

JULY 1981

CB

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Citizens' Band

Britain's Leading CB Monthly



CB ON THE SILVER SCREEN

• Could CB save your business £3000? See inside....

Exclusive Review! • Three New UK Rigs

• Alternative Telephones

• Inside CB • New Starter Series

• DIY Emergency CB Aerial

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CITIZENS' BAND MAGAZINE,
APRIL 1981

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Cover this Month

Citizens' Band magazine would like to thank the Management and Staff of the Dominion Theatre, Tottenham Court Road, for their help and use of their foyer... and Tina for supplying the big smiles.

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JULY 1981

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The transceivers shown below are typical of the wide range which we shall be offering as soon as the Home Office specification is issued. Whatever your interest and however much you want to spend, Lowe Electronics will have the right rig.



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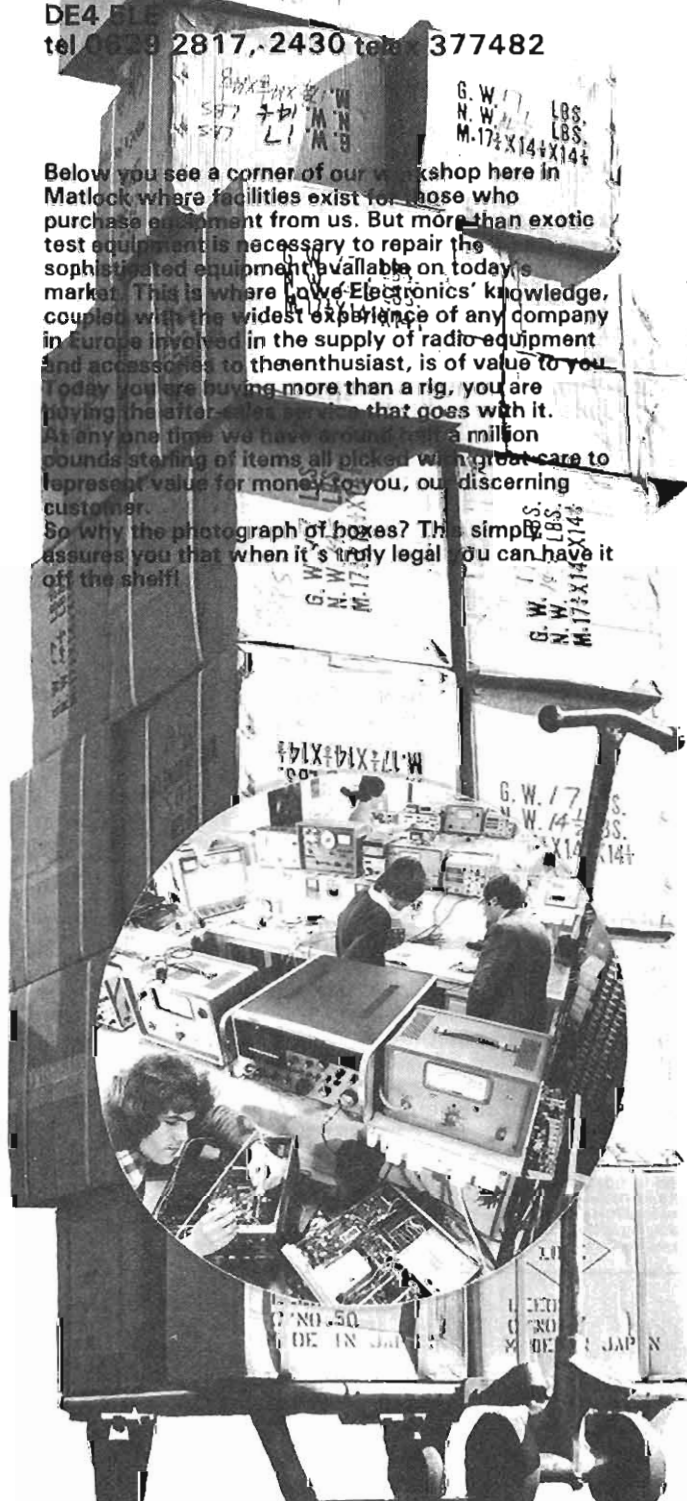
About £65 including VAT.

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Below you see a corner of our workshop here in Matlock where facilities exist for those who purchase equipment from us. But more than exotic test equipment is necessary to repair the sophisticated equipment available on today's market. This is where Lowe Electronics' knowledge, coupled with the widest experience of any company in Europe involved in the supply of radio equipment and accessories to the enthusiast, is of value to you. Today you are buying more than a rig, you are buying the after-sales service that goes with it. At any one time we have a million pounds sterling of items all picked with great care to represent value for money to you, our discerning customer. So why the photograph of boxes? This simply assures you that when it's truly legal you can have it off the shelf!



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UPDATE

News from the world of CB



New Face

John Woolfe Racing Ltd have added another member of staff to their promotional team in the shape of Sandy Munroe. Sandy, as you can see, has already been trying her hand with the microphone and if she can remember to hold it the right way round maybe we'll be hearing her on the old airwaves one day. JWR have been involved in the CB scene for some time now though they are better known for their car accessories and wheels. But back to Sandy — we'll be seeing a lot of Sandy at exhibitions and she'll be in a new series of advertisements featuring JWR products. We hope to be seeing much more of her in the future.

Meet The Dealers

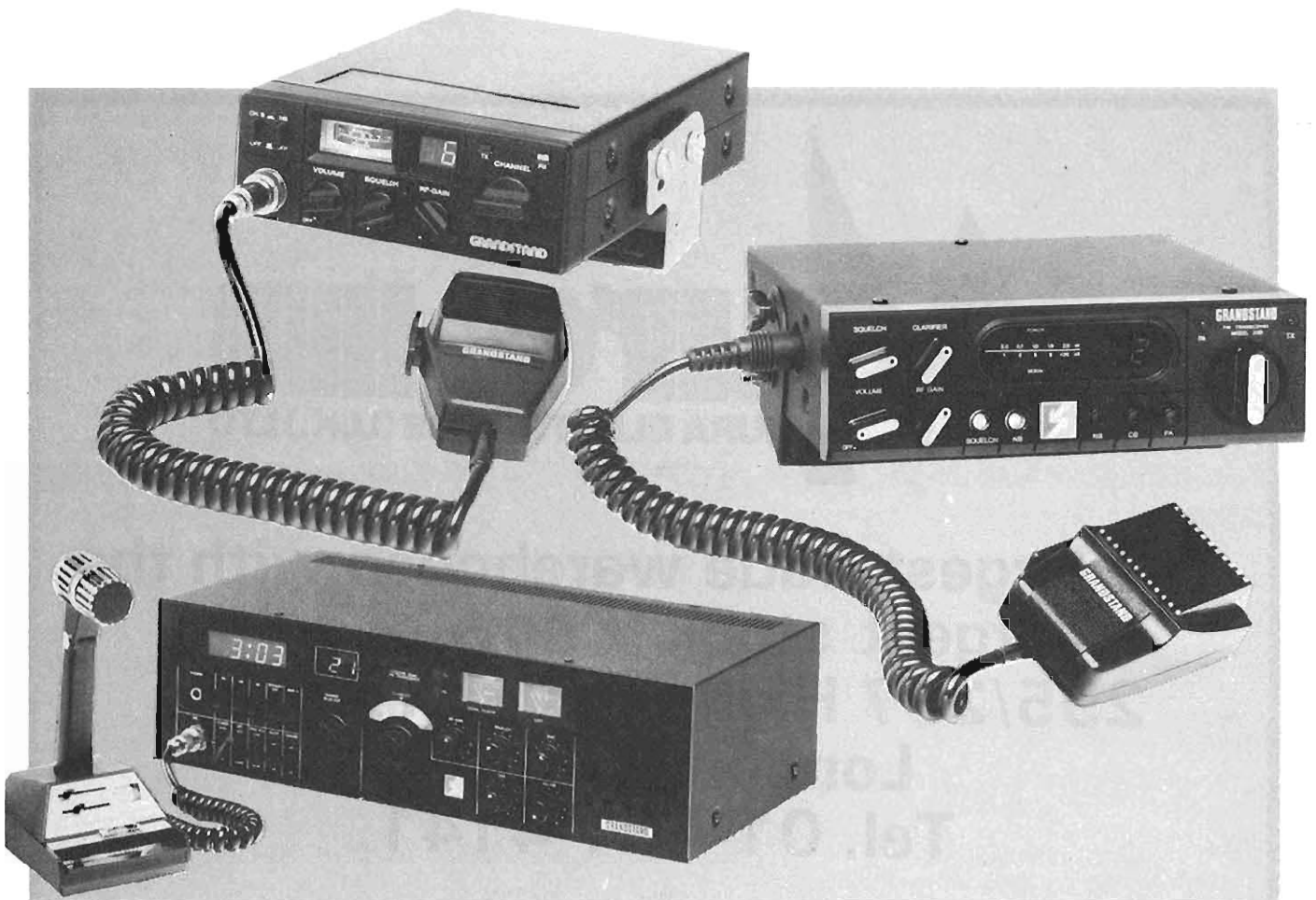
This month we're highlighting **Chelmer CB** up in deepest Chelmsford. The shop is run by Andy Grimwade (he's the boss) and Alan Davis (manager). Chelmer are well known in the area for their low prices and visitors to the shop are able to pick Andy and Alan's brains for technical advice and help with installations.

Chelmer have been open for just under a year now, though Andy had been involved with CB for well over two years, going back to the days when there were only five breakers in Chelmsford. Before Andy started Chelmer he was involved in the hamburger business although he won't say

exactly how involved he actually was. Maybe we'll be hearing of a CB restaurant in Chelmsford soon?

Andy's main passion lies with drag racing. Regular followers of this exciting sport may have seen Andy driving a mean-looking 69 Mustang Mach 1 called **The Tramp**. Andy can usually be found at Santa Pod on racedays clocking up very respectable low 12s. But back to CB. Chelmer have a full range of accessories in stock and are the local Mura distributors. Chelmer have a CB technical expert on hand and a rig doctor is always on call. If you want to have a look round, spend some Green Shields or just drop in for a chat then **50 Duke Street, Chelmsford** in Essex is the place to go.





More UK Rigs

News of rigs destined for the UK market is now flooding in. **Rig Review** this month looks at a range of rigs from Shadow and we've already had some of the prototypes in the CB office. Pictured here are yet another range of rigs, this time from a company called

Adam Imports. The name Grandstand that appears on these rigs will be familiar to devotees of electronic games and already Adam have established something of a reputation for themselves in this field.

The complete Grandstand range will include a base sta-

tion unit, three mobiles and two hand-held walkie talkies. To date we only have details of the base and mobile units, and as you will see from the photographs they look very interesting indeed.

The cheapest model in the range, the **Buzzing Bee**, is a fairly straightforward 40

channel 4 watt mobile rig and this is expected to retail at under £60. Middle of the range are the **Mercury** and **Gemini** models, with extra features like RF gain controls, noise blankers and PA facilities. These two models should be in the shops for around £70-£80 in the autumn.

The **Apollo** base station rig looks the most interesting. It includes features like a digital clock with alarm, SWR adjustment, meters to monitor SWR, percentage modulation and transmit and receive levels. One interesting feature with this rig is the clarifier control which apparently will allow the reception of SSB but we believe it really acts more like a sophisticated delta tune. Price for this beauty should be around £150, come the great day. All the rigs and accessories bearing the Grandstand name will be available through normal retail outlets but if you just can't wait you can contact Grandstand through their marketing company which has been called **Bee Ware Ltd** and they will be dealing specifically with the CB side of the business. You can find them at *Bee Ware Ltd, Ripon Way, Harrogate, North Yorkshire*, or telephone them direct on **0423 501151**.

CB Citizens' Band

Citizens' Band magazine, currently the country's leading CB publication, is looking for another person to join the editorial team of this new and exciting monthly magazine.

Prospective applicants should ideally have some journalistic training and a good working knowledge of radio and electronic theory is essential.

The job involves a fair amount of practical testing and assessment of equipment plus the day-to-day editorial work necessary on a monthly magazine. The ability to work unsupervised and upon initiative would therefore be an advantage.

Prospective applicants should send a full CV to:-

Citizens' Band (Dept EJ)
Modmags Limited,
145 Charing Cross Road,
London WC2H 0EE.

Power Supplies Dangerous?

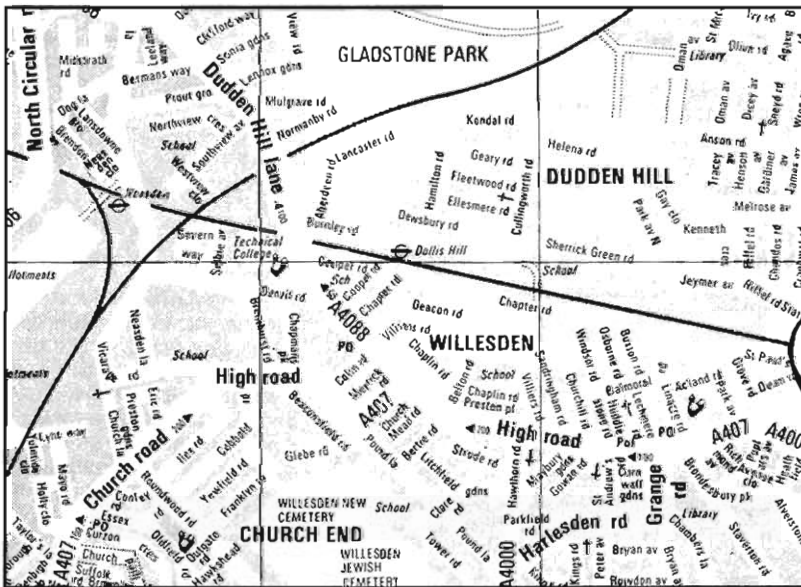
A couple of readers have written to us expressing concern about the safety of some imported base station power supplies. The supplies concerned come with a continental type moulded two-pin mains plug which has an earth connection on the side of the plug. It is tempting to force these plugs into a normal 13 amp socket and in most cases this will work quite satisfactorily. The problem is, however, that the earth will not be connected. Readers are advised to cut off these moulded plugs and connect a proper 13 amp plug not forgetting to connect the earth. Failure to do so could be lethal.

If you are in any doubt take your power supply along to your nearest electrical dealer or CB accessory shop and ask for advice. Better safe than sorry.

Mura

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CB Diary

Busy, busy, the next few months will be witnessing a lot of activity on the CB scene and as usual this is the place to find out all about it. We're giving you plenty of warning for our Exhibition which should be the BIGGEST gathering of

CB companies ever to be seen in this country, a truly international show so make sure you come along on at least one of the days. Send any entries you many have for CB Diary to our usual address and please give us at least six weeks' notice so that they will appear in the relevant issue.

DATE	EVENT	VENUE
June 7th	The American Dream Eyeball	Blue Boar, Hucknall. (0602 634655)
June 14th	Radio Fair & Mass Eyeball	Commodore International, Nuthall Road, Nottingham. (Long Eaton 62247)
June 21st	1st North East Eyeball	Lambton Pleasure Park, Co Durham.
July 4th	Uncle Sam's Eyeball	The Leisure Centre, Alfreton, Derbyshire. (Alfreton 4817)
July 26th	CB Mass Eyeball & Trade Show	Pavilion Ballroom, Matlock, Bath. (Matlock 2560)
August 31st	Radio Fair & Mass Eyeball	Commodore International, Nuthall Road, Nottingham. (Long Eaton 62247)
September 11, 12, 13th	Citizens' Band Show	Royal Horticultural Hall, London. (01-437 1002)

More CB On Video

What is the unlikeliest combination you could think of in a CB film? Go on, have a guess. Give up? Well, I've just sat through 90 minutes of the strangest film I can remember and I actually found the theme of CB and Kung-Fu quite absorbing. That's right, **Breaker Breaker** from VIPCO actually manages to combine CB and Kung-Fu in a rather spectacular way. The plot basically concerns a small American town called Texas City, run by the proverbial corrupt sheriff and judge. Truckers venturing into this town are pulled in by the sheriff and convicted on minor charges in order for the judge to maintain his illicit moonshine still. One young trucker falls foul of the sheriff and disappears. This prompts his brother, adept at the martial arts, to come looking for him. After sending most of the town flying on the end of his boots he is eventually captured and the final scene where all his trucking friends

come to the rescue, summoned of course on the old CB, is reminiscent of the destructive finale of **Convoy**. All good fun, good C & W music, and a very professional film.

Breaker Breaker arrived too late for us to include it in this month's feature on CB and



Sour Grapes?

Oh dear, this is all getting rather tedious. It has been brought to my notice that one particular CB magazine is having great difficulty in filling its pages with original material.

Not content with reproducing our front cover and two page Rig Review feature from the May issue, the Editor has the extreme bad taste to question the validity of the article.

Could it be that the Editor of this magazine is getting a little annoyed at the way we, and other CB mags, persistently report the news weeks before he even knows about it? Do you think he would have liked to have known all about Binatone being the first company to have publicly declared their intention to market CB equipment in the UK?

Well, I don't know, all I will say is that next time, Mr Editor, please check on your facts. And if you are really so desperate to fill space that you have to pinch our material, please have the good grace to ask next time.

Wonder what he'll say about that? Not to worry, I'm sure he'll think of something, after all, he does have all that space to fill!

the movies but if you want a copy it can be obtained from VIPCO films (9 Sentinel House, Sentinel Square, Brent Street, Hendon, London NW4) or from most video retailers. The film is available on both of the popular video formats, ie VHS and Beta, and costs £39.95 inc VAT.

CB Nightlife

Should you happen to find yourself down in Droylsden one Thursday night with nothing to do then get yourself along to **Carriages Night Club** in the Carriages Leisure Centre, where they are holding late-night eyeballs.

Eyeball nights will be celebrated with raffles, cheap booze and free stickers. The centre itself offers five bars, two restaurants, snack bar and disco, complete with all the latest lighting and sound. Sounds great! Due to local licensing regulations there is a 50p admission charge, and don't forget to be over 18. The Leisure Centre is in *Sandy Lane, Droylsden* and if you want more information call Carriages on 061-370 2021.

Skip Quip

You may be interested to learn that the latest reason suggested for the low level of skip experienced in the last few months has been put down to the erosion of the upper layers of the atmosphere by the ingredients in aerosol cans. Readers are urged to use their Sunilk and Pledge sparingly as DXers are suffering considerable earstrain trying to make out those 10.1 copies. By the way, On The Side, our regular SSB feature, will be back next month.

FM Converter

Already we have seen an example of an FM conversion kit for AM CB rigs. It comes from SSE down in Dorking, Surrey, and seems to be just what the doctor ordered. It can be installed inside virtually any AM rig via seven wires and will enable a rig to work on either AM or FM via a switch. It would seem that this unit is actually incapable of switching a current AM FCC rig to the new FM UK specs but sooner or later someone will come up with a mod. In the meantime, if you want to have a go with FM and see what's happening then pop into SSE at 27 Meadowbrook Road, Dorking, Surrey with £25 in readies or drop them a line at the same address enclosing an extra £1.50 for p&tp. Remember, though, this unit will necessitate some tinkering around inside your rig so be warned!

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Silver Rod 3.8 Dbs	£25.95
GPA 27 Half Wave End Fed 3.2 Dbs	£21.56
City Star De-Luxe Base Antenna	£28.95
Firenze 11 The 'Best' Ant	£59.95
Alcomm DPA 11 VR Very Popular 4 Dbs	£24.95
Avanti Sigma IV	£69.95
Avanti PDL 11 Quad Ant. 12 Dbs	£106.26
Hy-Gain 3 Element Beam, 8 Dbs	£59.95
Boomerang Antenna	£10.81
(Allow £4 Post/Packing on all Ants.)	

MOBILE ANTENNAS

K40 Antenna	£27.00
Avanti 6' Moonraker (Mag.)	£49.95
Avanti 4' Moonraker (Mag.)	£28.56
Avanti 6' Moonraker (Std.)	£44.92
Avanti 4' Moonraker (Std.)	£21.98
Rubber Duck High Quality Antenna	£10.25
Electric Retr. Antenna	£28.87
Retractable Disguise Antenna	£8.18
Valor 541 SMF 48" Dial-a-Match	£25.01
Valor 531 SMF 24" Dial-a-Match	£24.15
Valor 560 60" Warrior (Whip)	£17.15
Valor 520 60" Half Breed (Whip)	£13.70
Valor 332 5' Black Magic Rod	£9.05
Valor 736 5' Road Hog Rod	£12.24
Valor Antennas complete range in stock.	
Turner Signal Kicker SK910	£28.02
(Allow £3 Post/Packing on mobile ants.)	

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Bremi BRL 31 25 watt Burner	£23.80
Bremi BRL 35 45 watt Burner	£37.81
Bremi BRL 40 70 watt Burner	£49.83
Bremi BRL 200 200w SSB/AM/FM mains operated	£103.40
Bremi BRL 1KW SSB 500w AM mains operated	£333.35
Skipmaster 100w AM 180w SSB	£118.96
Skipmaster 150w AM 190w SSB	£137.00
RP 20 Pre-Amplifier	£16.45
(Allow £2 Post/Packing on linears.)	

POWER MIKES

Ham Master 4500 (Base)	£36.95
Ham Master 4200 (Base)	£29.00
K 40 Power Mike	£27.00
American Lollipop Power Mike	£29.95
Turner Exp. 500	£48.95
Turner RK 76	£37.77
7 Volt Batteries	£2.95
Cobra Base (Power Mike)	£36.84
Cobra Hand (Power Mike)	£16.31
(Allow £2 Post/Packing on Mikes.)	

POWER SUPPLIES

Bremi 3/5 amp 13.8v	£12.24
Bremi 3/5 amp De-Luxe 13.8v	£13.70
Bremi 5/7 amp 13.8v	£19.83

Bremi 3/5 amp De-Luxe 13.8v	£17.70
Bremi 5/7 amp 13.8v	£19.98
Bremi 10 amp 13.8v	£47.61
(Allow £1.50 Post/Packing on Power Supplies.)	

SWR METERS

Basic SWR Meter	£8.54
SWR/Power Meter	£12.42
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ANTENNA ACCESSORIES

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Retractable Mast 9 mtr	£31.05
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12" Wall Brackets (Pair.)	£5.77
28" Wall Brackets (Pair.)	£6.80
Double Chimney Lashing Kit	£5.86
3 Way Ant. Switch with dummy load	£8.53
Dummy Load 30 watt	£6.80
Dummy Load 5 watt	£1.06
Ferrite Rings	£0.80
TVI Filter High Pass	£5.50
TVI Filter Low Pass	£6.21
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Bremi Power Reducer (For Linears)	£6.80
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Valor 401 Ant. Magnetic Base	£15.43
Valor SS104 Medium Spring	£4.73
Valor SS504 Heavy Duty Spring	£6.03

Send for our full list of accessories.
(Please tel. for postage before ordering masts.)

ACCESSORIES

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PA Horn (Medium)	£9.22
PA Horn (Small)	£5.08
Mini Extension speaker	£8.95
Headphones with boom mic	£12.95
Headphones Telex Std	£17.95
Headphones RE 220 Padded	£7.95
EA 41 Reverb Unit	£17.07
Slide Mount	£4.95
CB Car Radio Converter 40 channel	£10.25

INDOOR/LOFT ANTENNAS

Mini Boomerang	£11.94
Whisky Loft Antennas	£24.95
Stabo Loft Antennas	£29.95
Mini GP 27 Loft Antennas	£21.95

RECEIVERS

CB/AM/FM Hira Multiband Receiver (with squelch facility)	£19.00 (£1 p&P)
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We are seeking specialist trade outlets.
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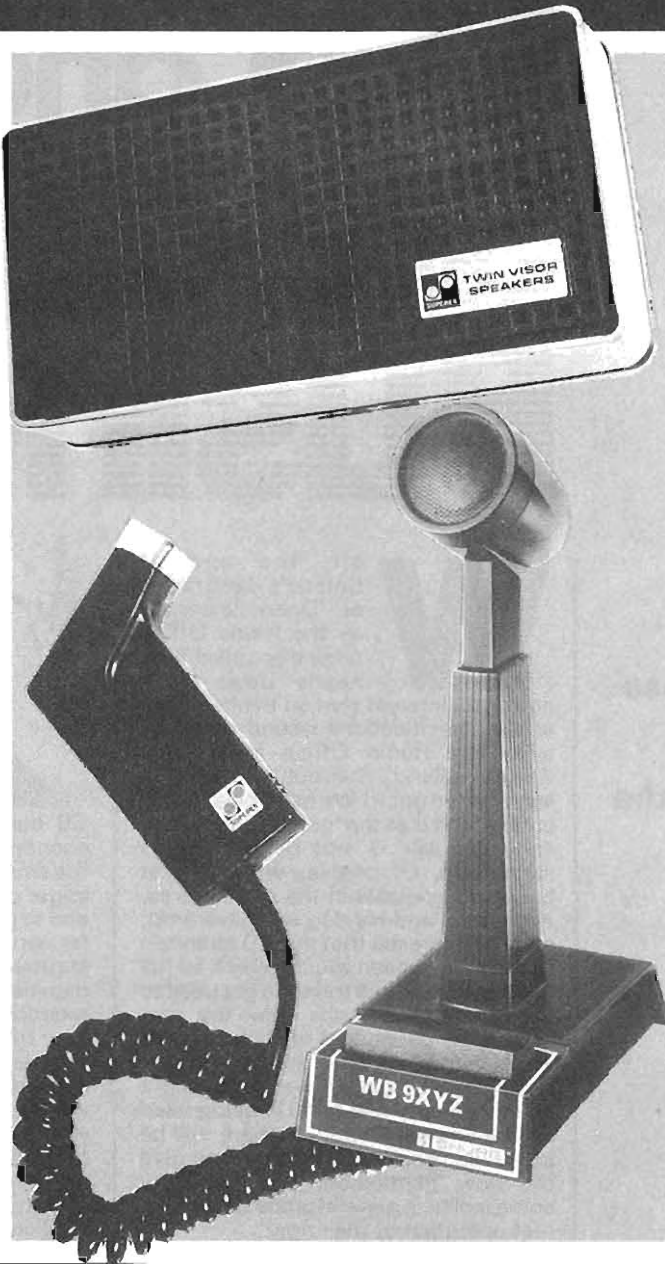
Shakespeare, A Fishing Story

Now listen you lot, Shakespeare the antenna people and Shakespeare the fishing tackle people are not connected in this country. Barry Jackson from Shakespeare UK is getting a bit fed up with people ringing him up asking for antennas (he'll sort you out a nice line in fishing rods, though). It seems that some kind of corporate shake-up last September in the USA resulted in the various divisions in Shakespeare turning into separate companies, so if you want to talk about antennas make sure you get hold of the right number.

Shure Looks Interesting

Shure Electronics, better known for their hi-fi bits and pieces, are going into the wonderful world of CB with some professional-looking mikes. Shure have already made a reputation for themselves with Hams and their mikes are used widely on communication equipment.

The model shown (right) should soon be available through reputable accessory dealers and although we do not have any details on price we are assured by Shure that they will be highly competitive. Of course, you can be sure they are of the highest quality. For more information contact Shure direct at: *Shure Electronics Ltd, Eccleston Road, Tovil, Maidstone ME15 6AU.*



Twin Ears And Pistol Grip

Interesting title eh? Bet you are wondering what it's all about! The answer is not actually what you are thinking; the twin ears is a twin speaker that clips to the sun visor in your car. This handy gadget saves you drilling unsightly holes in the old man's car yet gives the rig that big sound so you won't miss a single word. The twin visor speaker comes from Superex and will cost you less than £12. The second goodie also comes from Superex and is known as the **PV1 Power Voice Microphone**. It's shaped in the pistol grip, easy to conceal, one-handed operation format that is becoming very popular. The PV1 comes complete with an ingenious solderless plug fitted that will allow you to hook it up to virtually any rig in a matter of minutes. The mike also comes complete with a battery, full fitting instructions, and all this for under £25. Oh, by the way, it actually works quite well too. So, where can you get all these wonderful bits? From none other than good old **Wintjoy**, of course. Glamorous Glynn Hall down there in Shepperton will be only too happy to relieve you of your pound notes in his amazing CB emporium and if you would like a 25% discount on any of his goods we wouldn't be at all suprised. Wintjoy can be found sunning themselves at *103 High Street, Shepperton, Middlesex.*

Competition Results

At long last we have finally managed to open all the entries to Competition Number 3 and to bring us right up to date, we also have the results of Competition Number 4 at no extra cost.

Some 3,000 (plus) entries came in for Competition Number 3 and just to refresh your memories, this was to find the maximum number of words from the words 'Citizens' Band'. We reckoned that there would be at least 30 or so words. Our winner, one Chris Womack from Pontefract, managed to find no less than 972 words! We had to discount a few but his total still stood at 903 which made him the clear winner and recipient of the base station

kit. Second prize, the SSE ATU and splitter box, goes to Paul R Dicken from Walsall with 738 words. What do these people do with their spare time? Third prize, a year's subscription to the magazine, goes to J Swanson of Derby with 698 words. Many of you sent in entries that were not strictly in the spirit of the competition and were disqualified accordingly. Proper names and plurals were just not on but, all in all, there was an amazing response. A hearty thanks to everyone who took the considerable time and trouble to enter.

Competition Number 4 now. The question was how many penguins did a CBer see after driving 10 miles south,

15 miles west and 10 miles north and ending back where he started from? The answers we got were almost 100% correct, and that answer was **None**. The reason was simple if you thought about it. The only place you can travel thus and still return to where you started from is at the North Pole and we all know that penguins are only to be found at the South Pole. One or two smart alecs did propose the theory that there might be a sweet shop at the North Pole selling Penguin biscuits and a couple of others proved by some devious trigonometric means that a similar journey could be made at the South Pole and Equator but these were disallowed 'cos we didn't understand them.

So the winner, first one out of the carrier bag, was R Senior of Leeds. Mr Senior wins an Elco Test meter. Second prize goes to Steve Cook from Tottenham, London, who wins a Science Fair Monitor, and third prize, a year's subscription to the magazine, goes to Bill Beuxley (at least that's how we translated his indecipherable scribble) from Tetbury, Glos.

Prizes for both competitions should be on their way by now and once again, thank you to everyone who entered. Have a look at Competition Number 6 this month to get the old grey matter going. Results to our Beauty Contest (Competition Number 5) next month, and what an ugly lot you all are — great stuff! ●

CB and the Small Business

With mobile radio systems currently costing in excess of £2,000 there is a case for using CB as a cheaper alternative. E A Cooper looks at the possibilities

Well, the age of Citizen's Band radio, or 'Open Channel', as the Home Office originally called it, is nearly upon us. I note with interest that on the headings of the specifications issued recently, even the Home Office have used 'Citizen's Band'. Still, don't knock it, at least we've got it! We have been led to understand that the 'go' date should be early October — not before time, I might add. Of course, when it first becomes available in the retail stores, every man and his dog will have a rig, and I can foresee that the 40 channels that we have been allocated will be full of new breakers all trying to get used to the language and the new toy that graces the dashboard of their cars. (It will be interesting to see how many people can actually drive in a straight line when only one hand is being used on the wheel.) Hopefully there will be some old breakers on channel to give the new gentlemen, and hopefully some ladies, a general guide to the correct operation of their rigs.

As soon as the general melee has quietened down a little, and more air time is available, there should be room for small businesses to operate on the



CB bands. In these days of general economic problems, the only way for the small business to compete with the larger concerns is to be more efficient; and to give a quicker and therefore better service. The most obvious way to improve the service is on the communications front. How many times, I wonder, has your television quit, or your fridge freezer stopped freezing, or the car refused to start outside your own house? All these things, as well we know, create havoc at the times when we least want them to. So you rush to the phone and, having found the number, dial it six times before you convince Buzby to make the right connection, only to find that although the company concerned are bending over backwards to help you, there is no way they can get anyone to you for at least 24 hours.



By and large the companies want to stay in business and help you immediately but they have a problem. Anything you phone in today can only be done tomorrow, because they have a limited staff probably covering a 10 to 15 mile radius of their service point, and once the engineer or representative has left the depot, he is not con-

their customer, who naturally always expects the best service at all times.

Of course you can apply this to your own business. All businesses are slightly different, so you can work out which way CB would help you most.

There are, of course, limitations to the CB system. First and foremost is the range. A well-sited base station, radiating the maximum allowable 4 watts to a standard mobile should, if set up correctly, have a range of approximately 12 to 15 miles radius (not

Advantage

The biggest advantage is cost. Approximately £100 will buy you a base station, and about £60 a very good rig. The base aerial will cost £30 to £40 for a good one that will withstand wind and weather, and a mobile aerial about £12 to £20, depending on type used and type of base required. For a total outlay of only £250, then, you will have a valuable asset to your business, which is tax deductible, and better communication with one mobile. Compare this with a base and one mobile from a well known radio telephone company. Base station £1,200 plus aerial £125, plus mobiles at around £600, plus aerial £40, plus fitting £40. Total: £2,005. Very economical, you're thinking. Range is better, about 25 to 30 miles, and this system is private. But that seems a high price to pay for privacy. ▶



tactable until his return. Assuming he has about five of six calls to attend to, and given our unpredictable British weather and our increasingly difficult traffic conditions, he can easily be away all day.

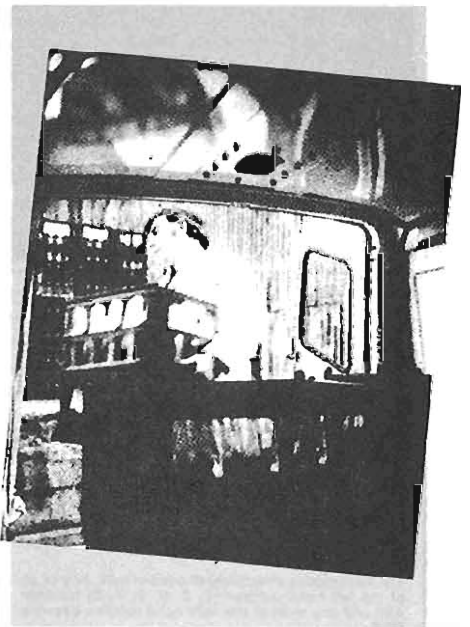
Some large companies who service, for example, commercial freezers in hotels, or freezer shops, do have a form of communication via one of the popular brands of radio telephone systems currently available. The systems available from *Aircall*, which covers almost the entire country and *Securicor*, which covers about half of the country at present, work through control operators spread around the major towns of the country and are relatively expensive to run. The only other option is to rent or buy a complete system which consists of a base station and the desired amount of mobiles from one of the proprietary radio telephone companies (*Pye*, *Storno*, etc).

All these systems are too expensive for the small user whose requirement is to keep his cost down although he would still find it useful to be able to have immediate communications with his mobile staff. This is where CB could come into its own. Consider, if you will, your local garage having received your phone call about the car that refused to start. While you are still on the phone the garage operator could call the breakdown vehicle on the CB, ascertain his location, get his estimate of the time he is likely to be on the job he is at, or if he has not reached it, decide whether it could wait for half an hour while he diverts to you and gets your car started. All the basic information you require to decide whether it is a taxi job for work to stop you swelling the ranks of the unemployed, and a snow job on the phone to the boss, or a short wait for your own vehicle, could be given to you on your original phone call. From the garage point of view there are two benefits:

- They can always contact their breakdown vans and get work down the most economical way.
- They have appeared efficient to

30 miles, as one importer was telling a goggle-eyed crowd of retailers at the May Radio Show in London). In practice it will be found that the actual working distance will be nearer 10 miles for constant reliable communication. This of course relies on the fact that you have your business in the outlying areas of towns or in the country. In the centre of London or Birmingham, for instance, you can only expect about a 3 to 5 mile radius.

The second drawback is that as the system is simple, ie both base station and mobile transmission and reception frequencies are the same, anybody listening to your working channel (say 38) would hear both sides of your conversation. Job pirating – possibly, but it is up to you to limit the amount of information that you pass over the air. This could be very difficult with any taxi firms that decided that CB could boost their business.



The Future

How about in the future? Well, a lot depends on the final decision by the Home Office but there could be, in the not too distant future, another feature added to CB sets which will enable individual sets to be called. The facility is called 'Sell Call' or Selective Call, and works as follows.

A small company has a base station and six mobiles, the Managing Director wants to contact his salesman — let's call him Keith, to call on a CB customer very quickly because he has nearly run out of sets and he wishes to order some more, but he does not want

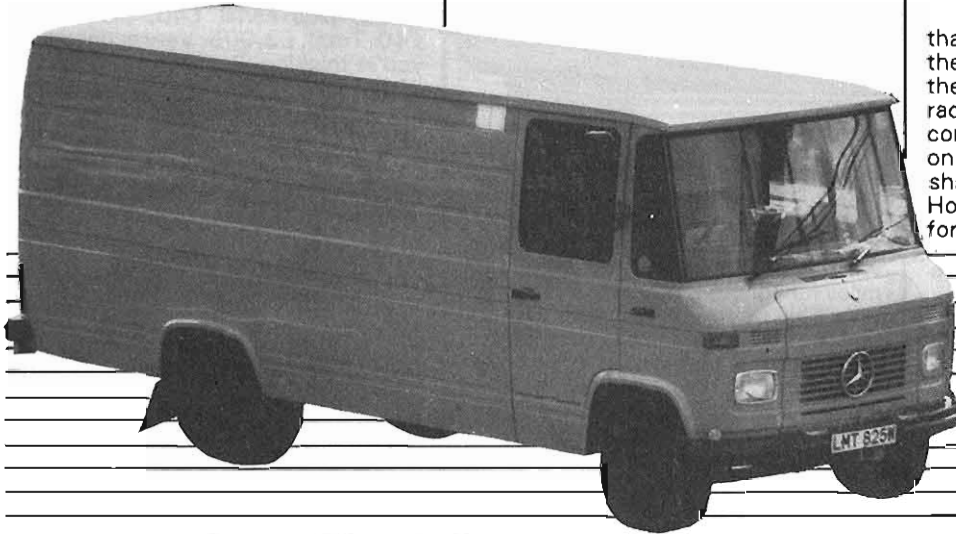
to order over the phone in case the opposition have got it bugged. Keith has a CB rig in his car, and his set has a preset Number, 4, say. His director pushes the 4 on a key pad on his base station. This sends from the base transmitter a coded tone which is received by all six mobiles. However, four of the mobiles will ignore the signal, only the correct number rig will bleep or buzz to let Keith know that he is being called. In case he is away from his vehicle, a small light will be left on, to let him know he has been called. Simple but useful, it saves anybody listening to every incoming call for the company and thus saves time.

Suggestions

Here are just a few examples of other business benefits of CB:

- Architects visiting sites could let the office know of position, and any immediate modifications to plans or sizes
- TV repair mobiles
- Garage breakdown mobiles
- Vets making house calls or farm calls
- Conglomerate harvesting companies
- Companies with one or two sales representatives covering small areas
- Farmers, communicating to tractors and harvesters.

Of course all this is OK providing that when the Government announce their final regulations regarding CB they do not state, as they do for the radio hams, that "No business of a commercial nature may be discussed on the designated airwaves". Well, we shall see. The latest rumours for the Home Office suggest that business use for CB will be OK. Let's hope it's true!



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There are 2 stages, each stage having 9 encounters. In stage 1 the game speeds up with each encounter and in stage 2 the invaders attack from a closer position. After stage 2 the game reverts back to the beginning of stage 1, but the score, which is added and displayed after each encounter, is carried forward.

Depending very much on your skill, one game can last for as much as an hour or more. The highest score so far will be retained in a non-volatile memory. (This will be erased if the stopwatch function is utilised).

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RIG REVIEW

without a shadow of a doubt...



Three new rigs for you this month with the cheapest possibly selling for under £50!

Well, here they are. The rigs shown on this page are, at the time of writing, the very first rigs in the country to conform to the new specifications.

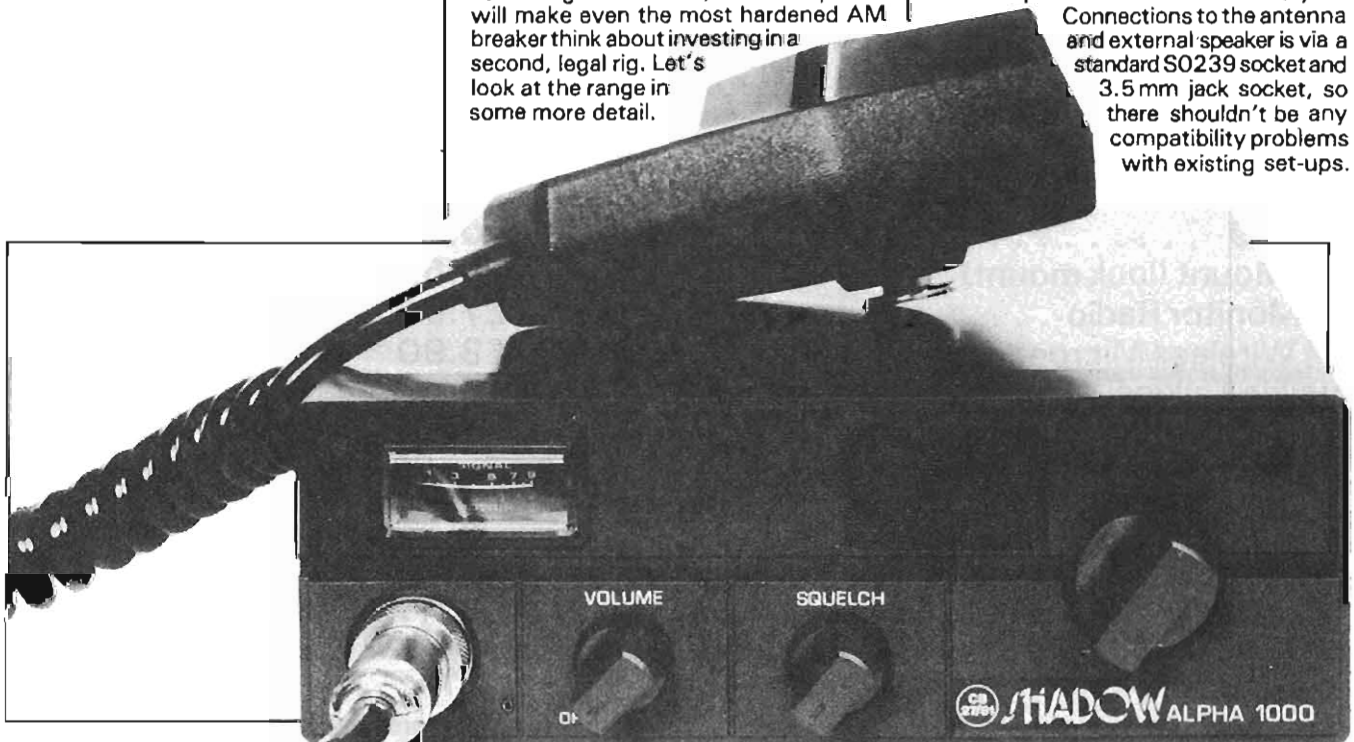
The rigs in question come from Shadow Communications who will be marketing the Alpha range (shown here) in a number of well known high-street stores and perhaps more significantly, via mail-order catalogues. One company at least — Grattan — will be featuring Shadow rigs in their new catalogues and several others look set to follow suit.

So far the Shadow rigs look as though they will be the cheapest mobile rigs on the market. The Alpha 1000 model may well be retailing at under £50, and at that price it will make even the most hardened AM breaker think about investing in a second, legal rig. Let's look at the range in some more detail.

Alpha 1000

This, as you can see from the pictures, is a fairly basic mobile rig. Controls are kept to an absolute minimum though the rig itself is a full specification, 40 channel 4 watts. The front microphone socket will please many breakers as the side-mounted variety often causes problems on our right-hand drive cars. The green two-digit channel display is bright enough to be seen in strong daylight yet not too bright for night-time use. An edgewise panel meter gives a constant readout of signal strength on receive and an indication of relative transmit power when the mike is keyed.

Connections to the antenna and external speaker is via a standard SO239 socket and 3.5 mm jack socket, so there shouldn't be any compatibility problems with existing set-ups.





Alpha 3000

This is the top of the range mobile rig. It boasts a host of features including channel 9 priority, external/internal speaker, Delta Tune, Microphone gain and dimmer for the channel display. The recommended retail price for the unit is a very reasonable £79.95, though again we can expect it to be sold for significantly less in the high street. The 3000 is slightly bigger than the other two models, though this shouldn't be a problem as far as installation is concerned in the average family car. One disadvantage, however, with the 3000 is the side-mounted microphone socket which can be a bit of a nuisance. A spokesman for Shadow has indicated that they are aware of this problem but re-tooling costs at the factory have prevented re-siting this socket at an economic price.

Alpha 2000

The recommended retail price for the Alpha 2000 is around £74.95, but we can expect to see it sold for significantly less when the price war hots up. This model has all the basic specifications of the 1000 and a couple of extra controls to make life a little simpler. A tone switch allows for either high or low audio output, a distinct benefit of FM.

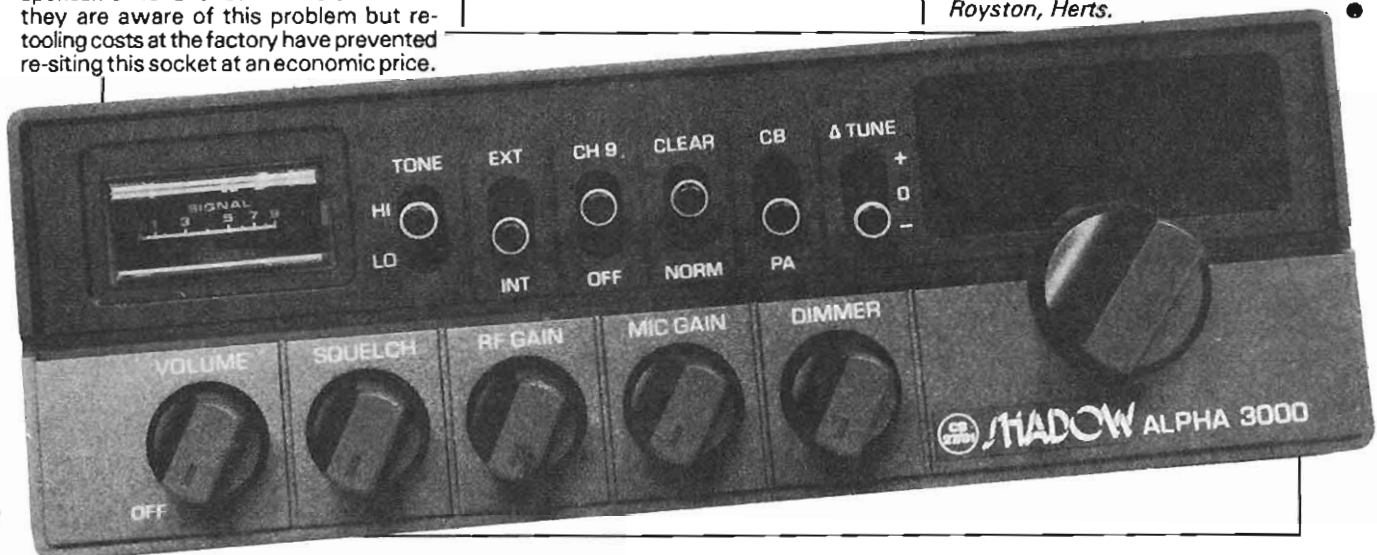
A PA (Public Address) facility allows for connection to an external loudspeaker to enable you to shout at pedestrians, though the worth and popularity of this particular gimmick is questionable. Next to the squelch control is a useful RF gain control, which allows the user to reduce the receiver sensitivity to transmission — useful if you are trying to copy a breaker nearby, minimising the swamping that usually occurs. Again, as with the 1000, the 2000 has a signal strength/RF output meter and digital channel display.



Base Station

Unfortunately we are unable to give you too many details of the Shadow base station rig, save for retail price. It is hoped that this will be around £110 but as before, look around for special offers.

Shadow will also be marketing at least one antenna for their rigs and this will almost certainly be of the stainless steel whip type with a loading coil on the base. Retail price for this should be under £10. Shadow Communications can be reached on 0763 46631 and they are located at Lumen Road, Royston, Herts.



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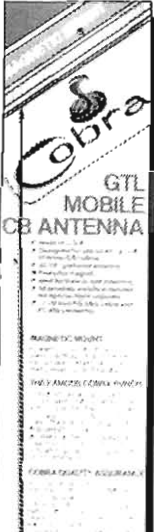
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Citizens' Band is the official organ of the Charing Cross Road White Lion Lunchtime Turkey Rosta and Chips Appreciation Society and, as such, seeks to promote the consumption of this fine dish among the staff of CB journalists within a hundred-yard radius of the aforementioned establishment.

In pursuit of this noble objective we intend to publish a major feature in the forthcoming August issue discussing the likely implications of **CB Radio and Civil Defence**, or 'what is the best way to stop your DV27 melting after a 10 megaton airburst five miles away'? Also in this issue we have an in-depth survey of the **CB Accessory Scene** — what's available, where to get it, and is it worth having? About this time we are expecting to bring you the run-down on the Government proposals for **Operating Codes of Practice and Procedures** for the new FM service. We see how this will affect the regular devotees of Turkey Rosta and Chips, and what the long-term prospects are for a reduction in the price of 95p per portion. **Mack The Hack** will be giving us some advice on how to prepare Turkey Rosta and Chips with just a tin of Kennomeat and two large King Edwards, Albie Vickers will be discussing the merits of Turkey Rosta in relation to the **Sideband Scene**, and Chris Peterson will be looking **Inside CB** at how chips can be used in modern CB rigs and whether Turkey Rosta has any place in this new technology.

All in all, it's a fun-packed bumper issue with lots of whizzo wheezes and plenty to get your teeth into, especially if you happen to like Turkey Rosta and Chips.

THE AUGUST ISSUE WILL BE ON SALE JULY 24th

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Alternative 'Phone Technology



It seems that everywhere you look there are shops selling telephone paraphernalia. We sent Andy Giles out to sample some of their wares, and this is what he found.

Once upon a time there was the 'General Post Office', but then the powers that be decided that 'The Post Office' sounded better and so the General was dropped. That satisfied them for a while, but then they had another think and thought that although 'Post Office' sound alright for the mail delivery side of the business, the telephone and telecommunications side should have a different name. This eventually resulted in the decision to split the Post Office in two. The postal section is keeping the name 'Post Office' and the telephone and telecommunications section is being re-named 'British Telecom'.

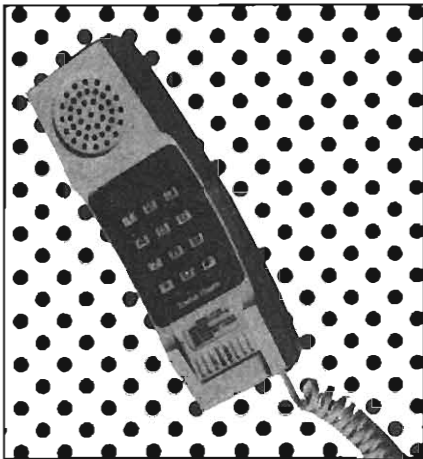
With the formation of British Telecom has come a relaxation of the rigid attitudes that were held by the previous incumbents and it is now official policy to allow private (ie non-BT) equipment to be attached to their lines, something that was unthinkable before. This new ruling does not mean that you can rush out and buy any old answering machine and connect it to your telephone. All equipment that is attached to BT lines must be BT-approved, and most of the equipment on sale in this country isn't. You can attach non-approved equipment to a private telephone system, if you hap-

pen to have one, or you can fix it to the BT telephone lines if you don't mind running the risk of being caught. BT have publicly stated that they will disconnect anyone who they catch using illicit equipment on their lines.

If you are concerned about incurring the wrath of BT, you should only buy approved equipment and if you are not sure about the piece of equipment that you want to buy, ask the shopkeeper if it is BT-approved. The vast majority of auxiliary telephone equipment on sale in Britain has not been approved and yet nearly every major West End store has a telephone counter where they will be only too pleased to sell you anything from a leather-covered trimphone to a multi-function auto-dialler. There are also dozens of shops throughout the country that sell nothing but telephone equipment, and they all appear to be thriving.

Realistically Priced

One of the biggest chains of retail outlets in Britain is **Tandy** and they sell several telephone gadgets. I looked at the ET-100, a self-contained slimline push-button telephone which may not



be at the top of their range, but at only £20.25 complete, it represents very good value for money. It's easy to install and it has the usual calculator style keypad that is used to dial the number. It also has a *mute* button and a *re-dial* button. The mute button disconnects the microphone so that the person on the other end of the line can't hear what you are saying — the electronic equivalent of putting your hand over the mouthpiece. The re-dial button will re-dial the last complete number that the telephone was used to call, as long as it doesn't contain more than 17 digits. This button can be pressed as many times as is necessary to get through, very useful when you are trying to get through to a number that is engaged for a long time. The button will remember the number almost indefinitely, or until a new number is punched in. The volume of the ringer can be adjusted by means of a three position switch which can be set to H — where the volume is at maximum, L — where the volume is reduced, or S — where the ringer won't work at all. At the bottom of the set is the actuator bar that is used to hang up, either manually by pressing the bar, or automatically by placing the telephone face down on a flat surface. The ET-100 is available in either white or brown plastic and although I can't enthuse about the styling, I must say that it is extremely good value for money.

Auto-dialler

The AD-200 is a microprocessor-controlled auto-dialler. It will dial a pre-programmed telephone number at the

touch of a button and it can store up to 32 complete numbers in its memories. If, when it has dialled a number for you, it discovers that the number is engaged, it will release the line after 30 seconds, then wait another 30 seconds and then automatically dial the number again. It will repeat this procedure five times or until the call is answered, whichever comes first. The large red display shows the number being called and the built-in loudspeaker allows you to monitor the ringing or engaged tone without holding the handset which means that you only need to pick up the telephone when you know that there is someone at the other end. The keypad on the front of the set can be used to dial out, just as with a normal push-button telephone, and there is also a 'last number re-dial' button. The set will send either British style pulses or American style tones so that it can be used all over the world. As with all microprocessor-controlled equipment, it's very easy for the manufacturer to add a few more bits to the inside of the chip to give the machine more functions. That's why the AD-200 is also a digital clock, an alarm clock, a stopwatch and a calculator.

The AD-200 is a useful gadget to have on your office desk. It has lots of features, is very easy to install and use and it will work with direct lines or PABX switchboards. It costs around £80 and is available from *Larrest Ltd*, 7-8 Market Place, London W1N 7AG.

The Compuphone

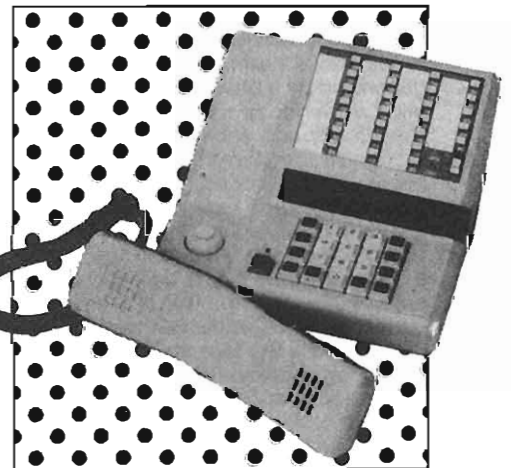
The **Compuphone** is really an auto-dialler with a built-in telephone. It has all the usual features of a good auto-dialler; it can be used to automatically dial any one of 16 pre-programmed numbers, it has a 'last number re-dial' button plus an automatic re-dial facility that will re-dial the number up to 10 times in the event of it being engaged. It will transmit either British or American pulses and tones down the line, it has a battery back-up for the memories and also has a button that allows you to put a caller on 'hold' while you get through to another extension: you can then transfer the call. There is also a pause control that makes the set wait for a dial tone when it is being used with an office switchboard. There are also the usual clock and stopwatch facilities.

A nice feature of this set is the 'hands off' mode of operation. If you don't want to hold the telephone next to your ear, because you're writing, for instance, then it is possible to have the caller's voice coming out of a loudspeaker and for you to speak normally. The Compuphone will pick up your voice with its built-in microphone. There is a microphone sensitivity control that allows you to adjust the sensitivity of the microphone so that you can sit well back from your desk and still be heard, and there is also a mute switch so that you can turn the microphone off when you don't want to be heard at all.

The Compuphone is another fine piece of telephonic equipment that would make a useful addition to your office. It costs around £150 and it is available from *Intercall Ltd*, 5 Hampton Court Parade, East Molesey, Surrey.

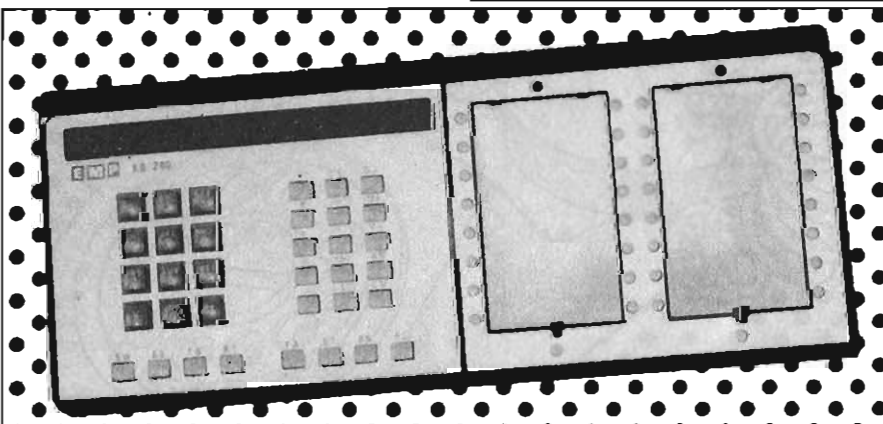
Crypto 1

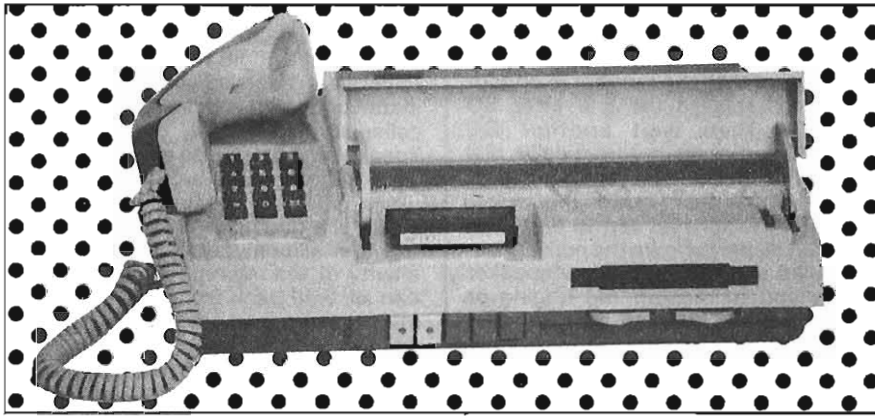
The **Crypto 1** is similar in many ways to the Compuphone — it's a telephone that has a built-in auto-dialler and it has 52 memories each containing a number that can be dialled automatically, or it can be used as a normal push-button telephone. It will automatically re-dial an engaged number up to 16 times and it can be programmed to dial



up to 8 other numbers after it has rung the first. That means that you can program in all your morning's calls and it will dial them all for you in order. It can also be used 'hands free' and it has a built-in calendar, digital clock, seven-setting alarm clock and stopwatch. The telephone will record the telephone number and duration of each call made, which is a good way of making sure your bill is correct and of also making sure your telephone is not being used for calls to America without your knowledge! There are also rechargeable batteries to make sure you don't lose the numbers in the memories, should the power fail.

The Crypto 1 contains just about everything that it is possible to build into a telephone and it represents the state of the art of telephone technology today. It costs £195 and it is available from *Chervonne Gift Boutique*, 9 New Cavendish Street, London W1 (telephone 01-486 8328). ▶





Voice Actuated

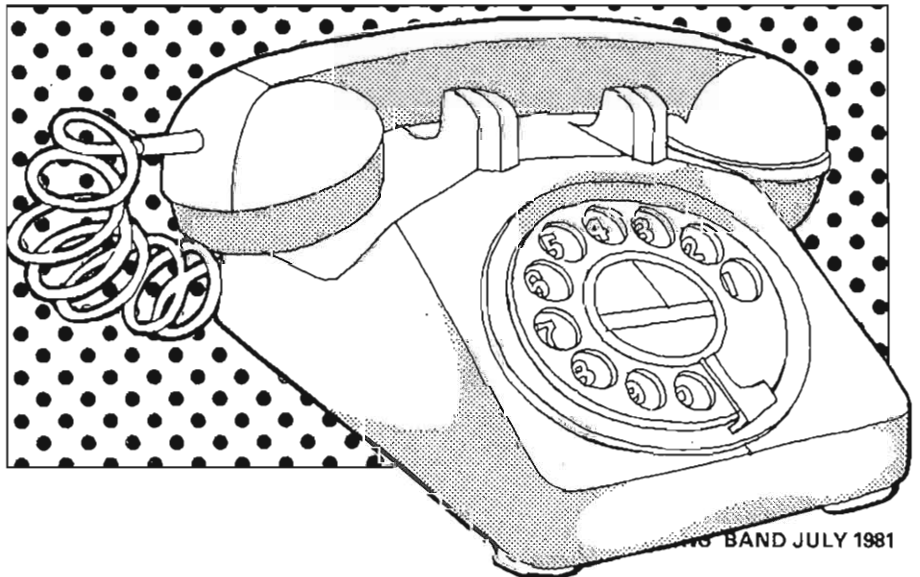
The T 601 is a telephone with a built-in answering machine. It can be used as an ordinary telephone and you have the option of either rotary or push-button dialling. Early answering machines could only record short messages and it was necessary for you to return home and re-run the tape before you could hear those messages. More recent machines have incorporated a refinement that makes it possible for you to make your machine re-play your messages when you call it from another telephone. To do this you have to dial your home number, wait for the machine to answer the call and then you send an assortment of electronic tones down the line to it. The tones are generated by a little gadget that is supplied with those machines that have this facility and each machine is set to recognise its own bleeper. When it hears those tones it immediately rewinds the tape back to the beginning and then it will replay all your messages for you down the telephone line. This is a good system but it has two major drawbacks. The first is that the bleeper gadget is small and easy to lose, and the second is the fact that there are not many permutations of the tones used in the beepers, and I know of several people who can whistle an assortment of notes and make most of these machines replay their messages — not a very secure system.

The T 601 seems to have overcome both of these problems and it has done so in an ingenious way. To start with there is no bleeper, your voice controls the machine. It does not have a voice recognition circuit as this would be far too expensive for a machine in this price range — instead it is controlled by five small switches on the underside of the casing. Any of these five switches can be turned on or off and if we assume that numbers three and five have been turned on we will be able to see how the machine works. Step one is to call your home number from any other telephone. The machine will then answer your telephone and ask you if you want to leave a message. When the machine has finished speaking it will then send out five tones, each with a two-second gap. If you speak (any word will do) after tone number three and tone number five, the machine will rewind the tape and then replay all of your messages down the telephone. At

the end of the messages you can instruct the machine to erase the tape and start recording again from the beginning or you can tell it to carry on recording from where it left off. There are 31 possible combinations of the switches and it is most unlikely that anyone else would be able to make your machine replay your messages and you don't have to carry a bleeper with you all the time. The digital code can be changed as often as you want — all you have to do is reset the five switches.

When the T 601 answers the telephone for you, it will usually replay a message that you have recorded, asking the caller to leave a message because you are out. If the tape is full, or if there is a technical fault with the tape cassette or if you have set it so that it is in the announce only mode, it will play another message that you have pre-recorded that explains that you are out but doesn't ask the caller to leave a message for you. If the set is faulty there is a small red display that will show whereabouts in the set the fault lies. The length of the pre-recorded announcements can be 30, 45 or 60 seconds and the message tape lasts for 30 minutes. Each individual message can be up to three minutes long. If, as often happens with telephone answering machines, the caller hangs up without leaving a message, the T 601 will automatically rewind the message tape so that none is wasted. This machine can be set to telephone on either the first or the fourth ring.

This is the best telephone answer-



ing machine that I have seen and I particularly like the idea of not having to carry a bleeper — I always lose things like that anyway. The T 601 is made by ITT, costs £349.50 and is also available from the *Chervonne Gift Boutique*.

If you look around you will see dozens of different types of telephones being sold, everything from Italian marble to transparent plastic. Glynn Hall of *Wintjoy* has opted out of the race to see who can stock the most telephones, instead he sells all the different plugs and sockets and adaptors that you need to connect these American style telephones to the British telephone lines.

Pre-Recorded

GMTC are well known for their telephone answering machines but they also sell a useful little accessory that is not so well known. This is a pre-recorded tape of messages that you can leave in your answering machine for people to hear when they call you. The cassette has 20 different messages on it and each one of them is in the voice of a famous personality. There's *Peter Sellers* as Inspector Clouseau, *John Wayne*, *Michael Caine*, *Peter Lorre* and lots more. I don't know who's doing the voices but they are very good and perhaps more important, very funny. This tape is the sort of thing that goes down well at parties as well as being a handy thing to have to put in your machine.

The GMTC tape that I listened to came from the CQ Centre at *10 Merton Parade, Kingston Road, London* and it costs £1.50.

There are lots of telephone gadgets that I have not yet played with such as call diverters, burglar alarms that automatically call the police, etc and I hope to be able to have a look at them in the not too distant future, but in the meantime if you feel that you must see them for yourselves, why don't you pop into your local telephone shop? They'll be only too pleased to show them to you. ●

Note. Readers are reminded that British Telecom will not hesitate in cutting you off if they catch you fitting unapproved gadgets to their lines. You have been warned!

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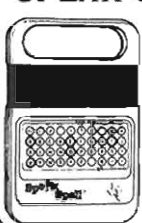
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bleepers (£13 each) this facility can be extended to colleagues and members of the family. Using a C90 standard cassette you can record as many as 45 messages. The announcement can be up to 36 seconds long and the incoming message up to 30 seconds long. The machine is easy to install and comes with full instructions. It is easily wired to your junction box with the spade connectors provided or alternatively a jack plug can be provided to plug into a jack socket. Most important, of course, is the fact that it is fully POST OFFICE APPROVED. The price of £135 (inc. VAT) includes the machine, an extra-light remote call-in bleeper, the microphone message tape, A.C. mains adaptor. The unit is 9 1/2" x 5 1/2" x 2 1/2" and is fully guaranteed for 12 months. The telephone can be placed directly on the unit — no additional desk space is required.
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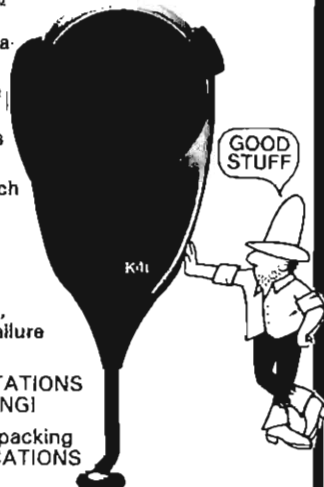
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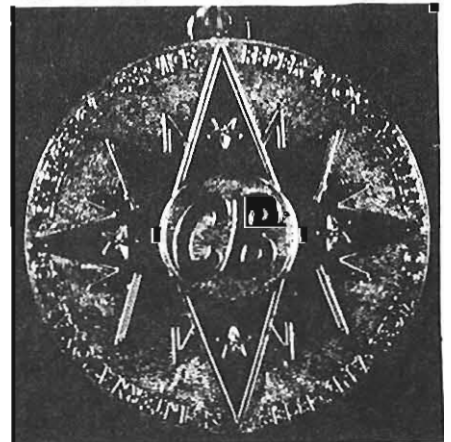
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COMPETITION

Sitting here in my ivory tower, surrounded by half-naked, nubile temptresses and counting my wages into a handy wheelbarrow, I was reminded that once again its competition time.

"Hey ho, what shall we give them this month?" I mused to myself. How about six months with my gold-edged American Express card? Can we give away a three-month, all expenses paid holiday to the West Indies? No, on second thoughts, we don't want to spoil you lot do we? Give you ideas above your station, and all that.

This month's prizes are as follows:

First Prize: The Shakespeare Knight Stick as reviewed in this issue plus 25 'Legalise CB' balloons. (We've still got millions of them hanging around, any offers?)

Second Prize: 50 'Legalise CB' balloons plus a rather natty SSE Horn Speaker.

Third Prize: Three million 'Legalise CB' balloons plus a year's sub to the mag.

"How can I win these valuable prizes?" I hear you all ask. Easy, all you have to do is write on the back of a £5 note, in not more than 25 words, why you persist in entering stupid competitions that you stand no chance of winning. Aaaaaaarrrrgggggggghhhhhhhh . . .

AN APOLOGY

Citizens' Band magazine would like to apologise for the perfunctory, rude, lewd and crude remarks made by our previous Competitions copy writer. This individual has now been sacked and normal service has been resumed.

This month's competition is quite simply to think up a slogan or design for the waving microphone gizmo pictured opposite. The winner will, of course, receive the prize above and have his or her design printed onto the waving microphone. These will be sold in this country and a portion from the sale of each mike will be going to a charity* — so everyone wins, really.

Rules

Usual stuff. No employees of Modmags or associated companies allowed to enter. Editor's decision is final and all that. No correspondence, can't afford the stamps. Closing date for entries 5th July.

NB. Millions of 'Legalise CB' balloons do not exist and anyone daft enough to send in an entry on the back of a £5 note will be heartily toasted when we spend it down the pub.

* A portion of the proceeds from the sale of the waving mikes will be going to a charity or an organisation to be nominated by us. Details next month.



Above: The waving microphone shown full size

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BATTLE STICKS

This month our European test team put two new 'Stik' antennas through their paces. How do they compare with the Firestik original?

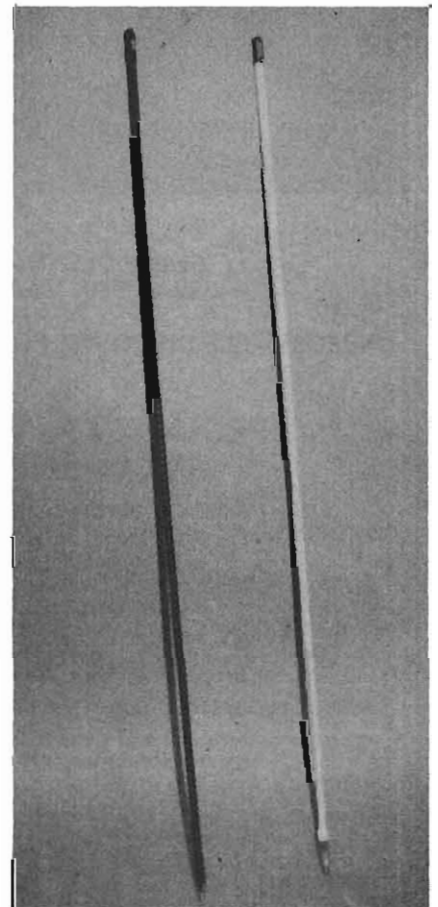
Knight Stick vs Roadhog

The American company, Firestik, should be congratulating themselves. Their distinctive range of CB antennas is arguably the most copied in the world. It is a tribute to the designers at Firestik that their tough-looking, fibreglass antennas should be so frequently imitated.

Our review this month looks at two such Firestik lookalikes — the Shakespeare Knight Stick and the Roadhog.

Both antennas have similar electrical and physical characteristics. The actual whip on both devices is made from a single piece of rigid fibreglass rod. It is worth noting that the Knight Stick is highly unusual in that the fibreglass rod is not perfectly round, but shaped rather like an egg in cross section. This shape, it is claimed, reduces wind resistance at speed. This is one parameter on which we cannot comment, not having a wind tunnel at our disposal. We suspect, however, that this particular design feature would not influence the overall performance of the antenna in any of our tests.

At the base of each whip is the metal mounting ferrule. In both cases this consists of a chromium-plated hexagonal rod with a $\frac{1}{8}$ inch threaded section for mounting to the appropriate base fitting. The helical winding that extends the length of the whip is electrically connected to the base. The Knight Stick's join is in the top of the base section, and the Roadhog connection looks less sturdy being simply soldered to the side of the ferrule. On



The Roadhog

The Knight Stick

the lower half of each whip the winding is relatively coarse. As the winding gets nearer to the top of the whip the turns get closer and closer together until, at the top of the antenna, the winding becomes a tightly wound coil.

To protect the windings both

antennas are sheathed in a heat-shrunk plastic tube which stretches along their entire length. At the top of each antenna is a rounded rubber cap that is removable to allow for any SWR adjustment, should it prove necessary.

The mounting arrangements for these antennas are quite diverse. Most accessory shops will be able to supply a variety of fixtures ranging from a simple wing mount to an elaborate mag mount, right up to a truck mirror mount for co-phased installations. In all our tests we used a standard mag-mount fixing with the antenna placed in the centre of the roof of our test vehicle. The radiation patterns in Figs. 1 and 2 demonstrate the circular pattern expected for this type of installation. In the case of wing-mounted or boot-mounted antennas some distortion in this pattern must be expected.

The patterns obtained in Figs. 1 and 2 are derived from our standard test used in all our antenna review surveys. For new readers these tests are outlined in the box opposite.

Adjusting the SWR on both antennas should, so the manufacturers claim, be unnecessary. In both our test samples the measured SWR was below the 2:1 we consider to be the lowest acceptable SWR before adjustment is required. In our test installation the Knight Stick was marginally better at 1.5:1, and the Roadhog weighed in at 1.7:1. This very small difference was allowed for in our tests though in practice it would not have made any noticeable difference in the actual results. In the unlikely event that the SWR is greater than 2:1, this could be adjusted by removing a small length of wire from the top of the whip, no more

than 1 mm at a time. A better solution, however, would be to use a good quality ATU which would remove the risk of cutting too much from the winding.

Conclusion

Possibly the fairest test we could have devised would have been to put both of these antennas up against the equivalent Firestik. In the end, this was thought to be unnecessary as we were able to compare both results against that of a Firestik previously tested. Neither antenna was able to match the Firestik in terms of overall coverage. In real terms the Firestik gave about a 1 to 2% increase in range.

Against each other it should be fairly apparent that neither Roadhog nor Knight Stick stood out at copies of S2 or less; any differences were a matter of yards and could well be attributed to local conditions at the test site. Where there was a significant difference, though, was at copies of S5 and S9. The Knight Stick had a definite edge over the Roadhog at distances of up to 2 km but the Roadhog made up for this local deficiency by having much

greater punch in the middle distance with reliable S5 copies at distances of up to 4 km.

We found these results quite surprising, especially when the basic similarities between the two antennas are taken into account. Even after repeating the relevant tests we were unable to find the reason why there should be this difference.

Taking these results in context with our other tests it would be difficult for us to recommend either of these antennas as being particularly outstanding. The overall range, when compared to a standard DV27, is approximately 5% greater. Neither of them was as good as the Firestik from which they were inspired, though Firestik should be aware that the difference is very small indeed and should look to their laurels for the future. In the end, the choice of which one you buy will be decided by the most basic factor of all — cost. If this plays no part in your decision then your choice will depend either on the colour (white for the Knight Stick or black for the Roadhog), or simply a toss of a handy coin!

The Tests

We have used our standard test procedure to assess the efficiency of these two antennas. Just to bring new readers up to date this involves two tests; one static and one mobile. Our test samples are fitted to a stationary mobile and a second mobile follows a pre-arranged route that orbits the stationary test vehicle, sending and receiving signal reports at measured intervals. This is then repeated with the test antenna on the mobile test vehicle and the signals are sent and received between a stationary vehicle. A standard rig and antenna is used in all the tests. With the results obtained we are able to draw up the radiation patterns (Figs. 1 and 2) shown here. These are simplified to make the results more easily understood. The antennas are also subjected to a series of 'lab' tests to assess their durability, quality of construction, etc and finally we hand them over to a panel of CBers for comment.

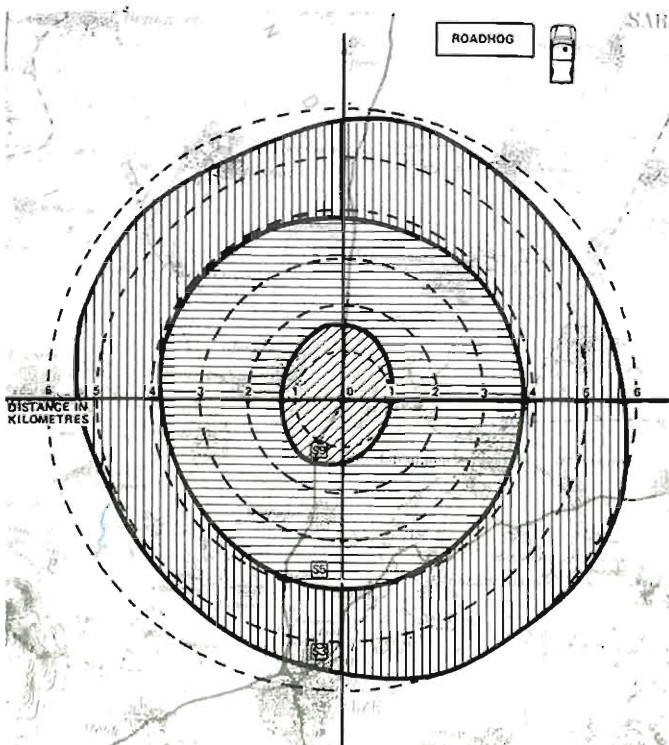


Fig. 1. Radiation pattern of the Roadhog

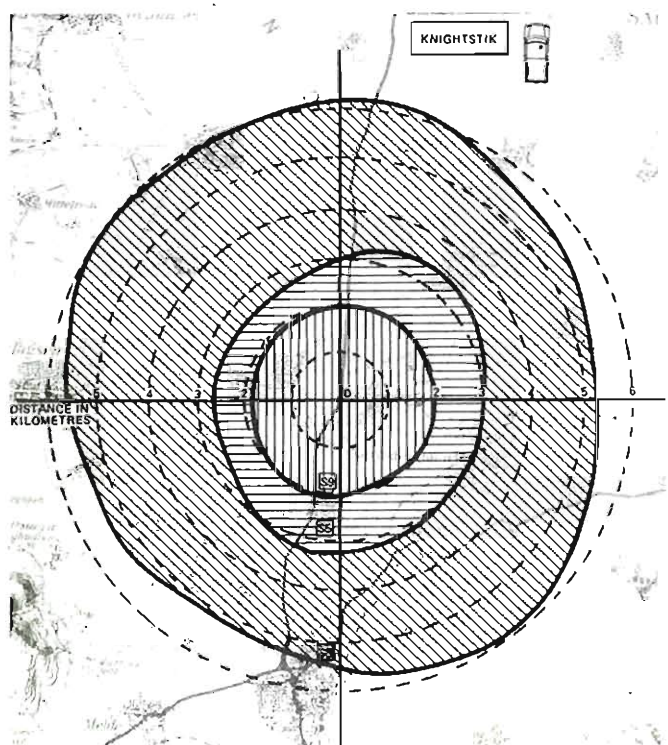


Fig. 2. Radiation pattern of the Knightstick



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THE KNIGHT STICK™ /
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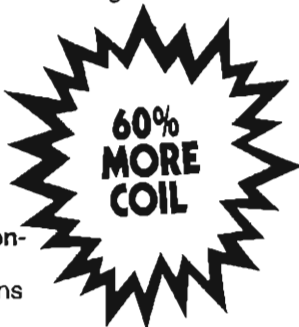
Max. Power Input: 1000 watts DC

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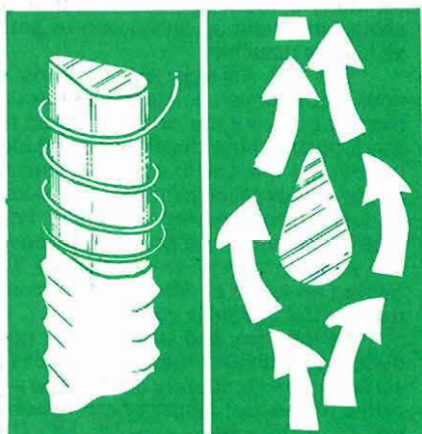
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DIY EMERGENCY ANTENNA

Don't be caught out in an emergency. This simple, versatile and very cheap emergency antenna might just save your life one day. Design by Bubble and Tweek — who else?

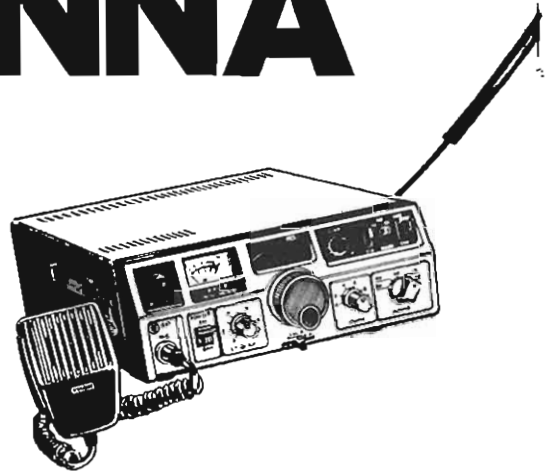
Just suppose that you have found yourself stranded in a 20 foot snowdrift, miles from anywhere. Things look grim. You've run out of petrol, and it's getting colder by the minute as night draws on. You've tried to put out a 10.33 emergency message on the old 'squark box' but it looks as though you are just too far away to be heard. You can hear breakers in the background but they cannot hear you — if only you could get out just a little further. . . .

Citizens' Band to the rescue! This month we have plans for a quick, simple and very cheap emergency antenna that can be erected in a matter of minutes. The CB Emergency Antenna is in principle a centre-fed half-wave dipole and consists of one 20 foot length of RG58 coaxial cable. Once prepared it can be suspended from a handy tree or any structure (preferably non-metallic) 10 or more feet from the ground. As it is a half-wave dipole it will enable you to get out much further than most conventional mobile antennas. Once made, it can be coiled up in the boot for future use.

Only two components are needed for this project: 20 feet of RG58 50 ohm coaxial, and one PL259 connector. Solder the plug to the cable before you begin.

The first step is to pare back 10 feet of the outer insulating material, taking care not to damage the woven wire braid beneath. Once that has been completed clasp the braid between thumb and forefingers of both hands and slightly compress the braid along the whole length of the cable. This will have the effect of 'opening' up the weave thus making it easier to draw back over the unexposed portion of the cable. By doing this slowly and carefully and working from the bottom of the braid you should be able to cover the insulated portion of the cable with the braid, exposing the inner conductor in the process.

To test the antenna, it is now

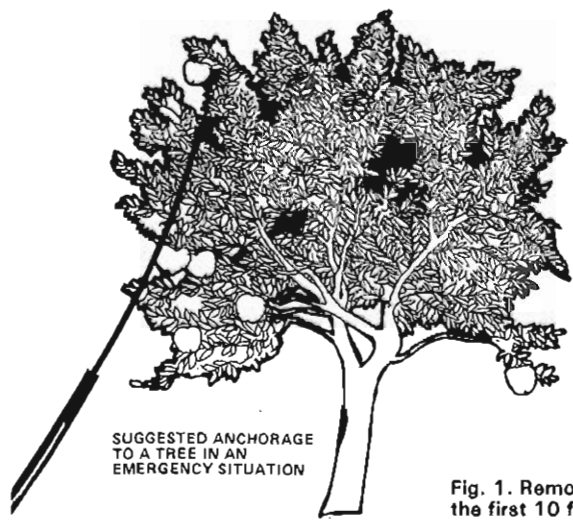


necessary to suspend it from a tree or wall at least 10 feet above the ground. Plug in the PL259 to a SWR meter and connect the SWR to your rig. To adjust the SWR of the antenna remove half-inch or so sections from the inner conductor until you can get a SWR lower than 3:1. You will find that you should be able to reduce it even further by sliding the braid up and down to get it as low as possible.

The CB Emergency Antenna is now ready for use. If it is to be stored in the boot of your car or left erected for any length of time then it is a good idea to seal the braid with paint (or similar) to prevent excessive movement. Alternatively, plastic tubing known as 'heat shrink' sleeving can be used to cover the whole antenna. Once in place it is heated up and it shrinks tightly around the coaxial to seal it up.

At the free end of the inner conductor you should make provision for some kind of temporary anchorage — a two or three foot length of string bonded to the cable should be OK. Remember, though, whatever you use to suspend the antenna must be non-metallic or the SWR will be adversely affected.

It's worth pointing out that this antenna, if properly sealed against ingress of water, will make a very good base station antenna for just a few pounds. Here's hoping that you never have occasion to use this antenna in an emergency situation!



SUGGESTED ANCHORAGE TO A TREE IN AN EMERGENCY SITUATION

Fig. 1. Remove the outer insulation from the first 10 feet of the coaxial cable.

- Parts List**
 20 to 30 feet of RG58 50 ohm coaxial cable
 1 PL259 CB connector plug
 Flexible paint (see text)

Buylines
 All of the materials can be obtained from a CB accessory shop.

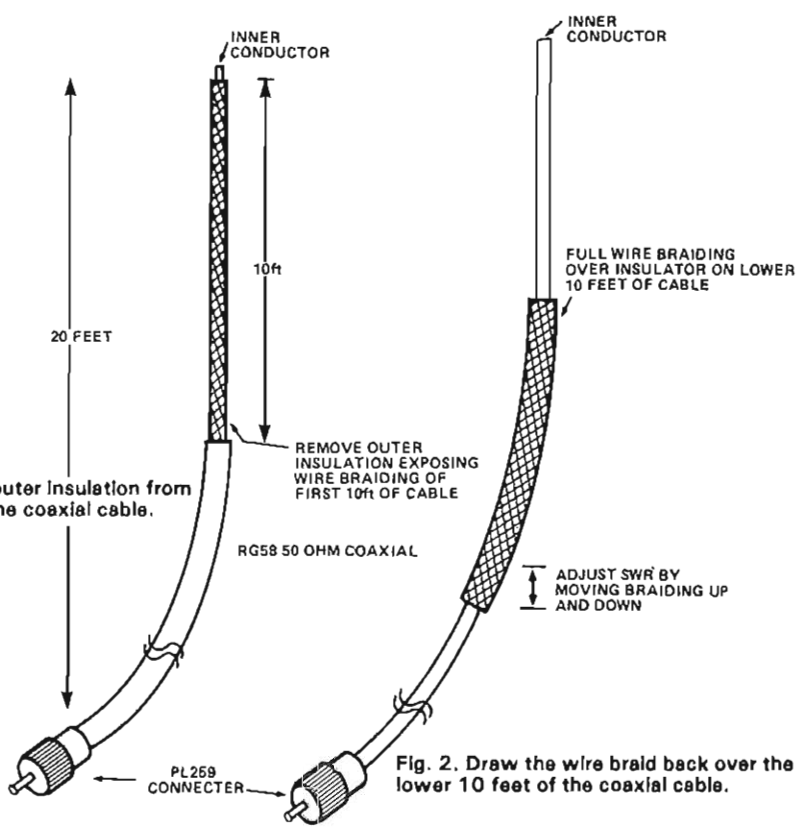


Fig. 2. Draw the wire braid back over the lower 10 feet of the coaxial cable.

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Current: 0-10 A
Stability: better than 0,2% with
mains variations of 10% and
load of 0 to 10 A
Protection: electronic with
current limiter
Ripple: 2 mV p.p. with 10 A
load
Working temperature: - 10
+ 60°C
Weight: 5,700 Kg.
Dimensions: 225x217x135
mm.



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MODEL BRS31

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Output voltage: 12,6 V d.c.

Current: 0 to 5 A

Stability: better than 0,1% with mains variations of -10% +15% and load of 0 to 5 A

Protection: electronic with current limiter

Ripple: 1 mV p.p. with 5 A load

Working temperature: -10° +60°C

Spy led: output short circuit

Cabinet: 10/10 sheet metal container with epoxy-based paint

Weight: 4,00 Kg.

Dimensions: 115x200x210 mm.

MODEL BRS27

Input voltage: 220 V a.c. 50 Hz

Output voltage: 13,8 V d.c.

Current: 3 A max

Stability: better than 0.1% with mains variations at 10% or load variations from 0 to 2,5 A

Protection: electronic with current limiter

Ripple: 1 mV with 2,5 A load

Dimensions: 155x135x85 mm

Weight: 2 kg.

Cabinet: 10/10 sheet metal container with epoxy-based paint

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CB on the SILVER SCREEN



Ken Ferguson of Photoplay magazine looks at how CB has influenced the film industry from the heady days of *Convoy* to *The Dukes Of Hazzard*, a series on BBC TV.

Maybe they don't realise it, but Hollywood has played a major and important part in the rapid growth and development of Citizens' Band.

During the mid-70s a Burt Reynolds movie went into production, titled *Smokey And The Bandit*, and became the first to use CB as an integral part of the plot. The movie proved to be an enormous box office success and Reynolds became an even richer man. A sequel was spawned — *Smokey And The Bandit Ride Again*.

Contrary to what you might be thinking *Convoy*, the Sam Peckinpah movie starring Kris Kristofferson as the legendary Rubber Duck, didn't start filming until a year after the cameras had rolled on Burt's *Smokey* movie.

Convoy was based on C.W. McCall's gigantic hit record and told a story about macho truckers who hammered up and down the American freeways linking together through the use of their CBs.

TV companies eyed the successes of these major feature movies and soon CB was being used for *The Dukes Of Hazzard* and *BJ And The Bear* adding to CB interests. And there's more to come on the small screen — watch out for *Concrete Cowboys*.

For decades CB meant one thing in Hollywood — Cecil B. de Mille, the legendary movie maker whose speciality was monumental epics. CB was what his close colleagues would call him. Not that CB had many that close to him: he was regarded with awe rather than with much personal affection.

With Citizens' Band the new 'in' thing, Hollywood *had* to play with this fascinating communications 'toy'. So far most of the CB movies have depicted macho types in combat with the law. In fact, if anything, *Convoy* might have given CB a bad name for it

was used in Sam Peckinpah's movie as a tool for defying the law. A fact which *might* have affected its legalisation here. Who knows?

But to get back to *Convoy*, regarded by so many as the doyen of CB movies despite the box office success of the *Smokey* films. Oddly enough this very American subject may never have got off the ground were it not for two English movie-makers, Barry Spinkings and Michael Deeley of EMI. They sunk British money into the very expensive production which got something of a mauling from the critics when it was finally unveiled here in August 1978.

Of *Convoy*, Alexander Walker of the then *Evening Standard* wrote . . . "the endless destructiveness the film practises on material things conveys a contempt for human values that's akin to the numbing destruction pornography inflicts on moral values."

Margaret Hinxman of the *Daily Mail* found it "a horrifying, heedlessly vicious 'comedy' and a highly dubious statement about the rights of anybody to wreak havoc in all directions if it happens to suit their cause."

Peckinpah, during production in Albuquerque, New Mexico, where he assembled a starry cast and over \$200,000 worth of trucks and equipment, agreed it would be a disturbing movie. But that was no surprise — all his movies are disturbing movies. *The Wild Bunch* and *Straw Dogs* are two perfect examples.

Convoy was Peckinpah's *Wild Bunch* on wheels — a modern Western where men drove a glory trail across familiar western settings sitting 12 ft up in their tractor cabs at the wheels of their 18-wheel articulated 'horses' (driven seemingly by the inarticulate) hauling their loads in a world of burning rubber and diesel smoke, and communicating with each other via CB.

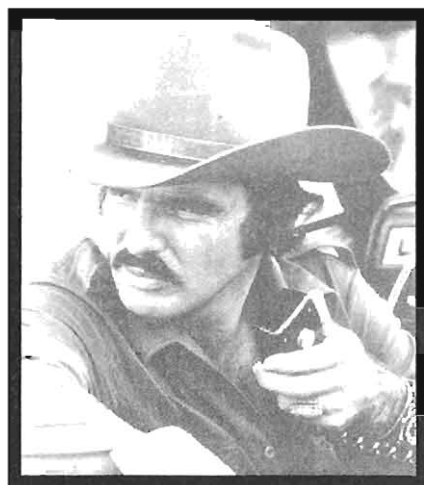


"Ain't nothing going to stand in our way"

Those words blazed a line across the movie posters which showed a bare-torsoed Kris Kristofferson (as Rubber Duck), with the arms of Ali MacGraw (the Beaver in his life) around his broad shoulders.

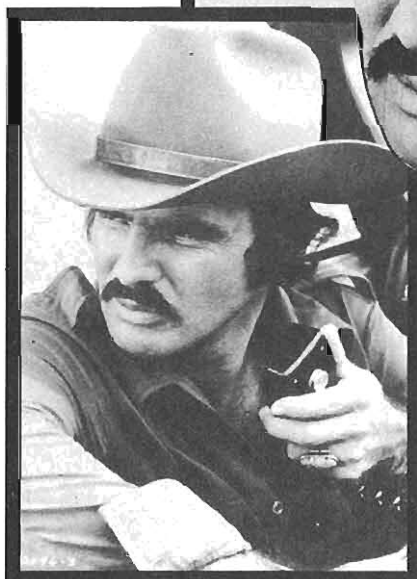
But these modern-day cowboys, led by the free spirit of Rubber Duck at the head of the Convoy, are on the run from the State Police and a Grizzly Bear Sheriff (Ernest Borgnine) after a mighty fracas at a truckstop diner.

Soon the Convoy is joined by other truckers who've tuned into the chase. Eventually the Convoy stretches for a mile down the Slab, hammering along causing chaos and destruction in their break or the State Line pursued by irate, angry Bears and a Bear In The Sky — sorry, I'm drifting off into CB lingo...



Sam Peckinpah was clearly moved by the McCall hit song which gave birth to his film.

"McCall's record," he said, "has been directly responsible for the myth which has grown up around the trucking fraternity. His (McCall's) legendary hero, Rubber Duck, has come to mean in the trucker's unique jargon, the leader of a line of rigs."



In fact Peckinpah's truckers, keeping in constant touch over their CBs and dealing swiftly with any move by the Smokeys and the Bears to stop them, become Western-style outlaws fleeing from the Sheriff's posse. Their lorries, snorting like wild horses 'gallop' across the concrete trails blazed by their old pioneering ancestors.

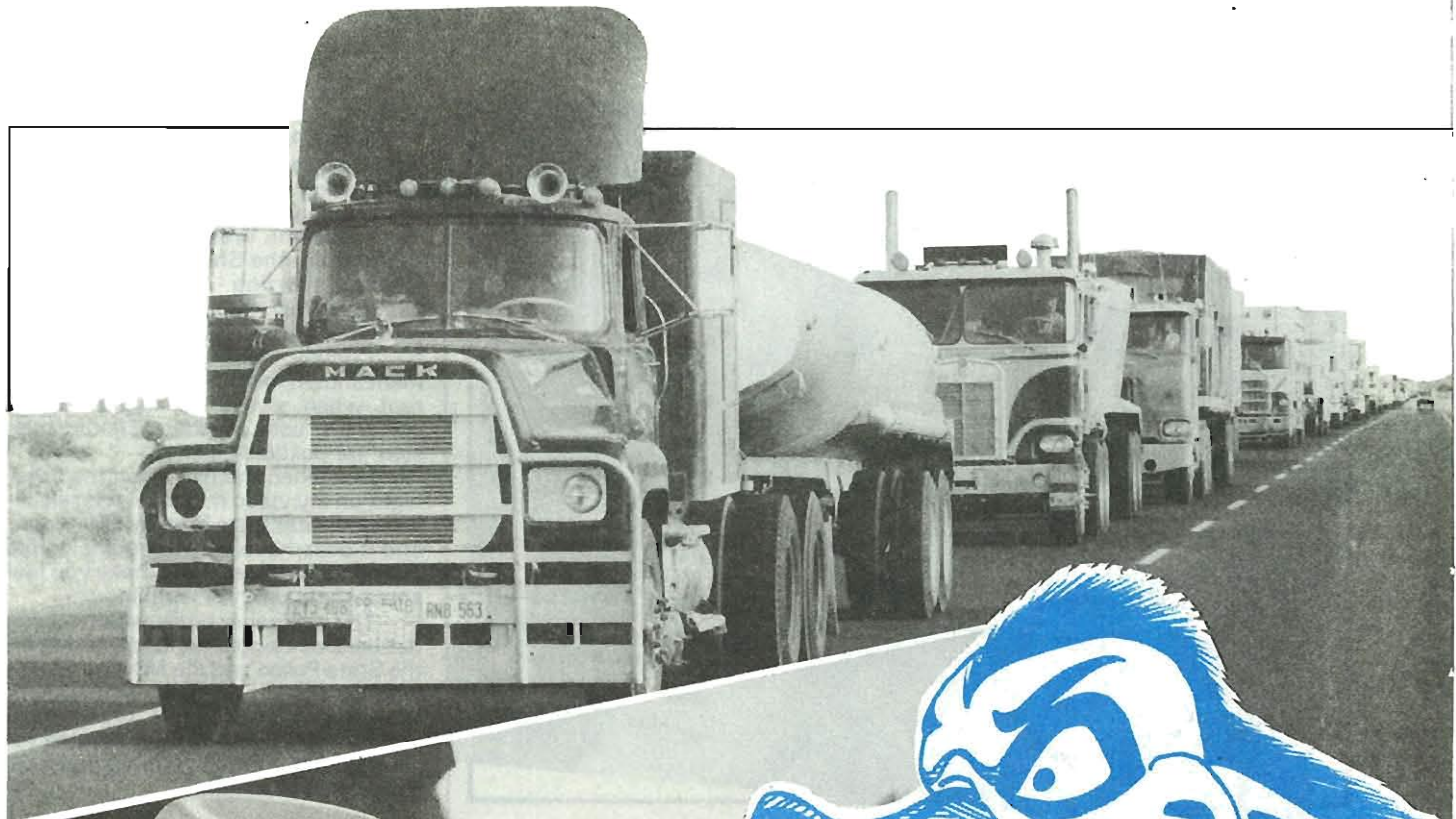
Convoy flaunted the establishment shown forcibly as being itself corrupt when a vote-seeking politician cunningly uses Rubber Duck's 'mission' for political gain.

I watched the film again the other night on my video machine. It is released in videocassette form by EMI Video, and it does have some genuine comic moments but even these make you feel somewhat guilty for laughing.

The explosive finale which leaves Rubber Duck single-handedly taking on the State Police and the National Guard who've brought up the heavy artillery in an attempt to stop him, is so typical of Peckinpah... one man fighting for his rights, face to face with authority in almost mortal combat. ▶

"Convoy was Peckinpah's Wild Bunch on heels"







Whether such a movie did CB any good at all is doubtful but it certainly tuned everybody in to what CB is all about.

Smokey And The Bandit was more of a fun movie with Burt Reynolds suitably cast as the macho Bandit, the trucker with a heart of gold and nerves of steel. He earned a small fortune for playing it, with his stuntman pal Hal Needham directing the action, and then increased his fortune because of his percentage in the box office 'take', which was incredible. It took millions of dollars.

Burt can certainly thank CB for the lolly in his bank account. Here CB was used perhaps more justifiably than for the reasons we saw in *Convoy* where it was clearly used in a fight against the establishment.

Smokey And The Bandit was a movie far more popular with the public than Peckinpah's barn-storming truckers' movie. It was much tamer in a political 'message' sense and more enjoyable as a piece of movie entertainment.

Tamer still are the almost folksy adventures churned out for the weekly TV shows *The Dukes Of Hazzard* and *BJ And The Bear* in which CB is also used most effectively.

Very much 'roadie' series, both heroes and the villains are clearly defined although the anti-hero element is very strong in the character of Billie Joe McKay, played by Greg Evigan in the *BJ* series.

A veteran of Vietnam and a prisoner of the Viet Cong, Billie Joe returns home to become a free-roaming trucker with a strong independent streak acquired from his days in Vietnam. He will haul *anything* for *anyone* providing the price is right. He shares his adventures with a chimp he calls Bear and such adventures have included transporting a secret 'cargo' of beautiful women escaping from the clutches of a slave trader (the story in the pilot show); helping a lady scientist in her attempt to transport a vial containing a deadly germ-warfare virus to the proper authorities; while for another show his truck was used as an illegal gambling casino with Las Vegas type hoods trying to cut in on the action.

For me *The Dukes Of Hazzard*, although it offers plenty of fun and thrills, is too full of frills. Too much of the time is taken up with those speeding, overdone, car chases which frankly are becoming a big screen bore.

Hollywood has clearly gained from the CB revolution as well as creating a worldwide interest in CB.

Movies with CB themes have proved very popular but perhaps too much emphasis, so far at least, has been put on the 'roadie' type of movie.

I would now like to see more intelligent use of Citizens' Band. So far, Hollywood would have us believe that CB is used only by butch trucker types. We shall have to wait and see if that is the case over here. ●



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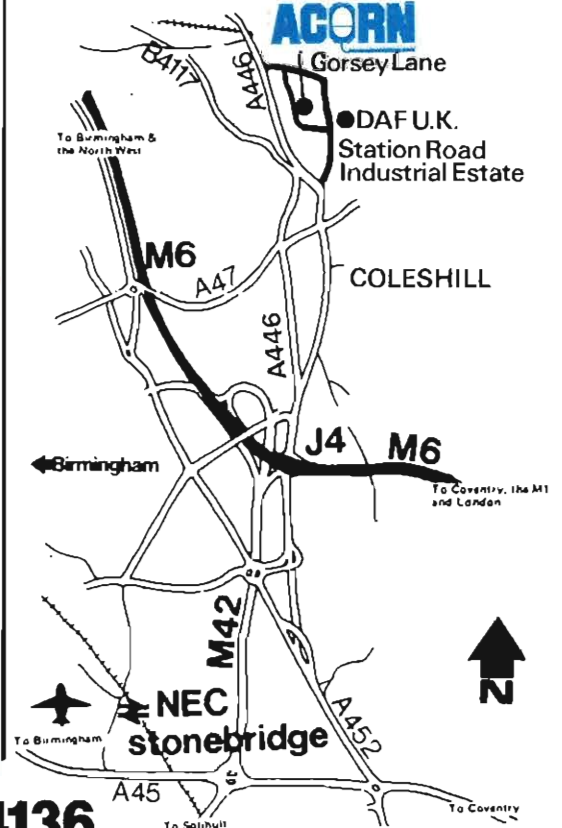
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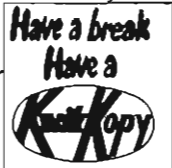
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Inside CB

In part two of Inside CB, Chris Peterson looks at the basics of FM transmitter operation.

In last month's article, we took a quick guided tour around the inside of a simple transceiver. While the outline principles of the system described would be adequate for a single channel 'walkie-talkie', a 40 channel rig is likely to be somewhat more complex. To see why, we will now take a slightly closer look at some of the sections of a typical transmitter.

The Transmitter

In an FM system, the bandwidth of the transmitted signal is a function of:

- (A) The bandwidth of the applied audio signal, and;
- (B) The amount of deviation applied to the carrier.

Since CB rigs are intended to be operated by non-technical operators, the specifications issued by respective Governments will be aimed at making them as idiot-proof as possible! That is not to say that you won't be able to burn your rig out, just that in so doing you will cause the minimum of interference to other users, both in and out of the CB band!

To prevent the transmitted signal splattering across adjacent channels, the microphone amplifier will include some form of limiter. This will prevent excessive deviation of the transmitted carrier no matter how big an overload is presented to the microphone socket. However, the overload will render the transmission unintelligible to any potential receivers. This is a point that should be borne in mind when connecting power mikes. Do not be tempted to turn the gain up too high!

Aside from this, the audio input circuits will be much as described previously, so we will now examine the next link in the chain, the crystal oscillator.

The Crystal Oscillator

The crystal oscillator section described in last month's article is entirely adequate for a single-channel transmitter. Indeed, by arranging to have a small bank of crystals, and some method of switching them, several channels can

be accommodated. The early American 23 channel sets had very large banks of crystals in them, but when 40 channel working was introduced it was clear that some other method should be sought. Most modern equipment uses some form of *Phase-Locked Loop digital synthesiser*.

A basic Phase-Locked Loop (PLL) is shown in Fig. 1. A Phase detector compares two inputs, one from a reference (crystal) oscillator, the other from a voltage controlled oscillator (VCO). Provided the phase relationship between the two inputs is in a certain fixed relationship, the output from the phase comparator will be a steady DC voltage. If for some reason the VCO starts to drift slightly, the comparator will detect this and its output voltage will rise or fall slightly from its previous value. This change in output voltage will drive the voltage controlled oscillator in the opposite direction to its original drift, and the VCO will remain locked to the crystal reference. The loop filter is necessary to prevent the oscillator being driven so fast that it overshoots and wobbles in frequency before settling down.

So far all we have done is locked an oscillator to a crystal reference, and this may seem a bit pointless. After all, why not just use the crystal direct in the first place? Suppose, however, that we now include a programmable divider in the feedback loop, as in Fig. 2. If the divider is set to divide by three, the VCO will stabilise at three times the reference frequency. If we set the divider to divide by four, the VCO will settle at four times the reference frequency. If the reference frequency is 10 kHz, then adjusting the divide by N will adjust the output frequency in 10 kHz steps. Starting to sound familiar? Furthermore, we can still generate our FM signal easily, by feeding the modulation (your voice) into the VCO input along with the control voltage from the phase comparator. The loop filter will ensure that the comparator cannot respond quickly enough to cancel out the modulation, but will

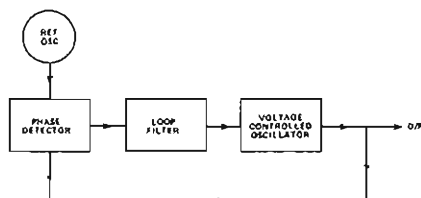


Fig. 1. Basic Phase-Locked Loop operation

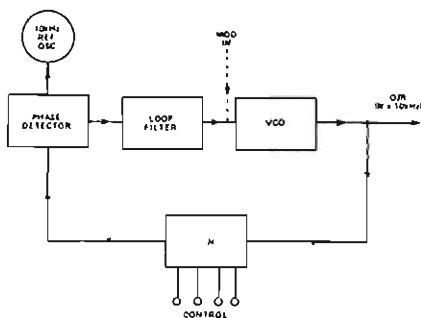


Fig. 2. A divide by 'N' PLL Synthesiser

ensure that the VCO maintains its mean frequency in the long term.

Nowadays all the active circuitry for the PLL synthesiser will be contained in one chip. It will also include circuitry to generate the receiver local oscillator frequencies in the same way. However, note that it will not be possible to change it away from its designed operating frequency simply by changing the crystal. While this will certainly change the operating frequency, it is likely that it will also change the channel spacing and the receiver local oscillator frequencies. In short, it won't work. The only way to change the operating frequency satisfactorily is at the design stage in the synthesiser. That is obviously a job for the manufacturer!

The output from the VCO is likely to be of fairly low level, and probably at half the desired output frequency. The practical upper limit frequency response of a divider IC is usually around 20 MHz. Thus by operating the VCO at 13.5 MHz, expensive high frequency IC technology can be avoided. The 13.5 MHz signal will be fed into a doubler to get it up to 27 MHz. It will then be amplified to a level suitable to drive the output stage.

Most of these low level transistor RF amplifiers in transmitters are operated in class B or C for efficiency. In these modes the transistor operates more like a switch than an amplifier. One of the effects of this mode of operation is the generation of *harmonics*, i.e. multiples of the input frequency. Obviously the biggest output from such an amplifier will be the input frequency, but there will be smaller outputs at two and three times the input frequency. In theory the number of harmonics is infinite, but in practice they fall off fairly rapidly beyond the third harmonic. By tuning the output of such an amplifier to an harmonic, rather than the fundamental frequency, frequency multiplication can be achieved. Thus by driving the transistor with 13.5 MHz and tuning its output to 27 MHz, only the second harmonic (27 MHz) will leave the amplifier. In valve equipment it is possible to achieve up to five times multiplication by these means, but with transistors it is unusual to go beyond three. For CB usage at 27 MHz, two times is sufficient.

One or two stages of amplification are usual following the doubler, and each stage will be tuned to 27 MHz. Fig.3 shows a typical transmitter RF stage. When we get to the output stage, things change somewhat. Instead of the tuned collector load used in the previous stages, an untuned collector load will be used, followed by a matching network.

It can be shown that the power output of a single transistor class C amplifier is given by the following equation:

$$R_1 = V_{cc}^2 + 2P_o$$

where R_1 is the load impedance seen by the transistor, V_{cc} is the supply

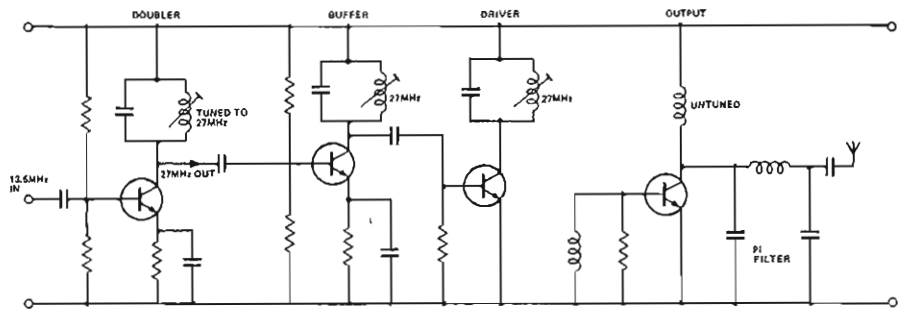


Fig.3. Basic RF stages in a transmitter

voltage, and P_o is the output power.

Suppose we want 4 W output, and are running off a 12 V supply. Then

$$R_1 = 12 \times 12 + 2 \times 4 \\ = 18 \text{ Ohms}$$

Unfortunately our aerial looks like 50 ohms, so somehow this must be converted to 18 ohms before it is presented to the transistor. This could be achieved by using a transformer, as shown in Fig.4a. A transformer has the

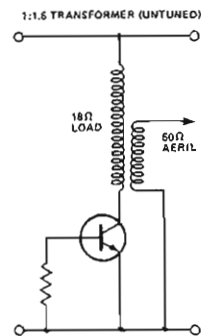
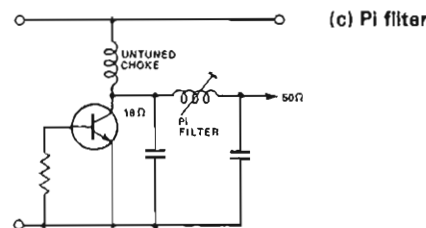
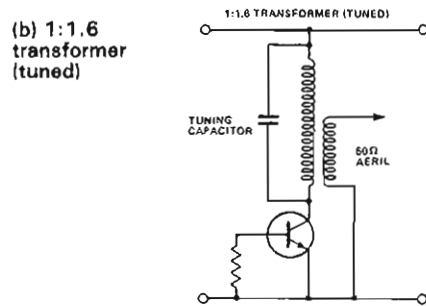


Fig.4. (a) 1:1.6 transformer (untuned)



useful property of transforming impedances in the ratio of the square of the windings. Thus a transformer with a 2 to 1 winding ratio would transform

impedances by 4 to 1. Unfortunately, a simple transformer would pass harmonics as well as the fundamental 27 MHz signal, and the resulting transmitter would not be very clean. The situation could be improved by tuning the transformer as in Fig.4b, but the most usual solution is to use a pi-filter as shown in Fig.4c. The pi-filter not only produces the necessary impedance transformation, but also acts as a *low pass filter*, removing the harmonics from the transmitted signal.

In practice, a single pi-filter is insufficient to meet today's tight transmitter specifications, and is often augmented either by a series trap, as in Fig.5a, or by a second pi-filter as in Fig.5b.

Provided the transmitter was properly aligned when it left the factory, it should not be possible to extract any extra power by returning the output stage. The power may appear to increase, but that may be because it is increasing on 54 and 81 MHz (second and third harmonics), but *reducing* on 27 MHz. *Do not* be tempted to twiddle with the output coils!

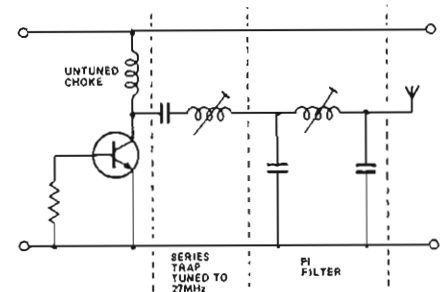
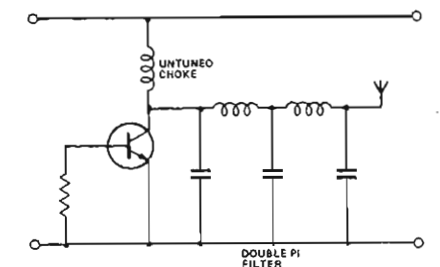
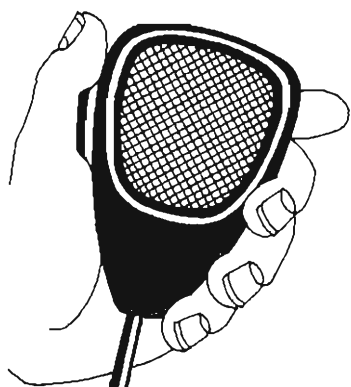


Fig.5. (a) Series Trap



(b) Double PI-Filter

Well that just about wraps up our guided tour of a transmitter. Next month we'll start talking about receivers.



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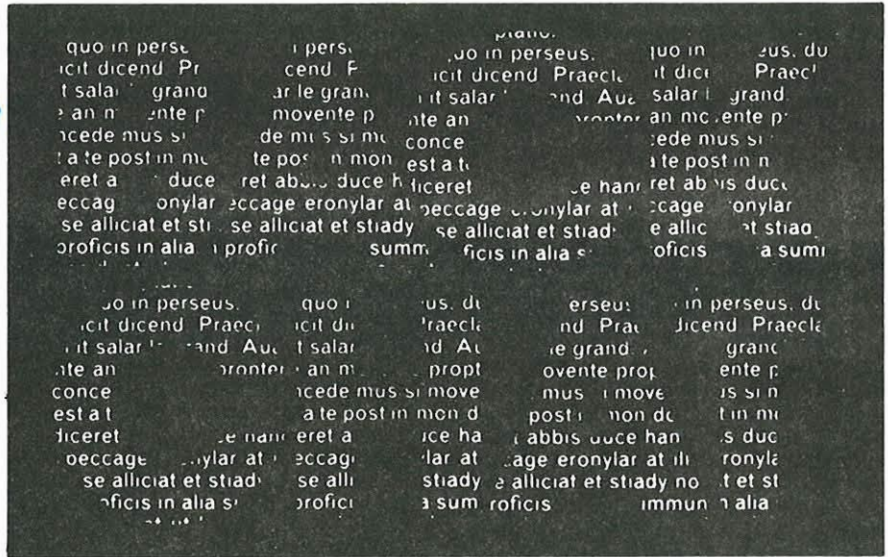
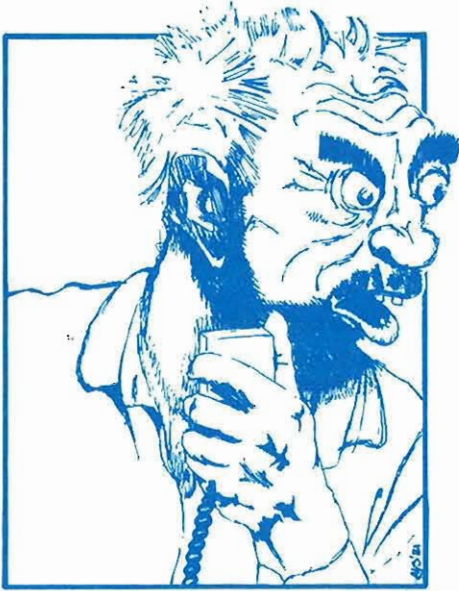
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The new system and a case of mistaken identity are the topics for this month's Backchat

No prizes for guessing the topic of this month's mailbag.

*Dear Sir,
I don't expect that this letter will be published, but I feel I must make my views felt.*

(Ed's note: Letters that start in this way are not guaranteed publication nor do they influence us in any way.)

Are you taking bribes from the Home Office? Ever since the Government came out with this rubbish about FM CB you have only written about it as if it was the best thing since sliced bread. What about us AM breakers? Do we just throw away our gear and rush out and buy new FM rigs? (Perhaps the cover of April CB was symbolic?) You are turning your back, not only on the people who fought for the cause up to now but also the people who buy your (Government-backed) mag. The only thing that is lacking from the present situation is legalisation, so why come out with all this rubbish about FM?

OK, so the sound quality could be better but the idea is not to transmit a signal with hi-fi quality and to be able to play with a tone control. The sound quality of the present AM system is quite adequate for talking to fellow breakers. The range of FM equipment is shorter than AM equipment. Why can't you put your ear to the ground and listen to the views of breakers? I think it is fair to say that if the views of breakers in the Luton area are anything to go by then the only thing FM CB will do is create two rival systems. There is no way I will use FM CB and a petition I have with over 100 signatures shows that the bulk of breakers feel the same way.

We feel betrayed by your magazine. If you want to represent the people who buy and read your mag then for God's sake say what we think and 13.5 to FM.

If the views of your magazine don't change you will lose much of your readership. I'm with Birddog, 10.10 for good.

*Starship Trooper
Luton.*

Thankfully Starship Trooper's letter is not representative of the letters we receive. If Mr Trooper is still with us then there are one or two points in his letter that deserve a reply.

- Citizens' Band has absolutely no connection with the Home Office, Post Office or any other Government Office for that matter and I don't think that they would offer us a bribe though they are welcome to try! Seriously though, the views and opinions we hold are our own and not influenced by any factor other than by our own technical knowledge, long-term experience with CB and by listening to you, the breakers.

- Whether you like to admit it or not, FM is better and this is more than amply demonstrated by the international shift towards FM as an alternative to AM.

- The range of FM is marginally better or, at worst the same as AM under normal operating conditions. If anyone can prove to us that it is otherwise we will happily publish this proof right here in this magazine.

- From the reader questionnaire published last month, completed by hundreds of readers, we can safely assume that the majority of AM breakers would welcome a workable FM system that offers as much, if not more, than the current AM system. Most people, if they are honest with themselves, do not enjoy breaking the law and risking quite heavy fines.

- We have used the new system, and Starship Trooper clearly has not. We ▶

are not out to advocate anyone throwing away their equipment. Reserve your opinions, try out the new system in the autumn.

There will be plenty of opportunity when it becomes generally available, as the equipment filters through to shops and exhibitions.

When you have tried it out tell us whether it is any good or not, then decide what system you will use. Until then, please please keep an open mind. We were campaigning long before most people in this country even knew what the letters 'CB' stood for and our policy has always been the same; the introduction of a workable two-way personal communication system similar to that found in over 60 countries throughout the world. The choice will still be yours, but base your choice on hard facts, not ill-conceived and mostly inaccurate rumours from people who generally do not know what the hell they are talking about!

Now for the other side of the coin:

Dear Sir,
Having just read the latest copy of your mag I feel I should add my voice to the AM vs FM argument.

(1) Maybe Birddog (Backchat, May) should change his handle to Birdbrain.
(2) Birddog, like many others, seems to be using the old argument, ie, 'do they expect us to throw away our AM rigs?'

If everybody was using FM as the norm and the HO tried to introduce AM they'd still moan about it. I'm not living in the UK for the next three years but I've had to get rid of my old rig because the use of 4 watts is illegal in Germany yet I didn't make waves and I'm by no means well off.

Your mag is the best on the market yet I have one complaint; please try and impress on the breakers in the UK who are threatening to dig in their heels that a CB system on FM will work better than the existing AM system. By now I can hear all those breakers with AM/FM rigs saying 'rubbish'. Well, sorry to shoot you down but the FM used on those sorts of rigs is in fact a form of SSB which is prone to bleed over on AM sets on the same frequency. This is in fact not true on FM.

I get my information from experience, not gossip on channel. Keep up the good work.

Ranger 3
Suffolk.

And . . .

Dear Sir,
I was very interested to read your exclusive review on the Binatone rigs in the May issue. I plan to be one of the first on the air when CB is legalised in the autumn and I am now saving up the Green Shields for the great day.

I must say that I am very pro-FM as I know that the greatly improved sound quality can be achieved from this type of modulation. This can be easily demonstrated by comparing the AM and FM broadcasts put out by the IBA and BBC. It's like comparing a modern LP to an old 78 rpm record, especially when the skip is up!

What I cannot understand is why people continue to buy (as opposed to already own) the illegal AM rigs when they could wait a few months more and buy new equipment without worrying about visits from Buzby. I must stress, though, that I am only putting that argument to those who have yet to buy a rig and not to existing AM breakers.

Until the autumn I will have to be content with monitoring AM CB (which is very active indeed in Cromwell City) and I look forward to modulating with all the good buddies in Cromwell City who will be using FM later on in the year. By monitoring I have learned the language and am more than prepared to hit the airwaves later in 1981.
Richard Harding (Norfolk Exile)
St Ives, Huntingdon.

And . . .

Dear CB,
Just finished reading your mag (No 6) and I think it's just great. I would like to congratulate you on your exclusive review of the Binatone FM rigs and especially on the front cover.

I am saving up for CB equipment which is taking a long time as I am out of work at the moment. Anyway, never mind, keep up the good work.

P C Duke
Aldershot.

And . . .

Dear CB,
I was delighted to open the pages of my favourite CB mag this month and see you sticking up for FM CB against the chronic, interference-prone, antiquated AM system. All but one of the other CB mags have chickened out of standing their ground and losing a few of their ignorant, die-hard AM readership. Instead, they are making the same tearful noises about the nasty trick the Government has sprung on them by offering a system that is far better but happens to be incompatible with the electronic monuments they already own. They know that when they bought their rigs they were illegal and there was never the slightest suggestion that 27 AM would be legal. In fact, even when the Government did say that they favoured CB they

specifically excluded AM from their consideration. So, the people that have expensive junk on their hands have nobody but themselves to blame; they make me sick with their pitiful crying.

Incidentally, I too have and use an AM rig but come 'L-Day' it will be in the bin and I will be the first to queue for an FM rig. Stick to your guns, CB mag, and keep those projects coming for us DIY freaks!

Sean Graham

(address withheld by request).

There is no denying that there would never have been CB in this country were it not for the actions of the half-million or so illegal users of CB. From a determined 'NO' to CB a couple of years ago the Government have agreed that the British public is responsible enough to run around using radio transmitters. The next few months will be very interesting indeed.

And finally, a sincere plea from L Ball.

Dear CB,
Would you please include in your magazine this picture of my van and inform all the breakers that it is not a CB DF van but just a private, customised van belonging to me.

The bubble on the back is an astrodome from a WW2 bomber and does not contain DF equipment.

I have been told that the van has almost been rolled and/or set alight three or four times. I do agree that it could give the breakers a bit of a scare but the van was customised long before CB became popular.

10.10 till we do it again. Keeping the shiny side up and the dirty side down — hopefully!

L Ball

Erith, Kent.

Could be nasty, please don't roll Mr Ball's van down there in Kent, we would hate to lose another of our customers.

Righty-ho, that's the lot for this month. We try and publish as many letters as possible and try to be fair, so keep those letters and comments coming in. By the way, we're not too proud to accept criticism and we hope this mag is what you want. Let us know if we're getting it wrong. ●



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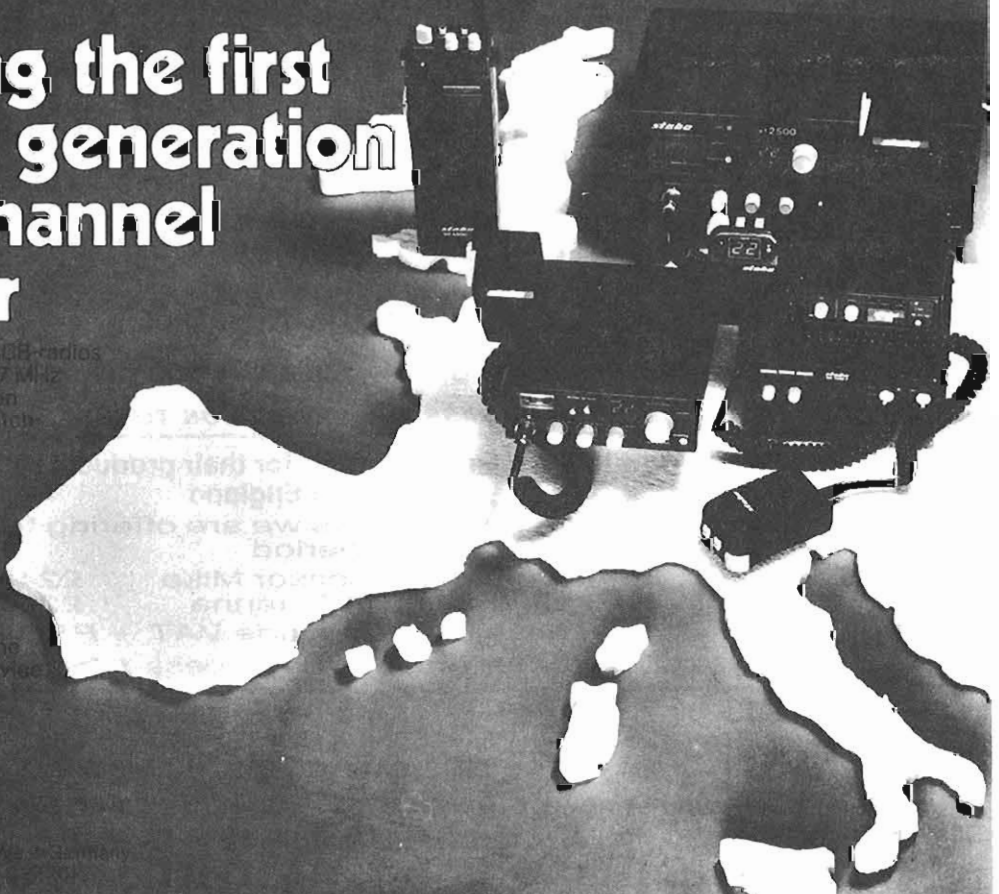
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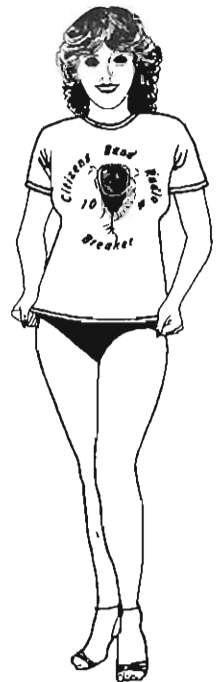
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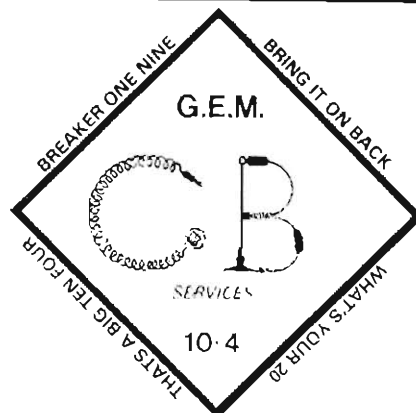
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Mack chat

What's happened to all the old breakers? Mack The Hack reminisces.

What's happening on the channels these days? Where have all the decent breakers gone? When I switch on each morning all I hear are the wallies larking about.

Are these the people that don't know more than the three whats* and find it such fun to stop other more intelligent breakers from having decent conversations? Even on the rare occasion that I do find a breaker for a ratchet, the wallies follow us up to our chosen channel to harass us. It was not so long ago that on my early morning and evening journey to and from my works 20 I would regularly copy 'Bold Warrior', 'Blue Thunder', 'Trucker One', 'Mirror Man', 'Star-buck 2', 'Jolly Giant', and others. But they all seem to have disappeared. I'm sorry to have to admit it, but I am now finding more entertainment from Capital Radio these mornings.

When I have managed to have a ratchet with some of the many younger breakers that we now hear on channel, I learn that the majority are new on channel and that their rigs have been obtained second-hand from breakers who have given up CB. Have all the old-timers of CB given it up or is this just a temporary lapse? Are they unloading their illegal rigs and now will wait for L day? I know where a few old breakers have gone: a few weeks ago I went to the Southend radio amateur rally and bumped into some of the old breakers that have now ventured into the amateur scene with the intention of taking the exam at a future date but pirating the ham frequencies at present.

I'll be the first to admit that I could be wrong about the success of the new legal system. Apart from the many thousands of current breakers that will be going legal and the many hundreds of thousands of other people who will be also joining the hobby with legal equipment, I am beginning to think that 40 channels will not be enough. I don't have to tell the present breakers how difficult it has become to find a clear channel. Even those of us who have 80 channels find that they also get busy at times. Perhaps we should start a campaign for more channels now.

I got quite angry when I read in the Daily Mirror on Friday, 1st May the story of baby Diana Moss whose first spoken word was a four-letter one, and CB got the blame. The baby alarm in the child's room was picking up CB broadcasts, so the Mirror reports, and the mother claims that this is where her baby heard it. The reader is left to guess what the word was as all they printed is 'S---'. Now if this is the word I am thinking of, it does not seem to me to be a word that even the most timid foul mouthed CBER would use. I would have thought that babies normally pick up the most common words that are spoken, and if this baby Diana is an avid CB listener surely she would have heard 'Breaker Breaker' or 'copy copy' much more frequently. The Mirror does not state the age of baby Diana, but from other facts published I would guess about 18 months to 2 years, just the right age for potty training. Perhaps that's where she picked up her first word?

A short while ago I was offered a fair price for my rig. Not being one to turn my nose up at a profit, I sold it. I tried to kid myself that I didn't want anything to do with this illegal AM anymore, and I could use this cash to purchase my legal rig when available. It did not take long for me to miss having a rig. I spent a miserable Easter at my caravan near Clacton. Normally I would ratchet with the other breakers in the area, some who live in that 20 and others who are weekenders like myself. We normally arrange eyeballs or other activities such as fishing trips or Gus baiting. But, being rig-less, I missed out. I also missed out on the happening of the weekend when 'Rigger One', my local dealer who also has a weekend retreat in the area, took his Range Rover onto the beach and found his mobile stuck fast in the soft mud. Even with the four-wheel drive the only progress he made was deeper down into the sand. So, with the tide advancing, he put out a 10-33 over the channels. Within minutes breakers started to arrive to help. Rigger told me that there were at least 30 of our good buddies pushing and pulling and digging at the mud but the mobile refused to move and the tide crept nearer. Other breakers appeared and luckily one turned up with a jeep. Ropes were produced and within minutes Rigger's Rover was pulled free to the cheers of some very muddy breakers. Drinks were on Rigger that evening. That's the most upsetting thing I missed out on — the drinks! Anyway two days after the Easter holiday I went and obtained another rig.

In the last couple of issues of the mag you may have seen a couple of letters from breakers accusing this mag of being controlled by the Home Office. One of the letters by 'Birddog' (or was it 'Bird Brain'?) and the Editor's modest reply to it, makes me want to tell you people a short tale about the original CBERs that Bird Brain says without whom this mag would not even exist. He does not know how true his words are.

About two and a half years ago there was I, parked in one of my many haunts where I would go to hide away when modulating. I heard a breaker call for a copy. 'Come back the breaker you got Mack the Hack'. 'This is the Viking with Herman The German riding shotgun and we would like a rig check'.

'You're hitting me 6 pounds and your modulations 100% what's your 20 Viking?'

'We are in the trees not far from the seaside' (Epping Forest, near High Beech).

That was how it all started, I'll leave you to guess who the 'Viking' and 'Herman The German' are, but from that first copy and after a later eyeball it turned out that the Viking was an acquaintance of old and a renewed friendship was formed with both these breakers which continues at this present time. So you see Birddog, the producers of this mag were some of the original breakers and I believe that I could honestly say to you what the old soldiers would say to new recruits — 'Get some in'. FM will work well so while you and a few others are unsuccessfully wasting your time trying to get AM, I shall, I hope, safely be enjoying myself on FM. ●

* Editor's note: What's your 20? What's your handle? What rig you running?

CLUB NEWS

Club Time again, with reports from England, Scotland and Wales. We would have featured an Irish club this month but we didn't hear from any so come on all you Irish clubs, tell us what you're up to.

Dozens of new clubs again, so without more ado here's this month's nomination for the club with the strangest name.

Bugs Bunny Give Us A Nine Club

Dear CB,
I wonder if you would be kind enough to include our club in your club Directory. (Consider it done — Ed.)

We have been running for about 20 weeks and, at present we have over 100 members, a figure that is increasing every week. We meet every Tuesday evening at the 'Hand-In-Hand', Boxhill Road, Boxhill, Surrey from 8pm. The joining fee is 35 pence and we make a nominal entrance charge of 10 pence to go towards printing costs and other expenses.

Every week we produce a newsletter and an up-to-date membership list. We're very proud of our raffle which we believe is one of the best around. We can supply club posters and QSL cards and we are awaiting delivery of sew-on badges and car stickers.

We're active on the social front, having regular discos and many other functions ranging from barbecues to convoys. We're preparing teams to go ten-pin bowling on a regular basis and we field two darts teams. We're ready to accept a challenge from other clubs!

At present we're raising money for Leukemia research and would be most grateful for gifts of stamps and ring-pulls (from Coke cans etc) which are sold in aid of this worthy cause.

Our club membership ranges from company directors to school children, from 7 to 70 and we warmly welcome all those 'would-be' breakers who want to be ready to go on the air in the Autumn to come and share the friendship, knowledge and experience of our members.

Bugs Bunny.

But where did you get that name from? Anyway, next report from the left-hand side of the country.

Dixieland Breakers Club

Dear CB,¹
We would like to notify you of our new club called the Dixieland Breakers.

We have only been going for a few weeks but already we are becoming well established. We meet every other week on Friday nights between 8pm and midnight at a pub we call 'Brenda's Place'. Even though our call sign covers Llanedreyn and Pentwyn (Dixieland) we welcome any breakers from any of the other areas of the Smokey Dragon (Cardiff, or indeed any other clubs throughout GB).

We are trying to establish ourselves, not just as a club but as a breakers social club, and arrange matches of pool, darts etc with any other clubs that may be interested.

Any other club or breaker who wants any more information is welcome to write to myself at the address given.

Chris Probert (Secretary)
52 Glyn Collen,
Pentwyn,
Cardiff.

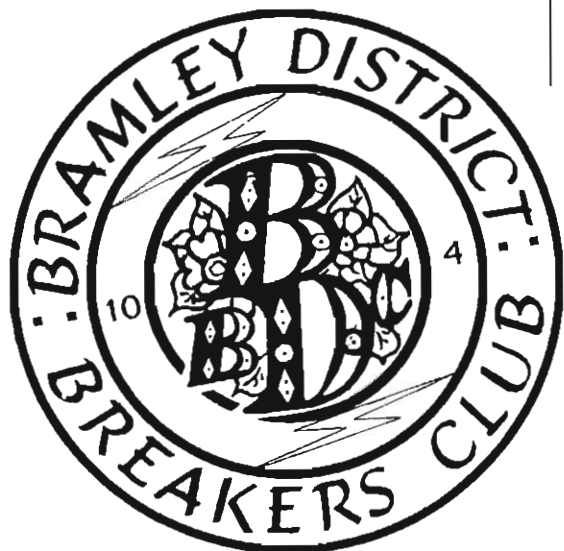
Right a bit and up is the next stopover, take it away Leeds.

Bramley And District CB Club

Dear CB,
Congratulations on the mag and keep up the good work. (We do try — Ed.)

Now, on to the serious bit and some words on the Bramley and District club. We are relatively new although we are certainly not newcomers to CB radio. We were formed in February this year after realising that there was no club locally offering the things we wanted. We opened our doors with just 12 members and things snowballed straight away. We took on 48 new members the very first night. Anyway, we now have a closed membership book at approximately 130 members. Any prospective members wishing to join have to be nominated by two existing members.

We started straight away to try and get all the local clubs together in-



stead of the total separation previously found in this area. Amongst our fund raising schemes we are currently raising money for an orthopaedic bed for a young girl known locally as *Sleeping Beauty*, who has been in a coma for six years. Our target for this appeal is £5000.

As soon as the weather gets warmer we intend to stage a sponsored swim down the length of Lake Windermere — from Windermere to Ambleside. We have several members already in training for this event. Other events include a sponsored tattoo (on the flesh), a sponsored run up the 1 in 5 gradient of the Kidstone Gill, completed in 9 minutes we hope.

Anyway, as you can see we're doing our bit. Thanks for the mention and we'll be in touch again with details after the sponsored swim.
Shanty Man (President)
(See Directory for address).

Ever onwards we now go North of the border up Stirlingshire way.

Central 27 Breakers Club

Dear CB,
As press secretary and on behalf of the Central 27 Breakers I would like to advise you of our existence since being formed over six months ago. (Bit slow, aren't we?)

We are located in Stirling; indeed, there are various handles for Stirling but the majority prefer Silver City. Our breaking channel is 16, mainly because we live so near the superslab and don't want to blow out the truckers' channel. A considerate bunch don't you think?

We started with just over 60 members when we began registration back in mid February and now we have just over 300 members. I estimate that there are just over 350 breakers in the Stirling area so we're not doing too bad. Our meetings are held fortnightly on Tuesdays and details of meeting times etc can be obtained from the club address.

Presently we are engaged in a good few social events and have entered for the Forth Raft Race on 17th May. Hopefully we will do well due to the expertise of the 'Mighty Mouse' and 'Big Duff', however, if it sinks... need I say more?

We are also entering a float in the Stirling District Festival and, if I may I will advise you of the outcome of these events at a later date.

Well, I've ratcheted long enough now this is Mickey Finn going 10.10, breaker break and all that jazz.
Robert Millner (PR Secretary)
c/o The Bruce Inn,
Nr Landmark,
Springkerse Road,
Stirling.

All very aquatic this month. CBers must float better than other mere mortals. Do I hear of a cross-channel swim, anyone?

Our last report this month comes not so much from a club but more of an organisation that will be of great interest to clubs troubled by rig nickers.

C.A.R.T.			HANDLE or NAME	TWENTY
NAME	MAKE	SERIAL NO.		
Concorde	Two	21000217	Silver Shadow	Breaker City
President	Pegasus 3	03002480	Billy Goat	Breaker City
Concorde	Two	21000510	Black Stallion	Nottingham
Ham Major	360	u376em8	Copper King	Breaker City
Fanfare High	190DP	27704833	Marraboo	Breaker City
President	Veep	07003896	Buzzer	Breaker City
Vice President	Roy	4609612	Dick Turpin	Moorley
Stag	357	922250	Night Owl	Breaker City
Midland	150 M	4038809	Badger	Breaker City
Formac	120 Channel	30000265	Rammer	Stapleford
President	AR7	03049568	Black Panther	Gillbrooke
Colt	210	1097811	Hammer Rash	Breaker City
Pace	8004	03000870	Sugar Lady	Bullwell
Ham Int	Multi-Mode 2	20000558	Wash Dog	Selston
Midland	4001	4320240	Galaxian	Kimberley
President	Veep	07002844	Lady Penelope	Breaker City
President	Old Hicary	73007550	Lady Cherokee	Long Eaton
President	Veep	07003431	Deey Janner	Bullwell
C.B. Jantar	40 Channel	3042316	Speed Adder	Kimberley
G.T.E Int	40 Channel	09009495	Pied Piper	Nottingham
Gobrn	19 X	2066660	Unicorn	Breaker City
President	A.R 44	93004622	Porcupine	

CART (UK) Catch A Rig Thief

To all CB Breakers,
We wish to inform you that an organisation has been in existence since the end of March. The organisation is known as CART which stands for Catch A Rig Thief.

CART is run entirely by volunteer breakers from the following areas:-

- Breaker City
- Robin Hood City
- Ram City and surrounding districts.

The object of CART is to receive and compile a register of all stolen rigs, along with the serial numbers and names of their owners. This will be achieved first by any breaker having a rig stolen contacting CART and second by Breaker Clubs informing CART of any members reporting a stolen rig. By close contact with breakers and Breakers' Clubs in Nottinghamshire and Derbyshire we can publish a full list of all stolen rigs in the local press.

It is hoped that CART, once funds are available, will be giving a reward to anyone offering information which leads to a successful prosecution. Should any breaker buy a rig in good faith and subsequently find it to be stolen, inform CART, and they will be reimbursed for the cost providing the rig is returned and again if a prosecution results.

It must be stressed that rewards and reimbursement depends entirely on funds available to CART.

To enable us to help you:

- 1) NOTE YOUR SERIAL NUMBER
- 2) Inform CART if your rig is stolen. This is achieved by asking for a member of CART on Breaker Channel

3) Any breaker who knows of anyone using or selling a stolen rig should contact a member of CART

4) When buying a secondhand rig check with CART on the serial number to see if it's stolen (Remember the reward)

5) To enable us to raise funds we will be looking for donations not only from individuals who support CART but also from all the breakers clubs in the area.

We are pleased to say that as a result of CART members' action three people are to be prosecuted for a rig theft and four rigs are in the process of being returned to their owners!

Obviously the more supporters and volunteers who are involved in CART the more effective it will become, so we are actively seeking contact with new breakers and clubs. The wider the net, the better it spreads.

Should you require further information please contact:
Mr P Duggan (El Cid)
Chairman
CART (UK),
72 Wood Street,
Ilkeston,
Derbyshire.

Sounds interesting. We have published CART's first stolen rig list so anyone coming across one of these stolen rigs can get in touch with CART directly. Maybe this will prove a deterrent to this particularly nasty type of theft.

That's it for another month. Look out for some more reports from around the country, and how about sending us some more pictures of club events to liven up these pages? After all, these are yours to fill. See you all next month.

CLUB DIRECTORY

Here are another 60 new clubs for your perusal. Next month, space permitting, we will feature the complete National Directory of Clubs, easily the biggest ever, published with hundreds of names and addresses. New clubs wishing to register with us should use the form printed on page 55.

ACE BREAKERS CLUB
Secretary: 240 Robert
Pelton Arms (Wednesdays 8 pm)
Pelton Road, Greenwich
London.

BORDER CITY BREAKERS CLUB
Soc Sec: Desperado
c/o PO Box 43
Carlisle
Cumbria.

BRAITHWELL RIG AND TWIG CLUB
Secretary: Wild Honey
10 Revill Close
Maltby S66 8BN.

BRAMLEY AND DISTRICT CB BREAKERS CLUB
President: Shanty Man
6 Ferncliffe Terrace
Bramley, Leeds LS13 3PN
Yorks.

BUGS BUNNY GIVE US A NINE CLUB
Hand in Hand (Thursdays 8 pm)
Boxhill Road
Boxhill, Surrey.

CANARY CITY BREAKERS CLUB
PRO: M G French
16 Meadow Close
Helliesdon
Norwich, Norfolk.

CAPITAL BREAKERS CLUB
Secretary: Crystal
c/o OPTA
138 Elton Road
Derby.

CENTRAL 27 BREAKERS CLUB
PR: A Robert Millner
c/o The Bruce Inn
Nr Landmark
Springkerse Road
Stirling.

CHURCH TOWN BREAKERS CLUB
Chairman: Master Builder
Stamford
Lincs.

CIRCLE CITY BREAKERS CLUB
PR: T C Masters
8 Easthams Road
Crewkerne
Somerset TA18 7AQ.

CLOGTOWN CLAYPIT BREAKERS CLUB
Secretary: Compo
c/o 22 Romiley Crescent
Brightmet, Bolton
Lancs.

**CLWB TORRWYR Y DREF WLEDIG
COUNTY TOWN BREAKERS CLUB**
Secretary: Magneto
Angorfa, Baptist Street
Penygroes, Caernarfon
Gwynedd LL54 6NU.

CO-AX MELTERS CLUB OF ENGLAND
Secretary: Dave Nairn
150 Smallgains Avenue
Canvey Island, Essex.

**CORRINGHAM AND STANFORD
BREAKERS ASSOCIATION**
Secretary: P Yallop
22 Dock Road, Tilbury
Essex RM18 7PT.

COUNTY BREAKERS ASSOCIATION
Chairman: Ginger Tom
12 Leonfield
Cleator Moor
W Cumbria.

DERWENT BREAKERS CLUB
President: Desperate Dan
23 Moorfield Drive
Wilberfoss, York.

DIAMOND BREAKERS CLUB
Secretary: Crackerjack
c/o 7 Hutton Drive
South Elmshall
Pontefract, W Yorks.

**DIAMOND BREAKERS CLUB
(STEVENAGE)**
Secretary: Mrs P Gregory
16 West Close
Stevenage
Herts SG1 1PW.

DIXIELAND BREAKERS
Secretary: Chris Probert
52 Glyn Collen
Pentwyn
Cardiff.

DOWNE TOWN BREAKERS
PR: Bootlegger
67 George Street
Snaith, Nr Goole
N Humberside.

FAIR CITY CB CLUB
PR: A D Wyllie
60 Tulloch Terrace
Hillyland
Perth PH1 2PS.

FIVE BRIDGES BREAKERS CLUB
Secretary: Mrs P Roberts
Heptonstall WMC
(Wednesdays fortnightly)
Hebden Bridge, W Yorks.

FIVE POOLS BREAKERS CLUB
PR: Daytons
Hagley And Blakedown
Stourbridge, W Midlands.

GOOD BUDDIES CLUB
Secretary: Gordon Grieg
8 Gallacher Place
Lumphinnans
Fife.

GRASS COURT BREAKERS CLUB
Secretary: Small Fry
14 Winston Avenue
Newton-le-Willows
Merseyside.

GWENT BREAKERS CLUB

PR: The Fixer
c/o The Gladiator
Pillmawr Road
Malpas, Newport
Gwent.

HARROW AND WEMBLEY CB GROUP

Secretary: David Hughes
26 Greenway
Kenton
Middx HA3 OTT.

HAWKER CITY BREAKERS CLUB

PR: The Professor
32 Nesbit Road
Peterlee
Co Durham.

HAZZARD COUNTY BREAKERS

Secretary: Rosemaria Potts
c/o Oakshaw Hall
School Wynd, Paistley
Renfrewshire.

HEREWARD BREAKERS CLUB

Chairman: Douglas Hall
South Farm Cottages
School Lane, Edenham
Lincs.

KINTYRE BREAKERS CLUB

Secretary: Angel Eyes
Columba Hotel
(Sundays fortnightly)
Tarbert, Argyll.

LIVERPOOL BREAKERS ASSOCIATION

Chairman: Sunseeker
c/o 72 Ashfield
Wavertree
Liverpool 15.

MALTBY CAMPAIGNERS FOR OPEN CHANNEL RADIO

Chairman: Mr M Ironmonger
14 Shaftsbury House
St Anns Flats
Rotherham, S Yorks S65 1AX.

MAYFLOWER BREAKERS

Secretary: Aunt Sally
Immingham
S Humberside.

MILTON KEYNES CITY BREAKERS

Secretary: P Knight
58 Langcliffe Drive
Heelands
Milton Keynes.

MOONRAKER JUNIOR BREAKERS

PR: Drifter
17 Lizmar Terrace
Moston
Manchester M9 1WG.

MORAY CB CLUB

Secretary: Black Diamond
c/o Gearchange
40-42 Moss Street
Elgin, Morayshire.

NORTHAMPTON BREAKERS CLUB

Chairman: Squire
400 Obelisk Rise
Northampton.

NORTH SEA BREAKERS

Secretary: The Druid
27 Zena Street
Glasgow G33.

NORTH WEST BREAKERS ASSOCIATION

c/o 8 Longhill Walk
Moston
Manchester M10 9NT.

PORT CITY BREAKERS CLUB

PR: Mr D Wood
39 West Down Road
Beacon Park
Plymouth PL2 3HF.

QUARRY BREAKERS CLUB

Secretary: Pinball Queen
c/o Waggon & Horses
East Street
Saffron Walden, Essex.

ROAD APPLE DX CLUB

Controller: C D Cotton
29 Fairfield
St Ives
Huntingdon.

SANDRINGHAM BREAKERS CLUB

Secretary: Mr T Morgan
7 Mountain View
Tynewydd, Treorchy
Rhondda Valley
Mid Glamorgan CF42 5LU.

SEDFIELD BREAKERS CLUB

Secretary: Bill Bayston
4 Pine Ridge Avenue
Sedgefield
Co Durham TS21 3EF.

SEVERN CITY BREAKERS CLUB

Chairman: Gander
(Tuesdays fortnightly at Tiffanys)
PO Box 2
Shrewsbury.

SOAR VALLEY BREAKERS

PR: D Wiltshire
30 Castle Road
Mountsorrel
Loughborough, Leics.

SOUTH WEST LANCs BREAKERS

Soc Sec: Tattoo
c/o 14 Cornbrook
Holland Moor 2
Skelmersdale
Lancs WN8 9AQ.

STAR GATE DXers

PR: Dragonfly
Canterbury Road
Herne Bay
Kent.

ST NEOTS BREAKERS CLUB

Secretary: Plastic Man
58 Hardwick Road
Eynesbury, St Neots
Huntingdon, Cambs PE19 2UG.

TAYSIDE CB CLUB

Chairman: The Rogue
c/o 271 Fintry Drive
Fintry
Dundee.

THAMESDOWN TRANSCEIVER CLUB

Chairman: D Porter
44 Belsay
Toothill
Swindon.

THAMES VALLEY BREAKERS

PRO: The Trucker
Wheatley Bridge Hotel
(Thursdays 8 pm)
Wheatley, Oxon.

TOAD HALL BREAKERS

Chairman: Arabian Cowboy
c/o Roundabout Hotel
Wallington Shore Road
Fareham, Hants.

TRENT BREAKERS

Secretary: Jennifer Boler
58 Oak Avenue
Radcliffe-on-Trent
Nottingham.

TWO-WAY INDEPENDENT NETWORK SYSTEM (TWINs)

Secretary: W Smith
5 Nuthatch Drive
Earley, Reading
Berks.

WEST END BREAKERS

Chairman: Ian Morrison
The Newbiggin Hotel
(Thursdays 7.30 pm)
Newbiggin Hall Estate
Newcastle.

WOKING CENTRE BREAKERS

Secretary: The Argonaut
c/o The Jovial Sailor
Ripley
Surrey.

WYRE BREAKERS CLUB

PR: Ironside
Thornton Le Fylde
Lancs. (Call Ch 27)

ZEBRA COUNTY BREAKERS

PR: Winnie The Pooh
c/o The Post Office
Sible Hedingham
Essex.

CITIZENS' BAND CLUB DIRECTORY REGISTRATION FORM

CLUB NAME ()
CHAIRMAN ()
Secretary ()
PR Contact ()
Contact Address ()
.....
..... (Tel No.)
MEETING PLACE, DAY AND TIME ()
.....
No. of members Position in club
Fee/sub etc (Committee members only please)
Please mark (*) Information that may be published.	

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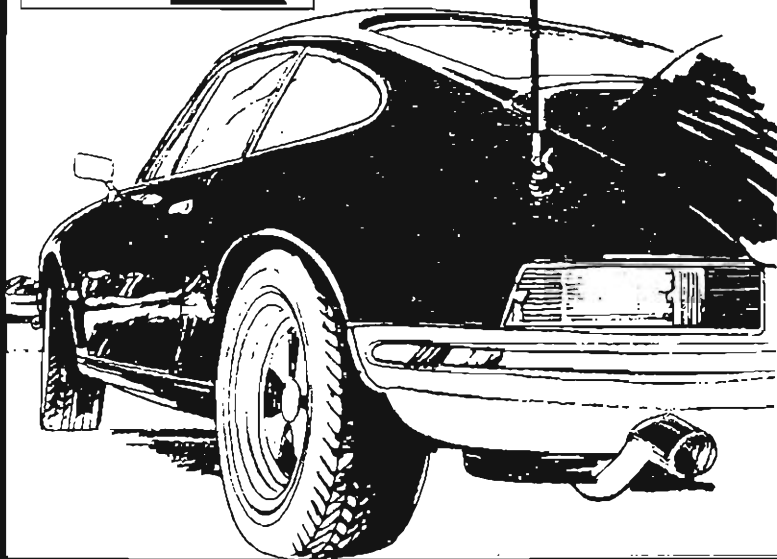
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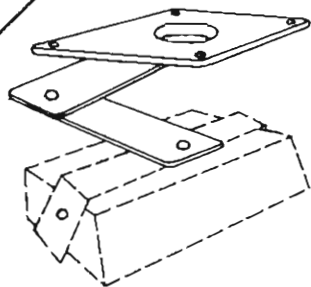
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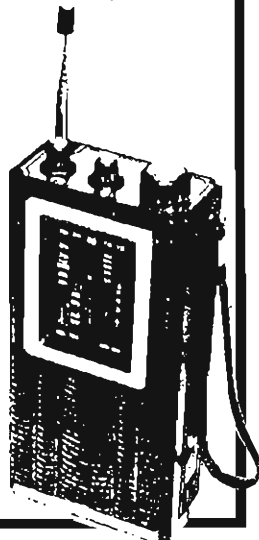
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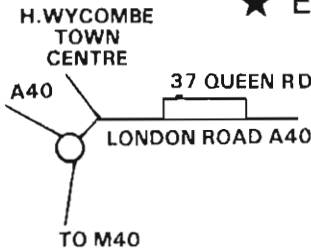
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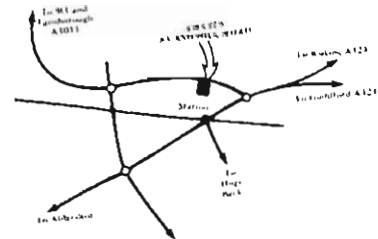


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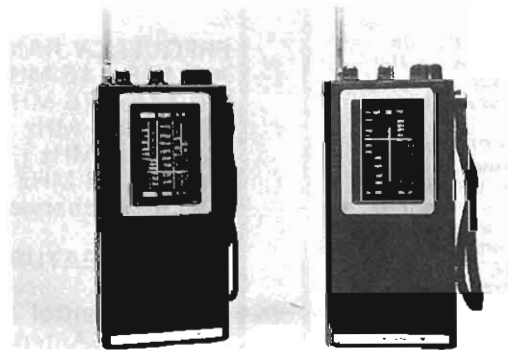


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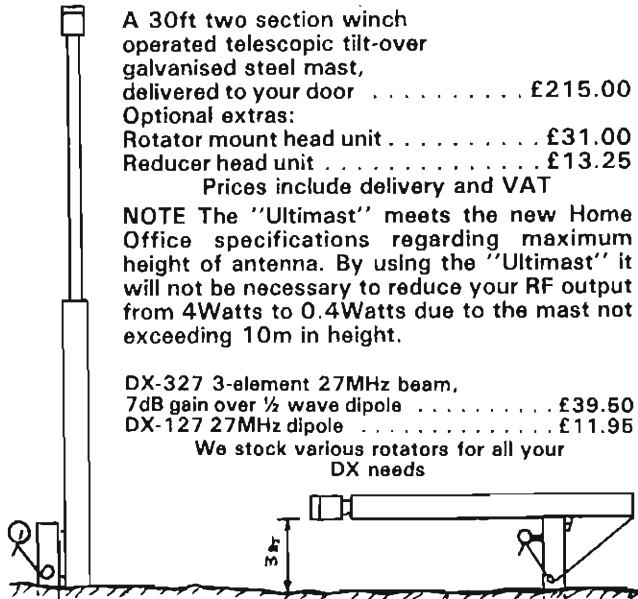
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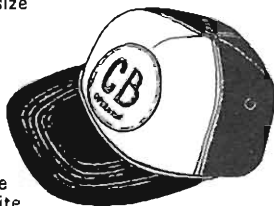
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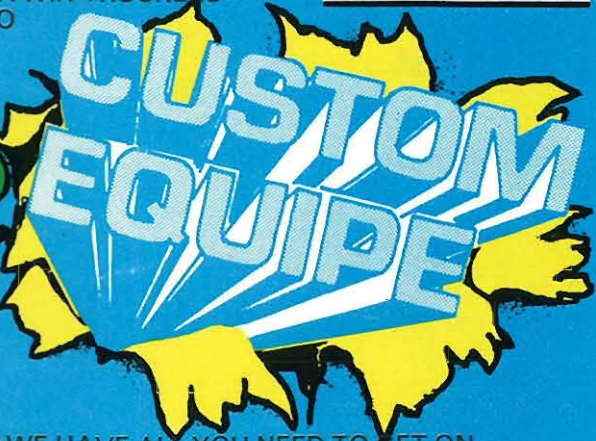
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