundreds of cards from people impressed by his bravery after his kidneys were removed in July last year, after which he has been kept alive by a machine.

Mark's parents, Mr. and Mrs. Ivor Gardiner, said that they are grateful for all the help they have received and that the most important thing they have learned is that everyone should carry kidney donor cards. Mark would still be very ill if it wasn't for a donor.



□ Newly-equipped CB enthusiast James Gordon (second left) at his home with Mr David Richards of Woolworths, Tom Thompson, chairman of the Northern Ireland Breakers' Association, Mr Wallace McCarty-Busby, vice-chairman of the NI Breakers' Group and Patrick Clarke, the "breakers' public relations officer.

## Kindness puts blind breaker back on air

By Louis Malcolm

A BLIND CB radio enthusiast in Belfast is back on the airwaves, chatting up old friends and making many new ones.

For 65-year-old James Gordon, of Tennent Street, who was silenced by the law on September 16 for operating the equipment without a licence is back in business due to the generosity of a News Letter reader.

Yesterday James was beaming as he tuned in on the gift set. He said: "Now I can live up to my name, which is 'CB Charmboy.'"

### Frustrating

Since being put off the air "Charmboy" had to content himself with listening to ordinary radio transmissions, but that wasn't the same.

He said: "Often I had the impulse to say something back to the announcer or compeer of a show and it was frustrating just having to sit there and keep on listening. What a pleasant change it is again to have the opportunity of getting quite a few words in edgeways!"

James, who has been blind since early manhood when as an apprentice jockey he took a heavy tumble, never let the disability "throw" him and his sense of humour, and doggerel odes are still features of his CB chat shows.

He said: "My output now will be restricted to a radius of between three and six miles and I will miss talking to some of my old 'sweethearts,' especially one in Sweden and one in Paris. But sure there are plenty more charmers in Belfast."

To provide James with his new equipment, the News Letter's Samaritan reader gave a cheque for £100.

At the weekend, James was picked up by CB fans in a token motor cavalcade from Newtownards to Carrickfergus as part of their campaign to have the AM wavelength made legal. They were protesting against the Government decision last November to restrict them to FM.

It was James's use of AM four months ago that put him over and out.

# Salmon poachers switch on to CB radio

By JAMES FREEMAN  
THE Scottish fisheries protection fleet may have to be equipped with Citizens' Band radio sets to combat inshore salmon poachers who are using the newly-legal air waves to by-pass conventional radio frequencies.  
The poachers, particularly those operating in the lucrative Tweed fisheries area, are using CB on a large scale and posing a new problem for the Scottish Office Department of Fisheries.  
Lord Mansfield, Scottish Office Fisheries Minister, drew attention to the latest development in a speech to

the Institute of Fisheries Management study conference at Stirling University at the weekend and said afterwards that his department was looking at ways to combat it.

Fishermen close to shore, using gill or drift nets — both illegal in Scottish waters, but legal a few miles away in English waters — maintained radio contact with each other and with fishing vessels farther out at sea, giving them an effective early warning system against the approach of protection vessels, he said.

"CB is legal and readily available in radio shops and these fishermen have

not been slow to adopt it. It is particularly suitable for their small boats and it has the advantage of carrying well over water. There are also over 40 frequencies which they can use.

"Equipping our vessels with CB monitoring sets and with CB itself is something which we will have to think about."

Lord Mansfield emphasised once again the importance of the fight against salmon poaching. Paying tribute to the bailiffs of the district fishery boards, the police and the protection service, he added: "It is a

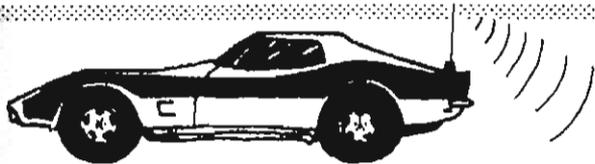
difficult and often thankless task, but their efforts form an important part of the chain of action designed to conserve salmon stocks for the future."

He was disappointed at the response to proposals two years ago on the review of present legislation and administration of salmon and freshwater fisheries. He did, however, "welcome the lead taken more recently by certain of the salmon interests to try to put together a common approach."

The Government had now to consider whether the balance of argument lay in continuing to pursue

what some people might regard as the ideal structure — the Government's proposed new area boards, with responsibility for both salmon and freshwater fish — in the face of what was strong opposition or apathy.

He made no reference to the growing tide of opinion, expressed increasingly in the specialised angling press, against the refusal of commercial netting interests to recognise the damage to stocks caused by unrestrained netting of vast salmon shoals trapped in Scottish estuaries each summer by low water flows.



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# Readers Write

Dear Sirs,

In response to the letter from Sam (Radio London 404) in your March 82 issue, I just had to put pen to paper.

It states in the letter that under Articles 30-36 of The Treaty of Rome the AM channels are legal and the FM aren't. Maybe Sam would like to tell us where he got his information from.

The European Parliament Information Office in London was kind enough to send me a copy of those Articles (30-36) and, as you can see, they have nothing to do with CB. I have checked with the European Parliament Information Office, the copies enclosed are the only Articles 30-36 in The Treaty of Rome.

Keep up the good work with a great mag.

Owl DX178 (A. Hopland)

## CHAPTER III HEALTH AND SAFETY Article 30

Basic standards shall be laid down within the Community for the protection of the health of workers and the general public against the dangers arising from ionizing radiations.

The expression "basic standards" means:

(a) maximum permissible doses compatible with adequate safety;

(b) maximum permissible levels of exposure and contamination;

(c) the fundamental principles governing the health surveillance of workers.

### Article 31

The basic standards shall be worked out by the Commission after it has obtained the opinion of a group of persons appointed by the Scientific and Technical Committee from among scientific experts, and in particular public health experts, in the Member States. The Commission shall obtain the opinion of the Economic and Social Committee on these basic standards.

After consulting the Assembly the Council shall, on a proposal from the Commission, which shall forward to it the opinions obtained from these Committees, establish the basic standards; the Council shall act by a qualified majority.

### Article 32

At the request of the Commission or of a Member State, the basic standards may be revised or supplemented in accordance with the procedure laid down in Article 31.

The Commission shall examine any request made by a Member State.

### Article 33

Each Member State shall lay down the appropriate provisions, whether by legislation, regulation or administrative action, to ensure compliance with the basic standards which have been established and shall take the necessary measures with regard to teaching, education and vocational training.

The Commission shall make appropriate recommendations for harmonising the provisions applicable in this field in the Member States.

To this end, the Member States shall communicate to the Commission the provisions applicable at the date of entry into force of this Treaty and any subsequent draft provisions of the same kind.

Any recommendations the Commission may wish to issue with regard to such draft provisions shall be made within three months of the date on which such draft provisions are communicated.

### Article 34

Any Member State in whose territories particularly dangerous experiments are to take place shall take additional health and safety measures, on which it shall first obtain the opinion of the Commission.

The assent of the Commission shall be required where the effects of such experiments are liable to affect the territories of other Member States.

### Article 35

Each Member State shall establish the facilities necessary to carry out continuous monitoring of

the level of radioactivity in the air, water and soil and to ensure compliance with the basic standards.

The Commission shall have the right of access to such facilities; it may verify their operation and efficiency.

### Article 36

The appropriate authorities shall periodically communicate information on the checks referred to in Article 35 to the Commission so that it is kept informed of the level of radioactivity to which the public is exposed

Dear Sirs,

At last! It arrived today, my prize for winning January's competition. A nice, shiny new DNT CB rig for the price of a stamp. It's marvellous; especially since it's the first competition I've won.

What's more, I read the news of my win on the morning of my birthday, which really made my day. This letter is to say 'Thanks' to everyone at CB Radio Magazine and that your publication is certainly the best around.

Thanks again,

Paul J. Hollway  
Sutton Coldfield

Dear CB Radio,

Although I am only 13, I have been on channel since I was 11 and know that a lot of kids are idiots on the air and I only wish more experienced breakers would give them a chance.

I talk to a lot of adults when they come on CB and I sometimes think they're a little rough but I don't call them wallies and idiots. I help them out and do my little piece. Whether I am on AM, FM or SSB, people are always telling me to keep the junior breakers under control, which I think is wrong. All they need is to be put right in the first place and then they're OK.

So, older breakers, give the kids a chance, don't have a go at them.

Also, all DX'ers, please can you put "Don't use channel 68 hi" on your QSL's to the Italians and Americans. I always do just to keep them off the 14.

Just to finish, I think the Government should think again because legal FM channels are in the middle of the 11-metre band DX channels and there is no stopping a 2000W Italian station over the 14.

Bye for now,

Rob (DX 73TC116)  
Harpenden

Dear James,

During my several years as a CB'er, I think I have been involved enough to have known this mode of communication in all its aspects and I think I know the good and bad which can come from it.

Being a long-distance HGV driver, I have found its use of great value and along my travels I have made innumerable good friends including the notorious Chris Hodgson, or our old mate, Charlie Hotel.

Anyway, I think an experience of mine may be of interest to readers.

At about 1.30am on Monday 8 January, I was driving my firm's artic in the Bayswater Road, London when an unfortunate mechanical mishap brought me to a halt. Sizing up the situation, I reckoned I could get myself out of trouble with the aid of a short piece of rope or strong string.

Having no such item about my person, I hit on the idea of asking a local breaker for assistance.

After all, I had 40 channels of FM to go at and so I thought someone would probably come up with something.

Even at this hour the CB was busy with breakers on most channels and I was confident that I would soon be surrounded by eager helpers.

I shouted on channel 14, "Ten thirty-three, I need assistance please". To my amazement, I was ignored. Anyway, after about 10 minutes a kind gent told me, "Shut up, you ——".

I then, having spotted other trucks in the area, proceeded to send the same message on 19.

On channel 19 were two charming gentlemen with cockney accents who immediately told me, "—— off".

In desperation, I called on channel 9 but all I could get out of that was what sounded like a couple having a domestic row.

I can remember a few years back when there were a number of good and sensible breakers in the Big Smokey Town but now, perhaps, the morons rule. I hope not.

Anyway, I did finally get going with the aid of a piece of electrical flex which I found in the gutter and the combined use of my leather belt.

I sometimes wonder why we did all the marching, campaigning and pestering of MP's when these mindless cretins, the like of whom I encountered on that morning, can rule the airwaves.

Yours truly,

Roast Beef (Ted Morris)  
Worcester

*If you read the rest of the readers' comments, it would appear that you are not alone. Perhaps FM will become the moron frequency, with AM being more respectable. Maybe the Government's FM decision to set illegal AM against legal FM will backfire - Ed.*

Dear Sirs,

Having just read CB Radio Volume 2 Issue 20 dated February 1982, I have found a letter from Papa Bravo going on about things like "Having experience of breakers jamming channel 14 on his rig".

I have been on AM for over two years and I think quite frankly that Papa Bravo is talking out of the lowest part of his anatomy. Quite obviously it is clear that the offender is not worthy

*continued over*



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# CB RADIO

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- ★ The chance to win a UK 27MHz FM rig.
- ★ Information on the 1982 CB Show.
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# Readers Write

of being called a breaker as he is only getting the real breakers a bad name and as for reporting breakers, well! If he has been on the AM for 'a year' as he says, will he also report all of his 'good buddies' he has on the AM?

I am not surprised he is being jammed and also saying things like "I won't hesitate to report interference in my area", he has got to be asking for trouble from AM breakers.

CB is a nationwide chatter box. Do not forget, Papa Bravo, AM or FM. Cheers!

We gone.

The Rat  
(Surrey)

Dear Sir,

With reference to Papa Bravo's (Peter Braybrooke) letter in February 82's edition, he says that if people wish to DX, become a licenced amateur. I started to take the RAE course at my local Tech but packed it up because I got fed up with it. Who the hell wants to know about every last piece of solder inside a radio? I would like to see more time spent on better operation than theory. The RAE Board seems to base its courses and exams on the old days when nearly every operator built their own rig but in these days of chips and transistors if your radio breaks down you take it to a rig doctor. After all, the equipment required to do repairs these days costs more than a rig. We're not all electronic geniuses, so some of us would require a qualified rig doctor. I would like to become Amateur but bring standards up to the 1980's, not the 1890's, first.

I've been a breaker for 21 months now, six months on AM and 15 months on SSB. I'm a very keen DX'er and talk all over the world from my mobile and don't cause any interference that I know of and I don't consider myself irresponsible. I went on marches and demos for AM and SSB not FM and as for those former AM breakers who six months ago said "FM, never! We'll fight for AM and SSB till the end" - where are they now?

Some of us are still fighting but the others have chickened out and are now on FM saying AM and SSB are rubbish. To them I say, "Remember, had it not been for AM they would not have their noisy and inefficient FM now". To my fellow DX'ers and AM stations I say "Keep fighting for what is legal nearly all over the world and certainly is the best". We'll win in the end. Why should we be different? Keep up the good work with the mag, it certainly is the best.

Jolly Roger 40  
Cheltenham

Dear Sir,

Whether you'll actually print the great mass of what's coming is a matter for your own judgement but I'd like to get it out of my system anyway!

Firstly, AM versus FM. For goodness sake, breakers, don't fight with each other. Fight the Home Office instead. As long as we are divided in ANY way at all, the HO wins, make no mistake about that. If we keep the pressure on, we'll get an AM service.

The decision to put CB on FM is, in my book, very much a political decision in many ways. I may be kidding myself and politicians will deny it, of course, but I am personally convinced that FM was chosen because the Government doesn't want a breaker in London to organise any kind of devilment with fellow breakers in Glasgow, with all the breakers in between listening and opting to go along with it. There can be no other logical explanation, when one considers the great number of AM frequencies that ARE available, quite contrary to what the Home Office says. Many of these frequencies are military ones, such as the famous 'Lancaster bomber' but they are NOT in use and, what is more, are most unlikely to be put to any use. The Home Office are getting away with this, basically, because the average Briton is an extremely tolerant type - grumbles to his mates but not to his MP.

The Secretary of State for the Home Department stated that 40 channels are sufficient and are in no way overcrowded and that 40 channels represent the highest number allocated anywhere in the world on 27. What he overlooked was the fact that we are the only twits ON 27FM! Of course, they are overcrowded in the London area but what would this desk-driving, pen-pushing, non-productive, tea-drinking, totally inexperienced berk know about that. It's an even bet that he wouldn't even know what a rig LOOKED like, let alone anything else.

Finally, the cost of all the gear. We are being well and truly ripped off as a fraternity. I spent quite a few years running my own hi-fi company, so I think I can claim reasonable electronic knowledge. When I look at the inside of many sets, it's immediately obvious that someone, somewhere, is making one hell of a mark up. I recently bought a well-known hand-held 40 and had a look inside. I'd paid £79.50 for it but after careful study and making generous mark-up allowance all the way from factory to shop, I simply couldn't find more than £35 at absolutely top weight! The one in my wrapper retails around £98 - I simply can't calculate more than £50. We keep hearing the legends that 'prices are falling'. Oh yeah, so you tell me where and when. The CB world is being conned absolutely rotten. The same thing applies throughout CB, on mikes, twigs, accessories and all the garbage.

Whew! Well, I've wanted to say it and now I have. It would be interesting to see other people's comments.

Very sincerely, Admiral

Dear CBR,

I wonder if any of your readers or technical staff would be able to assist me with a problem that I am sure is shared by a surprising number of others.

How can a rig be modified so that it may be operated by a blind person?

You don't need me to tell you what a Godsend CB can be for the handicapped generally but the blind can benefit perhaps more than others, as so much of their input is audio and they often long to just talk to new people without making a big deal out of the whole thing.

However, there are problems in that currently a blind person cannot operate a standard rig unaided without great difficulty and/or embarrassment.

The first and obvious problem is finding the channel. Braille dots stuck outside the selector are not so good as the steps are too small.

Would it be possible to produce cheaply a device that would emit a one-second tone burst on an ascending scale on every fifth channel? This way eight channels could be readily identified and a simple count of two or three either way would do it. A simple buzz or beep to indicate 14 and 9 would be an added luxury.

A second and not so serious problem is the signal meter. To have to answer the question "How many pounds am I hitting you?" with the obvious explanation can produce an embarrassed silence, followed by an empty channel, if one is really unlucky.

Would it be possible to add to the above channel indicating goody, a continuously variable tone (or rising click rate, like a geiger counter) linked to the signal meter and made audible to the user on the press of a 'read' button?

If someone could come up with an answer, I am sure the RNIB and/or Electronic Aids for the Blind could have the circuit made up and the good news circulated. Clearly, fairly complex fitting instructions will be involved but I would be surprised if any good rig dealer could not cope. (Perhaps a manufacturer will be interested in supplying a ready-modified rig, as the potential market must amount to several thousand).

I know the International Year of the Disabled is over but the blind are still blind and breakers are still very helpful people in my experience.

Yours,

Tango (Peter Taylor)  
pp The Music Man (Mark Taylor)  
South Nutfield, Surrey

*You may be pleased to know that one company is working on an audible channel change at this moment. Another outfit in the West Country have promised to send us information on a similar circuit. HOWEVER, THEY HAVE NOT YET, so if anyone reading comes up with a suggestion, send it in to us at CBRM and we will get our technical experts to check it out before forwarding it to Mark Taylor. - Ed.*

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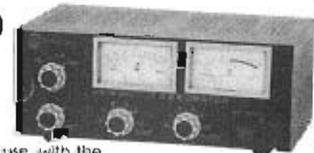
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# Round Up

## Jaws 2 fights on

Mike Moses, of Brecon, Powys, is housebound by illness and has suffered the less obvious illnesses of the disabled – isolation, loneliness and depression. With the legalisation of CB, Jaws 2 (or Mike) has found a new lease of life and a new circle of caring friends.

Prior to CB, Mike was spending up to 20 hours a day on his own sitting in a chair and limited to the view outside his kitchen window. Unfortunately, Mike has had to go back into hospital but has kept in touch with his new friends with his rig. He is picking up a



lot of local copies and even a few visitors.

Mike is very much a local man and has lived all his life in Brecon and his wife, who works in the hospital, is also interested in CB. She uses the handle Bingo Lady but is more interested in listening than speaking.

A porter at the hospital was responsible for getting Mike on channel during his last visit, after he read CB magazines and chatted to the porter.

He admits that CB has taken over his life and says that "Breakers are a caring bunch of people. I have no need to go out now. I live, eat and sleep by the CB."

## Confessions of a CB enthusiast

Part 2 from Videostar

(Raymond E. Orr)

Last month I told you of the problems I had in getting ready for 'L' Day – that wonderful day in November last year when at last our hobby officially came of age. Ever mindful of doing my best to promote CB, the national newspapers seemed to be prepared to give some form of limited coverage but TV was a different matter! After picking up my hard-won licence, I telephoned the newsroom of my local ITV station and asked them if they were doing anything to show that CB was about to land on an unsuspecting public. Yes, they did know that CB was legal and was I doing anything that morning? Well, to be honest, I jumped at the chance – leaping into the Passion Waggon, I drove round to the television studios, ready for instant fame!

Looking back with hindsight, perhaps I shouldn't have bothered, but as they say, ignorance is bliss and I leapt in with both feet. I was told that a film crew would be installed in the car and all I had to do was drive them round the block a couple of times and chat to the odd passing breaker. Driving round to the film unit, I was met by an army of people, reporter, cameraman, sound recordist and an electrician! Fortunately, my car is a Volvo Estate so with everybody holding their breath the car was filled to bursting point with bodies, lights, tape recorder and a film camera. I'm positive that *Gone With The Wind* was filmed with less fuss – but not wanting to spoil things, I

kept quiet. The story called for two 'typical' breakers (Is there such an animal?) chatting to each other. Calling out on channel 14, I made contact with a breaker called Red Stag and he, too, was conned into assisting!

Obviously, we had to have legal rigs and twigs to keep everyone happy – microphones were stuck to the rigs and we were off. In order to get a decent signal it was decided that the cars would go in convoy at a small distance apart. Driving round the city there was so much interference from AM side-banders the whole shoot nearly had to be called off – but in the end, we headed for the nearest motorway and headed out of town for a bit of peace and quiet! Various daredevil stunts including almost setting alight the roof lining with the powerful lights and blocking two lanes of the motorway by doing a side-by-side tracking shot – you name it, we attempted it! The leader of the City District Council has a CB in his limousine, which he uses to speak to breakers whilst on his way to civic functions. It seemed a good idea to try and raise him. His handle is Big G and on this occasion we weren't successful. As you would expect, he's on legal FM. I must admit, it seems a better way of getting a message to the 'top man' than having to suffer lengthy correspondence with various secretaries! Nearly three hours later the story was 'in the can' and we returned to the studios for lunch, dropping the crew off before I took the car to a side street and parked it. After swapping stories and anecdotes over a glass of milk or two, I returned to the car, to find it surrounded by three policemen! One of them was even moving about inside the car – what had happened? Was it a bust? Had the Telecom detector made his first legal mistake? Can three pints of milk make you incapable? All this and I still had to make my debut on British TV! Was I arrested? All will be revealed next month!

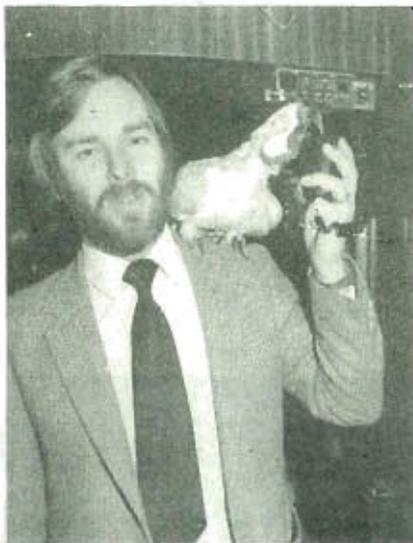


## Water waves

Borro Boats, of Oban, Scotland have added another string to their bow by using channel 24 (of the legal FM system) as their business channel.

Borro Boats are a small business specialising in boat hire; small boats (either sailing, rowing or outboard engine) or larger charters for fishing. They flatter themselves that they are small and friendly to deal with and that their phone is nearly always manned. However, they are also available on CB, using 24 as a calling and working frequency.

Surely this is the way CB should go, becoming a part of everyday normal life. Although enjoying CB as a craze is fun, it must be more worthwhile and valuable in the long term if it grows to be an accepted thing in people's working lives and leisure times. Good on you, Borro, for using some creative thinking.



**Who's a pretty breaker ?**

We've heard of a couple of pubs installing CB and, of course, the Eye-ball Restaurant has had them since the beginning. But the combination of a rig and a parrot is definitely new!

The Phoenix pub in Smith Street, Chelsea, has a rig in the bar for breakers to talk to Guvnor (the landlord, Roger - who else?), Firebird (Roger's wife) and barman Swamp Rat. The parrot, Jim Hawkins, has had his not inconsiderable nose put out by the arrival of the rig, as he is used to getting all the attention.

People are calling in from all parts of London as they have picked up the Phoenix whilst on channel.

Roger has an additional rig in his car and finds it useful for keeping in touch with the pub whilst he is out and about. I don't quite know if the parrot uses the rig or if we can publish his opinion of it but he seems reconciled in the photo.

## CB Aid

Another CB monitoring service is hoping to start up in south Birmingham. CB Aid are still appealing for volunteers to help man the scheme and want CB'ers over 16 who operate base stations and have access to a telephone. I can't describe the system better than they have themselves so here it is.

"Citizens' band radio is now more widespread in its everyday use and people from all walks of life are realising the importance of its use for a variety of social, domestic or business reasons. There is, however, a serious side to the use of CB and that is its value in providing an instant communication for emergency situations. It is with this in mind a group of local enthusiasts have formed CB Aid.

The aims and objects of CB Aid are to provide a continuous monitoring service of the emergency channel 09

## United Breakers Association

For all those puzzled readers who have contacted us trying to get hold of the UBA, they have changed their phone number. The UBA official phone number is now 01-720 7206 but the address of 50 Gaskell Street, Clapham, London SW4 6PJ remains unchanged.

Andy Donovan, of the UBA, has asked us to make it clear to our readers that there is only one UBA, located at the above address. No one but the headquarters of the UBA has the authority to collect fees or money. Anyone interested in joining is urged to contact Andy at the above address and they can be given an official membership card.

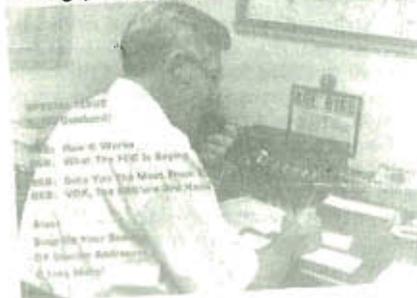


## S9 magazine

One of the most respected CB publications in North America, S9, is ceasing publication. We have not officially been informed of the cause but it seems that the old problem of cash flow has struck again.

Edited by Tom Kneitel, a man very much with his roots in CB, the magazine was America's oldest and largest CB magazine and was instrumental in getting CB Radio Magazine launched. We always had an excellent working relationship with S9 and regularly used each other for information and help.

S9 had extended their interests slightly to include all forms of Hobby Radio and also had regular articles covering the 'less 'legal' areas of skip and Free Radio. The magazine has been bought out by CB Magazine, now the one remaining US CB publication. They have not been without their troubles and perhaps the amalgamation of the two will result in one strong publication.



and by close liaison with the fire, police and ambulance services we will be able to summon speedy assistance to any CB'er who finds himself in trouble. We will also provide an information service for motorists regarding such matters as breakdown services, the location and opening times of petrol stations and other local information as necessary for them to complete and enjoy their journey in our area.

"There may also be occasions when the police may require assistance from a group of volunteers in search and rescue operations. Through the medium of CB we will be able to assemble, when speed is essential, such a group from within our membership."

Anyone interested in helping should contact Marshlander on (021 430) 3612.



**U  
B  
A**

# Walkie-Talkies: A question of frequency

## Are the public being misled?

Forty-nine megahertz walkie-talkies have been on sale in Britain for a number of years. The question of their legality has been raised several times both in the Houses of Parliament and through the pages of our national newspapers. More recently, though, it has been the subject of an adjournment debate in the House of Commons. The subject was raised by Miss Joan Lestor, MP for Eton and Slough, whose intention was to gain some clarification on the subject and, hopefully, a change in the law that allows the sets to be sold in this country.

## No licence required

The sets are manufactured in the Far East and are intended for the American market where a licence is not required. The packages are often marked "No licence required", which may be true for America but is completely misleading when the radios are sold in this country because, although it is perfectly legal to advertise and sell unlicensed radio equipment *provided import duty and VAT have been paid*, the use of such equipment is not permitted and can lead to prosecution.

The issue has been further complicated by the legalisation of CB radio in Britain. A vast number of 49MHz walkie-talkies have been purchased by unsuspecting parents who are under the misapprehension that they are allowing their children to use the new legal CB radios but they are, in fact, encouraging them to break the law. There are a considerable amount of legal 27MHz FM walkie-talkies on the market whose use is permitted that do not interfere with other radio equipment. The illegal sets, on the other hand, operate on the old 405-line television frequency which is still in use. Although, as was pointed out by the Minister for Trade for the Home Office in his reply to Miss Lestor, the walkie-talkies are not likely to cause problems on the scale of illegal CB operators, their potential effect should not be underrated and, although the 405-line television service is to be discontinued by the end of 1986, a deci-

sion has not yet been made on its future use.

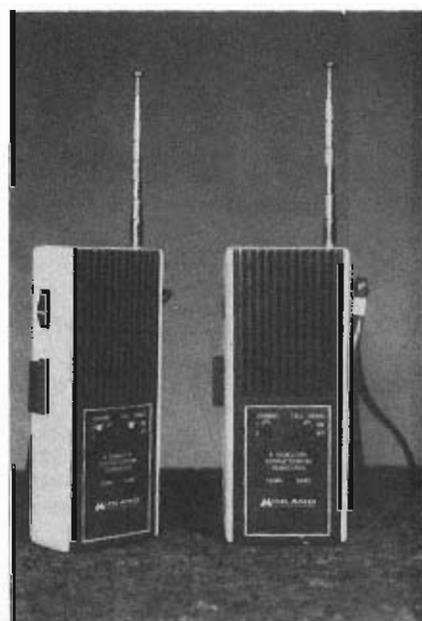
## New Government proposals

In his reply to Miss Lestor's informative speech, Mr. Raison expressed his gratitude to her for raising the subject and then continued to outline his proposals on the matter. As the Minister pointed out, there are three main areas of weakness in the enforcement powers of the present legislation. Firstly, some of the penalties available under the legislation are outdated and inadequate and will hopefully be brought into line by the Criminal Justice Bill which is now before the House. Secondly, whilst the courts have the power to order forfeiture of equipment that has been used illegally, there are no powers available to enforcement officers to detain such equipment until a court can decide. Thus allowing the equipment that has been illegally used to continue to be used before a case comes to trial. Finally, there are no powers available to ban the sale or advertising for sale of designated wireless telegraphy apparatus. In these three areas the Minister intends to bring proposals before the House when Parliamentary time permits.

## The prevention of interference

There are two main points which stem from the fact that the Home Office's Radio Regulatory Department's main concern is with the prevention of interference. Firstly, the Home Office would not be justified in using sweeping powers if there were not a real problem. Illicit 27MHz CB apparatus does fall into this category but as yet the 49MHz walkie-talkies do not present too much of a problem. Their widespread use, however, would considerably worsen the position.

Secondly, the Home Office's main concern is with the regulation of radio and the protection of radio services. It would not be appropriate for them to use their powers for the protection of consumers.



A pair of illegal 49MHz walkie-talkies - in this case bearing the Midland brand name.

## The Trade Descriptions Act

As I mentioned earlier in the article, some radios are being sold in packages stating "No licence required". Mr. Raison expressed some concern over this matter and stated that he deplored the practice of retailers selling such equipment labelled in this way. He also said that he would be drawing the matter to the attention of the Minister for Consumer Affairs, who would doubtless wish to consider whether the practice falls within the scope of the Trade Descriptions Act and if so whether Trading Standards officers can help.

In conclusion, Mr. Raison assured Miss Lestor that the subject would be kept under careful review and that if and when they obtain the power to ban the sale or advertising for sale of wireless telegraphy equipment they would expect to apply that power to the 49MHz equipment and solve the present problem.

CPD

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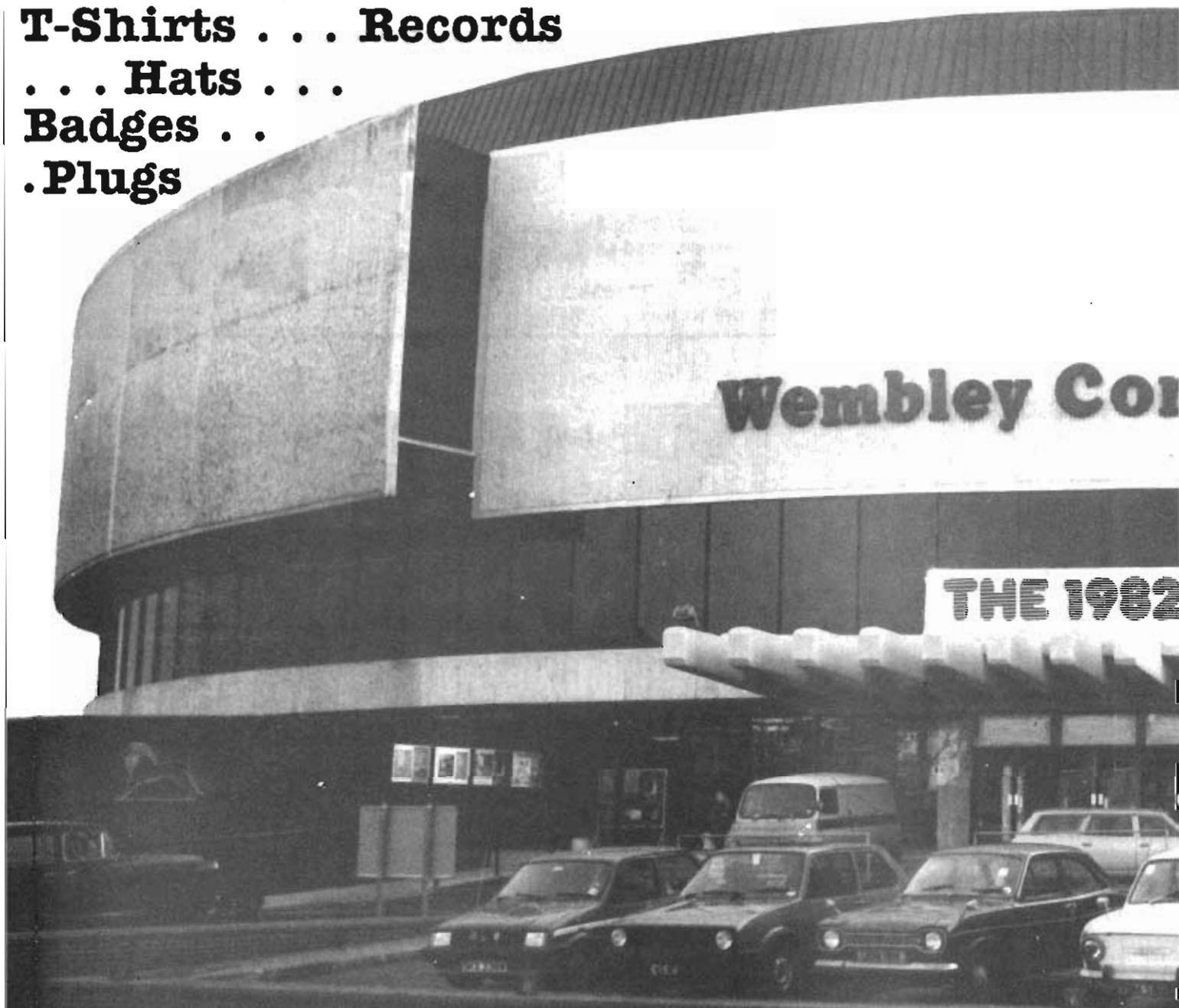
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# CB RADIO

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# THE 1982

## APRIL 9th, 10 10am-8pm (1



# Wembley Conference

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# MAGAZINE

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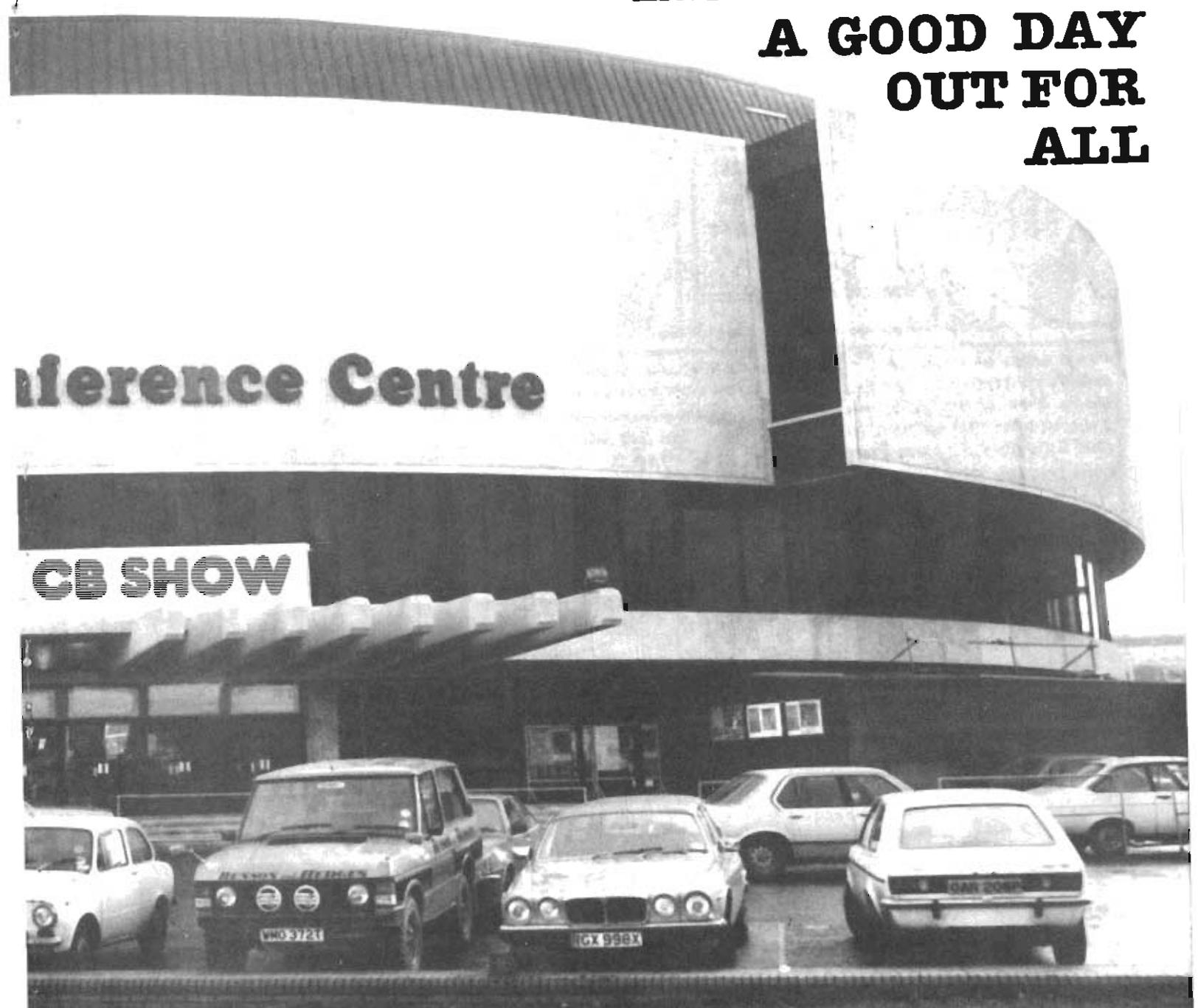
# CB SHOW

10th, 11th, 12th  
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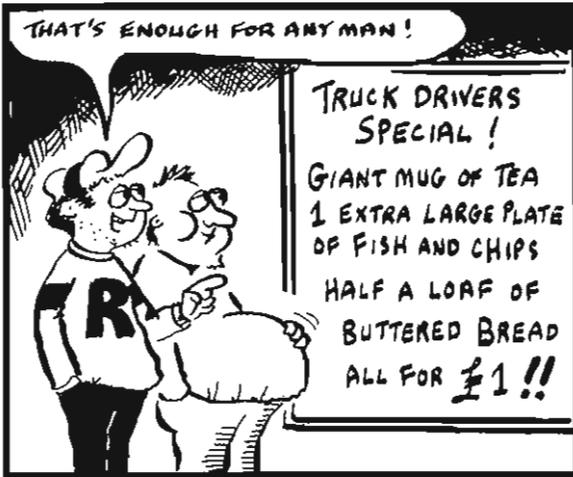
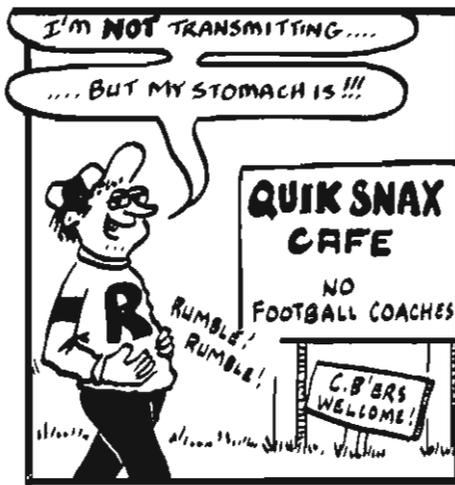


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CB SHOW

# Conference Centre

PAGE 36 FOR GROUP DISCOUNTS.



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## EASTER BONNET

OK, we know it's a CB Show but as a little extra for the Easter weekend, there's going to be a huge, big Easter egg and some goodies each day as a prize for the craziest hat at the Show.

# THE 1982 CB SHOW

Spend a day with us

It's only a matter of days to go before the CB event of the year! If you want to see the latest CB technology, try out the latest rigs, buy the latest twigs then come to the 1982 CB Show at Wembley. The entire Easter Bank holiday will surely go down in CB history as being the time when British breakers come out into the open for the first national "legal" CB exhibition ever seen in this country.

\*

### Not just an exhibition

Yes it's true that some of the most well known names in CB will be exhibiting their products at this prestigious venue but CB Radio Magazine, as the organisers of the 1982 CB Show, guarantee that for every single day of opening the show will be action packed and full of fun for everybody. More importantly some real bargains will be available for all comers.

\*

### The CB Radio stand

On our own stand some special show offers will be on sale! The small remaining quantity of 1982 CB diaries will be sold for £1.00 each which is less than half price. £7.50 will get you a beautiful CB Radio Magazine binder plus a copy of every magazine we have ever published (subject to availability). The popular range which we have been previously selling through the magazine will be on sale at substantially reduced prices and also a wide selection of CB Radio Magazine tee shirts, sweat shirts and badges. Don't forget these silly prices are only available at the 1982 CB Show and only while our stocks last.

\*

### Competitions and Charity

When you arrive at the Wembley Conference Centre for The Show, you will be asked to fill in a simple registration form. (Advance ticket holders; please fill in the counterfoil



on your tickets). These counterfoils are to be given in at the CB Radio information counter and constitute your free entry to one of our many competitions. This competition will be drawn two days after the show and the first person to have his or her ticket picked from the hat will win a rig, base antenna, mobile antenna, power supply, SWR meter and a patch lead". The result of this competition will be published in the June issue of CB Radio Magazine (on sale May 5th). There will also be a whole host of other spot prizes awarded to competitors at regular Intervals throughout the show. The competitions will be instant and prizes given straight away. All proceeds raised by these instant contests will be given to our selected charity which this year is Capital Radio's 'Help a London Child' appeal. Capital Radio use this money in many ways to help deprived youngsters get a better deal in the inner city area. 'Help a London Child' takes place every year at Easter and coincides very nicely with the 1982 CB Show.

\*

### The eyeball room

If you are bringing young children aged between 2 and 8 years old you can deposit them in our creche for 2 hours while you visit the show. This service will only cost 20 pence and for this your children will be looked after by fully qualified nursery personnel and their assistants. The creche will be situated in a cordoned off area of the Eyeball room.

Elsewhere in the eyeball room will be a bucking bronco machine, space invader games, a bar and an Eyeball request board. On the eyeball request board you will be able to arrange meetings, by way of a written message, with other breakers. This area should also serve as a good rendezvous point for parties that get split up. Also, at regular Intervals in the eyeball room, wet tee shirt competitions will be held to aid both voyeurs and Help a London Child.

## 9th, 10th, 11th, 12th April

These are the dates of opening of the 1982 CB Show. Please note the extra day which has recently been added to this event.

### Hours of opening

Friday 9th April 10am - 8pm  
Saturday 10th April 10am - 8pm  
Sunday 11th April 10am - 8pm  
Monday 12th April 10am - 6pm

### Entrance charges

Sorry it's too late to get advance party discount. However the price on the door is only £2.00, which is a bargain in anybodies reckoning.

### OAP's children & the disabled

People who can produce documentary evidence of either being an Old Age Pensioner or disabled will only pay £1.00. This price of £1.00 also applies to children under the age of 12 years and children under the age of 3 will get in free if accompanied by an adult.

### Express entrance

If you have already paid for and are in possession of advance party tickets, look out for our express entrance which will ensure that you don't have to queue.

### Show Guide

A colourful show guide will be on sale to help your enjoyment of the 1982 CB Show. The guide will include details of all our exhibitors, their products and where to find them. Price 30 pence.

### How to get to Wembley

All the roads leading to Wembley will be clearly marked by yellow A.A signs placed in prominent positions. If you require further details a small leaflet, giving train, underground and road details, is available on request from our offices.

### Facilities for the disabled

Wembley Conference Centre is a modern building and as such is well equipped with ramps, lifts and suitably designed toilets. These facilities make us able to offer a full welcome to people in wheelchairs as well as the able bodied.



# Look who's going to be there with us



# MOCOM



# BREMI



# tagra



# SIRTEL

# AGORN



# TELEX



# VIPER 88



# MIDLAND

# K40

## we all look forward to meeting you

# CLUB SPOT

## 10-30 Breakers' Club

Our 10-30 Breakers' Club was formed in August 1981.

We have a very strong committee of nine breakers who are as follows: Albatross - Chairman, Blue Shadow - Vice-Chairman, Cleaner - Treasurer, Sunrise and Sex Goddess - Joint Secretaries, Lady Albatross, Boy Macoy, Red Pepper and Argy Bargy - Organising Committee. Our Honorary Member is our Club's landlord, Beer Puller, who we would all like to say a very big thank you to for letting us use his watering hole for our club 20.

Our club has an eyeball every Wednesday at 8.00pm at the Fountain in Plumpton (Fat City).

In the very near future we will be starting up a 10-33 monitoring service on our breaking channel 14. So far we have had a good response.

Anyway, I think that is enough to be going on with, so 73's and 88's. This is the 10-30 Club signing off, we're down, we're clear.

Sex Goddess and Sunrise  
(Joint Secretaries)

## BCBS - Birstall Citizens' Band Social Club

Our club was formed with the younger breaker in mind. Many clubs meet at the 'local' where it is not possible for younger breakers to go. So we formed our club which meets at the Birstall Social Club every Tuesday night and this means that the whole family can enjoy the meetings. We are increasing our membership to 200 with room for guests.

As we are situated just on the outskirts of Leicester, we find that breakers from many other clubs come to our eyeballs. Recently, Red Oscar and Diggerman, two of our more experienced breakers (I don't mean old) started a DX'ers' club under our banner.

Take care cose we care.

10-10,

Ironrose and Brass Monkey

## Square Weald Breakers

It all started with a few good buddies getting together over a brown bottle. Within a month of collecting money, our membership had risen considerably and is increasing every week. We meet ever Thursday evening at the Fox and Hounds, Haywards Heath, Sussex. We have a raffle at every meeting and organise social functions, the proceeds of which go to charity.

All breakers are welcome, give us a shout on the 14.

10-10,

Hamstring (Secretary)

## Dirty Dozen CB Club, Paytown

We are a club with the membership of about 120. We meet every other Sunday at the Friendship Inn, Selby, where we have a few brown bottles and a lot of info. We charge £5.00 a year to join and out of this we get things like disco's, treasure hunts and lots of other great activities. We break on 17 and like to welcome any passersby to have an eyeball with us. When we have disco's and things we give all the proceeds to the Year of the Disabled Fund.

Anyway, I will give you all the golden numbers now.

10-10, breaker, break,

## Sunray Club

Our club was formed several months ago and is called the Sunray Club. This is situated in Royston. We meet every Monday evening from 8.30 until 11.00. The meetings are held in the Old Bull Inn, in the Oak Room. We also have a sideband section in the Club. At present we have 82 members and are increasing all the time.

Many thanks, 73's and 88's,  
Sparrow Hawk (Club Secretary)

## Snowdrift Breakers' Club

We are a small CB club on the west side of Edinburgh who have the interests of all CB enthusiasts at heart.

We meet every second Tuesday at Balerno, near Edinburgh, at 8.00pm. Any visiting breakers will be very welcome.

A. N. Other (Secretary)

## Daventry Breakaway Rubber Ducks Club

The Daventry Breakaway Rubber Ducks Club started last year with eight members. The Rubber Ducks are particularly geared to fund-raising for charitable causes and have adopted the Kalli Animal and Wildlife Sanctuary Trust as the recipient of the bulk of their fund-raising for the current year. The Club meets weekly on Sunday evenings at a local hotel.

Busy Lizzie (Dorothy Radford)  
(Secretary)

## The Voice of Scotland International DX Club

We thought your readers might be interested in a CB club with a difference. The Voice of Scotland International DX Club is a club for those interested in long-distance working, mainly on sideband.

The club was formed as an ideal by The Ace (VS 01) who is our Chairman.

He saw an increasing number of good buddies changing to sideband for their copies and decided there was a need for some kind of organised contact.

Our aims as a club are dedicated to the promotion of SSB and through its use gain a better understanding between people of different nations and to promote peace and friendship nationally and internationally.

At our meetings we discuss different techniques and equipment which have been used and tested by our 'technical men' and also advise on how to DX and how to build your own antennas. At the moment we have established a club net on channel 35 LSB on Sunday, Tuesday and Friday evenings from 10.00pm. Included on the Friday evening net is an attempt to link up with members of the Lima Victor Club in Northern Ireland.

We also run a two-monthly competition, which entails contacting a given number of countries and having these confirmed by QSL cards bearing a given date or after. A prize is given to the winner of this competition. We have also started an award scheme. Members can apply for a 15, 25, 50, 75 or 100 different countries' award and certificates or trophies are to be awarded for winners of these.

Our meetings are held on alternate Wednesdays, at 7.30pm, in the Broomhill Hotel, London Road, Kilmarnock.

The subscription per year is £6.00 (or 50p per month) and for this members receive a beautifully-coloured membership wall certificate, 10 club QSL cards or certificates, a personal ID membership card (similar to an Access Card but without its value!), technical information sheets, handles/call signs list, awards and competition rules and data and also have the use of a PO Box Number - thus enabling them to receive their QSL cards direct without having to give their private address over the air.

For anyone living outside Scotland who is interested in joining our club, the fee is £6.00. This gives them life membership but, of course, they have no voting powers and if they require the use of the PO Box they would be asked to provide a supply of large stamped addressed envelopes so that their mail could be forwarded to them. For further details, contact the Secretary, Fred Roe, on Kilmarnock (0563) 31327.

We at the Victor Sierra DX Club send best 73 and 51 to you and your readers and we'll keep you posted on the happenings at the VS Club.

We are QRT and standing by,  
Fred Roe (Secretary)

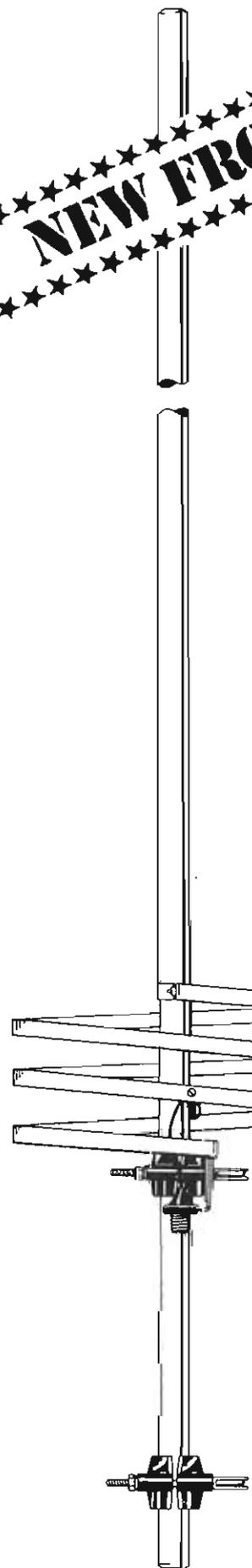
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## Thames Area Breakers

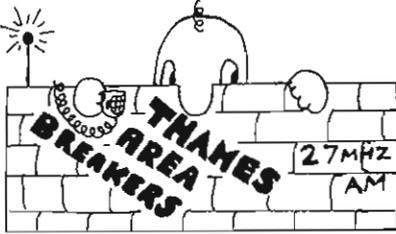
Just a brief note to inform yourselves of yet another CB club which has been formed, the club has been called Thames Area Breakers. We meet every Monday in the William Shakespear, Powis Street, Woolwich SE18 at 7.30pm.

Membership is £3.00 per family per year. Entrance fee is £1.00 per guest and 75p per member, which includes free buffet.

New faces are guaranteed a warm welcome. Any further information can be obtained from Karen Chiswick (Silver Dollar, Administration), at 81 Villas Road, Plumstead, SE18 or give her a land line on 01-854 9372 after 6.00pm.

When writing to the club address, please enclose a s.a.e.

The Gascooker (Chairman)



## Biscuit Town Breakers Club

We are a limited membership club in Uttoxeter, Staffs. We hold our eyeballs every third Monday. All funds raised are being donated to local charities and regular events include convoys, treasure hunts, with several future events planned such as a '60s dance, inter-club football and darts matches, etc.

The breaking channel in our area is 14, so we look forward to plenty of copies from breakers passing through our 20.

Tiger Moth (Secretary)

## Noisy City Breakers

Just a few lines to let you know about the Noisy City Breakers Club. Here in Darlington we break on 25 (and 65 for those with bigger rigs). We meet every Wednesday at the Wheat-sheaf Hotel at 7.00pm, children are welcome up till 9.00pm when the bar opens.

We now have over 250 members and are in the middle of organising competitions, dances, etc., for them.

Membership is still open and all are welcome to join (£5.00 per year) or be our guests (25p cover charge).

Android (PRO)

## Fourth Valley Breakers Club

Just a few lines to let any interested readers know about the reforming of the Forth Valley Breakers Club.

Location is at "Stargate" and the

eyeball HQ will be held in the Burns, Kennoway on a Tuesday and Sundays each alternate month. Membership will be limited to 150 (provisional) with a Lady Breakers' Section.

It is also intended to start a Junior Breakers' Section, ages between 12 and 15 years, to explain and teach the correct procedure in the use of CB.

The breaking channel is 16 and 56 in the "Stargate" area, which will cut down all the QRM in the area which is found on channel 12 which other clubs in the area use.

The club will also run the Central Bureau of Registration for this area.

Further details from Boy Wonder, Squeaky Toy or Sidecar, c/o Newsagents, The Cross, Windygates, Fife.

All the high numbers, 73's, 88's. Breaker break.

Boy Wonder

## North Walsham Breakers Club

We are writing to let you know a bit about our CB club in Norfolk.

It is the North Walsham Breakers Club which at the present moment has approximately 200 members.

We have also formed a side band club which has been going now for about three weeks. We hope to get a limit of 50 members.

The club goes under the call sign of "Delta X-Ray" and we were hoping that you could perhaps give us a mention in your magazine to let other breakers know about us.

W. M. Hurren (PRO)

V. G. Price (Deputy PRO)

## 21 Club

The 21 Club is a breakers' club with a limited number of 100 members. We eyeball every Wednesday at the Marine Hotel, Seaton Carew, Hartlepool, Cleveland for a disco or turn and have a meeting once a month. You don't have to own a rig to come, everyone who is interested is made welcome. We are purely a social club with aims of raising money for charity. At the moment we are putting together football teams for matches against other breaking clubs. If any other breaking clubs are interested give us a shout at the above address.

10-10.

## NTBC

The North Tees Breakers Club was formed in May 1981. We eyeball weekly at the Club Fiesta (The Brightlights). Membership is free, admission to the meeting is 50p which includes a free draw, prizes such as twigs, SWR meters or a cash voucher. Alternate Mondays are held as a social evening,

which includes a quiz, leaving the meeting night to discuss any business or forthcoming events.

So far we have organised social events such as treasure hunts, disco's and at the moment we are trying to organise a fancy dress ball, where breakers will come dressed as their handles.

As the meetings are held in a night club, our members are welcome to stay after the meeting to watch the cabaret.

If anyone is passing through our town, give us a call on 16 or come to our meeting where everyone is welcome.

Double Decker (Chairman)

## Big H Breakers

I am writing on behalf of the Big H Breakers Club based in Huntingdon, Cambridgeshire. The club was formed nine months ago to promote and support the use of Citizens' Band Radio on 27 megs.

Like many other clubs throughout the country, the Big H Breakers have delivered various petitions to the Government to fight for 27 megs AM. However, with the recent legalisation of the FM system, we feel that a unified effort is now required to achieve our aims.

As a single club we represent a very small proportion of AM users and we therefore urge other clubs and breakers to contact us so that we may concentrate our efforts for a legal AM system.

Martin Dodds (Soup Dragon)  
(PR Officer)

## Walton and Esher Breakers

Just dropping a line to tell you about the WEB.

The club is on every Tuesday night at the Orleans Arms, Esher (near the Scilly Isles).

We have about 250 members and assure you of a very friendly and fun evening at the Web.

Bald Eagle

## Cuckoo Breakers Club

The Cuckoo Breakers Club meets every other Monday at Maggy Thatcher's Club (Blue Club) in Cross Keys.

The committee have attempted to organise disco's, treasure hunts, convoys to the zoo and the seaside and barbecues. We have made a profit of £200 which has been donated to various charities.

We hope to keep up the good work and a big thanks to all Cuckoos who have helped us in the past.

Raspberry Ripple (Secretary)

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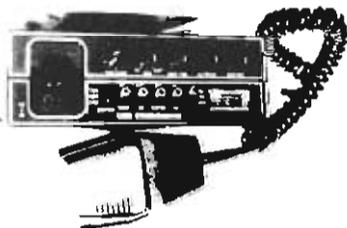
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# Parliamentary Review



## A question of licencing

The question of licencing and the revenue collected for licencing is one that is given much attention by our honourable Friends in the House of Commons. Had CB been legalised on AM instead of FM, would there have been a higher number of licences purchased or would it still be ignored by the majority of breakers? Is the Post Office really trying to track down illegal breakers or is it turning a blind eye? These are all questions that are continually cropping up and will continue to do so until proper organisation is introduced.

### Licence revenue

**Mr. Hal Miller** asked the Secretary of State for the Home Department what has been the revenue from licences issued for citizens' band radio.

**Mr. Raison:** Just over £1 million by 31 December 1981.

**Mr. Miller:** In congratulating my right hon. Friend on his appointment to the Privy Council, I hope that he will not think it churlish if I suggest that it is not entirely due to his work on citizens' band radio. We were very grateful for his giving freedom of the air to citizens' band practitioners but will he agree that the revenue figure he has just announced would be greatly increased if the licence did not restrict the user to the frequency chosen by the Home Office, which renders its use illegal in all other countries of Europe and takes no account of the many pre-existing users of the AM frequency who, if they all transferred to his chosen frequency, would cause it to be grossly overcrowded?

**Mr. Raison:** I am not quite sure how to take my hon. Friend's congratulations but I thank him for his remarks. If we went down the path of legalising AM, which is what seems to be implied in his question, there might be more licence revenue but there would be a great deal of additional interference. The problem in this area is interference with television sets and essential services and we do not believe that that is tolerable.

### Is Buzby really trying?

**Mr. Onisow:** Is my right hon. Friend satisfied that the Post Office is trying hard enough to track down the people operating illegal sets, which are causing interference and making life hell for their neighbours?

**Mr. Raison:** I think that the Post Office is trying hard but there is still excessive interference. I am happy to note that there was a considerable drop between

September and December. I hope that that will continue now that a legal service is available but we are likely to have to bring in new and tighter legislation.

### Excessive licence fee

**Mr. Campbell-Savours:** Is it true that only 100,000 licences have been issued? If so, will the right hon. Gentleman consult the Secretary of State for Trade to discover how many FM sets have been imported over the last six months, to see whether there is any correlation? Will he in future reconsider the cost of a licence, which at £10 exceeds what many reasonable people feel to be a sensible figure?

**Mr. Raison:** I do not think that 100,000 licences in the two months of November and December is a bad or disappointing figure.

### Concessional licence

**Mr. Allen McKay:** Will the Minister consider the meanness of his right hon. Friend concerning concessional television licences and take steps to provide concessional CB licences for those to whom his right hon. Friend will not give a concessional television licence?

**Mr. Raison:** I do not think that television licences are covered by this subject and I doubt whether there are many old-age pensioners who would want CB licences.

### Why no British equipment?

**Mr. McNamara** asked the Secretary of State for Industry what is his current estimate of the share of the market for citizens' band radio and equipment supplied by British manufacturers; and what is his estimate of the total value of the British market.

**Mr. Wakeham:** Since a citizens' band service has been permitted only since 2 November 1981, it is too early to form a reliable estimate of the size of the United Kingdom market. However, some 100,000 licences have been issued up to 31 December 1981. The bulk of CB radio equipment being sold is imported, although some British manufacturers have in the past indicated their interest in producing this equipment.

### Interference complaints

**Mr. Jim Marshall** asked the Secretary of State for the Home Department if he has received an increased number of complaints concerning radio and television interference since the use of citizens' band radio was legalised.

**Mr. Raison:** No. There has been some reduction.

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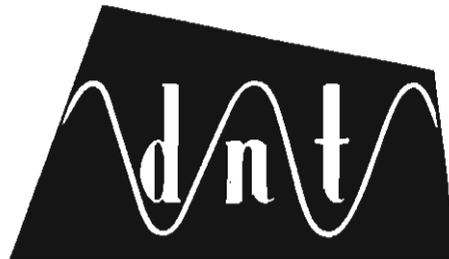
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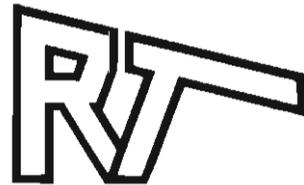
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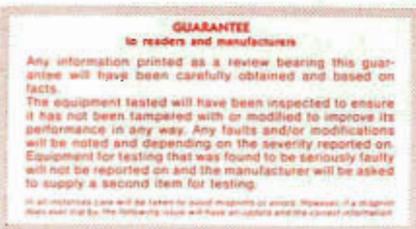
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# Rig Test



The Oscar CBM271 from South Midlands Communications Ltd.

First impressions often count for a fair percentage of people's opinion and hence the like or dislike of an item. SMC are obviously well aware of the importance of creating a good first impression. Their Oscar is certainly well presented. The packaging and presentation are very smart and practical and the enclosed booklet entitled "Citizens Band Operators Manual" is by far the best we have ever seen. Indeed, we were impressed to the extent of believing it worth more than a passing mention. Thirty pages of information on the Oscar, its use, installation, circuitry and practically all you need to know about getting on channel, starts the moment you open the cover. Here are some of the main points covered: the CB 27MHz FM service, covering the legal aspect, licensing antennas and equipment; a general description of the Oscar One, followed by a schematic diagram showing the controls, connections and their use; antenna consideration, detailing mobile hints and location tips as well, quickly followed by power connections for both mobile and base use. Up until now most of what we have just mentioned appears in most booklets supplied with rigs, however, the Oscar goes one stage further and offers advice on the following: installation, operating instructions, operating practice, emergencies and assistance and vehicle suppression. So far so good but there's more. Full specifications are followed by a block diagram and a schematic diagram of the circuit, a PCB layout showing all the main parts and the smaller PCB's that are used, then, to cap it all, a full list of every part, its identification symbol, description and part code is printed in the rear.



## Microphone

Many of our readers often complain that almost all the equipment available in Britain has the microphone socket mounted on the wrong side,

the left. Unfortunately, equally as many readers see no real inconvenience in this as they either prefer the rig on the driver's right or else they mount it closer to the left side of the wheel thus allowing the passenger and driver access. Indeed, the SMC Oscar has the mike socket on the left. Unfortunately, it is a five-pin bayonet fitting and not a screw attachment. However, to combat the looseness or easy disconnection often associated with this form of connection, the Oscar has a raised shield surrounding the five-pin plug. It is designed to take the brunt of any pull on the microphone lead away from the actual socket.

## Construction

Thanks to the detailed handbook already mentioned, we can inform you that the casing is escutcheon completed (for the uninformed that's a fancy word for shield) comprising of a chassis, a case top and a case bottom. This case is pressed metal finished in a flecked black paint. The speaker is mounted on the bottom panel with pressed slats to avoid dust. The face panel is a silver plastic with black inset panels highlighting the controls. Internally, the set was clean and of reasonable construction. The soldering was clean and although the legs were not as flush as they could be there is no possible complaint to be found with them. Once again nylon screws hold the power output transistor in place and this could lead to a melt situation if the set is exposed to high temperatures.

## Transmitter test

The standard equipment used for this test was:

- The Racal 9081 and a Racal 9082 signal generators
- Marconi TF 42F distortion meter
- Marconi TF 340 audio power meter
- Racal 9916 frequency meter
- Racal 9101 and a Bird 43 power meter
- Racal 9009 modulation meter
- Levell TG 150D audio generator
- Solartron AS 1412 power supply.

MPT 1320, the Home Office specification for the performance of 27MHz FM equipment demands that the maximum power output of the set

must not exceed 4 watts. This restriction applies to the maximum supply voltage, that is to say a car with a well-charged battery, 14.5 volts.

Power output is related to the voltage hence a lower output will be obtained with a lower voltage. There are three basic voltages, a low battery 10.8 volts, an average level battery 13.2 volts (referred to as 12 volts standard) and a well-charged battery 14.5 volts. Both hi power, unattenuated and lo power, attenuated modes are tested and at this point the 10dB attenuation can be calculated.

Power Output and Attenuation			
Atten.	10.8v	13.2v	14.5v
High	2.2W	3.6W	4.0W
Low	0.18W	0.33W	0.39W

## Frequency

The legal frequency is 27MHz FM with 10KHz channel spacing. Therefore, FM equipment must meet this basic but essential requirement before we even start to look further.

Twenty-seven megahertz FM is 40 channels. With channel 1 on 27.60125 and channel 40 on 27.99125, therefore, channel 2 would be 27.61125 and so on. Temperature affects this channel stability and a cold set will not be spot on frequency nor would a warm set. To detect the stability the set is connected to the Racal 9916 frequency meter and a reading at room temperature 68°F on channel 1 and 40 is noted. The set is then placed in a cooler and the temperature brought down to 48°F. Once again a reading is taken on channel 1 and 40. A reasonable reading is reproduced in the table.

Temperature Stability		
Temp.	CH1	CH40
48°F (cold morning)	27.60131	27.99131
68°F (room temp.)	27.60124	27.99124

## Modulation

One of the most important things to understand is whilst we refer to speech as modulation, which is correct on AM, with FM the actual process is deviation.

To conduct the test one measures the peak deviation using an audio tone which is fed into the microphone connections. By doing this the modulation limiting can be realised. Different input levels from 0.5 millivolts

to 200mV are used. The input frequency over 500Hz, 1125Hz and 2500Hz will have given us a reading using the Racal 9009 modulation meter. Looking across the chart, the wider the difference between each column and the higher the 2500Hz reading then the more natural the transmitted voice will sound.

Input Level	Modulation		
	500Hz	1125Hz	2500Hz
0.5mV	0.20KHz	0.4KHz	0.27KHz
1.0mV	0.35KHz	0.6KHz	0.29KHz
2.0mV	0.5KHz	1.25KHz	0.4KHz
5.0mV	0.7KHz	1.42KHz	0.6KHz
20.0mV	0.8KHz	1.5KHz	0.65KHz

## Receiver test

### Audio output

This is measured into an 8-ohm load at 13.2 volts supply which is normally the resistance of most speakers fitted. The distortion figures can now be measured using a Marconi TF 340 audio power meter, a Marconi 42F distortion meter and a Levell TG 150D audio generator. Three different wattages are used to give an idea of the flexibility: 1.5 watts lowest, the maximum wattage which can vary between 3.00 to 3.50 and a half-way wattage between the lowest and the maximum. A percentage of distortion can then be measured. The significance of this test is to determine how much of the received signal is lost at the audio output.

Measured Distortion	
1.5 watts	1.4% distortion
2.4 watts	10% distortion
3.4 watts (max)	25% distortion

### Squelch level

Measured in microvolts, the threshold and the fully-muted positions need to be determined to discover the squelch range. With a signal generator connected to the set, turned to zero and the squelch at threshold, it is gradually opened until the signal becomes readable. This gives a measurement in microvolts. To determine the fully muted position the squelch is left static and the signal generator is adjusted from zero upwards until readable.

Threshold - 0.12uV.

Fully muted - 9.0uV.

This example is quite a reasonable adjustment range and it would be possible to set the squelch to cut out all but the worst interference.

### Receiver Sensitivity

The amount of signal received as a reading in microvolts at 10dB quieting, 20dB quieting and 30dB quieting. To obtain these figures a generated signal of a known strength is transmitted, firstly at a low level, 10db and then at 20dB and 30dB. The figures achieved by the Oscar One are pretty good and the set is fairly sensitive.

Sensitivity	
10dB quieting	0.12uV
20dB quieting	0.30uV
30dB quieting	1.10uV

## AM rejection

To test for AM rejection a fully limited FM signal (10uV) is fed into the receiver and modulated with a 1KHz tone (1.5KHz deviation). The receiver audio output is then noted. The FM modulation is then changed to AM, still with a 1KHz tone but 30%-modulation. The audio output from the receiver is then measured. It should be noted that this rejection is only true for signals that are exactly on the received frequency and that if the AM signal is slightly off frequency then a completely different result would occur.

For the SMC Oscar, 36dB was the given result and this is considered to be good.

### Adjacent channel rejection

Two signal generators are fed through a combining network into the equipment and are set to adjacent channels on the rig (i.e., 19 and 20). Both are modulated with a 1KHz tone at 1.5KHz deviation and one is set to 1uV output. The receiver is set to this channel and the audio output adjusted to read 10mW. Now the output of the second generator is increased slowly until the receiver degrades the wanted signal by 3dB. The output from the second generator is noted and gives the relative indication or rejection.

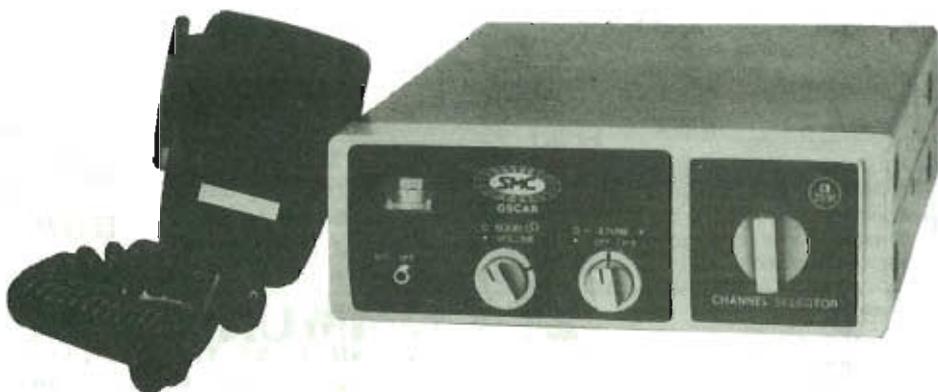
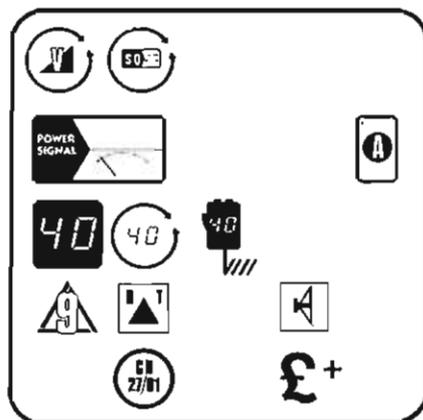
The result is expressed as a figure, in this case 242uV for 3dB degradation. Not a particularly astounding result but within acceptable limits.

## Summary

As we have previously stated, the packaging, presentation and, in particular, the booklet supplied, are very good. The set itself performed quite well and its construction is certainly up to standard. There are a couple of items worth considering if this rig is to be your choice. Firstly, the five-pin plug may give the operator problems, more so after a lot of use. Secondly, the nylon screw may eventually melt, causing the transistor to come loose from its heatsink. Both of these possible problems may never occur. One thing is certain, though, if any problem should ever arise, you should have no trouble identifying or obtaining spares SMC stock a full range of CB accessories and spares.

## Specifications

<b>General</b>	
Frequency Range	27.60125 - 27.99125 MHz
Channel Spacing	10 kHz
Channels	40
Generation Method	C.MOS LSI, PLL Frequency Synthesizer
Mode	Angle (Frequency Modulation)
Temperature Range	-5°C to +45°C
Antenna Impedance	50 ohms nominal
Power Source	12 volts DC (13.2 volts nominal)
Voltage Range	10.8 volts to 15.6 volts
Chassis Polarity	Floating earth
Current Consumption	Receive 200 mA - Squelched (typical) Receive 500 mA - Full Volume (typical) Transmit 1.5 A at 4 watts (typical) Transmit 0.5 A at 400 mW (typical)
<b>Dimensions</b>	
Width	160 mm (6-3/8") - 170 mm (6-11/16") with projections
Height	57 mm (2 1/4") - 60 mm (2-3/8") with projections
Depth	205 mm (8-1/16") - 236 mm (9-5/16") with projections
Weight	1.46 kg (3.2 lbs.) net
Dimension (Packed)	2.02 kg (4.5 lbs.) gross with accessories
<b>Controls/Indicators</b>	
	On/Off-Volume
	Squelch
	Channel nine revert
	Delta Tune (-1 kHz, 0, +1 kHz), RIT
	Attenuator (4 Watts/400 mW)
	Channel Selector Switch
	LED Readout Channel Indicator
	*F meter/P.O. meter - illuminated
	Antenna (50038)
<b>Jack/Connectors</b>	
	Microphone (5 pin Din, 180°)
	External Speaker (3.5 mm mono)
<b>Transmitter</b>	
*R.F. Output Power	4 Watts nominal 400 mW (Astr position)
*Frequency Tolerance	< ±1.5 kHz
*Frequency Response	500 Hz to 2,500 Hz (+4, -12 dB)
*Frequency Deviation	±1.5 kHz (at 1,250 Hz modulation)
*Adjacent Power	< 10 µW (at +20 dB over 60% mod.)
*Spurious Emissions	(1) < 50 nW within the following frequency bands - 80 MHz - 85 MHz 87.5 MHz - 118 MHz 135 MHz - 138 MHz 174 MHz - 230 MHz 470 MHz - 862 MHz
	(2) < 0.25 microwatt at any other frequency
Microphone	600 ohms, Dynamic, PTT
<b>Receiver</b>	
Type	Dual Conversion Superhetrodyne
Intermediate Frequencies	10.7 MHz and 455 kHz
Sensitivity	0.19 µV for 12 dB SINAD (Typical)
*Selectivity	±4.25 kHz at -6 dB
*Adjacent Channel	> 50 dB rejection
*Spurious Emissions	< 20 nW
Squelch Sensitivity	0.5 µV min, 10 µV max setting (typical)
Audio Output	> 2 Watts (to external unit)
Internal Speaker	3", 8 ohms unit



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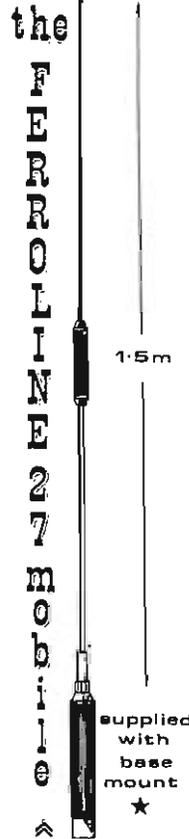
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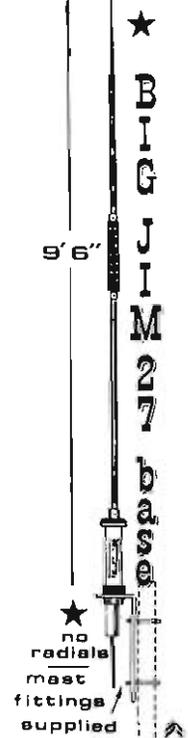
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# FM TRANS

## Part 4 by E. A. Rule

Continuing with our discussion of FM receiver tests, we shall now take a look at some other types of tests that reveal deficiencies in the design of the RF circuits used in FM receivers. CB transceivers are used in all types of situations and often this means a location where there are many stations operating close to each other. As a result, the signal levels encountered are very high from the more local stations and the receiver must be able to reject these strong signals if the weaker ones at greater distance are to be heard. There are a number of tests that will show how good a receiver is at doing this but regrettably the figures of the results are seldom given.

The first of these concerns the beat frequencies when two signals are present at the input. All amplifier circuits are non-linear to some extent and as a result will distort the signals to some degree. When two or more signals are present at the same time, this non-linear operation will mix the signals and produce other unwanted signals which are a product of these present. For example, the product of  $f_1 - 2f_2$  and  $2f_2 - f_1$  referred to last month. However, this doesn't give the complete picture as the resulting RF intermodulation figure quoted is related to the receiver's rated sensitivity. What we also need to know is what is the actual signal level in microvolts of two signals on adjacent channels which can be handled BEFORE RF intermodulation produces spurious signals on other channels. In general, the more sensitive the receiver the lower this threshold point will be. In other words, a very sensitive receiver may be worse than an insensitive one in a location where signals are at high levels due to the RF intermodulation swamping the weak signals. Whereas a receiver with a lower sensitivity but no RF intermodulation present would allow the weaker signals to be heard. So buying the receiver with the highest sensitivity could mean you are worse off! This test is carried out using the same set-up as for measuring the  $2f_1 - f_2$  products except that the actual input level in microvolts is recorded. This input level is adjusted until spurious signals appear on the alternative channels. The threshold of RF intermodulation is this signal level quoted in microvolts. Receivers with otherwise similar specifications can vary considerably regarding their RF intermodulation thresholds and this effect can be seen in our test results but more about these later.

One very important point to bear in mind is that using any form of pre-amplifier to boost the receiver sensitivity will GREATLY increase the risk of RF intermodulation even to the point of making the receiver unusable. Under most practical conditions these pre-amplifier devices should be avoided. The manufacturer will already have obtained the best results from the receiver design that is possible and add-on goodies often make things worse. The design of suitable pre-amplifiers is a very specialised one and they should be designed for a particular receiver. A general purpose pre-amplifier is unlikely to be much practical help (apart from boosting your ego with inflated 'S' meter readings).

Another test is to find the threshold point where the receiver is desensitised. If you are tuned to a wanted signal and another strong signal comes on to an adjacent channel its signal strength could be high enough to reduce the signal you are tuned to. There is clearly a limit to the amount of signal any amplifier stage can handle and this maximum cannot be exceeded without the stage being overloaded. When more than one signal is present this maximum is reached when the inphaser peaks of all signals added together equals the maximum level the stage

can handle. For example, if we assume that all signals present are equal in strength, then each time an extra signal is added the amount of signal that can be handled is reduced by 3dB. (In other words the amount of power that the stage can handle is shared between all the signals present). In a practical receiver let us assume that the RF stage will handle a signal of 100 microvolts before overload takes place. If two signals are present this will be reduced to approximately 70 microvolts. If 40 signals were present (all equal strength) the overload threshold would be reduced to around 15/16 microvolts. This is one reason why when the CB band is full of stations the interference seems so bad. Most of it often comes from within the receiver itself! Reducing the RF gain will sometimes effect an almost magic reduction in this type of interference. It is good practice to always operate with the minimum amount of RF gain required to copy the wanted station as this raises the overload threshold.

In practice when this effect is taking place you may notice a reduction in the 'S' meter reading of the wanted station without noticing any drop in sound from the speaker. This is because the desensitising is not yet bad enough to reduce the wanted signal level below the limiting level of the receiver due to the wanted signal itself being fairly strong. If local stations cause this problem the only answer is to get them to reduce their transmitter power and this problem is a good reason why every operator should work on the minimum power necessary.



# MISSIONS

As mentioned last month, in order to find out how CB FM receivers stand up to the tests outlined, four typical transceivers were obtained and put through the tests as described. The transceivers were, Cobra 21X FM, Midland 2001, Commtron CB40F and the DNT M40 FM. Each of these had their receiver section checked in an identical manner and the results are shown in Table 1.

In general it's a question of swings and roundabouts. Each set has its good and bad points so we will take each parameter in turn and see how they compared. Sensitivity, the Cobra, Commtron and Midland have good sensitivity, the DNT should have also recorded a good figure but due to the high audio distortion level present it was not possible to measure the sensitivity relative to a 30dB SND/ND figure.

**Limiting.** Figures for all four are very good.

**Image rejection.** All four have excellent figures.

**IF rejection.** Again excellent figures.

**Repeat spot rejection.** The Cobra, Commtron and Midland have excellent figures. Although the DNT is lower at 84dB, this is still a very good figure.

**AM rejection.** Not much difference between the four but in the writer's opinion these figures should be much better. Room for improvement here.

**Capture Ratio.** A very disappointing result on all four. The capture effect should be one of the advantages of the FM system and figures of 11/12dB are not good. In comparison a modern hi-fi VHF receiver will measure cap-

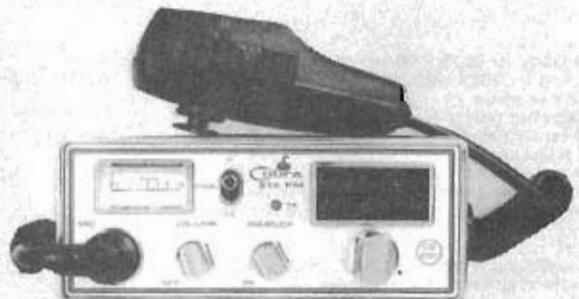
ture ratios better than 1dB, so room for improvement here. Figures of less than 6dB should be obtained without too much effort with a reasonable design.

**Sensitivity.** The Cobra and Commtron had the best selectivity when measured using the two-signal test with the Midland not very far behind. The DNT shows a poor result at only 8dB but as this is also the only one of the four sets fitted with an RF gain control it was also checked with this set for minimum gain. The adjacent channel selectivity then improved to 10dB and the alternative to 60dB. The RF gain should not effect the selectivity measurement and the fact that it did suggests that the poor selectivity measurements using the two-signal method may be due to RF intermodulation masking the results.

**211-12 and 212-11.** Results of all four sets are reasonable but there is room for improvement.

**Desensitising.** With the receiver tuned to a wanted signal of 2 microvolts EMF a second signal was fed into the adjacent channel and its level increased until the wanted signal decreased by 3dB. The ratio between the two signal levels is quoted in dB's. The Cobra and Commtron came out best at 54dB, the Midland at 20dB with the DNT between the two at 40dB. Clearly the Midland has room for improvement on this test.

**RF Intermodulation.** The Cobra and Commtron were clearly the best on this test and could handle signals up to 120 microvolts EMF, the Midland measured 40 microvolts and the DNT at maximum RF gain was 20 microvolts and at



# FM TRANSMISSIONS

minimum RF gain was 160 microvolts. However, as the sensitivity at minimum gain had also decreased the actual dynamic range of signals it could handle was not as much as the Cobra and Commtron. Measured in dB's the dynamic ranges were, Cobra and Commtron 32dB, Midland 22dB and DNT 16/28dB.

**Audio Power Output.** All four sets had similar powers.

**Harmonic Distortion** (at half power). The Cobra and Commtron were very good at only 0.9% and the Midland a close second at 1.7%. The DNT measured 7% and it was this higher figure which prevented a SND/ND sensitivity figure being measured (30dB = 3.1%). However, a distortion of 7% is still a good figure for communications as often a figure of 20% is considered reasonable for speech, so none of the four would cause any practical problems regarding the amount of distortion present. It's just that the higher figure of the DNT makes it look worse when carrying out these more exacting types of tests.

**Aerial Matching.** The input impedance of each set was measured and the DNT was 60 ohms, both the Cobra and Commtron 90 ohms and the Midland 160 ohms. With a correctly matched aerial system the SWR's on receive would be 1.2 to 1, 1.8 to 1 and 3.2 to 1 respectively.

See Part 2 of this series regarding aerial matching and sensitivity measurements.

**Signal Strength Meters.** Some operators get very concerned if they get a report of their signals which is low compared with the one they are giving, often not realising that the difference is entirely due to differences in the receivers. The four sets on test were compared for meter readings against input signal and the results are listed opposite:

As can be seen the actual figures are all meaningless. There is absolutely NO comparison one to another and, frankly, reports based on meter readings are a waste of time. After all, either you can copy or you can't!

This is not intended as a review but the results were surprising in a number of ways. First, the IF and spurious rejection figures were much better than expected and better than the manufacturers claim. On the other hand, the

Signal reading	DNT				
	Cobra	Midland	dx	local	Commtron
1	6	2	0.2	2	6
2	12	5	0.4	5	10
3	20	8	0.6	7	13
4	25	40	1.0	8	60
5	30	100	1.3	10	200
6	36	220	2.0	20	320
7	50	250	3.0	24	500
8	200	280	4.0	30	800
9	640	320	6.4	50	1200

microvolts  
EMF

capture ratios were disappointingly low, as was the AM rejection. The RF intermodulation figures for the Cobra and Commtron are very good with the Midland reasonable. The DNT, due to having an RF gain control, should be able to cope with most practical situations but both this and the Midland may have some problems if used as a base station in areas of high local signal strengths. All four sets should perform well when used mobile.

Finally, it must be stressed that these tests are more severe than those normally used and the figures cannot be compared directly with those published by the manufacturers at present. It is hoped that before too long we shall see more detailed specifications and that a standard method of measurement will be agreed as was the case in the hi-fi industry.

The sets were kindly loaned by Brookes Electronics Ltd., Norwich.

## Test Results

	Cobra 21XFM	Commtron	Midland 2001	DNT M40 FM
Sensitivity for 30dB SND/ND microvolts EMF	3.2	3.2	3.2	-
Limiting for 30dB SND/ND microvolts EMF	0.6	0.6	0.2	0.2
Image rejection	110dB	110dB	110dB	110dB
IF rejection (10.7MHz)	110dB	100	110dB	110dB
Repeat spot rejection	110dB	110dB	110dB	84dB
AM rejection	33dB	33dB	30dB	32dB
Capture ratio	12dB	12dB	13.5dB	11.5dB
Selectivity (two signal test) adjacent channel	36.5dB	37dB	28dB	8dB**
Selectivity (two signal test) alternative channel	55dB	55dB	55dB	***
2f1-f2	-28dB	30dB	-20dB	-20dB
2f2-f1	-44dB	-44dB	-20dB	-26dB
Desensitising (wanted signal of 2 microvolts)	+54dB	+54dB	+20dB	+40dB
RF intermodulation (two equal signals)	120 microV	120 microV	40 microV	20 microV (dx) (150 microvolts local)
Maximum audio power output (8 ohms) (12 volts supply)	1.6 watts	1.6 watts	1.4 watts	1.8 watts
Total harmonic distortion at half power	0.9%	0.85%	1.7%	7.0%****
Typical retail price	£69	£65	£65	£85

\*Harmonic distortion was too high to obtain a 30dB SND/ND figure.

\*\*Single signal selectivity is claimed as 80dB and was measured at this. However, the two-signal test showed a poor result.

\*\*\*Unable to carry out this test due to RF Intermodulation.

\*\*\*\*This very high distortion level probably accounts for being unable to carry out the SND/ND test. The distortion may be due to the audio section alone or due to the combined RF and audio sections.

In general it's a question of swings and roundabouts. Each has its good and bad points but both the Cobra 21XFM and Commtron CB40F have by far the better RF performance of the four with very good selectivity and RF intermodulation. At max RF gain the DNT M40 FM suffered from RF intermodulation when signals above 20 microvolts EMF were applied and this could cause problems in areas where a large number of stations operate as this level of signal would be easily exceeded by locals. It must be stressed that the figures obtained by these tests cannot be

directly compared with those published by the manufacturers but are a valid comparison between the four models. Nevertheless, the figures obtained on the Cobra and Commtron are so similar that further investigation revealed almost identical circuits and layouts (clearly from the same design) and as at the time of writing the Commtron is being offered in the Norwich area at less than £40 it must be good value, particularly as it also has a channel 9 priority switch.

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# FREE RADIO

## A miscellaneous selection

During the course of these articles we have fairly methodically worked our way around Britain and Europe. Whilst the Free Radio tradition is strongest in these countries, there is a wealth of independent transmissions from the rest of the world - some from very surprising areas.

CB News recently drew attention to the trend of mini radio stations in Japan, operating on 76-90MHz FM. The range is very small as the operators only use low power which does not violate the power level set by the Japanese authorities. Most stations hook directly into a stereo system with an FM transmitter and are used for music and commentary.

The amazing thing about the trend is the cost of the equipment. Most stations operate with a kit system that is powered by a 9v battery. The kit costs about 4,000 yen (at 430 yen to the £)

and kits are selling out like hot cakes. One of the most interesting points is that apparently the obedient Japanese stay within the relevant legislation and there is as yet no indication of DX'ing or stations in the European mode.

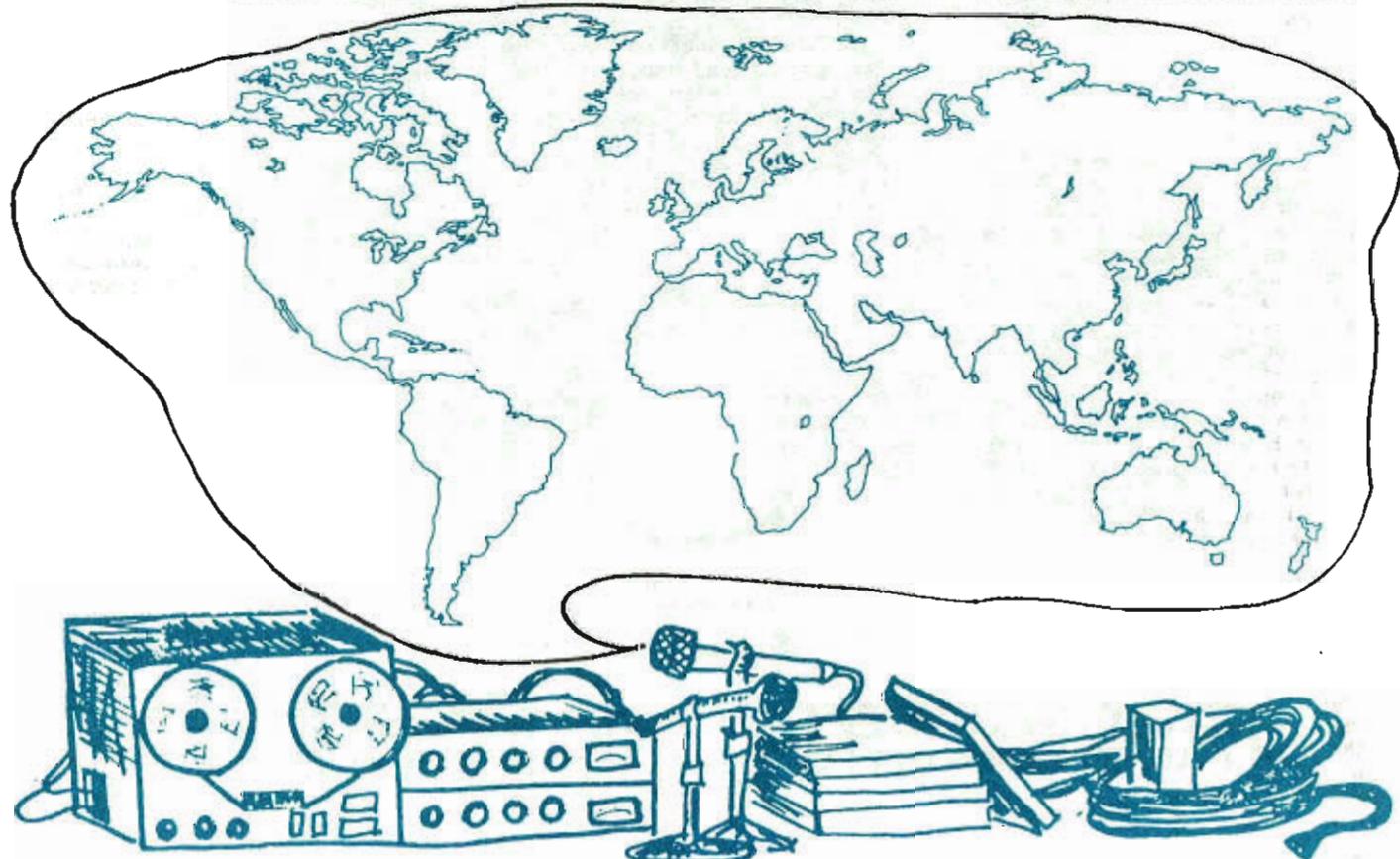
Even the Soviet Union has its 'radio hooligans' and public attacks do nothing to reduce the number. The little information that becomes available indicates that in fact stations are on the increase and fulfill the obvious need for passing on messages and private communication. Although such stations are used for underground political purposes, they also broadcast much coveted western music records - old Beatles records being particularly popular. In common with the more eccentric or individual western stations they can also cover a range of topics from cooking to sex education (which is apparently lacking in Rus-

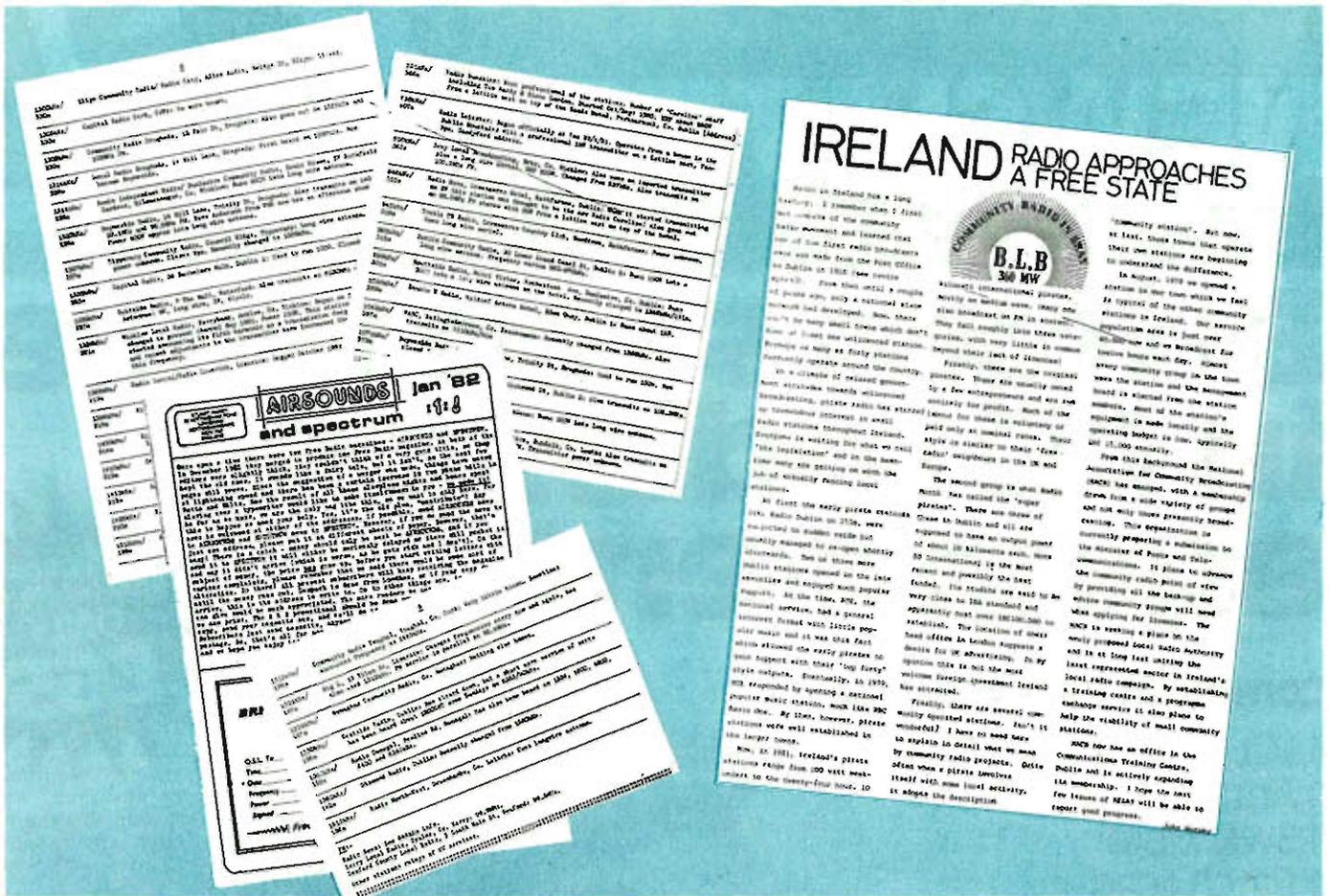
sian schools).

At one time stations were scattered in the MW band between 1100-1700KHz and occasionally on the 60-metre short-wave band but I have no really up-to-date frequencies available.

An article in the World Radio Year Book of a few years ago gives some interesting stories of stations from exotic locations. For instance, an unidentified station from southern India or Sri Lanka regularly broadcasts on 11725KHz with a selection of old light and popular music.

Information on Australia and New Zealand is rather sparse but the same article refers to Station 3BW on 6176KHz from Victoria and Radio Sunraysia was planned for 1610KHz. New Zealand also presents an interesting example of unofficial radio, offering more than an ego boost to the





A selection from the Free Radio magazines, showing the vast range of Irish stations.

DJ's. Radio Sunshine, on 1580KHz with 25 watts, broadcasts from the Southland region of New Zealand, an area remote from the official New Zealand Broadcasting Corporation. Sunshine was put off the air after nearly four years of broadcasting (protected by the isolation of the district), taken to court, fined \$96 and had their equipment confiscated. Sad but not unexpected. What was unexpected was the prompt complaints from the local community. Opinion was that Sunshine offered a welcome entertainment that was more popular than programmes from NZBC, which was received very poorly. Unfortunately, this didn't save Radio Sunshine.

In some African countries or stations in remote locations it isn't unknown for bored or lonely operators at official stations to come back on the air when they finish their official duties with programmes and station names of their own invention. This at least gets rid of the need to build a transmitter.

Readers familiar with the Free Radio scene are probably wondering when and where I am going to mention the Irish (both north and south) stations. Because of obvious political feelings, I decided to leave them to this article, thereby copping out of describing them as either British or European. However, it is difficult to leave political considerations aside as Northern Irish stations get irrevocably wound up with the tragic situation in Ireland. Stations existing for political

purposes peaked during the early 70's and are no doubt still used by the various factions to present their different opinions.

Even from a purely hobby aspect, Ireland as a whole has an enormous amount of Free Radio stations, especially on the medium wave. One of the longest-lived and best-known stations, Radio Valleri, however, was found on short wave. Broadcast from outside Dublin since 1973, it has been enthusiastically listened to by short-wave listeners who have been unable to get an Irish SW QSL since the official transmitter at Athlone was closed. Ironically, Athlone was closed because it was thought to be an uneconomic way of promoting Ireland abroad but Valleri is frequently referred to in letters to Aer Lingus and the Irish Tourist Board from tourists.

The proliferation of Irish stations, like CB, is due to the peculiarities of the Irish Wireless Telegraphy Acts. Maximum fine on conviction seems to be about £50 and since some stations earn much more than this in advertising revenue, raiding them becomes futile. Stations are using large amounts of power to reach larger audiences and 1KW is not uncommon. Unsung Irish ingenuity is also being used: Wicklow Local Radio normally transmits on 1358KHz MW but discovered that their fifth harmonic on 6720KHz (SW) was being heard world wide. So they did a bit of work on their transmitter and have increased the power going out on SW.

A count through the Free Radio newsletters like Spectrum and Airsounds shows upwards of 60 stations operating throughout Ireland. Well-known stations include Radio Nova, operating on 846KHz/355m and FM. Mind you, they are difficult to miss with a 5KW transmitter. The station is very professional and offers an extended service (I'm glad I don't pay their electricity bill!). Many Irish stations seem to offer a 24-hour service, using sophisticated equipment and they are easily picked up in Britain.

I was going to cover North America in this article but once again space seems to have run out. Therefore any information or QSL cards on American stations will be gladly received to feature in an article concentrating on our Transatlantic counterparts.

### Thanks

Many thanks to Stuart from Nottingham and Steve and Andy from Salisbury (You know who you are) for sending me issues of Airsounds and Spectrum and generally keeping me up to date. (In fact, knowing more about it than I do!).

Also, thanks to those who have sent info on their stations and offered compliments on the articles. We must reach parts other magazines don't. For example, Radio Krypton has received lots of letters from CB'ers who, naughty people, have listened in to them.

SS

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# OVER THE COUNTER

In past months in this article we have leant rather heavily towards covering legal FM transceivers. Since there are well over 50 models available, most of which, as we pointed out last month, have originated from a mere handful of far eastern factories, we thought that this month we would lean a little in favour of the antenna's/accessories side of the market.

Although there are not a vast number of ways that you can vary the basic design of an antenna, especially if it is designed to conform to British specification as set down in MPT 1320, the finer details of antenna's design can mean the difference between a successful product and an unsuccessful one. The factors that should be considered when buying an antenna are performance, ease of installation and removal, durability, styling and price the order of importance is of course totally dependant on the purchaser and the mode of employment.

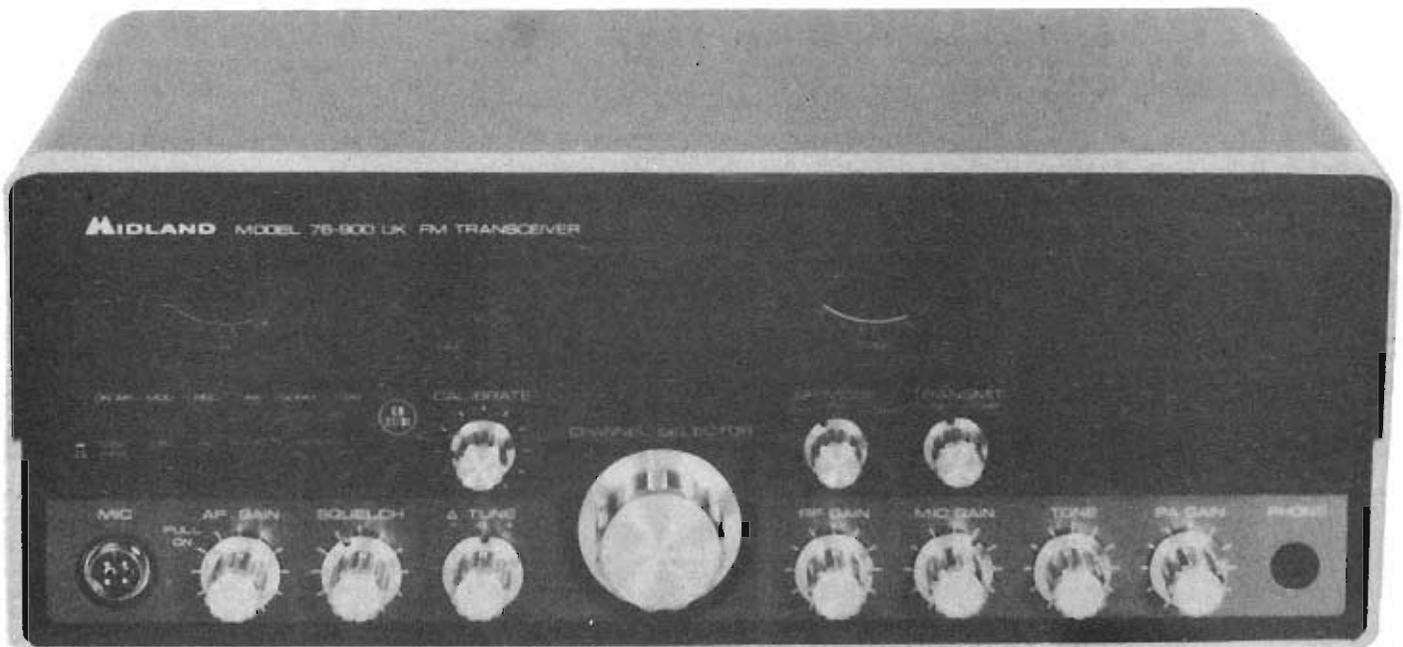
Accessories in many and varied forms have been readily available well

before legal CB was introduced although the prospective boom of CB has prompted electronics firms to initialize their new CB related products or to increase their existing range of CB accessories. SWR meters, power supplies, microphones and TVI filters are among the most popular CB accessories although a host of other little boxes of electronic wizzardry are on sale at most electronic and CB shops.

## Midland Base Station

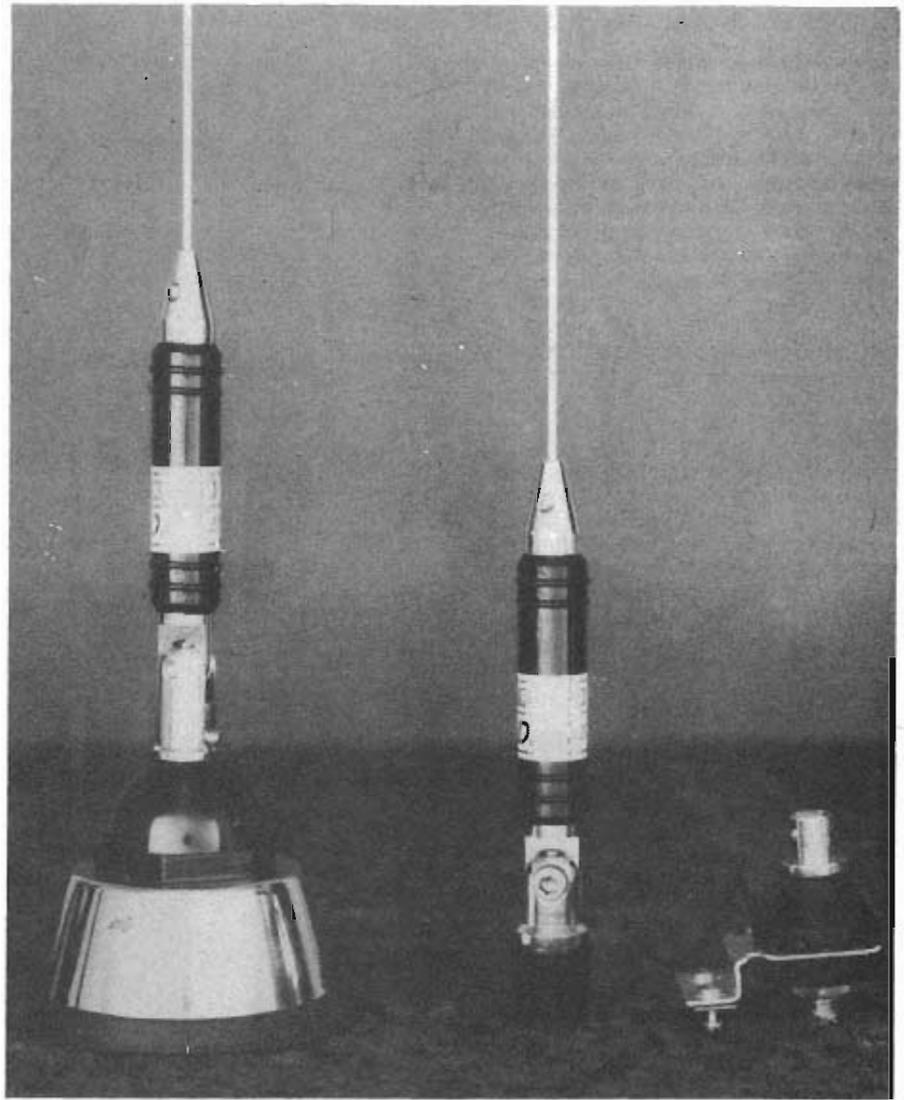
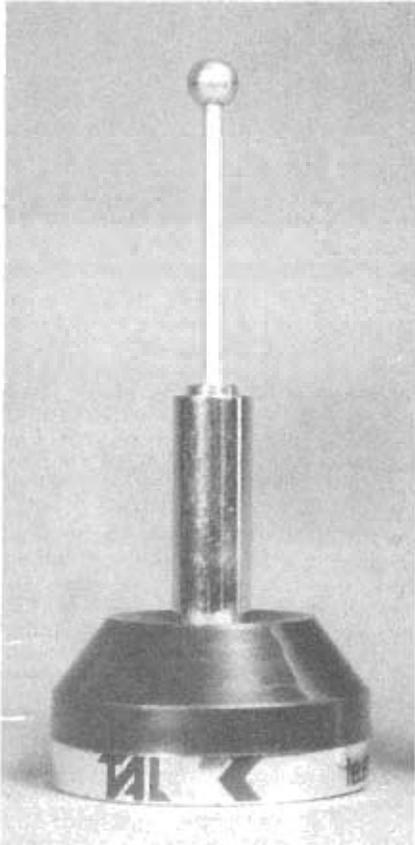
In the opening paragraph of this article I mentioned that preference would not be given to rigs for this month but this particular piece of equipment is surely worth a mention. The Midland 76-900 base station is bound to be the envy/prized possession, (depending on financial position) of many British breakers. The unit is attractively finished in Midlands usual blue-grey and black livery and features far too many knobs and switches for us to use our usual symbols chart, so a verbal run down is

very much in order. From left to right across the bottom of the rig there are rotary controls for AF Gain (audio frequency gain) which is just a posh way of saying volume, squelch, Delta tune, channel selector, RF gain, mic gain, tone and PA gain. Last on the line is a headphone socket. Above these is a line of push switches for, Calibrate/SWR, CB/PA, high frequency filter very useful in eliminating the hiss that is common with FM systems, and dimmer. Next door to these are yet more rotary controls for SWR calibrate speaker mode, (switches from external to internal speaker or both) and the necessary -10db attenuator. Directly above the row of switches is a row of LED indicators for on air, modulating, receiving, PA normal/ -10db. Three moving coil type meters are situated along the top of the fascia for, RF, SWR and signal. An LED channel display is situated directly above the channel selector, which leaves me only to mention the internal speaker which is placed at the right hand end of the fascia.



## 934MHz antenna

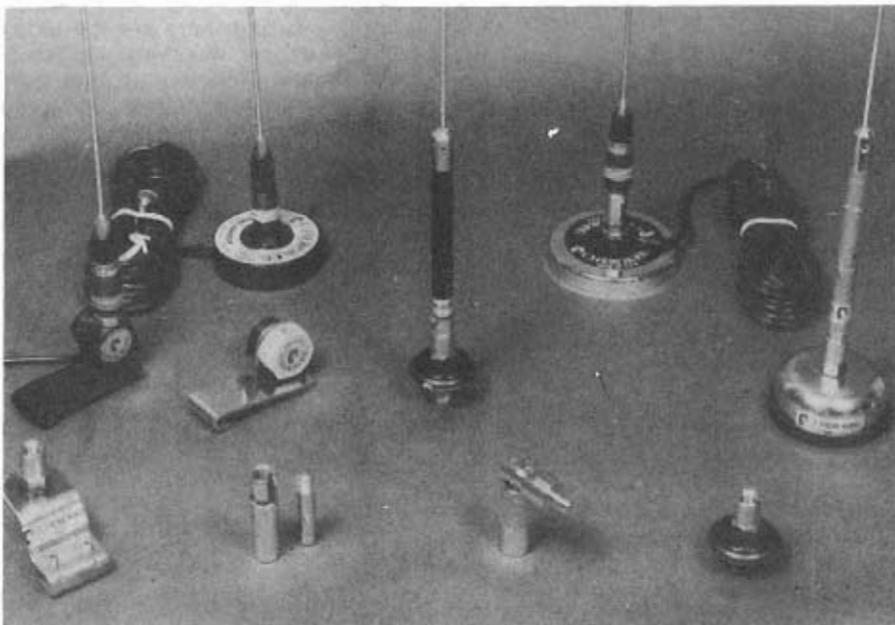
Telecommunications Specialists, who distribute the Antenna Specialists range of antennas, have released the first (as far as we know) purpose-made 934MHz antenna. As can be seen by the photograph, the antenna is very small in comparison with the antennas used for 27MHz operation. It comes complete with cable and mount and will retail at around £14.00. The 934MHz rigs for which the antenna is intended are expected to be on sale very soon.



## Revco Antennas

Mocom, who are the sole distributors for the Persuader range of antennae that were featured last month have

now released a new range of antennae bearing the Revco trade name. The basic antenna takes the form of a base loaded whip for which there are available several types of mount intended for different methods of fixing. One of the mounts has a very useful bayonet type quick release feature to prevent theft or damage from vandals. Others include, mag mounts (standard or heavy duty) gutter mount and boot lip mount. As usual we will refrain from giving retail prices as these will vary from shop to shop.

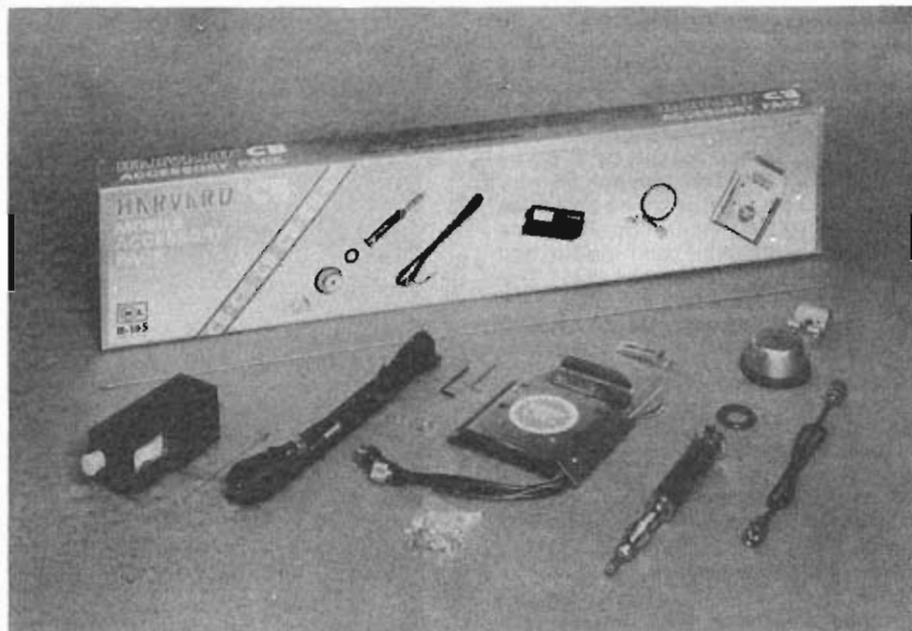


## Cherokee

The Cherokee range of antennas are not exactly new to the CB market but they have proven to be very popular. In fact, if you are planning a long journey with the kids this summer, a game of spot the Dial-A-Match or Half Breed is bound to keep even the most troublesome little brats amused for hours. Both the Dial-A-Match and Half Breed antennas are available in several lengths and are complimented by a pretty comprehensive range of mounts, including magnetic boot lip, hatch back, gutter, quick release and E-Z over mounts.

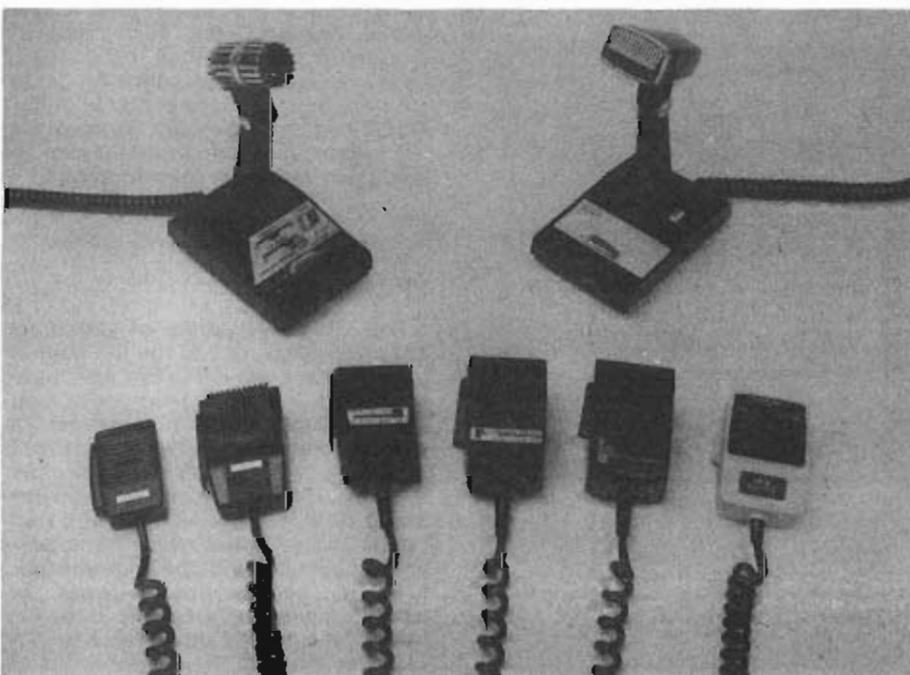
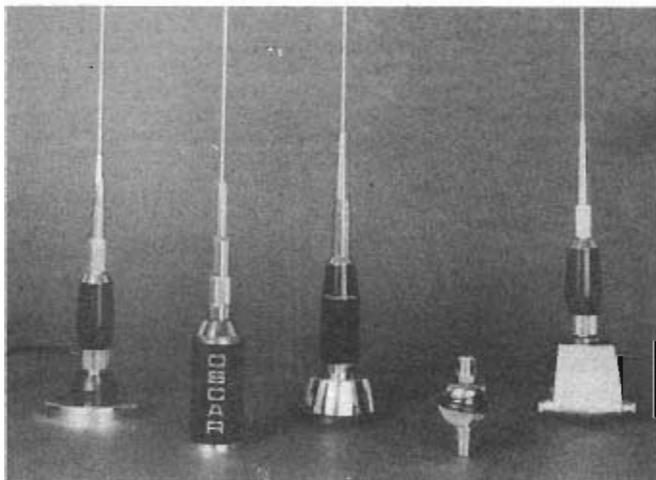
## Mobile Accessory Pack

Harvard have added to their range of CB equipment a CB Accessory Pack which includes a legal base loaded antenna, a locking slide mount, a patch lead, an SWR meter and an antenna gutter mount. The pack is ideal for newcomers to CB and retails at around £20.00 which is extremely good value. Again we must stress that prices will vary from shop to shop.



## SMC

As the SMC Oscar rig has been subjected to an in depth test by us this month we thought you may like to know what else they sell. Well, apart from a vast range of amateur, civil and military radio's, including PMR, South Midlands Communications are distributing a range of 4 CB antennas as well as a range of 6 accessories which



include 2 SWR meters, a regulated power supply, a low pass filter, an antenna tuner, and a co-axial switch. The antenna's are base loaded as per British spec and there are the usual types of mount available, including magnetic mount, boot lip mount, gutter mount and cowl mount.

## Sirtel Microphones

A new range of microphones released by Sirtel Ltd. will soon be appearing in your local CB shop. The range includes 2 home base microphones, and six hand held mikes. The hand held mikes vary from standard replacement mic through to speech processors, power mics and roger bleep mic's. The two base mic's have lockable PTT switches, and one of them, the 610A has slider controls for volume, and tone, internal S/R/F meter and indicator lights as pictured on the left of the picture.

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# DX QSL

# INTERNATIONAL

# CLUB SPOT



**Stop Press!**  
Hot over the telephone. No. 1 QSL club of Great Britain is in a turmoil. Mike Cooper, the founder, is departing these shores to go and work in Spain. The club is up for grabs. Anybody interested in taking over the Presidency, please contact Jim Glavin (Big Jim) on (04868) 20734.

OK, no messing about, I own up!  
I appear to have goofed badly in the November issue of CB Radio when discussing the Coon Ass Club of Louisiana. I recently received a letter from Stephen Madley, of Fife, Scotland, who informs me that things aren't what they seem to be as regards the Coon Ass.

Stephen wrote off to Coon Ass, duly paid his membership fee and sat back to await what he thought was going to be a pretty good club package. What Stephen received as his club package was only about 40% of what I stated you would receive. I don't know what has happened in the period from when I last saw a Coon Ass package up to when Stephen received his but to misquote Will Shakespeare "There's something rotten in the State of Louisiana". What I therefore suggest is that if anybody is thinking about joining the Coon Ass Club, a little letter to them first to find out exactly what's what won't come amiss.

Now a rather unfortunate story which concerns a couple of my favourite Texan radio cowboys.

Mission Control SSB club is run by Dave MC 001 from his home town of Pasadena, Texas. Amongst its worldwide members there is a UK branch containing around 40 Michael Charlie operators. (I'm proud to be MC 145). Anyway, back to the story. Until recently Dave MC 001 and Jerry MC 157 were regular visitors to the UK courtesy of 27.620 LSB. However, regular listeners into that frequency will have noticed that stations MC 001 and MC 157 appear to have vacated the airwaves and are perhaps wondering why. Well, the explanation is very simple and sad. On Tuesday night, 18 August, 1981 both Dave and Jerry had a visit from Uncle Charlie and Uncle shut both their stations down.

They have been charged with (amongst other things):

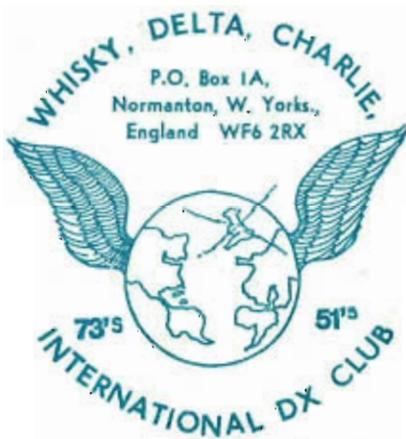
1. Running too much power.
2. Talking to foreign stations.
3. Talking on an illegal frequency.
4. Non-use of legal call signs.
5. Running a 'net' on 27.620.

So far no further action has been taken with Dave or Jerry but that's not

to say nothing won't. Just recently a Federal judge sentenced a CB operator from Fort Worth, Texas to a \$1,000 fine and two years' in prison for the use of a linear amplifier in violation of Section 302 of the Communications Act. The operator, Marvie L. Trotter, got a suspended prison sentence and four years' probation. He must also serve 120 days in a halfway house. I hope for their sakes that the same Federal judge doesn't get hold of Dave and Jerry's case!

Naturally, Dave has had to abandon his MC 001 call sign and favourite frequency of 27.620 for the time being but there's no way he's closed down for good. As a matter of fact, around about 16 January, Dave had three very nice QSO's with English stations and passes on his regards to them. At the moment Dave has to jump around the frequency but hang on in there and sooner or later you're bound to hear 2 Delta X Ray 3 Texas and you'll know you've got a hook-up with Dave.

I figure you're going to take more than a social visit by Uncle Charlie to shut down Mission Control, Pasadena.



I wonder how many UK DX/QSL clubs are now in existence. There must be quite a few by now. Some of them are quite happy to stay on their own patch while others are not content until their call sign is known around the world. I mean this in the

nicest possible way. By virtue of the fact that the club call sign is known around the world it means that the club members are keeping UK 11-metre QSO's alive and well on the DX bands. A good UK club which is active at this level is the Whiskey Delta Charlie DX club of PO Box 1, Normanton, West Yorks WF6 2RX. The club was originally formed by 16 local 11-metre DX operators. At its first meeting it was decided that the club would restrict membership to 50 local members but in June 1981 it was decided to open the membership to include both local, UK and international members. At the moment, WDC club has about 350 UK members, an active Scottish division and members in 19 different countries. The WDC club puts out quite a good package including stamp, club stickers, ID cards, etc. I know several WDC members and they all seem quite happy with the package, especially the club stamp. A pal of mine, Bob WDC 321, rates it as one of the best club stamps he's ever seen. One special attribute of WDC is that it actively encourages 11-metre DX'ing. So much so that included in the club package is a booklet which lists awards that members can claim for confirmed QSO's to various countries. As far as I know, this is the only UK club running such an award scheme. A very good idea. For more information on the WDC club, I suggest you either give a shout on the club frequency of 27.455 USB or contact Club Secretary Martin WDC 04 at the West Yorks AD. I don't think you'll be disappointed.



How often has some local breaker said to you "Oh yes, I'm an original, been on the air two/three years, etc"? It happens to me all the time. Whenever I hear this, I allow myself a little smile and think of a pal of mine in Huntsville, Alabama, USA, Richard Unit 9 of Outlaw International DX group.

Outlaw International must be one of the oldest 11-metre DX groups in existence. A little history lesson may help to clarify this point.

Way back in 1960-61, a group of 12 friends began using channel 22B. In those early days this was considered the ultimate in outerbanding! Well, they talked on this channel for a while until the business got real heavy on it, so up they went to 27.375 (channel 37). They were happy on this frequency for several years until the FCC spoilt it all by legalising CB up to channel 40. So, unperturbed, the group moved up again, this time to 27.555. This frequency lasted a while until it, too, became crowded, so once again a move was on the cards.

Eventually they landed on 27.615 LSB and appear to have settled there. Over the years the original group of 12 had expanded until there was quite a large net of operators all using 27.615 LSB as their standby frequency. It was eventually decided that a name had to be chosen for the net to operate under and so The Outlaws Radio Group was born. The name Outlaws was not chosen specifically to show where they stood as regards frequencies but merely as a bit of a joke against a local bunch of 'smarty-pants' radio operators known as The Bounty Hunters. However, it is a nice, appropriate name. At first the Outlaws all knew each other as there wasn't a lot of traffic way back in those early days but as more and more stations came on the airwaves requesting Outlaw Unit Nos. the group grew and grew until eventually International had to be tagged onto Outlaws and it has ended up as one of the largest 11-metre DX groups in the world. To give you some idea of the size, I'm Outlaw Unit 7212. Some size group, innit?

There are at the moment 7,240 Outlaws, spread over 104 nationalities. Out of these 83 have passed away, only 51 no longer talk on radio (turned in their Unit Nos.), about 70% of the Outlaws are QSL'ers but that is not what we're all about. To make it simple

- we are just radio operators. We are not trying to be the biggest, best known, most active or anything like that. Just real CB'ers that operate on the 11-metre band. Anybody can be a CB'er but it takes a little extra to be a CB operator.

I don't think I've ever heard it put better. It's all summed up on the Outlaw Int. Card. "Wanted alive and DX'ing. Bet your ass we are radio operators."

You bet your ass, I am!

Richard is still very active on the frequency. When he told me the equipment he uses, I was amazed. Are you ready for this?

Radio is a standard Colt 1000, 18 watts AM, 21 watts PEP SSB. Antenna is a 3/4-wave ground plane completed by a Silver Eagle mic and that's it, folks. No burners, no quads, no rotators, nothing. As Richard says, it is more fun and challenging to work DX barefoot.

If you like the sound of Outlaw International and think that you can call yourself a CB operator, why not drop Richard a card at the following AD? Outlaw International, Unit 9, 804 Mira Vista, Huntsville, Alabama 35802, USA.

As I said, Outlaw International is a free club but a couple of IRC's will help greatly towards mailing costs. By the way, if possible, let Richard know which frequency you operate on most of the time.

Seems like my time has come to an end again. I'm really enjoying receiving all your cards, letters and very useful comments. I appreciate them and the help you give me in making this DX/QSL article possible. Keep them coming in, I answer them all. It's the name of the game - COMMUNICATION.

One bit of good news, Allison is allowing me a 48-hour pass out over Easter weekend so I'm heading south to Wembley, land of sunshine, romance and CB Radio Show. I'm hoping to be at the show on Sunday, 11 April and want to meet as many of you as possible. So here's lookin' at ya, blue eyes.

Till next month, take care, best regards.

Charlie Hotel, Echo India 25, clear.

Readers are invited to send their news, views, comments and QSL swap requests to Charlie Hotel, c/o 3 West Street, Tyne & Wear SR3 1EU.

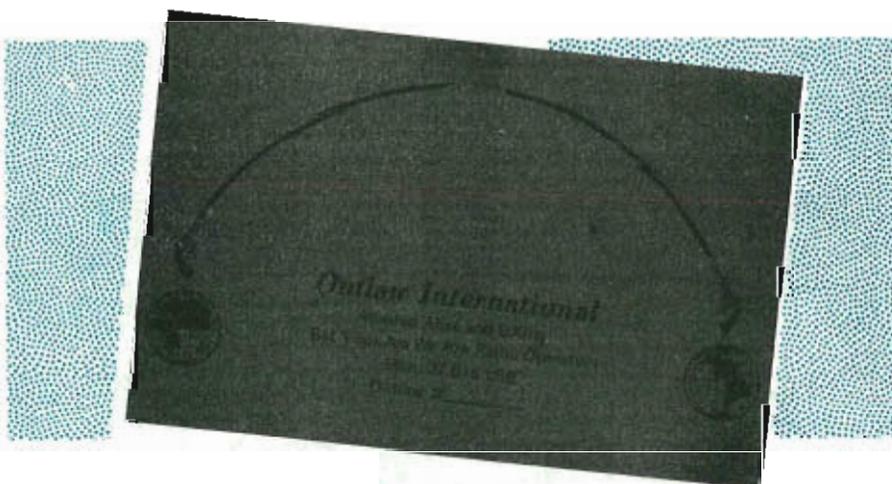
#### Genuine 1-4-1 QSL Swaps

Mabrouk Mohamed has a new AD. Please remember, no CB identification on envelope Mabrouk Mohamed PO Box 7198 Jeddah Saudi Arabia	PL Groenendaal TulpStraat 104 4711 HJ St Willebrord Holland (Panoramic views exchanged)
World Amateur Group PO Box 6390 Long Beach California 90808 USA	CB Station Dicus PO Box 3227 4700 GE Roosendaal Holland
Warwick Donaldson (Banana Kid) PO Box 13 563 Auckland 6 New Zealand	Ken Wheeler (The Red Lion) 72 Birkdale Drive Savick Preston
Joe Morgan (Sky Cowboy) 73 Main St English Town NJ 07726 USA	Kevin J. O'Reilly (Romeo Hotel 419) 72 Grosvenor Road Meir Stoke on Trent ST3 5ND
John Yzerman (Kilo Lima) PO Box 11044 3505 BA Utrecht Netherlands	Bill Coopland (CC Rider) 226 Rock St Pitsmoor Sheffield South Yorks S3 9JF
*Super card for the feilas to collect. I recommend it!	Peter Doyle (Papa Delta 1) Tombrack Cross Ferns
Nico (Dikke Bison) Roosenvelt L 36 6191 VX Beek (L) Nederland	Co. Waxford Rep. of Ireland
Peter & Gretha (Zilveren Carina & Lady)	John Leonard (The Urban Cowboy) 4 Wyndham St Penygraig Rhondda South Wales

#### Worldwide DX'ers

Hello again from the Sandcastle One. A few people that I have talked to have said they have got some mail from England after having their address listed here. I had a QSO with Keyn Asada in Kobe, Japan and he said he has been swamped with mail. He will answer all mail but please be patient. Also Sandy, Sandcastle Six, wants to thank everyone that has swapped QSL cards with him. I've had a few QSO's with the eastern states and they seem to be getting all the DX from the UK. Wish we could pick it up half as well over here. Most of the DX coming into my area is from the Philippines, Japan and Australia. I did have a brief QSO with South Korea and into Ecuador last night. I'm sending along some Xerox copies of QSL cards and I hope they will be put in the magazine. I will be sending along cards each month to this column. I hope the conditions will get better so I can have a few more QSO's into the UK in the future. Did receive a phone call from Clem the Sandcastle 634 up in Sunderland to tell me he heard me on frequency but was unable to get back to me. That's one QSO I would have enjoyed very much. Well, I wish to say hello to all the Sandcastle members in the UK and to all the readers of this column. I hope to hear from all of you soon. Did QSL to one fellow that writes an article about QSL'ing in another English magazine but never got a reply. Keeping my fingers crossed that I get a reply. 'Bye till next month. Ian Shrader, PO Box 167, Pacific Beach, Washington 98571, USA.

Anne (Yellow Monkey) Box 1966 Cape Town 8000 South Africa	Kazimierz Lisowicz 41-902 Bytom 2 Box 98 Poland
Tom Sowden (SC 502) Box 61 Richmond Hill NY 11419 USA	Jacky (16ES1) Box 219 8400 Ostend Belgium
Spencer Ford (Model T) 1171 South G Lakeview Oregon 97630 USA	Lae Zembyrcki (SC 484) 21123 76th St California City Calif 93505 USA
Reggy (K1 4) Box 2295 Paramaribo Suriname South America	Mohamed (SC 741) PO Box 23143 Safat Kuwait
Charles Felzer Box 25 F-67116 Reichstett France	Howard (WH 4655) Box 27099 Wills St Wellington New Zealand
	Andras 1519 Budapest PO Box 231 Hungary



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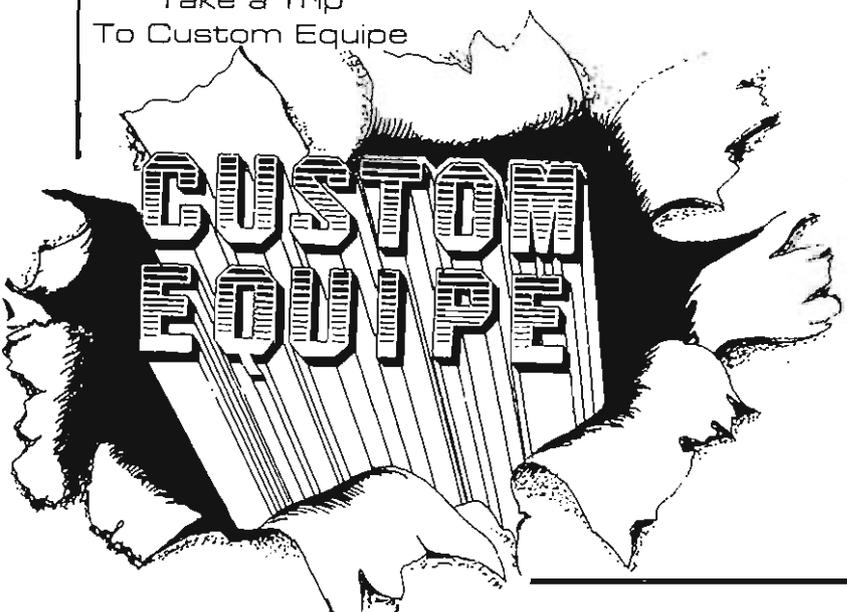
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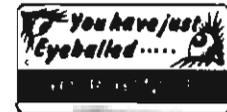
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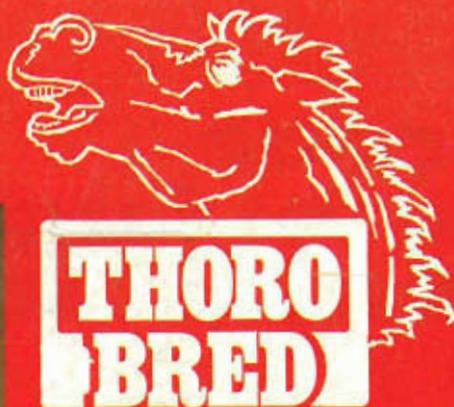
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