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CB RADIO



**INTERFERENCE – A
SERIOUS PROBLEM?**

**THE BEST
OF BRITISH**

**A REPORT ON
EMERGENCY UNITS**

**PLUS
ALL OUR REGULAR
FEATURES**

The British Breakers Mag.

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—J.H. Coffett, 207 McFee, Bastrop, LA

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—John A. Blum, Box 446, Zellenople, PA

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—H. Bachert, Jr., 15 King Rd., Park Ridge, NJ

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—Jerome R. Brown, 7800 S. Linder, Burbank, IL



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CB RADIO



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934MHz REPEATERS By F. C. Judd..... 39



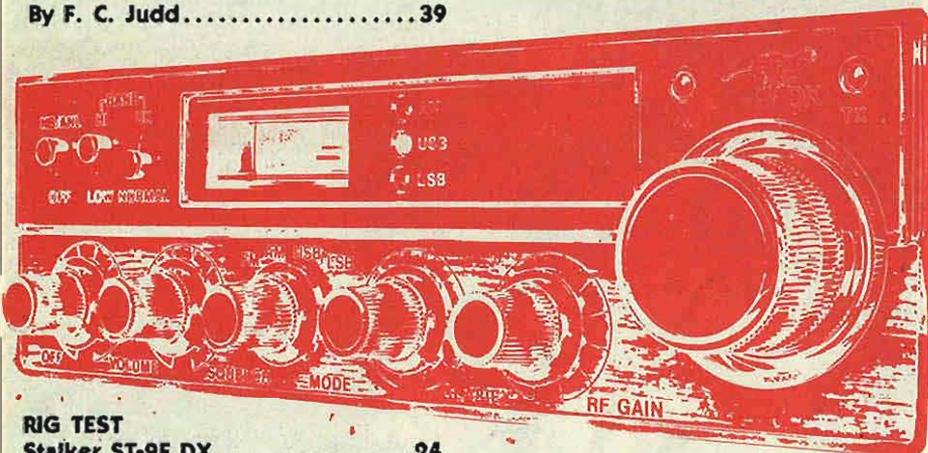
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This month's cover photograph is of the new model London Fire Brigade tender and was taken by Colin Downs. The fire brigade has suffered badly from CB interference, see article starting on page 6.



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A higher price to pay

Quite often the phone in our office rings and the caller turns out to be a breaker with the question, "How much is your cheapest rig, mate?" Not only is the caller misguided about our function but he's just as misguided about his quest for cheap equipment.

For a multitude of reasons, rig prices have been falling dramatically over the last year but the decline in price is now at last halting.

It would be fair to say that prices have dropped mainly because CB did not immediately take off in the UK as most manufacturers and importers had predicted. Many manufacturing companies in the Far East saw the legalization of CB in Britain as a way of recapturing some of the lost ground that the slump in the American market had caused.

Over reaction

The traditional importers of goods from the Far East like Fidelity, Amstrad, Binatone, Rotel and many more, including retail chains who ordered their 'own brands', like Dixons and Halfords, had all over reacted. So had many of the smaller companies who had imported illegal equipment and then 'came clean' on 2 November, 1981.

A high percentage of the sets, notably what hadn't sold over the Christmas of 1981, went below the £40 retail price barrier for the first time. By the middle of 1982, the £20 price barrier had also been broken. The entire trade began to panic. Importers began to dump sets onto wholesalers who in turn dumped them onto retailers who in the fight to compete with each other cut their profit margins to the bone. The resulting bankruptcies were a shame but entirely predictable.

Another disturbing trend also began to emerge. Some of the less-scrupulous factories in the Far East began buying up surplus stocks of components and cobbling together rogue sets which were as effective as two baked bean tins connected with a long piece of string.

You do only get what you pay for

As I previously said, rig prices have started to go up again and this is mainly due to the fact that supplies of dumped or rogue sets are at last drying up. Also, many of the more far-sighted businessmen have realized that there is a long-term future in CB in this country.

As a consequence, your local friendly CB store is quite likely to be in business this time next year. This is to your advantage as well because if he isn't there, he can't honour your guarantee. Also, it is only the CB specialist who stocks a wide range of accessories and has any real knowledge and can advise you on the subject. A higher retail price will also normally reflect a higher quality set. So the old adage of you don't get anything for nothing still applies (even to CB).

Behind the scenes

Fifty years ago it would have been unthinkable. Forty years ago it would have been impossible. Thirty years ago it would have been unlikely. Today, in 1983, the unthinkable, impossible and unlikely have all happened: a woman has been made Editor of CB Radio Magazine. From next month, the Contents Page is going to change dramatically. 'Baking for breakers,' 'The place of the CB widow in society' and other such riveting articles will start cropping up. An

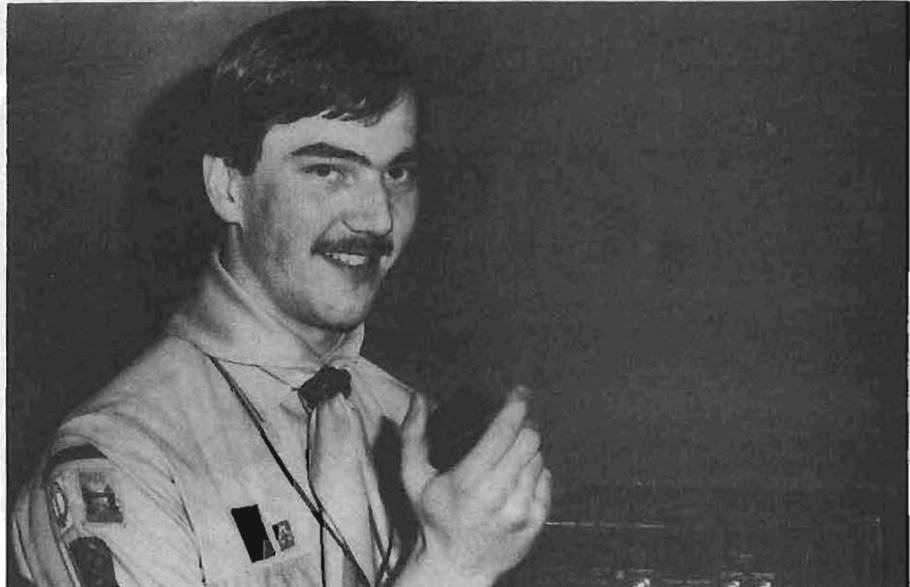
Agony Columnist has already been appointed and is currently sharing the desk with our new make-up artist and they are all competing for space on the radiator so they can air their smalls.

I jest (I hope). I'd really like to wish Sue Sharp every success and I'm sure she'll do an excellent job. I'm staying on with the firm as resident Male Chauvinist Pig.

Jogle 83

Over the Easter holiday, a sponsored run is taking place from John o' Groats to Lands End. Thanks to the efforts of CIBTA, the CB Trade Association, the whole run will be organized and monitored by CB. To make life easy for the organizers, we are publishing details of the run in next month's magazine in the hope that breakers will avoid the CB channels that are allocated to the run. Please warn your club or friends that this is happening and get April's magazine for details.

PCC



Competition winners

We have pleasure in announcing the winner of the Gold-Plated Z27 competition, which was donated by OCT International. The winning entry was submitted by P. C. Bishop, of Sandierstead, Surrey, who's crossword answers were all correct and who's slogan was 'You don't have to shout if you want to get out, just get ahead

with a Thorobred!' P. C. Bishop was one of hundreds who entered this competition and got the correct answers but, in the opinion of the judges, came up with the best slogan.

The winner of our two-part competition was D. Griffiths (Scout Leader), who is now the proud owner of a Midland Base Station. Sheriff, as he is known, was the first person with correct answers and a good slogan.

When you need a helping hand . . .

SPECIAL OFFER



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In times of distress, accidents, breakdowns, emergencies . . . communication is the *key* to receiving quick and efficient aid. All too often public communication systems are either out of order or nowhere in sight. With an Alert Mobile Transceiver, when the need to summon help arises, you have *instant*, two-way communication. This compact, solid-state unit can be set up in seconds and is the *only* one capable of being operated either from the vehicle's power supply or independently from its own battery packs. *Versatile* - with full 4 watts power output you can transmit up to 15 miles depending on the surrounding terrain. For ease of mind, instant communication, versatility, the AMT is a must for every motorist.

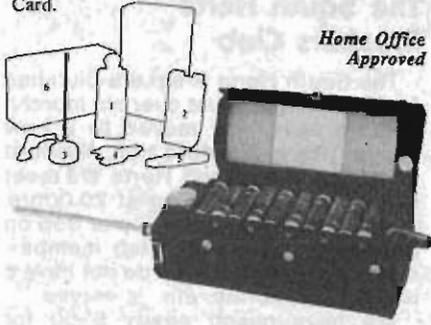
should *invest* in one for it has so many benefits because

- 1) The unit can be used to summon help.
- 2) No installation costs or unsightly holes.
- 3) Comes complete for car use with magnetic mount for antenna and cigarette lighter jack plug power supply.
- 4) Auxiliary power pack for use with the car in the event of electrical breakdown or for total portable operation.
- 5) Unit can be used to obtain up-to-date traffic and weather reports, as well as route directions.
- 6) With two units, car-to-car communication is easily obtained. Ideal for travelling with friends.

"A must for every motorist."

Editor *Bob*

- The MAXCOM 7E comes complete
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 - 2 Leatherette Case and Battery Pack (Batteries not included)
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 "This product is so unique and vital that it is the first and to date *only* transceiver that we are prepared to endorse. Every motorist

"A must for every motorist."
 Editor, CB Radio Magazine

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(Signed) _____
 Please allow 28 days for delivery.

CLUB SPOT

Round Robin CB Group

Would you please inform all the breakers in the Medway area through your Club Page that the Medway Breakers Club has now been reformed and is now known as the Round Robin CB Radio Group. Its sole object is to raise funds to provide CB equipment for any disabled breaker in the Medway towns.

For all QSL'ers, a PO Box is at their disposal, use of which costs £3.00 per year. A s.a.e. will bring full particulars: PO Box SX 26, Sittingbourne, Kent ME9 7MX.

Andy Capp (Hon. Sec.)
Sittingbourne, Kent

MEDX International DX'ing Club

We are based in Medway towns in Kent. We started on 12 January as a small group of 10 people who like DX'ing. We read your magazine and saw the article 'Tell Us About Your Club', so here you are. We QSL 100% anywhere and would like to hear from other clubs who have just started and the old ones too.

I. Underwood (MEDX IU30)
Gillingham, Kent

PS We meet every second and fourth Wednesday of every month at the Admiral Elliot PH, Crown Street, Gillingham, Kent.

West Oxfordshire Breakers

After holding meetings for almost two years, we have decided to tell a magazine of our existence. Yours is the lucky one.

Our membership numbers some 160 and we meet at the Red Lion, Eynsham, Oxfordshire (next to church) each Monday evening at 8.00pm. A Junior Club meets from 6.30-7.45pm. Breakers of any denomination wishing to join or just visit are welcome.

Our recent treasure hunt allowed the winner (Fred Bassett) to go home with half a lamb after enjoying the evening's barbecue and our weekly raffle has a mobile rig as the minimum prize, although recently we have given away base station rigs, a weekend for two in Scotland and two weekends for two in Paris. We hope to include other unusual prizes in future, including some trips to Le Mans in 1983.

During the last few months, we have managed to make a profit from our events which means that we have been able to send £250 to the South Atlantic Fund. We have also helped towards the pub's donation of £500 to the blind, donated a rig for raffling to-

wards a kidney machine and given a complete CB station to a local remand centre. Not bad, considering our average attendance of 50-60 people.

Dave Holloway (Midas) (Secretary)
Eynsham, Oxford

Lima Tango DX Group

Our club, the Lima Tango DX Group, started earlier this year, with membership growing all the time, from up and down the country not just locally. We even have a number of overseas members, too.

Membership is £2.00. This includes your Station number, membership card, use of PO Box if required, sample of QSL cards, pen with club name, key fob with club QTH, car sticker and other items as they become available. We also have our own club rubber stamp at an extra £5.00 for those who want it.



Most months we hold a competition for those members using the PO Box, e.g., furthest copy, most QSL cards, etc. From time to time locally we hold events such as car treasure hunts, camps, etc.

New members always welcome.
Roy (1-LT-001)
President and Founder
Lowestoft, Suffolk



The South Herts Breakers Club

The South Herts Breakers Club has been running for just over six months and we have now moved to a new venue. This is Aberford Hall, Aberford Road, Boreham Wood, Herts. We meet every Thursday evening at 20.00hrs. (8 o'clock). Visitors pay 50p or 35p on production of any CB club membership card. At present we do not have a bar but tea, coffee, etc., is served. We have raised nearly £200 for

charity by collection and a pram race and we have a sponsored walk taking place in the near future.

Club membership is £2.00 per individual or £5.00 per family. Junior membership (under 16) is £1.00 per year.

We are a family club and, as such, try to cater for all age groups and also promote the proper and correct use of CB by all our members.

Gnome (A. P. Harris)
Social Secretary
Boreham Wood, Herts.

THIS MONTH'S COMPETITION

BEST OF BRITISH

Throughout this month's magazine, you'll see this 'Best of British' design, which is used on the pages featuring British manufacturers and goods. To get this special feature off to a good start, ZENITH ELECTRONICS, of Hailsham, have provided March's competition prizes. A ZX4 microphone and Zenith Speech Processor will wing their way to the sender of this month's wittiest competition entry.

The photograph was taken on a CB rally by our photographer and it has sat waiting at the back of a drawer since but we think it's about time it got the publicity it deserves. We want you to tell us what you think the policeman is saying to the two breakers who are looking so intently at him. Bear in mind that the policeman is working on a Saturday (probably his day off), it is cold and he is surrounded by loud and protesting breakers - so he's not too happy. Keep the answers clean but funny!



The judges (whose decision is final) will choose the one they think is the funniest and most appropriate comment. The winner will be notified as soon as the result is known and this result will be published in the first available edition of the magazine.

Send your answer (on a postcard, please) to March Competition, CB Radio Magazine, Tudor Works, Beaconsfield Road, Hayes, Middlesex UB4 0FL by 25 March, 1983.

INTERFERENCE

THE FACTS?

Whatever motives the Government is accused of in selecting the frequencies and mode for British CB, it has always been loud in its assertion that the decision was based on causing the minimum of interference to other radio spectrum users. Individual arguments aside, this is a sensible and essential precaution, as no one would want to cause or see widespread disturbance to services or even minor disruption to emergency services. Loud noises from the Government aside, how much interference is being caused to other users?

The official view

The Home Office view is, quite simply, that illegal CB is at the root of interference complaints – be it illegal frequencies or legal frequencies used with illegal accessories. This is not an unexpected opinion, as the authorities are duty bound to prove and defend their decision on CB – but look at the figures for interference complaints. In 1981, when almost all CB was illegal, the figure was 44,966. A year later, it stands at 48,340 – an increase of nearly 3,500. If AM CB is declining in use, as everything suggests, then all of the increase – and then some! – is from legal CB or, at least, CB on legal frequencies.

Therefore, the Government's aim of reducing interference with the introduction of legal CB really hasn't worked. Whatever the cause, the number of interference complaints is worse than before legalization. In fact, many breakers feel that in giving a legal service with such ineffective restrictions, the Government is almost encouraging the breaking of licence restrictions. If FM CB was used totally legally, it would be much less likely to cause interference *but* this isn't the case as breakers are dissatisfied with the service they have and are ultimately causing exactly the same effect as if they were using AM.

Who's interfering with whom?

According to Home Office statistics, 95-97% of CB interference complaints concern domestic radio and television. (The Home Office is not involved or concerned with break-in on hi-fi or video equipment). The remaining few per cent are based on complaints from other services, including emergency organizations.

The Civil Aviation Authority

The CAA has always been strongly opposed to any 27MHz CB, not because it objects to CB in principle but because the fourth harmonic of 27MHz falls at the bottom end of the

Fig. 1. Comparative interference figures, 1981 and 1982

	Total number complaints	CB interference complaints	CB Interference complaints to domestic radio and TV
Jan-Dec 81	70,000*	44,966	43,864
1 Dec 81-31 Nov 82 (Total for 1982 not yet available)	70,000*	48,340	46,000 approx.

*This figure is rounded up

Independent Landing System localizer/VOR band and the fifth harmonic into the top end of the VHF R/T band. They were also concerned that widespread use of CB would mean that users in the close vicinity of airports and similar areas would inadvertently cause interference by being close to radio and communications installations, without realizing the dangers involved. The CAA's publication, 'Airway,' went as far as saying:

"It seems clear that CB interference, even from a legal 27MHz (FM) service, is going to definitely occur on VHF R/T to some degree".

The CAA went on to explain that they anticipated the good design of the ILS system and airborne control equipment would reduce the chance of interference from FM CB.

The CAA were certainly prepared to deal with such a problem and, as such, would have been better equipped to deal with it when it arose. Happily this hasn't been necessary. In practice, neither legal *nor* illegal CB has caused any real problem to the Authority – much to their relief.

Selective paging

The Selective Paging Committee has prepared more than one report on the implications of CB radio and interference to paging. Companies and individuals using paging devices get varying degrees of interference which are not always directly traceable to a particular cause – particularly not to AM or FM CB. However, the Selective Paging Committee has been worried about CB for some years since many paging systems share 27MHz with

both forms of CB. The Committee is now campaigning to get out of 27MHz completely, particularly as it is concerned that the British Government will eventually adopt FCC frequencies through CEPT recommendations. However, it has no evidence at the moment that the paging 'community' is affected by CB and is finding it difficult to substantiate any claims that CB affects the majority of paging systems. In the opinion of a spokesman from one of the major paging companies, the biggest and most persistent source of interference comes from British Telecom itself and similar licensed users but the Home Office has shown itself reluctant to act when cases are reported to it.

The same spokesman said, with some feeling, that the Government has deliberately set different radio user groups against each other and has made a scapegoat out of citizens' band by repeatedly highlighting problems caused (or suspected of being caused) by CB.

Hospitals and other emergency organizations using 27MHz for paging have been steadily moving off 27MHz to frequencies such as 35MHz for some time now, although they have had sporadic interference from all forms of CB. This has caused a prohibition of staff using CB equipment in some hospital areas or residential medical care homes.

Ambulance services

The reports from ambulance forces vary from minimal to severe at times. For instance, the London Ambulance Service has very few problems with

either illegal or legal CB, although what interference they do get is usually from AM CB but some other services, like Manchester, have greater problems, especially from illegal CB.

The police

Police forces are very reluctant to give any information on their telecommunications systems, although we have reported in the past on serious interference to mobile R/T in the London area. No force was prepared to comment officially, although some officers spoke 'off the record' and said that they are worried by the level of interference.

The fire brigades

The fire brigades seem to be suffering worst out of all the services—although it is difficult to make comparisons without full information from the police.

A Communications Officer at a County brigade, who also sits on the Communications Committee of the Federation of British Fire Officers, commented on the situation both nationally and in his own county, Kent. Many brigades experienced problems, to a greater or lesser degree, before legalization, which in many cases has increased with legalization.

Kent, itself, suffered a small amount of pre-legal CB interference which increased tremendously from 2 Nov-

ember, 1981 onwards. Investigations showed that the third harmonic of channel 16 was the exact frequency used by Kent Fire Brigade for mobile communication. The interference is so severe that it is a constant night and day problem and at times completely blocks transmissions from vehicles out on emergency calls. The brigade mounted a large publicity campaign involving local radio and breakers' clubs in an attempt to show how serious the problem was.

Kent, in common with other brigades, has sent officers out to CB clubs to explain the position which has, on the whole, met with success. Clubs may encourage members and other breakers on channel to avoid certain

frequencies but the 'wally' element, unfortunately, aren't moved by this argument and there is little that can be done about the breaker who is advertently parked near a hill-top relay site (particularly as any service isn't keen to announce the location of such sites).

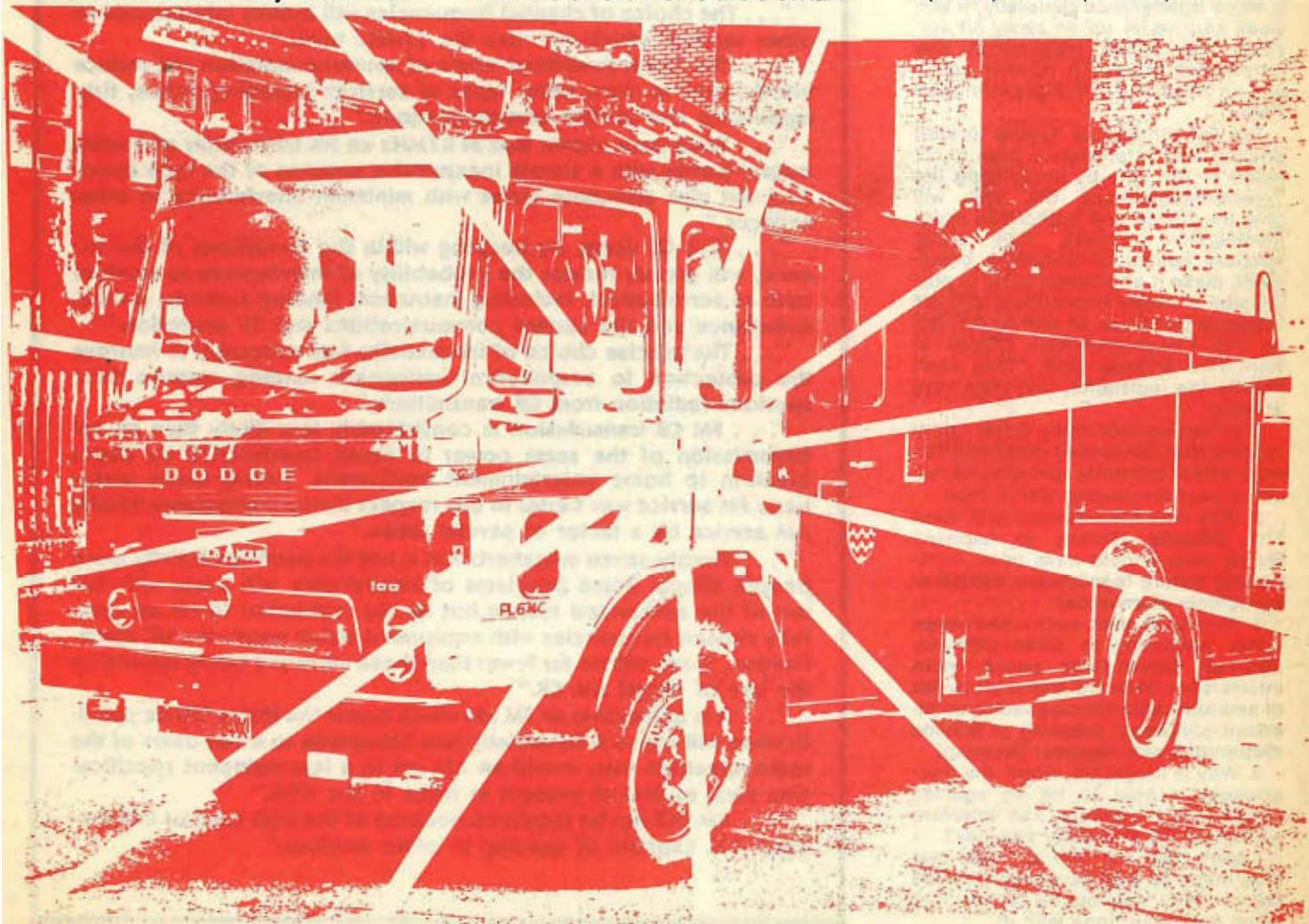
The Kent Fire Brigade Service is having to completely change frequency, an expensive business especially as they will have to change yet again in the future to fall in with national frequency changes.

London and Manchester Fire Brigades have also reported a high level of interference but mainly from AM CB. Although individual cases are reported, where possible, to British

Fig. 2. Number of CB prosecutions

	Number of prosecutions	Number of successful prosecutions
Jan-Dec 81	879	858
Jan-Dec 82	2,300	**A similar proportion to 1981* i.e., 97%

*Home Office quote



INTERFERENCE THE FACTS?

continued

Telecom, this is having no discernible effect. London can change frequency but this is time consuming and obviously not to be undertaken in an emergency.

What now?

It can be seen that there are problems associated with CB-caused interference. Depending on the organization, interference is non-existent or constant, from AM or FM or both, from legal 4 watts to burners. We are not condoning breaking the Wireless Telegraphy restrictions – whatever our own personal opinions may be – but it can't be escaped from that in making the decision it did and in a half-hearted manner, the Government has done nothing to help the situation it was most worried about. It must be said that at the end of the day there is more interference generally to services and not let up on badly hit services than when legalization was introduced nearly 18 months ago – and no indication of things getting any better.

The Government is hoping to start dealing with interference from multi-mode or AM sets by introducing the Telecommunications Bill. This will give the police and authorities wider investigative powers, stop shopkeepers selling unlicensable equipment, make it an offence to be in possession of illegal transmitters and will increase penalties on conviction. But as the Communications Officer at Kent Fire Brigade says, "They can't handle the legislation that they have already".

One parting shot. If the Government is really that concerned about interference and is currently spending £8 million a year on dealing with it then

1. Why was the situation with Kent Fire Brigade allowed to happen? Surely help should have been forthcoming before legalization instead of gudgingly afterwards?

2. Why is CB given such a bad image when, according to some services, mini-cab transmitters cause more interference than CB and some areas of amateur radio are plagued by unlicensed operators, breaking of licence restrictions and repeater jamming?

3. Why is illegal CB, which the Government is said to be so against, allowed to proliferate and interfere with legal CB and other services?

I can't help but feel at times that they might as well have legalized AM CB on FCC frequencies in the first place and have done with it!

Fig. 3. The Home Office Speaks

"... It is important to remember that the CB licence obliges users to operate their apparatus in such a way that it does not cause undue interference to other radio services."

"... The use of FM instead of AM will cause less interference to home entertainment equipment by direct break-in."

"... The choice of channel frequencies will reduce interference to other services which also use the 27MHz band."

"... The lower permitted levels of spurious radiation will reduce interference to many other types of services including police, fire, ambulance and aircraft communications."

"... Tests have shown that at 27MHz an FM transmitter of 4 watts output power with a simple inexpensive antenna of the type specified will give adequate range with minimum interference to other services."

"... The CB users, by keeping within the conditions of the licence, will greatly reduce the probability of interference to services such as aeronautical, including instrument landing systems, police, ambulance and fire service communications and TV reception."

"... The precise choice of frequencies was necessary to improve the protection to aeronautical instrument landing systems from spurious radiation from CB transmitters."

"... FM CB transmission is considerably less likely than an AM transmission of the same power to cause interference by direct break-in to home entertainment equipment. Twenty-seven megahertz FM service was better in this respect than a comparable 27MHz AM service by a factor of several times."

"... Twenty-seven megahertz AM is not the harmless activity many people allege. Some problems of interference will occur with the use of the authorized system but by the restriction to FM on carefully chosen frequencies with equipment which meets the UK specification, these will be far fewer than those currently being caused by the use of illegal AM CB."

"... It is quite clear an FM set which meets the Home Office specification will cause substantially less disruption to other users of the radio spectrum than would an AM set to a less stringent specification such as that at present in force in the USA."

"... AM will not be legalized because of the high level of interference it is capable of causing to other services."

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<i>Arrive Paris</i>	6.00p.m.

TIMETABLE: 17 APRIL (SUNDAY)

<i>Depart</i>	Hotel approx. 9.00a.m. for visit to Versailles
<i>Arrive England</i>	London 10.00p.m. Birmingham midnlight

Please reserve me _____ places for this Spring Weekend in Paris at £55.00 (single room supplement £10.00).

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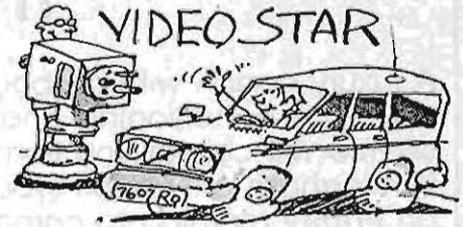


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Confessions of a CB enthusiast

Goodbye
from



Here we are again, a freezing winter with the spring probably just as cold and the ol' CB rig still getting used to help the odd fellow breaker out of the odd snowdrift or two and there's probably more to come! I was speaking to a REACT monitor recently and he underlined a thought or two I had during this cold spell. If you're in trouble (but still roadworthy) don't think that calling out on channel 9 will result in a free breakdown service with a mobile crane, complete with flashing amber lights and a REACT logo painted on the side coming to your aid. Although it seems a nice idea, it is not the case. A monitor will certainly do his/her best to help in any way possible - but they can only do so by calling on the existing rescue services of police, AA or RAC, etc. or even a local garage. The monitor is not there to leap into his own vehicle and come to your assistance (although many do help in every way they can). By far the best bet is to call out on channel 19 - the 'mobile' breaking channel. There is every possibility that a fellow breaker will be closer to you and possibly give immediate assistance. If there doesn't seem much activity on the channel, you can always try 14, as some mobile breakers (and I'm one!) 'copy the mail' in town and then forget to change up to channel 19 when hitting the open road! There is also the 'knock-on' effect I mentioned last month of town and city breakers modulating on 19 and treating any request to clear the mobile breaking channel with a few choice expletives - not forgetting the old chestnut, "I've paid for 40 channels and not 39," etc.!

Got your 934MHz rig yet? Nope, neither have I - is there anyone out there? I had a quick phone call with Jeff Smith of Reftec, who told me that 934 rigs are being delivered to wholesalers for distribution around now, so it shouldn't be too long before the odd one or two appear on the shelf of your local CB dealer. One thing that hasn't been established has been the channel operating procedures! What's the breaking channel? Is there any monitoring and if there is... is it still on channel 9? Don't forget that at present, 934MHz rigs are limited to 20 channels (not the 40 we've grown to love and hate). There's bound to be some initial confusion until the system sorts itself out - there is a provision to add a further 20 channels should the

need arise in the future but in view of the high cost of the first rigs, with the average price being in excess of £200, space to transmit shouldn't be a major problem initially! It is suggested that on 934MHz channels 1 and 20 be used for repeater operations - no, it doesn't mean that it's a cheap echo chamber! Briefly, amateur radio enthusiasts ('hams') have been using repeaters for years and their use helps mobile users get increased range from their equipment. It involves the use of a 'base' transmitter/receiver at some high vantage point which receives the incoming signal on, say, channel 1 and it then re-transmits the signal received on channel 1 to channel 20. Naturally, at the moment there are no 934MHz repeaters around the country yet but, in view of this future use, it would seem sensible to prepare for it now - repeaters work best the further apart the transmit/receive frequencies are - hence the suggestion to use channels 1 and 20. This now leaves us 18 channels to use from 2 to 19. There isn't the need for 'specialist' channels like 14 and 19 on our existing UK 27MHz system - but there is a need for a calling channel - and since no one has come up with a better idea, it seems that channel 14 will become the general 'breaking' channel. At present there are so few rigs around, it's not a realistic suggestion to hope that monitoring organizations will be able to offer their assistance on this new UHF band - but again, channel 9 seems favourite as the prospective emergency/assistance channel. After all, if you're in a jam and you've already pushed the panic button several times... it's a bit much to remember if you're in a 934-rigged vehicle what on earth the monitored channel is! To sum up, on 934MHz it's suggested the following be adopted as working practice: Channels 01 and 20 - repeater operations; channel 09 - emergency and assistance use; channel 14 - initial contact (or 'breaking' channel)... If you've any suggestions, drop me a note care of CB Radio Magazine and I'll pass on your comments to those concerned!

You've probably read elsewhere that lots of CB magazines are closing down and are to be no more. CB Gazette, 10-4 Action, CB News, CB World, What CB?, Breaker and a few others, all will be missed this year... certainly some more than others (no names!). Every magazine had at least one or

two good points and it's a pity all the 'behind the scenes' talent is being forced into other publications, like gardening magazines... (1-4 for a rhododendron?)... and the like. True, the CB boom never came but only the businessman wishing to make a killing thought in those terms. As you could see from our monthly News Review pages, the newspapers were always ready to print sensationalized accounts of a non-story but the possible distant connection with citizens' band radio made it a story and that old maxim is true... never let the facts spoil the story! CB's first birthday passed with hardly any media coverage. I don't remember being kept awake a few months back with the dancing in the streets celebrating CB's first year. No, it was left to the specialist press to give an unbiased view - those that were still there, that is. Looking back over the year, I loathed the inane comments uninformed adults would lapse into when they knew I was interested in CB - things like "1-4 for a rubber duck" (!) or maybe "1-4, 1-4, who's that knockin' my front door shoutin' for a copy..." It almost made reading girlie books a worthwhile alternative (apologies to those feminists amongst us). If you've stuck with CB since legalization or even before, you've proved yourself and deserve to be called a 'breaker'. For those of you who've just joined our merry band with a CB present from Santa, stick around, as you'll be amazed how much enjoyment can be had from a miserly £10.00 a year! (Psst - that is the licence fee - you DID get one, didn't you?)

I've just got a new rig in the car. So now I'm driving around with three aereals. Before you think the CB bug has bitten too hard, I should explain that one of the aereals is for the broadcast radio (You remember Radio 1? Surely!) the second is for my trusty CB but the third twig and the cause of my elation is that this latest piece of radio gubbins is so that I can make and receive telephone calls to anyone in the UK. My boss is making me mobile, so no longer will I be able to be 'desk-bound' and the wide, open road awaits - with the result I'm not going to be able to devote all the time I'd like to CB radio. I hope you find the hobby less fraught than I did initially, so a big 10-10 from ol' Videostar and remember, if you're fed up with the turkeys on channel, remember there's still 934MHz! Goodbye.

As you will see by flipping through the pages of CB Radio Magazine this month, a lot of the pages have a corner design with 'Best of British' on. This special feature has been produced to highlight some of the small British companies who have honoured their commitment to British CB and are producing rig, antennas and accessories within this country to a high specification.

Many of these companies have had a hard time during the Far Eastern onslaught of low price and poor quality. Since the majority of these British goods are made with British components and labour and have involved research and development, they have not always been able to compete with the cut prices that have filled some shop windows. Now this situation has sorted itself out a little, these British companies are now at the forefront with a range of products for the old and new breaker.

Gamma Aerial Products

Gamma Aerial Products has been in business for some considerable time as manufacturers of amateur radio antennas. The company started manufacturing CB products in 1981 and has had enormous popularity with its products, especially the GAP 27 1/2-wave antenna, which has become a household name among CB users. Their latest products include a revolutionary ground plane kit, the 'Ringo Plane', and a loft aerial, 'Lofty'.

John and his wife, Jennifer, run the company from their 6,500sq. ft. factory in Lye, which is totally dedicated to their aerial products. The factory has its own tool room, machined parts shop and plastic injection moulding machinery.

See advertisement for further details.



Freeman and Pardoe Ltd.

Situated in Alcester, West Midlands, this engineering company has been established for over 30 years and, until fairly recently, concentrated on sub-contracting work of engineering components for industry.

Freeman and Pardoe has manufactured a range of home base antennas that have quickly gained a good reputation for performance and price. The most current in the range is the Thunderpole II. An updated version of the popular Thunderpole, the Mark II can handle 500W and is pretuned to 1.5:1 or less.

The Thunderpole has a new ribbed coil design which is fully weather protected and is doubly wound to maximize performance. The price of the Thunderpole II is £25.00. It is also guaranteed.



performance to MPT 1320, a superior rubber duck antenna (not of the 'clip on' variety, which introduces two loading coils, one in the rig and one on the antenna and degrades the set's performance by mismatch), a PL259 socket so the set can be used with an external antenna and car mounting brackets for greater versatility. A leather carrying case is available for the Westward PT.

The PT can be used as a high performance portable, a mobile set or home base as it can also use car battery or mains power.

The Westward PT costs £129.95 (inc. VAT) with the leather case £25.30 (inc. VAT). Packing and posting is £2.88. It is available directly from Westward Electronics.

Westward Electronics

The Westward PT rig was designed by taking all the disadvantages of currently-available portable units and overcoming them, say Westward Electronics.

So the PT features a rechargeable, high-capacity 12V battery pack, full



BEST OF BRITISH



magpie

Magpie Electronics Ltd., of Andover, Hampshire have, for the last six months, been preparing their new British product for the market. Entitled the Magpie Autoscan 5000, this new transceiver has many unique features. The first and most significant of these features, as can be observed from the photograph, is the method of channel selection. Rather than using the normal large and often clumsy rotary mechanical switch, Magpie have employed an electronic system, operated by either of two sets of control buttons mounted on the top edge of the microphone and on the transceiver's fascia panel. Pressing one of the minus buttons lowers the channel number and pressing one of the plus buttons raises the channel number, either in single increments or, if the button is held in, until the desired channel is reached. When the transceiver is first switched on it automatically goes to channel 14, as it will also do if the two buttons are pressed simultaneously. The Autoscan 5000 also scans through all 40 channels in

search for either a free or a busy channel, dependent upon the position of a three-way switch on the fascia panel. Other switches give the user control over PA, channel 9 and attenuator facilities.

Bright blue

The usual red or green LED channel indicator has been replaced by a high-quality blue vacuum fluorescent display which is easier to see in bright sunlight. The brightness of the display is also automatically set by a 'magic eye' photoelectric cell situated adjacent to the display. Signal and RF power levels are monitored by the usual illuminated meter.

The all-metal front panel and attractive mechanical design reflect the quality of mechanics and components within the unit, which has been designed and manufactured in Britain. In particular, the receiver section has been so designed as to ensure high immunity from adjacent channel interference and bleed over using extremely

selective ceramic filters. Precise channel selection is digitally controlled by a phase-locked loop synthesizer using only one crystal for improved stability. You will be able to judge for yourself the effectiveness of these features when we issue a full test report on the Magpie next month.

The receiver section can be adjusted to the user's requirements using four rotary controls; mike gain, RF gain, squelch and volume and to help alleviate installation problems the mike socket has been located on the right-hand side of the transceiver.

Limited edition

Magpie Electronics Ltd. was formed solely for the production of the Autoscan CB set, although under the name of Solid State Electronics, the two directors, R. Friedlander, M.Sc. and J. R. Frampton, T.Eng.(C.I.E.), have been occupied with the design of specialist industrial and military instruments such as satellite receivers and fibre-optic systems for several years.

The construction work on the Autoscan 5000 is sub-contracted to several small British companies who each take on one particular stage of the production. The circuit board, for example, is put together on the Isle of Wight. Production numbers will, therefore, be kept to a minimum. Mail order will be the only method of distribution and enquiries should be made to:

Magpie Electronics Ltd.
PO Box 35
Andover
Hants.
SP10 2LG
Tel: (0264) 66361

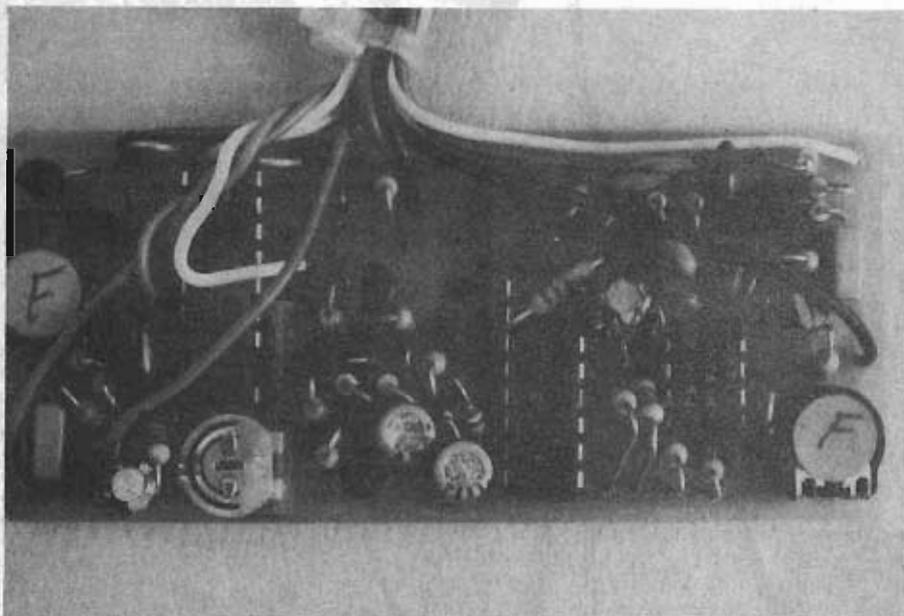


Skylab CB

For a change, not located in the West Midlands but in Bingley, West Yorkshire, Skylab CB has a range of three accessories.

The FM Superkrunch is probably the most well-known Skylab product and is a further development of an earlier product, the K9 Kruncher (not, as a colleague of mine commented, a dog biscuit). Much acclaimed amongst breakers for getting rid of that annoying hiss that can accompany FM transmissions, the Superkrunch costs £36.00.

The Skylab Supersound is a speech processor with echo, echo delay and integral reverb facilities. The Supergain is a RF pre-amp for FM CB and can be turned up to 36dB gain. It is particularly good for enhancing those very faint signals.

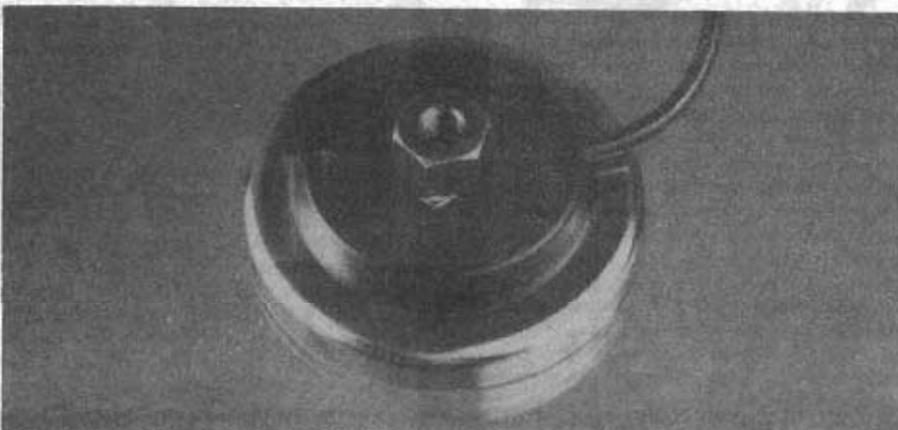


Catswhisker's

Well established as a CB shop in Berkshire, Catswhisker's also markets the cat call, a selective calling device. The cat call is marketed in matched pairs and uses digital encoding.

The system is based on five different colour codes and gives up to nine lettered codes on the standard unit. Installation and operation is simple. The cat call unit is very small and fits inside the majority of rigs. Operation is by pressing the required station call button. If the required station is switched on (and within range) the unit will automatically call back and buzz through the loudspeaker to confirm receipt. The called breaker will know he has been contacted as his set will buzz constantly. This is useful if the breaker is not near his set at the time.

With 3,200 permutations in any area, it could be the answer to channel overcrowding.



Ariel Midland Co.

Yet another West Midlands company, Ariel Midland, are best known for their Wot Pole antenna, a legal version of the popular di-pole antenna, which they designed, manufacture and distribute. The range isn't limited to the Wot Pole, though, as Ariel Midland also manufactures di-pole antennas and ground plane kits.

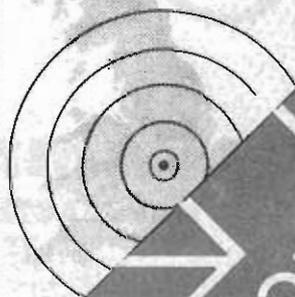
'Serving the
Country'

ren but their more traditional range includes antennas for television, car radio, amateur radio and, of course, CB.

One of the most popular CB base station antennas is the Silver Arrow from Aerial Supplies. Designed and tuned specifically for British FM CB, the SWR tunes to 1.4:1 for best performance. The antenna comes with comprehensive fitting and installation instructions.

This company is located in the CB-fertile West Midlands and manufactures antennas as well as a range of equipment that utilizes the tube that they produce.

The company now has garden swings and a selection of climbing frames available for energetic child-



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GAP 27Mhz
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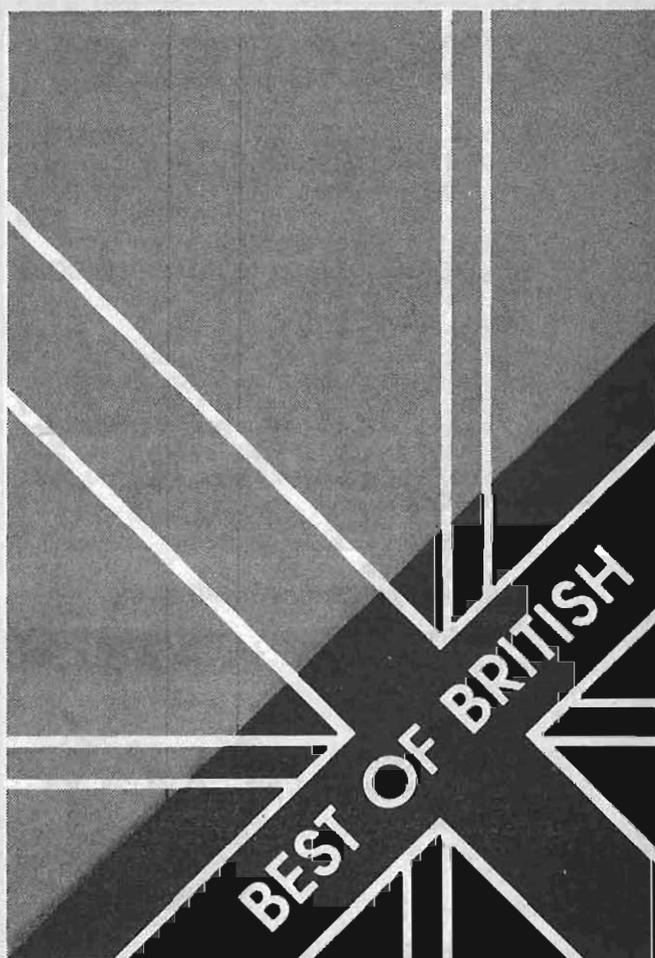


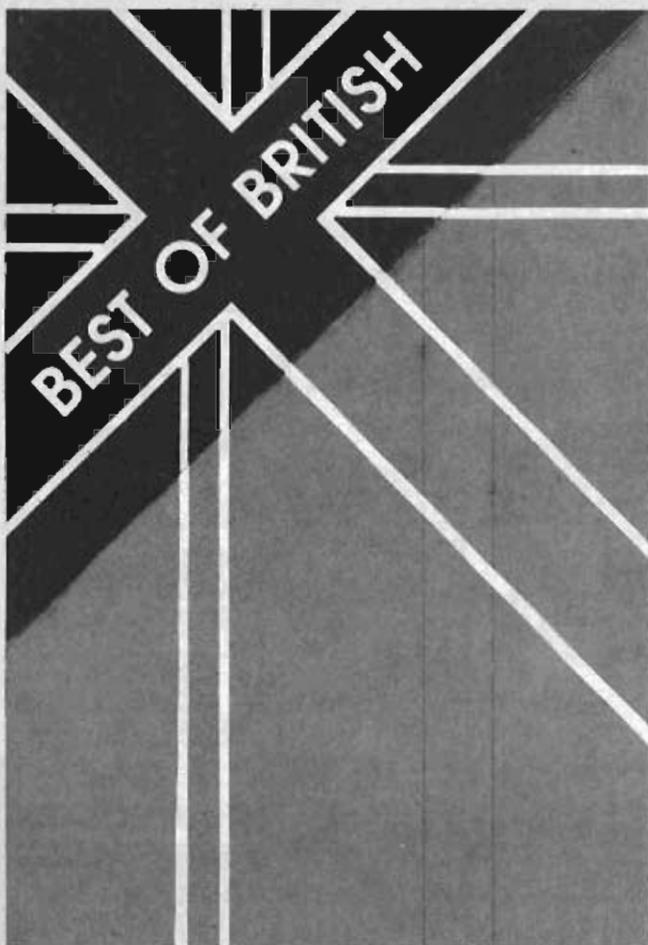
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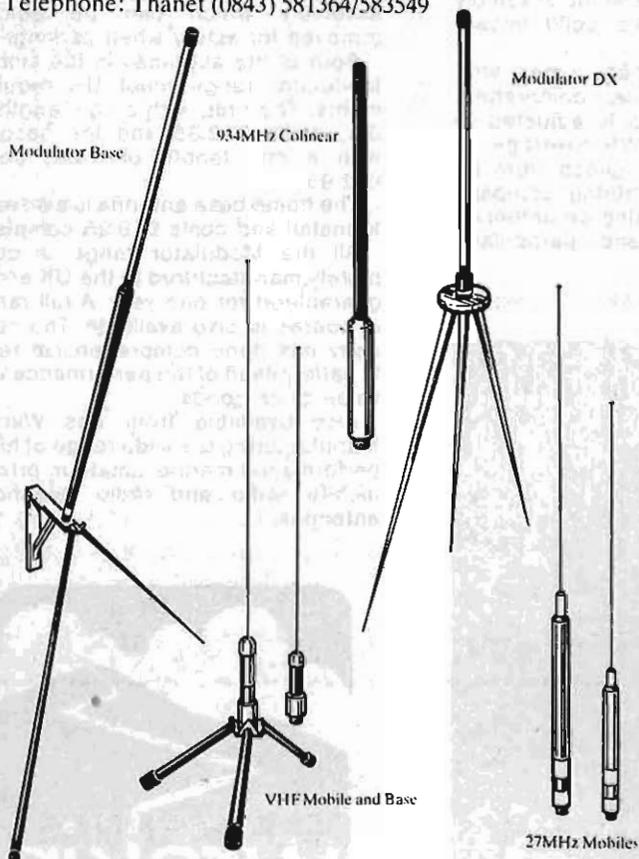
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for further information

BEST OF BRITISH



Alfra Manufacturing Company

This Plymouth-based company produces the Power Puncher antenna for British FM CB. This base station antenna is suitable for either pole or loft mounting with the ground planes crossed or window sill mounting with parallel ground planes.

The loading coil is protected from temperature and weather extremes by a heat shrink casing and the assembly is manufactured from solid impact polypropylene.

The Power Puncher comes with mounting accessories, comprehensive instructions and is adjusted to give the maximum SWR coverage.

Alfra, as you can guess from its name, is a manufacturing company and is currently working on antennas for the 934MHz band, particularly beam antennas.

Les Wallen Manufacturing

Les Wallen boasts that Modulator CB antennas have the biggest range, in terms of distance, of any CB antennas on the market.

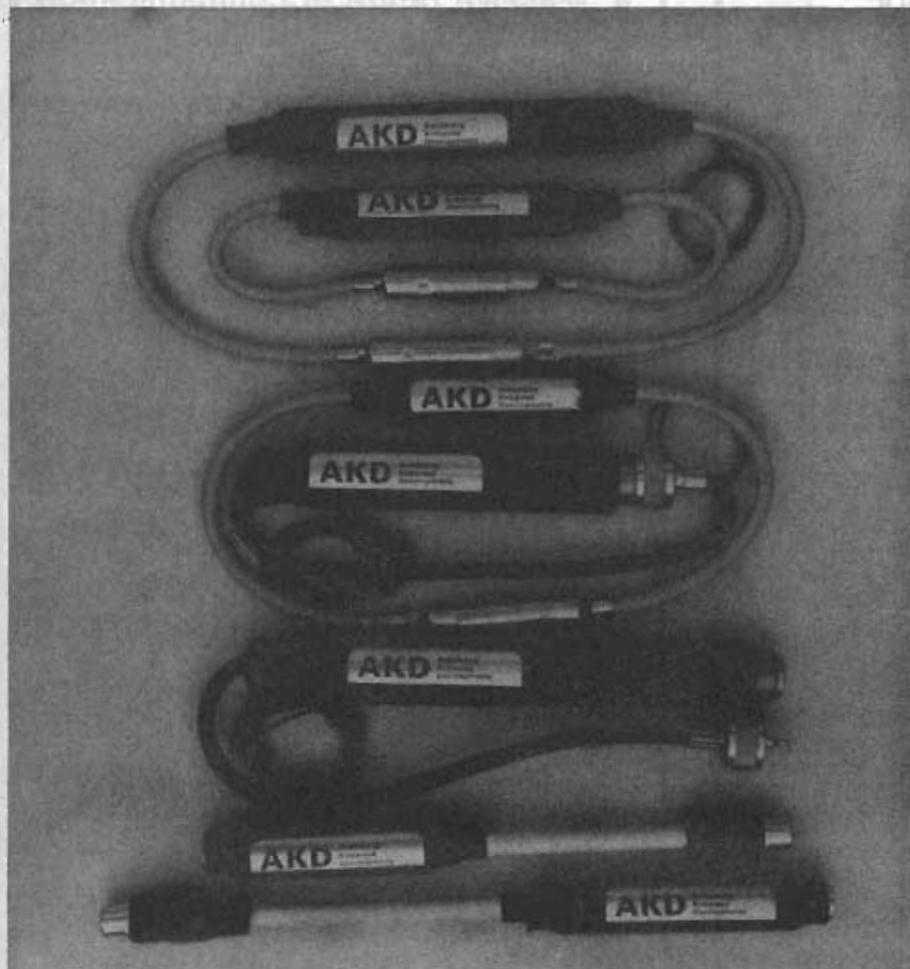
The Modulator range is of rugged construction, using high-quality stainless steel whips and are connected by a standard 3/16in. UNF X 24 TPI thread. Car installations can be gutter, wing or roof mounted, by mag mount or permanent fitting. The antenna has a whip assembly which can be quickly removed for safety when parking.

Both of the antennas in the mobile Modulator range meet UK requirements. The first, with a coil length of 6in., costs £12.35 and the second, with a coil length of 14in., costs £12.95.

The home base antenna is also easy to install and costs £19.95 complete.

All the Modulator range is completely manufactured in the UK and is guaranteed for one year. A full range of spares is also available. The company has done comprehensive tests to satisfy itself of the performance and value of its goods.

Also available from Les Warren Manufacturing is a wide range of high-performance marine, amateur, private mobile radio and radio telephone antennas.



AKD

Armstrong Kirkwood Developments manufactures and markets a range of electronic accessories which utilize miniature circuitry mounted within copper, aluminium or plastic tubing. This range of accessories covers signal boosters, high pass filters, notch filters and braid breakers, at prices from £6.61 to £14.40.

AKD has also recently produced the CB Vamplifier at £25.95 and the Precision Direction Finder at £45.00. The

Vamplifier is a CB signal booster and RF variable attenuator combination set, with LED indicators, automatic RF switching and band pass filter.

The calculator-size direction finder enables absolute pin pointing of an aerial radiating 27MHz CB transmissions. The unit is supplied with a miniature aerial, giving a 50-metre range. A full-sized directional aerial enables general DF'ing over a much greater distance.

All AKD products are made in Britain and backed by a two-year guarantee.



Tectel

The Tectel range of accessories is manufactured by unemployed youngsters at a unique training centre in the Shropshire new town of Telford. As part of their training, the youngsters at Telford Opportunities Centre are producing and marketing products like broadband filters and echo chambers.

Production work is divided between three sections which operate under the Telford Opportunities Centre roof. The electronics are designed, built and assembled by trainees at the Telford Information Technology Training Centre (ITEC), the boxes are constructed by their colleagues at the Telford Training Workshops and the finishes are put together by adult workers at Telford Disabled Skills Ltd.

ITEC manager, Alan Hullyer, said "We want to help the youngsters use their experience to set up small businesses in this and related fields or to find relevant jobs with local industries.

"It is a very small-scale outfit but there has been a tremendous response so far to our broadband filters."

Tarren Products Ltd.

This company has been in existence for a year and was formed with Government backing from an ITT company which was closing down. The directors of the ITT company went on to form Tarren and to produce two CB power supplies of 30VA and 70VA. Each has a 13.8V dc stabilized output.

The company has been so concerned about the quality of power supplies and ratings given to them that they have decided to move away from the common terms usually applied and market a 'standard' version and a 'high' version.

Both power supplies have been tested by the British Standards Institute and both comply with the Electrical Equipment (Safety) Regulations and the Electrical Appliances (Colour Code) Regulations.



Zenith Electronics

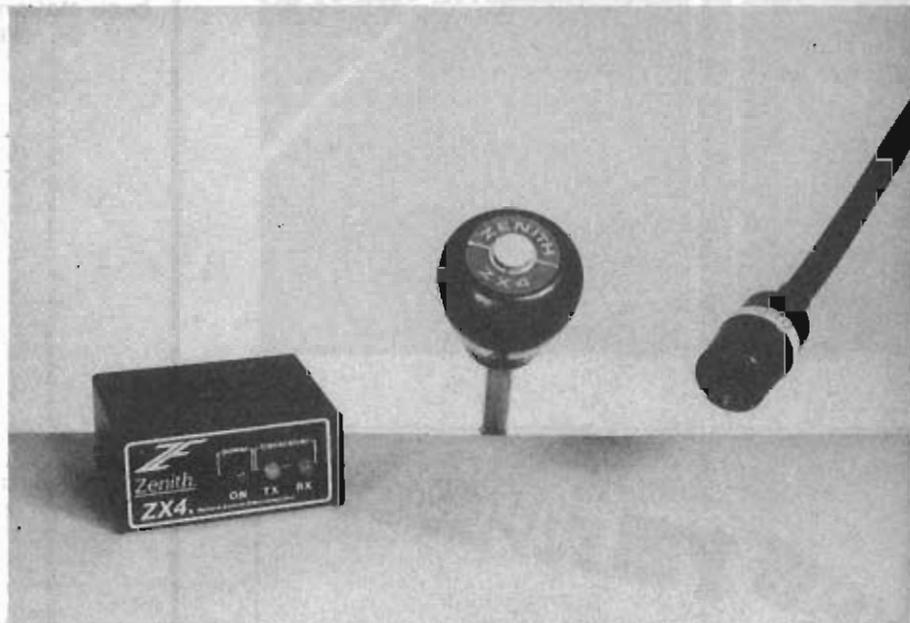
Although relatively new to CB, Zenith Electronics has nine years' experience in the hi-fi, audio and industrial electronics industry to back up its new products.

Currently Zenith produces two accessories. The Zenith speech processor is an offshoot from the company's audio work and costs £32.95 (a price which has been stable since June 1981). The company can also proudly boast that in that time it has had no returns or complaints. This is put down to very strict quality control at every stage of production, not just a final visual inspection at despatch.

The ZX4 is Zenith's most recent product. This microphone system has only just been released but has met with a good response. The microphone (which will pick up from over

3ft. away) is on a gooseneck with the PTT button located on a replacement gear lever knob (which is available in black or tan). The ZX4 costs £25.82 (approx.).

Although basically a design company, Zenith handles all its own manufacturing on its own premises.



Garex Electronics

This Hertfordshire family company has 20 years' experience in mobile radio and is the main distributor for another British family company, Revco Electronics Ltd.

Revco antennas, covering 27-500MHz, feature a folding whip and coil design which can be used with a range of mount options. This design allows easy installation to any surface, whether horizontal, sloping or vertical. Top quality materials are used, producing an antenna for years of satisfactory service.

The magnetic base features a removable rubber boot to prevent marking or scratching vehicle paint work. The Revco optional quick-release mount is also available for security. Revco will soon be releasing a Taperlock base mounting, a development of the popular snap-in mount design.

Garex Electronics is the main service and sales agent for the SX-200 scanning monitor, the only VHF/UHF scanner designed for the British market.

GAREX ELECTRONICS

Bury Electronics

The Auto-Squelch from Bury Electronics is a small (30 X 20 X 15mm.) electronic module which fits inside most CB sets and monitors the received signal. Requiring no adjustment during operation, it filters out the harsh FM 'fizz' and unwanted single sideband transmissions.

The Auto-Squelch works independently of signal strength and noise levels and won't interfere with weak, readable signals. Once fitted, the squelch on the set is turned off and the Auto-Squelch comes into action automatically. If the transceiver squelch is required, the device will turn itself off as the squelch is adjusted.

Fitting is not a difficult operation and in many cases is just a matter of six connections. The range of rigs suitable for fitting with the Auto-Squelch is listed in Bury Electronics's advertisement in this feature.





NEW FM SUPERSOUND

Ministry of Defence tests prove that received sound is better with an echo facility, so Skylab designed a circuit and put it into Supersound — speech processor input with echo, echo delay and integral reverb — all independently adjustable. Get more out of your rig — enhance the quality of your modulation.

NEW FM SUPERGAIN

New Supergain — this high quality RF pre-amp for FM rigs can be turned up to 36 dB gain! Ideal for serious DXing — brings out those normally undetectable signals.

FM SUPERKRUNCH

Plus FM SuperKrunch — the genuine original noise and hiss eliminator. SuperKrunch actually listens to the audio output of your rig and if it hears noise, SuperKrunch makes sure that you don't. SuperKrunch lets only modulation through to you. Simple connections — works with phones or speaker — protected against reversed polarity. Only £34.50 inc. p. & p. Money back if not fully satisfied.

Skylab 2C Keighley Road, Crossflatts, Bingley, W. Yorks.

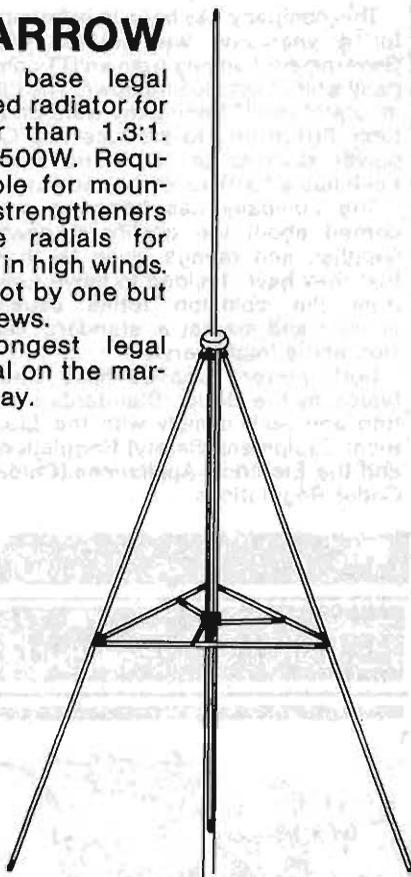


AERIAL SUPPLIES (Redditch) Ltd

SILVER ARROW

Pre-tuned home base legal antenna. Pre-tuned radiator for FM. SWR better than 1.3:1. Power handling 500W. Requires 1½in.-dia. pole for mounting. Additional strengtheners to ground plane radials for improved stability in high winds. Main mast held not by one but three locking screws.

Best and strongest legal base station aerial on the market today.



**WE ALSO MANUFACTURE
A RANGE OF ALL TYPES OF
AERIALS, MASTS AND
BRACKETS, ETC.**



ASP 3GP 27MHz ½-wave

This omni-directional base station aerial is a ½-wave, base-fed, vertical radiator. Ground planes help to broaden the bandwidth and achieve a low SWR across the band. The 12in. bracket provides two points of antenna support. This bracket fits masts up to 1½in. in diameter.

6 Widney House, Bromsgrove Road,
Redditch B97 4SP
Tel: Redditch 62620 and 60107

Tarren Products Ltd.

CB POWER SUPPLIES



The Best Unit because:—

Two year Guarantee

High quality Components and Manufacture

Ensures Constant Output

British Design, British Built

Equipped with Circuitry to ensure the

Safety and Protection of your Rig

This Unit stays cool even with Constant Use

THE BEST CB POWER SUPPLY AVAILABLE

THE STANDARD POWER SUPPLY
A STANDARD POWER PACK FOR USE
WITH 40 CHANNEL UK/FM CB RADIOS
WITH 13.8V DC STABILISED OUTPUT

THE HEAVY DUTY POWER SUPPLY
A HEAVY DUTY POWER PACK 5/AMP
FOR USE WITH AM/FM/SSB. TRANS-
CEIVERS OR SMALL LINEAR AMPLIFIERS.

CONFORMS TO BRITISH STANDARDS 415. ALL ENQUIRIES TO U.K. DISTRIBUTORS.

TELECOMMS LTD.,
189 LONDON ROAD, NORTH END,
PORTSMOUTH, HANTS. TEL. 0705-698113
TELEX 869107 TELECOM G.

CE BETRONICS LTD.,
53 DUCKWORTH STREET,
DARWEN (NR. BLACKBURN)
LANCS. TEL. 0254-75073

TRADE ENQUIRIES WELCOME

**Catswhisker's CB
Stores for all your CB
requirements
including the fabulous
cat call selective
calling system**



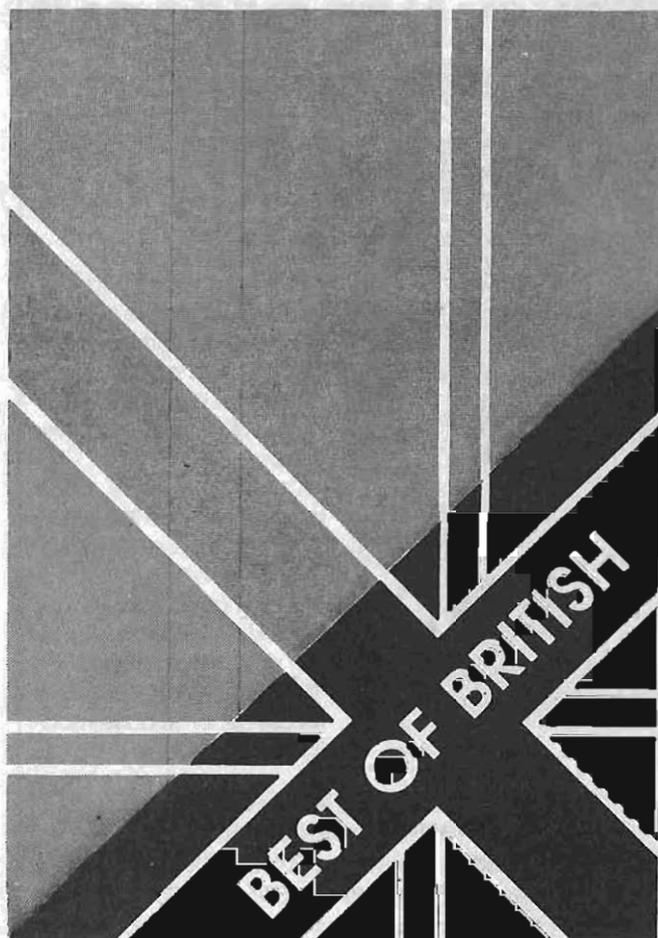
This month's special offer:
80-channel FM rigs ... £45.00
80-channel FM rigs
fitted with cat call..... £79.95

Phone Reading 589193
for all sales enquiries.

We will despatch anywhere
in the UK

Catswhisker's

25 CHATHAM STREET, READING, BERKS RG1 7JF
TEL: (0734) 589193

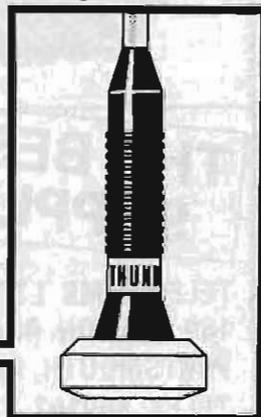




THUNDERPOLE II



- The Thunderpole II from the UK market leader of the fastest selling high-performance legal base station antenna.
- The highest star-rated antenna for Performance, SWR Adjustment, Installation and Value.
- Exciting new ribbed coil design with doubly encapsulated windings for maximum performance and all-weather protection.



Saucy Nancy does it anywhere with a WESTWARD PT!



COMPLETE WITH:

- Internal maintenance-free rechargeable battery, up to three working days' use on high power.
- Internal protected 13.8V mains-regulated power supply.
- Internal battery charger (fully charged in 5 hours).
- Quick-release car mounting bracket.
- PL259 aerial socket, rubber duck antenna, shoulder strap, mains lead, etc.
- 4-watt, 40ch. UK spec. for use as home base, mobile and portable.

further details, see
Westward Electronics

The Mill House, Tuckenhay, Totnes, Devon TQ9 7EL
Tel. Harbertonford 336 or 370

- Tests indicate performance matching that of an illegal 5dB home base antenna.
- Base loaded coil on a single radiating element 1.5m long — pre-tuned and requiring no SWR adjustment.
- Precision-machined alloy base with 3 angled ground planes, each 2.67m long, with cross bracing and designed for maximum performance.
- Power 500W — Frequency 27Mhz — SWR 1:1.5 or less.
- Pole mounting base 1 1/4 ins. dia.
- Price just £25.00 incl. VAT plus carriage £3.95 and each antenna is individually guaranteed.

FREEMAN & PARDOE LTD.

Tything Road
Arden Forest Industrial Estate
ALCESTER
Warks. B49 6ES.

Phone: (0789) 762 673

© Freeman & Pardoe: 1982

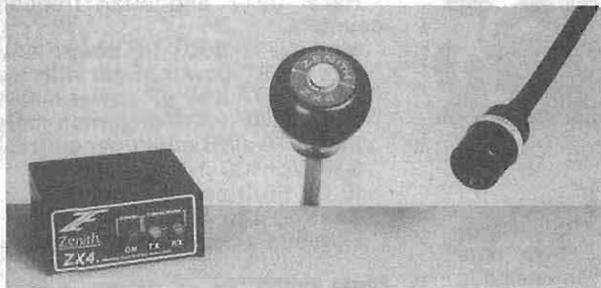
"A well constructed, easily assembled and erected, excellent performance legal antenna with the added bonus that it is pre-tuned²—that's how CITIZENS BAND magazine, September '82 described the fantastic...
...THUNDERPOLE!"





Zenith

NEW ZX4 SAFETY MIC



- Safer driving ● Easy installation
- Suitable for all modes

PRICE £28.00 (RRP) INC VAT

SPEECH - PROCESSOR

FM SSB AM

- Boost your 'talk power' ● Increase 'range'
- Improve 'speech clarity'

PRICE £34.00 (RRP) INC VAT

DISTRIBUTORS:

SOUTH EAST
South East CB Supplies
189 South East Road
Sholing
Southampton
Tel: Southampton 447907

CBC Wholesale
20c Selsdon Road
South Croydon
Tel: 01-880 4503
Mr. Peter Mills
(Distribution Manager)

WEST
Esserys CB Supplies
66 High Street
Barnstaple, Devon
Tel: 0271 3331

LONDON
Zulu One - 4
132 Leytonstone Road
Stratford, E15
Tel: 01-555 8045

A dealership available in the Northern Area

STOCKISTS:

Bournemouth
Skywaves
Tel: 302080

Brighton
Station Road
Tel: 563177
Burgess Hill
Guy Austin
Tel: 3407

Christchurch
Motor Mouth CB
Tel: 486207

City
City CB Centre
112 Pitfield
London, N1
Tel: 01-739 9991
Channel 4
Ilford
Tel: 4782728

Crowborough
Archers D.I.Y. Motoring
Plus 4
Tel: 4864

Eastbourne
Southdown Radio Supplies
Tel: 639351

Enfield
Enfield Communications
Ponders End, Enfield
Tel: 8057772

Farnborough
Farnborough Communications
Tel: 518009

Hallsham
CB Services

Hastings
Inrange Ltd.
Tel: 715709

Hove
D. F. Browne
Brighton
Tel: 417120

Isleworth
Martin Audio Systems
Tel: 01-560 6343

Lewes
Record CB Bar
Tel: 4334

Norfolk
Thetford CB Supplies
Tel: 0842 61645

Norwich
B. A. Yeomans
65 North Walsham Road
Tel: 46294

Reading
Catswhisker's CB
Tel: 589193

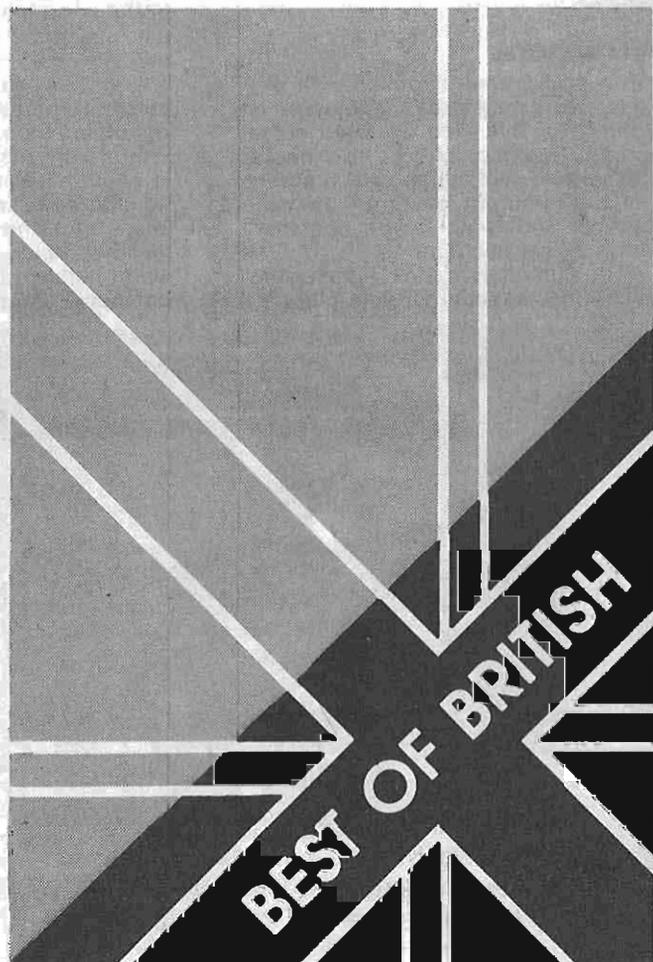
Worthing
G W M
Tel: 34897
S. A. S. Accessories
Tel: 211737

ZENITH ELECTRONICS

21 Station Road Industrial Estate
Hailsham, East Sussex BN27 2EW
Tel: (0323) 847106

This 'Best of British' special feature has highlighted some of the many British companies making excellent CB equipment and accessories.

Of course, not every company has been included. If you have bought a British product which you think deserves a mention then write to us with details for inclusion in a similar feature in a few months' time.



RIG TEST



socket on the rear panel.

Transmitter test

Test equipment available:
 Two Racal 9081 signal generators.
 Racal 9009 modulation meter.
 Racal 9301 milli-voltmeter.
 Racal 9917 and 9024 frequency counters.
 Marconi TF 2501 RF power meter.
 Bird 43 RF power meter with load.
 Marconi TF 893 AF power meter.
 Marconi TF 2337 distortion meter.
 Levell TG 66B audio generator.
 Solartron CD 1400 scope.
 IE DS 50/2 power supply.
 Keithley 130 digital voltmeter.
 Hewlett Packard spectrum analyser.

Power output

This test is done to check the power output of the rig conforms to Home Office specification MPT 1320 and that the rig will give the user sufficient power output for normal uses over a reasonable variation of power supply voltages in both high and low settings.

Power Output and Attenuation			
Atten.	10.8v	13.8v	14.8v
High	4.0W	4.2W	4.2W

The results of this test show that this rig exceeds at normal operating voltage the maximum power output permissible by MPT 1320. There is no low power position available nor is a 10dB attenuator supplied with the rig as required by MPT 1320.

Temperature stability

These checks are done to ensure that the rig stays on the correct frequency for a reasonable change in environmental temperature (48°F to 68°F).

Temperature stability			
Temp.	CH1	CH2	CH4
Should be	27.601250	27.791250	27.991250
48°F	27.601208	27.791204	27.991208
68°F	27.601156	27.791156	27.991156

It can be seen from the table that the temperature stability is consistent, only drifting a maximum of 92Hz from the correct frequency, which is a good result.

Modulation

We do this test to check the ability of the rig's modulation circuit to give a good modulation level over a varying range of input levels.

Input level	Modulation Input Frequency		
	500Hz	1125Hz	8500Hz
0.6mV	0.15kHz	0.2kHz	0.1kHz
2.2mV	0.5kHz	0.9kHz	0.45kHz
6.0mV	1.2kHz	2.0kHz	1.0kHz
25mV	2.1kHz	3.2kHz	2.4kHz
60mV	2.7kHz	3.5kHz	2.5kHz
250mV	3.0kHz	3.6kHz	2.5kHz

The above results show the modulation level is good, up to 25mV. Once 25mV has been reached, the modulation exceeds the level (2.5kcs deviation) specified in MPT 1320, therefore, if shouted into or a power mike used, the rig would most certainly

Construction

The construction is the familiar two-piece (top and bottom) cover plus chassis and front panel. The casing is made of hard-wearing, scratch-resistant black stove enamel paint with a crackle finish. The front panel is a plastic moulding finished in chrome, with two inset escutcheons, one black with white lettering, the other wood-grain finish with white lettering. The other controls on the front panel are well laid out and can be split into two sections. The controls from left to right on the top black escutcheon are noise blanker/noise limiter and on/off switch, two band select switches, black illuminated poundage meter, three mode indicators and, finally, the channel indicator, which is standard red, seven-segment LED display. Beside the channel indicator there are also two LED indicators, the first one indicating the mode selected and the second one is the transmit indicator. The controls from left to right on the bottom escutcheon are on/off and volume, squelch, mode switch, clarifier and RF gain control. The channel change switch is located half-way between the two escutcheons on the right-hand side.

Internally, the construction of the rig is good, all components are marked, floating wires have been kept to a minimum and the good layout should make servicing no problem. One point worth highlighting which is not found on many other rigs is the sel. call

This month's rig test features, by popular request, a set that has rather more than the UK FM 40 channels. The Stalker ST9-F DX has 40 UK channels, a set of 'low' channels starting at 26.965MHz and a set of 'high' channels beginning at 27.415MHz. The British FM channels will only work on FM and cannot be operated on AM or SSB. This gives a total of 80 plus 40 FM, 80 AM, 80 LSB and 80 USB. (Word of warning, the clarifier, intended for tuning in SSB signals, works on all modes, including UK FM. Operators would have to be careful of this!)

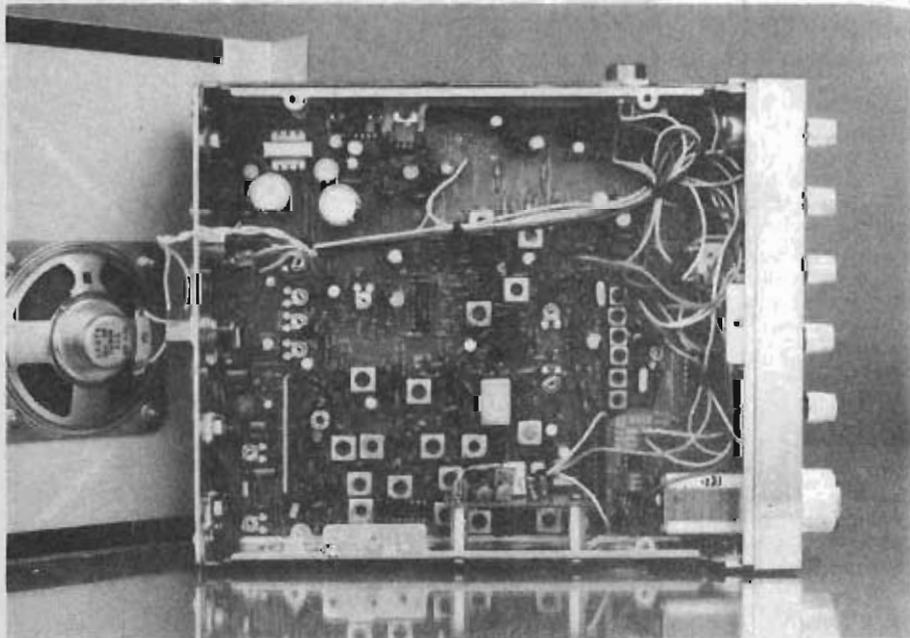
Eventually we decided to test the FM side as normal and get our engineer to cast his experienced eye over the 'other bits'. On giving the other modes a general check, he said the set "performed very closely to the quoted figures in the handbook" on AM and SSB.

The set is made in Taiwan and is distributed in this country from Roger D in Nottingham.

Microphone

The microphone supplied with this rig is a very neat pear shape which is the first of this kind we have come across. The microphone also has a microphone gain control which purely affects the output level from the microphone and is not to be confused with a power microphone.

For connection to the rig it uses the screw-ring, lockable four-pin plug.



cause bleed-over due to over modulation.

Receiver test

Audio distortion

To do this test, the loud speaker is replaced by a Marconi TF 893 AF power meter with a Marconi TF 2337 distortion factor meter connected across it.

Measured Distortion	
1 watt	7.5% distortion
2 watts	12% distortion
3 watts	29% distortion

The results of this test seem to reflect the results of most of the rigs we have tested to date, which were average.

Squelch level

The range of the squelch with the RF gain at maximum, the threshold was measured at 1.1mV and fully muted at .6mV. The test was repeated with the RF gain control at minimum, the threshold was then measured at .3mV and fully muted 300mV sensitivity, thus, by using the RF gain control in conjunction with the squelch control, all unwanted signals should be squelched out.

Receiver sensitivity

This test is done to check the ability of the rig to pull in weak or distant stations.

Sensitivity	
10dB quieting	0.8uV
20dB quieting	1.1uV
30dB quieting	3.0uV

The above results were average and not quite as good as some of the better legal FM rigs that we have tested.

S meter reading

This test is done to check the calibration (sensitivity) of the rig's signal strength meter.

S Meter Reading	
1	3uV
3	4uV
5	5uV
7	6.5uV
9	30uV

With the RF gain control turned to maximum, the results showed a 30mV signal coming down the aerial was needed to indicate a 9lb. (S9) signal on the meter. This reading is a bit low but is compensated by the fact that the receiver is not as good as normal FM rigs.

AM rejection

The AM rejection measurement taken from this rig gave a result of 29dB - this reading is about average for mid-price-range FM rigs. The only thing is that the rig could be susceptible to high level interference, i.e., car ignition systems and alternators.

Adjacent channel rejection

This test is done to check the rig's resistance to bleed-over by other stations near by. We take a measurement



RADIO BACK PANEL VIEW

SSB Filter 10.695 MHz, crystal lattice type
6 dB @4.2 KHz
60 dB @7 KHz

RECEIVER

Sensitivity SSB: Less than 0.25 uV for 10 dB (S+N)/N at greater than 1/2 watt of audio output.
AM: Less than 0.8 uV for 10 dB. (S+N)/N at greater than 1/2 watt of audio output.
FM: Better than 0.8 uV for 20 dB (S+N)/N at greater than 1/2 watt of audio output.
AM/SSB 6 dB @4.2 KHz, 60 dB @15 KHz
More than 60 dB.

Selectivity FM: 0.8 uV @7.0 KHz, 60 dB @15 KHz
More than 60 dB.

Cross Modulation More than 60 dB.

Image Rejection More than 60 dB.

LF. Frequency FM: 455 KHz AM and SSB: 10.695 MHz
Adjustable for optimum signal reception.

Automatic Gain Control (AGC): Less than 10 dB change in audio output for inputs from 10 to 500,000 uV.

Squelch Adjustable; threshold less than 0.5 uV.

Noise Blanker RF type, effective on AM and SSB.

Carrier Range 11.5 KHz.

Audio Output Power 4 watts minimum into 8 ohms.

Frequency Response SSB 300 to 3000 Hz.
AM 300 to 3000 Hz.
FM 300 to 3000 Hz.

Distortion Less than 10% at 2.5 watts output.

Built-in Speaker 16 ohms, round.

External Speaker (Not Supplied) 8 ohms, disables internal speaker when connected.

SPECIFICATIONS

GENERAL

Channels 80 + 40FM, 80AM, 60LSB, 80USB

Frequency Range 26.965 to 27.855 MHz (FM, AM, USB, LSB) and 27.60125 to 27.89125 MHz (FM only)

Frequency Control Phase Locked Loop(PLL) synthesized circuitry.

Frequency Tolerance 0.005%

Frequency Stability 0.001%

Operating Temperature Range -20°C to +50°C

Microphone Plug-in type: dynamic with push-to-talk switch and cooled cord.

Input Voltage 13.8V DC nominal, 15.9V max., 11.7V min. (positive or negative ground).

Current Drain Transmitt: AM/FM full mod., 3A maximum.
SSB, 12 watts PEP output, 3A maximum
Receiver: Squelched: 0.5A, maximum audio output 1A.

Cabinet Dimensions 7.9(32") W x 2.9(32") H x 9.5(64") D

Weight 4.5 pounds

Antenna Connector UHF, SO-239

Semiconductors 51 transistors, 8 integrated circuits, 72 diodes and 6 light emitting diodes.

Meter Illuminated; indicates relative RF power output; recovered signal strength.
LED display: channel, TX and mode (FM/AM/USB/LSB).

Indicators

TRANSMITTER

Power Output AM, 5 watts FM 5 watts
SSB, 12 watts, P.E.P.

Intermodulation Distortion SSB: 3rd and 5th order, more than -25 dB.
7th and 9th order, more than -35 dB.

SSB Carrier Suppression More than -45 dB.

Unwanted Sideband More than -45 dB.

Frequency Response AM and FM: 350 to 3000 Hz.
SSB: 400 to 4000 Hz.

Output Impedance 50 ohms, unbalanced.

CHANNEL INFORMATION

* UK: British Regulation (FM Mode only)

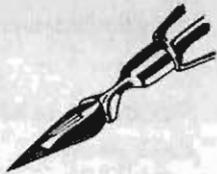
CH NO.	ANTI-FREQUENCY BIZES			CH NO.	ANTI-FREQUENCY BIZES		
	U.K.	LOW	HIGH		U.K.	LOW	HIGH
1	27.66125	26.965	27.415	21	27.86125	27.215	27.695
2	27.61125	26.975	27.425	22	27.81125	27.225	27.675
3	27.62125	26.985	27.435	23	27.82125	27.235	27.700
4	27.63125	27.005	27.455	24	27.83125	27.235	27.680
5	27.64125	27.015	27.465	25	27.84125	27.245	27.695
6	27.65125	27.025	27.475	26	27.85125	27.265	27.715
7	27.66125	27.035	27.485	27	27.86125	27.275	27.725
8	27.67125	27.055	27.505	28	27.87125	27.285	27.735
9	27.68125	27.065	27.515	29	27.88125	27.295	27.745
10	27.69125	27.075	27.525	30	27.89125	27.305	27.755
11	27.70125	27.085	27.535	31	27.90125	27.315	27.765
12	27.71125	27.105	27.555	32	27.91125	27.325	27.775
13	27.72125	27.115	27.565	33	27.92125	27.335	27.785
14	27.73125	27.125	27.575	34	27.93125	27.345	27.795
15	27.74125	27.135	27.585	35	27.94125	27.355	27.805
16	27.75125	27.155	27.605	36	27.95125	27.365	27.815
17	27.76125	27.165	27.615	37	27.96125	27.375	27.825
18	27.77125	27.175	27.625	38	27.97125	27.385	27.835
19	27.78125	27.185	27.635	39	27.98125	27.395	27.845
20	27.79125	27.205	27.655	40	27.99125	27.405	27.855

by receiving a signal on channel 20 then introduce a second transmitted signal, first on channel 19 then 20 to check the filter band width then on channels 1 and 40 to check for receiver desence.

Adjacent Channel Rejection			
CH1	CH19	CH91	CH40
20mV	1mV	2mV	20mV

As can be seen, these were rather disappointing results. This rig could suffer very badly from bleedover and desence as the best reading we could get was 20mV (whereas previous rigs tested have been as good as 300mV). The higher this figure, the greater the rig's resistance to interference from local breakers on other channels.

Readers Write



Dear Sirs,

The long letter in January's issue regarding the use of Channel 9 was most interesting and it is unfortunate that the writer did not care to have his name published.

As Chairman of a REACT team, obviously I am biased when it comes to discussion about monitoring but I would like to point out to the writer that the new monitoring guide published by REACT (UK) covers all the points he raised and a great many more. No other monitoring organization goes to the trouble of educating its monitors to the same level or goes to the same trouble to co-operate with both national and local Government and emergency services to find out what THEY want from us.

A comment in the same issue of CB Radio Magazine suggested that during 1983 only one organization would emerge with consistency in the monitoring field and surely a group with nearly 300 active teams throughout the UK is well on the way towards that goal?

However, it is also necessary to ensure that Channel 9 is legally protected and policed by the Radio Interference Service and this will only come about through pressure from both monitoring groups and ordinary individual breakers. There is a great potential for community use of CB and an extension of advice and assistance on Channel 9 (not necessarily restricted to pure emergencies) but this requires co-operation from all parties, particularly in a crowded area such as Nottingham with a high level of illegal sideband use still present.

There are a lot of new breakers on the air because of Christmas presents and it is essential that the sensible, responsible breakers stay on the air, educate the newcomers and return some form of sanity to the airwaves.

Steve Buxton (Chairman)
REACT Nottingham (East)

Millionaires and morons

Dear Sirs,

We, Surrey Sussex Electronics, as a firmly-established company, have always believed in fair trading, wholesale and retail, but alas, a lot of larger wholesale companies think that undercutting Joe Bloggs down the road is the thing to get trade going. Some companies have actually sold at or below cost price to beat matey down the road. The public, bless their hearts, have had a right old buying spree because these large wholesalers, mainly those who imported vast quantities of FM rigs, had a fright when the market went quiet for a couple of weeks and decided amongst themselves that CB was at an end (What rubbish!) and then promptly unloaded thousands of FM rigs at half the normal going trade price. We didn't get caught but many did.

Enough of trading . . . now to the public . . . Dear Mum and Dad, brothers and sisters, there are a minute bundle of morons out there bucketmouthing and swearing to your loved ones and generally messing up decent breakers' conversations. These 'brats', as we call them, probably don't know what an AM rig was or that the breakers who used AM/SSB were and still are a very respectable bunch of people. The Brats have bought rigs for £19.00 a time (cheaper than a car radio) and descended as low as they can get.

Now if the old boys from the AM days can't stand it, surely it's about time they stuck together. Get your tape recorders going, get names and handles and report them or sort them out one way or another. Why should these wallies kill it for you. If it wasn't for the AM boys, we would not have FM and everyone whose a radio fan should know the AM boys put a lot of time and effort into getting CB in the first place.

The retail trade has taken a slump in the south, dozens of shops have been forced to close indirectly by these morons.

It will take time to clean up CB but with your help we can and will.

Yours sincerely,

H. J. Owen, M.D.
Surrey Sussex Electronics
Dorking, Surrey

This letter is a vivid description of what is wrong with both sides of CB - trade and public. To say that AM breakers never swore on channel would be an exaggeration but I agree that things on FM are definitely worse. I still regret the day when rig prices fell below £50.00.—Ed.

Dear Sir,

I would like you to print this letter to thank all clubs and individuals who sent eyeball and QSL cards for 'Little Buddy', 'Joey' or 'Paul'. As you will know, this was reported as a hoax but we received a letter from Natcolcibar stating that this young boy died.

Since then, we have got a young girl called Mandy, whose handle is 'Daddy's Girl' (she is both mentally and physically handicapped) to accept all the cards and gifts sent by breakers throughout the UK for the record books as was arranged for the little boy.

I trust all the good buddies who donated anything will be in agreement with this.

We shall be writing to the 'buddies' whose addresses we have in the near future.

10-10 for now.

E. Riddock (The Crab) (Secretary)
Forefront Breakers
Alloa, Clackmannan

Dear Sir,

Referring to the article in November CB Radio Magazine concerning the RSGB, I am very surprised to see that

the Society is now "all for CB". This was certainly not the case a year ago, when advertisers in RadCom were told that no copy would be accepted for CB equipment and if submitted would be deleted. It is interesting to note that the firms who advertise in RadCom do not advertise CB equipment in any of the ham radio journals I take nor do they advertise in the CB press. Mind you, if they asked the average CB man to pay the prices the hams have to pay for their equipment, they would be wasting their time. I am aware that ham equipment is multi-mode and multi-band in many cases but is selling to a worldwide market and at what appears to be inflated prices in this country.

From all reports, the attitude of the RSGB, even to its own members, is one of disdain. I think the G8+3 and G6+3 hams are considered to be very slightly superior to the CB man. What a difference a 12 words per minute Morse exam can make, in many cases the only exam a lot of the older members have had to pass. These people seem to have forgotten the spirit of enquiry which attracted them into ham radio so many years ago. Many of the new members of the RSGB are probably ex-CB and came into ham radio via CB and many a youngster will follow via the family CB, etc., just as I was drawn into it via a home-made crystal set 60 years ago.

We all deplore the wallies and bucketmouths, also the channel squatter who says, "This is our channel, we have been using it for the last 1½ hours". We only have 49 channels! Not everyone wants to sit the RAE and many cannot afford the expensive gear the radio ham apparently finds so necessary. Some of the old timers referred to must have memories of very uncomplicated gear made with their own hands.

Come on, RSGB, there are a lot of very nice people in CB. They don't all want to jam the repeaters and use bad language.

Name and address supplied

Dear Sir,

With reference to your article on the assumed "Death of Channel 9" in your October issue. I presume that you, as well as the majority of other magazines who have criticized monitoring teams, consider yourselves to be national magazines. If this is the case, why do you only do your surveys in London? Aren't the circulations of these magazines wide enough to make enough profit to travel to other parts of the country?

I can't speak for the rest of the country but in South Wales everything is run smoothly. I am Deputy Director for THAMES Wales and with us THAMES and REACT work hand in hand. If one monitor picks up a call but

loses it, the other will do a 10-5. We do not try to grab each other's calls. We, as monitors, are there to help people not to go glory hunting.

Our job is difficult enough as it is, trying to get through the sidebands and the bleedover, without it being made more difficult by idiots who abuse the channel. It surprises me that we have any monitors left when we have to put up with bucketmouths, etc. So we don't need your criticism as well. We do the job as well as we can under the circumstances and we have helped many grateful breakers. The monitors we have, both THAMES and REACT, are dedicated to helping people. They have to be dedicated to put up with the abuse and criticism.

We do occasionally get people complaining that they couldn't get a monitor on 09 but, unfortunately, we have not as yet acquired a full 24-hour service. There just doesn't seem to be enough breakers around willing to give up a small amount of their time to help others. When I have asked those who have complained to join us, they always say they haven't got time. So my answer to them is that there are too many people like them, that's why they didn't have a monitor on.

In our area, neither team minds who a breaker joins with, whether it's THAMES or REACT, as long as they monitor. We do not stand for people joining us just to mess about on 09. If they do not monitor properly or abide by our monitoring procedures, they do

not stay as monitors.

There is one other thing that I would like to mention about all the fuss that everyone makes because of monitors signing on and off. There are a number of reasons for this, the most important in my opinion is for people to know that there is someone there. In this area, especially, there are many black spots. The country roads are surrounded by trees and often dip suddenly. Imagine an invalid broken down in this situation. He can't get through on 14 and has no answer on 09; he would have to sit there until someone came along, which could take hours. If he stays on 09, there may be a monitor not far away that signs on, so he can call again and get help. Without this signing on and off that both monitoring teams have, he would not know that there was anyone on that could copy him, so he probably wouldn't bother trying to call again. We have had this situation, so we know how important it is to let people know we are there.

My wife and I do not sign on or off as our set is on from 7.00am to 11.00pm but although we are in a good spot, even we have some black spots that we cannot copy.

To get back to the different monitoring teams, THAMES and REACT got together to run an information channel on 03 for holidaymakers wanting information on road and traffic conditions throughout South Wales. It was started on Saturday morning and

extended to Wednesday afternoon to cover the Pope's visit. During this time, we all lived on tea and sandwiches and gave up our holiday time to help people. We didn't ask for recognition at the time but I cannot sit back any longer and take all the criticism that's thrown at us without commenting on the good work that all the monitors in South Wales do. There are many really dedicated people amongst them and they could do without all this hassle.

I hope, after reading this, that you now realize that if your article on London was accurate, that you cannot assume that it is the same all over the country. I only hope that the articles that you and others have written in the past have not deterred people from joining monitoring teams. We need all the monitors we can get, if we ever hope to run a full 24-hour service. It would make a pleasant change to have someone show a little gratitude in an article, after all, we are volunteers doing our best. We don't have to sit there waiting for someone to call for help.

Yours sincerely,

G. T. McKie (DW2)
Llanelli, Dyfed

When you consider the size of Great Britain, you will understand that it is impossible to go everywhere when researching articles. I can assure you, our picture of the London monitoring scene was accurate.—Ed.

BILTONS

In November's edition of CB Radio Magazine, we carried an advertisement from Biltons, of 377 Edgware Road, London, W2. This advertisement featured a range of CB equipment available through mail order.

This advertisement was placed with the advertising department in the usual manner and complied with our acceptance terms. However, it has become evident through readers' enquiries that goods have not been supplied and we have been unable to contact them by letter or telephone.

The matter is now in the hands of Paddington Green Police Station. A police raid has found empty premises and some unopened mail, although some cheques have been cashed at a bank local to the Bilton address.

Readers who have ordered goods and have sent cheques with their order should contact:

Det. Sgt. Hurley
Paddington Green Police Station
Edgware Road
London, W2
Tel: 01-725 4171

The magazine has forwarded any information we had to Det. Sgt. Hurley to help police investigations.

Unfortunately, we can take no responsibility for any debts or fraud on behalf of Biltons or the individuals who placed the advertisement.

100% CB SPECIALISTS

For expert and sound advice

Vast range of legal FM sets in stock
Plus full range of CB accessories
Fitting service

Simply C.B.

37 Station Rd, Rickmansworth
Hertfordshire
Tel: RICKMANSWORTH 70634

OPEN SEVEN DAYS
8.30am-7.00 pm Mon.-Sat., 10.00 am-4.00 pm Sun.

We Know how to turn You On!

© CB Radio.

RUFNEK BY ZAKZ

HEY, RUFNEK, DO YOU THINK I'M CLEVER ENOUGH TO FIT THIS RIG INTO MY CAR MYSELF?

WELL, LET'S PUT IT THIS WAY.....

RIGSHOP ←

POKE!

.... DO FISH WALK ON LAND?

RUFNEK IS COOL SIGNED RUFNEK!

I ♥ CB

OK THEN! WILL YOU HELP ME FIT IT?

YOU'VE JUST ASKED THE MAN-IN-THE-KNOW! I'VE FITTED MORE CB RIGS THAN YOU'VE HAD HOT DINNERS!

18-84!

BUT I NEVER EAT HOT DINNERS, RUFNEK!

OK! I'VE FITTED ONE RIG MORE THAN YOU!

SANDWICH BAR

BLUSH!

RIGHT, JIM, WE'LL NEED SOME TOOLS AND A DRILL!

I'LL GET MY DAD'S STUFF, HE'S JUST FINISHED WORKING ON THE NIGHT SHIFT!

A HAMMER DRILL? WERE ONLY DRILLING THROUGH CAR BODY STEEL ... NOT A BANK VAULT!

BURGLARY DO IT IN THE DARK!

ALWAYS REMEMBER, THE SMALLER THE DRILL BIT THE FASTER SPEED YOU WANT!

WHIRL!

.... AND A MORE SERIOUS TIP.... BE CAREFUL WHEN DRILLING, ESPECIALLY IF YOU'RE WEARING A TIE.... IT CAN EASILY GET WRAPPED AROUND THE DRILL!... DOOPS!

YANK!

18-64

RIGHT! WHEN FITTING A RIG THE LOCATION IS VERY IMPORTANT! YOU'VE GOT TO BE ABLE TO CHANGE GEAR, AND YOU SHOULD BE ABLE TO REACH IT EASILY TO CHANGE CHANNELS, WITHOUT MOUNTING THE KERB AND RUNNING PEDESTRIANS DOWN!

SCRATCH!

WHAT A 13-1!

WHERE'S THE INSTRUCTIONS?

I DON'T KNOW, THEY WERE HERE A MINUTE AGO!

SO THAT'S WHAT THEY WERE!

THESE 13-1'S ARE ALL OVER THE PLACE!

CHEN!

NOT TO WORRY, I THINK I CAN REMEMBER MOST OF IT.... AH THE NUMBER ONE RULE IS COMING BACK TO ME NOW!

WHIRRL!

WHAT'S THAT, RUFNEK?

.... ENSURE THAT YOU DON'T DRILL THROUGH THE WIRING AND INSTRUMENT PANEL!

THE ULTIMATE BLUSH!

TRUCKFEST '83



THE SHOWGROUND, WINTHORPE, NEWARK, NOTTS.
EASTER 1983 — APRIL 3rd & 4th, 1983
"THERE'S NEVER BEEN ANYTHING QUITE LIKE IT"

Truckfest Convoy

Amongst the unique attractions to be staged during the Truckfest, there will also be an attempt to establish a solid two mile convoy, made up entirely of Trucks. All Trucks and Truckers participating will receive a TRUCKFEST '83 plaque for their Truck grills.

Test Rides

One complete runway will be reserved purely for Test Rides. Two miles in which drivers will be able to ride in the latest trucks available on the market today. Test ride booking staff will operate a booking system for each manufacturer participating. The Test ride runway will be professionally supervised and marshalled to ensure total safety throughout. Make sure you Test Ride a new Truck, at TRUCKFEST '83.

Trade Stands

Trade stands will be drawn from all areas of the Trucking market — bodywork and trailers, accessories and components, carriage work, refrigerated trailers, tyre manufacturers and of course garage equipment, in addition to Truck manufacturers.

Attractions

As well as Trade stands and Test rides, attractions will also include entertainment with a definite Motoring flavour. There will also be entertainment for the whole family including Marching Bands, Celebrities and of course a Fun Fair.

Radio's Trucking Celebrity to Open Truckfest

We are especially pleased to welcome Sheila Tracey to the TRUCKFEST '83 and to officially open the event on Sunday, 3rd April at 2.00 p.m. Gates open daily at 11.00 a.m.

Best Kept Truck Competition - Sponsored by —

CB RADIO

Trophy and valuable Cash Prizes.

Do you have a Truck that would win?

TRUCKFEST '83

Organized by
 Live Promotions
 The Mill Stone, St. Thomas' Road
 Spalding, Lincs.
 (0775) 68861-2

Bring the Family
Admission £2.50

CAR PARKING — FREE • CHILDREN — FREE
 SENIOR CITIZENS — FREE • (Bring Granny and Grandad)

TRADE ENQUIRIES WELCOMED — CONVOY APPLICATION FORMS and BEST KEPT TRUCK APPLICATION FORMS NOW AVAILABLE.



Installing Remote CB

As you will have read in last month's magazine, there is now a selection, if somewhat limited, of remote CB rigs. These use a 'black box' which houses all the works and a microphone unit which features the controls. Their big advantage is that they give the user a greater amount of flexibility in locating the rig – especially useful if interior space is limited or the rig doesn't fit in with the design of the dashboard too well. A set installed away from the engine and electrical equipment will be less prone to crackle and static and won't act as a shop window for the itchy fingered.

However, fitting remote CB seems a bit more intimidating, although in principle it's the same as installing an ordinary rig but with longer wires. There are particular individual problems, though, so we're following up last month's article with a 'nuts and bolts' feature on fitting remote CB in a car boot.

Equipment needed: a microphone extension lead compatible with your set, an electric drill, suitable drill bits (or Velcro and suitable adhesive or fixing – see last month), a centre punch if available and hammer, wire snippers, a soldering iron, solder, cable ties if available and a helpful friend.

1. Look at your car and decide:

a) Where you want to locate the antenna. (Back To Basics last month gives advice on antenna location). For ease of installation it's simplest to boot or back wing mount it with either a mag mount or permanent installation, as this causes least problems with connecting the antenna to the transceiver. If you locate the antenna at the front of the car, you may need to extend the coaxial cable to reach the boot.

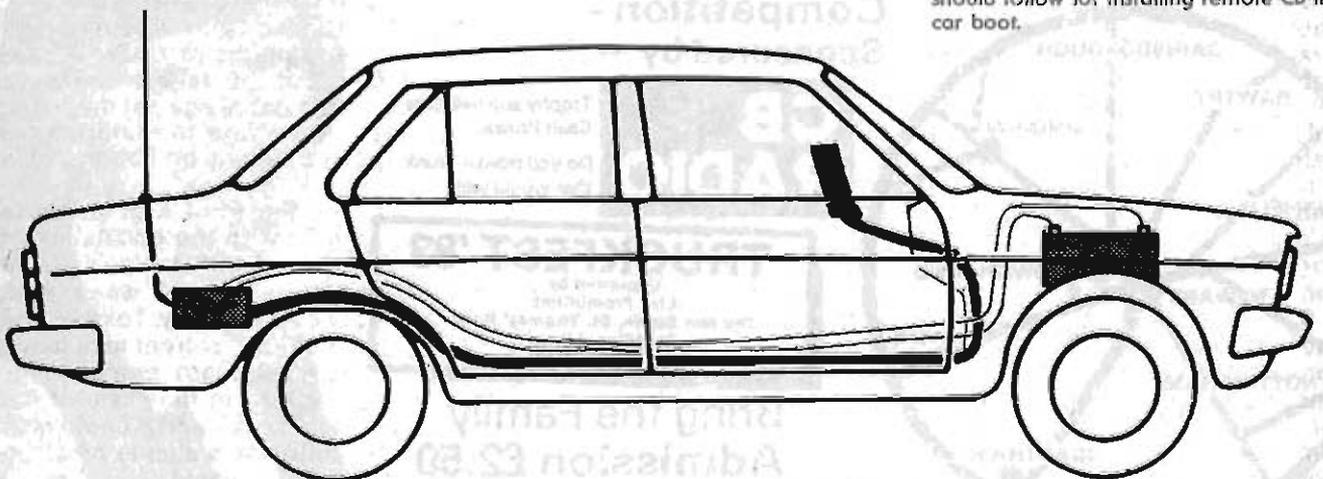
b) The best place in the boot for the transceiver. There are several points to bear in mind when deciding this. Don't put the set where it can be harmed

by luggage, spare tyres, leaky boot lid, other loose objects, heat from the exhaust, heating or air conditioning ducts and take care not to put the set where there is any danger of drilling into the petrol tank or pipes or wiring. Just back of the rear seat partition is usually suitable.

2. Use the mounting brackets or bolt holes on the transceiver case to mark the position of the mounting holes. Cut small holes in the carpet where you intend to drill, otherwise the carpet threads will wind up around the drill bit.

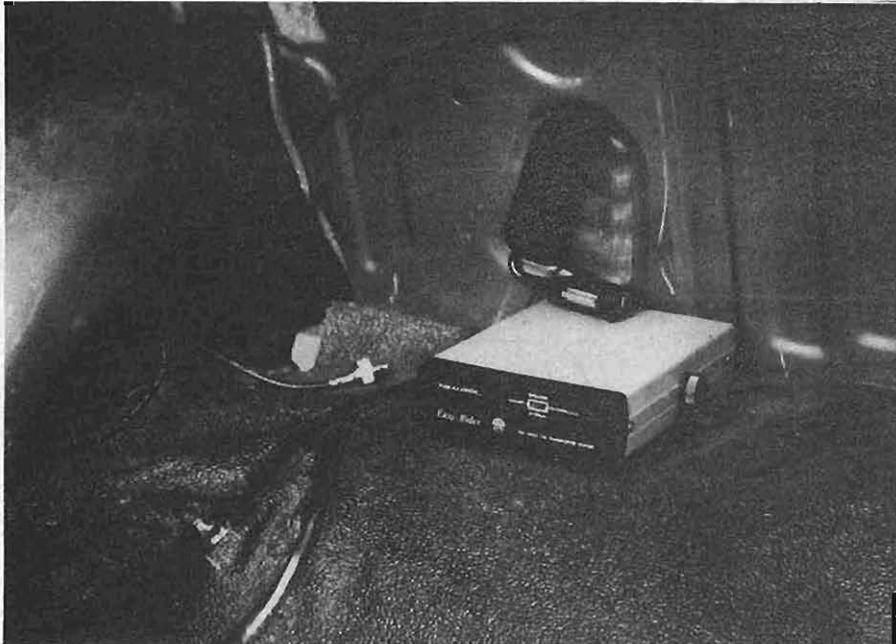
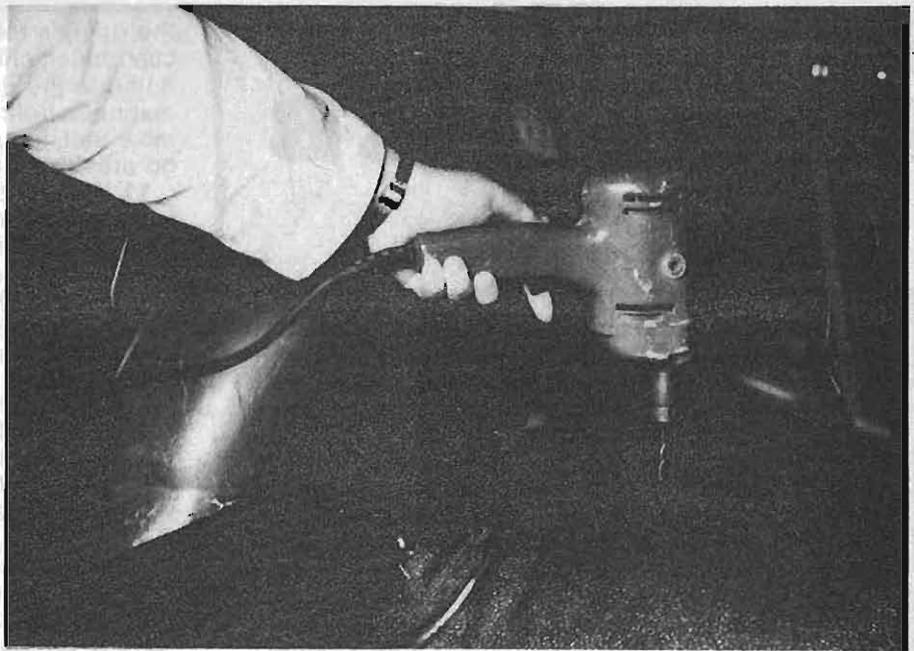
3. If you are using a centre punch, punch the marked area to prevent the drill from wandering or slipping. Refer to the manufacturer's handbook and mounting equipment for appropriate drill sizes.

4. Fasten the transceiver firmly with the screws and washers supplied and attach the extension cable for the microphone.



This shows the route that the various wires should follow for installing remote CB in a car boot.

Fitting the mounting bracket



The set installed in the boot

5. Now the difficult bit! To route the microphone cable through the car may mean taking the back seat out if there isn't a convenient gap to pass the cable through. In most British cars the seat itself will lift out and this might be enough but the back rest will probably be bolted in place or retained by catches. If it is necessary, remove the back rest and route the cable through a suitable opening. Lay the cable where it cannot be pinched by the seat when it is replaced. This might mean drilling or punching a large diameter hole through the bulkhead to pass the cable through.

6. For normal installations, many breakers take the easy way out and run any coax, etc., loosely through the car. The proper way is to run the cable under the door sills to prevent the cable becoming worn and the diagram shows how this is done. Unfortunately, this isn't so easy with remote locations as the cable is thicker and there will be a large connection where the extension cable is joined but

it is the best way of dealing with long cable runs. If it proves impractical then run the cable where it won't be damaged, placing the connector under a seat where it won't be kicked. For the sake of neatness and unbroken ankles, fix the cable against the transmission tunnel or the edge where the floor meets the door with strong tape, Velcro or ribbon cable ties.

7. If necessary, remove the front kick panel to route the cable from the floor to the dashboard. If you have surplus cable, don't cut it. You'll never reconnect all the different internal wires and, besides, you may change cars one day. Take up the slack either behind the rear seat or front kick panel or, second best, on the dashboard parcel shelf. Don't coil the cable too tightly. In time one of the wires inside the cable might break and it could take a lot of time and money to locate a simple break inside the microphone extension cable.

Installing Remote CB

8. The Binatone Breaker Phone has a connector bracket which locates the handset socket on the end of the cable at a convenient place on the dashboard. This is a good idea, as the connection is bulky and unwieldy to move about, especially as it can bang against the dash or gear lever causing damage to the connector. Secure any dangling loops of cable under the dash, using ties or Velcro. If your set doesn't have a connector bracket, it might be a good idea to find some way of achieving the same effect - with perhaps a home-made metal U-shaped bracket to hold the socket in place.

9. Disconnect the battery ground cable. Connect the power leads from the set following the manufacturer's instructions. You will almost definitely have to extend the leads that come with the transceiver. Use black and red wire of similar quality and gauge (available from electrical and some motor accessory shops) and route it along the car the same way as the microphone extension cable. Reconnect battery.

10. Install microphone clip or cradle for handset. Remember that the microphone weighs more than a standard mike and get a good fixing for it. Choose a location high enough to keep the cord away from

the driver's feet. If drilling holes to screw in a mike clip holder, check to see what damage you might be doing to the dashboard wiring or use Velcro tabs. A magnetic holder may not take the weight of a heavy mike unit, so try it out somewhere safe so it doesn't go crashing onto the floor in mid conversation.

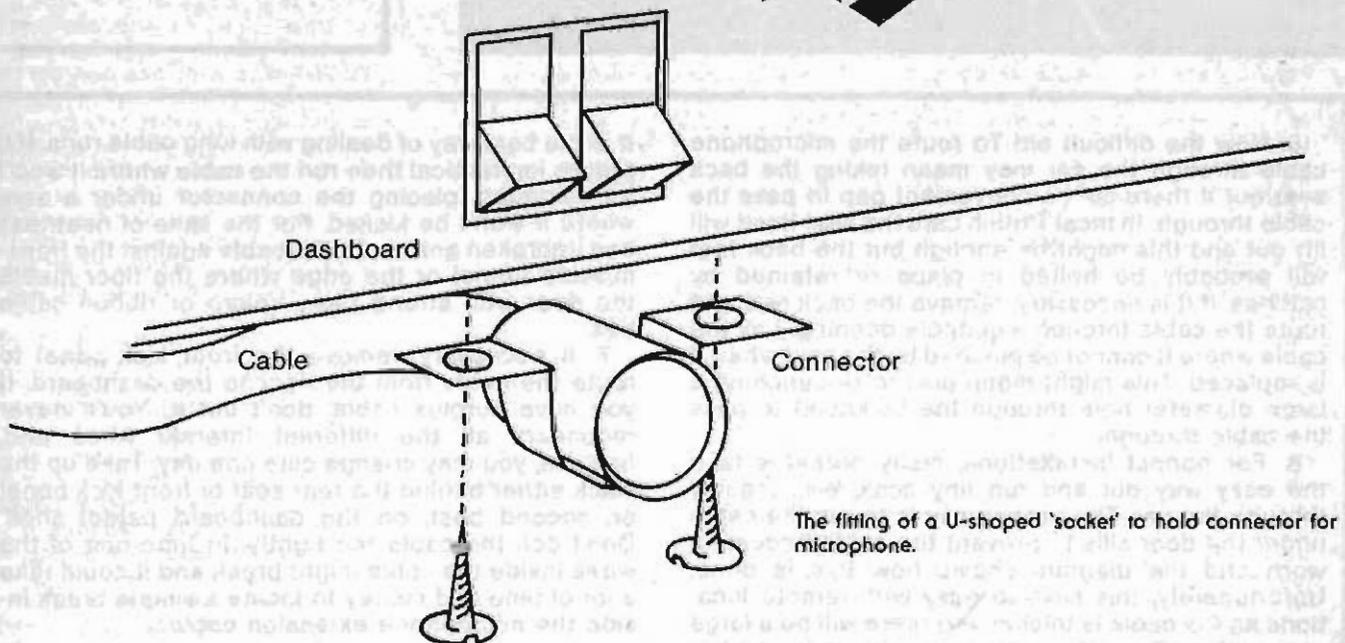
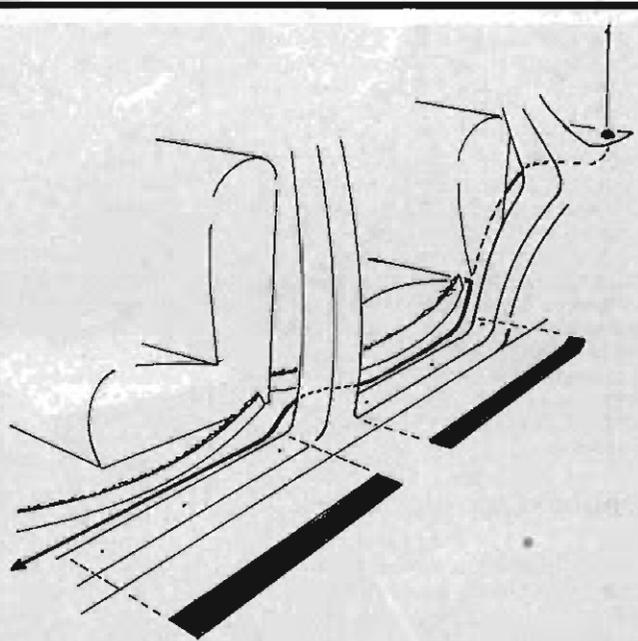
11. Connect the antenna according to the manufacturer's instructions and following the usual rules of antenna installation. If the antenna is located at the front of the vehicle, the coaxial cable may need extending and should be brought back to the transceiver by the same route as the microphone cable and power leads.

12. Replace the carpet or floor covering, sills and rear seats, if removed.

13. Connect the microphone and adjust for SWR. Because the meter will be connected to the rig in the boot, you'll need a friend to key the mike whilst you take a reading.

14. Some sets have facilities for extension speakers, relay switches for utilizing the car's radio or stereo system speakers and PA. See manufacturer's instructions for fitting - but remember, you'll have to run cable or wire the length of the car again!

Right.
Car door sills removed to allow for the cables and wires to be run through the car.



"AN ELECTRONIC SOAPBOX FOR IDIOTS"

Breaker Profile 4

The originator of that rather startling headline, Don Gale, doesn't really fit into the accepted image of a CB'er - something he wryly acknowledges when non-CB'ers comment on a very successful, middle-aged, businessman using a 'toy'.

Although Don's involvement with British CB goes back to legalization, over a year ago, he is no stranger to CB since his career has taken him all over the world and he has used CB in whichever country he has been (as long as they predominantly use English!). His career has spanned many aspects of broadcasting, including the BBC and managing TV and radio stations abroad and he is now heading the European division of one of the major American film and television producers and distributors. His professional broadcasting experience and familiarity with other CB systems has made him slightly more critical (both technically as well as practically) of British CB than the average consumer.

Manufacturer support

When asked for his assessment of CB in this country, he says he is 'worried' about it. Although he takes his hat off to AM CB'ers for demanding CB and their determined lobbying of the authorities, he is dubious about the choice of 27MHz. But, as Don says, now we've got it, we must look towards getting the best out of it - and not living in the past. He firmly believes that the future of CB depends on the users themselves, with support from manufacturers and the specialist CB magazines.

This support from manufacturers (and importers and retailers further along the line), Don feels, is crucial to the development of CB. "British CB has not really advanced since the day it was introduced as a bastardized AM set with added chrome and double the price." He sees the market eventually splitting into two distinct areas, both needing particular products and both needing full consideration from manufacturers. The first area will be those who can and will afford the top of the range equipment and the second those who can afford the cheaper equipment but have the same right to use and enjoy the system. Don believes that British CB sets are still

basically crude pieces of equipment and that innovations in design and performance must follow, even if it only begins with moving the microphone location. He also thinks that it is the responsibility of the manufacturers to offer their eventual customers a set which is well designed and manufactured and value for money.

In Don's opinion, much of CB's current problems stem from the Government's initial reluctance to introduce it and its subsequent lack of interest in maintaining the system. He also echoes many other breakers' opinions that the Government has shown itself to be only interested in the income from CB, rather than any positive moves to foster it.

Don, himself, has a York 863, which he bought at legalization. The fact it can now be bought for £50 when he paid £100, he sees as symptomatic of the image of CB. Although many sets were overpriced in the beginning, prices have discouragingly dropped to "toy level" in Don's words. In his opinion, marketing has also been responsible for this, as many companies who know nothing about CB have sold equipment when they should have left it to companies able to offer the technical back-up. Many new CB'ers have to rely on shops and dealers to recommend suitable sets but even going to what appears to be a reputable dealer isn't always the answer as it is difficult to get an objective comparison of equipment.

Badly overcrowded

If Don is worried about the technical aspects of CB, he is alarmed at the public image CB has. He immediately blames the press for some of this rarely reporting on the positive sides of CB but he follows this criticism of the press by some harsh comments on breakers themselves, since the behaviour of some has generated this bad image. Don feels that if CB is to become a mass open communication network then standards of use and courtesy will have to improve, otherwise sincere potential users will be discouraged and CB will degenerate into an electronic soapbox for idiots. He also blames areas of high population for the majority of abuse, as too many people try to use a badly-overcrowded system.



Don, himself, has limited but specialized use of CB. Travelling from Camberley, in Surrey, to Central London and back each day can cause a lot of headaches for the driver as traffic delays and roadworks can turn the journey into a nightmare. Don is one of an informal collection of breakers who travel regularly on the M3, who swap travel information and chat to relieve the boredom of the drive. They are usually found on channel 39 but check channel 19 for information, delays and members of the group who have just started their journey.

Often some of the group meet at the end of the motorway for a cup of coffee and to say hello before finishing their journey into London. Don particularly enjoys the camaraderie of this group and, as he points out, it doesn't matter if you drive a Mini, a lorry or a Rolls-Royce, everyone is equal on CB. The group includes a plumber, a courier service operator, an author and a security systems employee. If it wasn't for this friendship and the travel information he gets on his journey across the country, the current state of CB would probably make Don give it up, especially if, he said with feeling, his only experience of CB had been in built-up areas.

Having seen CB operate in South Africa, where the Government threatened to discontinue CB after it degenerated and was used extensively by prostitutes, he feels there is a serious risk that the Government in this country could do the same - especially if the revenue from licences drops substantially. His experience with American CB leads him to say that if British CB was 50% as good, he would be happy. As Don points out, American CB has authority support as well as user, which is necessary for CB to work properly - something a lot of British breakers would agree with!

Round Up

New licensing procedure for amateurs

The Home Office has informed us that application procedures for amateur radio licences are being simplified to speed up the issuing process and to save the trouble and cost of handling original documents such as birth certificates.

From 1 January, applicants will not have to provide proof of age, although they will still have to be over 14 years old. The new application form requires applicants to sign a declaration that all the information provided is correct. If any of the information is subsequently proved to be not true, the licence will be revoked.

The nationality requirement is also being dropped so that suitably-qualified foreign nationals will be able to apply. Also being dropped are the Class C and Class D licences which were issued to overseas amateurs operating in this country. In future, overseas applicants will be issued either Class A or B licences with their own call signs prefixed by either G4 or G6.

Trunked common base stations

For the first time in the UK, frequencies are to be made available for

trunked common base stations. (A system whereby a group of users share a common pool of radio channels and a common base station transceiver). The Home Office Radio Regulatory Department has gained access to a small UHF sub-band for land mobile use within 35 miles of London and to make the best use of it, has made it available for trunking.

Three groups of channels are available. Three users who, in the view of the Home Office, seem likely to make the best use of the facilities, will each be allocated a group with three initial channels but with room for improvement. Further room for expansion in this area will be possible when the 405-line TV service closes down in 1986.

All change

Up until 6 January this year, political matters concerning broadcasting were looked after by Mr. Timothy Raison, M.P., Minister of State for the Home Department but due to his handling of the failed Immigration Bill, late last year, Mr. Raison has now been moved to the Department of Overseas Development. His former position with the Home Office has now been filled by two Ministers, Mr. David Waddington, Q.C., M.P. and Mr. David Mellor, M.P.

TRUCKFEST '83



Truckfest '83

There's a treat in store for truckers in April as Truckfest '83 takes place in Newark at the Showground, Winthorpe. Staged over 3 and 4 April, the show will feature a professionally-supervised test ride track for potential purchasers and drivers, trade and accessory stands, entertainments and competitions - including the CB Radio Magazine Best Kept Truck Award.

The show aims to entertain the whole family, as well as the professional drivers and hauliers and a fun fair should keep the kids quiet whilst truckers in the family try out the latest in trucks on the two-mile test strip. The organizers are also trying to arrange a Truckfest Convoy, as they hope that drivers will turn up in their own vehicles.

Visitors to the show will include Sheila Tracey, of Radio 2, who regularly features a Trucking Hour on her programme. Sheila will be officially opening the show at 2.00pm on Sunday, 3 April. CB Radio Magazine staff will also be in attendance to report on the show and to present the prize for the Best Kept Truck. See you there!



Home Office

934MHz contact column

We know there's not many of you out there yet but we're persevering with listing 934MHz breakers, so that breakers with sets can find other like-minded CB'ers. No transceiver is a lot of good if you can't talk to anyone else!

First in the column is

Jack (Unit 77)
Clapham Common, London

Jack (also a 27MHz breaker known as Western House), has reported only one copy so far - but that one was 40 miles. Jack is home base only, using a co-linear twig with 3dB gain. He is a 71-year-old radio enthusiast, so give him a call if you can.

Second in the list is

Knuckles
Sevenoaks area in Kent

Knuckles is prepared to travel to meet other breakers, particularly in the Dartford and Eltham areas.

If you would like to be included in the 934MHz Contact Column, write to the magazine with details. We won't publish addresses or phone numbers but you might find someone in your area waiting to talk to you.

Next month we hope to feature a 934MHz breaker profile.

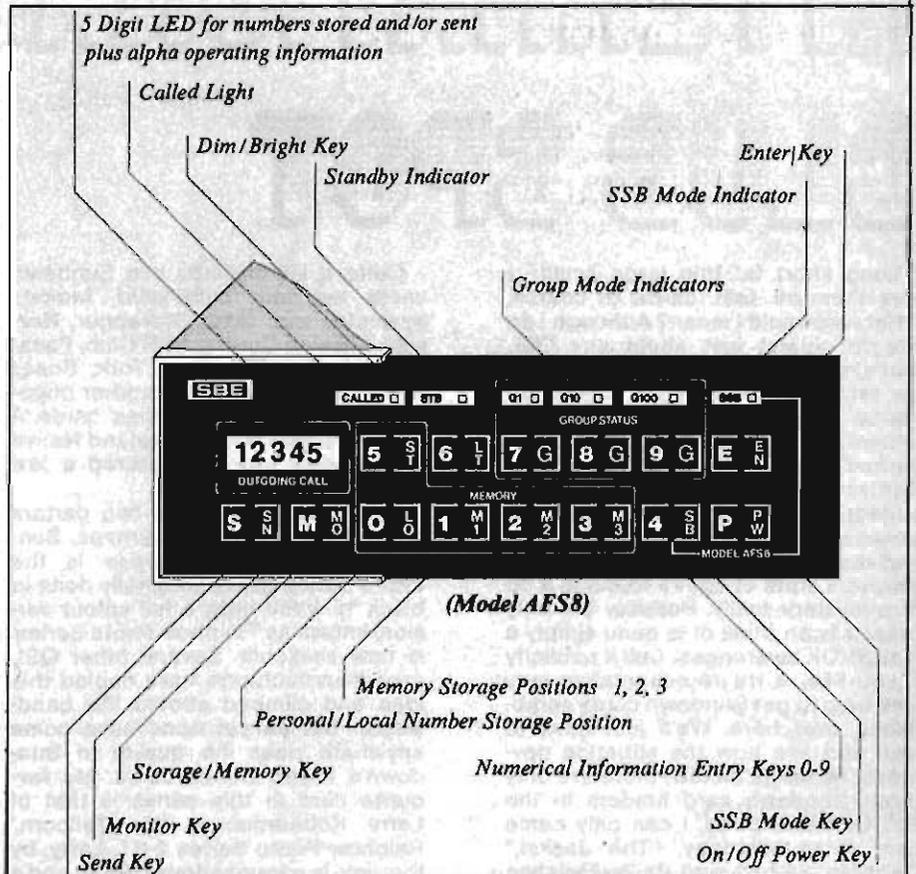
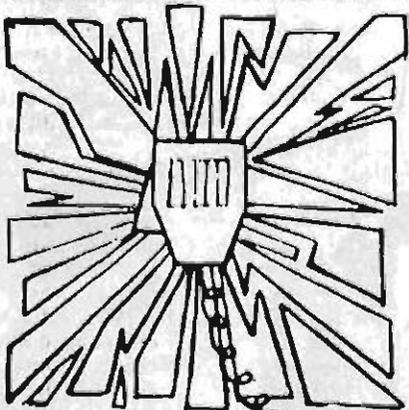


CB Aid for Leicester

Greville Janner, M.P., first became actively involved in the world of CB radio when he conducted a CB surgery in his constituency during August last year. Local breakers were asked to call Mr. Janner to air their views or ask his advice. The surgery was a resounding success and as a result Mr. Janner has realized the great benefits of CB as a method of communicating with the outside world, especially to those who are disabled or handicapped.

The decision was made to set up a local organization to raise money for the distribution of CB sets to the disabled and housebound in Leicester West. This is particularly for those who cannot afford the high cost of a telephone and do not qualify for one from the D.H.S.S. 'CB Aid,' as the organization has now been called, presented the first of these CB sets on the Monday before Christmas to a former councillor who suffers from an acute heart condition and has been advised to maintain some form of emergency link at all times.

Apart from CB Aid, Mr. Janner is also concerned about the lack of service that CB'ers are getting in return for payment of the £10 licence fee, in particular the need to control the misuse of channel 9 and the use of foul language.



SBE Select A Call

As we have mentioned many times before in CB Radio Magazine, selective calling devices are a valuable asset to users of any two-way radio system but more specifically to those that suffer from over crowding, such as CB radio.

The Select A Call AF8 is a user-installed, user-programmable, micro-processor-based personal communications selective signalling transcoder (to give it its full title). In simple terms, it is a computer-controlled device that allows radio users to break through crowded frequencies in seconds, every time, by sending out a five-tone

sequence. Operation is via a touch-sensitive, backlit keyboard and all the user has to do is to dial the correct five-figure number and press the send key. Alternatively, code numbers may be stored in the unit's built-in memory and recalled on demand. The Select A Call also features 'group call', which allows up to 100 users to be called with one code number and at around £60.00 + VAT makes a useful addition to your CB rig. Further details from

Revco Electronics Ltd.
Poundwell Street
Modbury
South Devon
PL21 0RQ

Sponsored modulation

Jim Andrews, whose CB handle is Vaquero, is preparing himself for a sponsored 200hr. modulation to take place from Saturday, 2 April, commencing at 8.00am. Jim is a member of the Breakaways CB Club in Kidderminster, Worcestershire and will attempt to make his modulation last until 4.00pm on Sunday, 10 April. The money raised by this event will be donated to local charities such as the Sunfield Children's Home and the Flying Doctors Appeal. The equipment for this event has been supplied by West Midland CB, Kidderminster, from

where sponsor forms are also available. The Breakaways are hoping that this event will qualify for entry into the Guinness Book of Records.

Cybernet Easi-Com

We must apologize to Goodmans Loudspeakers Ltd. for stating that their Cybernet Easi-Com can be used as a walkie-talkie, with its own telescopic antenna. The Easi-Com is intended solely for use with the mag mount antenna supplied using the 12-volt dc car adaptor.

DX QSL

INTERNATIONAL

CLUB SPOT

Long, short, fat, thin, large, small - I love them all. QSL cards, of course. What else could I mean? Although I do like to collect just about any QSL cards, I do have preferences. Topping my list of favourites is the Collectors series. The best known of these Collectors series as far as the UK is concerned is the Dirty Doodler series. Rather unfortunately, Sundown cards appear to be still pretty much an unknown quantity, so I intend to try and rectify the situation as from NOW! Why this state of affairs exists is a bit of a mystery really. Possibly the only reason I can think of is quite simply a lack of 'UK awareness'. Call it publicity if you like. A UK representative may well help to get Sundown cards established over here. We'll just have to wait and see how the situation develops. As far as I know, there are only three Sundown card holders in the UK. Of these three, I can only name two: Brian Warnaby, "The Jackal," Card No. 883-81 and Phillip Fletcher, "Wax Wing," Card No. 945-82. Two really beautiful cards and very fine examples of the quality of Sundown cards. Indeed, Card No. 945-82 "Wax Wing" is not only one of the best Sundown cards I've ever seen but is simply one of the finest QSL cards in the whole of my card collection. I'm really pleased to have it and would encourage all QSL collectors to add it to their collection.

Although Dirty Doodler and Sundown cards are often spoken of in the same breath, there is really no similarity between them. The only parallel as far as I am concerned is that between them, they constitute the world's greatest QSL cards.

Dirty Doodler cards, as we all know, are brilliantly drawn and in the main of a comical nature. Sundown cards contain much more variety within their ranks.

Quite a lot of clubs use Sundown cards as their club card, famous examples are: NAC, Stavanger, Norway; Mission Control SSB Club, Pasadena, Texas; KIT, New York; Super Stinky, West Germany. Another popular conception is the 'series' cards. A good example is 'New Zealand Native Bird Series' which I featured a few months back.

Also very popular are two parters and four parters but perhaps Sundown's greatest innovation is the Photo Series cards. Originally done in black 'n' white only, a full colour version, known as 'Rainbow Photo Series' is now available. Several other QSL card manufacturers have copied this idea and climbed aboard the bandwagon but as yet none have come anywhere near the quality of Sundown's Photo Series cards. My favourite card in this series is that of Larry Kobberman - 'Mr. Tallcorn,' Rainbow Photo Series 2-81. Larry, by the way, is a tremendous QSL'er and a real gentleman - one of the best.

So, anyway, that's the stage set. Now for the full Sundown cards production! It all began back in 1975 when Lucille Bice was studying art and design at North Idaho College in Coeur D'Alene, Idaho. A friend of the Bices (Lucille 'Sundown' and Mike 'Snowgoose') asked Lucille to design him a QSL card, which she did, with the result that Sundown Card No. 1, 'Compass Man,' came into being. It was Compass Man who got Mike and Lucille interested in CB (both Mike and Lucille, incidentally, hold Advanced Class Licenses in Amateur Radio) and before very long, Sundown Card No. 2, 'Snowgoose and Sundown' was designed and printed up. The superb quality, freshness of ideas and approach to card design of these QSL's was such that within a very short space of time, more and more

people were asking Lucille to design their own personal QSL cards. Not only CB'ers but Licensed Radio Amateurs, too. What started out as a hobby very soon mushroomed into a full-time business which can now boast of over 900 custom-designed, no two alike, Sundown Series QSL cards.

Mike and Lucille maintain a complete roster of all card holders which is supplied in the membership package of The Sundown Collectors Club. More of the club later. For a reasonable fee, the roster is available to non-club members via Mick, 'Connecticut Crumb Snatchers Unit No. 1,' PO Box 8062, East Hartford, Conn. 06108, USA. Mick is Sundown's East Coast Representative and is in complete charge of the Sundown roster.



Under consideration at the moment is a series which will appeal to sportsmen and sportswomen the world over. Provisionally entitled 'Sundown Fur, Fin and Feather Sportsman's Photo Series', it could well be another Sundown triumph but, as I said, merely an idea at the moment. Should the series progress any further, I'll pass on the details.

OK, so much for the Sundown story, now for the cruncher! The cost of being a Sundown Card holder. Since there is always a lapse of some six weeks between writing this article and its being published - plus the inevitable delay in post from the States - I would suggest that anyone interested in having a Sundown card should write to Mike and Lucille for up-to-date information. The address is Sundown QSL Cards, Star Route Box 251, Spirit Lake, Idaho 83869, USA. Any prices quoted are for 1,000 cards, including artwork and printing. Unless requested, a second side is included on all cards, i.e., "Hi Station . . . nice talking to you, etc."

The only problem I can see with ordering Sundown cards is going to be the problem of delivery or, more accurately, the problem of delivery time. Due to the enormous distance involved between us and Sundown, this is unavoidable. However, don't despair. Mike and Lucille will airmail 100 QSL's on to card holders ahead of their regular order. A good service and worth a thought from prospective Sundowners. At least you will get 100 cards to hold you over until your regular order arrives via sea mail, which can be anywhere from 6-12 weeks depending upon volume. Cost of this air mail service to western Europe (that's us, folks!) is \$3.50.

Last but not least, there is the Sundown Collectors Club (1,000 members plus at the moment). There is also a Photo Series Club and a Rainbow Photo Series Club but I won't concern myself with these at the moment. Included in the membership package is a

certificate, membership card, embroidered patch, an assortment of Sundown cards and applications to other clubs. Membership is \$8.00 for two members (two of everything) or \$6.00 per single member. Rubber stamps are available at \$2.00 each with extra patches available at \$3.00 each.

Sundown Collectors Club cards, personalized with members' names, addresses, etc., are available at \$46.15 plus postage.

I almost forgot to mention that rosters for the Photo Series are also available to non members.

The roster for the Black 'n' White Photo Series is handled by Donald W. Hodous, "Blinco," of 13041 Webster Road, Strongsville, Ohio 44136, USA. The Rainbow Series is under the control of John Weber, "Honesdale Hunter," Box 458, Honesdale, Penn. 18431, USA. For more info on these rosters, drop a line to the above two characters (a couple of IRC's appreciated) and request details.

Well, that's just about all I can tell

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QSO of the Month

Phew! I received a very impressive list of QSO's from Ian, India Mike 01, The President of India Mike DX QSL Club. They're all good, it's difficult to know which ones to pull out! What I've done, therefore, is to reprint those which have a particular appeal to me.

The India Mike 01 Station is quite a nice set up. Nothing brilliant or out of this world but, nevertheless, quite nice. Incidentally, I'm noticing more and more operators using a Nato 2000 radio. Will they eventually take over the ever faithful Cobra 148 in the popularity stakes? Time will tell.

TRX: Nato 2000
 ANT: 1/2-wave omni-directional
 PWR: CP 100 (100 watts PEP)
 MIC: Ham Master 4200
 9 OCT 82: 1325 GMT 27.515 LSB
 WMF: Op max
 QTH: Vatican City
 S9: R5
 17 OCT 82: 1540 GMT 27.645 LSB
 129 WW 003-Op GE2A
 QTH: Budapest, Hungary
 S9: R5 with QRM
 27 OCT 82: 1115 GMT 27.915 USB
 CP1 Op?
 QTH: Guallarella, S. Africa
 S9: R5
 18 NOV 82: 1640 GMT 27.955 USB
 Unit 444 Op. Imro
 QTH: Paramaribo, Suriname, S. America
 S3-9 R4-5 with QSB

These are just a small part of the very impressive listings sent to me by Ian. Sorry I can't reprint them all but to do so would take up just about all the space allocated to me and I've got to fight my genial, ever-so-friendly Editor for that!



Quoted Cards 1-4-1 QSL's
 These appear to be in a bit of a decline at the moment. Remember, although I receive stacks of cards, I will only reprint your name and AD if you specifically state that you want me to. So, sorry to all those people who expect their name to be here but unless you say so, courtesy prevents me from doing so.

Peter Evans	Brian Warnaby
Papa Romeo Echo	(The Jackal)
90 Caswood	Rosemere House
Llandybie	Catcote Road
Ammanford	Hartlepool
Dyfed	Cleveland
S Wales	(Sundown 883-81)
BATS SUG	
	Philip Fletcher
	(Waxwing)
Hydon	Manor School Bungalow
(Sholgun)	Owlton Manor Lane
Vestry House	Hartlepool
Perrygot	Cleveland
Edin Vale	(Sundown 845-82)
Gwent	
S. Wales	
NPS 6AZ	

DXQSL INTERNATIONAL CLUB SPOT

you about Sundown cards. I don't know why I've never featured them before, in retrospect I wish I had but what the heck, "All good things come to those who wait!"

One last word on the subject, apart from Brian, Card 883 and Phillip, Card 945, are there any other UK Sundowners? If so, I would truly appreciate a card from you.

Seeing as I'm basically a bone idle, lazy, so and so, the following review of the Berliner Bear Club gives me great pleasure; the reason being is that I haven't wrote it! I'm always requesting club members to tell me their own personal views and thoughts on clubs which they are members of. Why I do this is that, hopefully, I can combine several points of view and eventually come up with a fairly true and honest appraisal of clubs.

Regrettably up till now, I've had a very poor response but at long last a club member has taken the time out to give us the benefit of his experience.

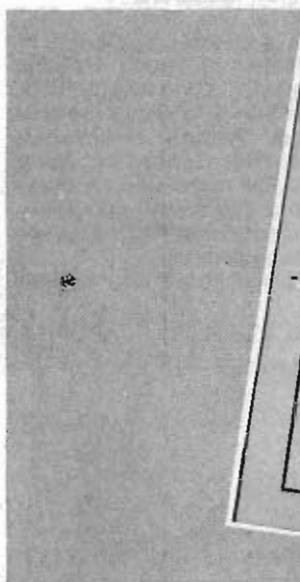
BB214 Ross, of Yorkshire, has very kindly put pen to paper and given me his honest appraisal of Berliner Bear Club.

Full AD is Berliner Bear QSL Swap Club, Postbox 2923, 6750 Kaiserslautern, West Germany. Club President is Knut Mittelstadt. Membership fee is 20 of your signed and dated QSL cards plus \$18.00 or sterling equivalent.

This, more or less, is Ross's report: "The club package I rate first class. For my £7.00 plus 20 cards I received: 1. Membership card and BB Unit No.; 2. ID card and certificate; 3. Club roster; 4. Club badge; 5. Club pen; 6. A German record; 7. 20 QSL's from other members; 8. 20 BB QSL cards; 9. QSL Club app. forms; 10. BB Club stickers; 11. Tourist information.

"I paid a further £2.00 and received an extra 100 BB cards. All in all, I thought it was good value for money. The roster I didn't rate and I have yet to contact a German station who has heard of the BB Club, so I think that, as yet, international recognition may be poor. Still, time will tell. As it happens, though, I have been on the phone recently to another BB Member, Peter, who tells me he has had his first international QSO with another BB Member. The station in question operates out of Spain.

"I have spoken with Inge "Flowergirl" Milson (BB UK Rep.) on FM on three or four occasions and she tells me that the club is growing at a steady rate with quite a few members based in Scotland. She speaks to Knut about every three weeks on the phone."



So there you have it, an unbiased report on Berliner Bear Club. In the current atmosphere of rip-off clubs, Berliner Bear has a nice, honest-to-goodness sound about it. I especially like the idea of Inge Milson being in regular touch with the Club QTH. Not many clubs can boast this sort of set up and it's to their credit that BB can. All in all, Berliner Bear seems a nice outfit to get involved with.

For more details, please contact Inge "Flowergirl" Milson, 17 Cherry Avenue, Malton, Yorkshire YO17 ODE.

My sincere thanks to BB214 Ross for his report but I haven't finished with him yet. Ross is one of the best exponents I know of mobile DX'ing. One of his recent contacts was a nice three parter: Ross, WDC 04 Martin and John the Unit 71 in New Jersey. A nice little tip from Ross for all mobile DX'ers to take note of is as follows:

"Make sure the rig has a good metal mounting - metal to metal. I pulled the fitted radio out of my car in order to get a better mounting for my rig. That plus a good antenna and you're in business. If you can't hear it, you'll never speak to it."

Nice one, Ross - thanks.

To finish off with, a rather nice, unusual QSL card. As it happens, it's the first one of its kind I've ever seen. It's hard to know what to call this card, it's not a two parter but just a single card divided into two. Perhaps the best thing to do is just to let you look at it and make your own mind up as to what to call it. Either way, I like it very much. My compliments to its co-owners, Anglo-American Sidebanders

and the Dorset Knights DX Group.

I've had quite a few letters recently asking me what frequencies I transmit on. A hard question to answer, due to the fact that, generally speaking, I never use a standby frequency. I'm a bit of a butterfly in this respect, flitting from frequency to frequency. As a guideline, though, forget FM: I don't possess a legal rig and, in fact, I've never even used an FM rig yet (I'll get me bum smacked if HO read this!). I rarely use AM, much preferring to operate on the upper side. My favourite frequencies are between 27.415 and 27.605 and if I'm really pushed, yes, I may just sit long enough on 27.555 USB to get a bit of a QSO going.

I like to talk to local stations. In fact, I prefer "Why aye, man" to "My friend" any day of the week. So there you have it, any Sunday afternoon give a listen between 405 and 605 USB and you may just hear The Unit 25 given what for, especially if you happen to linger around 27.555. I can't promise to be there but if you do hear me, come on in, I'll love to hear you.

OK, that just about wraps it up again for another month. Get that rip-off club info to Richard Outlaw Int. 09 as soon as possible and let me hear about your specials QSO's.

Till next month, take care, look after yourself and good DX'ing.

Ta ta.

Charlie Hotel Unit 25.

DX news, views, QSL swaps, gossip and QSO of the Month to Charlie Hotel, c/o 3 West Street, Sunderland, Tyne and Wear SR3 1EU.

Repeater station system for 934MHz CB

Part 1 by F. C. Judd

Wishful thinking maybe but a very definite possibility, *if and only if* the Home Office would grant permission for such a facility and allocate the requisite number of channels that would be required for a planned repeater station system to be put into operation. *We already have the technology.*

Whilst a 934MHz CB band can provide station-to-station ground ranges equal to and in many instances greater than those obtainable on 27MHz, the use of a repeater station can easily double or even treble average ground range especially for mobile operation. Radio amateurs in almost every country of the world have long since proved the value of VHF and UHF repeater stations and in the UK alone there are about 160 VHF and/or UHF repeaters at present in continuous operation, day and night. With the exception of the mountain regions of Scotland and Wales, it is quite possible to drive from virtually any one part of the country to another on main trunk roads or by-roads and rarely be out of range of a repeater station. One VHF repeater properly sited can provide coverage for a whole county allowing mobile or fixed stations, otherwise out of range of each other, to make contact. There is often a bonus too when tropospheric conditions are good and it is not unusual during these periods for stations, fixed or mobile, to make contact through a repeater 100 miles or more distant. Aside from radio amateurs, many other services also use repeater stations to provide greater VHF or UHF communication ranges and the idea is, of course, extended to the use of satellite repeaters which permit VHF/UHF contact between different parts of the world.

How a repeater station functions

A repeater station is a dual system which receives signals and then re-transmits them. It therefore consists of a sensitive receiver and a transmitter each connected to its own antenna. A signal picked by the receiver on one frequency is demodulated, passed through to the transmitter and sent out again on another frequency. A repeater station therefore requires two frequency channels which are normally separated by a determined amount depending on the frequency band of operation (to be dealt with later).

The range coverage of a repeater depends almost entirely on the height its antennas (transmitting and receiving) are above ground. At VHF and UHF (934MHz) *radio distance* is somewhat greater than

visual line-of-sight distance but can be extended very considerably by using very high antennas. In terms of *visual* distance the higher one is above ground the further one can see. The same applies to VHF and UHF radio and a transmitting antenna at a height of about 150ft. above ground has a *radio* distance in the region of 30 or even 40 miles depending on frequency, transmitted power and the nature of the surrounding area. Using omni-directional antennas, reception and transmission can be achieved over a more or less circular area with a radius equal to the radio distance obtainable. For example, a mobile station at say 20-25 miles from the repeater can make contact with another station at more or less the same distance in the completely opposite direction from the repeater thus establishing a total communication range of some 40-50 miles. This would not normally be possible by direct path transmission with commonly used omni-directional antennas at low heights as would be on a mobile station.

The diagram (Fig. 1) should help clarify the system further. We have three mobile stations and one pedestrian with a low power hand-held set. Each are out of range of each other for making direct contact. However the repeater station with its very high antennas can easily receive either of the four stations. We will assume that mobile 1 is transmitting. His received carrier is used to activate a relay (COR) or (carrier operated relay). A pair of contacts on this are used to switch on the repeater transmitter (TX) which allows the *audio* signals from the receiver to be re-transmitted. Since the repeater transmitting antenna is also very high, the relayed or repeated signals from mobile 1 can be received quite well by the other three stations. When one station has finished transmitting another can come in on the repeater and talk to the others in the net.

The general technology of a repeater station

A repeater station is normally designed to be quite automatic in operation and is in effect switched on and off by the stations using it. A logic system is incorporated to ensure that only signals intended to go through the repeater are accepted and that any signals too weak to be readable are rejected.

Activation of a repeater is accomplished by an audio tone of very short duration sent by the station when its operator presses the microphone button to transmit. The 'tone burst', as it is called, comes from

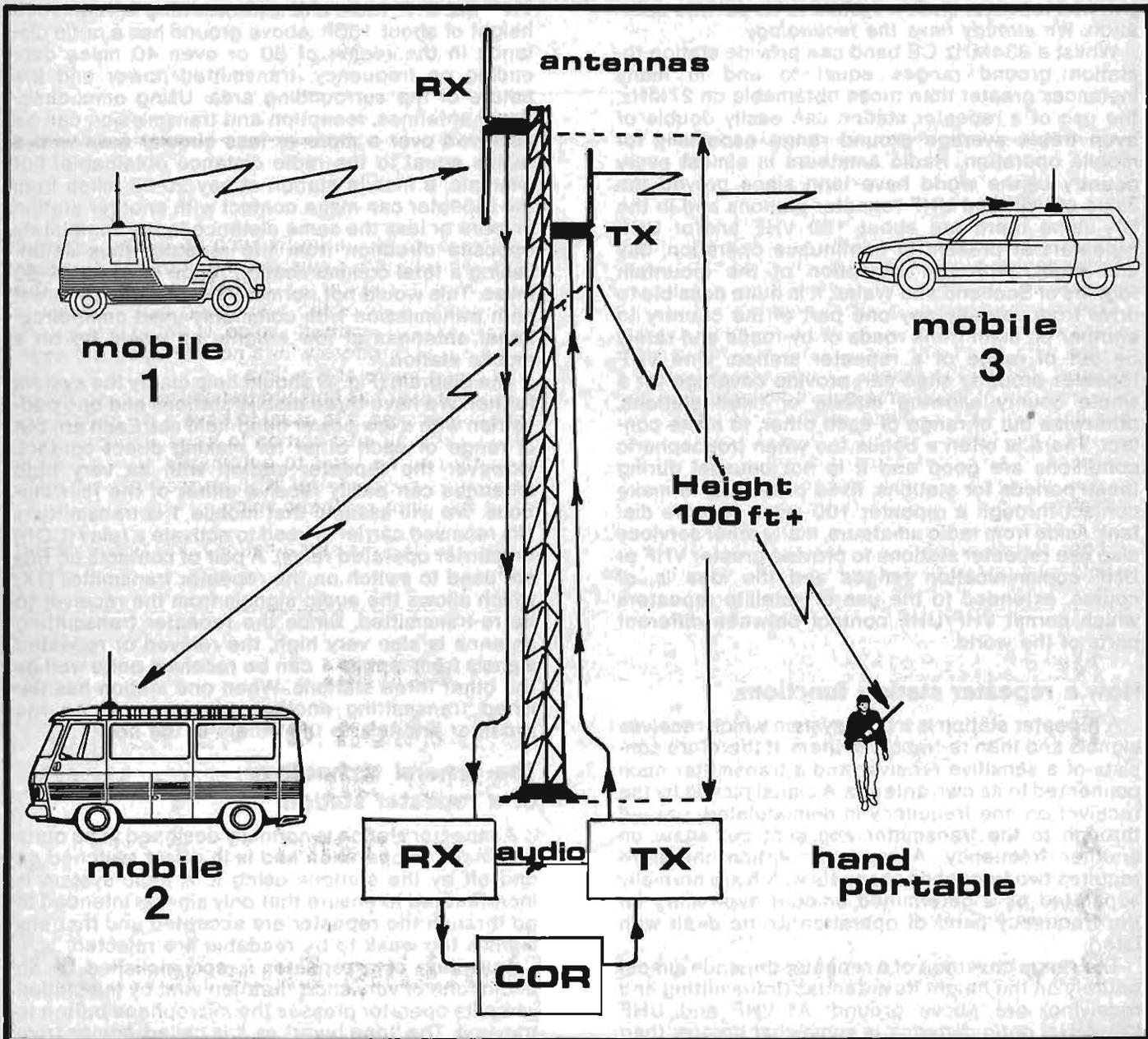
a small but simple circuit built into the CB set. It lasts only for a second or so but when received by the repeater receiver sets a timer circuit into operation. This determines the time allowed for you to transmit, usually a minute or two, so that no one operator may occupy the repeater for long periods to the annoyance of others. At the end of the timed period, your audio signals are cut off and those listening are usually made aware of this by a series of tone bleeps. Only when you cease to transmit, i.e., return your set to the receive condition, will the repeater revert to its 'access' condition. The next station in line can then transmit and re-activate the repeater as before.

A simplified arrangement of a repeater system is shown in Fig. 2. Signals to go through the repeater are received by the antenna RX. The carrier operated relay (COR) switches on the repeater transmitter section via TX Sw (transmitter switch). The 'timer' is activated and simultaneously allows the received and now demodulated (audio) signal through for re-transmission via the antenna TX.

The full circuitry for a repeater station is, of

course, much more sophisticated than Fig. 2 might imply. For instance, special precautions must be taken to prevent the re-transmitted signals from being picked up by its own receiver which could easily happen because of the close proximity of the antennas and the relatively small difference between the two frequencies used, one for reception and one for transmitting. The difference could be as little as a few hundred kilohertz depending on the frequency band. For example, on the 2-metre amateur radio band a repeater OUTPUT (transmitting) may be on 145.600MHz whilst the INPUT (receiving) will be 600kHz down from this or at 145.000MHz. On the 432MHz amateur band the transmit and receive frequencies of a repeater are separated by 1.6MHz. At 934MHz (CB band) the frequency separation for a repeater would need to be at least 2MHz which means that the existing band of 934.025-934.975 would be of no use. The band required to accommodate 20 repeater channels (two frequencies per repeater) and 20 simplex channels, making a total of 60 channels with the present 50kHz spacing, would be 934.025-936.975MHz.

Fig. 1. How a repeater station can provide contact for a number of stations mobile (or fixed) but otherwise out of direct communication range with each other (see text).



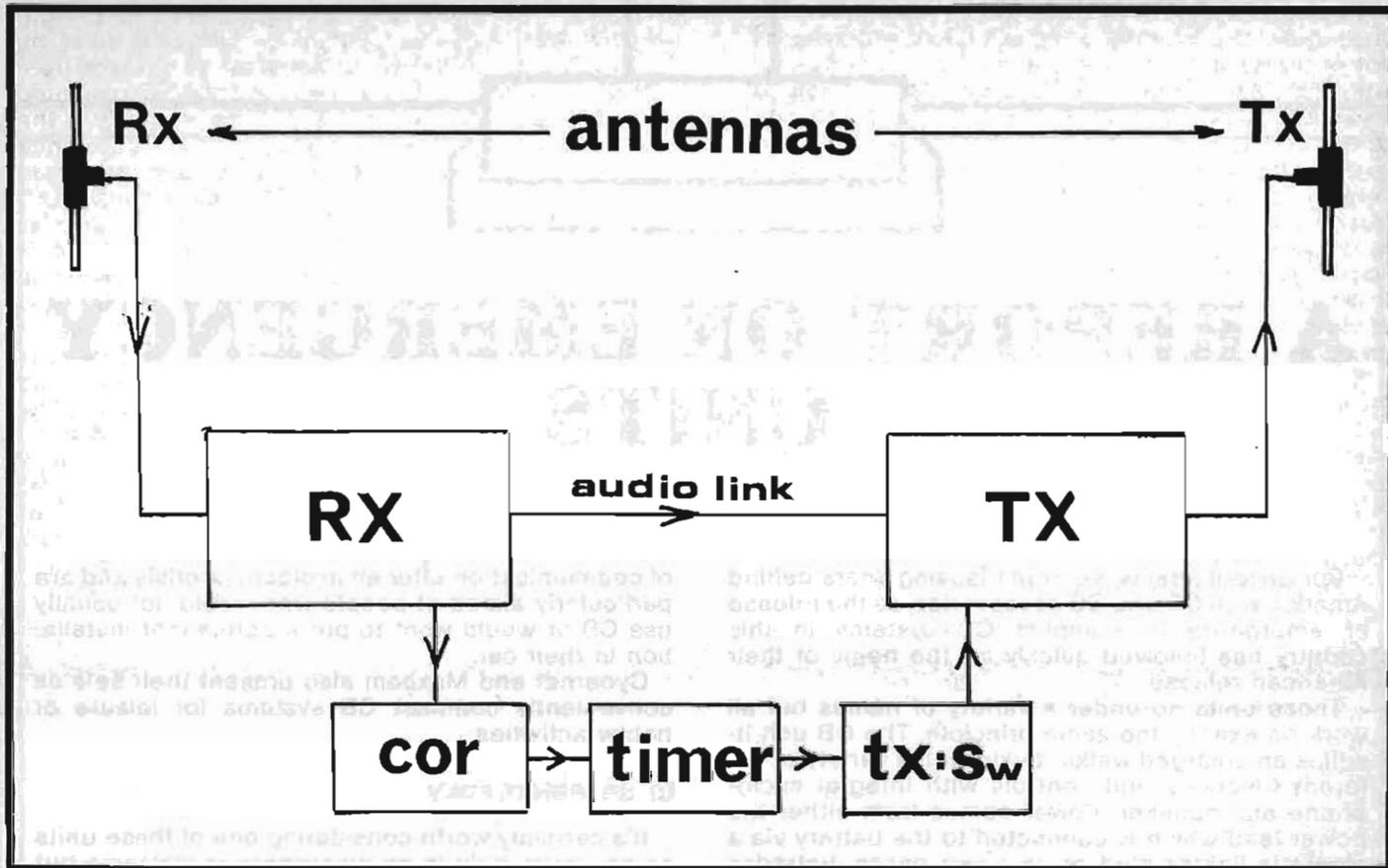


Fig. 2.
The basic principle of a repeater system (see text for detailed explanation).

This provides a total bandwidth of 2.950MHz and a 2MHz spacing between a repeater input and output channel, i.e., receiver and transmitter.

One other requirement of a repeater station is a means of identification and this is normally accomplished with a call sign sent automatically every 15 minutes or so by the repeater transmitter whether it is in use or not. With amateur radio repeaters the identification call consists of the prefix GB3 followed by two letters, the latter being chosen to represent as close as possible the name of the location or area covered. For example, one of the London repeaters might be GB3LN (London North). The call sign is sent in Morse code as an audio tone signal and generated by logic circuitry. For CB radio use it should be possible to use an electronically-synthes-

ized voice to give a prefix such as GCB - together with two letters for location, e.g., London North as GCBLN, Manchester as GCBMC and so on. The modulation level of the identifying call, whether in Morse code or synthetic voice, is set at a low level so as not to interfere with a normal voice transmission being made at the time.

When a user has finished transmission and 'drops' repeater access, it is usual to have a 'go ahead' signal to alert the next station to transmit. Again logic circuitry can be used to automatically send, as in amateur radio, the letter 'K' in Morse code or for CB radio the 'K' in synthetic voice.

Next month - Plan for a national 934MHz repeater system.

Next month in CB Radio Magazine:

The Campaign for the Legalization of CB Radio by Major Sir Patrick Wall

A Look at the Telecoms Bill - Friend or Foe?

Disabled CB

Power Supplies - Still a Shocking Experience?

A REPORT ON EMERGENCY UNITS

For once it seems we aren't lapsing years behind America with CB and CB accessories, as the release of emergency or compact CB systems in this country has followed quickly on the heels of their American release.

These units go under a variety of names but all work on exactly the same principle. The CB unit itself is an enlarged walkie-talkie with a variety of different functions and controls with integral microphone and speaker. Power comes from either the power lead which is connected to the battery via a cigarette-lighter plug or, in some cases, batteries which fit inside the unit. The antenna is telescopic and fits into a mag mount base which is placed on the car when needed. Some sets also have an antenna socket on the CB unit itself. Hey presto, instant CB.

Many of the units are marketed as emergency units or handy for traffic information and they are intended to be stowed in a car or boot as a method

of communication after an accident or crisis and are particularly aimed at people who would not usually use CB or would want to put a permanent installation in their car.

Cybernet and Maxcom also present their sets as conveniently compact CB systems for leisure or hobby activities.

In an emergency

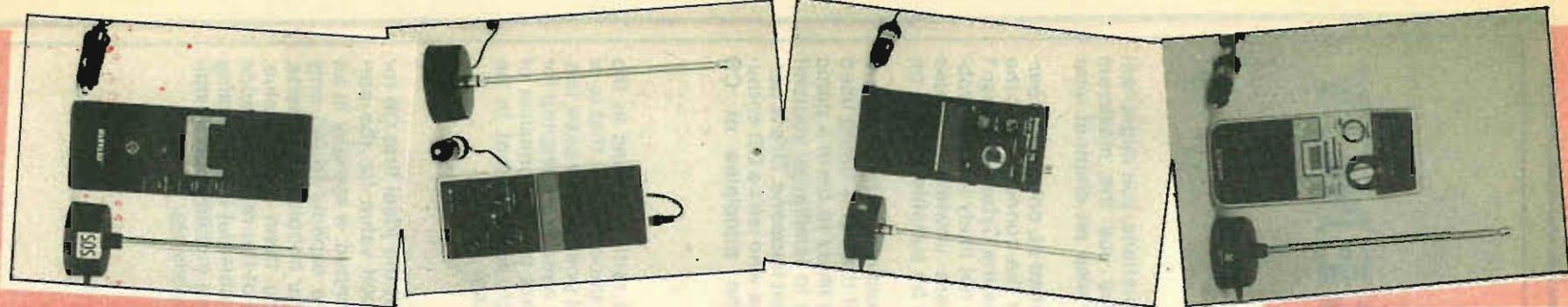
It's certainly worth considering one of these units as any extra help in an emergency is welcome but bear these points in mind

- ★ If you can reach a telephone then use a phone rather than CB.

- ★ Range will be limited because of the less efficient telescopic antenna and mag mount.

- ★ Locate the unit where it will actually be of some help in an accident or emergency. Effectively this means the unit is best put under a seat or on a par-





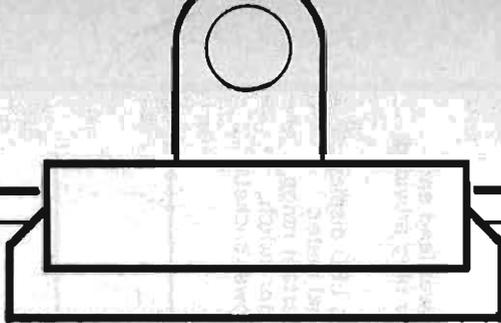
Midland Ready Rescue

**Maxcom 7E Alert
Mobile Transceiver**

Harvard SOS

Cybernet Easi-Com

Power output	4W	4W	4W	4W
Channels	40	40	3 (9, 14,30)	40
Power source	Car battery (power lead and cigarette-lighter plug provided)	Car battery (power lead and cigarette-lighter plug provided) or batteries	Car battery (power lead and cigarette-lighter plug provided) or batteries	Car battery (power lead and cigarette-lighter plug provided)
Features	Channel select, TX light, volume, squelch, power and antenna sockets and sockets for direct antenna connection	Channel select, TX light, volume, squelch, power and antenna sockets and socket for direct antenna connection. 'Recharge' socket	Squelch, volume, channel select switch, battery warning light, power and antenna sockets. Socket for direct antenna connection. 'Recharge' socket	Channel select, LED display, power and signal meter, volume, local/distant range switch, attenuator switch, antenna and power sockets
Antenna		Telescopic antenna which fits into a mag mount base		
Instructions		Clear and concise instructions on using the equipment. Can be clearly understood by non-CB'ers and is helpful in explaining CB, its conventions, limitations and how to get best performance		
Carrying case	Black moulded plastic with carry handle and secure fastenings	Black plastic briefcase-type with snap fasteners and carry strap	Red plastic briefcase-type with carry handle. Snap fasteners	Black moulded plastic, no carry handle. Secure fastenings
Country of manufacture	Korea	Korea	Hong Kong	Japan
Price	£49.95	£49.95	Not available	£49.95
Comments	Robust set and case. Channels 9 and 19 highlighted on select switch. Case has easy instructions for installation inside lid	Robust set. Comes with strong leatherette case for unit and carrying strap. Loop for hanging unit up	Less robust unit. Not 40 channels but the three could be sufficient, depending on purpose. On set we had, we couldn't get a tight antenna connection with mag mount or unit itself. Instructions inside case lid and space for AA/RAC membership number	Hanging loop on back of rig. Robust set and case. Antenna will not fit directly to unit. Easy installation instructions inside case lid



A REPORT ON EMERGENCY UNITS

cel shelf, as reaching the boot may not be possible, especially if you are injured.

★ The unit draws current from the battery. If the battery is not charging or you think you will need your lights for a long time without the engine running then don't use the unit continually.

★ If your unit uses batteries and you leave it with the batteries in then use the dry-cell type or check regularly for leakage.

★ CB transmissions are influenced by all sorts of factors, including terrain, weather and atmospheric conditions. CB cannot be relied upon to reach a certain range and consequently cannot be guaranteed to provide help.

Other uses

Emergencies aside, these units are very suitable for people not wanting to install CB equipment permanently in their vehicle, those that don't use CB a lot or as high-quality walkie-talkies for leisure or sporting activities.

These sets have come down in price considerably in common with most other CB equipment and can be purchased for about £50. Although this is not cheap compared to the cut-price sets available from some shops, it does include a complete kit and isn't expensive for a versatile 'second' set.

Choosing a set

All of the sets available have a maximum power output of a nominal 4 watts, so this isn't an influencing factor. They are all also powered by a 12V power supply and come with a cigarette-lighter plug as standard. However, you might want a set that can be powered by batteries as this gives great flexibility and mobility, especially if the set is used for a hobby or sport.

Only one of the sets, the Harvard SOS unit, doesn't have the full 40 channels. Depending on your requirements, this might be sufficient but if it is

being kept for emergency situations, you might feel that 40 channels would give you the maximum chance of finding someone else on channel near you.

Out of the four sets we looked at, only the Cybernet Easi-Com didn't allow for the connection of the antenna into the unit itself. As the Cybernet doesn't have a battery facility, this is not likely to be a problem. Telescopic antennas are unwieldy for use inside the car so would only be suitable for use on the rig outside.

It's important that any instructions with the set are clear and concise, because if the set is being used in an emergency, the user is likely to be in a panic and hurried. It's a good idea to familiarize yourself with its use *before* the accident happens. This is particularly the case for someone who isn't a CB enthusiast and familiar with the principles of CB installation.

Construction

If your set is going to get rattled around in the boot or interior of a car then choose a set that is of robust construction – and that goes for the case, too. All the cases and sets we've seen are designed for rugged use but remember that any CB consists of electronic components which aren't meant to be bounced around too vigorously.

Conclusion

These sets are probably not the ideal first CB for any breaker but they are good value for the purposes for which they are intended: a standby in an emergency; for someone who expects to get only occasional use from a CB or for hobbies and sports. Prices have dropped, making them better value, although against the bottom-of-the-range rig price they aren't the cheapest available but in purchasing a compact unit you are buying mobility and flexibility rather than a standard mobile rig.

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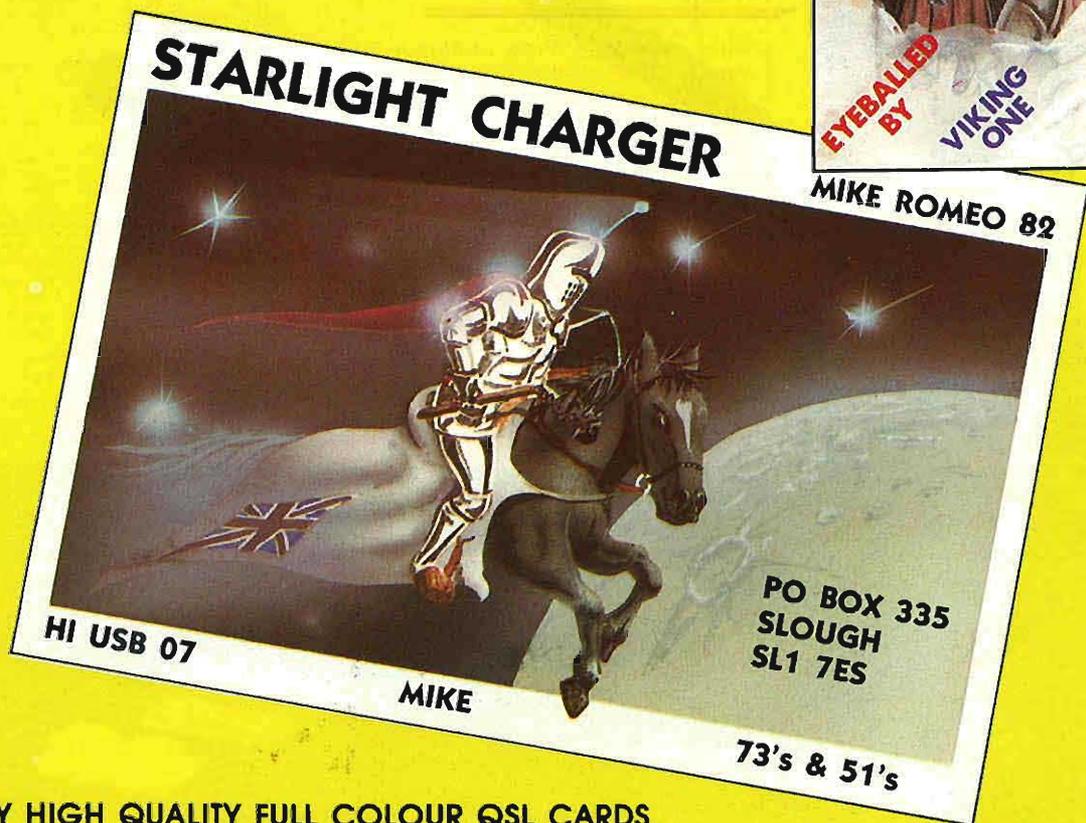
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