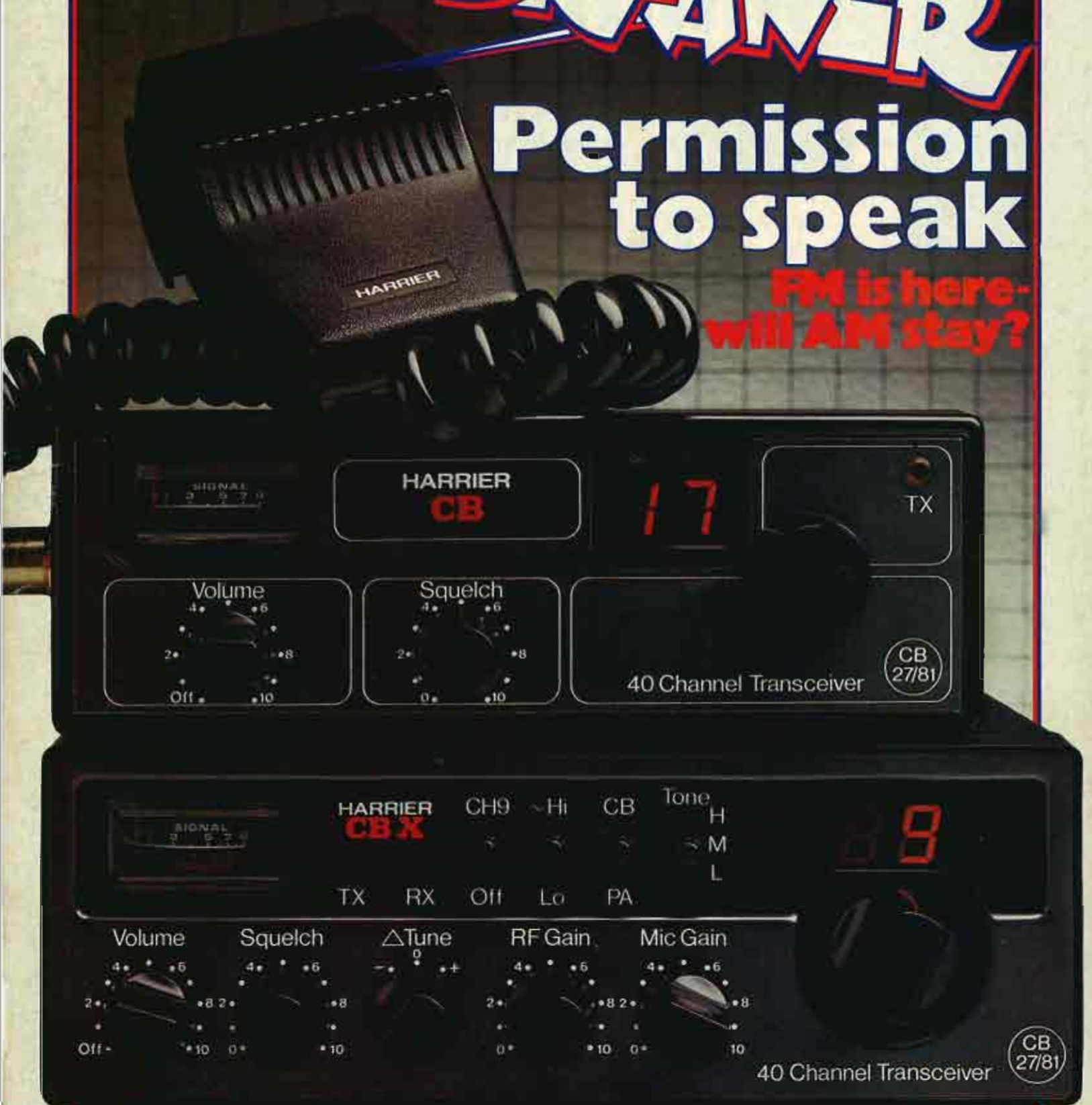


# BREAKER

## Permission to speak

FM is here—  
will AM stay?



CB and antenna installation, code of practice,  
new rigs, DIY project, club news,  
trucks and more

Which CB?  
THE buyers guide

# POWER



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## BREAKER


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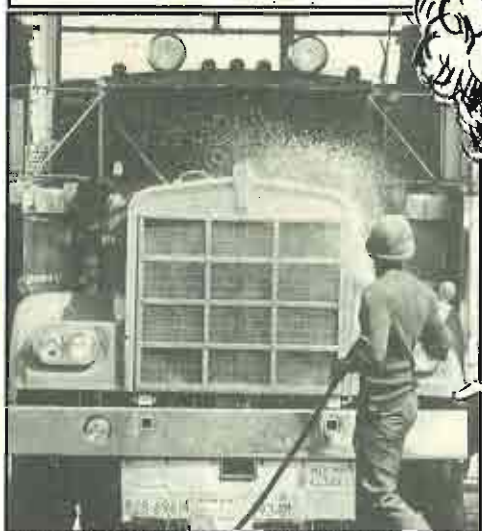
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 A LINK HOUSE PUBLICATION

The publishers of **BREAKER** would like to make it clear that CB radio is legal in this country, whether it be to manufacture, own install or use such equipment, and it is our intention to encourage and approve of such practices. And we've been wanting to say that for bloody ages.



Hi fans. Sorry to let you all down by not writing the credits last month but I had one of my headaches. Got no sympathy from this lot, of course. They beat the poop out of me. They're just jealous of my cult following. Anyway, credit freaks, the very classy cover and spread shots this month and last were taken by the very glassy David Leigh. Would you credit it?

# If you're into CB, join the club.

Following the legalisation of CB Radio, there'll be CB clubs springing up all over the country.

Good clubs, bad clubs, and indifferent clubs.

So how do you choose the right one?

So what else do I get?

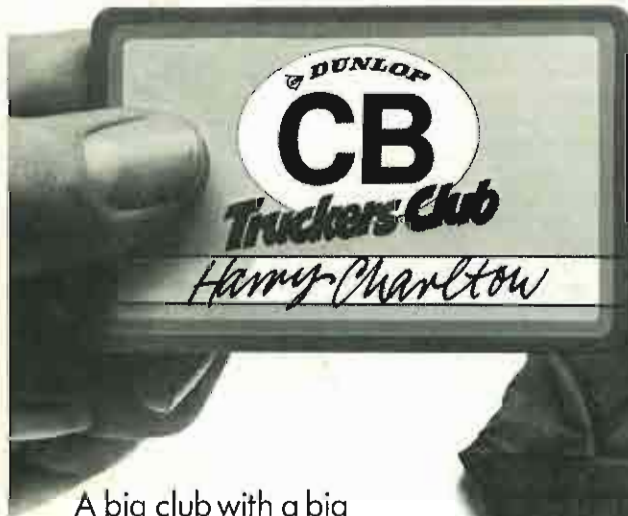
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*Going further all the time.*

# Ratchet jaw

Don't quite know how to put this. I mean, you're not a bad bunch, as readers go. You don't kick old ladies or slip distasteful matter through our letter box and very few of your letters are abusive. Or, at least, not very abusive. There you are, sitting back in your penthouse suite with your feet up on the home base, sipping brown ale cocktails, feeling content with the world. You're either using FM (or queuing up for one), or ignoring it and using AM — everything is hunky dory and you are at peace with your fellow man. I really don't want to spoil things but you must face up to things and there's something you must know. You see, they've made me editor.

It could be an administrative hiccup. Maybe one of the typists got her finger stuck in the typewriter keys and could only release it by typing my name on a new appointment form. Maybe it's a dastardly plot to get rid of me and they figure that if they let me play with the staff Capri I won't last the month out. Whatever the reason, I'm keeping quiet. There are certain advantages to take into consideration.

For a start, I get an extra biscuit at morning break (chocolate after three months) and all the Link House coffee I can chew. It also gives me a chance to pit my wits in the office game of challenge and intrigue — trying to read Lynn's typing. And, joy of joys, it means I don't have to keep practising how to spell dip . . . depo . . . deputy. That alone is a weight off my typewriter.

So it's the beginning of a new regime. The dawning of a new era. Or error, as some of my so-called colleagues would have it. Could this be the start of something good? And I should point out, that's a rhetorical question — or one we don't want anyone to answer, as we call it in the trade. The problem, of course, is how does one better something which is already perfect? Never too late to crawl, my mum always says.

Could Michael Angelo improve the wallpaper in the Cistern Chapel? Could Shakespeare improve Romeo and Juliet? The answer is, of course, no. They are both dead, but if they were around today, their work would certainly have changed to some degree in keeping with the times. And that rather contrived link brings us back to Breaker.

Breaker first saw the light of Croydon in August of last year but we didn't go monthly until May of this year, which is why we've only just got to issue number twelve and also justifies us celebrating our birthday for a good percentage of the year. Either way, we must be fairly close to a birthday now, so it's as good a time as any to take stock. And no I'm not suggesting you pop out and shoplift presents for us.

Don't expect any radical changes over the coming months — mainly because I haven't looked 'radical' up yet, but also because Breaker will continue to reflect what is happening in all areas of CB. And with more colour, style and fullstops than the rest. Recently, we've tended to concentrate on FM, which is not surprising since we've campaigned for a legal service since the word go and, whether we like it or not, we have got one. But we don't ignore AM either although we would never encourage or condone it. Not at all. My word no. All the regular favourites will carry on too, getting even bigger, even better and even more regular. And we've already hinted at some of the new goodies we've got lined up for you, so if you missed them you'll just have to wait and see. That'll teach you.

Just which way the UK CB movement will go now is by no means certain. As we say in the AM feature in this very issue, the future of the new FM service really depends on the public's response to it and the actions of the authorities. Something I wouldn't even put someone else's money on at the moment.

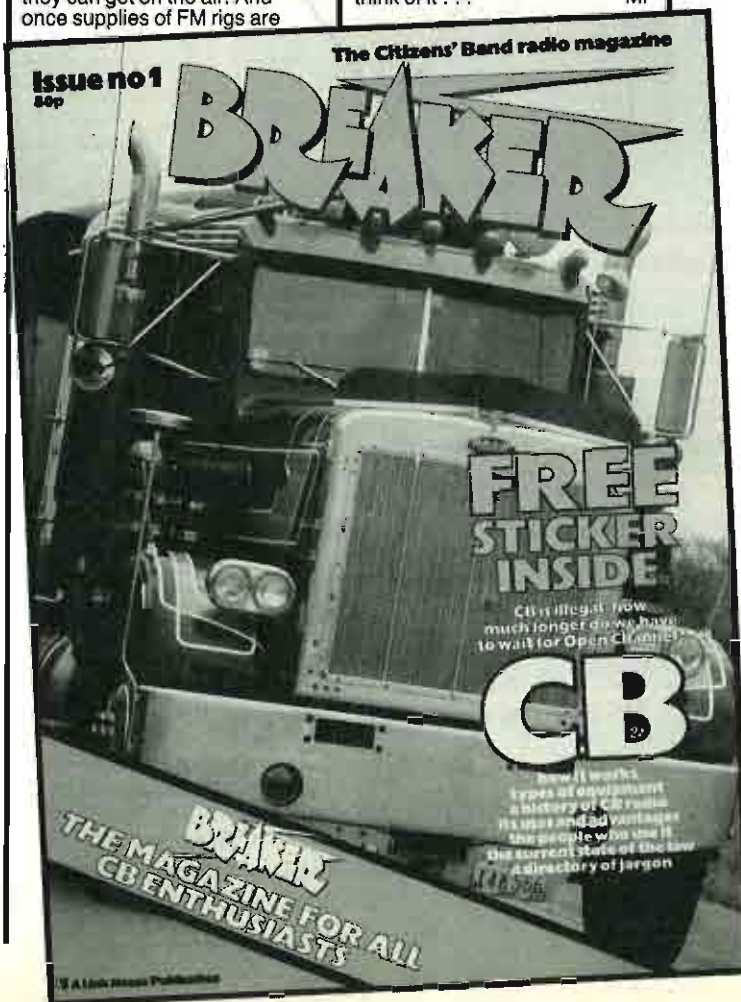
Short supplies of FM sets could have one of two effects: It could either cause more interest in the service, thereby creating an even greater demand; or just the opposite and drive would-be breakers over to AM simply so they can get on the air. And once supplies of FM rigs are

more plentiful, 40 channels will soon become very crowded — particularly with the limited range — again tempting people over to the illegal service. Either way, the Government is to blame.

The authorities can't stop AM rigs coming into the country simply by putting the block on the Isle of Man connection (got to be a movie there somewhere) — hundreds of thousands have been smuggled through customs over the past couple of years. And tracking down those already in the country is another headache for Customs and the Home Office. It'll take a lot more than a couple of Disprin to sort it out.

The National Committee for the Legalisation of Citizens Band Radio (Natcolcibar) have already declared their intention to continue the fight for a better, and more extensive, CB system. But they are also encouraging the proper use of FM — two courses of action with which we agree.

So you can see that trying to predict the content of a magazine dedicated to CB is no easy task, and certainly not one I intend to embark upon before lunch. Breaker will continue to keep its ear to the ground, which itself is a dangerous practice in the Croydon underpass, and bring you everything there is on CB. The good, the bad and the ugly. Which isn't a bad description of the staff, come to think of it . . . MF



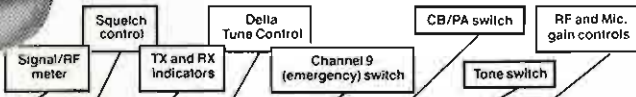
The first issue of Breaker sold out and is now as rare as hens' teeth. We weren't allowed to use rigs on the cover then — and what's all that about Open Channel?

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# Give us a break

## The rules

So. You want to make a point? You want to write us a letter? Easy, just scribble on a bit of paper and send it in to the address at the front of the magazine.

But remember that we won't publish letters unless you put your name and address on them. We won't print your address if you don't want us to, but we do need it in the first instance. Otherwise, it's the bin. Very sorry indeed, but there it is. Or, in some cases, isn't.

## Cop's eye view

Dear Breaker,  
As a police officer, I feel CB is a must for the UK, but it does annoy me when I read in CB mags about police harassment. Where I work, none of us has ever done a CBer, AM or FM. In fact, I have learnt a lot from CBers I have stopped, and I am grateful to them.

I must admit there are some police who dislike CB, and therefore are rather negative towards it, but even they never do anyone. So to all CBers, if your rig gets nicked, report it, because we want to catch the bastards who steal these things, not you!

Once legal, I want to get FM CB, but now knowing much, I don't know which make is best. Which is the best equipped? And not too expensive (Not all coppers are rich).  
*Name and address withheld (We haven't yet fully tested enough equipment to say which is the best available but look through our rig guide, Which CB?, and look out for full rig tests in the coming months.)*

## Spratt speaks . . .

Dear Breaker,  
Don't you think its about time you made Breaker a little more exciting for us lady breakers — ie some hunky male wearing just a CB sweatshirt or with negatorie clothes on.  
Love and Kisses  
*Randy Mandy (age 17)  
Caterham  
(If this isn't a wind-up, my name's Reginald Spratt. We demand proof in the form of a photo — with negatorie vest on — that Randy Mandy exists. Address it c/o Reginald Spratt . . .)*

## A civil tongue

Dear Breaker,  
I love Breaker almost as much as I love breaking, but please, no more unnecessary civil servant-bashing. A couple of your news snippets border on the paranoid.

The fact that there were only two HQ officials issuing test and development licences, and no one to step in when they're

away, is indicative of Maggolini's cutting of civil service staff to such a level where they become inefficient — in fact, as well as in popular legend.

The item on the C & E men borrowing the books of Ham International, is probably a panic over very little. The C & E's internal organisation is such that VAT work, and the investigation of illegal imports, are far removed from each other in practical terms. A link is possible but improbable, and let's not forget that the C & E is as short-staffed now as any other Govt Department — they have enough on their hands trying to get their routine work done.

It's an unpopular job. They don't get huge salaries, they don't expect thanks or praise. So let's not see plots everywhere — there are enough, without imagining more.

*The Meanie  
(We didn't say it was the civil servants' fault — just that a new (and very lucrative) service needs proper staffing.)*

## Do what, John?

Dear Breaker,  
A lot of people seem to be complaining about the American jargon that is being used by the British CBers. In issue No 9 Jolly Green Giant complained about the American 'Roger the Dodger'. Well, I have some news for him. Roger the Dodger is very much British — say it to any self respecting Yank and he'll think you're crazy!

You want some American jargon? Jimmy behind the chrome cowboy running bareback, you'd better lower them flaps and close the double nickel, else you gonna be feeding the bears at the cave 'cause we got a county mountie in his black and white taking pictures.' How often do you hear that on the air?

So, go across to America before you start complaining. And to round off, there is nothing wrong with American jargon, anyway. It has been developed over the years to fulfil a need. Instead of saying how bad it is, we ought to be learning from it.  
*Skyrider  
Malvern  
Worcester  
(Um . . . well . . . erm . . . um. I think I'm getting the hang of it.)*

## Forcing the issue

Dear Breaker,  
After having spent some time in the UK with my family of ardent breakers (father and three brothers), I caught the bug and got an AM rig which I brought back to Germany. However, I never got to use it here because it was completely illegal having 80 channels and too much power.

So I decided to go legal, as it's not too expensive here. My husband bought me a 22 ch FM rig and I couldn't wait for my first copy. After shouting 'Breaker for a copy' for nearly two hours we decided the rig must be useless until the local fixer arrived on the scene.

He told us I was the only breaker in a twenty mile radius with an FM rig, so after paying out for two rigs which are completely useless I got a bit disheartened.

I'm still an ardent CB fan though. I receive my copy of Breaker every month and can't wait to get back to the UK where CB is much more fun than here.  
*Mailard  
British Forces  
Germany*

## CB for disabled

Dear Breaker,  
Thank you for your feature about the disabled. I myself am disabled and now have a rig and although I have a speech defect, this has not stopped me from breaking.

Please help the disabled to be accepted in to this great hobby through your great mag.

*Tiny Tim  
Watford  
Herts  
(We've had a big response from our CB for the disabled feature — look out for a follow-up soon.)*

## Sticky problem

Dear Breaker,  
I dashed into my local newsagents to get my September issue of Breaker and what do I find? Only one left on the shelf and no free sticker.

Shame.  
*Long Ranger  
Chipping Sodbury  
Bristol  
(Saw a Breaker sticker on a Telecom van the other day. Now that's naughty . . .)*

## Just practising

Dear Breaker,  
One of the problems we have grown up with in CB is the use of varying breaking channels throughout the length and breadth of the UK caused, no doubt, by small individual groups of friends taking up CB in their own towns and just picking a channel to talk on. This channel has then become the breaking channel for that area, as more of their friends have bought rigs.

This has certainly been the case in the Isle of Man, where the breaking channel is 13, and it is too late to change it now. It is not too late, however, to introduce a common breaking channel on FM — I would suggest 14 for towns and 19 for mobile coppers on motorways, even 'A' roads, etc as these two channels appear to be the most

accepted ones at present.

Clubs and dealers could help by informing those new to CB, and the Home Office really have an obligation to publish a code of practice that must be adhered to, stating the breaking channel to use, how a copy can be made and how to change to an alternative channel. This would ease the chaos that must follow the purchase of legal sets by virgin breakers.

*Allan Quirk  
Douglas  
Isle of Man  
(The Home Office approved code of practice, worked out by Natcolcibar, goes along with your suggestions — channel 14 for local breaking and 19 for 'main road' and 'long distance' drivers.)*

## Red tape worm

Dear Breaker,  
How long are breakers to remain second-class citizens?

In June, I wrote to the Home Office asking how to go about getting a temporary import licence for my rig when I visit the UK — I am still waiting for a reply. The other day I wrote to the same address with a query about ham radio — I received a reply by return post!

Makes you think doesn't it?  
*Andy McColland  
D-1000 Berlin 19  
(Not now, I'm thinking . . .)*

## Keeping it clean

Dear Breaker,  
I am a new breaker running a Viking Johnstone 260 rig. I have a DV27 mounted on an old metal twin tub washing machine body which stands on four sheets of tin foil. This is set up in the front room and so far I have managed to get out 12 miles.  
*Blockbuster  
Dunmow  
Essex  
(Sounds all washed up to me. . . If anyone else has any unusual installations, let us know and we'll give everyone a laugh . . . er, sorry . . . pass on your hints.)*

## EEC answer?

Dear Breaker,  
I don't mind whether CB is AM or FM, as long as it is possible to use the sets in European countries where CB is already in use and established. Perhaps the EEC could (for once) agree to provide a licence suitable for use by trucks and tourists abroad.

Secondly, like many others, I intend to make full use of the FM system now it is introduced to the UK. If the Government stick to their antenna specification, then I may be one of the thousands running an FM rig with a DV27, Firestick or similar.

*Pintpot  
Brentwood  
Essex  
(Pintpot also said something about spelling mistakes — wat doos hea meen?)*

There  
are  
twigs

and  
twigs

Sure, you can buy a cheap antenna. But the whole performance and range of your rig will suffer. Far better spend that bit more and get the best. *The best?* Antenna Specialists are absolute top CB antenna choice with US fans . . . and they should know! AS make *professional* communications antennas, and their CB range gets the same components, same high-grade materials, same quality standards. They offer the highest VSWR figures . . . better than 1.5:1 across all 40 CB channels, and power handling way beyond any you'll ever need. They meet Home Office MPT 1320 spec . . . take our Antiference word for that. We've field tested them for UK use too, and as antenna makers ourselves we'll tell you now . . . AS are the best. And latest news, they come via Antiference, so you'll be seeing the AS 'quality stripes' everywhere now.

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# Wrappin'

Fascinating little snippets of information time, as motorbrain Justin V Molebrain III takes to his pen to bring you the latest murmurings from high places in the motor industry, plus all the latest cribbed from the national press by his best friend Gerald. Read on alone, and unprotected . . .

After the tremendous exposé on insurances last issue we've had a number of solicitors' letters, etc, also a phone call from an insurance inspector. He thought the piece was great, except for the bit about insurance inspectors. Mmm. But he said he could tell us things about insurance which may be useful — look out for an update on this soon, in the next issue, perhaps . . . **Meanwhile**, after our little bit on life at the limit for the disabled, especially that part about the disgusting plastic pigbins they're supposed to drive (?) about in, comes news from the multinational and very triff Ford Motor Company about a new Cortina which will be available only to registered disabled persons or people in receipt of a Government Mobility Allowance. The car has been built with the needs of disabled people in mind, based on a 1600 two-door Cortina, and includes automatic box, laminated screen, heated rear window, remote control passenger and driver door mirrors and loads of other stuff. It's priced at £3995 including Car Tax and VAT, as opposed to the standard Cortina price of £5040, and Ford have introduced a special credit scheme for purchasers — 20 per cent deposit (£799) and repayments over four years.

Seems like there aren't that many people who can get their bums into action, but Ford have been doing it consistently in a number of fields for year. Nice to see them act in this way, and prove to the motor industry at large that it can be done. Not only does it cost nothing to have a heart, but I bet they make a profit too . . . **And** speaking of Ford, interesting to note from Computacar that the Escort tops their list as the most sought-after used car in London and the South-East. In fact, apart from the Mini in second place, Ford have got the first five places sewn up, and a total of six cars in the Top Ten. They must be doing something right. And it's even nicer to see that the top five are 100 per cent British, with only the VW Golf and the Renault 5 (positioned 6 and 7 respectively) preventing that coverage reaching the Top Ten, which is 80 per cent British. 73 per cent of total enquiries were for British cars, 52 per cent Ford, 19 per cent BL and 2 per cent Vauxhall.

More than half of the total enquiries for second-hand cars were for one make; shouldn't we all be twiggng something here? . . . **Visitors** to Motorfair will have

seen that all the manufacturers are going polty trying to get the new slippery cars for the eighties off the drawing boards and onto the roads. Renault seem most likely to be first, with their aerodynamic restyle of the 18 range; Ford ought to be last, mostly because of the dramatic innovations on their Probe mobile testbed, but with the record they've got they could well upset a few people with their speed at getting things into production.

Certainly look out for some of their stylish (and effective) techniques on other production cars soon — twin rear spoilers, curvy sill-line, plastic moondiscs on all road wheels, even plastic wheel-arch lips and perhaps fender skirts as well — so you can enjoy the fuel saving benefits soon . . . **Watch** out for all the trick new engines from people like Mercedes and similar. These things think for themselves, and generally don't trouble to even ask the driver's opinion, never mind do as they're told.

This need not be all advantageous, though . . . **As** readers of the Daily Mail will be aware, CB can seriously damage your engine if you're not careful. This may come as something of a surprise to you, but it seems that an unshielded CB rig in the car can give off radio signals which could confuse the inbuilt computer (which is becoming a more regular feature of everyday motoring in these silicon-chips-with-everything-days) beyond belief, and drive your whole car crazy like you wouldn't credit. You may find this hard to believe but it can happen; in the development days of some early electronic injection / ignition systems it was discovered that some PMR sets could throw the computer haywire, and start all sorts of things happening at the wrong moment.

Lucas very sensibly built filters into their units in order to prevent all this; presumably other manufacturers have too, but remember it's proximity which calls the shots round here. Some on-board computers are under the dash or the seat, within spitting distance of the rig; check out yours when you fit the CB and make sure that all the necessary shielding and filtering is taken care of before your cruise control goes beserk and kills the pump attendant . . . **Speaking** of pump attendants, it's no wonder there are so many self-serve places these days. Have you seen the conversion charts from gallons to litres?

Imagine trying to cope with that. You'd need an A-level in applied maths . . . **Vicious** rumour department; the M1 will be closed for repairs somewhere along its length for ever from now on; it was built from one end to the other, and by the time they reached the top the bottom needed repair. By

the time the bottom's repaired the middle will need it, and by the time they finish that, there'll be cracks at the top.

Once that's fixed . . . **More** vicious rumours pertinent only to those privileged people with company cars. You already pay tax on private usage, right? Soon you'll be paying tax in relation to the engine size, so you'll have to give the Chancellor more for a 3-litre than a 1600. Now do the conversion from 350 cubic inches and see how I feel . . . **Notice** also that your CB licence covers you for three sets. One base unit and, presumably, two mobiles.

The Government already think that everyone owns two cars. Or do they imagine that we're all given to gratuitous pedestrianism and walk about so much we need handsets? And notice also that the Code of Practice says don't put your face closer than six inches from the antenna when transmitting. You could poke your eye out. Ever tried that in a car anyway? At 70 mph? . . .

Three from Ford: The Computacar chart-topping Escort, the Cortina designed for the disabled and the Probe experimental vehicle.



# You've got to go some to be King of CB in the States.

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And now that COLT has at last been released here in Britain, there's going to be some stampede among British CB'rs.

**So beat everyone to it** - post the coupon below to Shellpost for details of your local dealer.

And you'll soon be rubbing shoulders with the CB King of the States.



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## ICE and EEC

We get lent cars from time to time; some nice motor manufacturer who doesn't mind taking a risk with a bit of his disposable assets. Quite nice, some of them. Some not so nice, but never mind. We don't. Often.

One of the first things to do when you get a test car is start pushing all the buttons. Checking out the gadgets. Some of us are gadget freaks, see. Give us buttons to press and we're anybody's. Sometimes though, gadgets can be more trouble than they're worth. Never forget the first Fiat X19 we got on test. Lovely little sports car, very good looking, goes like the brown stuff off a shovel (now it's got the bigger engine) and generally very well appointed.

Have you noticed all motoring correspondents say that. Well appointed. Means it's got ashtrays and a radio.

And speaking of radios, the X19 was the first place we ever encountered the Voxson radios. Jolly smart little things they are too. The one in the X19 had all the usual guff attached to it—pushbutton wavechange, millions of assorted controls for this that and whatever—plus a single knob on one side with no visible descriptive label giving any clues as to its origin or functions. Hardly surprising to find us pressing it like fury. Very surprising to have the whole radio drop out in your lap. Just popped out of the dashboard.

Thought it was broken.

Wasn't.

Meant to do that.

Anti-theft device, see. Pop it out when you leave the car and slip it in your pocket or your boot, do your shopping or sunbathing with no worries, and then clip it together when you return to the car. Thank God for that. Frightened the life out of us for a minute.

Seems like a good idea, though, particularly for owners of soft-top cars, who have a lot of problems with theft and/or insurance. Modular CB next?

Funny thing about radios is that once upon a very long time ago they were what car manufacturers called optional extras. That meant very expensive luxuries you probably couldn't afford. Now they're standard in everything except motorcycle sidecars. It's a pity that some manufacturers still show them as extras and still charge for them as extras. That's mostly, so we're told, because you lot—the buying public—are such a difficult bunch to deal with, and insist on remaining individuals. Some of you want a radio, others want stereo cassette, some of you don't want anything at all. That's because you either hate music or you're going to put in a vastly expensive component system of your own. Bloody good luck to you too. Hope it makes your ears bleed. That's why, though, the state of the art for factory-fitted radios is so jumbled. Some manufacturers

(no names—we want to keep borrowing the cars, chaps) do sell a car as standard with a basic two-band radio in it, included in the price. Then they offer the option of having any one of a bewildering range of much better units instead, and this is where it starts to get really complex.



A car which is likely to be sold in say 15 countries within the EEC has to pass some fairly stringent tests; the radio is no exception. It may have to satisfy the requirements of as many as 300 different bodies before it gets accepted. Consequently, if you were a manufacturer you would need to go to a radio manufacturer with your own set of engineering requirements for radio sets; these would have been worked out by a team of experts, who may even travel all round Europe in a car loaded with radio gear, testing reception and quality all over the place, perhaps as far afield as Iceland. Then you'd need to ensure that the set itself met all the relevant DIN standards. And that's not only size, but impact resistance, absorbency (it's going on the dashboard where it may, under unfortunate circumstances, come into contact with faces) and all sorts of things.

Having given your requirements to the factory you'd be forgiven for wanting your own name-tag on the unit, would you not? Especially as your requirement for the vehicles on the production line may well exceed by many times the radio manufacturer's needs for the set on which the unit was originally based. Your unit may well work out to a completely different price to the audio manufacturer's very similar-looking unit. But you'd be charging different prices for it anyway, depending on where it was installed, if at all.

It might be £145 plus VAT over the counter, £165 factory-fitted in a flash limousine and £110 factory fitted in a cheap saloon.

£145 is the base price of the set. Add VAT, labour for fitting and speakers plus fitting kit and it's £165 in the big car. Less messing about in the small car makes it more than base price but less than £165.

Then deduct the cost of the factory-fitted standard two-band

radio and it's only £110. Getting complicated, right?

A lot of people seem to think that the factory option for CB is only a day or two away from legalisation date. It may not be that simple. If it was only going to be fitted in a car available in England that may be true. But no manufacturer worth his salt is going to confine sales to one country in Europe. He's going to want to sell in all of them. And what do we know about CB specs in Europe? Correct. They're all different. Very different in some cases. Especially ours. Ask a car manufacturer to build a CB facility into the already bewildering range of radio units he has to have available and life is suddenly going to get drastically complicated, not to mention

stupendously expensive. And so far we haven't even thought about antenna fixing or specification.

Oh no. It isn't going to be easy. Don't expect it to happen overnight. People like Ford, who have their own range of equipment re-engineered from the range of an independent audio manufacturer, and Unipart, who do the same, are going to take forever getting things organised. And it won't be their fault. . . .

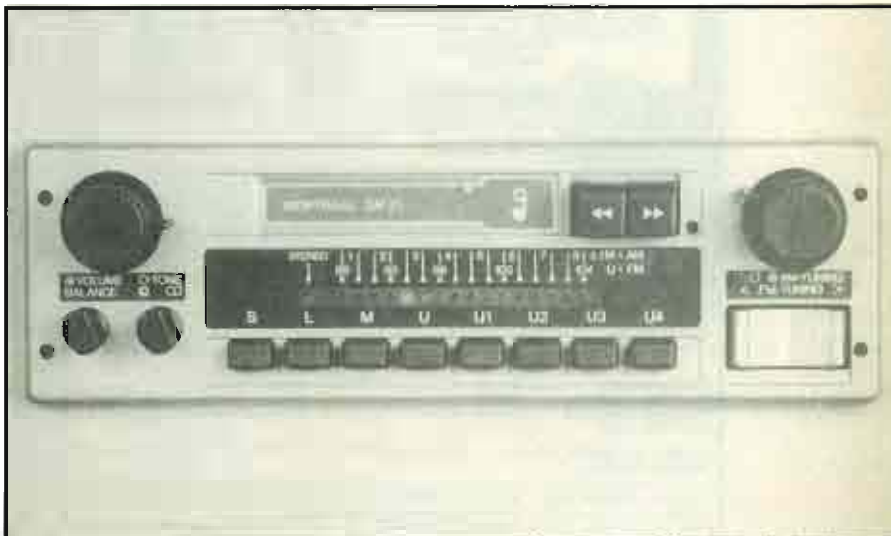
## Montreal together

Mention Montreal and what do you think of? The vast forests of Canada? The Mounties? Fast flowing rivers gushing down from high mountains? The place where they held the Olympics a few years back? All pretty understandable really, but would you connect a place in Canada with a stereo radio cassette? No, we wouldn't either.

So why call it after some place in North America? Well, it's got more appeal than calling it the Scunthorpe, and that's what it's all about when it comes down to selling things—appeal. Mind you, the Blaupunkt Montreal SM 21 has more to its credit than just a flashy name. For £129.95 you get a LW/MW/AM/FM stereo radio with four preset FM stations. And if that's not enough it will seek its own stations, but if you like to feel useful and do your own tuning the frequency scale is made up of a row of LED indicator lights to let you know where you are. Another nice touch is the fascia, which has its own green lighting to wire up to the car's panel lights.

It delivers nine watts a channel and the cassette part has lockable fast forward and reverse—and the radio starts automatically when the cassette ends. It's a neat, if unspectacular, package which should suit most people.

On top of the £130 for the unit you will have to fork out for speakers. These will depend on the type you buy, but about £20 should see you right, so we're looking at £150 all in. Not cheap, but then again, not nasty either.



CBC

# CB CENTRE

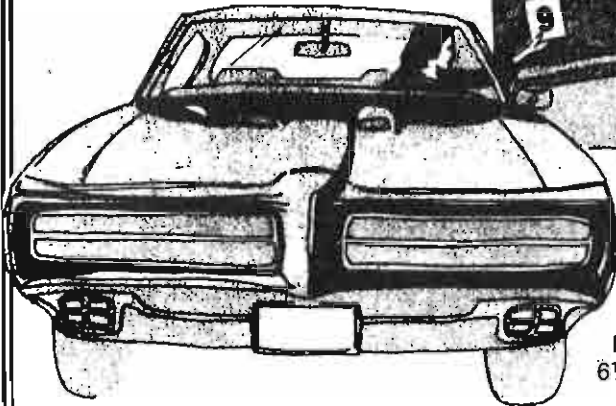
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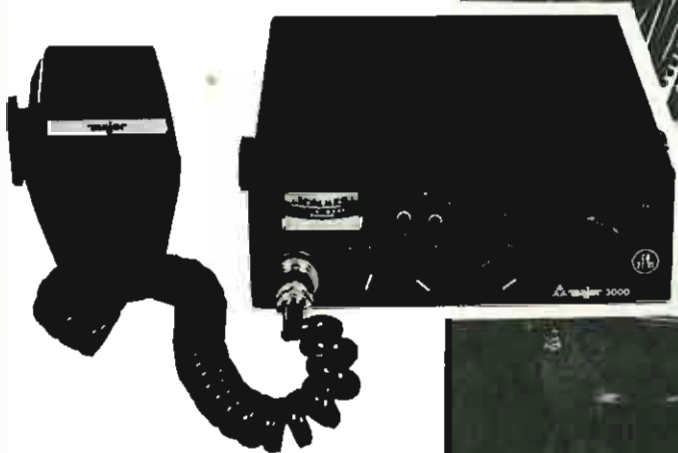
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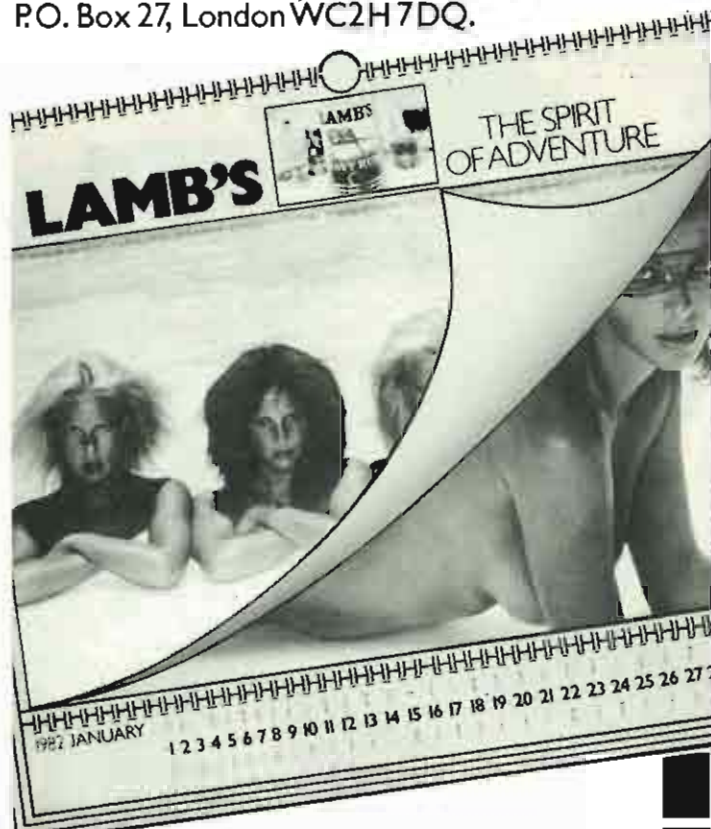
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# Lowdown

## New Brit

Bit of late news on a new rig. The Road King, British designed and made, uses a Plessey chip and will retail for around £85. It will be distributed by Acorn Trading (Unit 43, Coleshill Industrial Estate, Station Road, Coleshill), so keep an eye open in your local shop. More next month.

## Much binding

Sorry about this, but you're going to have to find something else to hold up the end of your bed where the leg fell off. We got binders.

You can gather together all those back copies of Breaker that you thumb through everytime you've got an hour or so to spare, thus saving yourself an ear bashing from your wife/husband/girlfriend/warder/nurse, who can't vacuum and isn't it about time you did the garden.

He or she will be so grateful they'll probably even send us the measly £3 to Binders, Breaker, Link House, Dingwall Avenue, Croydon — and make the cheque or postal order out to Link House Publications Ltd. Then you can put them neatly in your bookcase alongside your bound copies of Womens Weekly and Rapier. I really should sell insurance.

## Once a Knight . . .

Charlie Godfrey from Knight CB Specialists popped into the office the other day. He even drank a cup of the evil Link House coffee, so he deserves a mention. If not a stomach pump.

They've got the sole import rights to the Audio King and Pow-R-Stik antenna ranges, both manufactured in sunny California. Bum of a life for antennas, isn't it? California one day, Luton the next.

But first the Audio King. To be honest, it's not the most attractive antenna we've ever seen but the manufacturers claim amazing performance (and Charlie got excited and used lots of words we can't print) and that's more important. The loading coil is oil-filled for improved performance — we're putting one on test, so we'll let you know just how good.

The Audio King is centre loaded, which is a mite illegal, but the lower part can be removed to make the antenna base loaded without affecting the performance too much. Again something we'll be checking. The two models, AKO-100 and AKO-150, aren't cheap, both selling at around £30, but they should find a market as replacement antennas to uprate a system.

Their second range, the Pow-R-Stiks, is more familiar and not dissimilar to the Firestik — although many claim the former has better performance. And both are mucho illegal under the new FM regs.

One nice touch on the Pow-R-Stik is the tunable tip,

which means you don't have to start hacking bits off to get the SWR down. The manufacturers guarantee it will outperform any competitive antenna of equal length. It's certainly a very effective antenna — and annoying that the Home Office didn't OK these, and similar helically wound items. Like the Audio King, it comes with an enormous choice of mounting brackets. Prices range from around £13.50 for the three foot dual wound DS-3 to around £21 for the 5' 6" quad wound QS-564.

Knight CB Specialists are also supplying goods wholesale to other stores but you'll find their retail outlet at 201 Dunstable Road, Luton, Bedfordshire.

## Haces high

While we tell you about all the new goodies on the market we don't, of course, actually supply them. Although with the amount of gear coming into the office, we could almost set up shop. But no, that's down to the retailers. The dealers. And we thought it was about time we had a look at another one in some detail. So we have.

HACES. Not mean much to you? Well how about 'Home and Car Entertainment Specialists'? HACES live, at 32 York Street, Twickenham, Middlesex — and they sell CBs.

The shop opened in April of this year with Howard True in command. Howard is a businessman and needed a good salesman to make a go of the business, so Andy MacKenzie joined him as a partner. Since then business has been good and Howard reckons that the first year's turnover should be around £125,000.



The shop is an agent for HMP and Harada base/mobile antennas, as well as being the southern area agent for FKI, a new British power unit which is proving popular. The sale of power units is on the increase and HACES sell around 30 a week. They put this down to the colder weather forcing people out of their cars and into their homes. HACES also stock a wide range of Avanti and Firestik aerials, and can provide large home base antennas.

HACES also sell rigs, ranging



from a straight 40 channel from around £65 to a wizzo base station for about £275, and these include makes such as Johnstone, Ham International, Sharp, Colt and Expert.

HACES like to feel they offer a complete service, the sort of attention a large department store cannot match, 'Everything from crystals to three element beams', says Howard. The service includes rigs repairs done on the premises, a mobile installation service from £12.50, rigs serviced from £7.50 to £12.50 and wiring up power mikes from £3.50. They don't offer a supression service, but they are willing to offer customers advice on this and other CB problems. They have also applied for a licence so they can convert your AM rig to the legal FM specifications. Speaking of which, they see a strong demand for AM sets even after legalisation, especially SSB. It will be interesting to see how it turns out.

It's not been plain sailing all the way, though. In September the shop applied for its new insurance, and they were told they couldn't get it until a burglar

rigs from day one of legalisation. They will part-exchange your old rig against a new one and if you get fed up with CB (as if you could) then HACES can also do you a deal on a radio telephone if you're very wealthy.

They also stock a large range of video cassettes and in-car-entertainment equipment — now you know how they got their name.

## Halfords move in

Halfords are selling CBs. They've got a range of five rigs, two own-brand Barracudas and three sets from the Binatone range. Prices are from £70 to £110, and while the Barracudas are exclusive to Halfords, Binatones will be available elsewhere. Two sets are pictured here — the Barracuda HB 940 at £90 and the Binatone Breaker Phone at £109. The Barracuda is a straight forward mobile, with tone, dimmer, and channel nine switch, and the Breaker Phone is a remote set with all the controls on a telephone type handset — including electronic channel selection. Rather nice.



alarm was installed. So the shop arranged for one to be installed the next week, and, you guessed it, they got burgled in the meantime. Not just petty crime this, £10,000 of goods taken. And no insurance cover.

What do you do after something like that? Well, if you're HACES you go right back out and buy £25,000 of new stock and start again.

Not being the sort of people to let such things get them down, Howard and Andy have got the shop back into full swing with FM



# The Shape of CB rigs to come

CB is now legal in the U.K. These new rigs have been designed and produced especially to meet the needs of CB enthusiasts by Fidelity – a leader in audio systems. For performance and reliability you can really depend on Fidelity. So when choosing your rig settle on Fidelity. It's a name you know and a name you can trust.

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- 40 channel LED Indicator.
- Signal Strength Meter.
- Built-in Speaker.
- Screw Fixing for mic.
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# Lowdown

## School daze

OK, who split on him? Supertramp wrote to us a while ago from public school and said he was a bit worried about getting busted. Had good reason, it seems, because he has been. By his headmaster, who took the rig and mag mount (which Supertramp had stuck outside his dormitory window) down to the local police station and handed it over with the 'no names, say no more' line.

At least the head didn't report him officially, but Supertramp is now 'skint and legal', as he puts it. He goes on:

'I'm saving for a new rig but it might take some time. Meanwhile, I'd like to say a big thank you to all you good buddies for being great friends — I'd like some QSLs to remember you all by.'

Probably better not use his name and address, so if you've got any spare cards, mark the envelope Supertramp, send it to us, and we'll pass them on.

## The numbers game

Since we did a piece in the September issue on US licence plates, and how some breakers are buying examples which are appropriate to their handles, we've had a number of phone calls asking us where they can be bought. Now, if we've had enquiries from some of you, that means there's a lot more who want to know but are too mean to pay for the call. That's a sentiment we at Breaker can understand, my life already, so we'll cut your phone bills at a stroke and reveal all.

Brian and Margaret Haley have the largest collection of American plates in Europe and offer a return by post service, the cost of which is included in their prices. We'll get on to the grubby money bits in a minute, but first a few did-you-knows

from the helpful Haleys to amaze your friends and break the ice at parties.

Many US states don't issue plates in pairs but issue a rear plate only, so when you see an exotic plate on the front it is often a novelty plate, which are not really collectable. Indiana plates are very collectable because they are going over to 'lifetime' items. California and Delaware are fairly rare too because the Highway Departments there like scrapped plates to be returned.

The Haleys fly out to the States to buy the plates, wash them and ship them home and can supply examples from 50 states plus Guam, the American Virgin Islands and Washington DC. And if you want anything specific, they'll do their best to pick one up.

Prices range from £3 for a current Florida plate, for example, (post and packaging is included, remember) to £15 for the highly collectable 1932 Mississippi in its original mailing envelope. In between there are Idaho, bearing the legend 'Famous potatoes' (£4 or £4.50, depending on year), New Hampshire 'Live free or die' (£5 or £5.50) and hundreds more.

Drop them a line at 21 Partridge Way, Norwich, Norfolk NR6 6TU, if you want a full list, or ring them between 2 and 7pm weekdays, after 1pm on Saturdays or before 7pm on Sundays on 0603 46261. If you want to visit them in person, let them know first and you'll be welcome. And if you're going by bus or rail they'll even pick you up from the station. How obliging can they get?

## Going National

Things might have seemed a little quiet in the Natcolcibar camp recently but, in fact, they have been busy behind the scenes

meeting with the Home office and other interested parties.

There are now over 100 clubs behind Natcolcibar (National Committee for Legalisation of Citizens Band Radio), and they don't believe their work is finished with the introduction of the FM system.

If your club feels the same way, or if you want more information on the organisation, send a SAE to the chairman Ian Leslie (71 Duke's Avenue, London N10 2PY) or the secretary Bob Hopkins (85 Allen's Lane, Pelsall, Walsall, West Midlands).

## Community service

It would be pretty easy to think that CB is the only thing going in radio at the moment. Easy, but wrong. In the past few years, the face of radio broadcasting has been changed out of all recognition by the introduction of local radio stations (BBC and commercial) to counter the national networks of Radios One, Two, Three and Four.

But a lot of people would say that stations such as Capital or Piccadilly are too large to represent local interests. To this end the Pathfinder Radio Group are working for a sort of local radio, controlled by, and run for, local people. In other countries community radio projects have already received government approval, but so far the Home Office is still 'considering' their use in Britain. Heard that one before, huh?

The Pathfinder group want to use 102 to 104MHz for a network of local stations, which would give people such as schools, youth groups, community organisations and minority groups access to radio. You might recognise this situation, it's the one that CB had to face for years. On the one hand, people wanting a service, and on the other, the Government stalling any decisions. Like CBers they plan to go ahead with their plans regardless, so they are looking for support with Radio West Hertfordshire. Anyone who's interested should contact Alexander Lex-Arnold, 11 Livingstone Walk, Grove Hill, Hemel Hempstead, Herts HP2 6AH.

## Bleeping confused

Even when the Home Office finally released their licence forms and conditions to end the confusion over the specification, it didn't. End the confusion, that is.

The first problem we came across concerned the roger bleep, beep, or pain in the butt, as we call them. Are they legal, or not?

The licence conditions clearly state that only voice can be carried on our hallowed airwaves by the FM service. Piercing little bleeps are in no way human. Even if you do call them roger. So we spoke to our friends at the Home Office and they said, 'no, they are not legal.' No messing, definitely a

no-no.

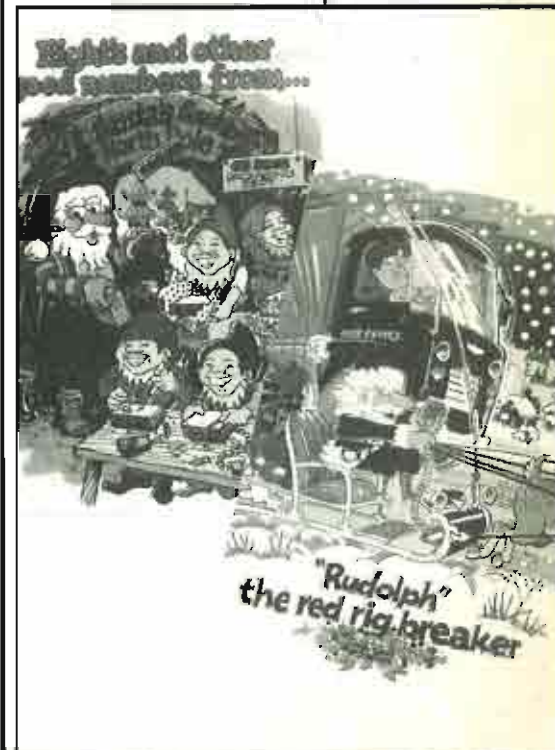
Also a bit embarrassing for some people — namely, the manufacturers, many of whom have fitted the roger function to their 'legal' FM sets. But then the Home Office called back. They'd been doing a bit of checking. 'Yes, they are legal — providing the bleep doesn't last longer than half a second,' they said. So, unless they change their minds again, they're OK. The manufacturers can breathe a sigh of relief, the users can pretend to be on Apollo space missions and we'll just have to put up with them.

The second vague area concerns FM antennas — somewhat fundamental to the operation of the system. The conditions on the licence (again) say the antenna's length must not exceed 1.5 metres *excluding* the loading coil. The italics are our own. Does this mean that a loading coil say two metres long could be used with a legal 1.5 metre whip? The Home Office are still looking that one up . . .

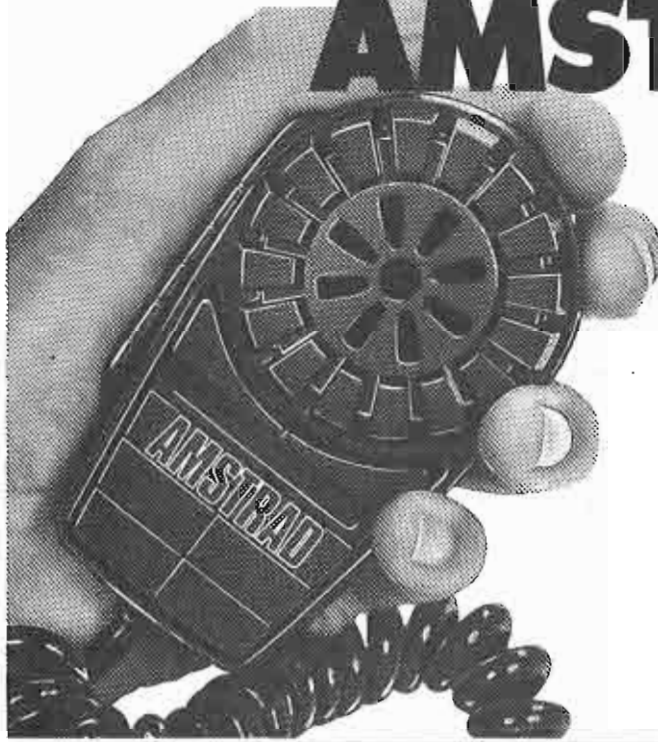
## On the cards

It had to happen. Would you believe CB Christmas cards? Neither did we, but then they arrived on our desk and while they aren't exactly subtle there's no doubt they will be popular. Not too sure about the verse: 73s51s88s Round the house at the Yuletide Season. Good DX in the New Year. The cartoons on the front are quite neat though.

They couldn't give us prices in time, but if you're interested, drop a line to CB Printers, 806 Leeds Road, Bradford, West Yorkshire BD3 9TY, or give them a call on Bradford 665449. They do QSL cards too.



# 'WALL TO WALL AND TEN FEET TALL, AMSTRAD!



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**LOOK FOR THE SIGN  
OF THE CB LEADERS**



# Basically Speaking

## the beginners guide to CB...

Citizens' Band radio is legal. Never thought we'd actually be able to say that. Since our very first issue we've been saying we don't condone or encourage the use of CB. Now we do — in fact, we demand you all rush out and buy one immediately. We've even got a feature, Which CB?, to help you choose one. Last month, the first part of Basically Speaking we told you how they work and how to use one. And, with impeccable timing we look this month at installation of the set and antenna and SWRing the antenna.

Incidentally, if you missed last month's feature (covering how the rig and antenna works, what controls do what and a guide to the technical terms and slang), back copies are available. Just send £1.20 (including p and p) to Lovely Lynn, Breaker, Link House, Dingwall Avenue, Croydon CR9 2TA, and ask for issue number 10. Make cheques and postal orders payable to Link House Publications Ltd — otherwise she'll only buy make-up with it.

On with this month — and part two of the Basically Speaking trilogy. Makes Roots look like a Janet and John book.

### Installation-fitting remarks

So, you've finally done it. You've rushed out, put your greenies on the counter, and walked away with a nice, shiny rig. Then you ran home, got your screwdrivers out and set about fixing the rig in your car. But before you go any further, here's a word of advice — stop. Installation, good or bad, will play a large part in the efficiency of your CB — so don't rush it.

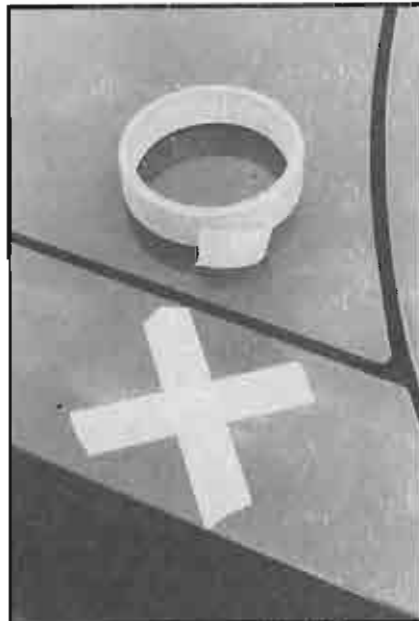
The first thing you want to do is unpack the rig slowly and check all the bits are there. Every rig should have some form of mount (usually just a bolt-on bracket) with all the screws, washers, nuts and bolts included. Check all the bits are there by reading the instructions that come with the rig, and every time they say, 'bolt sprocket A to flange B', you do the same. If sprocket A doesn't appear to be there, go back to the supplier and get hold of one before you start drilling things.

Now that you've read the advice of the manufacturers we can get down to more practical stuff. First of all you want to decide where the rig and the antenna are actually going to go. Ah, the antenna . . .

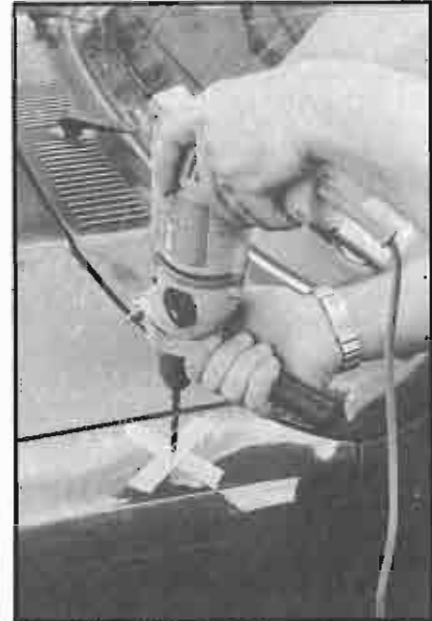
The tools of the trade. The right tools will help to ensure you don't bodge the job, so get hold of an electric drill, electrical and masking tape, centrepunch, hammer, pliers and screwdrivers.



BREAKER



Above: Marking panel to be drilled with tape protects paint when drilling. Below: Centrepunch at centre of cross to stop drill skidding.



Above: When drilling hole take care to avoid obstruction beneath panel. Below: Antenna base can then be fitted — ensure good earth on panel.



we haven't mentioned that before but, of course, you bought one at the same time you got the rig, didn't you? The most practical place to put your aerial is in the front or rear wings, but from a theoretical point of view the best place is in the centre of the roof.

Apart from the roof being the highest point of the car, which means the signal

can reach further, a roof-mounted antenna is not shielded by the car body, so reception is not directional. Unfortunately drilling holes in your roof can present problems. First of all it can leak, despite the rubber seals on the aerial mount, and secondly, you have to take the roof lining out to get the wires through, leaving you with the problem of

# Basically speaking...

running them down one of the pillars behind the trim. All in all it's a bit of a job, and anyway, the aerial will foul on the ceilings of multi-stories. So we'll run through an antenna installation on a front wing, but the system is the same for a rear wing. And not really that different for the roof, once you've solved the problems.

Again the first thing to do is stop and think. On some cars there is no space on a wing to mount an antenna without it fouling a bonnet or boot lid. On others, with double skinned wings, there is no room to run a cable out from below, so choose a site where access is good from the bottom. Above all don't drill a hole until you're sure.

Once you've found the ideal spot you should mark it with a criss-cross of masking tape to protect the paint while you're drilling. Then use a hole punch and a light hammer to mark the spot for the drill in the centre of the cross, which will stop it skidding across your paint work. It's better to make the hole slightly smaller than you need and enlarge it with a half-round file to fit. If there are any electrical connections under the area that you're drilling, or obstructions such as pipes or the petrol tank, be very careful not to damage them, or you'll suffer untold damage. Check it out first.

A male and female connector should come with the antenna, one part of which comes up from below the wing and the other part of which screws down from above to secure the aerial. We'd probably be accused of sexism, if we said which is which, so we won't.

On top you place a rubber seal and then you can screw down the antenna mount itself (the conical base). As you screw this down you can see it spread the rubber seal, and hopefully keep out the damp. Down below, you screw the antenna cable to the underside of the male/female connector, which is when you find out just how little clearance there is underneath a wing. After bashing your knuckles and swearing a bit you should win through, and then you have to run the cable to where the CB will sit.

If we are working on a rear wing the start of the cable run will be in the boot.

Below: On this type of antenna, conical base screws down to make seal.



Above: Ensure panel is strong enough to take mounting bracket—If not, strengthen it. Below: It is often easier to wire in before fixing set.



Above: Power leads can be run straight to the battery, providing the set has an in-line fuse. Below: That just leaves the SWR—see text.



While this gives you room to work, it also leaves the cable exposed to knocks from luggage, so keep the wire in dark corners and try not to loop it around the spare. Your biggest obstacle is going to be the back seat, and on some cars the only way around it is to take it out. On others you may be able to thread it through — it will differ from car to car. Once in the passenger compartment, the easiest run is along the sills underneath the carpet, and underneath the 'kick strips' that the manufacturers use to keep the carpet edges down. Make sure that the cable is not kinked or pinched anywhere along its length.

If the antenna is at the front you may have to start drilling again. You need to bring the cable into the engine bay from under the wing, which in the absence of any convenient holes means making a few of your own. Feed the cable through the hole (which you've fitted with a grommet, haven't you?) and use one of the existing holes in the fire wall (the bit between the engine bay and the passenger compartment) to thread the cable inside the car. Far easier said than done,

we know, and be wary of drilling your own hole through the fire wall — there are hundreds of wire and switches and pipes, and it would be easy to slice through a few of them. In any event, when routing the cable through the engine bay make sure it's kept clear of moving parts, hot spots and any other areas where it could be damaged. Also make sure it's secured so it won't shake loose and fall into the fan etc, which may impair the reception of the rig.

There are more ways to mount an aerial than to drill holes in things, though. Boot mount aerials simply screw onto the edge of the boot lid, and then you run the cable through the car as suggested above. Gutter mount aerials work in the same way, and up to a point give you the advantage of being close to the centre of the roof, being screwed to the rain gutter on one side. Unfortunately the cable run for gutter mounts either means you have to have one window slightly open to let the cable in, which can let in noise and thieves, or running the cable through the door rubbers. A popular idea is the mag-mount, which as the name sug-



Above: Gutter mounting means no drilling, but cable run can be untidy. Below: Boot mount—simple but sites are limited.



gests has a large magnet at the base so it can be fixed anywhere on the bodywork, usually in the middle of the roof (the ideal position for performance, as we've said). If you go into a multi-storey car park you simply take it off and leave it on the back seat, which is also a good security measure as thieves look for a CB aerial first. It has the disadvantages of having to run the cable through a window and loosing its SWR faster because it gets knocked about more.

Speaking of security, it's a good idea to fit an alarm. Even if you don't keep much of value in your car (and remember, the rig will be worth from £60 to £100) it's a real pain to have someone mess about in your motor. And that's assuming they don't take the car in the first place. While a determined thief will get past any alarm, a few precautions will make him go elsewhere. You can mount your rig on a slide mount, which allows you to take it out of the dash and keep it out of sight, and disguised antennas don't look like CB antennas, so you don't draw attention to your car. And, of course, there is the normal car alarm, which you can wire up so it goes off if your rig is tampered with. We'll cover this in more detail in a later issue.

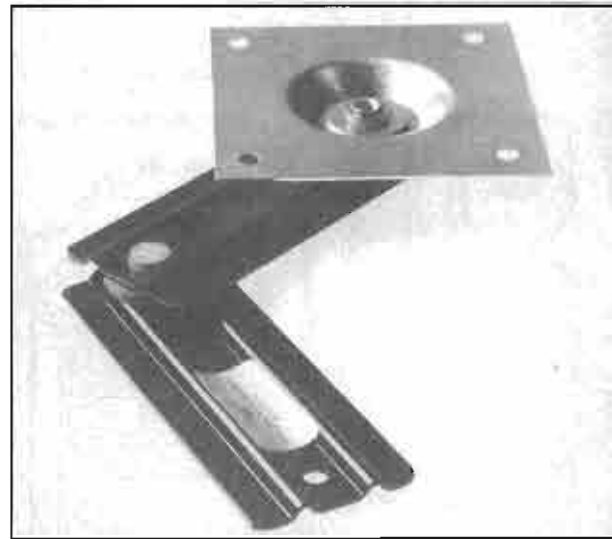
On the subject of rigs, we haven't yet decided where to site it. We've got the antenna cable to the front of the car under the dash and you may have some cable left—but don't cut it off, wind it up (back and forward, not in a coil) and tape it under the dash. The reason for this is you may want to fit the rig to another car which needs a longer cable, and in any event the manufacturers make the cable the optimum length for the best reception.

With the mounting bracket bolted in place on the set, try positioning the rig in various places under the dash. You'll find most rigs are too big to fit the 'in-dash' holes in cars, so it will have to be bolted underneath. You have to find a spot where the rig is accessible but not in the way. Probably the best place is to the

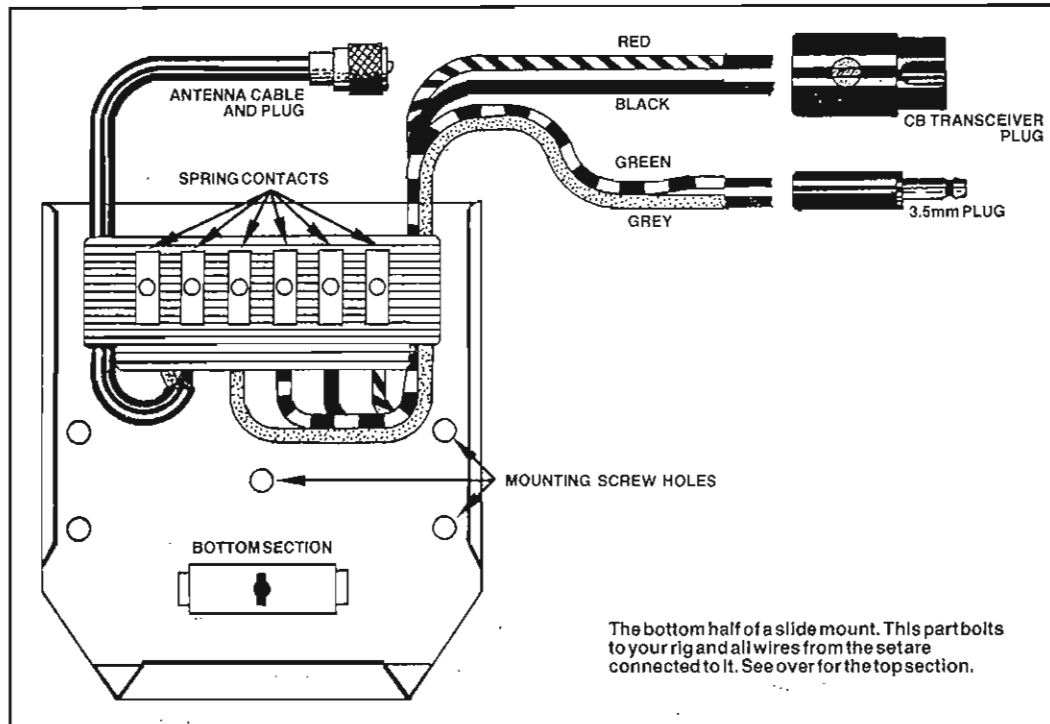
right of the steering wheel, but check it carefully. When it's in place (with the mike clipped in place) does your knee hit it? Will the door foul it when closed? Does it cover any switches on that part of the dash? Can you see it to change channel easily?

Obviously metal makes the strongest mount, but many cars will have plastic or cardboard under the dash. Self tapping screws will hold the set against metal, but on plastic or board you will have to use bolts, possibly with large washers or another bracket behind the dash to stop them pulling through, so find a place that's strong enough to hold a bolt.

Once you're sure of the site, use the bracket from the set as a template, and mark the spots for the holes. Before you drill, check behind the dash that there is nothing which could get damaged (cables, pipes etc). The rig fits into the bracket with the bolts provided, and the antenna cable screws into the socket on the rear of the set (it may be easier to connect all the wires to the back of the rig before mounting).



The Pivotrig mounting bracket means the rig can be swung under the dash when it's not in use out of harm's, and passing the selves', way. It'll cost you £4.50 including p and p from R and B, 141A Mount Pleasant, Redditch, Worcestershire.



The bottom half of a slide mount. This part bolts to your rig and all wires from the set are connected to it. See over for the top section.

Instead of using the bracket provided with the set, there are other less permanent ways of fixing the rig into your car, with the advantage of allowing you to stow the rig out of sight in the boot when not in use and allowing you to use the rig in different locations—base and mobile or in different cars. Remember though, the antenna at each location must be properly SWRed to the rig.

A slide mount does the job nicely. It comes in two parts (see diagram) with one part screwing onto your rig and the other fixed under the dash. All the wiring from the rig is run through slide connectors on the plate fixed to the rig's back. Similarly, all the wiring from the car is connected to slide connectors on the plate under the dash. All you have to do to install your set is slide the two parts of the bracket together, and in one move you've wired it in and fixed it to the dash.

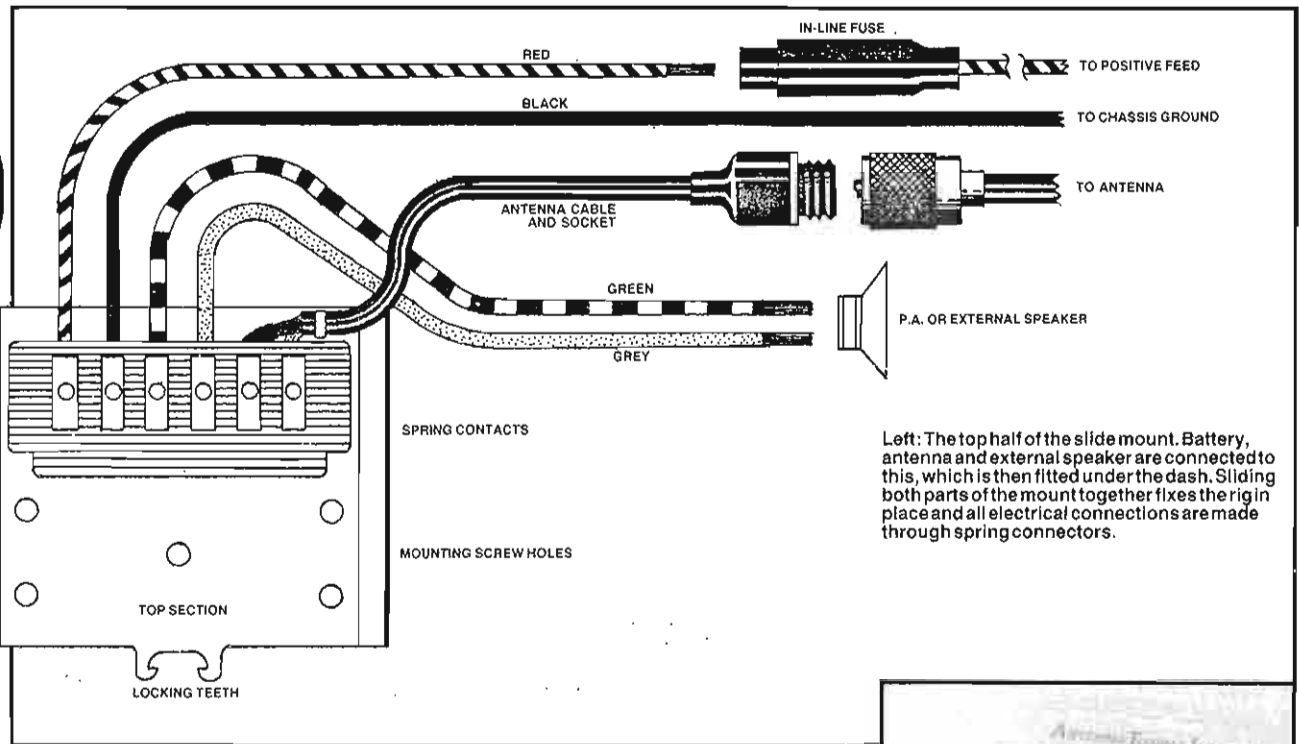
There are problems with slide mounts though, mainly with the slide

connectors. They can wear and corrode, and a poor connection can cause an open circuit and damage your CB, so avoid this by keeping the contacts clean.

On the back of the rig there should be two wires, one red, one black. These should be connected directly to the battery to lessen interference, so it's a question of getting under the dash again and threading the wires back through the fire wall, into the engine bay and to the battery. Make sure they are neatly out of harms way, and protected by a grommet when passing through the fire wall. At the battery, connect the red wire to the positive terminal and the black to the negative. The rig should have an in-line fuse already fitted on the wire, and if it hasn't, check with the manufacturer or the shop before connecting.

Now, we've got the rig under the dash, connected to the battery and to the antenna, so we're all ready to go, aren't we? In a word, no. If we look back to the antenna mounting bit you'll notice that ▶

# Basically speaking



Left: The top half of the slide mount. Battery, antenna and external speaker are connected to this, which is then fitted under the dash. Sliding both parts of the mount together fixes the rig in place and all electrical connections are made through spring connectors.

there isn't an antenna in the mount—yet. Before you can use the rig you have to set the SWR, which matches the aerial to the frequency it's working on.

That's covered elsewhere in Basically Speaking but a word of warning — don't press the push-to-talk button on the mike until the antenna is installed and SWR's because it is likely to self-destruct. Bit like Mission Impossible . . .

## Antennas— it's a put up job

With the antenna and the set in position you're left with one problem. SWR, or standing wave ratio. This may sound complicated but in practice is simply a question of matching the electrical capabilities of the antenna to the potential of the set. All you do is adjust the length of the antenna until it produces a reading of under 1.5: 1, on an SWR meter.

If the set is not correctly SWRed then it will be damaged if you try and transmit. If the worst comes to the worst, the set will self-destruct — a little inconvenient, to say the least. There are other tests which it's worth while making on your antenna such as power and field strength, and to do this manufacturers produce combined SWR and power meters.

For any of these tests, there are a few points to remember. The vehicle should be outdoors (not in a garage) and away from obstructions like buildings and fences. You should make sure the meter is for 27MHz and can handle the power as some will be designed for low powered European CB.

The doors, boot and bonnet of the car or van should be closed before any readings are taken, and if you have someone helping you, they should stand well away from the vehicle. For the power and SWR tests a short 50ohm patch cable (about one- and-a-

half feet long) is needed (try RG58U or RG8) and should be connected as shown in figures one and two. The job is straight forward enough if you follow the steps set out below.

1. Disconnect the antenna cable from the CB set.
2. Connect this cable to the socket marked 'ANT' on the SWR or power meter. Note: the 'ANT' and 'TRANS' markings can be on the front or rear panel.
3. Connect one end of the patch cable to the socket marked 'TRANS' on the meter and the other end to the antenna socket on the CB set.

Now to actually operating the SWR meter. Again it looks complicated, but if you follow the instructions, you'll be surprised how easy it is.

1. Turn on the CB set and select channel 20.
2. Position the 'FWD-REF' switch in 'FWD' and make sure the calibration knob is turned fully anti-clockwise (Fig. 3).
3. Press the transmit switch on the mike and turn the calibration knob clockwise until the needle on the meter reaches the 'SET' mark on the SWR scale (Fig. 3). Release the transmit button.
4. Change the set from 'FWD' to 'REF' and press the transmit button again

If the needle goes off the scale or into the red section, release the transmit button at once because you could damage your set. For what to do next take a look at the fault finding guide at the end of this feature. If the needle reads 1.5 or lower you're laughing and the set can now be used, but if the reading is between 1.5 and 3 go on and to the next instruction.

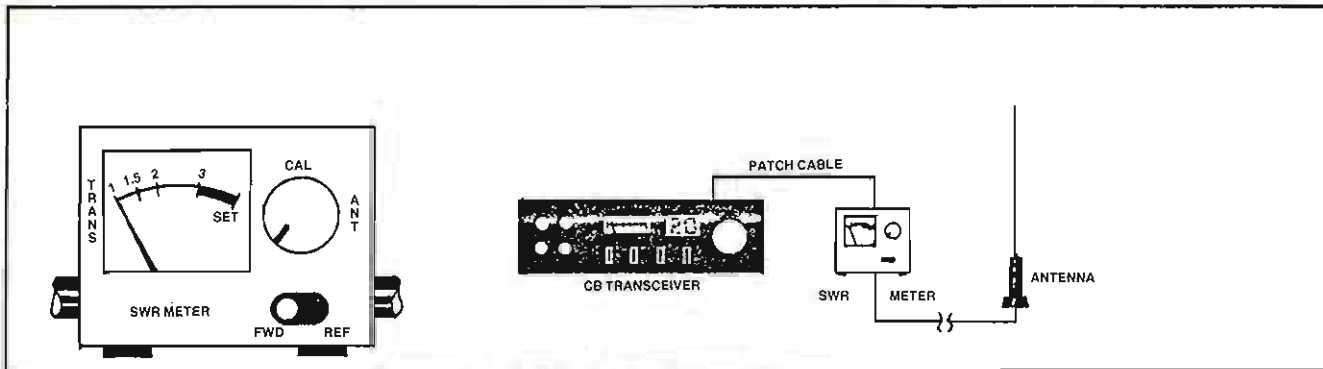
5. Select channel one and repeat the steps for taking an SWR reading as shown above (instructions 2, 3 and 4) and make a note of the readings, then do the same for channel 40. If channel one reads lower than channel 40 then the antenna is too long and if channel one reads higher than channel 40 then the antenna is too short. That means you have to tune the antenna.



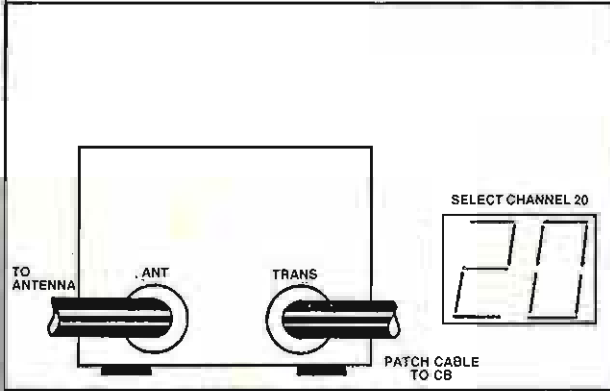
Two antenna tuning meters. The antenna tuning indicator from Allgon (above) clips to the antenna. The Midland 23-126 model combines SWR and field strength meters.



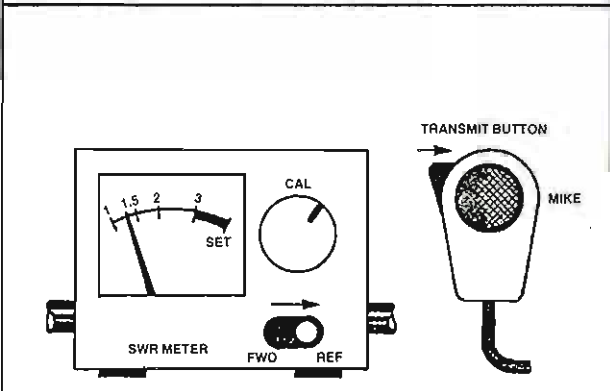
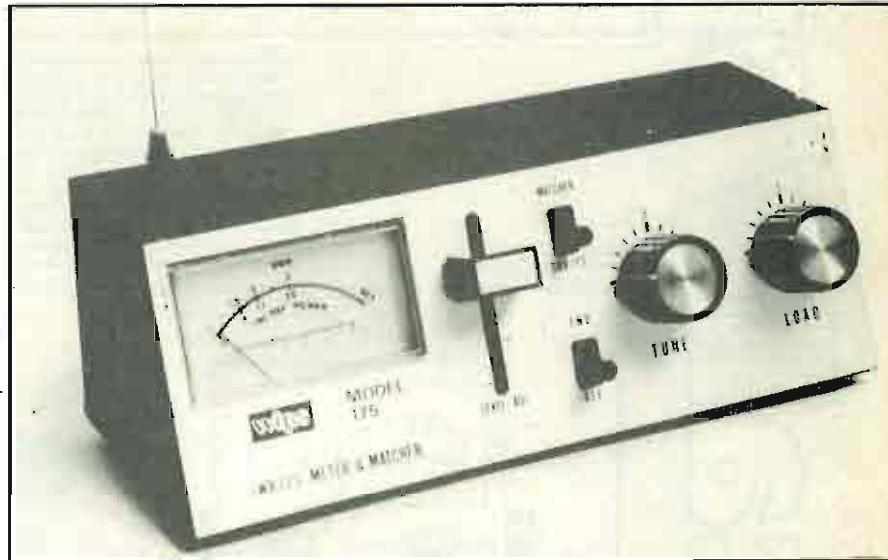
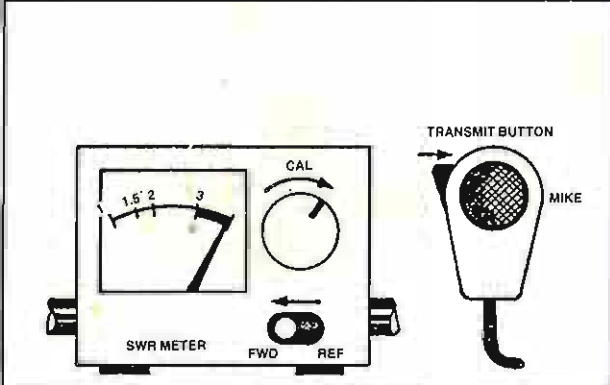
Two common types of antenna are shown in the Antenna Specialist type on the left and the Panorama type on the right. To tune the AS type the set screw on the base is loosened with an Allen key (which should be supplied with the antenna). You adjust the length by moving the whip up or down about 1/8 inch at a time until you reach an acceptable SWR (1.5 or lower), which means you have to keep testing it everytime you change the length. On the Panorama type the whip is



Above and left: The steps in how to get an SWR reading. Note how the SWR meter is connected in-line with the antenna by using the patch cable. See text.



Above: Multi-meters combine several functions in one unit. The Wipe 78 can be used for measuring SWR, power, modulation, and field strength, and as an antenna matcher. Below: Model 175 is a combined SWR/FS meter and matcher.



loosened by undoing the whip lock adjuster a few turns and the whip can be moved up and down easily. In some cases the whip will be too long for the adjuster to compensate, so you'll have to hacksaw one-eighth-of-an-inch off the bottom of the whip, but never saw until you're sure. In any event if you're having trouble with the SWR, look at the fault finding guide at the end of this feature, as things such as the length of cable used can effect the SWR. And finally, don't touch the antenna while pressing the transmit button. You'd be surprised the belt it'll give you.

And that's the SWR done. It's very necessary to do this before you try to transmit with your set otherwise you could end up doing yourself a nasty. The next two tests are not so vital but

do provide some useful information. First of all the power meter.

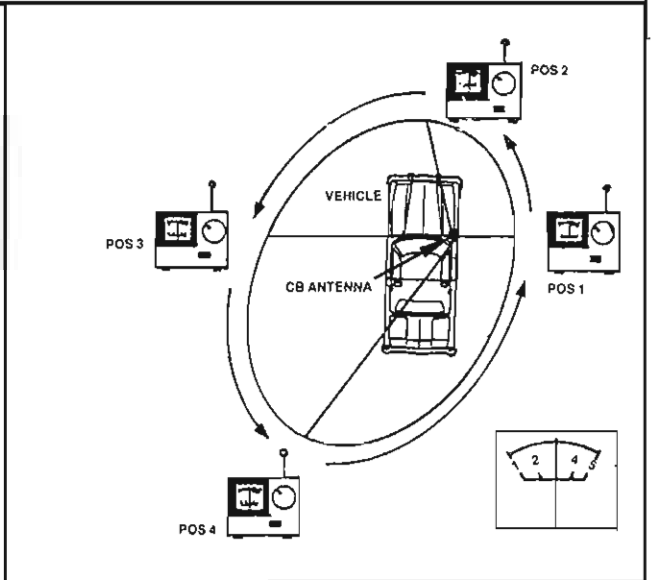
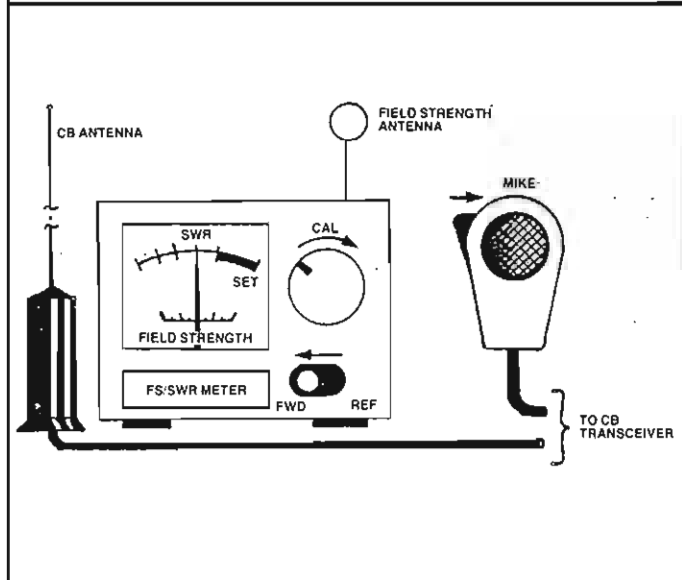
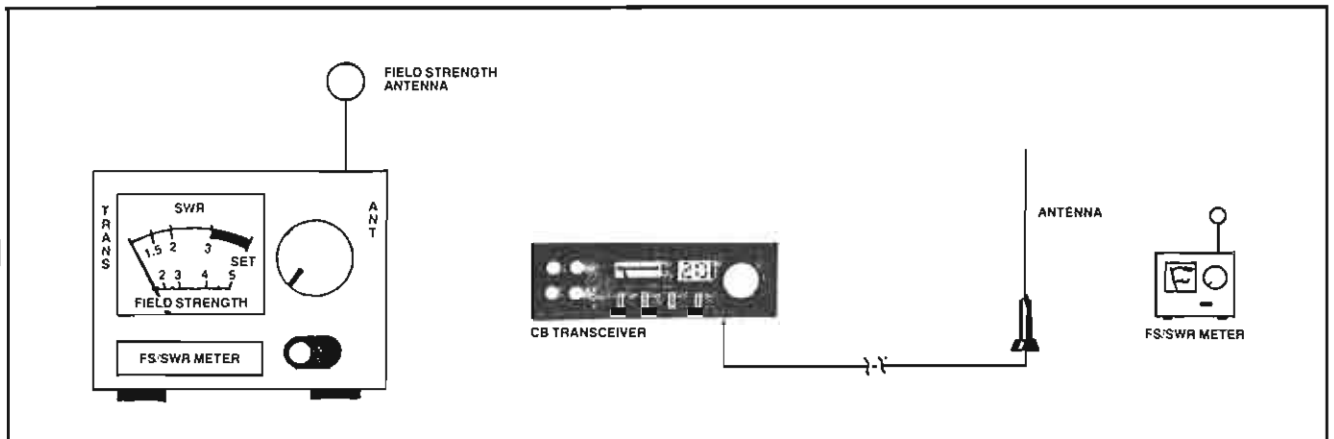
1. Connect in the same way as the SWR meter.
2. Select channel 20 on the CB set.
3. Put the 'SWR-POWER' switch in the 'POWER' position.
4. Put the '1W-10W' switch in the '10W' position and press the transmit button on the mike. The needle on the power meter should rise to around the number four mark, ie four watts output.

If your antenna is mounted higher than seven metres, you should be operating at 0.4 watts using the 10dB attenuator switch on the CB set, and to measure this you should put the power meter in the '1W' position. Then, when you repeat the procedure above, the needle should also go to four on the

scale, but because of the '1W' control, this will indicate 0.4 watts output. This should not be confused with the signal-power meter built into your rig, which in any event doesn't read out in watts (so you're not putting out nine watts when the power meter says nine).

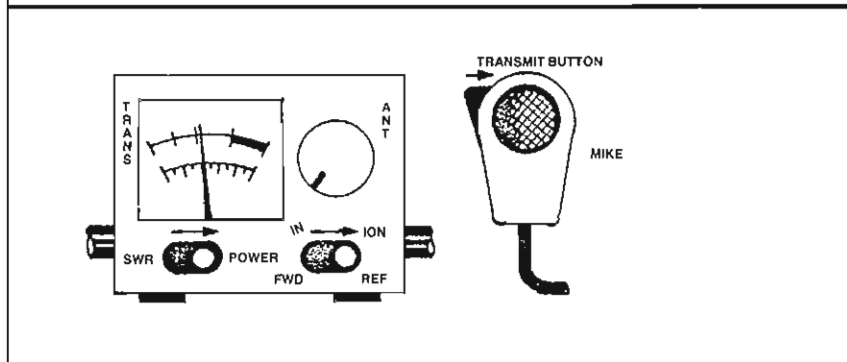
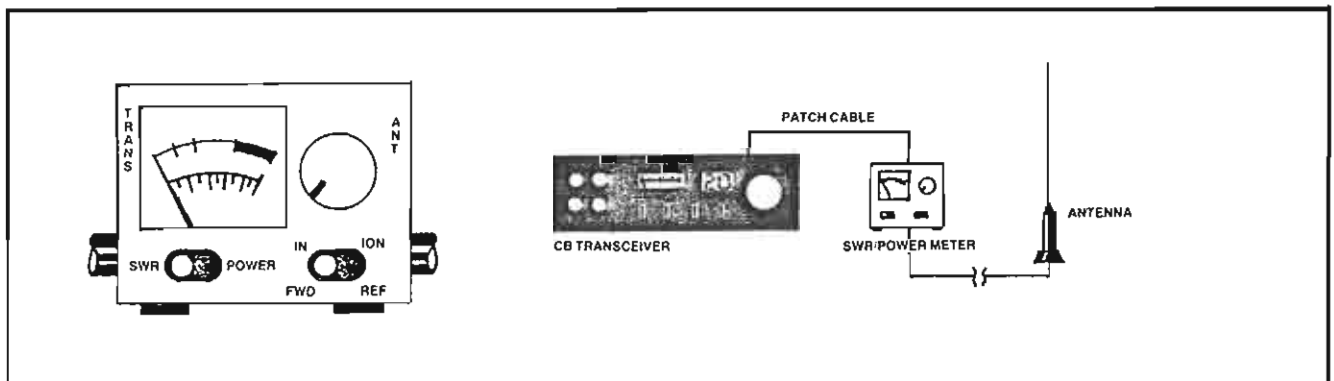
And finally comes the field strength meter. Unlike the other two, this is not fitted in-line with the CB set. You simply attach the small antenna supplied with the meter to the socket on the meter marked 'FS ANT'. With this set you can check if you're putting out the maximum signal from the antenna (effective radiated power or ERP) and to check the radiating pattern of the antenna, which varies according to where the antenna is placed on the car. First of all we'll check the ERP, and if you've read the

# Basically speaking...



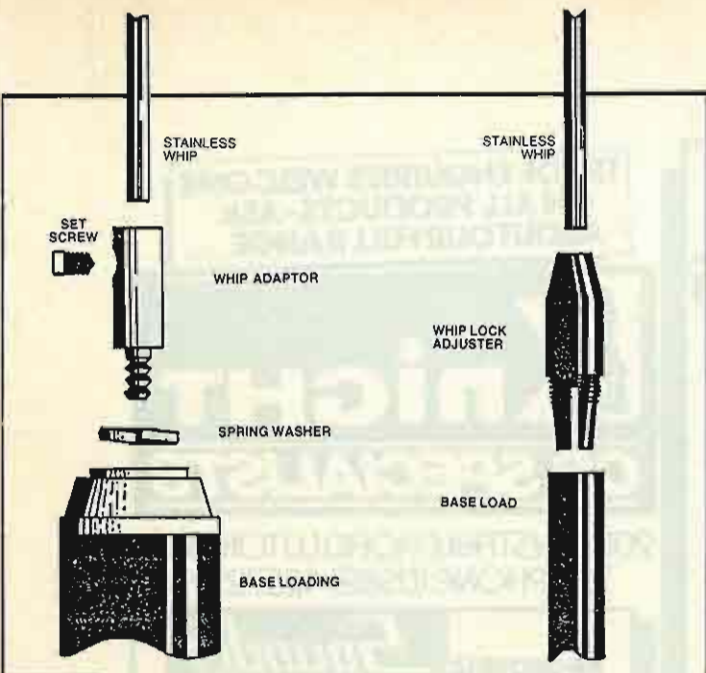
Above: How to operate a field strength meter. The top picture shows what you can expect on the meter itself and how the CB should be set up with the antenna in place. When checking the field strength or the ERP, keep the vehicle away from walls, houses or other cars. With radiating pattern, it's a simple job of calibrating the meter to your set and then walking around the car with someone keying the transmit button. The furthest point you have to go from the car to keep the needle on three is the strongest point of radiation (position 4).

Below: The power meter is used in-line like a SWR meter, and it's the only accurate way to tell how much power your set is putting out.

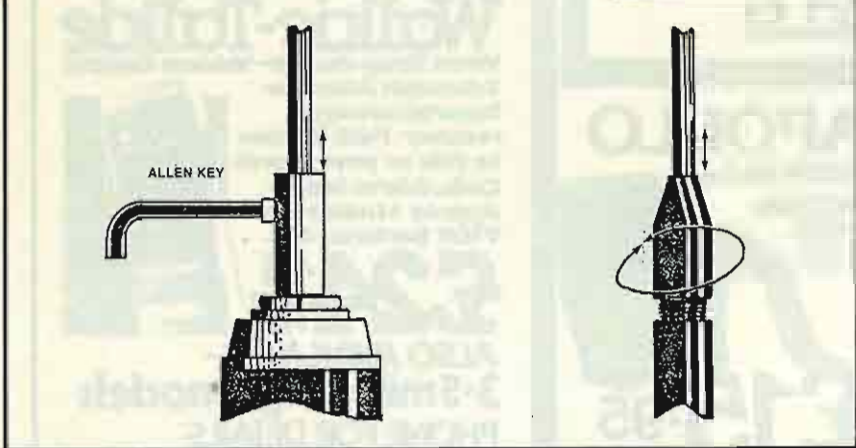


- feature this far you'll know it's time for another numbered list.
1. Select channel 20 on the CB set.
  2. Place the meter next to the CB antenna.
  3. Put the meter in 'FWD' and turn the 'CAL' knob fully anti-clockwise.
  4. Press the transmit button and turn the 'CAL' knob until the needle points to three on the scale.
  5. Without adjusting the meter, shorten or lengthen the antenna in the same way you did for SWR until the highest possible ERP is obtained. This now means the best possible signal is being





Left: Two popular forms of antenna, the Antenna Specialist and the Panorama. The Antenna Specialist (far left) has the whip held in place with a locking screw, while the Panorama is locked with a screw-down barrel. Other antennas may use other methods. To adjust the length of the AS whip, (below left) release the locking screw with an allen key, which should be provided with the antenna. On the Panorama (also below left) the locking barrel releases the whip. Right and below: A variety of legal antennas: Below, the Panorama type; bottom right the AS; and left the Midland and Hy-Gain.



produced from the antenna, but you will now have affected the SWR, so you have to check it. As long as the SWR is not above 1.8 then you're OK. Check the SWR on channels one and 40 to make sure you're not over the limit, and if you are you may have to compromise your ERP reading for a safe SWR reading.

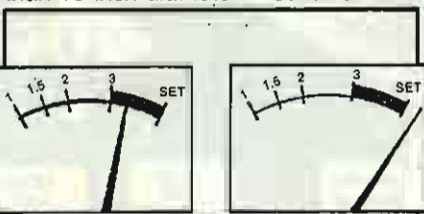
The second use of the field strength meter is to check the radiating pattern. This shows you how the position of the antenna on the vehicle affects its reception and transmitting power. You'd expect an antenna mounted low on a bumper to be shielded by the car body, but even those on wings and boot lids can be affected. Like all the best things in life, you need a friend to help you. Cue numbers.

1. Set up meter as for ERP readings (steps 1-3)
2. Stand approximately 18 feet (5.5 metres) from the antenna with the meter and ask your helper to press the transmit button. Turn the 'CAL' knob until the meter reads three. Now move round the vehicle, and keep the needle on three by moving to and from the antenna, and take note of how far you are from the antenna. The further you go from the antenna is the point of the strongest radiation, the closest you come to it is the weakest point. It will give you some idea of how your antenna positioning is effecting the range and direction of your transmissions.

And finally, here's what to do if your SWR won't come down. If the SWR doesn't respond to tuning of the whip **BREAKER**

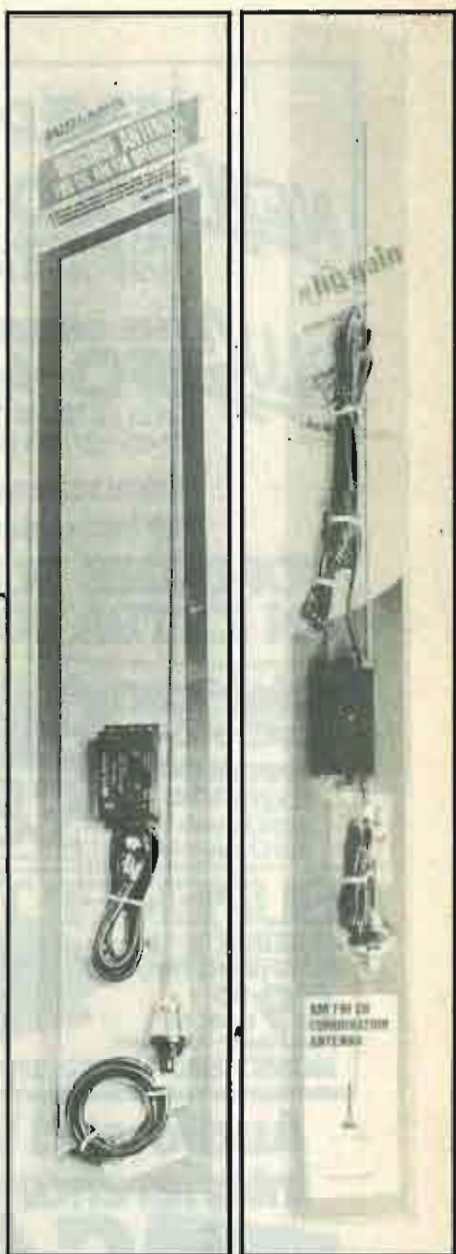
then there must be something wrong, and here are a few suggestions as to what it might be and the readings they would produce. Red means the needle stays on the red section of the dial, and off where the needle goes off the end of the scale

1. Broken or shorted coaxial cable—**off**
2. Antenna mount not grounded—**off**
3. Wrong coaxial cable (only 50 ohm should be used)—**red or off**
4. Excess cable wound into coils of less than 10 inch diameter—**red or off**



The two SWR meter readings as described in the fault-finding bit. The 'red' reading is illustrated on the left, 'off' on the right.

5. Antenna is not 27MHz type—**red or off**
6. Side mounted antenna is too low—**red**
7. Pinched or kinked coaxial cable—**off**
8. Antenna mount shorted out—**off**
9. Coaxial is too long or too short (RG 58 should be used in 12 foot lengths or multiples of 12)—**red**
10. Vehicle parked near buildings—**red or off**
11. Insufficient ground plane—**red or off**
12. Quick disconnect or spring added effectively lengthens the antenna—**red**



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# Practice makes perfect

Now, we all know CB means communication for everyone — all you need is a set, a licence (and some people are doing pretty well without one of those) and something to say. The regulations laid down in the licence small print are basic, unrestrictive and sensible. If the law regarding the use of CB was too stringent, it would kill it dead — which makes us wonder why the Home Office rule book isn't in three volumes, but let us be grateful for small mercies.

Having said all that — you can feel a contradiction coming on, can't you? — the system would kill itself if there weren't some guidelines to behaviour on the air. Witness the AM wallies we all know and hate. What we need is a code of practice. Not to be enforced by law, but voluntary, as a guide to new breakers and as a reminder to those who already know better than to screw things up. Or should do.

Having not burdened us with a weighty rule book, the Government realised this too. As did the various bodies representing CB users. The British being a reasonable and civilised race (my psychiatrist assures me), the first move was a meeting of all interested parties to hammer out the precise nature of the document (a little phrase we picked up from our union representative). At the end of September, James Bryant, Ian Leslie, Dickie Mould, Keith Townsend,

## the CB users' code explained

Richard Town and two Home Office RFD officials met at the Home Office nerve centre in Waterloo Bridge House. Between them, they represented Natcolcibar (National Committee for the Legalisation of Citizens Band Radio), the CBA (Citizens Band Association), The Parliamentary working party, REACT and CB manufacturers and importers. Each of the bodies had been consulted before the meeting to agree on policy. That's the British way. Makes you proud.

So that was the time, the place and the people. The result was a Code of Practice for British CB, which will be circulated to users in various ways, and gives advice on all aspects of the new system. It's not intended to be a comprehensive course on the use of CB, but it offers the newcomer five separate sections, which cover all the basics for safe and competent use of CB. Let's have a quick look at the code of practice itself and then we'll go through each section with James Bryant, who played a part in its formulation and will give the committee's reason behind them. Cue code.

## CB CODE OF PRACTICE

### READ YOUR LICENCE

It tells you what you can and cannot do. The conditions have deliberately been made simple with few restrictions. It is up to you to develop this service as you wish for the benefit of all. This means having consideration for one another and recognising that no-one has preferential rights at any time or place or on any channel. Natcolcibar, the Parliamentary CB working party, and representatives of industry have, in consultation with the Home Office, prepared this simple code of practice. If you work to it you will help the system to help you.

### HOW TO OPERATE

**Listen before you transmit.** Listen with the squelch control turned fully down (and tone squelch turned off if you have selective call facilities) for several seconds, to ensure you will not be transmitting on top of an existing conversation.

**Keep conversations short** when the channels are busy, so that everyone has a fair share.

**Keep each transmission short** and listen often for a reply — or you may find that the station you were talking to has moved out of range or that reception has changed for other reasons.

**Always leave a short pause before replying** so that other stations may join the conversation.

**CB slang isn't necessary** — plain language is just as effective.

**Be patient with newcomers and help them.**

### EMERGENCIES AND ASSISTANCE

**At all times, and on all channels, give priority to calls for help.**

**Leave Channel 9 clear for emergencies.** If you have to use it (for instance to contact a volunteer monitor service) get clear of it as soon as you can.

**If there is no answer on Channel 9,** then call for help on either Channel 14 or 19 where you are likely to get an answer.

**If you hear a call for help, wait.** If no regular volunteer monitor answers, then offer help if you can.

**There is no official organisation for monitoring CB** and no guarantee that you will always be in reach of a volunteer monitor. CB is not a substitute for the 999 service.



## CHOICE OF CHANNEL

**Respect the following conventions:**

**Channel 9:** Only for emergencies and assistance.

**Channel 14:** The calling channel. Once you have established a contact, move to another channel to hold your conversation.

**Channel 19:** For conversations among travellers on main roads. (Remember, if you are travelling in the same direction as the station you are talking to, not to hog this channel for a long conversation). Give priority to the use of this channel by long distance drivers to whom it can be an important part of their way of life.

**Other:** You may find that particular groups in particular areas also have other preferred channels for particular purposes.

## SAFETY

**Use commonsense when using CB and do not transmit when it could be risky to do so.** For example, don't transmit:

**a** — when fuel or any other explosive substance is in the open — e.g. at filling stations, when petrol or gas tankers are loading or unloading, on oil rigs, or at quarries.

**b** — when holding a microphone may interfere with your ability to drive safely.

**c** — with the antenna less than 6 inches from your face.

## INTERFERENCE

**Interference can be caused by any form of radio transmission.** Avoid the risks. Put your antenna as far away as possible from others, and remember that you are not allowed to use power amplifiers. In the unlikely event that your CB causes interference, co-operate in seeking a cure using the suggestions from a good CB handbook. Moving the set or antenna a few feet may cure the problem.

Good sound, sensible stuff, right? Really goes without saying? Wrong. It should do, and let's hope that eventually it will, but in the meantime, this code is necessary and sensible. We'll look at it in a bit more detail now, with the explanatory bits coming from James and the appalling punctuation, atrocious spelling and totally unnecessary asides from me. I'd call it editorial prerogative, but Joe 90 has eaten the dictionary again and it's too risky using it without looking it up.

The preamble emphasises that every CB operator should read his licence to discover the legal restrictions on CB (the licence is written in rather technical language and it is sometimes far from clear just what is required of a CB operator), but the Committee felt that it was not part of their job to rewrite the Home Office's legalese — although an article or paper explaining the licence would surely be welcomed by most breakers. It goes on to point out that consideration for other operators is essential if CB is to work properly and that the easiest way to show such consideration is to observe the Code. Nothing to add, James. Carry on.

The committee was acutely aware that the code cannot be enforced except by agreement among operators, and that very soon there will be millions of operators. We therefore thought it essential to make operators aware that it is up to each and every one of them to make CB work well — the Home Office

will find it impossible to enforce the licence regulations and will not even try to impose a code of practice. If CB is to work it is up to us, the breakers, to make it work.

So it is important that no operator or organisation has any more right than any other to use CB. The fact that you have used a particular channel every evening for a year for a chat with your friends gives you no right to use it again today if someone else is already there. Such disputes cannot be won and the fighting damages the reputation of CB. No matter how badly the other fellow may behave you should never get into a fight on the air — what good can it do you?

## HOW TO OPERATE

The six paragraphs in the 'How to Operate' section should all be familiar to any reader of *Breaker*. They summarise the way that any sane and sensible operator works, but it is still very necessary to spell them out for the benefit of the newcomer.

The first — listen before transmitting — is so fundamental that it is hard to credit how often it is ignored. If you don't listen, you can't know whether you will be trampling all over another conversation, or whether it will be trampling all over you. The rest of the paragraph merely sums up how to listen on a channel to make quite sure that it is clear (i.e. squelch backed off, tone squelch or selective call disabled, and listen for long enough to make sure you did not hear a pause in a conversation).

Keeping conversations short is another obvious rule that is frequently broken, as is keeping transmissions short. Even in conversations between base stations interference can arise and if you speak for twenty minutes at a time you may discover that for the last nineteen you have been speaking to nobody. Even if you have been heard for the full twenty minutes the other station may have been wanting to get away for fifteen of them and too polite just to pull the switch on you while you were still talking. This fault is more common among Radio Hams than among breakers but it should be avoided at all costs.

Following on from the above is the obvious step of leaving a pause between transmissions, so that any other station that has been listening can join in. It can be very frustrating for an operator who has a useful contribution to make to find

that he cannot get into the conversation to make it. It can be lethal for someone who needs help fast to find that he cannot make the only CB station in range hear him.

Many people are attracted to the idea of CB and are then put off by the way that the media are always obsessed with American CB slang. It is therefore very necessary to emphasise that such slang is not necessary and that ordinary English works very well on the air. This is even true in the United States (except that they talk ordinary American there). There are, of course, various expressions which are special to CB such as channels, breaks, overs and suchlike, which will be used because they convey ideas which rarely occur in non-CB conversation. But the sooner the idea that only smokey bears, rubber ducks and pregnant rollerskates may be discussed on CB is forgotten the better.

The final rule has always been important but, with CB becoming legal and another few million breakers appearing in a few months, it will become critical: be patient with newcomers and help them. You were a newcomer yourself once (and statistically you were probably one within the past year) and you should sympathise. Never, whatever the provocation, become angry or rude — it generally makes matters worse and never makes them better.

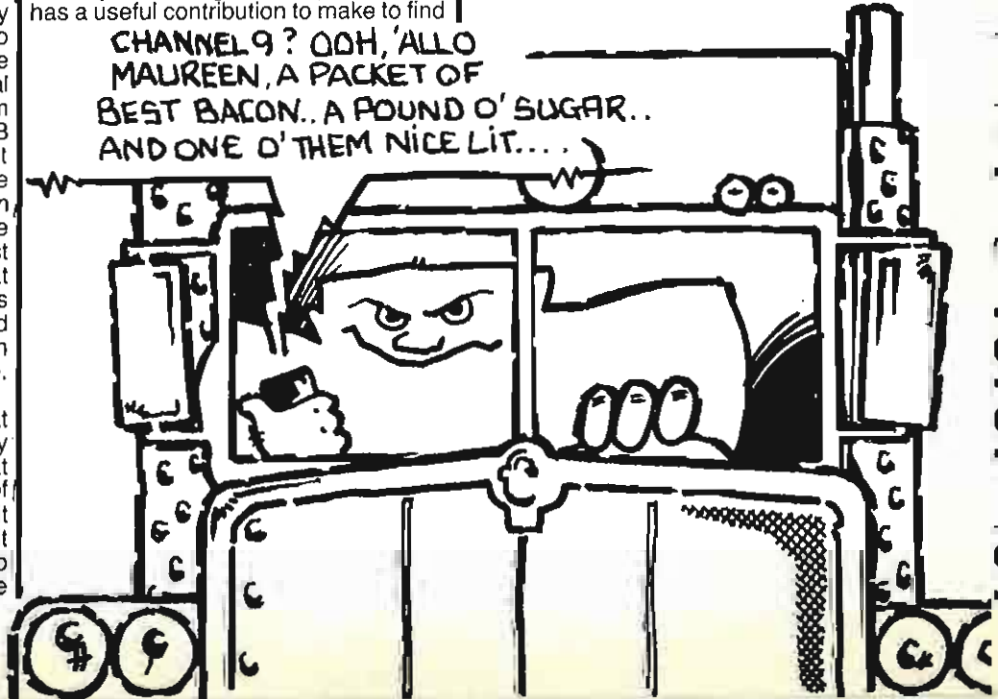
## EMERGENCIES AND ASSISTANCE

Like the 'How to Operate' section, the five paragraphs in the 'Emergencies and assistance' section are merely commonsense — but cannot be repeated too often. It is far too common to hear emergency traffic lost because well-meaning people swamp the channel when they hear a call for help and too many people operate on channel 9 when there is no need to do so.

The first rule is paramount — at all times and in all circumstances every CB operator should give absolute priority to any call for help. No matter how trivial the help required, and no matter that you may think that it is the caller's own silly fault that he needs help, give the call priority. It may be you needing the help next time.

Help does not only mean matters of life or death — although, of course, these must have priority over lesser matters — but can be as simple as 'I'm lost and a

CHANNEL 9? OOH, ALLO  
MAUREEN, A PACKET OF  
BEST BACON.. A POUND O' SUGAR..  
AND ONE O' THEM NICE LIT....





stranger in town' or 'Where can I find a fish and chip shop that's open?'

Channel 9 is the emergency channel. It has no legal status as such in the UK (although we have asked the Home Office to change this) but by common consent among breakers this is the channel reserved to aid of all sorts. If you need help of any sort — even the trivial types mentioned above — it is best to call on channel 9 first since many people will be monitoring it, but if the help you need is trivial you should move to another channel to ask for it once you have made contact. Even in major emergencies, it is better to move off 9 if you can so that it can be kept clear for another one, but only if there is another clear channel available. If there is any doubt about the reliability of communication in a major emergency — stay on 9.

Just because channel 9 is the emergency channel does not mean that you will always get an answer on it. If you get no answer, move to another channel (after first announcing that you are doing so that if someone can hear you but cannot reply he can follow you and try again). If channel 9 has failed, listen for a busy channel and break in or call on channel 14 or 19 which are also likely to be monitored. If several people answer a call for help make it very clear which one you wish to work with otherwise it may take valuable time to sort out a jam of answers.

If you are not a member of a monitor service (REACT, Thames, etc.) and hear a call for help you should wait and see if a monitor service answers. These organisations are probably better equipped to cope than a casual listener. If there is no such reply you should call and offer help only if you are able to do so. If you are sailing in the Solent it is unlikely that you can telephone the police for someone.

If you can't offer help but hear repeated calls and no answers you should offer to relay — it is possible that there is a station which can hear you but cannot hear the station needing help but you should wait until it is certain that no direct help is available before offering such a service. Every breaker should support his local monitor service. These organisations exist solely to monitor the CB channels and send help when it is needed. Even if you cannot spare the time to monitor you

should be aware of the organisation and how they operate so that in time of major disaster you can assist rather than contribute to the problem. You should also donate what you can to meet their expenses — one day you may need their help!

The final point in this section is very important — you cannot depend on CB to get you out of trouble. Although the police may monitor CB and the monitor services will do so in many parts of the country there is no guarantee that a call for help will be heard — there may be nobody there or you may just be too far from the nearest set to do any good. CB lets you call for help when there are no telephones but the quality and reliability is less than that of a telephone — don't get into a situation where the absence of a reply can kill you. It may, Of course, if you are in trouble you should always call — there will probably be a reply.

Even if there is no reply, give all the details — it may be that someone can hear you but either cannot answer or you cannot hear his answer. If you just shout 'Help!' you won't get any, but if you say what help is needed and where you may get it even though your call is not acknowledged.

#### CHOICE OF CHANNEL

There is no legal obligation to use any particular channel for any particular purpose or to avoid using any channel for any purpose, but there are three channels which are widely used for particular purposes (although there is some disagreement about two of them). These are channel 9, the emergency channel, which was dealt with in the previous section, channel 14, the calling (or breaking) channel, and channel 19, the long-distance drivers' channel. There was a major discussion about the use of 14 and 19, but these channels are used for these purposes more often than any other and rather than leave the matter open it was decided to settle on them.

The calling or breaking channel is the one which is used for making contact. If an operator wishes to have a conversation he calls on channel 14 until another station answers and then they move to another channel for their conversation. Channel 14 should not be used for conversations. The long-

distance drivers' channel is used as a calling channel by long-distance drivers and is also used for brief conversations about road conditions or for general chat among all the drivers in a particular area. If drivers want a longer or more personal conversation they should move to another channel. This is sometimes called the 'convoy' channel since dozens of drivers may be using it to keep each other informed about road conditions. Or awake.

Although these three are the only channels which are defined nationally there will certainly be other channels which are used for a particular purpose in particular regions. Visitors should try to be courteous in observing regional conventions but locals should remember (a) that visitors cannot be expected to know about local conventions and (b) there is no right to any channel for any use.

#### SAFETY

There are sometimes occasions when the use of CB can be dangerous. This section suggests that breakers do not transmit in certain circumstances that might cause hazards. Commonsense will tell you most of them, but they are:

- (a) When sparks from the CB transmission (and CB transmissions can occasionally cause sparks up to ten yards from the antenna) may ignite inflammable or explosive substances.
- (b) When transmitting may distract you from driving or interfere with your driving ability (for example by tying the microphone cable round the steering column).
- (c) When there is the possibility of radio frequency burns to the eyes — in practice it is quite hard to receive such burns from a four watt transmitter, but it is a wise precaution to keep the antenna at least six inches from the face so that even if nudged it cannot be poked into the eye.

#### INTERFERENCE

The interference section draws attention to the possibility of TVI and other forms of interference from CB transmissions and indicates that if moving the set or antenna does not cure the problem a good CB textbook should be consulted for details of how it should be tackled. When we were writing this section we did consider giving more technical advice but in the end decided not to for two reasons. To be useful such advice would occupy more space than the entire code of practice, and we did not wish to over-emphasise the problem. The majority of CB installations will be mobiles which will never be near enough to a house to cause any trouble.

#### CONCLUSION

In a perfect world (one where the Home Office legalised the FCC system PLUS FM in 1979?) there would be no need for this code of practice because it is all commonsense. In this imperfect one where people only read the instructions when everything else has failed it is important that every new breaker should have many opportunities to read and observe it. Several CB manufacturers and importers have undertaken to print the code and supply a copy with every set. It's hoped that CB clubs and CB dealers will take every opportunity to display and circulate it. If it is observed CB will work well — if it is ignored there will be chaos.

# REACT

If you are new to CB, you might not know about REACT UK. If you have run into difficulties, you might already have used their network of volunteer monitors to call for assistance. For the benefit of newcomers, we'll run briefly through the aims and structure of REACT, then bring things up to date (or as up to date as possible — things are developing almost daily now) and then we'll look at the REACT bike, which has been put on the road by one of the area co-ordinators. A good, structured feature. My college lecturer would be proud.

REACT stands for Radio Emergency Associated Citizens Teams, and the UK operation is affiliated to REACT International, which is based in America and has been in operation there since 1962.

In line with its US counterpart, REACT UK is a non-profit making, voluntary organisation consisting of teams throughout the country, who monitor channel nine (the emergency channel) on a rota basis to provide help for anyone who needs it. It's interesting to note, incidentally, that in the States channel nine is protected by law and can only be used for 'emergency communications involving the immediate safety of individuals or the immediate protection of property or communications necessary to render assistance to a motorist.' Although the

code of practice worked out by CB organisations, in conjunction with the Home Office, recommends the use of channel nine only for emergency purposes, there is no legal protection. Interested parties, including REACT UK, are lobbying the Government for action in this area.

In practice, if a breaker is in difficulty (broken down or lost, for example) or comes across an accident, he simply turns to channel nine and puts out a call for assistance (a 10-33, as it's known in the 10 code). Providing there is a monitoring team within range — and the extent of their coverage depends on the number of volunteers who join up (hint, hint) — details of the problem are taken over the air and passed on to the relevant emergency service; police, ambulance, fire brigade or coast guard.

The main advantage over methods used before CB is the time saving. Obviously, minutes, or even seconds, can be vital if you arrive on the scene of an accident. Finding a phone in some isolated parts of the country is not easy — and finding one that works in many towns and cities is even worse. Once the monitor has notified the emergency service(s), he is then able to tell the motorist that help is on the way, or can ask for more details to relay back.

This close link with the authorities is vital to the successful operation of the system and REACT UK have developed good working relationships with all the emergency services plus civil defence groups (in case of large-scale local emergencies), RAYNET (the Radio Hams' own emergency monitoring service), the Red Cross Society and St John's Ambulance Brigade. Results in America prove monitoring channel nine cuts down response time and saves, literally, thousands of lives.

The list of circumstances in which REACT can provide assistance is almost endless, giving information on road conditions, road hazards, diversions and traffic jams, as well as bringing help to road accidents, rail accidents, searches for missing persons, floods, fires and more. Breakers can report acts of vandalism or muggings at the time the crime is witnessed, giving the police more opportunity of finding the offenders.

Annual membership for REACT is £5, which goes towards the cost of producing their magazine, the REACTer, providing equipment for monitoring stations and the dreaded administration, which for a national body is a large bill in itself. It's important to remember that, being a

volunteer service, no-one will be there to help you unless someone volunteers and you won't be there to help them unless you do. Teams are already set up throughout the country, each operating independently but linked by the national body. But it needs a tremendous amount of man power to provide nationwide coverage.

Monitors need licence numbers before they can register as teams, so teams weren't able to officially go on the air until they had licences and REACT had done the paperwork. The shortage of rigs has also proved to be a problem but the organisers hope to have 600 teams operating by May of next year — if you want to do your bit fill in the form and send it to the address indicated.

Next month, we'll be looking at some of the monitoring stations in details — what sort of equipment they use, how the rota works and so on — and we'll be bringing you up to date on some of the other monitoring services. Some are staying AM, some are going FM and some are doing both. We'll tell you which is which, what is what, who is who and where is where, or something equally comprehensive.

Having said that REACT is all about monitoring, Andrew Witham's bike might seem something of a contradiction. But while REACT don't intend to provide an emergency service themselves (rather to pass the calls on to the official bodies), it make sense for monitors to be prepared should they come across a traffic accident or similar emergency.

Andrew is REACT area co-ordinator for Hampshire and was prompted to kit out his bike after reading our CB on bikes feature of a few months ago. He used the Panterra fairing as used in the feature and should by now have received an Amstrad 901 rig direct from the manufacturers. The antenna is an Avanti Astro-phantom and an emergency medic kit is stowed away in the Sup-america panniers.

REACT emphasise that a little medical knowledge can be dangerous and have started first aid courses for monitors, but Andrew had already undergone training with the Red Cross and is a special constable in the Hampshire constabulary.

We'll be following the progress of Andrew over the months but if you live in the area and want to join the Fleet team, you can write to him at 20 Tavistock Road, Fleet, Aldershot, Hampshire, or complete the form and send it to the national membership register at the given address.

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**A**nd god said to noah  
 "of every LIVING  
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 the earth you shall  
 bring into the ark  
 two of each sort



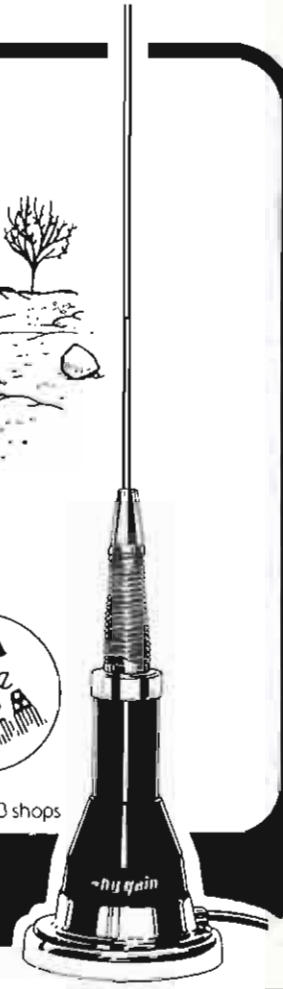
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# Talking shop

Rig specs have been finalised, money has changed hands and supplies are coming into the country. Not exactly flooding in, but coming in all the same. And more manufacturers and importers are releasing full details of their ranges — although, in many cases, only one or two of their models are available now and the rest will be following hot on their chips in the new year. Or so.

There's some interesting new rigs to look at this month, so we'll get on with the show . . .

## First come . . .

The Reftec is a very unusual animal — British and operating on the 93.4MHz frequencies, the other part of the legal FM service and, for the time being, rather neglected. It may well be the first 93.4 set you've seen. The main reason for this is that past services have been on 27MHz, albeit AM, and when the time came for the new sets to be planned everyone went for 27 FM — 93.4 got left behind.

There's another reason for 93.4 being left out in the cold, and that's cost. Whereas 27 FM uses existing AM machinery to make the circuits and what have you, 93.4 is a different kettle of frequencies altogether. It is such a high frequency that it needs special circuitry, coax and antennas, all of which has to be toolled up for individuality. The result of all that is cost and the subject of this piece, the Reftec 93.4, is going to set you back around £197. And remember, 93.4 only has 20 channels so it works out at about £10 a channel. All of which could make it a rather exclusive service. Fine if you can afford it.

On to the more mundane stuff on the Reftec. It's very simple; just volume, squelch and channel selection, with Tx and Rx lights. The signal strength meter consisted of five LEDs, and that's about the lot. Until we compare the two new services, it's difficult to know what to say about 93.4. Can it be that much better than 27? Can it be £130 better?



## JWR base

John Woolfe Racing have been involved in CB accessories for some time and have just announced details of a new home base, which will bring their rig range up to four models. Known as the Diplomat 40, it sells for £194.

We couldn't get a set into the studio for pictures this month, so you'll just have to wait until next month to see what it looks like. We can tell you a few of the features it has, which will give you a taste of what to expect. Let's start with the old favourite, the 10dB attenuator switch, which is a must on any base station with the present rules on antenna height/power restrictions. After that you have an automatic channel nine switch, noise filter switch, RF gain, power and SWR meters, all built in a set described as having 'a black sculptured look'. No doubt Henry Moore would be proud of it.



The rest of the JWR range has been out for a while now, but being the kind souls we are we'll tell you about them anyway. They're called the M1, M2, and the M3 and just to confuse people the M1 costs more than the M2, so in order of price they run M2, M1 and M3. Follow that? Well never mind, let's look at a few features instead.

The M1 costs £65 and is a compact rig finished in black. It has all the stuff you need like a 10dB attenuator, Tx light, signal and power meters and a Dx local switch. For £5 less you can buy the M2, which has all the features of the M1 except for the Dx local switch. If you can live without that then you can save your self some money, but for £90 you could have the M3, with RF gain, PA, noise blanker and automatic noise limiter, Rx, Tx, signal and power meter . . . all in a sesame seed bun.

JWR had around 6000 sets for the launch day, mostly mobiles as you'd expect, and have a further 16000 sets ordered for December. Rush, rush, rush.

## And jet . . .

We'll make this short and to the point. Dixons, all heard of them, have we? Good. CB. Know what that is? Great. Put them both together and you have Dixons selling their own brand of rigs through all their 240 odd branches across the country. And they were the first on sale after November 2 — unless, of course, you know different.

The brand name is Harrier and there are five models. Cheapest are two handsets, the WT1 and the WT2. The WT1 is a two channel job, working on channels 14 and 30, and like most handsets the controls are simple because there isn't space for anything flashy. This means that squelch, volume, channel select and call tone button is all you get on the WT1. The retail price hadn't been set, but it will be under £40 for a pair. The WT2 is more complicated, with a full 40 channels, and the bits to match. You get an LED channel indicator, signal strength and power meter, battery test meter, Rx and Tx lights and an external antenna plug in addition to the features of the WT1. The cost is £65.

The two mobile rigs in the range are the CB and the CBX (imaginative names,



## Voxing clever

Something different in CB is very unusual. Just think about it, there are only so many controls possible on a CB, and in the length of time CB has been around before it came to these shores most of them will have been tried. So what does that leave a manufacturer to play with? He can offer a better price or he can offer a racy new box to put all the same old components in — or he can spend some time and trouble and work on something a little out of the ordinary.

The result, if it works, is something like the new Tenvox. It's taken the simple CB and made a set that is classy to look at (without looking like Jederal Bank) and easy to use thanks to imaginative use of electronics. And for once the mike socket is on the right of the set, which reflects the fact that the set was designed and built in this country.

Channel selection is electronic by using two buttons, one for up and one for



huh?) and if you look on the front cover you'll find them in full, glorious colour. The CB is the cheaper of the two at £70, and it's quite a stylish looking set. The features include a signal strength and power meter, but nothing else, so we're looking at the bottom end of the market here. Not so the CBX, which sells at £100 and has lots of knobs to fiddle with. Starting with the signal strength and power meter, the set also has delta tune, RF and mike gain, PA, channel nine selection, tone, Tx and Rx lights and external speakers. What's more, it looks good.

Top of the range is the home base, called the CB HQ. It doesn't have any more features than the CBX, but it does come in a tidy console which will look at home on your side board, and for that you have to pay £130. Makes the WT1 look very attractive . . . Still, on to the boring bit. The HQ has signal strength and power meter, RF gain, delta tune, channel nine switch, tone, Rx and Tx lights and a head phone socket.

Dixons are also giving away a copy of the Big Dummy's Guide to CB with every set, which is very nice of them, but the one they sent us is the American version, which seems rather odd.



### Speaking Realistically . . .

Tandy are the world's biggest electronics retailer, and if you've been to the States you'll know them better as Radio Shack. And it doesn't take much imagination to realise that if a firm is big in electronics in America they'll be interested in CB. Which brings us to the point of all this — Tandy are now selling CBs in this country through their 270 dealers.

Don't want to be too critical, but the sets Tandy are selling are very American in looks, and the microphone socket is on the left of the rig. This is a criticism that could be raised at many of the rigs imported into Britain, and obviously it is much cheaper for a manufacturer to keep the tooling for Britain the same as for the rest of the world, which is why we get sets which look so foreign.

The Tandy rigs are being sold under the Realistic brand name and there are three — a handset and two mobiles. Starting at the bottom we'll talk about the handset first. Called the Realistic TRC 1001, it's a 40 channel transceiver with a built in antenna and comes complete with carrying case. It has two levels of output, 3.5 maximum and 0.3 watts, to

save the batteries on local communication, and jacks for external power source, battery charger, mikes, speaker and antenna. We don't have any prices at the moment, but if you go into your local Tandy store they'll probably tell you. And on to the mobiles.

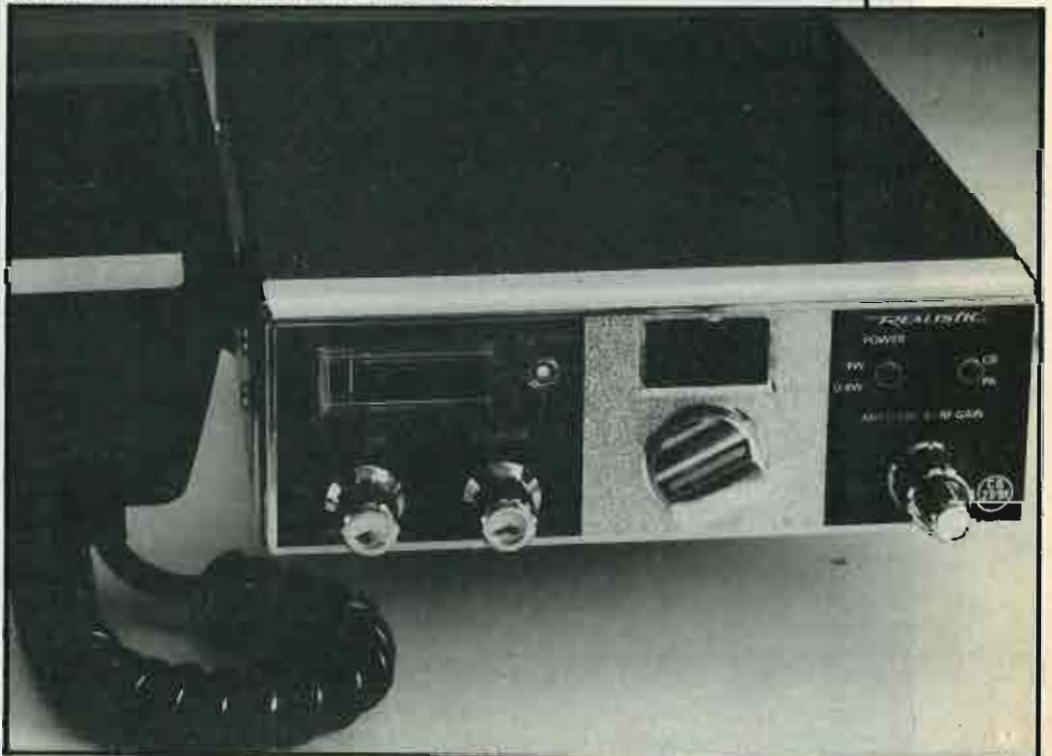
First we have the TRC 2000, which shows Tandy are nothing if not logical in naming their sets. It's an ordinary 40 channel mobile with Tx light, 10dB attenuator, PA, RF gain, signal strength and power meter and all the usual stuff you expect. Unfortunately this one looks particularly American with silver plastic panels and knobs, but anyway, take a look and make up your own mind.

Finally the TRC 2001, which, just to confuse people, has less features than the 2000. TX light, signal power meter, PA and a 10dB attenuator are about it on this one, but it all looks nice and neat. And, of course, with Tandy having so many shops around the country you should have no trouble in getting spare parts for your rig if you get carried away with your SWR'ing and break something. Not that you will if you follow our guide, will you?

down. Channel search can be continuous or channel by channel. The volume and squelch controls are sliders as opposed to the usual rotary knobs, and there is an automatic channel nine selection. As well as the usual 10dB attenuator, there're LEDs to indicate signal strength and transmit or receive.

A clever point about this set is that it comes with an extension speaker as standard — there is no speaker inside the rig. This means the rig is very slim, which would allow in-dash mounting, and you can put any speaker you fancy on the set, which would include running it through the stereo speakers in your car. The set also has built in noise blanking. Because of the purer FM signal it's possible to put filters in the actual wiring, but only if the set is designed as an FM rig in the first place.

And for all that technology, do you have to pay the earth? Well not quite. How's £96 sound? Not too bad? Fine.



**BREAKER**



CB  
27/81

CHANNEL



40

Radiomobile  
202

SIGNAL LOG  
4 CH 9  
3  
2 RX  
1 TX

CH 9

PA

DIM

SOUSLECH

VOLUME

POWER

RF GAIN

TUNE

OPT



# AM—here today... here tomorrow?

It's a bit like being a sociology student working at Breaker. Without the long holidays. If we need detailed information on what you think about something, we run a readers' survey in the magazine. But if we want to know the general trend of thinking among breakers in the UK, we need look no further than the readers' letters. Or need listen no further than the phone calls we get every day.

Up until a month or so ago, most of them centred around the introduction date for the FM service. When that was announced, the next point of interest was where the FM rigs were available. But recently, the burning question on everyone's lips has been, 'What's the future of AM?'. A similar question has been asked as many times on the AM airwaves. And it's not only the breakers who are interested. The media seem determined to set the AM and FM users clawing at each others' antennas. Nothing like a bit of conflict for a good news story.

There's one other group of people who have been heard discussing the very same topic, whether over G and Ts at a business lunch or over pints and pints at all hours. They are the trade. The merry band of entrepreneurs who import FM sets, smuggle in AM sets, sell you accessories or stick antennas on the roof of their Roller. Or go broke and take your money with them.

There are good dealers and bad dealers, fair and unfair, although, thankfully, the rogues are in a minority. But they are all in business for one reason—to make money. And that means knowing the market—and that means knowing whether AM will stay or not.

The trouble is, nobody does know. A lot of people have very strong views, but nobody really knows. Speak to breakers who use AM—in person, we're not allowed to encourage the use of illegal CB, remember—and a large percentage of them will tell you they're staying with it. Sticking with it until the death. And beyond, probably. But how many times are they prepared to be busted? Some traders say they aren't going to forget the AM breakers because they made them their money in the early days. But if the market is in FM, won't they go there?

Back to the same old question: What is the future of AM? FM is here and—supplies allowing—it's certainly going to be big. But will supplies allow? Will a crowded 40 channels make the new generation of breakers look for more? When they join CB clubs and meet AM users, will they resist the temptation of hi/lo, upper and lower sideband and all the rest? Will the shortage of FM equipment make people look elsewhere? Who's going to answer these questions, anyway?

We've said before that we intend to cover all aspects of CB and we thought it was about time we had a look at developments in AM. We won't make any sweeping statements about its future—Lynn's keeping fish in our

crystal ball—but we'll look at a few areas of interest and you can make up your own minds. If you haven't already.

## The converted

In our younger foolish days—earlier this year—we hoped the Government might allow an amnesty for AM breakers. Sounds silly now, we know, but in those far off innocent days...

We've since learnt to expect, and eventually to accept, second best, which in this case was the announcement that AM sets could be legally converted to FM. Since that announcement, however, things have been a little confused, so we decided to try and dig up the true picture. Now we're even more confused.

The Home Office made the first announcement and said that Customs and Excise were looking into the financial arrangements—ie: paying the import duty and VAT, which your set evaded when it was smuggled in to the country. Then the Customs and Excise spoke:

'It is known that there are many 27MHz AM sets operating on the illegal frequency which have evaded import controls and these will be liable to seizure with the possibility of prosecution of the owner. It is technically possible to convert these sets to comply with the new legal specification and Customs and Excise recognise the desirability of enabling this to be done.' Reads a bit like Dickens, doesn't it? They continue:

'Therefore, where individual sets are converted on or after November 2 under the following arrangements, Customs have agreed to take no action regarding their illegal importation and to free the set from its liability to seizure.'

'The following arrangements' are simply that the set must be converted to the FM specs and carry the CB 27/81 stamp; a £5 fee must be paid to cover the import duty and VAT. Once a conventional CB licence is obtained, the converted AM sets can be used legally in the UK. All sounds very sensible and fair but the next bit seems a bit out of character for the Customs and Excise we know and love:

'These arrangements are intended to apply mainly to specialist converters but they can also be followed by individuals who have the technical ability to convert their own sets.'

Does this mean that Joe Sparks can open up the back of his set and fiddle with the fiddly bits? Unless things change, that is exactly the case, which seems an unusual attitude for Customs and Excise or the Home Office. Some people are perfectly capable of carrying out the conversion but a lot more will think they are—and they will try. Neither the Home Office or the Customs envisage any kind of quality control, other than saying that anyone using illegal equipment will be liable to prosecution. But then there are around a million or so doing just that now.

And the sacred CB 27/81 stamp?

Customs suggested popping round to the 'local engraver' to have it put on the set. As the Home Office reminded us recently, that stamp is the mark of legality and no set can be used unless it bears one. We can see an enormous demand for 'local engravers'.

So the Home Office, who have been so keen on stamping out any cause of interference are prepared to let people tamper with very delicate rigs and trust them to carry out the conversion successfully. In the States, only qualified electricians are allowed to work on sets.

But reservations aside, the Customs are in effect saying 'give us a fiver and we'll forget it's smuggled in', which isn't a bad deal.

The conversion process begins by contacting the Customs, who will send you a form. You then convert the set, or have the set converted, fill in the form to tell them you have and send it off with the fiver. You then buy a licence, wait for Customs to send you a stamped form and you're on the air. Legally.

So far, we've only heard of one company producing conversion kits: Finelms Electromec, 50 Parker Street, Warrington. HACES will be carrying out conversions and you'll find them at 32 York Street, Twickenham, Middlesex. Expect to pay around £20.

But beware of piggy-back boards available elsewhere which convert AM sets to FM but don't change the frequencies.

Footnote: On some AM sets (with FM, hi channels and a 5KHz shift), some channels—around the mid 50s on hi—should coincide with the legal FM service. This practice is very illegal and should be avoided at all costs.

## Quack thinking

Probably the largest factor in AM's future is the action of the authorities. If the Home Office and Telecom really clamp down on the illegal breakers, many will drift over to the new system—even before FM, a lot of sets ended up in the dust under the bed when a local bust campaign was launched.

But with over one million AM users operating (if you don't like that figure, substitute one of your own), it will take the authorities a lot of time and money to police the airwaves. We did ask the Home Office what their plans were but, not surprisingly, they weren't prepared to discuss their policy. We'll just have to wait and see. Getting nervous? Just to take your mind off things, let us introduce you to Donald.

Donald stands for Direction Of Null And Line of Drive, a device which has been developed by the Regional Test Equipment Design Centre at Seaford in Sussex. At the time of writing, it was still in its prototype stage, but if and when it is brought into service, Donald will give a continual bearing from a van on any 'selected transmission source'. They couldn't mean CB, could they?

The van can work on the move and home in on any stationary or mobile signal and even if the transmission shuts down, good old Donald locks on to the last bearing and guides the investigation team to your door... er, sorry... to the source.

Donald's warm little heart is a ferrite aerial, which picks up null (minimum) and



peak strength signals which are 'tuned by the system's receiver'. The device then 'integrates the two null bearings and triggers lights on a 180 degree scale.' When the scale is lined up with the van, there is an 'immediate direction indication'. Wish we could find spies who speak English.

Best watch out for the beak, huh?

### Don't interfere

When the anti-AM lobbyists need something to fall back on, they often land on that old faithful — interference. TVI is a favourite, of course, because if you walk all over Coronation Street, the world and his wife are going to walk all over you in the commercial break. No pun intended.

TVI is usually caused by cheap and nasty faulty sets — and/or linear amplifiers, which have got as much to do with the idea of CB as meths as got to do with social drinking. But there are other areas of interference, and radio controlled models are another favourite. Aircraft modellers have been allotted alternative channels around 35MHz, however, and it's only a matter of time before all modellers move there. In the meantime, there are still a lot on 27MHz, so if you hear the familiar buzz of a radio-control transmission, keep well clear.

Then there's selective paging systems. We've all heard of them being used in hospitals, but they are only a small minority — there are about 200 systems being used on 27MHz by the NHS and about 4,000 in use in commerce and industry. Hospitals usually cover a large area, so their transmitters are generally more powerful, and although they can be, and sometimes are affected by CB, breakers in most areas keep clear of the problem channels and interference is reduced to a minimum.

Natcolcibar (National Committee for the Legalisation of Citizens Band Radio) has long offered to try and persuade

breakers to keep off any channels affected by interference from CB but the Home Office have refused to co-operate. The Selective Paging Committee have now spoken out and revealed that the channels which can interfere with selective paging are: 2, 4, 6, 8, 10, 12, 15, 17, 19, 21, 24 and 26.

Natcolcibar says they hope that breakers will now avoid these channels when near offices or works likely to be using a paging system. We can only agree. You never know, if AM breakers continue to act responsibly, the authorities might listen to reason. Eventually.

### Rigolization

With millions of FM breakers coming onto the airwaves over the coming months, it won't be easy for the authorities to isolate the AM users. But a device developed by Broadercasting Ltd (200 North Service Road, Brentwood, Essex) could make their job that much easier.

The Rigolizer, as the name suggests, differentiates between legal and illegal rigs and it has already been evaluated by authorities up and down the country, from Customs and Excise to the Metropolitan police.

The portable unit, which will sell at around £35, monitors the 26.9 to 29.9MHz range to check for AM signals and can also check the 27.6 to 28MHz FM band for deviation.

If the Rigolizer is used, it will, presumably, operate in a similar way to the breathalyzer, so if you get a negative reading, your set would be taken away for further testing. If either the mode or frequency used by your set is outside the Government's spec, you might as well say 'it's a fair cop' and put it down to experience.

They have the technology, it seems.

### Both sides now

One reason that AM breakers won't

readily go over to the FM system is that they don't want to lose contact with their friends on AM. But what if there was a set that combined the British spec FM frequencies with the US/European AM frequencies? Would that be popular, or what? Well there is such a set — and it is.

It's called the Commtron CX Nato and features 80 AM and 80 FM channels on the illegal frequencies — and the 40 channels now legal in this country all going out at four watts. The AM facility means it is still illegal over here, of course, and combined with the Brit bit, it is illegal everywhere else too. But breakers already running AM aren't going to be too worried about that, now are they?

About 3,000 sets came into the UK through the Isle of Man, exploiting the loophole in the law which said that anything produced in the Isle of Man could be legally imported into the UK. The sets were imported into the Isle of Man 'partially built', completed there and then brought through customs onto the mainland without a hitch. Thousands of illegal sets have come into the country this way — Romford CB Centre in Hornchurch Road, Hornchurch, sold 1,100 Commtrons in just four days, at around £120 each.

That loophole is now closed but Commtron Natos are still coming in and finding a big market from breakers who want the best of both worlds.

### Philatelists

Talking of conversion kits, how would you like to convert your AM set for a matter of a few quid? We hear that one



unscrupulous company is producing CB 27/81 stickers that look just like the stamp on the front of FM sets. Now that's naughty.

# Which CB? —the rig guide



Another month, another salary cheque, another row with the bank manager — and another Which CB? It comes round as regularly as the rent collector and judging from the response we've had from manufacturers, retailers and readers, it's a lot more welcome.

With the CB market only just out of nappies, Which CB? provides a reliable reference for everyone who needs to keep up to date with what's going down. Or up, inflation being what it is. If you're going shopping, it's a bit like finding one of those rare creatures; an informed, helpful salesperson. And you don't have to put up with the bad breath and aftershave either. If there are any salesperson reading this, we're only joking (and if there aren't, we mean every word — still joking, chaps).

But enough trumpet blowing. And anyway, it makes your lips go funny. We've had a number of phone calls and letters asking us where the equipment is on sale but bearing in mind this is being written before legalisation, we weren't able to include that information this month. But we do know of some very big deals that have been signed and we'll be putting on our best Levis, polishing our plimsolls and exploring the corridors of power for next month's issue. Providing the doorman lets us in.

In the meantime, we're continuing to include the manufacturer's or retailer's name, so you can drop them a line and get it straight from the nag's gob.

Now, a word about the terms and abbreviations used in the guide. Last month we started our Basically Speaking feature and included a glossary to the terms your tongue is most likely to stumble across in the CB world, but we don't expect newcomers to the game to keep referring back to that, so we'll include a quick rundown in Which CB? each month until you're all familiar with the terms used. Or brain-washed, as we call it in the trade. There are a couple of features common to all sets, which we haven't included in the guide (those blobs don't come cheap you know):

	VARIABLE RF GAIN	MIC GAIN	DELTA TUNE	TONE		PA	ROGER BEEP	NB	ANL	SWR METER	PA
				SWITCH	VARIABLE						
AMSTRAD 900											
901							●				●
BARRACUDA GT 868	●	●			●			●			
HB 940	●	●	●	●	●						●
BINATONE LONGRANGER											
SPEEDWAY											
ROUTE 66				●							
5 STAR	●	●	●	●	●						
POWERBASE (HOMEBASE)	●	●	●								●
COLT 295					●						
DNT HF-12/13											
HF-13/40											
M40											
B40 (HOMEBASE)											
FIDELITY 1000											
2000	●	●			●	●					
GRANDSTAND INTERCEPTOR											
COMMUNICATOR											
BUZZING BEE	●						●				●
HAWK	●	●					●				●

The Ham International Explorer—the basic set in their range





The well-appointed Gemini from Grandstand brings their range up to seven models

Grandstand's base station retails at around £290 — not cheap but not nasty either



INDICATOR LIGHTS		METERS		MIKE SOCKET		SWR SAFETY CUT-OUT	DISTANT-LOCAL	STANDBY	C/B PRIORITY	HEADPHONE SOCKET	DIMMER	PRICE (approx £)	OTHER FEATURES	CONTACT ADDRESS
RX	TX	SIGNAL	POWER	FRONT	SIDE									
●	●			●								70		1-7 Garman Road, London N17
●	●			●		●						85	AUTO SQUELCH	
				●								70		All Halfords stores
●	●	●	●					●		●		90		
												80	HANDSET	Beresford Avenue, Wembley, Middlesex
		●	●	●								N/A		
	●	●	●		●							70		
		●	●					●		●		N/A	10dB ATTENUATOR	
●	●	●	●	●				●	●			100		
	●	●	●									85	10dB ATTENUATOR	Shellpost Ltd, 183 The Rock, Bury, Lancs
												42	THREE CHANNEL HANDSET	Radiotechnics Ltd, Grove View, Bel Royal St. Lawrence, Jersey
●	●	●										71	AVAILABLE 1982	
●	●	●	●	●		●						85	10dB ATTENUATOR	
●	●	●	●	●		●						95	10dB ATTENUATOR	
		●		●								60		Victoria Road, N. Acton, London
		●		●				●				80		
	●											29	TWO CHANNEL HANDSET	Adam Imports Livezey St. Sheffield
		●	●									69	40 CHANNEL HANDSET	
●	●	●	●	●								75		
●	●	●	●									86		

**On/Off and Volume.** On most sets these functions are controlled by the same knob. Turn it until it clicks and you've turned your set on. Turn it some more and you will start to hear things. Turn it more and you'll hear the same things only louder.

**Channel selector.** Not surprisingly, this selects the channels, which are usually indicated on an LCD (Liquid Crystal Display) readout.

**Squelch.** This control reduces the sensitivity of the set, thus cutting out distant signals, which interfere with the local signals you're trying to listen to. When it's fully open you'll get everything coming through your speakers, turning it down reduces the range and only lets through the stronger local signals.

**Power and signal strength meters.** The power meter tells you how much of the available power you are putting out as a signal, so the higher the reading the better. The signal strength meter, or S-meter, shows the strength of incoming signals, usually in a scale of one to nine. Not all sets have both meters, so we have included it in the chart, but most have

Two rigs from Radlmobile, the 201 and the 202, and the CB and CBX from the Harrier range on sale at Dixons. Above right are three of the Midland sets; 2001, 3001 and 4001. Go back to the centrespread and you'll find the Radlmobile rigs in glorious colour.



some method of getting the message across — sometimes in the form of a progressive light display. Just like on that hi fi you can't afford.

All sets will have a microphone socket, of course, but the siting differs, so we'll work our way across the features listed and say a word about mikes when we come to it. Can't say fairer than that.

**RF Gain.** Got this one a little wrong last month. What it really does is to adjust the volume of the RF amplifier, and can be used to lessen the noise from nearby stations.

**Mike again.** Following on from the last one, this controls the sensitivity of your mike, so you don't have to swallow the mike to be heard. Useful for backseat drivers, too.

**Delta tune.** If your signal is slightly off channel, this gives you fine control over the frequency to bring it back onto the mark. Given the sophistication of modern sets, its value is debatable.

**Tone.** Self-explanatory, really. But we've got to earn our keep, so we'll say its

the same as you find on trannies and the like. The switch type gives you just two settings and the variable knob control is ... er ... variable.

**PA.** Public address, just like the system that tells you what's the best buy in Tesco. Flick on the PA switch and, providing you've got a speaker plugged into the socket in the back of the set you can address the world. Or, at least, the high street. Don't expect a very warm response from the local bobby though.

**Roger Beep.** Sometimes called Roger Bleep, sometimes labelled Roger on the set, it means you can end every transmission with a 'beep'. Just like on the space missions. Everyone will know when you've finished speaking — and most of them will get a bit fed up with it after awhile. There are even some with variable notes, so you can play a little tune after every transmission. These are slightly less annoying than that squeaking bed at your parents' house. But only just. See Lowdown for legal position.

**NB.** Noise blander ... bit like the Dolby

	VARIABLE RF-GAIN		MIC GAIN	DELTA TUNE	TONE		PA	ROGER BEEP	NB	ANL	SWR METER	PA
	SWITCH	VARIABLE										
GRANDSTAND (Con) BLUEBIRD												
GEMINI	●					●		●				
BASE STATION	●			●		●						
HAM INTERNATIONAL EXPLORER						●						
MARINER	●				●	●	●	●	●			
HERCULES HOMEBASE	●	●			●	●	●			●		
HARRIER CB												
CBX	●	●	●	●		●						
WT1 HANDSET												
WT2 HANDSET												
HQ HOMEBASE	●		●		●							
INTERCEPTOR INTERCEPTOR	●											
TC400	●	●			●							
REMOTE	●				●							
HB600	●	●			●						●	
JOHNSON	●		●		●							
MAJOR 3000	●		●		●							
MIDLAND HANDSET												



on your cassette. It cuts out the high frequency signals that carry most of the interference. Similar to squelch but shouldn't reduce the range.

**ANL.** Automatic noise limiter. Similar function to above.

**SWR meter.** SWR stands for Standing Wave Ratio and measures the match between the electrical length of the antenna and the transceiver's frequency. If an SWR meter is incorporated in the set — usually only found in home base units — it means the antenna can be 'tuned in' without using additional components. See this month's Basically Speaking.

**Indicator lights.** These simply tell you which function is operative — PA for public address, RX for receiving, TX for transmitting.

**Meters.** We've already mentioned this and while they are not vital, they do keep you up to date with the performance of your set.

**Mike socket.** This can be front or side mounted — front is usually more practi-

INDICATOR LIGHTS		METERS		MIKE SOCKET		SWR SAFETY CUT-OUT	DISTANT-LOCAL	STANDBY	CH9 PRIORITY	HEADPHONE SOCKET	DIMMER	PRICE (approx £)	OTHER FEATURES	CONTACT ADDRESS
RX	TX	SIGNAL	POWER	FRONT	SIDE									
●	●	●	●	●				●				102		
		●	●	●								141		
●	●	●	●	●					●			287		
	●	●	●		●	●						75		
●	●	●	●	●								110		25 Buckland Road, Leicester
●	●	●	●	●					●	●		165		
	●				●							70		
●	●				●			●				100		
												25	TWO CHANNELS	All Dixone Stores
		●	●									65	40 CHANNELS	
●	●	●	●	●				●	●			130		
●	●	●	●		●	●						80	AUTO NOISE FILTER	
●	●	●	●	●		●						95	AUTO NOISE FILTER	Chelsea CB Centre 73-77 Britannia Road, Fulham, London
●	●	●	●	●		●						125	AUTO NOISE FILTER	
●	●	●	●		●							180	AUTO NOISE FILTER	
		●	●		●							44		Star Warehouse, Camden Goods Depot, Chalf Farm Rd, London
	●	●	●	●		●						76		Unit 2, Station Yard Willbraham Rd, Fulbourn, Camba.
	●											N/A	BATTERY METER	Plustronics Ltd.

The CB 1000—one of two models available from Fidelity



al because it doesn't restrict the positioning of the rig.

**SWR safety cut-out.** We've mentioned SWR, and if the match is too far out it can cause damage to the set. This cut-out device safeguards the rig—useful but, if you're careful, not essential.

**Distant/Local.** Again a bit like squelch in that it reduces the sensitivity of the set. It's designed to safeguard the set from local signals which are too powerful for it to handle comfortably. A useful by-product is that it cuts down interference by shutting out those long distant signals that carry all the crackly stuff.

**Standby.** This cuts out the transmitting part of your set, so you can listen in without taking too much out of your battery.

**CH9 priority.** Channel nine is the emergency channel and when this switch is activated, any calls on nine will automatically interrupt the channel signal you are tuned into. An alternative control takes you directly to channel nine without you having to fiddle about with the channel control. Particularly useful if you are monitoring for emergency signals.

**Headphone socket.** Well, it's a socket for headphones, really.

**Dimmer.** All those pretty warning lights and illuminated dials and meters can become a mite distracting at night—the dimmer control can solve the problem.

**Price.** At the time of going to press we've had to keep prices approximate, but they are within a few pounds of what you'll have to pay. Prices will vary, in any case, when sets are available from a number of outlets.

**Other features.** Auto squelch is automatic squelch; the clarifier control has the same function as delta tune; the attenuator switch reduces the output of the set to 0.4 watts bringing you within the Government specs for siting of home base antennas.

That about covers the lot, but if you have any technical queries on controls, or any other areas of CB, drop a line to Citizens Advice, Breaker, Link House, Dingwall Avenue, Croydon and we'll answer any questions. We can tell you now, the answer is 42.

	VARIABLE RF GAIN	MIC GAIN	DELTA TUNE	TONE		PA	ROGER BEEP	NB	ANL	SWR METER	PA
				SWITCH	VARIABLE						
MIDLAND (Cont.) 2001											
3001	●					●					
4001	●	●				●					
RADIOMOBILE 201											
202	●			●	●						
RANGER											
REALISTIC TRC 1001											
TRC 2000	●	●				●					
TRC 2001						●					
TRC 2002						●					
REFTEC 934											
ROTEL RVC 220											
RVC 230	●			●		●					
RVC 240	●	●	●	●		●					
S&M ANGLIA	●		●			●		●			
SIRTEL SEARCHER						●					
TENVOX											
WR ELECTROTEK											
YORK JCB 863					●						
JCB 861	●	●	●	●		●					

# Which CB? —the rig guide



York's JCB 863—around £90  
from Boots and Woolworths

INDICATOR LIGHTS		METERS		MIKE SOCKET		SWR SAFETY CUT-OUT	DISTANT-LOCAL	STANDBY	CB PRIORITY	HEADPHONE SOCKET	DIMMER	PRICE (approx £)	OTHER FEATURES	CONTACT ADDRESS
RX	TX	SIGNAL	POWER	FRONT	SIDE									
●	●	●	●	●								70		Plustronics Ltd, Hempstalls Lane, Newcastle under Lyme, Staffordshire
		●	●	●				●				80	NOISE FILTER	
		●	●	●		●				●		90	NOISE FILTER	
		●	●		●							90		Goodwood Works, North Circular Road, London
●	●	●	●	●				●		●		120		
				●								70	SWITCHABLE SQUELCH	Modux, 29a Eastcheap, Letchworth, Herts.
												N/A	10dB ATTENUATOR	All Tandy Stores
●	●	●	●		●							N/A	10dB ATTENUATOR	
●	●	●	●		●							N/A	10dB ATTENUATOR	
●	●	●	●		●							N/A	10dB ATTENUATOR	
●	●	●			●							200	934 MHz	North Herts Co, 8 Melbourne St., Royston, Herts.
		●	●	●								70	10dB ATTENUATOR	2-4 Erica Road, Stacey Bushes, Milton Keynes, Bucks.
●	●	●	●	●								80	10dB ATTENUATOR	
					●			●		●		90	10dB ATTENUATOR	
					●							N/A		Queen Street, Haverhill, Suffolk
●	●	●	●	●								80		24 Altric Square, Woodaton Industrial Estate, Peterborough
●	●	●		●				●				96	CHANNEL SCAN	Voxon Audio, Nuffield Way, Abingdon, Oxfordshire
●	●	●	●	●		●		●				120	10dB ATTENUATOR	33 Grove Street, Wantage, Oxon
		●	●									70		From Boots and Woolworths
●	●	●	●					●		●		90	10dB ATTENUATOR	



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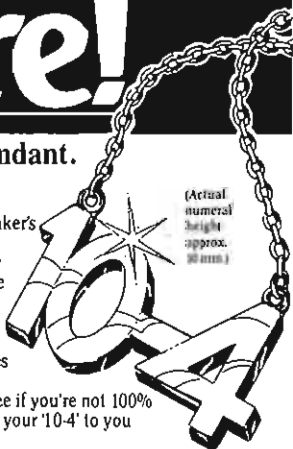
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Burleigh CB, 48 Burleigh St, Cambridge

Markemith Autosales, Carlton Hill, Nottingham

Geoff Cox, Butterly Hill, Ripley

CBG, 20c Seisdon Rd, Croydon

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# Pole volting DIY power warning unit

Calling all you practical types, who aren't frightened of getting your screwdrivers dirty (bushy beards and thick glasses optional). Judging by the letters we receive, Breaker's readership ranges from the technically minded down to the rather silly minded, which is just the way we like it. We realise that those of you who are prepared to retreat to your workshop and actually make something are in a bit of a minority — probably a smaller minority after half of you blew yourselves up attempting the switcheroo project we ran a couple of months ago.

But unlike some we could mention (but won't because our libel settlement account is a little low just now), we don't ignore you. We had a good response from the Switcheroo feature and the only accident we know of was when I jammed my finger in the typewriter writing the introductory paragraph. So here is Breaker DIY project No 2, hot from the drawing board and typewriter of James Bryant. It tells you all you need to know on how to make two types of voltage indicator — not too tricky and a very useful addition to your system, whether you're mobile or home on the range.

And, incidentally, if anyone's not too sure of some of the procedures used, fear not. Hold on to this issue, because we'll be introducing a basic guide to practical electronics in the coming months, so you can always come back to it. Right, that's our bit done. We'll pop down the pub and leave you in the capable hands of James...

Most CB Radios are designed to be powered by twelve volt lead-acid car batteries. This means that to operate correctly they require a supply voltage of between 11.5 and 15.5 volts, which are the limits of voltage met on a car battery under normal conditions of charge and discharge. Under fault conditions the supply voltage in a car can go outside these limits, and any CB radio may misbehave.

If the voltage is too low the misbehaviour usually takes the form of loss of sensitivity, frequency instability (which may be so bad that the rig does not operate on the CB channels at all), interference generation, and low power. If the voltage is too high, similar problems may occur, but the most likely fault is over-dissipation which can quickly destroy the PA and audio stages.

It is, therefore, very sensible to keep an eye on the supply voltage of the rig (especially since faulty power leads can cause a reduction in voltage even when the car battery is in perfect condition). The two voltage indicator circuits described here are both small printed boards containing a few components and use LEDs (light-emitting diodes) to indicate the value of the supply to a CB radio. If installed in a car or a boat they will also indicate the condition of the battery

and if connected to a mains power supply will confirm that it is operating correctly.

Both indicators use the National Semiconductors' LM3914 integrated circuit and are connected to the battery with just two wires. The simpler indicator uses ten LEDs to indicate the supply voltage in 0.5 volt steps from 11 to 15.5 volts, and the display may either be a 'bar graph' where more LEDs light as the voltage rises or a 'moving dot' display where a different LED lights for each range of voltage — the mode is selected by a wire link on the printed circuit board. The other indicator uses only three LEDs to indicate the voltage but requires rather more circuitry to do so.

## THE CIRCUITRY

The circuit diagram of the simpler indicator is shown in Fig 1. It consists of only seven components and the ten LEDs — the ten LEDs may either be in the form of an LED array (a component containing ten LEDs in a single DIL package), or may simply be ten discrete LEDs of the same, or different, colours. The kit of parts for this indicator, which is available from Ambit International (address at the end), uses the LED array because of its small size and simplicity of construction.

The LM3914 contains an accurate voltage reference circuit, a voltage divider, a buffer amplifier and control logic, and ten comparators and lamp drivers. The values of the components are given in Table 1. Since the accuracy of the indicator depends on the accuracy of the resistors (R1, R2, R3 and R4), they should be 2% types and it is better that R1 should be adjusted as described below. However, if the necessary digital voltmeter is not available, R1a should be replaced with a piece of wire and R1 should be increased to 110K 2%. The Ambit kit of parts contains a 110K 2% resistor and no components for R1a.

The printed circuit board and component layout for the ten lamp indicator is shown in Fig 3. The first step in assembly is to mount a wire link on the board underneath where the integrated circuit is to be mounted. If the integrated circuit is mounted first, the link can be mounted on the back of the board but much more care must then be paid to insulation. The link determines whether the display will be a 'bar graph' or 'moving dot' type — if

the short link 'a' is used, the display is a moving dot, if the longer link 'b' is used, it will be a bar graph. On no account should both links be fitted as this would give a bar graph display but with LED L9 not working.

The integrated circuit, diode, and LEDs or LED array are mounted on the board and soldered in place using resin cored solder and a small electric soldering iron. The polarity (i.e. the direction in which these components are mounted) is very important and the diagram should be followed exactly. If there is any doubt about the polarity of the LED or LED array, you can test it by connecting a 500 ohm resistor in series with a 3 volt battery and connecting the arrangement across the LED — if it lights up you have it the correct way round. It is essential that the 500 ohm resistor is used in this test — an LED connected directly to a 3 volt battery may be destroyed.

The resistors and capacitor are then mounted and soldered in place. The capacitor must be connected with the correct polarity, but resistors may be connected either way round.

If the indicator is being built by a constructor with no electronic testgear, R1 should be 110K and a piece of wire should be used to connect the holes for R1a together. An indicator built in this way, using 2% resistors, will have an overall accuracy of 6% or better — much higher accuracy can easily be achieved with the aid of an accurate voltmeter.

To calibrate the indicator accurately, R1 should be set to 100K and a 20K variable resistor mounted temporarily in the R1a position. Exactly 13.50 volts (as indicated by an accurate voltmeter) should be applied to the circuit and the variable resistor adjusted until the LED L6 just lights (this should be checked by reducing the voltage to 13.45 volts when L6 should go out again). The value of the variable resistor is noted and a fixed resistor of the same value is placed in the R1a position. The overall accuracy of the indicator should now be better than 1%.

Table 2 shows the voltages at which the LEDs come on. If all ten (or number 10 in dot mode) are on, the supply is over 15.5 volts and any CB equipment should be turned off as soon as possible to prevent damage.

The circuit diagram of the three-lamp indicator is shown in Fig 2 and the circuit

Table 1

R1	110K 2% ¼W	C1	10uF 25v Electrolytic
R2	10K 2% ¼W	D1	1N4001 or similar 1A diode
R3	910R 2% ¼W	IC1	LM3914
R4	1K8 2% ¼W	LEDs	10 LED array or 10 discrete LEDs (any colour)

Table 2

Voltage:	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5
Lamp just on:	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10

Table 3

R1,R2,R3, R4,R5,R6, R7,R8,R9,	390R 10% ¼W	C1	10uF 25v Electrolytic
R10	110K 2% ¼W	D1	1N4001 or similar 1A diode
R11	10K 2% ¼W	IC1	LM3914
R12	470R 2% ¼W	T1,T2,T3,T4,T5, T6,T7,T8,T9	TUP (See text)
R13	910R 2% ¼W	LEDs	1 each red, amber and green LEDs

Table 4

Voltage:	6.5	6.5	7.5	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5
LEDs alight:	None	R	R	R	R	RA	A	AG	G	G	RG



board and component layout in Fig 4. It should be noted that the component numbers in Fig 2 have NO connection with the component numbers in Fig 1.

This indicator uses a slightly larger PCB (printed circuit board) than the ten LED version but has the major convenience that only four wires are needed (rather than eleven) if the lamps are to be mounted away from the board itself — this may be a major advantage if the indicator is built into a car, boat or CB set.

The component list, with values, is given in Table 3. Again the Ambit kit supplies a 110K 2% resistor and no components for making fine adjustments. The expression 'TUP' for the transistors stands for 'transistor, universal, PNP' and means that almost any small silicon PNP transistor may be used for this circuit and the cheapest available (which will probably cost well under 12p) should be used. It is important to notice that the component diagram shows transistors of the 2N3906 type and that some types of PNP transistor have different lead connections — it is important that the leads be placed correctly, the actual orientation of the package is unimportant.

There is no mode-select jumper lead on this board so the integrated circuit is mounted first, taking care to see that it is placed in the correct position, and soldered in place. Next the transistors go on. As is clear from the circuit diagram the collectors go to the LEDs, the emitters to R7, R8 & R9, and the bases in the middle. As different types of transistor have different arrangements of leads it is important that you make these connections correctly. The supplier of the transistor will certainly be able to tell you the arrangement of the type you buy — if, like me, you use 2N3906 transistors the layout is exactly as in Fig 4.

Next the diode and capacitor are mounted (observing polarity) and soldered, and then the resistors. If no adjustments are to be made, R10 is 110K 2% and the R10a position is short-circuited with a piece of wire, otherwise R10 is 100K 2% and the R10a position is left for the moment.

Finally the LEDs are mounted — these may either be on the board or may be mounted some distance from it and connected to it by wires, depending on where the indicator is to be used. In either case it is important that the anodes (positive connections) of the LEDs are connected to the transistor collectors and the cathodes (negative) are connected to the negative supply.

If it is required to calibrate the indicator it now has a 20K variable resistor temporarily connected at R10a and is supplied with an accurate 11.50 volts. The resistor is adjusted until the amber LED is on and the red LED is just off — if the voltage is reduced to 11.45 volts the red LED should come on again. A fixed resistor of the value of the variable one is now fixed at R10a and calibration is complete. Without calibration accuracy is about 7% — with it it should be about 1%.

Table 4 shows how the various LEDs come on and off at various voltages. In principle if the red LED is on, the voltage is out of specification, if the red and green LEDs are both on, the voltage is too high and equipment should be turned off before damage results. In a car (and this instrument can be used as a battery

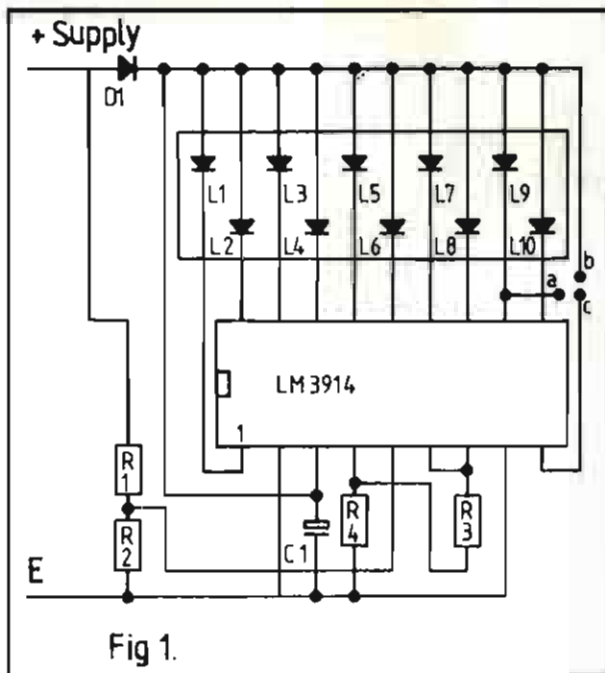


Fig 1.

condition meter as well as a CB supply meter) the amber or amber and green LEDs should be on when the engine is stopped, and the green LED only should be on when the battery is charging (a fully charged battery off charge may just light the green LED alone).

Both indicators are mounted in any convenient location and connected to the voltage it is required to monitor. If they are to be used to monitor a CB supply, they should be connected to the supply as near to the rig as possible so that they will show up any problems due to poor or damaged wiring, if they are to be used as battery condition meters they should be wired directly to the battery being used.

These indicators are small, simple and inexpensive and yet may save the life of your rig. They are also invaluable in showing the state of your car or boat battery. Kits for both types may be obtained from Ambit International, 200, North Service Road, Brentwood, Essex. They should be described as 'Ten Lamp Voltage Indicator' or 'Three Lamp Voltage Indicator' respectively.

James M Bryant MIERE

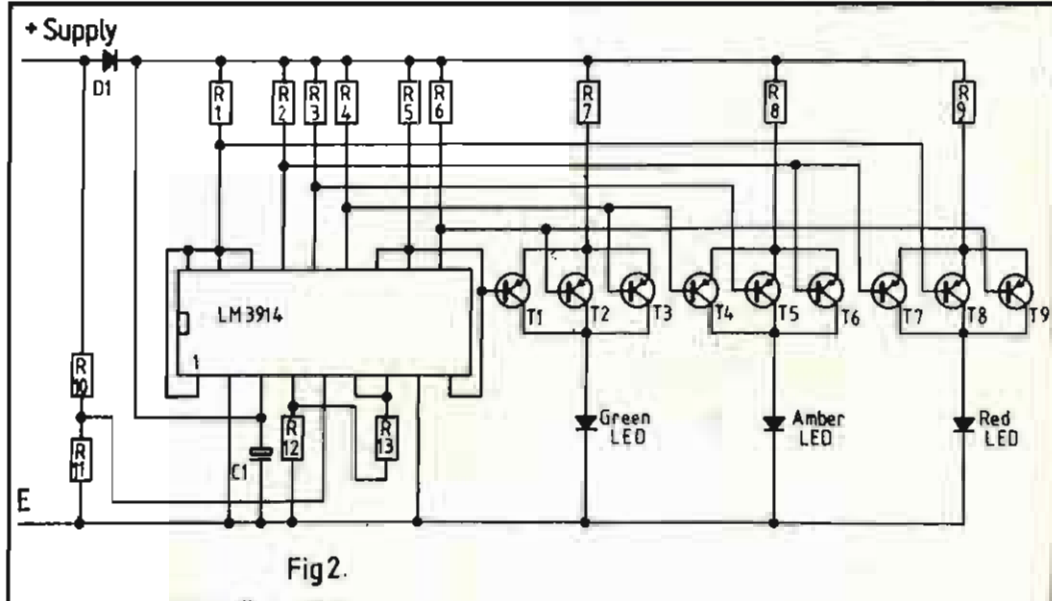


Fig 2.

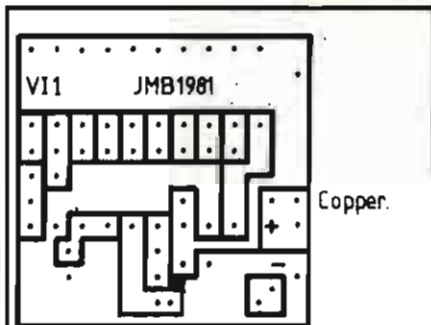
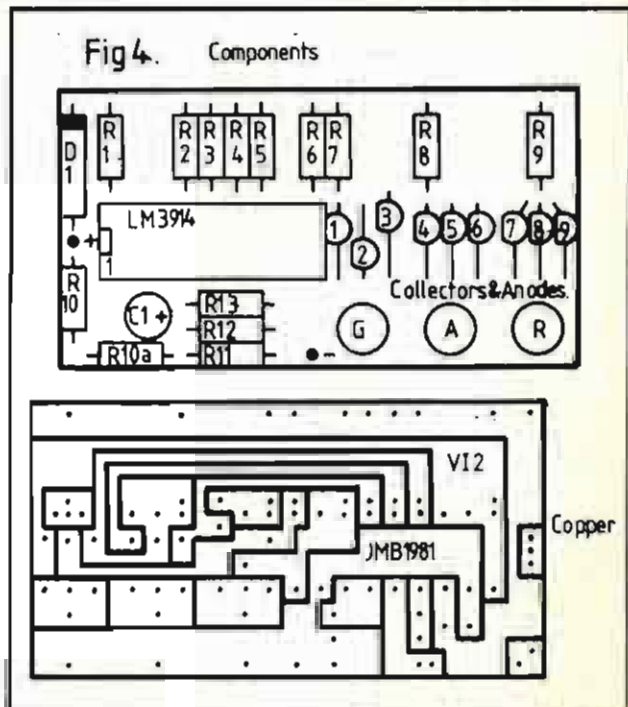
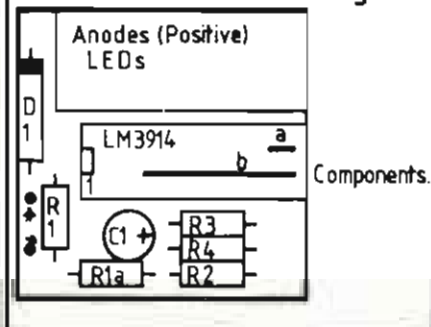


Fig 3.





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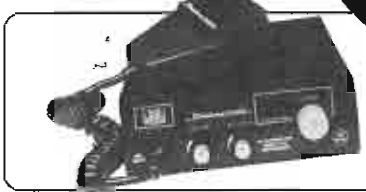
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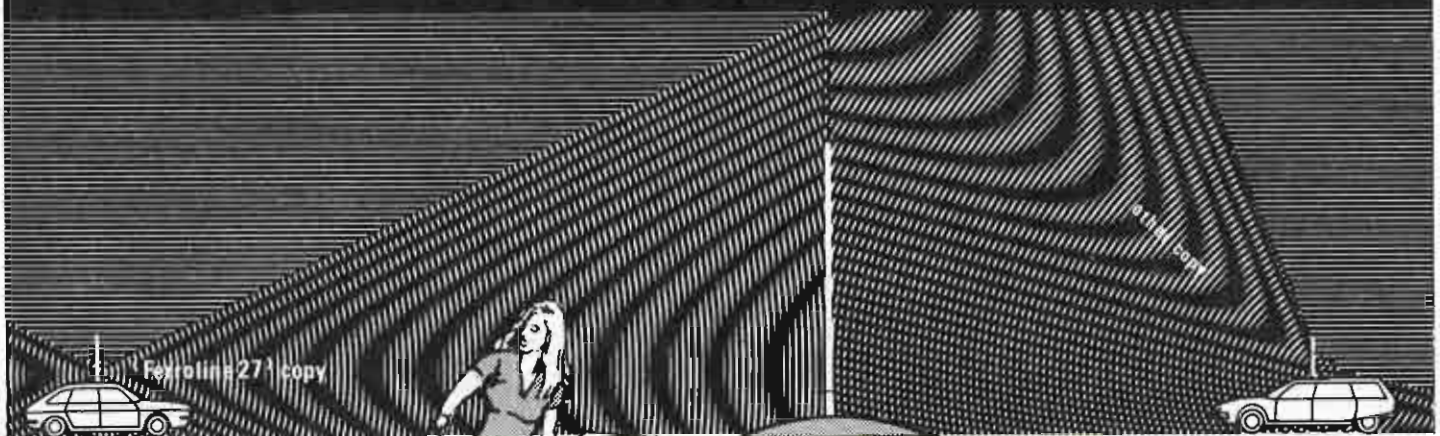
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- (2) Claims occurring whilst vehicle containing insured item is left unattended unless such vehicle is locked and windows closed.
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- (1) It is a condition precedent to consideration of a claim for Theft hereunder that the Assured shall have reported the circumstances to the police within 24 hours of such Theft.
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*Note: Confiscation Cover is not provided by Lloyds of London but a Swiss reinsurer.*

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3. Value £	@ 10% = £	Plus confiscation (if required) £7/£5	TOTAL £
			CHEQUE ENCLOSED £

I/We declare that I/We have not withheld any material information and that all statements made on this form are true to the best of my/our knowledge and belief and that the articles and property described belong to me/us, and that no other person has any interest therein whether as owner, mortgagee, trustee or otherwise.

Signed ..... Date .....

**NOTE** - The information contained in this proposal will be treated in the strictest of confidence between the Brokers and Lloyd's Underwriters ONLY.

# Easy as QSL

QSL cards were originally sent to confirm radio contact — usually over a long distance — but it has grown into a sort of breakers' stamp collecting. Mike Newbold, The Medicman, is preparing a beginners' guide to QSLing for next month's Breaker.

Hello again fellow QSLers. Well, here we are rapidly approaching Christmas, so it's about time you were expressing the seasons greetings on your QSL cards, especially those going overseas.

When Breaker published my letter way back in issue 2, I really had no idea that QSLing would become a major hobby, and judging from the postbag, it is still increasing. I really will have to see if we can have our own Breaker emblem on a rubber stamp.

Well, a lot of you have been impatient for the first Isle of Man contact as promised last month, and it is 16 year old Brett of 95 Friary Park, Ballabeg, Arbory, Isle of Man. He promises 100% QSL return and, judging by his package to me, he is a really first class QSLer, so he gets pride of place on our new 'Best of British' QSL list. He sends an excellent range of club cards, Zulu Alpha, Shamrock International, Alfa Tango International DX Group, Bulldog International, and a superb special Isle of Man Royal Wedding Commemorative QSL card of the Isle of Man Citizens Band Club. As Brett tries so hard, and is a first class QSLer at just 16 years old, I am sure a stamped addressed envelope would help him out when you QSL him.

With all those club cards about, let's have a look at the news from the clubs. Nice letter in from WDC 04 Martin, Secretary of the Whisky Delta Charlie DX Club of PO Box 1, Normanton, West Yorks WF6 2RX. As featured in Easy as QSL last month, membership is now up to 300 plus and rising rapidly, a very good club with a lot of effort put into it. New club cards in from Delta 50 Sideband association (PO Box 83, Hailsham, Sussex BN27 4LW) sent in by Charlie Lima 4. D Butte, Bravo Tango 85, sends the club QSL of the Beer Town Breakers Bravo Tango DX Club of Burton on Trent — let's have a few more details of the club, please gentlemen.

Ken, Unit 44, writes with details of the Woodpecker DX Club (PO Box 22, Hereford HR4 0UH), a small but well organised SSB-DXing club. A call on 27.585 (channel 55 LSB) will get a QSL for a QSO. All clubs interested in SSB/DX are invited to get in touch with exchange visits in mind. More British Concorde International CG-QSL Club cards are in, personalised for 70 BC 274 Bob McKeown (33, Oriol Crescent, Kirkcaldy, Fife KY2 5QR, Scotland) and the others are on the Best of British list, nice to see these cards in evidence. The British Concorde address is 187, Walton Road, East Molesey, Surrey KT8 0DY.

Another well-designed club card received from Pete Unit 0084 of the Mid-Somerset SSB and DX Club (PO Box 9, Shepton Mallet, Somerset). They meet the second and last Sunday each month at the York House pub, Shepton Mallet. The club listen in on 27.305 (channel 30 USB) and 27.755 (channel 70 USB).

Station XN 46 sends a Fair City CB Club card from PO Box 5, Perth, Scotland, but no other details of the club. And Hawkeye — Bob McKeown (address above) also sends the club card of the Jolly Rodger Club (PO Box 2, Lochgelly, Fife KY5 0BE, Scotland). Thanks boys, but let's have a little more information about your clubs.

An abundance of mail in from the Emerald Isle. First opened was from prolific letter writer Jack (Lima Victor 16) of the Lima Victor DX Group (PO Box 33, Lisburn, Northern Ireland). A SAE will bring full details of this very active and well supported club, who meet on the 2nd and 4th Tuesday each month at Halfpenny Gate Lunge, Maze, Lisburn. Nice club QSL card too, and good world-wide contacts.

Thomas Callan the Secretary of Erne Skippers DX Group (PO Box 27 Enniskillen, Co Fermanagh, Northern Ireland) writes to invite Breakers QSLers to join, and for a £5 Sterling fee you will receive a nice club package, including a club rubber stamp. Alan writes from The Quebec Sierra Lima Club (PO Box 18, Lisburn BT28 2LT, Northern Ireland), of which the '44' QSL Radio Group is part. A very interesting press release tells us how two fellows just happened to meet

on Channel 44 LSB, and it developed into a regular 'net', which now stretches from the North, through the whole of Ulster and onto the British Mainland. The club preaches brotherly peace and friendship through radio, a good sentiment in troubled times. The 44 Group has its own colourful QSL card, so drop them a SAE for details.

An Antrim County Sidebanders' card came in from Alpha Charlie 39 (Laurence of PO Box 27, Ballymena, Co. Antrim, Northern Ireland), who is also a member of The World Wide Radio Group Unit 29WW 521 — and German DXers World Amateur Group Unit WAG 801. He QSLs 100%. Also from Antrim came an Alpha India DX Club card from Ashley A.I. 03 (1 Craigmores Parks, Antrim). And last this month from north of the border, a cheeky-leprechaun QSL from Paul SD14 (14 Belfast Road, Saintfield, Co. Down, Northern Ireland), who says he hasn't seen much of a mention of his beautiful country. Well, we have certainly corrected that this month Paul.

Over to the Republic now, with a great letter from Brian Cullen (PO Box 14, Waterford, Eire). He tells us he has made some wonderful friends through our Breaker leads, and now writes regularly to Bert Turner in New Zealand, Sandra Newlands in the Orkney Islands, and to my very dear friend young at heart Arthur Brodner of Rhode Island USA (see last month's Easy as QSL for his address). Brian encloses a club card of the Bravo Whiskey radio DX Group, address as Brian's, and also tells me he sent Nick Roberts (PO Box 4074, Hamburg 1726, Johannesburg, Republic of South Africa) a QSL and a packet of Shamrock Seeds, but Nick hasn't had much success growing them. Brian kindly sent me a packet and I've planted them in the office today hoping they will be ready to wear by St. Patrick's Day next March. Very nice thought Brian, greatly appreciated, and I'll let you all know how they progress.

Super screed in from Malcolm Fisher (Aughinish, Ramelton, County Donegal, Eire), who tells us all about his two favourite clubs: The Emerald Donegal — Echo-Delta DX Club (no address given but I am sure Malcolm will pass your enquiries on) and the English International DX Club. He is number EI 648. Nice to hear again from my friend, Joe Cashin (Free Wheeler, Mooncoin, Co. Kilkenny, Ireland), whose new QSL shows a Leprechaun on a radio controlled bicycle — had me in stitches. He would like to hear from any Breaker QSLers — his postal address is PO Box 39, Waterford, Ireland. Next, a letter not from Ireland but concerning it. Kevin Dewing (22 Lynewood Road, Cromer, Norfolk) writes saying he has been made really welcome by the Easy Mayo International DX QSL Group run by John Corless (Coolaught, Claremorris, Co. Mayo, Ireland). The membership form is in dollars, but I calculate that if you send John £5.00 Sterling, you will be in with a chance of membership of this club, whose motto is 'unrestricted friendship through radio'. Kevin also tell us he was very pleased with his membership package from the United Kingdom International Radio Group, run by Arthur of PO Box 13, Long Eaton, Nottingham NG10 1BU.

Lez Carroll, President of the English International DX Club (225 Arnold Street, Boldon Colliery, Tyne & Wear

NE35 9BA) sends a sample of the new club cloth badge, and a superb quality product it is too. Existing members can get one from the club HQ for 45p, plus SAE. Life membership of the club remains at £5.00, which is good value. Heard from P & T Designs of Unit 1, Crest Estate, Stoke Row, Oxford, who produce a large eyeball card, about 4" x 3", very reasonably priced at £11.50 per 200. Make nice fillers for your QSLs — a SAE with all enquiries please.

Now to Antipodes, with a letter of thanks from Ross A Young (34 Discovery Drive, Wellington, New Zealand), who would like lots of British QSLs, so include some extra floaters for him to pass to his friends. He also sends a demand that Breaker should be exported to NZ, as they only have one small bi-monthly *Cee Bee* magazine over there. Tom Sowden writes a long thank you letter from PO Box 61, Richmond Hill, New York 11419, USA. Tom is president of the Keep In Touch Club, and many Breaker readers have joined the English chapter of the club via The Duke. Tom, King Valium on the air, has been first overseas contact for many of you DXers, and he has done a tremendous job in forming a CB brotherhood between our countries. Hope you find time to QSL him.

Nice pack in from Bob Munro (PO Box 74, Moranbah, Queensland 4744, Australia.) He has lots of friends in the Moranbah CB Radio Club who would like some pommie contacts, so drop him a few of your QSLs. Chris Byers KBHD 9824 (PO Box 42812 - A 103, Houston, Texas 77042 USA) sends some 'rebel' QSLs. He is a great club-joiner, and would like to hear from us over here. A lot of continental contacts are a little mediocre — in fact, most do not even bother to sign their cards, let alone put their address on them. One exceptionally good contact is Station Borussia 46 (Operator Uwe, PO Box 1212, d-5810 Witten, West Germany). I have been in contact with Uwe since I first started QSLing and he has always come up with something of interest. His latest letter encloses details of a QSL club now over 20 years old, and Uwe says it's a good one. It's the WRDXC and QSL Club (DS/2B, Rest Camp, Gauhati-781012, Assam, India). Be interesting to know how you get on with that one! Uwe is looking for contacts in Asia and Africa, so if you have any, please let him know.

Had a nice letter in from Harry W Hertz of the Super Stinky QSL Club (PO Box 2664, D-6750 Kaiserslautern, West Germany), who sends some samples of his new QSL cards, and would like to offer membership to Breaker readers. Full details from Harry — send one International Reply Coupon for membership form. As regular readers know, I rate this as one of the very best QSL clubs in existence today, and as a lot of you have enquired about Super Stinky we will be giving a full write-up next month.

Well, that's about it for this month. Many thanks to all those who have written and QSLed. We try to include as many as possible, so if you are not successful first time, please try again, and if you want to be included on our list of 100% QSLers, just send your QSL with your request written on the back. Till next month take care, we care.

THE MEDICMAN

You can write to The Medicman at 187, Walton Road, East Molesey, Surrey KT8.

### No1 QSL Club of Great Britain

PO Box 5  
Horsham  
West Sussex RH12 3SX

A small QSL club, mainly with overseas members, currently running at about 60. The club was founded just before last Christmas by Mike Cooper of the Night City Breakers Club in Horsham and offers a good range of QSL rubber stamps, useful if your own QSL cards are printed on one side only.

For the normal joining fee, £5.00 plus 10 of your own signed and dated QSL cards, you will receive:

Club certificate of membership; club ID card; club rubber stamp; cloth club badge; car sticker; exchange QSL cards from overseas; invitations to other QSL clubs; your name entered into the club world register of QSLers; and regular up-date information service.

All the club items are of very good quality, and the club cloth badge was especially good. There are club QSL cards available and QTH (county map) postcards are available at just £5.80 per 100 — very good value and a nice extra when QSLing. Stick on Union Jacks are also available. A good club with a very well designed crest, well worth Breaker QSLers support.

### Papa Bravo International DX & QSL Club

PO Box 48  
Preston  
Lancs PR1 1AB

Recently founded by Andy Cookson, who has been on the QSL scene for quite a while, the membership package has had a great deal of time, effort and money put into producing it. For the £5.00 membership fee, plus 10 of your own personal QSL cards, you will receive:

Club rubber stamp; membership certificate; official DX unit number (XYL free); club ID card; club key ring; club sew-on patch; club ID wallet; club pen; large club stickers; club address labels; sample club QSL cards; applications for other clubs; postage stamps; introductory letter; tourist information; QSLs from other members; and other items as available.

There are club certificates available for certified DX workings and extensive effort has been put into providing tourist information. In the package we reviewed was a club stamp, well produced and completely mounted, and the club QSL cards showed originality. If Papa Bravo can maintain the standard of their membership pack, then there is no reason why it is not readily accepted as one of the better QSL clubs in Britain.



#### YOUR FIRST BEST OF BRITISH QSL LIST (100% QSLers only)

Brett	95 Friary Park, Ballabeg, Arbory, Isle of Man
Craig Douglas	31 Hawes Crescent, Crook, Co. Durham
Mary Hughes	Tyn Hain, Tregale, Cemaes Bay, Anglesey LL67 ODP
Stan & Gladys Jones	27 Rowanberry Avenue, Leicester LE3 6PN
Graham Simpson,	11 New Smithy Drive, Thurlstone, Sheffield, Yorks S30 6RS
Steve Bradshaw	40 Birchgrove, Porth, Rhondda, Mid Glamorgan, South Wales
STE Winstanley	2 Glamis Grove, Sutton, St Helens, Merseyside WA9 3UN
John Clist	2 Holm Close, Burnham on Sea, Somerset TA8 1NG
Eric Cooper	28 Wordsworth Avenue, St Marks, Cheltenham GL51 7DY
Norman Head	6 Edward Crescent, Wareham, Dorset BH20 4HQ
Adrian Haines	38 Cromwell Drive, Slough, Berkshire SC1 3NF
Bob Sturdy	13 Martin Close, Tidworth, Hants
Bob Davies	PO Box 22, Hereford HR4 0UH
Clay Miller	316 Garth Road, Morden, Surrey SM4 4NW
Geoff Jones	PO Box 70, Warrington WA5 1FX
William Purvis	3 Coronation Road, Runcorn, Cheshire WA7 5QF
Maurice Underhill	18 Vaughan Close, Southampton, Hampshire SO2 6GY
Malcolm	3 Stonecroft, Pentwortham, Preston, Lancashire
Terry	5 Edinburgh Road, St Leonards on Sea, East Sussex TN38 8DA
CR Stephenson	19 The Square, Alredale, Castleford, Yorkshire WF10 3JJ
Steve Evans	The Mitre, Y Maes, Pwllhell, Gwynedd, North Wales

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Southend Lane  
Catford SE6

**A78 CBBC**  
c/o 117 Main Street  
Largs  
Ayrshire  
Scotland

**Alre Valley Breakers Club**  
53 Albert Road  
Sallaire  
Shipley  
West Yorks

**Airwave Breakers**  
Every Monday at  
The Plough  
Bedminster  
Bristol

**All Breakers Club**  
190 Evelyn Street  
London SE8

**Anglia Breakers Club**  
c/o Great White Horse Hotel  
Tavern Street  
Ipswich  
Suffolk

**Appletart Breakers Association**  
c/o 45 Hevers Avenue  
Horley  
Surrey

**Appollo CB Club**  
Pasture Road  
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**Aquae Sullis**  
c/o The CB Centre  
Chelsea Road  
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Tel: 0225 333379

**Associated Breaker's Club**  
c/o Dial Electrics  
528 Lever Edge Lane  
Bolton  
Meet Monday nights  
Aquarius Club, Bolton

**Association of Meghull Breakers**  
c/o 69 Vetch Hey  
Netherley  
Liverpool  
Merseyside

**Attic Breakers Club**  
12 Jameson Road  
Bridlington  
East Yorks

**Australian International QSL Swap Club**  
PO Box 855  
Freemantle 6160  
Western Australia

**Avanti Breakers Club**  
c/o Post Office  
Newton of Falkland  
Cupar  
Fife

**Back Road Breakers**  
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Liberat Club  
Garstang  
Nr Preston  
Lancs

**Barley Breaker's Club**  
Alternate Wednesdays  
Barley Shiel  
New George Street  
Plymouth  
Devon

**Barnet Breakers Club**  
Meet at British Legion Hall  
Brookhill Road  
East Barnet  
Herts

**Barrier Breakers**  
Every Wednesday at  
The Railway Hotel  
Netherfield  
Nottingham

**Barry Breaker's Club of Wales**  
Meet alternate Sundays  
Hotel International  
Barry

**Barwell CB Radio Club**  
5 Mayfield Way  
Barwell  
Leics

**Beachcombers Breakers Association**  
c/o 3 Thursby Road  
Highcliffe  
Christchurch  
Dorset BN23 5PA

**Beach Breaker's Club**  
Mowbray Road  
South Shields  
Tyne and Wear

**Beachwood Breakers Club**  
c/o 14 Sandholes Street  
Paisley  
Scotland

**Beach Breaker's Club**  
Every Sunday evening at  
Blacksmiths Arms  
Thornwood Common  
Nr Epping

**Big C Club 80**  
c/o Dominix  
PS 14  
The Market  
Carmarthen  
Dyfed  
S Wales

**Big Eyeball Breakers**  
Every Thursday at  
The White Hart  
Devonshire Hill Lane  
London

**Big H Breakers**  
c/o Ardencaple Hotel  
Rhu  
Dunbartonshire  
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**Big Top Breaker's Club**  
5 Council Villas  
Melton Ross  
Barnetby  
South Humberside

**Big Wheelers Association**  
35 Alexander Court  
Lansbury Park Est.  
Caerphilly  
Mid Glam  
Wales

**Biscuit Town Breakers**  
PO Box 123  
Reading  
Berks  
(send SAE)

**Blackpool Breakers Club**  
c/o ADS Electronics  
239 Dickson Road  
Northshore  
Blackpool

**Boomerang Breakers Club**  
Meet at White Lion  
Moulton  
Northampton

**Border Breakers Club**  
c/o Cathedral Garage  
Weybread  
Harleston  
Norfolk

**Boston Breaker's Club**  
19 Pool Lane  
Kinson  
Bournemouth  
BH11 9DX

**Bottle City Breakers**  
31 Farm Road  
Clock Face  
St Helens  
Merseyside

**Bottsford CB Association**  
c/o 8 Spusby Road  
Scunthorpe  
Sth Humberside

**Boulevard Breakers Club**  
56 Kirkdale Drive  
Glasgow G52 1ET

**Bourne End Breakers Association**  
Fridays at  
The Fire Fly Pub  
Bourne End

**Bournemouth Independent Breakers Association**  
Every Tuesday  
Coach House Motel  
Ferdown  
Dorset

**BP Breakers Association**  
19 St Helens Avenue  
Flimby Maryport  
Cumbria

**Bracknell Breakers**  
Every Sunday at  
The Bridge House  
Wokingham Road  
Bracknell  
Berks

**Bralthwell Rig & Twig Club**  
Every Tuesday  
Braithwell WMC  
Sth Yorkshire

**Bramley and District Breakers**  
5 Ferncliffe Terrace  
Leeds  
Yorkshire

**Breaker One Four Club**  
c/o OK Corral  
Napier Barracks  
BFPO 20  
West Germany

**Breakers Town CBC**  
Every Thursday  
c/o The Stanley Club  
Stanley Road  
Carshalton  
Surrey

**Breakers Yard CBC**  
Every Monday at  
St Helier Arms  
Carshalton  
Surrey  
Tel: 01-669 5441

**Bricket Breakers Club**  
c/o Watford Component Centre  
7 Langley Road  
Watford  
Herts

**Bridgetown Breakers Club**  
Meet at Phoenix Social Club  
Heesle Road  
Hull

**Bristol Breakers**  
120 Beaufort Road  
St George  
Bristol 5

**Bristol CBC**  
1A St Peter's Rise  
Headley Park  
Bristol  
BS13 7LU

**Brook Breakers CB Club**  
Every Wednesday at  
Badger in the Brook  
Shirebrook  
Mansfield

**Broadland Breakers Club**  
First Sunday at  
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Stalham Norfolk

**Bromsgrove Breaker's Club**  
PO Box 5  
Bromsgrove  
Worcs.

**Brown Bottle Breakers**  
c/o The White Horse  
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Theinetham  
Diss  
Norfolk

**Buckingham Breakers Club**  
35 Addington Road  
Buckingham

**Bruggen Bandits CB Club**  
Orchard 13  
BFPO 25

**Burns Breaker Club**  
c/o Braehead Hotel  
Whitlitts Road  
Ayr  
Scotland

**Bury CBC**  
c/o CB Paradise  
69 Northgate Street  
Bury St Edmunds  
Suffolk

**Byron CB Radio Club**  
Byron Hotel  
Ruislip Road  
Greenford  
Middlesex

**Caketown Breakers Club**  
Every Sunday at  
The Queens Hotel  
Pontefract

**Campaign for 27MHz AM CB Radio**  
10 Lochnell Road  
Dunbeg  
Connell  
Argyll PA37 1QJ

**Canary City Breaker's Club**  
Meet first Tuesday of month at  
Ebenzers Freehouse  
Salhouse Road  
Norwich

**Canyon Breaker's Club**  
Meet every Wednesday at  
Hillstown Miners Welfare  
Hillstown  
Chesterfield

**Cardiff & District Breakers**  
80 Richards Terrace  
Roath  
Cardiff

**Carlton & Langold United Breakers**  
Thursdays at  
Langold Hotel  
Langold  
Workop  
Notts

**Carrick CB Club**  
Tuesday night at  
Carrick Hotel  
Maybok  
Ayrshire

**Castletown Breakers Club**  
29 Graigwen Crescent  
Abertridwr  
Mid Glamorgan

**Heard of the CHUB Club?** It stands for the Cranham, Hornchurch and Upminster Breakers, who staged a big fund-raising event at Harwood Hall in Essex, better known for its televised show jumping. The idea was to raise the cash to buy a children's home a video machine, and CHUB set out to interest as many breakers and charity organisations in the area as possible.

In the end 400 breakers took part, with the local YMCA, British Legion and Christian Associations all helping out. Around 3600 people attended, and at one stage there was a four-mile queue of cars waiting to get in. All of that was no problem though because the local



**Caatle Breakers**  
c/o Rose & Crown  
High Street  
Tonbridge  
Kent

**Cathedral City Breakers**  
c/o 2 Barryman Court  
Wells  
Somerset

**CB 007 Breakers Club**  
Tuesday nights at  
The Windmill Club  
Rotherham

**CB 4900 Club**  
BFPO 15  
West Germany  
Call on channel 15

**CBA Central Scotland**  
5 Carronvale Avenue  
Larbert  
Stirlingshire

**CBA**  
Coronation Service Station  
Middleton Road  
Heywood  
Lancs

**CBA Fife**  
16 Bayview Crescent  
Methil

**CBA Reading**  
PO Box 123  
Reading

**CBA Sussex**  
15 Buckingham Mews  
Shoreham By Sea  
Sussex

**CBCB Club**  
103 Southwood Road  
Downside  
Dunstable  
Beds

**CBGB**  
CB House  
Crosby  
Liverpool

**CB Information Centre**  
7 Sandringham Crescent  
Harrow  
Middx HA2 9BW

**CB-NE**  
PO Box 61  
Sunderland SR3 1EZ

**CB Radio Action Group**  
55 Dartmouth Road  
Forest Hill  
London SE23

**Central 27 Breakers Club**  
Alternate Tuesdays at  
The Bruce Inn  
Nr Landmark  
Springers Road  
Slirling

**Central England Breaker's Association**  
Meet on Tuesdays at  
Staffordshire Volunteer  
Collingwood Road  
Bushbury  
Wolverhampton

**Cheesy Breakers Club**  
116 St Christopher's Drive  
Caerphilly  
Glamorgan

**Cheltenham Breakers Assn**  
6 Pitville Crescent  
Cheltenham  
Or: The Crown and Cushion  
Bath Road  
Cheltenham

**Chichester & District Breakers Club**  
Every Sunday at  
Bulls Head  
Fishbourne  
Chichester  
Sussex

**China Town Breakers Club**  
c/o 54 Oxford Road  
Penkhull  
Stoke on Trent

**CHUB Club**  
c/o 103 Roseberry Gardens  
Cranham  
Upminster  
Essex  
Meet Elm Park Hotel  
Hornchurch

**Circle C Breakers**  
c/o The George Hotel  
Crewkern  
Somerset

**City Circle CB**  
Bedford Green  
Horseferry  
Leeds

**Clear Air Association**  
Mondays at  
Woodhays pub  
Wednesfield  
Wolverhampton

**Clog Town Breakers Club**  
33 Pendle Court  
Astley Bridge  
Bolton BL1 6PY  
Tel: Bolton (0204) 50046

**Clogtown Claypit Breakers Club**  
Aquarius Club  
Halden Street  
Dean  
Bolton

**Club 14**  
Every Thursday at  
Spotted Cow  
Willesden High Road  
NW10

**Club Breakaway**  
c/o 123 Hasler Road  
Canford Heath  
Poole  
Dorset

**Clyde Coast Breakers**  
c/o Island Hotel  
New St  
Stevenson  
Ayrshire

**Clydeside Breakers Supporters Club**  
62 Rosemount Crescent  
Carstairs  
Lanarkshire

**27 Coastline Breakers**  
PO Box 24  
Rhyll  
Clwyd  
North Wales

**Coastline Breaker's Club**  
Meet every Wednesday at  
Wash and Tope  
Le Strange Terrace  
Hunstanton  
Norfolk

**Copy Cats Club**  
The Manager  
Martholme Grange  
Ailham  
Accrington  
Lancashire

**Cottonmount Breakers Club**  
Alternate Tuesdays at  
Cottonmount Arms  
Malkusk  
Newtownabbey  
N. Ireland

**County Area Breakers Club**  
4 Corbert Gardens  
Ardersier  
Inverness

**Country Town Breakers Club**  
Angorfa  
Baptist Street  
Penygroes  
Caernarfon  
Gwynedd

**Crewe Breakers Club**  
1 Main Road  
Crewe  
Cheshire

**Cromwell Breakers**  
c/o The Winning Post  
Market Deeping  
Peterborough

**Cuckoo Land Breaker's Club**  
PO Box 2  
Penicuik  
Scotland

**Dare Breakers' Club**  
c/o Paul Vann  
72 Tre Telynog  
Cwmbach  
Aberdare  
Mid Glam  
S Wales

**Delta Breakers**  
Sundays at  
Invicta Co-op Sports Club  
Burnham Road  
Dartford  
Kent

**Den Breakers Club**  
c/o 38 Down Field Way  
Chaddlewood  
Plymouth  
Plymouth  
Devon

**Derwent Valley Breakers**  
10 Prospect Terrace  
New Kyo  
Stanley  
Co Durham

**Deveron Valley Breakers Club**  
Turriff  
Aberdeenshire AB5 7PQ

**Diamond Breakers Club**  
Diamond Jubilee Club  
South Kirkby  
West Yorkshire

**The Diamond Breaker's Club**  
c/o 16 West Close  
Stevenage  
Herts

**Didcot and District 27 Club**  
Meet first and third Sunday of the month  
at  
The Rio Hadden Hill  
Nr Didcot  
Oxfordshire

**Ditch Breakers**  
Meet every Monday at  
The Railway Hotel  
Netherfield  
Nottingham

**Dinnington & District Breakers Club**  
Alternate Wednesdays at  
The Squirrel  
Dinnington

**Dixleland Breakers**  
PO Box 25  
Grimsby  
South Humberside

**Doctor's Cure Breakers**  
Meet in the Legion  
Healing  
Grimsby

**Don Valley Breakers**  
PO Box 41  
Doncaster  
South Yorks

**Dorset Nob Breaker's Club**  
c/o 3 Barr Lane  
Burton Bradstock  
Bridport  
Dorset

**Dragon Breakers Association**  
c/o 70 Fford Llwy  
Moelfre  
Anglesey  
Gwynedd

**Driffild CB Association**  
c/o 22 Haworth Walk  
Bridlington  
East Yorkshire

**Dukesville Breakers Assn**  
23 Potter Street  
Worksop  
Notts

**Eagle Breakers Club**  
c/o 78a Penn Hill Avenue  
Parkstone  
Poole

**Earthquake City Breaker's Club**  
DL 71  
Rotherham Record  
Regent House  
Rotherham

**East Antrim CBRC**  
PO Box 4  
Antrim

**East Coast Breakers Assn**  
c/o The Tartan House  
Frating  
Nr Colchester  
Essex

**Eastern Counties Open Channel Club**  
c/o Everards Hotel  
Comhill  
Bury St Edmunds  
Suffolk

**Edinburgh Breaker's Club**  
Meet Mondays at  
Sinatra's Lounge Bar  
St James Centre  
Edinburgh  
Scotland

**Edinburgh CBRC**  
22 Rose Gardens  
Edinburgh EH9 3BR

**Elite Breakers**  
The Father Thames  
Albert Embankment  
London SE1

**Essex Citizen's Band Club**  
24 Bryony Close  
Witham  
Essex CMB 2XF  
Tel: Witham (0376) 513532

**Falkirk and District Open Channel**  
PO Box 15  
Falkirk  
Scotland  
FK1 1AA

**Farnborough Area Breakers**  
Every Thursday  
The Oasis Club  
Alexander Road  
Farnborough  
Hants

**Fish Town Sea Bees**  
Meet at Big Wheel  
Grimsby  
S. Humberside

**Five Bridges Breakers Club**  
c/o Barfield  
Oakville Road  
Hebden Bridge  
West Yorkshire

**Five Pools Breaker's Club**  
c/o The Old House at Home  
Blakedown  
Kidderminster  
Worcs

**Flixton, Urmston & Davy Hulme**  
Good Buddies Assn  
PO Box 2  
164 Corn Exchange Buildings  
Manchester 4

**Forfar and District Breakers Club**  
Meet every Monday in  
Stag Hotel  
Forfar

**Freedom Breakers International**  
11 June Street  
Bootle  
Liverpool  
Merseyside

**Frog and Nightgown Breakers Club**  
c/o Amberwell  
Pottersheath Road  
Welwyn  
Herts

**Garden of England**  
Meet Mondays, 10 pm  
The Beckets  
Southborough Lane  
Bromley  
Kent

**Give Us A 9 Club**  
Every Tuesday at  
Hand in Hand  
Boxhill  
Surrey

**GK 13**  
D5130 Gailenkirchen  
West Germany

**Glasgow CBC**  
361 Hallhill Road  
Glasgow G33 4RY

**Golden Gate Breakers Club**  
c/o The Deva Restaurant  
Cliff Road  
Dovercroft  
Hanwich  
Essex

**Good Buddies Club**  
Alternate Wednesdays at  
Halfway House Hotel  
Kingsseat  
File

**Gower Breakers Club**  
PO Box 12  
Swansea  
South Wales

**Grampian Breakers Club**  
59 Jasmine Terrace  
Aberdeen  
Scotland

**Granite City CB Club**  
92 Forest Avenue  
Aberdeen  
Scotland PH 322073

**Grantham Breakers Assn**  
8 Parklands Drive  
Harlaxton  
Grantham  
Lancs

**Grass Court Breakers Club**  
Every Sunday at  
The Wagon & Horses  
Haydock  
St Helens

**Green Acre Breakers**  
c/o Ye Old Frigate  
Aberdeen

**Guildford City Breakers**  
Tuesdays at  
The Cannon  
Portsmouth Road  
Guildford  
Surrey

**Gwent Breakers Club**  
Meet every Wednesday at  
The Gladiator  
Malpas  
Newport

**Halfway Breakers**  
12 Moot Lane  
Downton  
Salisbury

**Hangmans Breaker's Club**  
Meet on Thursdays at  
The Staffordshire Knot  
Birmingham Road  
Wolverhampton



police were extremely helpful in handling the traffic and all the other arrangements for the day. And what did all those people go to see? Sack races with a difference, a sack over your head as well as one over your legs, or an egg and spoon race with the spoons going in your mouth. 136 eggs met their end that way. As well as that there were the usual side shows, stalls, ice cream and the chance to win one of three Ford Fiestas. Romford CB also supplied an Expert home base to be won.

In the end, £1300 was raised for the children's home, and CHUB want to thank the KEBA Club, for their help in clearing up afterwards, and the local hens for making a special effort ... The Leighton Buzzard CB held a run for the National Kidney Research Fund. It wasn't just any old sponsored run though, it ended up as a cross between a pub crawl and an 'It's a Knockout', with 80 competitors in a three-legged obstacle course/drinking competition through the middle of Leighton. They all had to climb over a wall of straw bales before setting out around a circuit of 11 pubs. 120 marshalls were stationed throughout the town to make sure everyone had at





# Airwaves



least half-a-pint in each one, and 30 minutes after the start the leaders were back at the starting point crossing more obstacles before reaching the finish line. Spider and Crazy Blacksmith won, though we're not sure if it makes them the fastest runners or just the fastest drinkers. As well as the race, music and refreshments were on hand, and when all the money was counted, more than £100 went to the Kidney Fund . . .

Three Legs, from the Twins CB Club in Reading, tells us he uses CB in connection with motorcycle racing on the Isle of Man. More of that in a future issue. Meanwhile Twins are one of the first of a new breed — legal FM clubs. Three Legs also points out that 40



channels on FM won't be enough. It's going to get very crowded out there . . .



More news from the Newark Breakers. Their fund raising for the Gateway Club started well with a ten-mile sponsored walk. The Minster Town Club helped out and the result was £629 in the kitty. Not satisfied with that, they arranged a fair in a pub garden, with all the usual stuff plus a karate demonstration and a tug of war (won by the Lincoln Breakaway Club by the way). All that added up to £375 for the fund, which brought the grand total to £1004, four pounds over the total they'd set themselves. The Mayor of Newark, Mrs Dobson, presented the cheque to the Gateway Club on behalf of the Newark Breakers . . . Some news from the Den Breakers in Plymouth. They've got a roller basket ball team and they're looking for some opposition. Also, if you're down that way, avoid channels 22-28 as they interfere with the hospital beepers and 10-11 because they play merry hell with a local firm's beepers, OK? . . . The Woodpecker DX group tell us they use the lower side of 27.585 (Channel 55) as a local calling frequency. Confused? They use SSB . . . The Shaw and District Breakers have only been around since January, but they already have 425 members. They're trying to raise £1000 to buy an electric wheel chair for a handicapped breaker. If you think you can help then pop along. Like all the other clubs, the address is in the club list . . . The Isle of Man CB Club have sent us a news letter. They're organising a convoy to show the Government that a great many AM breakers don't want the FM system . . . A new club up in Scotland open only to truckers. You don't need a CB to join, but you do need a HGV, and £5 for a year's membership. The club wants to set up a country-wide assistance network for breakdowns and road information, and they'll even let people from South of the border join . . . And staying North of the border, here's news of a new club in Arbroath. The Smokie Town Breakers have 250 members, and if you're in town on a Thursday night they break on 14 . . . The Cardiff and District Breakers have a new Secretary and a new address. Check the listing . . . Moggy Oily wrote in to tell us about a sponsored walk to raise money for the mentally handicapped. Unfortunately Moggy didn't tell us the name of the club. Try again . . . Up in Cleveland the North Tees Breakers meet every week in the Club Fiesta, where the 450 members have raffles for antennas, SWR meters or cash vouchers. They break on 16 — well, it's different . . . Yet more news from North of the border. The Laverock Breakers would welcome new breakers. They also have a mixed pool team who would like some competition. Any takers? . . . At the time of writing the Beechwood Breakers still had room for another 10 full members (the limit is 50). They're based in Paisley. Something about Scottish clubs this month . . . The Paradise Breakers wrote in to say they wanted a mention in the list. No sooner said than done . . . The Three Feathers Sidebanders are a

73s                      51s                      88s

**THREE FEATHERS**

**SIDE BANDERS**

**CARDIFF**  
CAPITAL OF WALES  
QRT AND STANDING BY

**Harrow and Wembley CB Group**  
28 Greenway  
Kenton  
Middlesex

**Hazzard County Breakers**  
c/o Oakshaw Hall  
School Wynd  
Paisley  
Renfrewshire

**Hazzard County Breakers Club**  
22 Radcliffe Avenue  
Chaddesden  
Derby

**Hazzard County Breakers Club**  
Meet first Tuesday of month at  
Fleet Country Club  
Surrey

**Heart of Oak Breaker's Club**  
Faltham Road  
Ashford  
Middlesex

**Hereford 14 Club**  
Meet every Monday at  
Crystal Rooms  
Hereford

**Hereward Breaker's Club**  
17 Munton Fields  
Ropsley  
Grantham  
Lincs

**Herts Citizen Band Radio Assoc**  
c/o Stratford Arms  
Multon Lane  
Potters Bar  
Herts

**Highland Breaker Club**  
PO Box 39  
Inverness

**Hillbillies**  
Meet every Friday at  
The Friend at Hand  
West Wycombe Road  
High Wycombe  
Bucks

**Hornblower Open Channel Club**  
c/o 65 North Street  
Ripon  
North Yorkshire

**Hucknall Welfare Breakers Club**  
Hucknell and Linby Miners Welfare  
Portland Road  
Hucknell  
Nottingham

**Hunters Heath and Orchard Town Breakers**  
c/o Tally Ho Inn  
Broadheath  
Tenbury Wells  
Worcs

**Invitation Breaker's Club**  
Every second Sunday  
The Yorkshire Dragon  
Malby  
Cleveland

**Isle of Man CB Club**  
PO Box EV 77  
Douglas  
IOM

**Ironstone Breakers Club**  
c/o 16 Lunedale Road  
Scunthorpe  
South Humberside

**Journeys End Breakers**  
Alternate Thursdays at  
Escrick Social Club  
York

**Junior Breakers Club**  
Scout HQ  
Clifford Bridge Road  
Coventry  
1st Thursday every month

**Kent and Essex Breaker's Association**  
Every Tuesday at  
Orsett Hall  
Orsett  
Essex

**Kent and Essex Breakers**  
24 Mill Lane  
West Thurrock  
Essex

**King's Lynn Breakers Club**  
c/o Cellar Man  
Victoria P.H.,  
John Kennedy Road  
King's Lynn

**King's Norton CB Club**  
Poste Restante  
GPO  
Lisburn  
Northern Ireland

**Kintyre Breakers Club**  
Sudown  
Tarbert  
Argyle

**LA Breakers**  
Unit 13  
Carlton Industrial Estate  
Hawthorn Avenue  
Hull

**Laker Town Breakers Club**  
Every Tuesday at  
The Cornish Man Hotel  
Wythenshawe  
Manchester

**Laverock Breakers**  
c/o 12 Wilson Street  
Larkhall  
Lanarkshire

**Lazy K**  
Lima Kito Radio Club  
PO Box 55  
Portladow  
Northern Ireland

**Leapool Breakers Club**  
c/o Maid Marion Hotel  
Coppice Road  
Arnold  
Nottingham

**LEBC (Castle Breakers)**  
Pete Beilby  
c/o 189 Derby Road  
Long Eaton  
Nottingham

**Leicestershire CBers**  
c/o Modern Motoring  
68 Narborough Road  
Leicester LE3 0BR

**Leighton Buzzard CB Club**  
c/o Coombe Drive  
Eastcote  
Ruislip  
Middlesex

**Lennox Breakers Club**  
4 Lismore Crescent  
Oban  
Argyll

**Leslie Breakers**  
Mondays at  
The Leslie Arms  
Cherry Orchard Road  
Croydon

**Lima Bravo DX Group**  
PO Box 11  
Oban  
Argyle  
Scotland

**Lincolnshire, Nottinghamshire, Derbyshire and Yorkshire area Committee (LNDY)**  
8 Sunnyside  
Worsnop  
Notts

**Log Breakers**  
Every Monday at  
Log Cabin  
Royal Oak Pub  
Watnall  
Notts

**Lorn Breakers**  
PO Box 11  
Oban  
Argyle

**Lost County Breakers**  
Meet every Tuesday at  
Pete's Paradise  
Windermere  
Cumbria

**Lowestoft & District Jolly Breakers**  
10 Viburnum Green  
Lowestoft  
Suffolk

**Maidenhead Official Breakers**  
Thursdays at  
The Prince Albert  
King Street  
Maidenhead

**Mansfield Area CB Club**  
c/o James Maude Social Club  
Forest Road  
Mansfield  
Notts

**Market Town Breakers**  
PO Box 2  
Ashford  
Kent

**MCBRA**  
85 Allens Lane  
Pelsall  
Walsall  
West Midlands

**Medway Breakers**  
55 Playstool Road  
Newington  
Sittingbourne  
Kent

**Meon Valley Breakers**  
4 Lawrence Road  
Fareham  
Hants

**Merseyside 27 Club**  
34 Micklefield Road  
Liverpool 15

**Mexico City Breakers**  
The Old Masons Arms  
High Street  
Mexborough  
Yorks

**Mid-Kent CBC**  
c/o Ten Four Telecom  
22 The Broadway  
Maidstone  
Kent

**Midlands CBRC**  
Unit 2  
72 Oval Road  
Erdington  
Birmingham

**Midlands CB Radio Club**  
85 Allens Lane  
Pelsall  
Walsall  
West Midlands

**Milktown Breakers**  
Meet every first Sunday in the month at  
Vanity Fair  
Bradford Road  
Huddersfield

**Milton Keynes City Breakers**  
c/o 2 Buckfast Avenue  
West Blechley  
Milton Keynes

**Molesey Open Breakers**  
c/o Royal Oak  
337 Walton Road  
East Molesey  
Surrey

**Monkey Town Breakers**  
c/o Victoria Hotel  
Church Street  
Heywood  
Lancs

**Monklands Breakers Club**  
c/o 78 South Commonhead Avenue  
Airdrie  
Lanarkshire  
Scotland

**Moonlight Bay Breakers Assoc.**  
c/o The Great Harry  
Walsash  
Hampshire

**Moray CB Breakers Club**  
c/o Gearchange  
40-42 Moss Street  
Elgin  
Morayshire

**NACB**  
Every Thursday at  
The Commodore International  
Nuthall Road  
Nottingham

**National CB Union**  
PO Box 123  
Reading  
Berkshire

**National Committee for the  
Legislation of 27MHz CB Radio**  
47b Stoneygate Road  
Narborough  
Leicester

**National Federation of Licenced  
Breakers**  
142 Lutlieworth Road  
Nuneaton

**National Independent Pirate Band**  
Heirman Straat 37  
Merksem 2060  
Belgium

**Nationwide Breakers Club**  
Tentercroft Street  
Lincoln

**New City Breakers Club**  
9 St Leger Court  
Linford Local Centre  
Gt Linford  
Milton Keynes  
Sucks

**New Forest CB Club**  
12 Westcot Road  
Holbury  
Hampshire

**Newton Breakers Club**  
Meet every Tuesday at  
Book and Candle  
Redditch

**Newtown Breakers Club**  
c/o 14 Cornbrook  
Holland Moor 2  
Skelmersdale  
Lancs

**Newark Breakers Club**  
c/o 173 Barnby Gate  
Newark  
Notts

**Noisy City Breakers**  
Every Wednesday  
Flamingo Night Club  
Darlington  
Co Durham

**North Bucks Breakers**  
The Folly Inn  
Adstock  
Buckingham

**North East Derbyshire 10-4 Club**  
c/o The Shoulder of Mutton  
Hardstoft  
Nr Pilsley  
Chesterfield  
Derbyshire

**North London Breakers**  
Wednesday at  
The Sparrowhawk  
Glengall Road  
Edgware  
Middlesex

**North Notts Breakers**  
4 Farm Grove  
Theivesdale Lane  
Worksop  
Notts

**Northampton Breakers Club**  
Wednesdays & Sundays at  
The Needle  
Northampton

**North Sea Breakers**  
c/o 27 Zena Street  
Glasgow

**North Tees Breakers**  
c/o Club Fiesta  
395 Norton Road  
Stockton on Tees  
Cleveland

**North Walsham Breakers**  
c/o Bankside  
Lower Street  
Southrepps  
Norwich  
Norfolk

**North West Breakers Association**  
c/o 8 Longhill Walk  
Moston  
Manchester M10 9NT

**North West Leics Breakers**  
c/o Home Farm  
Appleby Magna  
Leics

**Norwich Social Breakers Club**  
72 Silver Road  
Norwich  
Norfolk NR3 4TD

**Open Channel CBC**  
17 Coronation Street  
Preston

**Open Channel Citizens Band Club**  
17 Coronation Street  
Blackburn

**Out of City Breakers**  
Every Tuesday  
Southall Working Mens Club  
Beighton  
Sheffield

**Over Wyre Breakers**  
Every Thursday  
Fernhill Hotel  
Park Lane  
Preesall  
Nr Blackpool

**Paradise Breakers Club**  
Meet alternate Mondays at  
The Beaumont  
Park Estate  
Shiremoor  
Tyne and Wear

**Pendle CB Supporters Club**  
110 Barkerhouse Road  
Nelson  
Lancs

**Pennine One Nine Club**  
29 Legrams Avenue  
Lidget Green  
West Yorkshire BFD7 2PP

**Pirates**  
Meet every Thursday at  
The Mill  
Halfway  
Sheffield

**Plaietow Breakers Club**  
Every Monday  
Phoenix Club  
Grange Road  
London E13

**Popular Breakers Club**  
29 Putterham Road  
Sheffield Park  
Chineham  
Basingstoke

**Pudsey MF Citizen Band Radio Club**  
54 Harley Drive  
Swinnow  
Leeds

**Purbeck One-Nine Club**  
Every other Tuesday at  
The New Inn  
Church Knowle  
Dorset

**Quaker Breaker Club**  
c/o Waggon and Horses  
East Street  
Saffron Walden  
Essex

**Quilat Breakers Club**  
8 Wedgewood Road  
Cheadle  
Stoke on Trent  
Staffs

**Rainbow Breakers**  
c/o PO Box 56  
Cookstown  
Co. Tyrone  
N. Ireland

**R & B Club**  
PO Box 4  
Stranraer  
Scotland

**REACT UK**  
10 Buckingham Way  
Sharnford  
Leicestershire

**Red Cat 14 Breakers Club**  
c/o Red Lion  
Derby Road  
Sandiacre  
Derbyshire

**Redditch Area CB Club**  
88 Heronfield Close  
Churchill  
Redditch  
Worcs  
Tel: Redditch (0527) 67083

**Redhill Radio Breakers Club**  
c/o The Ram Inn  
Mansfield Road  
Redhill  
Nottingham

**Rhine Cuppers CB Club**  
On channel 13  
BFPO 40

**Rhondda Breakers Club**  
35 Shady Road  
Gelli  
Rhondda  
Mid Glamorgan

**Rhythm and Blues Club**  
The Bell Hotel  
Botesdale  
Nr Diss  
Norfolk

**Richmond & District Breakers**  
Friday nights at  
Black Horse  
Richmond

**Ringway Sideband Club**  
Every Thursday at  
Benchill Hotel  
Wythenshawe  
Manchester

**River City Breakers Club**  
c/o 38 Worcester Road  
Burnham-on-Crouch  
Essex

**River Exe Breakers**  
c/o 149 Withycombe Village Road  
Exmouth  
Devon

**Riverside Breaker's Club**  
Every Friday at the  
Redcroft Hotel  
Bo'ness  
West Lothian  
Scotland

**Riverside Breakers**  
c/o 1 St Lukes Grove  
Humberstone  
Grimby  
South Humberside

**Road Apple DX Club UK**  
SAE to Robert RA 68  
c/o Top Ear  
London Road  
Eaton Socon  
Hunts

**The Rolling Stones Breaker's Club**  
The Moss Cottage  
Nottingham Road  
Ripley  
Derby

**Roman City Breakers Club**  
c/o 29 Kelston View  
Whiteway  
Bath  
Avon

**Roman Road Breakers**  
Tuesdays at  
Galway Arms  
Harworth  
Nr Doncaster

**The Rooftop Breaker's Club**  
Every Wednesday at the  
Gonidola  
Ballon Woods  
Nottingham

**Royal T Breaker's Club**  
c/o 3 Manse Street  
Tain  
Ross-shire

**St Neots Breakers Club**  
Every Thursday at  
St Neots Working Mens Club  
Hardwick Road  
Eynesbury  
St Neots

**Saddleworth Breakers Club**  
Every Monday at  
Well Lit Pub  
Saddleworth

**Sandwell Area CB Club**  
4 Baldwin Close  
Twidale Warley  
West Midlands

**Saundersfoot and District Breakers  
Club**  
14 Ryelands Place  
Kilgetty  
Dyled SA68 0UX

**Scottish Truckers Club**  
c/o 3 Cornlon Crescent  
Bridge of Allan  
Stirling

**Sedgefield Breakers Club**  
c/o 4 Pine Ridge Avenue  
Sedgefield  
Co Durham

**Seven Towers CBC**  
15 Carnduff Drive  
Ballymena  
Co Antrim

**Severn City Breakers Club**  
c/o PO Box 2  
Shrewsbury

**Singing Wheels CBC**  
c/o 2 Grenofen Cross  
Tavistock  
Devon PL19 9ER

**Shaw and District Breakers**  
PO Box 2  
Shaw  
Oldham

**Sheaf Valley BC**  
c/o 27 Ashberry Gardens  
Sheffield

**Slab Town Breakers Club**  
Meet every Thursday at  
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Morley  
Nr Leeds  
West Yorks

**Smokie Town Breakers**  
103 Demondale Road  
Arbroath  
Angus  
Scotland

**Southend and District Breakers**  
Every Thursday at  
Rascals Disco  
Southend

**South Birmingham  
CB Club**  
Meet fortnightly at  
Solihull Civic Hall  
Solihull  
Birmingham

**South Somerset Breakers**  
c/o 19 Vincent Street  
Yeovil  
Somerset

**South Tees DX Club**  
c/o 73 Tawney Road  
Eston  
Middlesbrough  
Cleveland

**South Wales Action Teams**  
16 Lanelay Park  
Talbot Green  
Pontypridd Mid glam

**South Wales Big 10-4 Club**  
139 Manselton Road  
Manselton  
Swansea

**South Wales  
10-100 Artists  
Club**  
Tuesday nights at  
The Landing Strip  
Swansea

**South Wales Federation of Breakers**  
c/o 74 Beech Court  
Giffach  
Bargoed  
Mid Glamorgan

**South West Lancs Breakers Club**  
c/o 14 Cornbrook  
Holland Moor 2  
Skelmersdale  
Lancs

Cardiff based DX group. They're looking forward to meeting more breakers on the air, and go under the Tango Foxtrot call sign... The Wild One has written in from Surrey about his club, the Nine Plus 30 Club. You mentioned a bribe in the letter, but we couldn't find it. In the next post perhaps?... Wessex Open Channel



have got some very impressive headed note paper. More importantly they've got open arms for anyone in the Bath/Chippenham area with an interest in CB. They say they were the first club in the area — unless, of course, you know different... The All Breakers Club are so called because



they want all to feel welcome, including children. 106 members were there on the first night, and they're hoping for more... The Quiet Breakers are holding a presentation on December 17 at the Jubilee Hall in Stoke. They'll be giving out awards like Breaker of the Year, Plank of the Year and so on. The Lord Mayor of Stoke on Trent will be there, so it should be a classy evening... From the valleys we've heard from the Checkmate Club in Caerphilly. They've got 500 members — seems like a good move. Chess, good move?... And finally one last club from Scotland — perhaps we should make this a special Scottish edition of club news. The Whisky Valley Breakers come from Aberlour in the North of Scotland, and although they're a wide spread country community, they've clubbed together to buy a diabetes scanner. They break on 19 and passing breakers are made welcome. With a glass of scotch, perhaps? That's a tot you owe us.

After visiting Wales last month we sent Clark Kent to Scotland. As he's always had a liking for the hard stuff, he disappeared northwards faster than Martin when it's his turn to buy a round. Where was he off to? The White Horse Breakers? The Bells CB Association? The Teacher's Big 10-4 Club? No, it was The Gamesoup City Breakers from Fochabers.

# Airwaves

Gamesoup? Well it's better for you than scotch — or so we're told anyway. The story starts in June 1981 when the Post Office purged CBers in the Fochabers area. While this sort of thing was supposed to dissuade CBers in the bad old days of AM, all it did in Fochabers was to make the local breakers club together in order to help their image. They didn't want to be seen as an irresponsible bunch and they knew that CB had a lot of benefits for a rural area such as Fochabers. And so the Gamesoup City Breakers was born, the name coming from the fact that Baxter's soups are made just up the road.

The first move was to take the local old age pensioners on an all-expenses paid trip to Cabrach, a local beauty spot. After that it was back to the Red Lion (the club's HQ) for high tea. Scotch and scones, that sort of thing.

This sort of thing costs money, so the club set about on various sponsored events. The first one was a sponsored walk arranged in conjunction with another club, which may not sound much, but remember these people live in the wilds. No one was carried off by wild animals though, so it all turned out OK. Spurred on by their success they set up a pub crawl with a difference — they actually crawled two miles around a circuit of pubs. They had one free drink in each, and then considerably more in the last one, and why not, they deserved it. Two of them found it so easy they are going for the world record in crawling — over 12 miles. Tom's good at that — must be to have lasted so long at Breaker.

The president of the club, Eddie Currie, is known as the Chieftan (see, we said we were out in the wilds). To do his bit he went on a sponsored swim, but no lily-livered swimming pools for him, oh no. He swam 25 miles down the River Spey, the fastest-flowing river in Britain, and although he hadn't swam in the river for 20 years he completed the course — and rescued a member of his support crew who fell in along the way. Must be men of steel up in the highlands. Probably something to do with all that Iron Brew they drink.

The result was over £500, which went toward buying a motorised wheel chair for a local disabled breaker. But it's not just the big things the club helps

out with. One local man is blind and house bound, and the club are planning to put up a hand rail from his front door to his front gate, so he can get about his front garden and have more chance to chat to passers by.

And like any good club, they cater for their members as well as other people. They hold all their meetings at the Red Lion where the publican has installed a video and members can watch the films of their choice. Other nights, live entertainment is provided by a local singer. Members also have the use of a club rig bought from their funds. It costs £1 to join and 20p entrance at each meeting.

Other fund-raising events included a charity dance that raised £170 and a sponsored slim by the club's vice-president John Dye (Low Rider). He hopes to lose one-and-a-half stones over ten weeks.

Being in a rural area, the Gamesoup Breakers are in a good position to see the benefits of CB. John Dye works as a forester and he can be as far as ten miles from the nearest road, and the nearest village can be another ten miles from that. If he gets into trouble help can be a long way off, but CB can help and with the mountainous terrain the range is amazing. Hang on, I can hear him now . . .



# Airwaves



Can't vouch for the accuracy of this caption (blame it on Neon's handwriting) but this may or may not be Corporal of the Barry Breakers' Club handing over two radios to matron Marion Morean of the Gwalla OAP's home. The club meets at the Hotel International in Barry, Wales.

## Airwaves calling . . .

The Airwaves club list has featured in Breaker (except for the one month that it got squeezed out) since the first issue appeared last year. There were 26 entries in that first issue, if our memory serves us well. Actually, we know there were 26 — just checked. There's always one smart Alec just waiting to pull us up. And from those 26, things grew rapidly until today when we've got . . . well, ever such a lot. The aforementioned smart Alec can count them, if he wants.

The Airwaves news section has grown too and has proved very popular with the clubs. We know because you've told us.

Over the months, the whole CB movement — clubs included — has changed. Clubs have died. Clubs have moved. Clubs have merged. Clubs have changed name. Most of you have been very good and told us all about it, of course, and we've updated the list accordingly. But there comes a time (in every man's life etc) to sit back and take

stock. This is such a time. It'll cost you only a minute and a drop of ink — and it'll mean peace of mind and a deep-rooted feeling of satisfaction. It'll also mean that we can improve Airwaves by passing on more information, which in turn will benefit us, the clubs and all the readers. Impressed? I am, and I wrote it. Maybe I ought to sell insurance. . . .

Ideally, we would like every club in the country to complete the club call form and return it to us, but we realise this is not an ideal world. We warn you, however, that Breaker's influence is powerful and far-reaching — and if your club doesn't do the business, we could put the pressure on. Bar you from Mothercare, or put a curse on your SWR, that sort of thing.

Primarily, the form is aimed at clubs which don't already feature in the list (there are one or two) but even if you're already in there we want to hear from you because the form will give us information about your club which we may not already have in our filing system. Or 'that heap of papers under the desk', as we call it in the trade.

The additional facts will also enable us to improve the listing and tell our readers more about your club and if you're still looking for new members (say so on the form), new readers will know. Plus we can update any change of titles, addresses etc.

In case you need any more incentive, we hope to be running a few offers, and the like, over coming months and some will be aimed expressly at clubs — providing they've returned the club call form. Call it blackmail, if you like, but it is in your interest in more ways than one. Know what I mean, John?

Please complete the form as fully as possible — in block capitals, please, we haven't mastered joined-up writing yet — and send it to: Club Call, Breaker, Link House, Dingwall Avenue, Croydon CR9 2TA.

Any other clubs news, photographs, newsletters, bribes and so on, should be marked 'Airwaves' and sent to the same address.

**Stag Town Breakers Club**  
Every Thursday at  
Courlands Social Club  
Thorpe Road  
Ballamy Road Estate  
Mansfield  
Notts

**Steel City CBC**  
282 Eccleshall Road  
Sheffield S11 8PE

**Steeltown Breakerways**  
c/o 12 Keelby Road  
Scunthorpe  
South Humberside

**Stour Valley Breakers**  
c/o The Red Lion  
South Street  
Manningtree  
Essex

**Stourport-On-Severn Breakers Club**  
Every Sunday at  
The Old Anchor  
Stourport

**Studley Breakers**  
c/o Studley Arms  
Studley Green  
High Wycombe  
Bucks

**Summer Wine Breakers**  
Every other Thursday at the  
Burnlee Working Men's Club  
Holmfirth

**Swindon CB Club**  
23 Afeck Close.  
Toot Hill  
Swindon

**Tango Foxtrot Charlie  
International DX Group**  
PO Box 14  
Heywood  
Lancs

**Taunton Deane CB Club**  
c/o 19 Trinity Street  
Taunton  
Somerset

**Tayside CB Club**  
c/o 271 Fintry Drive  
Fintry  
Dundee

**Telford CBC**  
Tel: Telford 603474

**Test Valley Breakers Club**  
PO Box 27  
Andover  
Hants

**Thames Area Breakers**  
c/o 81 Villas Road  
Plumstead  
SE 18

**Thamesdown Trancellers**  
Every Monday  
Swindon Town Football  
Supporters Club

**Three Feathers Slidebanders**  
c/o 269 Ball Road  
Llanrumney  
Cardiff

**Toadtown Breakers Club**  
Meet every Sunday at  
Bridgend Inn  
Howey  
Nr Llandrindod Wells

**Tunbridge Wells CB Association**  
Monday evenings at th  
Robin Hood  
Tunbridge Wells

**Tweed Valley Breakers Club**  
c/o 72 Beech Avenue  
Galashiels

**TWINS**  
c/o 5 Nuthatch Drive  
Earley  
Reading  
Berks

**UK International Radio Group**  
PO Box 13  
Long Eaton  
Nottingham

**Untouchables**  
299 Manchester Road  
Kearsley  
Bolton  
Lancs

**Uttoxeter Breakers Club**  
c/o 32 Goldhurst Drive  
Lower Tean  
Stoke-on-Trent  
Staffs.

**Walsall CB Radio Club**  
c/o 6 Central Close  
Bloxwich  
Walsall  
West Midlands

**Waterbables Breakers Club**  
c/o 17 Furzey Road  
Upton  
Poole

**Wellingborough Breakers Club**  
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Dog and Duck pub  
Wellingborough

**Wessex Open Channel**  
PO Box 108  
Melksham  
Wiltshire

**Wessex Glamorgan Breakers Assn**  
25 Plass Newydd  
Baglan Moors  
Port Talbot  
West Glamorgan SA11 7DF

**West Glamorgan Breaker's  
Association**  
25 Plas Newydd  
Baglan Moors  
Port Talbot  
West Glamorgan  
South Wales

Meet on Wednesday nights at  
125 Club, Port Talbot

**West London Breakers**  
Tuesdays at  
White Hart  
Southall

**West Glamorgan Breakers**  
c/o Dock Hotel  
Aberavon  
Port Talbot  
West Glamorgan

**West London Breakers**  
Meet at the Steam Packet by  
Kew Bridge

**West Somerset Breakers**  
c/o 5 Periton Court  
Minehead  
Somerset

**Weston Breakers Club**  
33 Lower Church Road  
Weston-super-Mare  
Somerset

**Wetherby District Breakers**  
9 Norfolk House  
Wetherby  
West Yorks

**Weymouth CBC**  
Flat 1  
39 St Thomas St  
Weymouth  
Dorset

**White Cliffs Breakers Association**  
PO Box 13  
Dover  
Kent

**Whisky Valley Breakers**  
c/o 4 Tamdhu Cottages  
Knockando  
Morayshire

**Wickrath Breakers**  
On channel 14  
4050 Mönchan-Gladbach 4

**Windy City Breakers**  
c/o 19 Lochlilbo Crescent  
Barhead  
Glasgow

**Wirral CB Assn**  
Meet every Monday at  
Riverside Restaurant  
New Brighton

**Woking Centre Breakers**  
c/o Jovial Sailor  
Ripley  
Surrey

**Woodpecker DX Club**  
PO Box 22  
Hereford

**Worth Valley Breakers**  
c/o 8 Carlisle Street  
Parkwood  
Kelghley  
Yorks

**Wye Valley Breaker's Club**  
c/o CB Centre  
106 East Street  
Hereford

**Wyre Forest Breakers**  
19 Chawson Pleck  
Chawson Estate  
Droitwich

**Yorkshire Elite Breakers**  
Fairway Inn  
Birley  
Sheffield

**Young Aldershot Area  
Breakers**  
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Oddfellows Hall,  
Aldershot

**Young Breakers Assn**  
22 Romley Crescent  
Bolton  
Lancs

**Zebra County Breakers**  
Post Office  
Sible Hedingham  
Essex

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 Area covered.....  
 Meet at.....  
 Meet on.....  
 Is membership still open?\* Yes/No  
 Number of members.....  
 Contact address (for publication).....  
 Local handles:  
 Town/city/area..... Handles.....  
 Local breaking channel(s).....  
 Club channel(s).....  
 Club supports\*\* AM only  FM only  AM/SSB  All CB   
 Is your club in the Airwaves club list? Yes/No\*  
 Has your club raised money for charity? Please state who received  
 the money, how much they received and when it was handed over:  
 Form completed by (confidential — NOT for publication)  
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 Address.....  
 Phone number (home)..... (work).....  
 \*Delete as applicable \*\*Tick appropriate box  
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# Haulin' ass

Most people would think that a firm called Kenworth was called that for a reason. Maybe that back in the mists of time Mr Abraham Kenworth sold the house, mortgaged the wife and put everything into making horseless carriages. Years later, the business a success, he would retire leaving the business to his three sons. Jed, tall, handsome and honest, Jeridiah, short, weasly and sneaky, and Jeremy, who hates trucks and wants to become a ballet dancer. American TV could make a 14 part series out of that, a sort of Dallas with wheels. 18 wheels.

The main reason that the Kenworth story has never been immortalised in film is because it's not true. The real story is far more straightforward and starts back in 1915 with a firm called the Girlinger Manufacturing Company. They were founded in Portland Oregon but expansion forced them to move, first to Tacoma in 1917 and then to Seattle, although by this time the name had changed to . . . yes, you guessed it . . . Gersix.

The Gersix company specialized in mining, agricultural and timber industry vehicles, and were doing quite well, but two of the major shareholders, Mr H W Kent and a Mr E K Worthington, believed they could do better things, so they decided to set up their own truck business. And what did they call it? Ken-worth, of course, although the hyphen is ours.

The company built its early success on its willingness to wheel-and-deal. They even went to the extreme of accepting horses and carts as down payments on trucks. Try doing that at your local Ford dealer and see how far you get. The company prospered, with Kent becoming President in 1929, and as with most truck companies, the second world war meant Kenworth spent its

time making military vehicles and, strangely, the nose cones for bombers.

When the war ended, the company was taken over by the Pacific Car and Foundry Company, and in 1944 a vast new site was cleared for a new factory in Seattle. This large investment paved the way for Kenworth's expansion since the war. As early as the end of 1944 they were producing the first extruded aluminium frame truck, a move which all other manufacturers could only follow. Other firms had toyed with the idea, Kenworth were the first to actually produce one.

Kenworth centred its attention on heavy duty vehicles, the largest tractor units and off-highway models, where a combination of strength, power and lightness was essential. Following up this they experimented with the use of gas turbines. In 1950 Boeing provided a gas turbine for installation in a Kenworth Conventional, giving 175 BHP through a five speed Spicer gear box. While the truck was easy to drive and made an excellent tractor unit it had one major draw back — the fuel consumption.

Large trucks are not known for their high MPG, of course, but one mile per gallon from the turbine Kenworth meant the experiment had to be abandoned. But not forgotten. In 1973, Kenworth tried again, this time with an Allison GT 404 turbine and with great success — the fuel consumption was doubled. However, as this now meant two miles per gallon it was not thought it had much commercial future, and it was dropped. Richard would have bought it. Make a pair with the Corvette.

Not that such things matter much, as Kenworth have been very successful with their conventional petrol and diesel engines trucks. They now have

five plants across the USA and several overseas assembly locations. The slogan 'There's a lot more worth in a Kenworth' seems to ring true.

At present, Kenworth build some of the largest tractor units available in the States, and 400,000 pounds of truck and freight is a lot of truck. Because they build their trucks so large they have plenty of space for long wheel bases and original cabs. The VIT is a favourite model with family men because it has a sleeper cab with a double bed, and we reckon it must be quite popular with un-married men as well. The Aerodyne cab features a sleeper cab with head room of six foot nine, which must make it very popular with wind surfers. Aren't



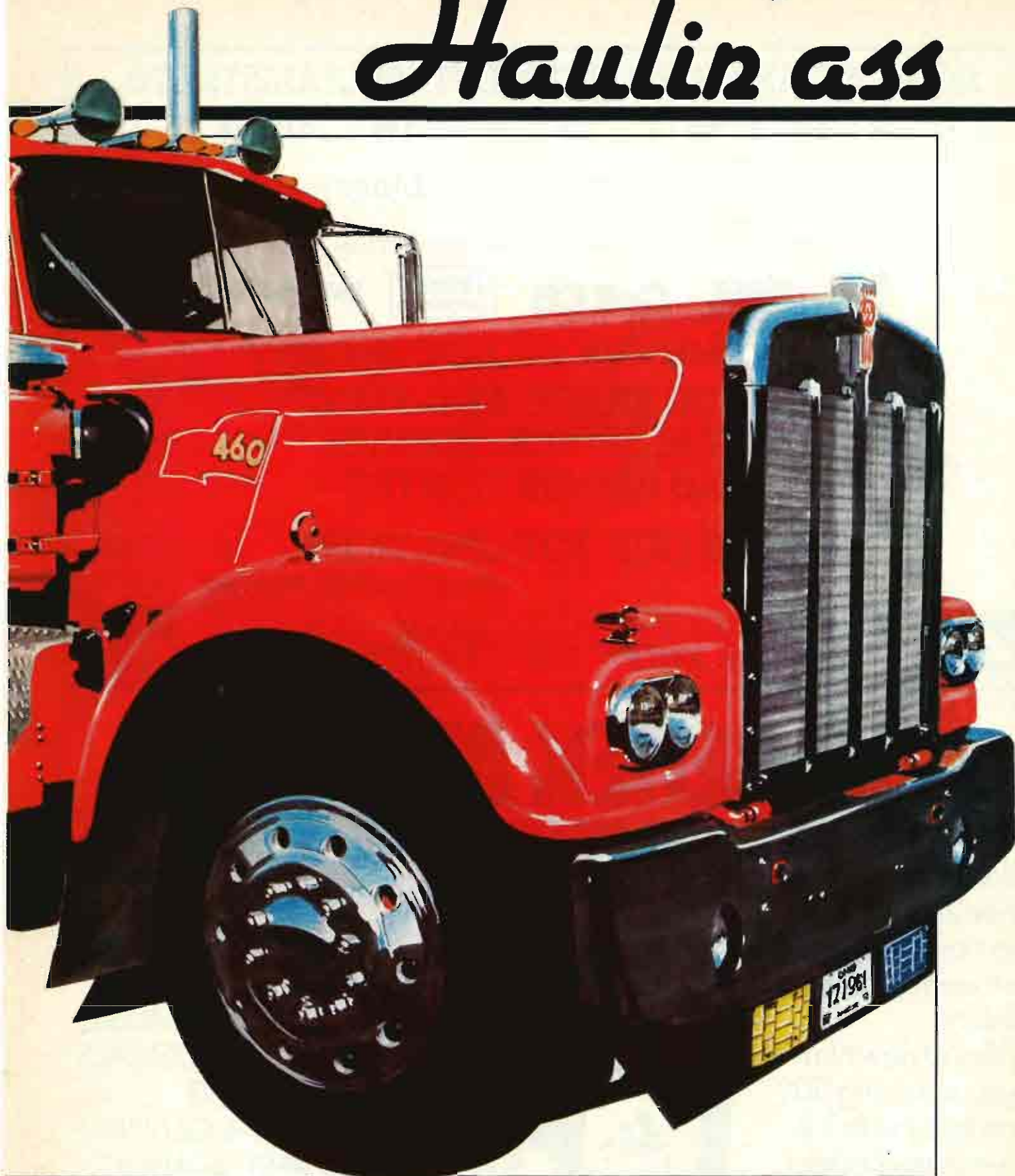


they the ones who do it standing up?

And now for a few examples of Kenworth might from the pen and brush of Peter Stevens. In 1954 the Yellow Transit freight line of Kansas City replaced their petrol powered tractor units with the odd looking cab-beside-engine Kenworths. They were called Telephone Booths by their drivers, (we'll leave you to figure out why) and



# Haulin' ass



350 were delivered with 175 Turbo diesel and Fuller 5A 62 five-speed gear boxes (with, of course, two-speed auxiliary boxes). Another strange thing about these trucks is the sighting of the right hand mirror. It sticks out on a stalk from the right-hand wing, which is logical when you think about it because there's no where else to put it.

Now we move on a year to 1955 and back to the origins of

Kenworth; heavy agricultural work. This Kenworth Conventional is using chains on its front driving axle in combination with a severe-service Spicer 5 by 4 gear box (20 speed). The reason for all this hard-ware is that snow, mud and steep hills make for dangerous conditions when you're pulling 40-50 tons of logs — especially when they're pushing you down hill.

Just to show the international nature of Kenworth's activities, next up is a C 500 Conventional in Australia. The big Kenworths are popular with the road train operators, who kit them out with heavy roo-bars (for kangaroos) high power spot lights and extra water tanks. Cans of Fosters are, we're told, an optional extra.

And then up to date with a 1980 W 900 and sleeper. The trailer is an aluminium

lightweight Freuhauf, and all the polished parts come from Kenworth as optional extras. On a truck like this, engines of over 400 BHP are available for heavy work.

There, Kenworth in a nut shell, supposing such a thing were possible, or even desirable. Next month another riveting feature from the world of trucks and . . . you know . . . things like that.

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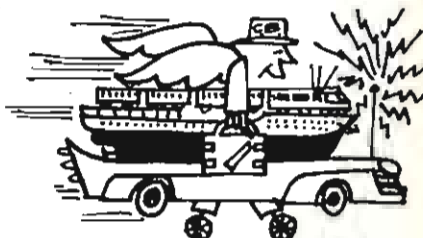
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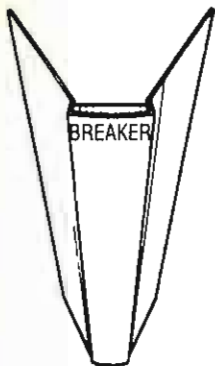
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Doubtless by now the floor beneath your bed is littered with old bits and pieces — DV 27, power mike, that sort of thing — which you no longer need. Now, through the Breaker Supermart, you can get rid of them at last. Just fill in the form and send it to us, we'll do the rest. Use the Supermart to QSL, buy or sell all for free. Unless you're a trader, in which case we'll accept you ad at 20p per word.

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# TWONG

JOHN ZICHARSKI

SUDDENLY, FRED GUBBINS STOPS PICKING HIS NOSE, AS A NEW FACE APPEARS ON CROSSROADS...  
...IT HIM!! HE GOT TV!!



OUR HERO GOIN' FOR A LIL' RUN OUT! HE FLYIN'! HE HAPPY! HE SINGIN'... ALSO HE SMASHED OUTA HIS HEAD AGAIN!!



WHY THE...? TYPING! WAH!!



...NOW HE GOT THE TV, ALSO!  
YOU'VE BEEN WALKIN' ALL OVER IT FOR THE LAST SIX MONTHS! NOW YOU CAN 'KIN WE'LL WEAR IT!  
TWOING! TWOING! ARE YOU OK, MY DARLING?  
SHHH!  
ARE YOU INTACT?  
IS YOUR THING BEAT?  
GUEST!



SO Y'SEE...  
...WALKIN' ALL OVER OTHER FOLKS RECEPTION IS A NO-NO! SPECIALY A T.V. SET 'COS THEY CAN'T TALK BACK!  
TWOING NOT LIKE T.V. SETS!  
T.V. SETS HURT!



NOT LONG AFTER TWOING QITS WALKED ON...  
MAYDAY-MAYDAY, F'ORSAKE!  
I SAY! YOU CAN'T DO THAT! I'M THE ONLY ONE WHO CAN HIT HIM...  
OH!  
SUIES ME  
...COS I'M HIS FATHER!  
DRUG DRUG  
HIT!  
CRUM



BUT TWOING, BUWAH! YOUR A GODLING! US C.B. USERS LOOK TO YOU FOR A GOOD EXAMPLE! Y'CAN'T GO GIVING LIL' KIDS NINE FROM THE SKY JUST FOR WALKING ON YOU! IT'S ALL A MATTER OF GIVE AN' TAKE...  
KIN SHOWED HIM, THOUGH!  
WATCHER DO THAT FOR?  
I'M SORRY!  
I'M SORRY!  
SORY  
GEE 'KIN SIDE ARE YOU CAL, ANTHAN?  
GEE, SORRY!



...AN' I THINK IT'S ABOUT TIME YOU DOT AROUND TO SOMG GIVING...  
LUSTY LEAP



TWOING BEEN PUT ON, WALKED ON, AN' JUMPED ON!  
YOU 'KIN MORTALS IS ALL ALIKE!  
TWOING'S FED UP WITH BEIN' CONFUSED 'BOUT WAU'LEAFS AN' THAT! TWOING GONNA LAY DOWN! SOME REAL RULES 'COS TWOING RULES OR! OR!!  
EEK!!



WAAH! Y'CAN'T LAY DOWN YOUR OWN RULES, DUMMY!  
Y'CAN'T GO AGAINST THE GOVERNMENT!  
IT'S TAKEN US YEARS TO GET THIS FAR!  
IF YOU GO UPSETTIN' EVERYONE...



TOO LATE! OUR HERO BROADCASTIN' TO THE ENTIRE NATION...  
YOU'RE GONNA COCK IT UP!!



...INCLUDING FILINADALES!  
SCREAM!  
BOOM!  
WHO FIRED THAT, HEAVY?  
I DID! THAT JOD WAS WALKIN' ALL OVER CROSS-ROADS!

BREAKER-BREAK, YOU MORTALS! THIS HERE 'M TWOING! TWOING TAKIN' OVER AROUND' HERE! ME GOIN' SORT OUT THIS HASSLE 'BOUT WAU'LEAFS AN' FINGS, 'COS ME YOUNG, ME GOOD-LOOKIN, ME...

# You'd look daft without your SuperBike.



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Superbike is more than a motorcycling magazine. It's profoundly important contribution to the development of Western philosophical reasoning—encompassing as it does the quintessence of technological advancement as symbolised by the internal combustion engine linked to the two-wheeled vehicular device commonly known as the 'bike.'

Not to mention some of the raunchiest chicks in town.

Read SUPERBIKE and start a chain reaction.

# SUPERBIKE

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Advertisements in this publication are required to conform to the British Code of Advertising Practice. In respect of mail order advertisements where money is paid in advance, the code requires advertisers to fulfil orders within 28 days, unless a longer delivery period is stated. Where goods are returned undamaged within seven days, the purchaser's money must be refunded. Please retain proof of postage/despatch, as this may be needed.

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If you order goods from Mail Order advertisements in this magazine and pay by post in advance of delivery, Breaker will consider you for compensation if the Advertiser should become insolvent or bankrupt, provided:

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- (2) You write to the Publisher of Breaker summarising the situation not earlier than 28 days from the day you sent your order and not later than two months from that day.

Please do not wait until the last moment to inform us. When you write, we will tell you how to make your claim and what evidence of payment is required.

We guarantee to meet claims from readers made in accordance with the above procedure as soon as possible after the Advertiser has been declared bankrupt or insolvent up to limit of £4,250 per annum for any one Advertiser so affected and up to £10,000 per annum in respect of all insolvent Advertisers. Claims may be paid for higher amounts, or when the above procedure has not been complied with, at the discretion of Breaker; but we do not guarantee to do so in view of the need to set some limit to this commitment and to learn quickly of readers' difficulties.

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suggested retail  
vat included

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

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

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—J.H. Colett, 207 McFee, Bastrop, LA

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—H.R. Castro, VRB, Monserrate D-87, Salinas, Puerto Rico

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—John A. Blum, Box 446, Zelenople, PA

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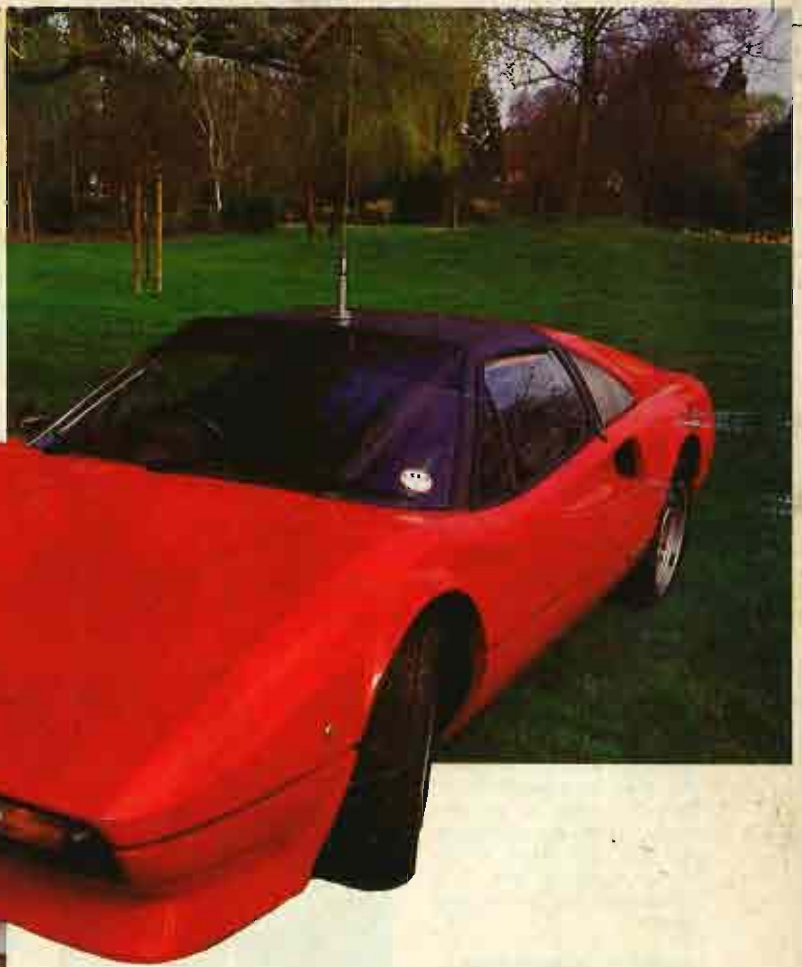
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