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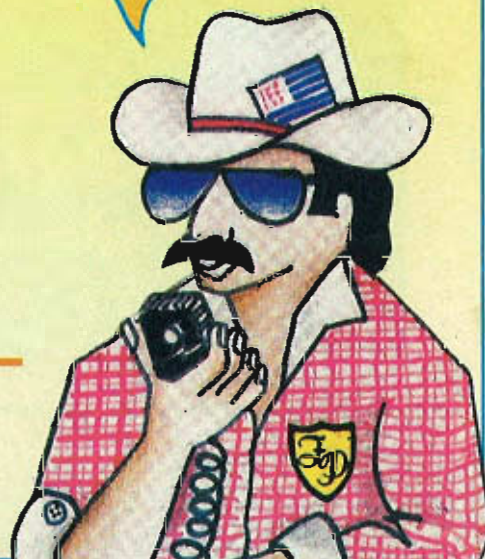
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CB Citizens' Band

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JUNE 1986 VOLUME 5 NUMBER 7



Inside this month

David Harding looks at the pros and cons of citizens' band at sea

Editor Eamonn Percival
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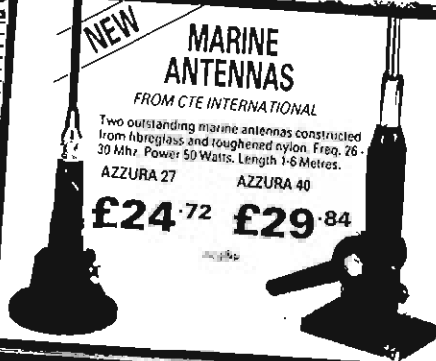
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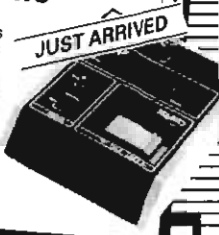
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Yours sincerely

Mike Devereux



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UPDATE

**NEWS
FROM
THE
WORLD
OF
CB**

**NEWS
FROM
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WORLD
OF
CB**

**NEWS
FROM
THE
WORLD**

Editorial

Well, if you have been reading the Back Chat pages over the last three months, you won't fail to have noticed the many references and comments about monitoring organisations. It is one branch of CB which seems to attract as much criticism as it does praise. As I have mentioned in previous issues of the magazine, I am appalled at the bickering and in-fighting within these groups.

If you are an everyday breaker in a club or a monitoring group, it is very easy to develop an insular view. You only see things in terms of your own local organisations. However, from the rather privileged position of Editor of this noble journal, I claim to have a more balanced overview of the state of groups nationwide. I am, therefore, at a loss to understand the disputes between these groups of people.

The original aim of monitors was a laudible one; to listen out for emergencies of all sorts and, on the direction-finding side, to clean up the airwaves *without* resorting to vigilante tactics. Sadly, a lot of these intentions have fallen by the wayside and many now seem more concerned with building up small 'armies'. In fact, as

Keith Townsend recently remarked, many now end up "sporting paramilitary uniforms and acting for all the world like Fred Karno's Army." I can't help but agree with him.

One point I would like to make clear now is that, while many monitoring organisations claim to *imply* to have official links with the RIS/DTI, none of them, in fact, do. Of course they are free to report offenders to the RIS, the same as the rest of us are. True, some groups are more in contact with the DTI than others — but that's as far as it goes. With this in mind, and to clear up any doubts, I interviewed Roy Williams of MSGB Ltd recently, and you can see the result elsewhere in these pages. MSGB Ltd have come in for both bouquets and brickbats lately and this is the reason we are carrying the interview. Why them and not us, I hear you cry. Well, our telephone number and address is on the Contents page — you have only to contact me. I should like to stress, however, that I will *not* get involved in any of the petty jealousies and minor warfare between different groups. My job is to report, and that's what I shall do — given the information in the first place, of course!

Eamonn Percival

High Anxiety

When Paul Dewhurst tried to do his brother a good turn, he ended up with rather a red face. Paul, 20, of Ashington, Northumberland, offered to climb onto the roof of his two-storey home to retrieve a CB antenna cable for his brother. He borrowed a ladder and went up to the roof, unhitched the cable

and lost his nerve as a few roof tiles were loose. Paul then had to climb back up to the roof ridge to wait for the fire brigade, who eventually brought him down from his 30ft perch.

"I have been scared of heights for years", he said, "I just went up because my brother wanted his cable. I am a bit embarrassed now."

The Genuine 934 Cavity Filter

At the mention of cellular radio my lips draw back and a growl can be heard deep in my throat. At the mention of a cure for cellular radio interference on 934MHz CB, a look of hero worship and surprise appears on the same face. When my eyes fell upon the Genuine Cavity Filters that were presented to the office for test, so did my hands and it would have taken a very strong man or a few fivers for me to loosen my grip.

If an open-ended ¼-wave stub is fitted between the transmitter and antenna, then whatever frequency the stub is resonant at will be sucked out. The cavity filter acts as a tuneable ¼-wave stub and will suck out the offending signal, leaving you with a better incoming signal at the receiver. The cavity filter is a 5" long by 1" square aluminum block. One side is fitted with sockets for attaching to a patch lead to rig and antenna and at one end is the tuning stub with locking screw. The cavity filter is fitted in the antenna line and adjusted so that the offending interference is eliminated. However, some of the *wanted* signal is also lost.

In theory, it sounds wonderful, but connected to my 934 rig, the filter was adjusted as instructed to eliminate the strongest cellular interference. But the 934 stations signals were also drastically reduced except for the more local stations, but even they were not up to their usual strength.

The Genuine Cavity Filters are fitted with either BNC or N-type sockets and are priced at £24.95 plus £2 post and packing. They are available from S J Tonks, CB Components, 18 Simmonds Place, Wednesbury, WS 10 8BN.

Mack The Hack

Hissing Mike

I am sure many of you remember the saga of Hissing Sid. Well now we have Hissing Mike. Rendezvous is the name of the hiss-operated microphone, the introduction of which we mentioned last month. Vox or voice-operated microphones are not new and some have the disadvantage that you have to maintain a constant voice level and if you hesitate during transmit the vox mike would switch off. Of course when you speak once more they will switch on again but the first word or two could be lost. The Rendezvous microphone requires only a short 'hiss' to key and dekey.

I found that it took some practice to find the correct pitch to activate the mike and at first I found that I was hissing too hard. At the end of a short period of testing I had quite an ache in my chest but I soon realised that even the softest hiss activated the microphone. The object of this type of mike is for the driver's safety; your hands are free for driving. For the homebase, again it leaves you able to continue to use your radio equipment even if your hands are engaged in other activities. For the disabled, the answer is obvious.

The microphone given to us to test was the prototype and had a bit of a home-brew appearance, but we have been assured the production models will be much more presentable. The high impact plastic case measures 165 x 85 x 25mm. On the front edge, from the left is the power on/off switch incorporating green indicating light. The minute condenser microphone element is next in line followed by a red transmitting indicating lamp. Finally comes the audio gain control.

On the rear of the case is a single lead that connects via a mike plug to the mike



socket of your rig. From the mike plug, a single red wire that has to be fitted to a suitable power source of 10v - 14.5v DC. On the base of the unit is a Velcro patch for attaching the microphone in a suitable position. The comprehensive instructions supplied with the mike gives microphone connections for a large number of popular rigs. To prevent accidental jamming of a channel should the mike be inadvertently left on, if no reasonable level of sound is present, the microphone will automatically return to receive mode after 15-30 seconds. The reports given by other stations of the audio quality were encouraging. fitted to a Uniace 200, we found that the gain control was set at two thirds of travel for best results. Of course the best position for the gain control will vary for individual radios. In my opinion the Rendezvous microphone could be invaluable in the type of situations already stated and in normal circumstances could make the radio operator quite lazy!

Technical specifications:
Supply: 10v-14.5 DC stabilised.
Output: 10 Milli/v - 600 ohms.
Sensitivity: 64dB + 3dB at 1000Hz.
Frequency: 20-14,000 cycles (element).
Current: 48ma-110 ma-TX.
Impedance: 600 ohms.
Price: £60 approx.

Mack The Hack

Eyeball Time

The season of mass eyeballs seems to be approaching rapidly. We have news of two more, the dates of which, unfortunately, clash. On Saturday and Sunday, 7th and 8th June, there will be a mass eyeball at the Brean Leisure Centre, Coast Road, Berrow, Brean Down, Somerset. The eyeball includes a CB and car boot sale and tickets are priced at £2.25, which includes a raffle. More details are available from PO Box 16, Burnham

on Sea, Somerset TA8 1DS. On Sunday 8th June, the Mercia QSL Club is holding its annual eyeball at Caludon Park, Coventry. It starts at 11am and goes on 'til late. The attractions include stalls selling everything from souvenirs to CB equipment, side-shows, food and drink and games. There will be an inter-club tug 'o' war. Ample parking is available and admission is free. Details from the President, Mercia QSL Club (Coventry), PO Box 158, Coventry CV6 6BD.

Cabbie Fined

Gateshead magistrates recently fined a Tyneside taxi driver £25 with £15 costs for using illegal radio equipment and not having a licence. They also ordered the forfeiture of the equipment.

Raymond Henderson, 44, of Gateshead, claimed he was duped into buying the rig, which he did not know was illegal.

Prosecuting for the Department of Trade and Industry, Mr Paul Heron told the court that a Radio Investigation Officer, checking

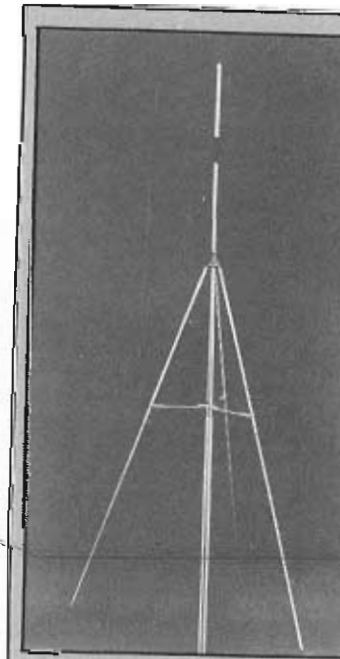
on taxis at a Newcastle rank last summer, discovered the radio in Henderson's cab. On the surface, he said, it looked like a legal rig but further investigation revealed that it had been converted to transmit on illegal frequencies.

Said Mr Heron: "The most serious aspect about these extra frequencies is that if used near bands for industrial, medical and scientific use, they could have affected vital medical equipment such as heart pacemakers and respiratory equipment for young children."

New Skylab UK Antenna

Telecomms of Portsmouth recently announced the introduction of a new product from CTE International. Called the Skylab UK Antenna, it is a legal base antenna using high-grade anti-corrosion aluminium with brass and nylon.

The aerial has been specially designed to provide optimum sensitivity on receive, whilst the radiating element uses an extra low-loss coil and radial array for exceptional penetration on transmit. All interconnecting parts are made of turned copper. Designed to mount on a 1 1/4" aluminium mast, the aerial can withstand winds of up to 120Kmh an hour. The UK price including VAT is £24.



UPDATE

Grey Beard's Gleanings

Not wishing to get involved in the Sassenach habit of relating how many wallies there are North of the Border, I must say that if all my friends in the Tulloch Breakers Club of Perth are such, long may they continue to remain so. They have raised a staggering £900 with just two (yes two) dances. I know that everyone involved with the Assessment and Development Classes at Tulloch Primary School are all "over the moon" with the cheque that they received for £400! Well done Sandpiper, Statesman and all concerned. Special mention must be given to Lady Laird, the new club magazine editor.

If your club is doing well in the fund-raising stakes let me know, better still send me any articles appearing in the local press, but make sure to include the name of the paper (the Editor is a bit funny about these things!).

The article on antennae by Fred Judd, Keith Townsend and other experts refer frequently to the importance of correctly tuning antennae to the desired frequency and impedance (52 Ohms approx.) to achieve the maximum transfer of power between transmitter and antenna. I am trying to find out about the types of tuning meters available at a cost



51's 73's 100' QSL

that doesn't need a second mortgage to purchase same! Anybody able to get such information to me, please?

Information is also required on the availability of mirror-mounts that accept a 3/8" stud on one side and a SO 239 (feeding a PL 259) on the other side. Can you help? Let me have your news, views, hints and your queries. News of new products and what have you. This will help to get the Gleanings back on the road as before.

I have received a lot of queries on the subject of computing and CB radio; unfortunately, I haven't got any information at all. So let me know anything that you know about this fascinating side of our hobby. Programs, hardware, whatever. Well that's it for now, 73's.

The Grey Beard

BT Announce New Mobile Radio

British Telecom recently announced its entry into the private mobile radio market with its new service, British Telecom Baselink.

Baselink initially provides a local two way radio service for businesses who need to keep their mobile workforce in contact with their office or base. Customers can either choose to be served by one of a large number of shared radio stations already installed throughout the UK or a complete Baselink radio system can be provided for exclusive use of one company which can be tailored to each customer's requirements. Local coverage areas will expand to provide complete regional services, with national coverage available next year.

Baselink will provide a

complementary service to the very successful cellular radio service provided by British Telecom Mobile Phone which can itself provide access to anyone via the world's telephone networks.

British Telecom believes that Baselink provides the natural environment for the development of fast and efficient data communications. Using Baselink to transfer data, efficient businesses will, for example, be able to send instructions to their mobile radio personnel and receive up-to-date, accurate reports.

British Telecom say they are very conscious that the radio spectrum is limited and that data messaging makes more efficient use of this scarce resource. Baselink, with data messaging, more users can be served at lower cost through better use of the available radio channels.

Club Disbands and Aids Charity

Hemel Hempstead charities got a welcome boost when a local CB club, having disbanded, decided to distribute its remaining funds.

Alan Webb, of the newly-formed West Herts DJs Association, which is organising a major fund raising

event, was presented with a cheque for £350. A similar amount was presented to Ralph Jones, licensee of the Red Lion, Water End, which is now just £100 short of the £1000 needed to buy its seventh guide dog for the blind. The club, Hemel Hempstead Channel Changers, disbanded 10 months ago.

Thanks from Jean

In the April issue of *Citizens Band*, Big T mentioned a lady by the name of Jean (TT) from Weybridge, who had to go into hospital with a back problem. Well, Jean is now back at home convalescing and she found time to contact us here, asking if we could thank, on her behalf, all the people who sent cards, flowers and generally cheered her up just when she needed it. So, thanks people and get well soon, Jean.

Air Aid

There can't be many people in the western world who haven't heard of Band Aid, Live Aid, Sports Aid, Fashion Aid and all other appeals to raise money for the starving in Africa. Well, the latest on the list is Air Aid a campaign being launched by Kenny Johnson, and which is based in Guernsey.

Kenny is alerting CBers, and amateur radio operators that a massive 'radio-in' will take place on the weekend of the 18th, 19th and 20th

July. The event already has the approval of the Band Aid office and is likely that it will attract worldwide attention as interest has been shown by Germany, Italy and the USA.

The idea is that money to be donated will be pledged over the air for famine relief — in the case of amateur radio, it is hoped that a 'special events' station will be established. Apparently, the International Police Association are trying to find ways and means of helping, but Kenny is also hoping

that international business organisations will also be willing to help.

Kenny would like to thank various companies for their tremendous help with the project including Aurigni Air Services, Viceroy Hire Cars, Radio Guernsey, Radio Jersey and everyone else who has been of assistance.

If anyone else would like to help in any way, they can contact Kenny at 24a Vauvert, St Peterport, Guernsey, CI (2B508 or 53406), or his partner, Clive Ogier, on Guernsey 49479.

Mack Chat

Mack the Hack offers food for thought on 934 problems



March the fourteenth this year, members of the 934 Club UK Committee met with DTI officials to discuss the future of the 934MHz C8 frequency. One topic discussed was the interference caused by cellular radio telephones to the CB band. The answer will not please many of the users of 934, as the DTI state that nothing can or will be done as they feel that the blame lies with the 934 equipment itself. You may recall a few months ago I questioned if the fault could be in the present radios. It seems I was very near the mark as it is now stated that the problem occurs due to inadequate receiver design. I interpret that as when 934 radios were designed and built it was not taken into account that there would be other users on that particular bit of radio spectrum. Also, bear in mind many of us use pre-amps and are a little bit naughty with the antennas we use. The only glimmer of hope that could eliminate the problem is that, at present, the cellular system does use rather high power (100 watts) to enable it to work the existing repeater stations. As more repeaters are established around the country the power level must be reduced, otherwise they will get co-repeater interference. When this comes about it should reduce, or even cure, the cellular problems. Antenna restrictions will stay, say the DTI, at least for the present. But they are willing to study specification and performance details of antenna requirements from the 934 Club and this will be presented by the Club in the near future.

No more channels will be allocated on the 934 frequency, I understand. These statements could make 934 users a little glum. But there is a reason why the DTI seem to be "abandoning" the 934. When somebody gets an idea this idea is written with all the relevant technical details and is called a 'document'. When presented to the authorities to study it then becomes a 'discussion document' and it seems that the DTI have such a document. In about a year's time when it has accumulated enough dust it may be studied and if they believe that it is workable, plans could be made

to put this once idea into operation. The idea in question is a system that the Japanese are using at the present time known as 'Personal Radio Service'. This is the system that many dreamed of years ago; 80 channels UHF 933-935 25Kc spacing, a general calling channel, some channels for one-to-one contacts and others for group communication. The users of this system will be small businesses and citizens of this country who require a short range communication system (now where have I heard that before?). The working of the system is rather complex and I'll leave the technical details of this to my old mate and fellow contributor Keith Townsend who will, I am sure, enlighten you in the very near future. The present 934 CB system will not be abolished but will run alongside this new service, if adopted. Next year, Holland commences using this communication service and I imagine that our own authorities will watch the result closely before committing themselves as to whether or not this country is allowed the same privileges.

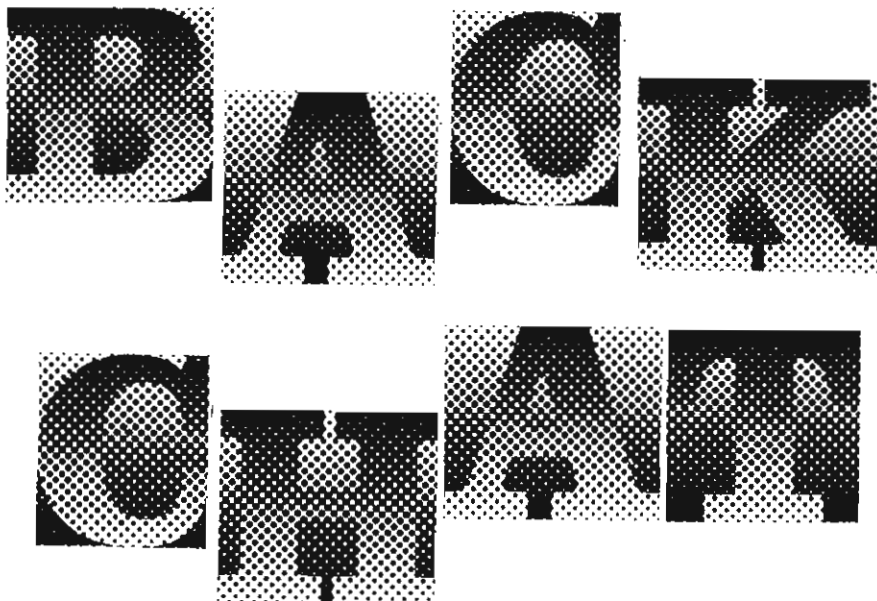
Tamper-proof

In the 14-page report many references are made to ATIS (Automatic Transfer Identification System). The report states that all radios are fitted with ATIS, which will be tamper-proof. Each time the set transmits, a coded signal is sent which is unique to each set so any misusers would be immediately identified. It could be some time before this system becomes a reality *if it does*, but I understand that the DTI have shown a pair of rigs they have been testing, and these rigs are already available in this country but modified for UK specifications (and can be remodified to the new specs whenever they might be). I shall let you guess which rigs these are and you should by the time you have read to the bottom of this page. One other interesting fact emerged from the 934 Club and DTI eyeball and that was that

the new European CEPT 27MHz frequencies will be introduced in the early part of next year.

A telephone call to my home the other evening resulted in a visit from Mike and Mary Machin of Selectronics. One reason for the visit was for the testing of the new MT370 934MHz handset, to discover its response to the cellular problem. With the ladies discussing cats, dogs and kids, Mike and I crept away to my den to play radio. I believe Mike was staggered by the amount of interference that I was receiving on my present setup. The MT370 was connected to the antenna system, the bad news is that the cellular phones were still evident but not as troublesome as before. The good news is I noticed that my other 934 rigs the cellular interference would wipe out the weak 934 stations and also, at times, distort the strong local ones. With the MT370 the situation is reversed. Even the weak 934 stations get over and eliminate the cellular interference. The better news was that, after a pleasant evening, Mike left me a MT370 to play with for a while, and I'll tell him now he's seen the last of that rig (I hope).

Although it is early days yet, the other owners of the MT370s that I have spoken to say that they have not picked up cellular phones on their new radios. At the time of writing, I have only used the MT370 for three evenings and a Saturday, connected to my base antennas. On Saturday morning the MT370 was set on scan. Jack (Unit 77 QTH Clapham), called and I returned to him and told him that I was using the new radio. After a couple of minutes of chat, Jack asked me to try and see if I could pick him up with the set in portable mode with the rubber duck antenna. I thought to myself "don't be daft" but, to satisfy his curiosity, I did. Sitting at home on the ground floor holding the rig in my hand, I gave a call and, to my surprise, he answered. Moving around the room, I found a spot for the best reception and we managed a good QSO. Fifteen miles as the RF flies on 1/2 watt. What do you think of that then?



The pick of the mailbag

Blue Control wants to say hello to truckers (see fourth letter).



Conversion Contradictions

The Specialist, from S. J. Tonks CB Components, has a very important point to make regarding conversion boards . . .

Many thanks to Chris Peterson for his excellent review of our conversion board. The review was especially interesting to me because Chris managed to fit the unit to a Midland rig for which the conversion was never intended. The "birdies" (interference on receive) is often a feature of the Midland on channel 2 even without conversion and can be worsened by placing the FCC board close to the receive I.F. section. We still recommend the conversion only for rigs employing the Cybernet "134" chassis to ensure full and accurate frequency coverage.

I am entirely in agreement with Chris' conclusion that, although the unit has been designed for simple

fitting without test equipment, the installation should be left to a competent person. Anyone wanting the conversion, therefore, should approach his/her local CB dealer.

We have noticed that several units sold have been removed from the protective cover. Those people interested to see inside need only consult the excellent photo in Feb edition. Removal of the cover will result in loss of guarantee. Please note that copyright subsists on the design and software codes.

Those of you who own Uniden, Tandy or Audioline rigs will be pleased to know that our TC9119 conversion will soon be available.

May I also remind readers that the use of the FCC channels is *not yet legal* and they should, therefore, be left disconnected. Fitting agents can, do doubt, offer a (free?) connection service once the use of the band has been authorised. The LED indicator allows alignment of the rig without the need for illegal transmission.

Finally, an apology to those who have contacted us recently to order conversions. Demand has far outstripped supply and those businesses sending cash with orders are being supplied in favour of those wanting six month's credit! Before sending your orders, however, please contact us to check on stock. Whilst we would love to run the business on the interest from your money, conscience will not permit it. The quoted price, by the way, did not include VAT and is subject to change without notice.

Don't Forget the Clubs

Black Knight, from the Taunton Deane CB Radio Club in Somerset, sticks up for individual clubs . . .

In reply to Nimrod's letter and REACT's reaction, as a CB Club, founded prior to legalisation and with a constitution that states to support the legal system, we in the very early days set up the Tango Delta Monitoring Service. With

a club membership of 500+, we were able to recruit 90 to 100 monitors to monitor channel 9. As time and CB has progressed, so this club membership has dwindled to approximately 150 members and, in proportion, the people prepared to monitor Channel 9. With this in mind and realising a need for more active participation in our community affairs we out of the remaining Channel 9 Monitors formed a Communications Team. This small team of people, approximately 36, who are members of the Club, become Communications Team Members at no extra fee for joining the Team. We have, over the last three years, provided communication for marathon committees, long distance walks, carnivals, fetes, and carried out searches for missing persons on a voluntary basis. If it wasn't for the loyalty and dedication of our members, there wouldn't be any undertaking of these events as we do.

The area in which we live has lead us to think further in relation to people being lost on the hills and moors etc. Therefore, whilst feeling we have gained considerable experience in radio operating procedures and are at present devoting Sundays and evenings in training our members in the art of map-reading and orienteering, we have also during this time carried out various exercises for S.E.P.O. and working relationships with the radio amateur group RAYNET.

In reply to REACT's comments about the use of PMR radio we feel that we as a CB organisation should only use the equipment licensed and available for us to carry out this work. Reasons for this being that, whilst we are monitoring various events, other breakers outside the limits of the Communications Team like to listen and find out what is going on. Therefore, if PMR radio is being used this privilege is denied them.

No doubt this reply will be met with "because of interference by outside parties this cannot always be practical". My reply to this is that if you have the respect and co-operation of the majority of local CBers in your area, you will not have too much interference.

Whilst we agree, that monitoring organisations and REACT carry a valuable service in some areas to the community at large, we feel that individual groups should not be forgotten.

Act Now

Ivan the Terrible from Preston has strong views about Channel 9...

As a channel 9 monitor with several years' experience, I was very interested by the now-famous letter from Nimrod of Wigan in the November 1985 issue of *Citizens' Band*. His attitude was typical of the present malaise on CB; all talk and nebulous plans, all complaints and no action.

If people want, as I am sure they do, a good emergency service on CB, then they will have to do something about it *now*. Nimrod complains of sporadic cover from this local group —

why? — almost certainly because they are short of *volunteers*. Don't complain, *do* something positive. Join your local monitoring group *today*.

If you don't like the existing group, start another; and realise some of the difficulties involved. Don't let the problems get you down — *win*.

Wallies on Channel 9 are a problem; but they don't transmit from outer space, they live near somebody. Use CB as a means of communication; and let everybody (on 14 etc) know the name and address of your local wally whilst he is abusing Channel 9. In my experience, all abusers are cowards who usually stop once their precious anonymity is blown. If everybody who reads this *does* something positive — end of problem.

Act now, *before* we get the CB service we deserve.

Say Hello

Blue Control from Leicestershire writes with just a short message...

I have been on CB for three years, two years of which has been spent running the Blue Control through Market Harborough. I copy most big wheelers from Corby to the M1 motorway, as well as Northampton and Leicester. So, if any big wheelers want to give me a call for 10-13s and traffic reports in the area, I will look forward to hearing from you all.

Fair Trading

Ted Pittman, of Westmount Communications, comments on CB from 'the other side of the fence'...

May we take issue with you over some of the remarks that have appeared in the 'Mack' columns. Readers may gain the impression that all CB shops, except Truck King, are rip-off merchants but it is a fact of life that a shop needs to have a reasonable margin in order to survive. In fact all businesses must make a profit, otherwise they will soon fail. The margins that a CB shop needs are totally dependent on the overheads that it has to cover. In our particular case, in addition to rent, rates, light, heat, PAYE and National Insurance contributions, VAT and all the like expenses, we have a comprehensively equipped workshop to maintain in order to ensure customer satisfaction on under-guarantee repairs. All this costs money — a lot of money!

Our feeling for the future of CB in this country is that it is essential that it functions in an orderly and responsible manner. In the early days after legalisation, many people thought they could make a quick buck out of CB, and equipment was highly overstocked. It didn't take too long for the real size of the market to show itself and, in the subsequent scramble to get out of the market, a lot of people must have lost a lot of money. Thus we ended up with good quality rigs being sold at £20 to clear stocks and basic Binatone 'Speedway' models were being sold around here for £9.95.

So, then the situation arises where importers and manufacturers become wary of the UK market and items become unavailable. Where CB equipment is being supplied it is obviously in much smaller quantities and this has to be reflected in the price with no bulk-production discounts. Also, with a smaller market to supply to, the retailer has to ensure a proper margin is made purely in order for him to stay in business. There are many parts of the country that now don't have a CB shop with proper workshop facilities because there are not enough customers to justify the operating expense.

This may well have the benefit, however, that it has taken the majority of the 'cowboys' out of this business and they have moved on to mess up the video and home computer markets — no doubt they are all now wondering how they can make a fortune out of 'installing' satellite television dishes in everybody's houses.

We have got new frequencies coming next year — let us all make a concerted effort to ensure that we get it right this time. How nice it would be to see properly constructed rigs sold properly through a network of authorised dealers, all with service backup, and used responsibly by all the breakers out there.

Bleedover Again

'Doc', from the CB Shop, 5 Odeon Arcade, Hallgate, in Doncaster, has a few comments to make on the causes of bleedover...

I would like to take this opportunity to (belatedly) congratulate you on your fifth birthday and hope you continue to provide such interesting reading. I would like to pick up a point frequently raised in the Q&A section regarding bleedover.

Quite honestly, most of this is due to badly-tuned sets. It's not that the clever Japs are making them incorrectly. It's just the minority of CBers who can't keep their screwdrivers out of a perfectly satisfactory rig.

Please, please, please, if you feel the urge to have your rig adjusted or you think your modulation (deviation) is a bit quiet, take your set to a competent rig doctor with a deviation meter, as there is no way you can set it correctly without one.

For anyone in my area, rather than cause interference in this way, bring in your set to me and I will adjust the deviation free of charge while you wait. If we can get our rigs in order, it will improve CB immensely.

Perhaps as a footnote, if manufacturers set it to a limit of 2.5kHz instead of the usual 1 to 1.4kHz, people would not feel the need to tamper.

Letters should be addressed to: Back Chat, Citizens' Band, 1 Golden Square, London W1R 3AB

the occasional need to pull off the road and turn the engine off when copying a distant station. I may have forgotten to mention that I also used suppressed leads. Anyone want to borrow an assortment of suppression equipment, in the hope that they have more success?

A. You do seem to have taken almost every possible step to cure the problem, Marek, and I am sorry that you have been frustrated but I still have a couple more suggestions to offer. Every physical object has a resonant frequency and I have come across cases where such simple objects as a bonnet panel or exhaust pipe were resonant at just the right frequency to cause massive interference. Simply earthing the offending object was, in these cases, sufficient to cure the problem.

However, based on the information which you have supplied, I feel that you may be blaming the car unfairly for what is really an inadequacy in your rig. Because it is fitted in the centre console there is a good chance that the interference is not being conducted along any of the car's electrical or physical surfaces. Consider for a moment the possibility that the close magnetic field of the engine is being detected directly by the tuned circuitry of the rig, from which it is separated by only the bulkhead and you will see that there is a strong likelihood of direct breakthrough. I would be interested to know if the interference is diminished by siting the rig further from the engine.

Having said all this, I am the first to admit that some cars really do defy all attempts at suppression. My own personal bete-noir was a friend's Citroen GS, which nearly drove us both to the bottle before he took the extreme step of part-exchanging it for a Volvo.

Antenna Basics

Mr. W. Starr writes from Macclesfield, Cheshire, in search of a better understanding of his antenna system . . .

Q. I am new to CB and would be grateful if you can answer a couple of questions for me. Please can you tell me which part of my antenna transmits and which part receives? I would also like to know whether the use of ground-planes is optional and, if so, whether I would transmit further with them than without?

A. There is no single part of an antenna which performs one specific function. Efficient performance depends on the precise relationship between radio, antenna and the frequency being operated. As well as a physical length every antenna has an electrical length, which must correspond to a precise fraction of the wavelength of the operating frequency. For example, the electrical length of a quarter wave antenna for use at 27MHz can be obtained by dividing the frequency



Mr Starr wants to know the workings of an antenna

(27) into the speed of light in metres per second (300,000,000) and then dividing the result (11.1) by four, to give a figure of 2.775 metres. A further refinement of this calculation takes account of the difference in the speed of electrical waves through air and solid substances but that need not concern us here. Since the terms of the CB licence dictate a maximum physical length of 1.6 metres the extra length necessary to enable the antenna to resonate at 27MHz takes the form of a wound coil so that, within reason, aerials of differing physical lengths can operate at the same frequency.

Because an antenna is, in effect, a tuned electrical circuit it must have an earth contact and, in many cases this takes the form of a series of ground-plane radials. Remove them and you effectively create a short circuit which not only prevents the transmission of your signal, but also risks serious damage to the radio, as the energy which cannot be radiated takes the form of intense heat at the radio's power output stages.

The ground plane radials perform a further function in helping to determine the lobes, or pattern of the signal emanating from the antenna and so it is important that they are of adequate length. Mobile aerials rely on contact with the car body to provide the necessary electrical earth and make use of the roof and other panels to develop the proper waveform. Siting the antenna to one side of the car offers a better ground-plane in the direction of the largest steel surface, so that an antenna mounted in the centre of the roof will give better omnidirectional performance than one which is mounted off centre.

Video Interference

D. J. Graham, from Sheffield, wants to be kind to the neighbours, but how?

Q. My base station seems to create no problems other than when either of my neighbours are using their video recorders, which seem to pick up all the CB chat, though it would appear that some machines are more prone to this form of interference than others, since my own VHS recorder is unaffected. In an attempt to reduce the problem I have tried numerous different rigs and aerials but the interference persists, even with low power output. I have tried fitting ferrite rings and a variety of suppressors to my neighbour's TV set and even installed a new TV antenna. All to no avail. Please can you help?

A. As regards your mobile problem I can offer no different advice to that given to White Eagle but the question of video recorders is an entirely different matter. In short, the remedy probably does not lie in your hands but in those of the video owner, since it is most likely to be his equipment which is at fault, though the use of a low pass filter at your rig will help to ensure that you do not transmit a signal at higher frequencies than you want.

Inserting a video recorder into the feeder cable of a TV set can result in a significant mismatch, which can lead to all manner of spurious responses. There are a number of possible means by which the unwanted signal may be detected. Perhaps it is direct breakthrough onto the video circuitry, in which case the video recorder will require the attentions of a qualified engineer, who will fit the appropriate means of suppression. On the other hand, it may just be that the lead between the recorder and the TV set is acting as an antenna at 27 MHz. If so, changing it for one of a different length will alter its resonant frequency and should solve the problem. The same may be said for the mains lead to the recorder, which might also be providing a direct path for mains-borne interference, though it is unlikely that two neighbours would be on the same mains phase. In the event that interference is mains-borne, ferrite rings should have cured the problem.

Many video recorders are fitted with internal amplifiers which, although inserted to compensate for insertion losses, often boost the incoming signal, together with any unwanted signal, far beyond what might have been expected from a plain antenna and the relatively high gain created can make it extremely difficult to filter out the interference.

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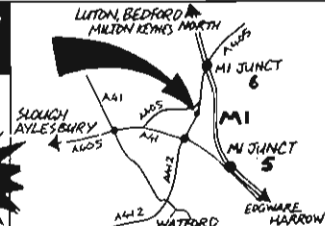


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certainly be very expensive. You can avoid the rush, (remember there are around 3 million sets in the UK) by buying our simple, easy to fit, 40 channel synthesiser board. This will give you the new 40 plus the existing UK 40 and you can start converting as soon as the changeover period is given the go ahead. Remember that this frequency is legal for use now in most European countries so you can of course use your radio if travelling abroad.

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WHAT'S BUGGING YOU?

Are the buggers getting to you? Do you have a secret? Can you really be so sure? Bugging, or electronic espionage, has become one of today's growth industries. Microchip technology has made feasible many devices which were once part of James Bond style mythology, and mass production has brought the cost of many of them down to as little as a few pounds. In almost every large town there is at least one backstreet factory turning out miniature transmitters which, although illegal to use and capable of limited range, are of immense value to the would-be spy. Although some degree of official surveillance, such as the police use of cameras on urban motorways and the in-store application of video to detect shoplifters is necessary, possibly even desirable, I doubt that authority has much interest in the daily lives of the majority of us and today's spy is far more likely to be in the employ of a business rival or a suspicious spouse than of MI5 or the KGB.

Although armed with a veritable arsenal of electronic gadgets, the sleuth can often rely on a little assistance from his intended target and the contents of waste paper baskets can prove most revealing, especially when allied to the office photocopier. Not even such precautions as the shredding of confidential documents are guaranteed to prevent your rivals from knowing the inner workings of your business, as one large company discovered a few years ago, when it was found that the person entrusted with the task of collecting documents destined for the shredder was earning a few bob on the side by showing them to a competitor before destroying them. Neither is it safe to assume that all industrial espionage is aimed at large concerns with multi-million pound turnovers. The cost of bugging equipment is now so low and the potential rewards so high that even the most modest of businesses in a competitive market can fall prey to the attentions of the bugger and many an illicit assignation has been uncovered by similar means.

Governments may have long-range listening posts aimed at far corners of the world and spy satellites capable of reading a car number plate from 120

miles above the Earth but, though industry soon follows where governments lead, the needs of the private surveillance artist are far more modest. He relies on the use of everyday items, such as the telephone, small radio transmitters and the tape recorder and many of his toys are merely miniaturised versions of items to be found in almost every home or office. Modern technology has both revolutionised manufacturing processes and decimated costs, so that a recording machine which, only a few years ago, would have cost a week's wages and been housed in a large carrying case, can

Keith Townsend looks at the latest developments in electronic surveillance

now be bought for a very modest outlay and takes up less space than a packet of cigarettes.

The same advances have made it possible to switch the machine on and off by means of sound, removing the necessity for it to be constantly tended, whilst improved amplifiers mean that even the weakest signal can be enhanced so that it becomes intelligible. Matchboxes, calculators, ballpoint pens, lighters, picture frames, door-knobs, have all provided ideal places of concealment for clandestine listening devices at one time or another and the variety of instruments which they have hidden is infinitely wide. Nowhere is sacred.

Telephone Tapping

Films and fiction writers have made us all aware that the telephone system is the surveillance expert's paradise but do we really appreciate the range of different ways in which a phone can be tapped? Or the ease with which a phone tap can be accomplished? Take,

for example, the common answering machine. Installed at the telephone itself, it is a useful servant but it is really little more than a recording machine and a similar instrument can be connected at any point in the wiring which connects your phone to the rest of the network. Vox operated, it can then record your conversations, leaving the tapes to be collected in safety, without arousing your suspicions. Listening for clicks and squeaks on the line will offer no clue as to whether your phone is tapped, since today's bugs are electronically, rather than electrically, switched and many devices can be extremely difficult to detect.

The obvious disadvantage to telephone bugging, as with many forms of electronic surveillance, is the need to install the bug in the first place but, assuming that this can be accomplished, the results can be most revealing. Although most of the early devices had the added drawback that they needed constant battery replacement if they were to be of use for any length of time, these have largely been replaced by units small enough to be hidden inside the telephone, without the need for large power sources. Connected across the internal wiring, they transmit the content of any conversation by means of a radio signal, using one side of the wiring as an aerial. The other side is used to draw power from the telephone's 50 Volt supply, thus providing a constant source of energy for the transmitter, which means that the bug can remain operative almost indefinitely, without its owner risking discovery.

Such units are often designed to act as a direct plug-in replacement for the standard mouthpiece microphone and are invisible to the casual observer. Not all telephone taps require direct connection to the telephone. Inductively coupled, some respond to changes in the magnetic field around the coil and then transmit their signal in the normal manner. Although the lack of a direct connection makes this type of bug difficult to detect it does require new batteries now and again but it can be bought so cheaply that unless continued surveillance is required it can easily be discarded once the power has run out.



Modern-day telephones — friend or foe?

Perhaps the most insidious of all telephone tapping devices is the so-called "infinity bug" which, unlike other forms of phone tap, can monitor conversations which take place in the room, even when the phone appears not to be in use. The infinity bug usually consists of a small microphone, an amplifier and two wires which connect to the telephone wiring. Hidden away in, for instance, a junction box, it is activated by simply dialling the number of the instrument to which it is connected and then whistling into the mouthpiece.

Some infinity transmitters are so sophisticated that they include circuitry to prevent the bell from ringing, leaving the subject entirely unaware that his number has been dialled, whilst others are activated by multiple tones, often generated after what appears to the subscriber to have been a "wrong number" call. In either case, the listener can then monitor all conversation in the room for as long as he likes, for no more than the cost of a phone call. Because it relies entirely on the telephone lines such a device can be triggered from anywhere in the world, which is how it got its name.

Radio Surveillance

With the exception of direct recording and the infinity transmitter all of the taps described so far share the disadvantage of all forms of clandestine radio transmission. They can be detected by anyone who tunes to the correct frequency. Early radio bugs, often little more than miniaturised versions of the radio microphones commonly used in broadcasting and the theatre, used frequencies which could be received by means of an ordinary domestic receiver but the easy availability in recent years of receivers which cover the less crowded parts of the spectrum has slightly reduced the risk of accidental detection, whilst the transmitters have also progressed until it is now possible to buy one which constantly changes frequency during the course of a single conversation. Simply programme a

scanning receivers incorporate some form of automatic recording device, conversation can be heard without interruption. Since most of the popular scanning receivers incorporate some form of automatic recording device, the signal can even be recorded in the absence of an operator.

The obvious advantage to the eavesdropper of radio surveillance is that, once installed, it confers absolute anonymity. Like older forms of telephone bug, early radio devices required regular battery replacement but the advent of solar power cells now means that so long as they can be placed in a manner which allows the cells to be recharged they can be operated almost indefinitely. Miniaturisation has ensured that transmitters can be hidden in almost anything you care to name, whilst recorders can now be housed in a wristwatch, with the result that almost anybody can be bugged. Even when they expect it!

Radio bugging can even be accomplished without the need to place a transmitter in the subject building! One such technique, widely reported to have been the brainchild of Soviet Intelligence and since copied by the independent entrepreneur, is the use of resonant cavities. This method relies on placing some innocent object, such as a vase, or plaque, in the room to be monitored. Since it contains absolutely no electronic circuitry it will appear innocuous to even the most stringent anti-surveillance tests but somewhere inside the object is a small cavity, known to resonate at a specific frequency. Simply beam a radio signal at the precise frequency and the listener can monitor all that takes place in the room. As the transmitted signal is reflected from the cavity it is varied, or phase-modulated, by sounds within the room, which are then carried back to the source of the transmission by the reflected wave, to be picked up on the appropriate receiver.

An effective refinement of this technique involves incorporating in the resonant cavity an inert tuned circuit and a diode. Usually hidden in the wall of the building, the circuit will

remain invisible to most forms of electronic sweep, simply because it has no power source. Aim a radio signal at the same frequency as the tuned circuit towards the cavity and, because the diode generates harmonic frequencies, the result can be monitored by listening to a receiver tuned to either the second or third harmonic of that originally used.

The public use of radio transmitters has mushroomed in the last ten years. Radio telephones, once a status symbol, are now commonplace and, even though they use split frequencies and, in the case of cellular radio, change frequency as they move from one repeater area to another, they can still be monitored to good effect using any of a number of pre-programmable scanners. Land mobile radio, as used by business, is only too easy to monitor, as has been discovered by many irate minicab driver, who has arrived at his destination only to find that his fare has been picked up by a pirate and, since many small businesses are using CB, particularly 93.4 MHz, as a cheap form of communication, perhaps we would all do well to consider what we give away over the air.

Modern Techniques

Much of Fleming's sixties fantasy has become eighties reality and even laser beams are among the stock in trade of the modern industrial spy. Aimed at the glass in a window frame, a low powered laser beam will act in much the same way as a radio signal. The minute vibrations of air against the glass, which occur as the result of sound from within a room, can be detected and deciphered by means of the changes which they create in the beam's reflection. A similar method of translating the tiny vibrations within a brick wall involves pressing a spike no larger than that of a drawing pin into one side of the wall. On the outer end of the spike is a small microphone which, when pressed firmly against the surface, registers every vibration, which is then fed into a small amplifier. A simple pair of headphones takes care of the rest.

In short, there is absolutely nowhere that you can go to escape being bugged. Everything in the home or office, from the carpet to the ceiling rose, offers a hiding hole for some means of surveillance. Magnetic bugs, once the favourite of every screen cop who wanted to keep track of a moving vehicle, have been refined far beyond the point where they will transmit only a tone. Hidden behind the upholstery or roof lining of your car, or even your private jet, they will relay your conversations to any listening post capable of staying within their still limited range. You are not even safe in the middle of a deserted moor. Leaving aside the possibility of rifle-mikes, which amplify sounds from the direction in which they are pointed, you might well be carrying the means of surveillance yourself. What about the buttons on your coat? Or the lighter in your pocket? Or your cuff-links? Or even that pin you carry in the lapel of your jacket?

CB INSTALLATION GET IT RIGHT FIRST TIME

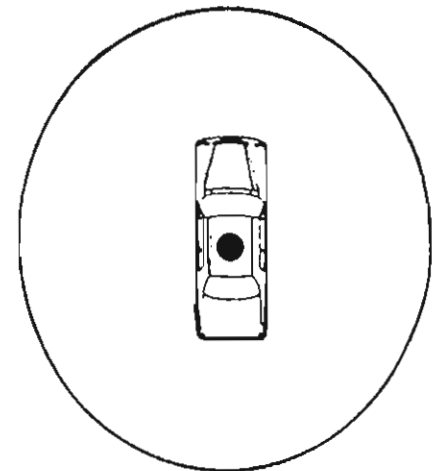
Whenever I am asked for help in installing a mobile rig I remember the advice of one expert who, when asked the best way to cure mobile interference, said, "Easy! Take the rig out". There are so many potential problems in fitting a rig to a car that I am sometimes tempted to follow his advice. The modern motor car is so festooned with electrical and electronic systems and devices that it represents the most unfriendly environment imaginable, so far as radio transceivers are concerned and making sure that none of these systems has an adverse effect on the rig's performance has, on occasion, taxed the brains of even those who design and build them. A little forethought before installation will ensure that many of the possible problems are never encountered but there is always the unforeseen, not to mention Murphy, whose second law of physics, you may recall, states that if anything can possibly go wrong, it will. Alternators, starter motors, windscreen wipers, electric fuel pumps, spark plugs, dashboard instruments, electronic ignition systems, direction indicators and even tyres are just a few of the things that can throw a spanner in the works and even the most carefully installed radio is likely to suffer from the effects of at least one source of interference.

Just to make matters more complicated, even if you have a pretty shrewd idea of what is causing your particular problem, you have first to work out whether the interference is being conducted along any of the wiring leading to and from the rig or radiated through the air and detected by the aerial. Even when you have decided that the irritating noise is airborne you might find that although you intended to install only one antenna you have inadvertently created any number of others. For example, a speaker lead, an earth lead or even the main power cable will all resonate at 27MHz if cut to the appropriate length and you would be amazed how efficient they can be at collecting unwanted

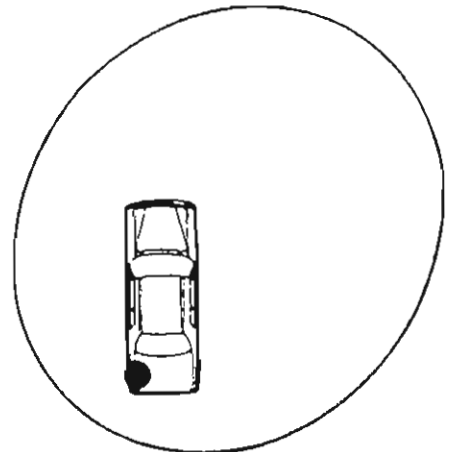
All manner of things can go wrong when installing a CB rig in your car. Here Keith Townsend offers some time-saving tips

signals. One further complication lies in the fact that each of the various electro-magnetic fields being generated under the bonnet has its own wavelength and who knows what length of wire will respond to which? Factory fitted suppression will, hopefully, have taken care of some of the pitfalls but pre-planning your installation, rather than simply connecting a few wires and dumping an aerial on the roof, should take care of the rest.

Although positioning the rig might, at first glance, appear obvious, you may find yourself torn between the need to site it so that you can operate safely whilst driving and keeping it well away from the obvious sources of interference. That slot under the stereo seems fine until you find that either it interferes with gear changes or is too close to the engine and picks up every little noise going on, just as bad, the speaker is so muffled as to be inaudible at anything above the tickover speed. Many of today's cars contain the latest in all-singing, all-dancing in-car entertainment, with graphic equalisers and four-track stereo but manufacturers seem oblivious to the fact that you might want to include CB radio and finding a convenient space can be difficult enough without having to contend with possible interference paths and the unwelcome attentions of the light fingered brigade. Often the only possible answer is a compromise. Quick-release plates offer a convenient means of security but they have definite disadvantages so far as



Centre-roof position provides most all-round coverage.



Rear mounting at side delivers most signal to opposite corner of car.

operation is concerned. The "instant" connections have a nasty habit of developing high resistance after only a short period of use and I have yet to find one with good quality antenna connections. If you use a snatch-plate then the best method is to avoid the possibility of high insertion losses by making a direct connection between radio and aerial and to clean the electrical contacts regularly. Most rigs are supplied with some form of mounting bracket but, if possible, it pays to use the type with knurled knobs, which allow the rig to be released almost as easily.

Once a suitable location has been chosen for the rig we should look to the antenna. As with any kind of transmitter installation it is important that the antenna be connected before the power source, since any accidental transmission at this stage might damage the rig. Without an antenna, any power

"... each of the various electro-magnetic fields being generated under the bonnet has its own wavelength ..."

generated cannot be dissipated and the result is a steady increase of heat at the power output stages, which might ultimately melt.

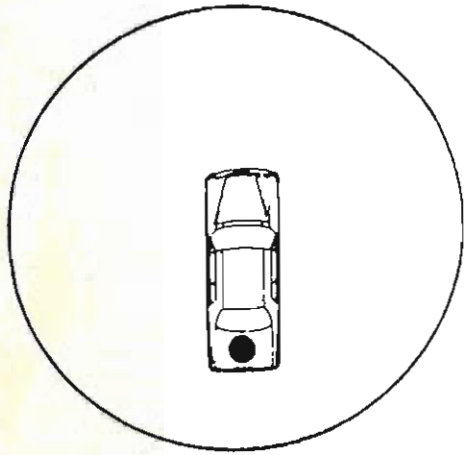
Optimum antenna location plays a large part in determining the performance, at does the way in which it is mounted and you may have to try more than one location in order to get the

best performance. Mounting in the centre of the roof, for example, should give fairly even performance in all directions but might leave the antenna unshielded against stray radiation from under the bonnet. Moving the antenna a little further back should cut out the unwanted noise but will slightly reduce rearward radiation whilst improving forward gain, as can be seen by the preference of many long distance drivers for this configuration.

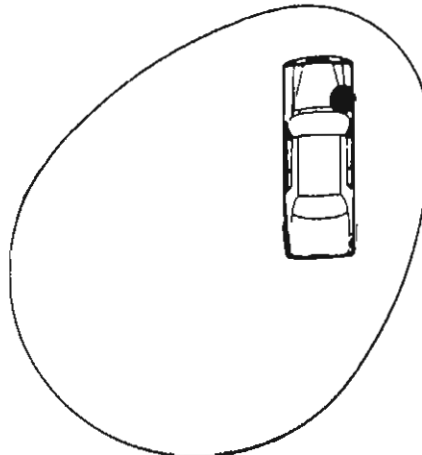
Magnetically mounted aerials are obviously convenient for this purpose but they have the disadvantage of not offering a particularly good earth contact, especially when mounted on a vinyl roof. They have also been known to come adrift at speed. A gutter or trunk-lip mount provides better earth contact but tends to direct the best signal across the largest available expanse of flat steel. For example, an antenna mounted halfway along the off-side guttering will radiate most efficiently toward the nearside. Rear wing mounting can be a useful compromise because it combines a good earth contact, reasonable radiation pattern and the ability to route the feeder cable without the risk of it becoming damaged by sharp door edges or other obstacles. On the other hand, front wing mounting is rarely successful because of proximity to the engine. One last point worth remembering is that the VSWR can vary just by moving the antenna, so before you go chopping lumps off the antenna, try different locations to obtain the best result.

Although some antennae are supplied with coaxial feeder cable already connected it is often of poor quality and although losses over the lengths involved are likely to be insignificant there are other reasons why it pays to use good quality cable. Firstly, it is likely to be better shielded and less prone to direct breakthrough. Secondly, the heavier quality braid and conductor create a better solder joint which offers less electrical resistance and is likely to remain intact for longer. Whatever type of cable you use, it should always be routed well away from existing wiring and electric motors, so as to minimise the chances of it picking up any radiation from them.

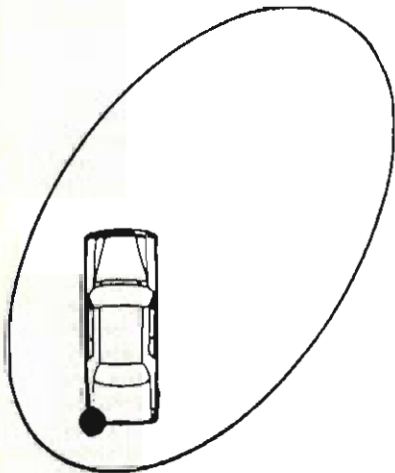
Many cases of ignition interference originate with the way in which power is fed to the radio. A cigar lighter socket might seem a convenient pick-up point but the wiring behind it is likely to cross the path of several others as it snakes through the loom and each proximity is a potential source of interference. Almost every car has at least one spare terminal beneath the dashboard but, unless you are very lucky, you are likely to run into the same sort of problems. There is no effective substitute for picking up power directly from the battery, simply because you can run the wire to the rig without it coming close to anything which might generate interference. Most rigs are supplied with a power lead but I prefer to replace them with the slightly more expensive screened variety, which offers far greater protection against stray radiation from



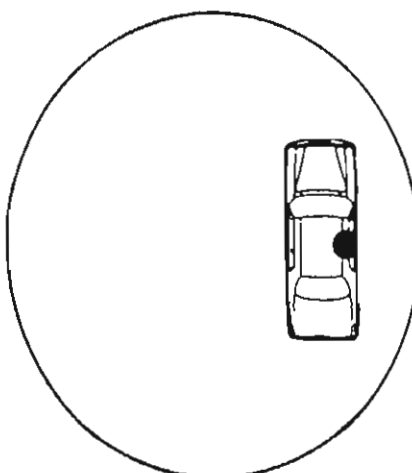
Centre-boot mounting is also good, although favours front of car.



Front wing mounting creates rear-and-side bias.



Rear bumper mounting accentuates front-and-side bias.



Gutter mounting throws signal centre to opposite side of car.

other circuits within the car. The original line will have contained a 1 amp fuse and it is important to include one in any replacement. As with all other leads associated with the rig, the power lead should be kept as short as possible, to avoid the likelihood of its acting as an aerial and directly introducing interference.

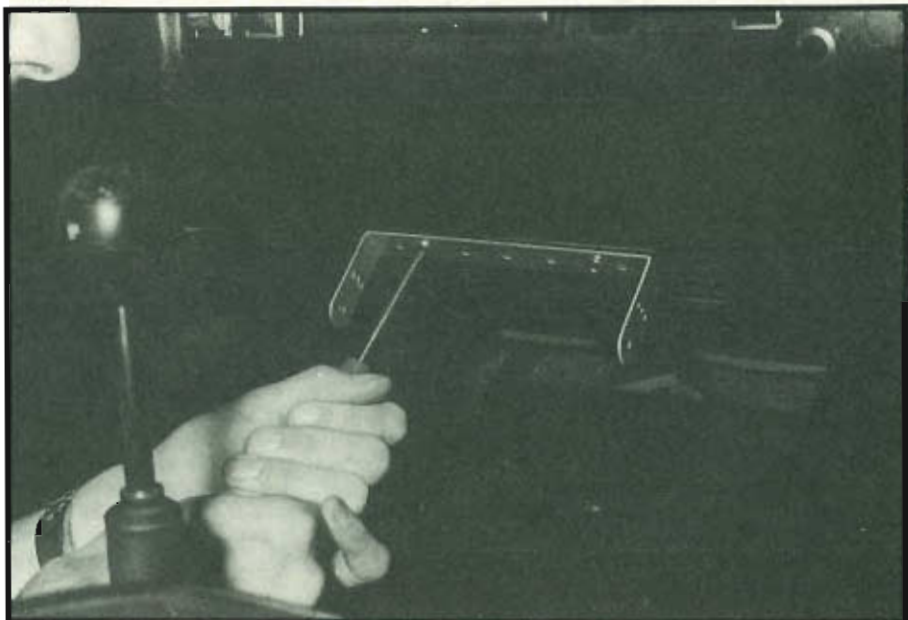
Earthing

Adequate earthing at the outset is one of the most effective methods of preventing interference. The outer casing of the radio, any external speaker and several points on the body of the car are capable of conducting unwanted signals and the simple provision of an earth strap will ensure that they do not affect reception. Even exhaust pipes have been known to cause problems, so take the simple precaution of earthing them. Car bonnets are a well known source of trouble and should be treated in the same way. In particularly severe cases, it may be necessary to line the underside of the bonnet with aluminium foil, which should also be earthed. Once again bear in mind the need to keep leads to the shortest practical length.

You may find, when you come to test the radio, that despite all your precautions, you still have some degree of interference and the first step towards curing it is correct identification. Listening with the aerial disconnected will provide a good indication of whether the unwanted noise is being radiated through the air or conducted along the wiring. In the event that it is being conducted, the simple remedy is to identify the offending wire and then fit the appropriate means of suppression. Let us take, for example, ignition interference, which takes the form of a machine-gun like rattle. If it is being conducted along the radio's power cable then an RF choke fitted to the live side will generally do the trick. If, on the other hand, it is being radiated, you will need to cure it at source. The first item to tackle is the ignition coil, which will usually respond to a coaxial suppressor of at least 12 Volt rating, bolted to its body, with the lead connected to the switch terminal. The next stage is to fit a 10Kohm resistor between HT lead and distributor cap and 5 Kohm resistors to the base of each plug lead. Resistive plug caps take care of the other end of the leads.

Another common problem is alternator whine, which shows up as a high pitched sound which rises and falls in time with engine speed. Internal suppression means that this problem is less prevalent than in the days of dynamos but alternator slip-rings are prone to arcing and suppressing the live contacts should prevent further trouble at the rig. Unlike most problems associated with auto electrics, alternator whine is often transmitted along with the out-going signal, rather than heard at the receiver and you may not be aware of the problem unless another station informs you that it is present.

Although ignition circuits and



Choose the location for the rig carefully

alternators are the most common cause of problems in mobile operation, occasionally something entirely unexpected crops up and other items which have proven troublesome include dashboard instruments and even the friction between tyres and the road surface. Instruments and those motors such as windscreen wipers and heater fans, which are used spasmodically can be prevented from affecting the radio by the inclusion of a small capacitor with a value of between 0.1 and 0.5 uf, as

“... proper installation techniques will ensure the best possible performance under varying weather conditions ...”

close as possible to either end of the lead delivering the power. The direction indicator relay may require similar treatment. Brake and courtesy light switches are another potential source of trouble, though any interference should be easily detected as a loud cracking noise at the receiver each time the offending switch is operated. Disconnecting the lead and inserting a capacitor should prevent any recurrence.

One of the less common sources of interference, static build-up on road wheels and even tyres is very often overlooked. Tyre static is really often likely to occur in hot, dry weather and, for that reason, is rarely persistent. In really severe cases it can be overcome by the injection of graphite powder through the tyre valves but wheel

static can be a recurring nuisance. Earthing the static merely requires a spring or, better still, the old set of carbon brushes from a vacuum cleaner inserted behind the grease cap over the hub but, since either method can lose its effect with age, it is advisable to renew the means of earthing at regular intervals.

One other possibility which is, fortunately, rarely a problem, is that of interference from the radio to some of the electronic components of the car. I have heard of, but never actually come across, instances of a radio signal interfering with the fuel flow on fuel-injected models, though I was once very amused when a friend explained to me that his windscreen wipers came on every time he keyed the microphone. It turned out that he had recently installed a small circuit board, the purpose of which was to limit wiper operation to once every few seconds. Shielding the board from the effects of the RF energy made sure that he had no further problems from that particular direction.

Mobile operation can be a great deal of fun but no matter how well the radio is installed its range is likely to be considerably less than that of a fixed station. The signal flutter caused by antenna movement, differences in terrain and reduced antenna height all combine to affect transmission and reception range and you might well find the value of VSWR to have risen alarmingly in wet weather. Water-proofing antenna connections with, for instance, underseal will ensure that water does not get into the works and proper installation techniques will ensure the best possible performance under the varying conditions to which a mobile rig is likely to be subjected. If, having taken every precaution you still have some unidentified source of interference I suggest you do what we all have to do from time to time. Consult your local distributor of your make of car. He may know something about that particular model that we do not.

FREE READERS' ADS

FOR SALE: Codemaster CW/RTTY, model CWR 610E, £90. Please phone (0752) 778825.

DISABLED BREAKER collects QSL and eyeball cards. Will QSL 100% with a nice package. Good cards. Contact Peter Westhead, Rossharbour, Leggs PO, Co. Fermanagh, Northern Ireland.

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WANTED: 40 channel rig in good condition, also a power supply, home-base aerial coax and an SWR (if possible) all in exchange for 48k Spectrum with many games, joystick, worth £100. Ring weekdays on Salcombe 3666 and weekends on Salcombe 3855 (in South Devon). Week-days after 4.20pm.

FOR SALE: ZX81 home computer, 6 games, 6 blank cassettes, books etc. Swap for CB or homebase mike plus some money, or £35 for the lot. Write to 18, Acreage, Whitbourne, Worcester, or ring Knightwick 21043 after 4.30pm.

SUPERSTAR 360 AM/FM/USB/LS8 Cybernet Beta 3000, K40 aerial, Astatic Teardrop, Breml transformer, 1/2-wave aerial £150. Telephone 0707-874440.

WANTED: Ham International Jumbo III and/or Concorde III or Excalibur 1600-DX or Superstar 360 MkIII FM, must be in perfect condition. Please phone 020884 206.

FOR SALE: Unwanted gift; Zenith speech processor, unused, will accept £25. Contact BK34, PO Box 19, Romford, Essex.

WORLD WAR II ship's receiver, very big and heavy, weighs about 100lbs, needs some work on it. Sell or W.H.Y. Telephone John on Peterborough (0733) 210797.

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FOR SALE: Lucas ACB 888 27MHz FM CB transceiver, 40 channel, little-used, in original box, excellent condition, £50 o.n.o. Telephone Chertsey 60415.

MANOR KESTREL, GAP Skybreaker, power pack and SWR meter. Also a

Harvard 410T handheld with free batteries. The lot for offers over £50. Telephone (0524) 53349 and ask for Anthony, after 5pm on weekdays. All items as good as new.

NATO 2000, absolutely mint condition, two sets of bleedover crystals fitted, also switchable roger bleep and alpha channels, £150, or exchange for mint Colt Excalibur or Jumbo style base station. Telephone Crewe 69403 after 6pm. Ask for Dave.

SIGNAL GENERATOR 500MHz to 120KHz, Tech TE20D £18. Wanted: Ham Major 588 board that is of no use, to help repair mine. If not, any other sideband rig that is reasonable or needs repair. Telephone Sedgley 75060. **090 73**

WANTED: February and March 1984 editions of Citizens' Band. Good price paid. Phone Barry on Pontypool (04955) 59811 anytime.

FOR SALE: Magazines including REW, RE(US), Television, WW, HRT. All at half price or less offers, except a selection of rare collector's CB mags c.1981 at face value. Details from WM117, PO Box 23, Brentford, Middlesex.

RADIOMOBILE 202 CB, v.g.c. £50. ES880 echo £35. Two SWR meters and power pack £20. All in very good condition. Items altogether £100. Will separate. Also, Serpent UK 4000 £30 o.n.o. Contact Grasscutter, 68 Wainfleet Road, Burgh, Skegness, Lincs.

A new service for readers wanting to buy, sell or exchange equipment, and for obtaining information (i.e. circuit diagrams, handbooks etc.) that other readers may be able to provide.

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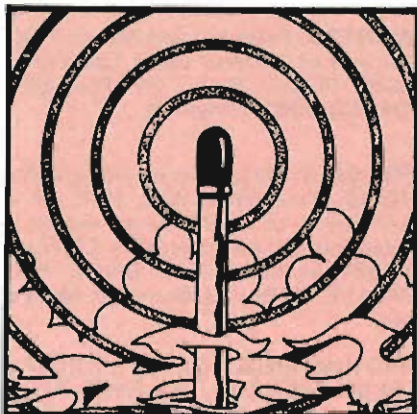
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ENTER YOUR ADVERTISEMENT HERE:

Antenna Review



Our little rebel, Gordon Blackwell, tests the Badland Rebel Super Minor

REBEL WITH A CAUSE

Biggest is best' has long been the antenna watchword for CB enthusiasts and, generally speaking, I have to agree with them. There is no substitute for a full-size, resonant antenna. But take a look around. How often do you see a full size antenna on a car these days? Not often, if ever, I bet.

The full-length, quarter-wave antenna is a cumbersome beast. Even when mounted on a bumper, 2.7m (9ft) is a lot of aerial — beware of low-slung trees, underground car parks and garage forecourts. And what do you do with it when you're parked in an isolated spot to protect it from vandals or thieves? Try squeezing 9ft of aerial into a 5ft Mini!

Fortunately, as we all know, technology has provided us with the answer — the loaded antenna. With a relatively minor drop in performance levels, the loaded antenna, with a physical length of around 1.6m (UK legal limit), has become the accepted face of mobile CB, but anything much shorter than

having a CB. What you do get, of course, is a neat little unit that offers minimal wind resistance (so there's virtually no change in its performance at high speed), and can be conveniently stowed away in the vehicle when not in use.

Badland already manufacture a reputable short unit as part of their Satellite range of antennas. However, amongst a batch of new Satellite products recently sent to us by the company was a short centre-loaded antenna which looked very interesting, so we decided to give it the once over for this month's review.

Known as the Rebel Super Minor and measuring, at its shortest, just over 80cm, the first thing that struck me about this unit, and for that matter, all the Rebel antennas, was its super appearance. It really is a nice-looking aerial. Basically a stainless steel whip, the Super Minor's appearance is heightened by the bright chrome base and coil ends. Black plastic shrink-wrap not only protects the 20mm coil but, against the chrome, adds a striking

"As supplied, the Super Minor gave a surprisingly high reading well into the red"

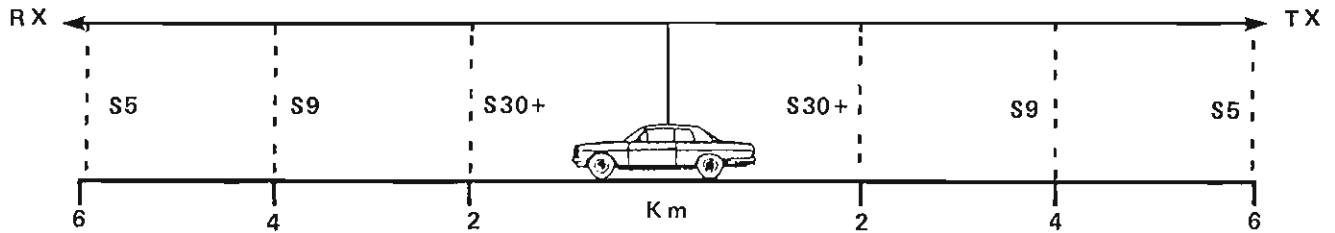
that is looked upon as being next to useless. Well, in the words of a well-known, ageing songwriter, "the times they are a-changing."

Antenna technology and manufacturing techniques are improving all the time and, as a result of this, a number of well-designed, short antennas are emerging which are proving to be worthy competition for the standard 1.6m models. You can expect a slight drop in performance primarily because of the smaller radiation pattern, but not so much, I would say, that it will detract from the usefulness or fun of

feature to the aerial.

The Super Minor is supplied ready assembled, and with a standard $\frac{3}{8}$ " thread on the base can be quickly fitted to most mounts available. The aerial comprises four parts: two stainless steel whips, a coil unit and a base. The whole thing is held together by three grub screws offering, in effect, three options for SWR adjustment. Of the two whips, the lower one is slightly thicker to give the aerial with its centre-loaded design, a bit more rigidity. To further improve the rigidity, it is also a little shorter than the top

ANTENNA REVIEW DATA PANEL



SPECIFICATIONS

Model REBEL SUPER MINOR
 Type CENTRE LOADED MOBILE
 Length 80CM
 Frequency 27MHz
 Max Power Handling
 Impedence 50 ohms
 Cable Supplied N/A
 Mounting Details VARIOUS
 Supplier BADLAND
 Typical Price £10.95

REVIEW VERDICT

Performance XXXXX
 SWR adjustment XXX
 Construction XXXX

Installation XXXXX
 Instructions —
 Value XXXXX

We rate our samples on a scale of one to five. Five crosses is the highest rating, three and four stars are average to good and one and two crosses mean it's not doing so well.

THE TESTS

We have used our standard test procedure to assess the efficiency of this antenna. To bring new readers up to date, this is what we do: in the case of a mobile antenna, we perform a static and a mobile test. Our test sample is fitted to a stationary mobile and a second mobile follows a pre-arranged route that orbits the stationary test vehicle, sending and receiving signal reports at measured intervals. This then repeated with the test antenna on the mobile test vehicle and the signals are sent and received between a stationary vehicle. In the case of a homebase antenna, obviously only one vehicle is used. A standard rig and antenna are used in all tests. The antenna is also subjected to a series of 'lab' tests to assess their durability, quality and construction, and finally we hand it over to a panel of CBers for comment.

whip, so you could say that the Super Minor was in truth a just-below-centre-loaded antenna! Oh, and finally, guess what sits on the tip of the top whip? You got it — a black plastic cap!

SWR adjustment on the Super Minor is quite simple, yet very critical, as I found to my cost. The problem is, with three adjustment places to choose from, where do you start? As supplied, the Super Minor gave a surprisingly high reading well into the red. Pulling the whip almost fully out of the base improved the situation slightly so I decided to start from scratch, so-to-speak, and set the aerial to its maximum length which turned out to be 96cm. Adjusting the length is a piece of cake, by the way. Just loosen the grub screws with the allen key supplied and slide the whip in or out of the coil/base as appropriate. Anyway, getting back to the SWR, setting the aerial at its full length made it even worse. In fact the needle almost blew out of my meter! So, painstakingly, a few millimetres at a time, I drew the length in. After about 10 minutes of checking the reading, leaping out of the car, dropping the length a few millimetres and getting back into the car to check the SWR again, I finally got it down to a very respectable 1.1:1. Out of curiosity, I measured the length of the aerial and

"A point worth making here is that, almost without exception, the RX matched the TX"

found to my dismay that it wasn't much different from when I started! This, without doubt, is my only criticism of the Super Minor. With over 6" (160mm, in fact) available, SWR adjustment is, I feel, excessive.

On checking the SWR on the other channels, I was again surprised as the reading rose dramatically to 2:1 on channel 40, dropping to 1.5:1 on channel 1. Naturally this led me to surmise that the aerial would not perform so well on the higher channels. Oh, ye of little faith! This little blighter defies all logic. Not only does the Super Minor perform well on *all* channels, it performs as good as, if not

better, than some of the 1.6m antennas I've used lately! In fact, the results of our air test were so good that I actually accused my colleague of using illegal power — he wasn't of course (power metering confirmed output to be just under 4 watts). A point worth making here, is that almost without exception, the RX matched the TX.

On reflection, I shouldn't have been surprised by the Super Minor's performance. I had been using the aerial for at least a week before our actual test, and quite frankly, I didn't notice any drastic drop in performance, if any at all. So, what does one deduce from this, after all the law of physics dictates that an aerial of this sort of length should be a no-no, or at best, a poor second. If you'll excuse the pun, I reckon "the answer lies in the coil". Coil design and construction is crucial, and the efficiency of the antenna depends almost entirely upon the skill of design and manufacturing. All credit to Badland.

In conclusion then, I can only say, congratulations to Badland on a really 'Super' antenna. More information on the Super Minor and other Satellite aerials is available from R.W. Badland, Roetan Trading Estate, Providence Street, Lye, Stourbridge, West Midlands DY9 8HS. Telephone (038482) 3160.



Now in the U.K.

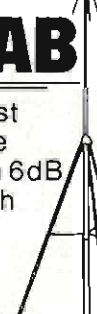
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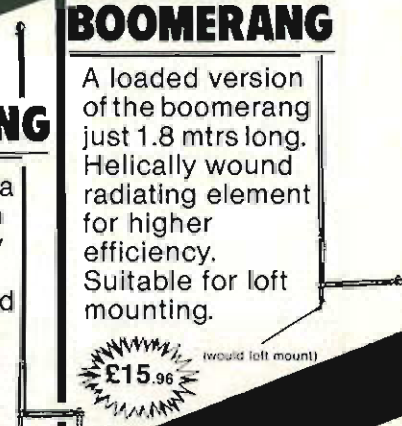
£24.00

MERCURY
 This top class half wave leaves the cheap copies standing. High grade aluminium and a low loss coil enable it to cope with up to 1KW and provide over 3 dB's gain.




£27.82

BOOMERANG
 A full size antenna suitable for both base, or balcony mounting with adjustable loaded radial, overall length 3 mtrs. 2dB gain.



£15.96

MINI BOOMERANG
 A loaded version of the boomerang just 1.8 mtrs long. Helically wound radiating element for higher efficiency. Suitable for loft mounting.



£15.96 (would loft mount)


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COLUMBIA
 Helically wound for ultra high efficiency. Will handle 600W. 3.2dB 1.4mtrs long. Comes complete with mount, cable and plug ready for use.



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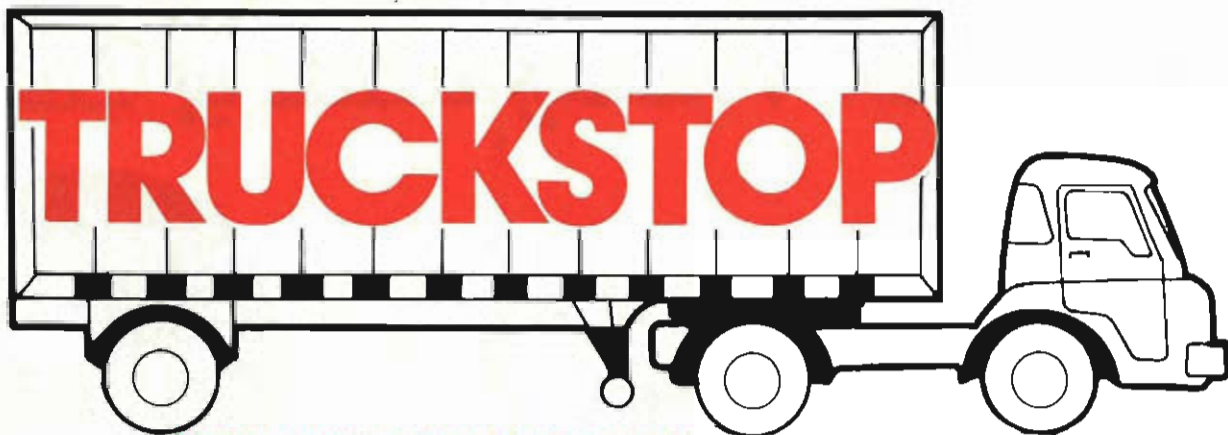
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More tales of Big T's tortuous trans-country travels

Last week found me staying overnight at Chris's Cafe, High Wycombe. The following morning I woke up early and so decided to have an hour on the CB before starting home to Telford. During the next hour or so, I caught many of my old mates; first of all Tony (Sherlock) came in to insult me as usual, closely followed by my old mate Pat (Intrepid) from Reading. Pat and myself have spoken many times but had never met. Next to give me a shout was Dave (Electron) who had just come out of hospital after a two-week stay. I told Dave that, if he did not behave himself, I would let the tyres down on his wheelchair. Needless to say, we had a good laugh.

When I eventually got mobile, I had a flick around the channels and found some of the lads having a bit of fun on channel 27 so I decided to QSk in and join them. I was soon to find out who was making all the noise. It was (in my opinion) one of the best mobile set-ups in the country — Dennis (Fly Boy) from Farnborough. Dennis was running mobile from Farnborough towards Oxford and, as we have spoken many times but never met, I decided now was the time. Dennis was about six miles in front of me when I asked him where he was heading. I was pleasantly surprised to find he was running up towards Telford, my home QTH. After we had decided to go via Banbury, Dennis suggested we stop at the Five Ways cafe near Warwick for our breakfast, so it was agreed. During our hour or so together mobile heading for the cafe, Dennis and I had a nice little natter together and I can quite honestly say I have never known any breaker more popular than Dennis — breakers from far and wide came to wish us a good morning and, from the way they were talking, it seems it is a regular occurrence. When we got to the cafe we ordered bacon, eggs, fried slice, tea, bread and butter — the plates were full and the meal was definitely one of the best I have ever had in a cafe and, to round it all off, Dennis paid! Thanks Den, it's my turn next time.

For this month's cafe, I have chosen the one Dennis and I stayed at for our breakfast — Dennis tells me he calls there every Tuesday and Thursday and can recommend it 100%. The Five

Ways Cafe is situated five miles north of Warwick on the A41; the proprietors are Sam and Yvonne Gorton. Yvonne told me that they are open Monday to Friday, from 6.45 am until 5pm, and Saturday 6.45 am until 10.30 pm. Overnight accommodation is available sleeper cabs are always welcome and, as I have said earlier, the meal was superb. Sam and Yvonne have definitely not seen the last of me.

I am always on the lookout for good CB shops and last week whilst on my travels, I called into Breakers World at Bordon, Hants. John, the proprietor, was not in but I was very ably looked after by Keith and the two ladies. The shop itself is in Bordon High Street and they sell a very good selection of rigs, twigs and accessories opening Monday to Saturday 10 am until 6 pm, Sundays 10 am until 1 pm. Repairs are undertaken by Keith at the rear of the shop, where I was given a guided tour and a cup of coffee. I was very impressed with their set-up and also the prices so, Keith, many thanks and I hope I can call again in the not-distant future.

I had a land-line from my old mate Roy (Leyland) in Halifax, informing me of his and Pearl's (Paper Mate) latest venture. As you probably remember, Roy and Pearl had a well-deserved mention in our mag last year. Roy informs me that, on the 28th June 1986 at the Halifax Civic Theatre, they are holding an eyeball/dance and tickets are on sale at £1.25 each with all profits going to charity. Only 750 tickets are available so, to avoid being disappointed, please send now to PO Box 7, Halifax. Food will be available on the night. Last year, Roy and Pearl made £3,000 for charity so, come on breakers, drop Roy a line and don't forget your SAE for your return tickets. Roy, many thanks for the information and the invitation. Eileen and I will be there — doors open 7pm until midnight.

This week found me delivering to a new customer in York — York Railway Museum — and, being a stranger to the city, I gave a call out for directions on the 19 and was answered at once by a friendly voice of Ivor. Ivor soon had me on the right road but our concern was whether or not I would get under either of the low bridges, one each end of the sought-after street. On arriving, I found the highest of the

two bridges to be 12' 6", my trailer being 13' 6" so with Ivor's help I managed to park my Scania and find a 'phone. The customer had to come out in his own car and make three journeys with his goods (he really was pleased). Well, all's well that ends well, so thanks Ivor once again for your help. Ivor did write me a nice letter telling me that he sells and buys rigs and has one of, if not the biggest, stocks in north Yorkshire. Hopefully, next time I am in your 20, Ivor, I shall call in to see you.

Over the last few days I have been driving in some of the worst winds I have encountered in 24 years of driving goods vehicles. Last Thursday, on my way up to Scotland, gusts of up to 90 mph were being recorded with a high of 153 recorded up in the Cairngorms. Between Carlisle and Glasgow I saw eight lorries on their sides. The police were stopping all HGVs at Abingdon and advising drivers to park their vehicles if they were empty. I, for one, was certainly pleased to get parked up on this particular night in Glasgow. To top it all, I was sent down to Kent the following Monday and Tuesday where, yet again, I encountered the winds. I don't think they were quite as bad as they had been in Scotland but I was reminded to be careful by the sight of a couple of upturned vehicles plus reports on the radio that the Severn Bridge had been closed to all vehicles for the first time ever.

On my way back from Kent I had troubles with my Scania — a prop shaft bearing had gone so I called into Ryder's Truck Rental, Swindon, for repairs but, because they could not get the spares, I was offered another spare unit. I was offered a Merc or an Iveco and chose the latter as I had never driven one before. A nice steady ride empty back to Telford showed that it was a very fast truck and I was looking forward with anticipation to the following two-day trip to South Wales, Devon and Hampshire. As I thought, the motor was extremely quick and, if the twelve speed box is used to its full potential, speeds of 80-plus are easily obtained. The brakes were very good — visibility to the rear left a lot to be desired but with larger mirrors, I am sure it could be improved. I was pleased to get my own unit back though.

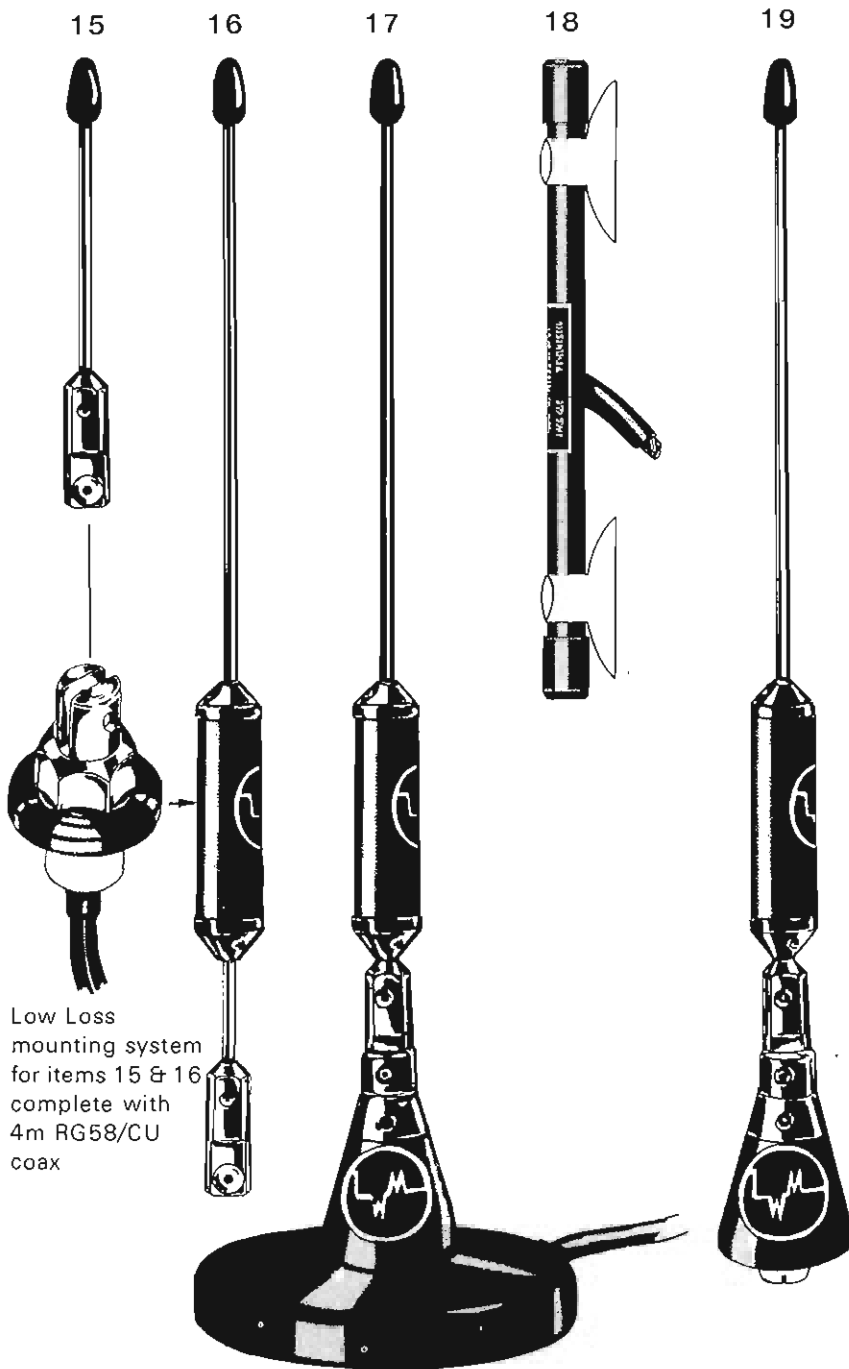
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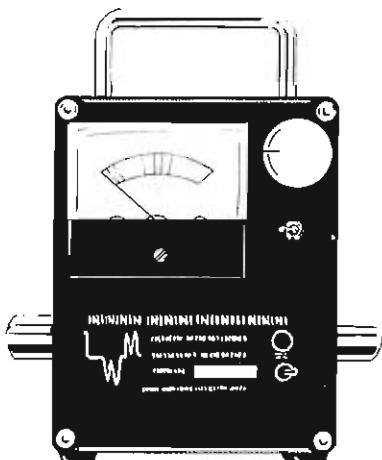
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15. ¼ wave 934 mobile antenna
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More news from around the clubs

CLUB NEWS

Organised Radio Society

May I take this opportunity, as PR Officer of our club, to inform all the readers of your magazine that we have changed the name of our club from ORC (Organisation of Radio Clubs) to ORS (Organised Radio Society). We are now a fully registered charity society whose aim is to help the aged, blind and disabled people in the local areas of Derbyshire and Nottinghamshire.

Our PO Box is still the same, as is the place of our meets (every Wednesday night at the Red Lion, Ripley Marketplace). We are, at the present time, waiting for our new QSL cards from our printer. Anyone wishing to join our club can get in touch with the club chairman or myself at the PO Box number. Any clubs out there who may want to exchange an eyeball trip can also get in touch. We're always pleased to go out and meet our fellow breakers.

**Grizzly Adams,
Organised Radio Society,
PO Box 33,
Ripley,
Derbyshire.**



The Radio Club

This is an introduction to our Radio Club of Nottingham. The club has been active for over a year now. Our main aims are helping the disabled and elderly, and supplying them with full CB equipment plus, of course, installation in order to get them on the air. Several who we have helped achieve this are highly delighted at finding a new world through CB radio.

We meet at the March Hare, Carlton Road, Nottingham at 7.30 every second Tuesday. Good food is always available, the room is large and also contains a bar.

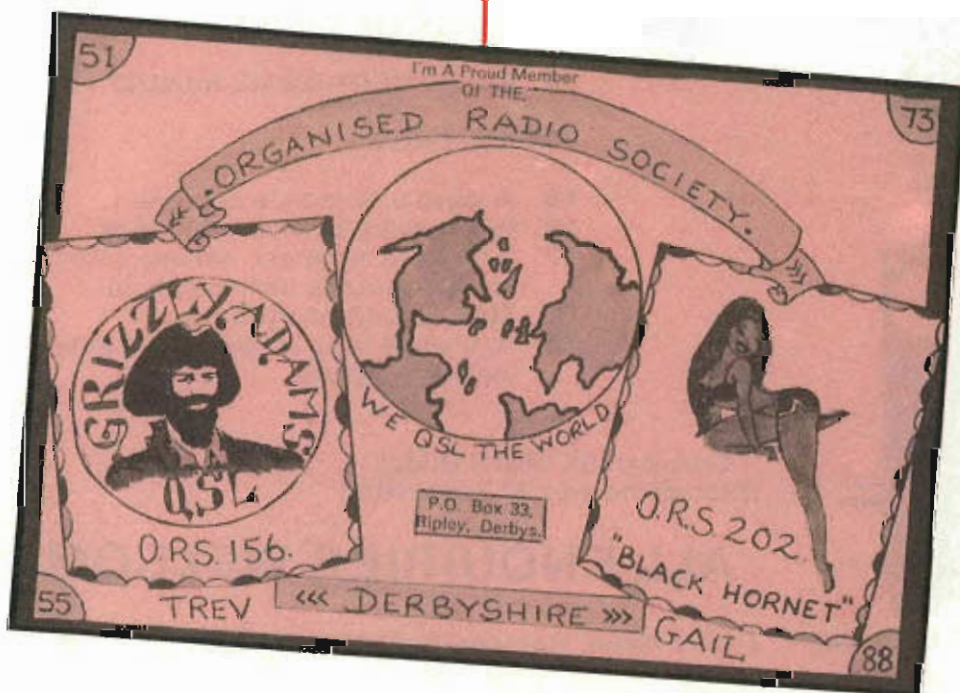
Membership is £5 per year and visitors are welcome for 50p. We are dedicated breakers and aim for a better standard of CB. Any further information can be obtained from the address below.

**Chairman (RC1),
PO Box 13,
Nottingham.**

Time Off Breakers

We formed the Time Off Breakers Club in September 1985 at the Leeds Unemployed Centre, with five unemployed breakers. We now have 144 members and the club is going from strength to strength. Most of the day, the club is taken up by club members giving directions to drivers from the M1 and M62, as well as supplying set-ups to new members (pensioners, with instructions on how to operate a CB — our members install them for the pensioners).

The centre's cafe provides cheap breakfasts and dinners and there is a free playroom for the under-fives available for those using the centre. We also have a pool room, darts, dominoes,



cards etc and there is a good advice room for people with problems with benefits, housing and the like.

We are looking for other clubs who have unemployed breakers who would like to pay us a visit and give us an eyeball — you are most welcome. We are open Monday to Friday, 9am to 4pm, with half-day Wednesday, when we close at 12 midday.

We also have a rig doctor who is down at the centre every day for repairs and we are, at the moment, trying to get some spares together for sale to our members — rigs, twigs etc.

So, if you live in Yorkshire and find yourself in Leeds, call in and give us an eyeball. If you are interested in our club and would like to know more, write to the chairman, enclosing a SAE and details will be sent as soon as possible.

Mouse Trap (chairman),
Time Off Breakers Club,
Leeds Trades Council Unemployed
Centre, 2nd Floor,
Market Buildings,
Vicar Lane,
Leeds.

Romeo Tango DX Club

As we are a well-established DX club with a membership of 77, I would like some of your readers to think about joining a club. By joining, they would probably find interests in other things apart from CB radio.

Since I last wrote to you about two years ago, some of my members have taken an interest in amateur radio and I would like to take this opportunity to say a big Well Done to White Canary and to Hot Black for passing the RAE licence. I am very proud of these two members and hope that maybe some of the other members might take the same. I hope this may be of some interest to some of the new clubs around.

Black Panther,
Romeo Tango DX Club,
PO Box 206,
Aylesbury,
Bucks.

FORTY BREAKERS DX. CLUB.

Poolle, **Dorset.**

F.B. ----- P.O. BOX 46.

Forty Breakers DX Club

I would like to inform you of our CB club. We are a group of radio enthusiasts whose sole aim is to DX and make friends all over the country. We have four breakers in Guernsey who are members of our club and who make regular visits over here to see us.

We meet every fortnight (Thursdays) at the Seaview Hotel in Parkstone. The club was formed in April 1984 and, at present, has restricted membership to 40 members. Anyone down in our area on holiday, why not pop along on our club night where we will be pleased to meet you.

Silver Dollar (secretary),
Forty Breakers DX Club,
PO Box 46,
Poolle,
Dorset.

SOLWAY BREAKERS (MARYPORT)

P.O. Box 4,
Maryport,
Cumbria.

"73's & 51's"

Hythe Breakers Club

I am writing to tell you that the Hythe Breakers DX and QSL Group are offering life membership to people outside a 20-mile radius of Hythe. We are hoping to launch this venture at the Hastings castle International Poma card swap meeting, which will be held at the Royal Victoria Hotel, Hastings on Saturday 12th and Sunday 13th July this year.

The Club package will include the Club Poma card, Black Saxon Card, ten other club cards, patch, runner stamp, certificate, membership card and other goodies.

The cost of the package will be £8 with XYL free. We look forward to seeing you all at the Hastings Meet.

HB 39,
Hythe (Kent) Breakers,
PO Box 36,
Hythe,
Kent.

PO. Box 36 - Hythe, Kent - England

HYTHE BREAKERS CLUB

HYTHE-CARDS 85/3003

OCEAN WAVES

Ask any coastguard what he thinks about CB, and he'll frown and tell you that nobody, however small his vessel, should be without a Marine Radio, and CB should not be used in its place. The CB Code of Practice, as revised last August (and still not available at many Post Offices unless you make a fuss), clearly states that "CB is not a substitute for the 999 service ashore or for VHF Radio (Channel 16) afloat". Yet CB far outweighs in popularity the number of radio amateurs operating/MM, and whilst it is losing some of its favour inland, it continues to grow as a means of communication at sea. Why is this?

First, let us examine the limitations and disadvantages of the other systems. If you are not a radio amateur already, then there is a great deal to be gone through, to say nothing of the expense. Sitting the RAE is not something that comes easily to anyone but the most dedicated; it takes a good deal of effort over several months, studying a range of subjects, some of which can be quite difficult to memorise for those who are inexperienced. Once you have passed, you are still limited to the wavebands and modes you can operate until you have passed the Morse Test. This, again, is not acquired overnight. Many weeks of patient practice are needed to reach the required standard.

For the average member of the public who wants nothing more than to be able to communicate with the shore, this is asking too much. Let's face it — somebody devoted to sailing or fishing will not necessarily be a radio fanatic as well. He is not concerned how it all works; he just wants to be able to press a button and talk. No doubt any radio amateurs reading this will shudder; but therein lies the difference between the two kinds of operator. And in any case, anybody working/MM as an amateur is further restricted, partly in the content of what he or she can discuss, and also where the vessel can be when the discussion takes place. Harbours, estuaries or docks are out of bounds, according to the licence regulations. There is even a slightly tongue-in-cheek argument going on at the moment as to whether you are strictly allowed to operate on

While we do not, by any means, suggest that CB is perfect for ship-to-shore communications, it can have its uses. David Harding looks into the possibilities

land within a harbour area or estuary, as the main object of that particular licence regulation is to prevent interference to essential services on the Marine Bands.

Such strict preparation is not necessary for operating a Marine VHF Radio, though you are still required to have some basic training and take a test. And there are arguments which make it less attractive to a small-scale sailor than might at first be apparent. True, you are in touch with the coastguard in an emergency; you are in touch with other ships; and you have access to navigational and meteorological messages via coast stations. But there are restrictions to this mode as well. You are not supposed to use Marine VHF on inland waterways; you cannot operate it from the land unless you are an official transmitting station, and you are not encouraged to fill up the channels with hours of unessential chatter. In harbours or docks, messages are limited to strictly official communications. So the fisherman who is at anchor and feeling bored can only have a moderately brief chat with neighbouring vessels, and the yachtsman who feels like a natter with his wife ashore before he turns in for the night simply can't do it.

Having a radio-telephone on board is similarly restrictive. The cost of a call is uneconomic; there is always the problem of radio range, and the queue

for calls often means you cannot get through at the time you want. Immense strides are being made in this direction. Communication by satellite is already under way, with channels provisionally allocated in the 6 and 4 GHz bands for ground-to-satellite links, and between 1.5 and 1.6 GHz for ship to satellite links. Using this system, it would be possible to use the satellite as a repeater between ships many thousands of miles away, as well as being able to radio direct to your telephone at home. It is even possible to hook a yacht into a computer ashore for data. But it is a system which is very sophisticated, rather cumbersome as yet, quite expensive and still in its infancy.

Which takes us to the argument that must have occurred to you already: CB is cheap; all the other systems are very expensive. The equipment, though much better technically than CB, costs anything from five times to forty times more. The licences, too, are more money. CB is £10, Radio Amateur is £12 and Marine Radio is £17. Little wonder, then, that the hundreds of amateur yachtsmen, local fishermen and owners of small launches, to say nothing of those whose hobby is steering a narrow boat up a canal or sailing on our inland rivers and lakes, turn to CB as a means of cheap, local communication.

True, it can't replace Marine Radio when it comes to an emergency — always. But that is not to say that it can't do the job as well — sometimes. It all depends. Some areas, where the population is thin on the ground — around Scotland, for example — you might find it difficult to raise *anybody* on CB. At other, busier parts of the coastline, Channel Nine may not be effectively monitored, and there is no guarantee of finding a friendly breaker who is capable of lending a sensible, helping hand. But there are long stretches of coast where a mariner is provided with all he needs: scores of friendly voices to while away the long hours at the helm or at the end of a fishing line; and an efficient service on Channel Nine to get him out of trouble if the engine conks out or the weather becomes too rough to handle.

Propagation is usually better at sea. To begin with, there are no natural obstacles in the way, apart from the

odd passing ship. And water provides the best ground plane available. From the beach, it is possible to speak with a vessel ten miles out at sea, where across a town, the same rig would only lead one to expect half a mile. And from a vessel 35 miles away using a normal CB with a magmount, it is not uncommon to hear signal reports of six pounds being exchanged in both directions.

One of the features of coastal CB is the way the pattern of life has been changing over the past six months. Many of the lightships with crews of up to eight men have now been replaced with automatic vessels; before long there will be none of the old type left around our shores. The lightshipmen found their month-long spell of duty a lonely business on a stationery vessel, cut off from everyday life. Television became a real boon to these men, though it was not too long before they found, as do so many of us, that too much viewing becomes boring and one tends to become more and more selective. With the advent of CB, many lightshipmen grasped the opportunity (with the permission of the skipper, of course) to chat every day with the shore. Those living on the coast welcomed this with equal delight. This led to many friendships

"So far as inland waterways are concerned, there are many who feel that a CB should be standard equipment on board"

springing up, many eyeballs being arranged for the men when they came on leave, and even, so we hear, to one marriage. Today, most of these "maritime-at-anchor" stations are off the air, with the crews scattered to other duties around the country, and the coastal CB airwaves are all the poorer for it. But that still leaves a fair number of merchant ships and ferries, that have crew members who have been given permission by the Captain to

chat to the shore from their cabins, as well as a number of oil rigs.

So far as inland waterways are concerned, there are many who feel that a CB should be standard equipment on board. Thousands of holiday-makers, miles from the nearest telephone, would then be able to contact help instantly. There are sufficient success stories already to make this worthy of serious consideration by those boatyards who hire out their vessels. To quote just a couple of stories (amongst many others). There was a narrow boat that sank to the canal bed, mercifully near the bank where it was shallow, so it was only partially submerged. This occurred during the early evening, when most other craft had already moored, so there was little chance of anyone passing by. One of the crew had rigged up a CB, and thanks to a breaker eight miles away, a phone call was made to the boatyard, who arrived with help, by car, an hour later. By next morning, the boat continued on its way, freshly repaired.

Then there was the incident where a teenager, showing off no doubt, jumped from the roof of the cabin on to the towpath, tripped on a tussock of grass and cracked his spine. By chance, the group had a CB with them, and

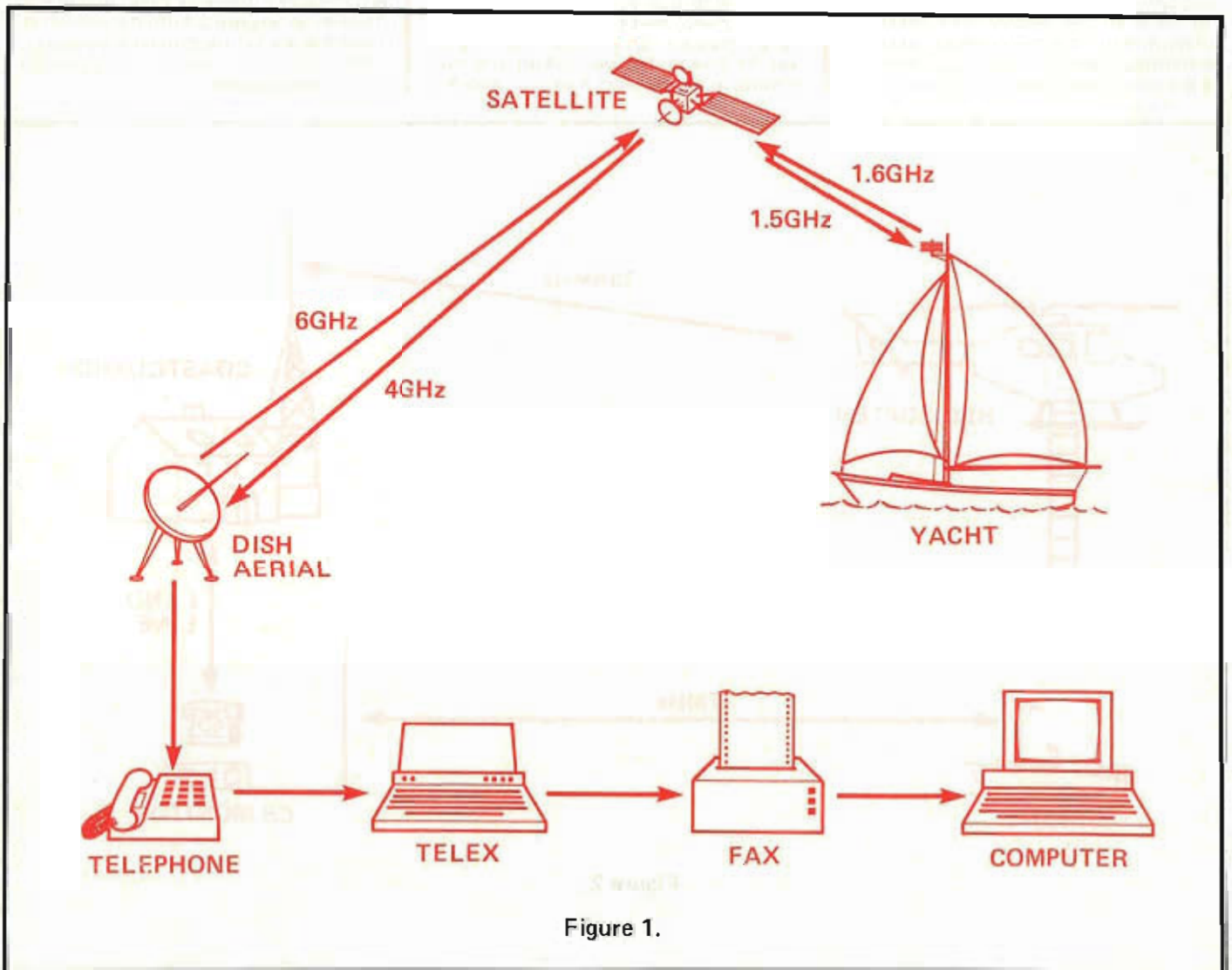


Figure 1.

were able to radio directions, via a Channel Nine monitor, to a hospital twelve miles away. Shortly afterwards, an ambulance crew, who had parked by an isolated bridge upstream to which they had been precisely directed from the boat, appeared along the towpath with a stretcher. Hours of time had been saved, and the casualty had not been moved, in accordance with correct First Aid procedure.

Neither of these incidents, though passed on to the Press, were apparently newsworthy enough to print. A great shame, as CB needs this sort of publicity to improve its overall image.

As was said earlier on, the coastguards frown on anybody setting out to sea without a Marine Radio. But, human nature being what it is, a large number of people, particularly those who stay fairly close to the shore, seem to take the risk. However, many places around Britain's coastline have hazardous currents, treacherous obstructions and unpredictable weather. Many smaller vessels, too, are not maintained as well as they should be, and can develop mechanical trouble, usually at most inconvenient times. It is then that these boats can get into serious trouble; obscured by fog, drifting out to sea, or even sinking, without the safeguard of Channel 16.

It has often been the case in these circumstances that CB has been able to come to the rescue. The Press is often happy to make a story of such episodes when they go wrong, especially if there are juicy injuries and

perhaps tragic loss of life; but they are strangely reticent when it comes to a successful rescue where CB has played a significant part. It may be that they feel they should play down the CB side of it, to avoid owners of smaller craft thinking that it is a direct substitute for Marine Radio; though even the coastguards themselves would probably reluctantly agree that taking a CB is better than taking no radio at all.

“... the coastguards frown on anybody setting out to sea without a Marine Radio”

One can point to a large file of nautical stories where CB has been the vital lifeline. There was the owner of a launch who was able to repair his failing engine by receiving instructions from the shore from a Channel Nine monitor who had the presence of mind to make a phone call to the boatbuilder. There was the yachtsman who had drifted many miles off course and no longer had a chart to cover the area of sea he was in. He was talked into the marina at the nearest harbour, a tricky

route with currents and sandbanks and a high wind running. The CB operator, though inland, had the intelligence to call up the harbourmaster, who knew the hazards and could see the yacht's progress with binoculars. Then there was the helicopter who was talked into position by radio from the nearby coastguard station, the coastguard meanwhile being in telephone contact with a CB monitor, who in turn was holding communication open to a sinking dinghy by means of his rig.

Of course, many will shake their heads and say, "How foolish not to have a Marine Radio", and no doubt they are right. But thank goodness they had taken a CBI. So often, I regret to say, small craft like these take nothing at all, even forgetting distress rockets, because they imagine their voyage is so short and so close to land that they will be safe. Then, an unexpected hazard crops up, and they need help, which CB can often give. That is why it is so desirable for anyone living around the coast to consider monitoring Channel Nine.

I suppose the best advice one could give anyone setting out to sea is to take both modes — Marina VHF and CB. One for essential communication, and one to chat on. But most of all, one to back up the other, in case one set is out of range, or full of water, or faulty. And this, of course, is what a growing number of people are doing, which is what makes CB for those of us on the coast or near a canal an increasingly interesting hobby.

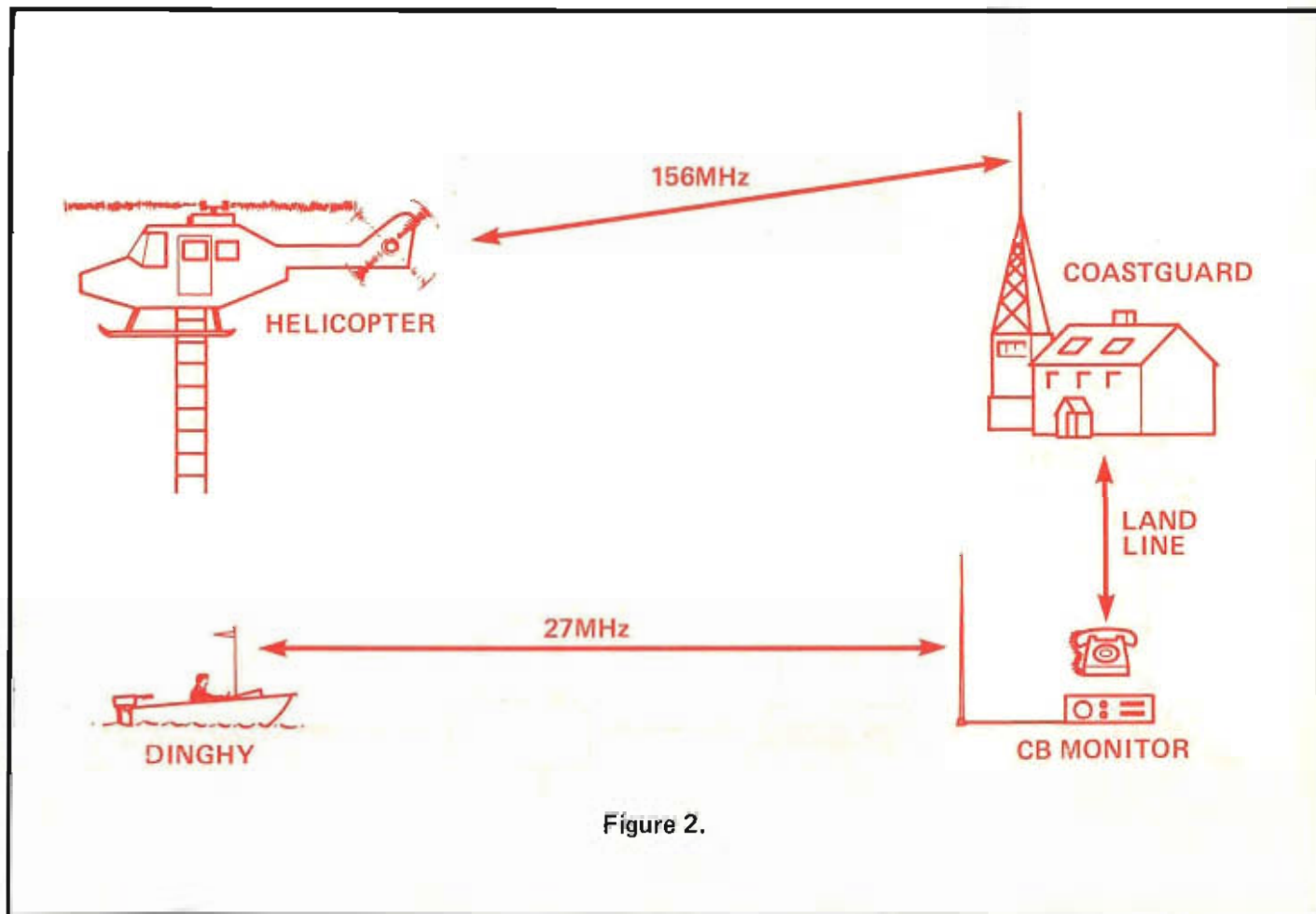


Figure 2.



**David Shepherdson
comes up with more
names and addresses**

COMMUNICATION THE QSL WAY

Well, here we are once more, already halfway through the year and I seem to be just as far behind as I was at the beginning of it!

So, without further ado or extra greetings, I'll get right into the pile of letters and start off with a couple of address changes. First is Don (*Copycat*) who has a new PO Box in Coventry and would like me to pass this on to you. Also, from Pat and Reg (*Blue Girl* and *Collie Man*), a new Midas card and a new address and they say that they would love to receive your QSLs. From Folkestone comes a card from Kevin (*Joker*) who just says "give me a mention!" while from Barrie and Joan (*Airwolf* and *Silver Squirrel*) of Co Durham comes an impressive pile of Currie cards including some great "Independent Artist" ones.

From Melton Mowbray comes a further selection of Currie cards, including some of the new Spectrum cards, these are from Irene (*Patient Lady*), Tony (*Kingfisher*), Lesley (*Snowflake*) and Michael (*Greenfingers*); all one big happy family. For details of these cards, prices and how to order etc, please drop a line to the printer in question. Don't forget to include return postage to assist with a speedier reply and of course this also applies when writing to a QSL club too. As for the costs of cards, basically the rule is the more artwork required, the higher the price. However, if you do go to town on your cards as many QSLers do, they will probably be really sought after items, and after all, we are in the hobby of swapping and collecting cards, aren't we?

From Tony (*Penny Black*) of Farnborough come a couple of his new cards whilst from George and Barbara (*Sandtank* and *Mumbar*) of Southport a selection of their cards, both personal and club arrived recently. From Philip (*Pony Express*) a pack of his cards dropped through my letterbox and he asks for a mention promising to reply to all QSLs received. From Joe (*Kneebone*) and Gary (*Yorkie Bar*) of Cornwall a

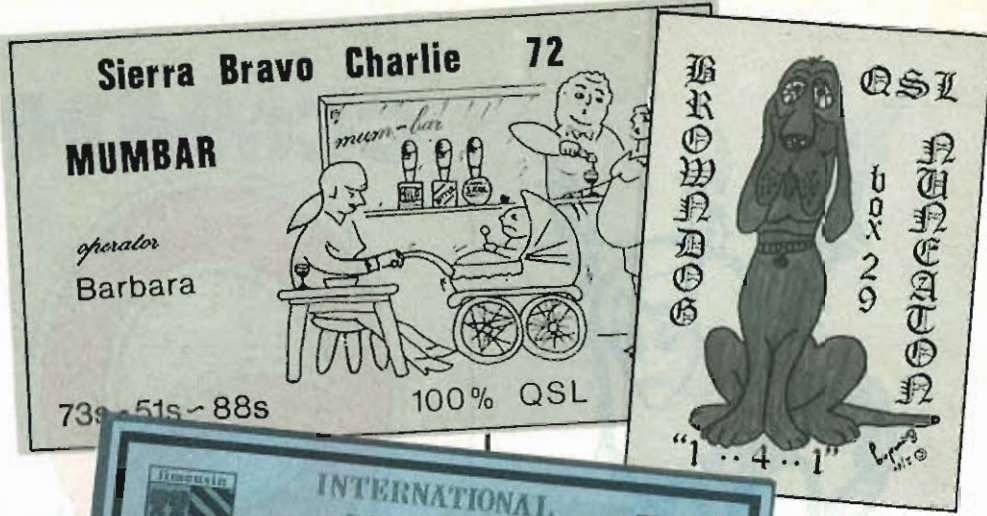
whole pile of cards and other items, far too many to mention here, but could be well worth a QSL or five to them. And the last name for now, 'cos I'm going to start on the club pile of post now, is George (*Browndog*) and his thousands of relations (going from the number of cards and length of the letter)! Anyway, the club in question is the November Delta DX Group which is a local DX group catering for Nuneaton-based DXers who want use of their own PO Box. Membership is by invitation only, but everyone in the group is happy to QSL if you wish to drop them a card or ten. Members include Colin (*Triple X*), Kenny (*Music Man*), Joe (*Postman Joe*), Kathy (*Cheshire Lady*), Will (*Carrier*) and Bob (*Country Man*) and all will appreciate personal cards sent via PO Box 29, Nuneaton.

Now, some time ago, in the January issue to be exact, I was asked if I could shed any light upon a rather unusual club which had been proposed to Roadmender. The letter referring to the club (Deck of Cards) was, to say the least, secretive! Anyway, I asked if anyone connected with the club would care to get in touch and confirm that it was a genuine one. To cut a long story short (before the Editor does as well!), the Fiddler, who was setting up the club, has been in touch and has let me know that the club has finally set up a 28-member group known as the Ivory Set. This is a reference to a set of Dominoes, he tells me. The card I saw was printed by Ensign in their excellent hot-foil style. As I say, there are only 28 members, and if you can collect all 28 cards (and they are only available through QSO and QSLs, *not* QSL or eyeball only), then you can send off to the Fiddler for a special certificate to prove it. Best of luck! And before anyone writes in for the addresses, I've only got one and I promised not to reveal it, sorry.

Another local club is the Tango QSL Club of Welwyn Garden City. Now this one costs £2 to join, but covers the use of the Club PO Box for one year and anyone outside the area gets a few

club cards and labels. The Club also has the occasional eyeball and any decent new breaker is more than welcome. I would assume that the £2 fee is payable each year for the PO Box but I'm not sure so if you are interested in joining, drop the Club President (Stan — Toucan) a line, but don't forget a SASE.

A newish DX group has been in touch now (via the post as I refuse to accept anything over the phone, so please don't waste your time or mine by ringing); this is the Stonehenge International DX Group which costs £4 to join for which you get the use of the Club PO Box for one year, after which there is an annual fee of £2 for this, your unit No, membership scroll, 10 QSL cards, 5 eyeball cards, DX hints and tips, frequency charts etc. Also, if you wish to use the PO Box, you should also supply a few SASEs for the return of your post. Extras available include Club cards (£5 per 100), embroidered badge at £1.20 and club stickers at



QSL CLUB ADDRESSES:-

- Lima Lima BP 1147, F-87052 Limoges (Cedex), France.
- International PO Box 29, Nuneaton, Warks.
- November Delta DX PO Box 5, Stornoway, Isle of RDX (Charities) Lewis, Shetland Isles.
- Stonehenge PO Box 25, Amesbury, Wilts.
- International PO Box 147, Welwyn Garden Tango QSL Club City, Herts.
- Dragonrider One, either via the Mag or C/o 3 Tam Villas, Cowpasture Road, Ilkley, West Yorkshire.

of June at the Bargoed Leisure Centre, Bargoed, Wales. Admission is 50p for the afternoon's Eyeball, and £2 for the evening of live entertainment. This is held in aid of a local charity each year. For example, last year's raised £2,000 towards equipment for handicapped children at a local hospital. Well done to all involved and the best of luck for this year's do.

The next event is the International Card Swap Meet at Wolverhampton at the Old Vic Hotel, Lichfield Street, Wolverhampton over the weekend of the 28th and 29th of June from 9.30-

75p per 100. The Club does accept cheques and postal orders which should be made out to R J Baker. This club does come highly recommended by an old pal of mine, Ken (*Rebel*), who of course can be contacted via the Club.

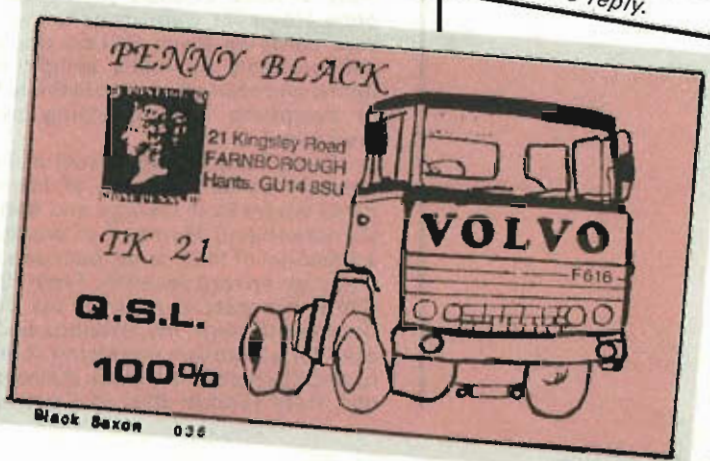
A letter from Lillian Broome, who recently moved house (her new address is in the QSL addresses block lets me know that she has been collecting stamps for Cancer Research for quite some time now and asks me to say a big thanks to everyone who's helped her in this by sending their old stamps to her. So, if you'd like to help support such a good cause, please send your piles of stamps to Lillian, or if you want to support the RNL, send them up to the RDX Charities Organiser (Anne) in the Shetlands.

Before I browse through a club's package as promised last month, I've some details on a trio of forthcoming events. These arrived just in time for this issue so, if you are organising one, please do let me know as soon as possible. The first two are being held on the same day, though the second one is over a full weekend. The first is the Romeo Victor CB Radio DX Group's Annual Eyeball being held on the 28th

QSL PRINTERS ADDRESSES:-

- Currie Cards 89 Derwent St, Blackhill, Consett, Co Durham.
- Ensign (Hot Foil) 58B Market St, Ashby-de-la-Zouch.
- Midas (Hot Foil) 40 Marklew Close, Shire Oak, Brownshills, West Midlands.

When writing to any of the above or any club or QSL service, always include return postage to assist with a reply.



4.30 (Sat) and 9.30-2.30 (Sun). I think I've got the details right, but the form is not *too* clear in places! The cost will be £14.50 per person, and I *think* this includes hotel accommodation, disco and evening meal, but do check with the Club to be absolutely sure please. All applications *must* be sent to the Firebirds Club by the 1st of June so it doesn't leave much time I know, but I've only just received the details myself. SASE essential for a reply by the way. The third forthcoming event is a truly international one, it's being held at the Paul Ricard Grand Prix Circuit in the South of France over the weekend of 31st May-1st June. It's part of the European Truck Racing Championship and there will also be an International CB Village with quite a few QSL clubs represented (hopefully). I don't know how much it is to get in but, going from the last time I went to Silverstone for the British Grand Prix, it ain't cheap! However, if you're on holiday in the South of France around this time, you may enjoy a day out there! If anyone does go, would you like to let me know how this, or any of the others turn out? I won't promise, but I may be able to include your report in due course.

Right, for this month's browse through a club's package, rather than take yet another UK club's pack, I've been influenced by the invite I got to the GP event so I've picked a French club's pack to go under the microscope.



I do just want to say this is *not* a "Club of the Month" slot, but a slightly more detailed look through a club's package. The club in question is the Lima Lima International DX Group to which membership costs 150FF or \$17 (US) dollars (or \$19 including XYL). The costs do seem at first rather high but the well-wrapped package costs over \$2 in postage and the contents soon make up the difference. Anyway, here are my impressions of the package received. The first thing is "Where do I start?" The colourful certificate shows three shields, a "Winkels Tripel" of the world (look it up, I had to! Don't worry, I'll put you out of your misery next month) and a wax seal with the LL mark. However, the seal didn't quite survive the postal journey.

Next up are some rather excellent club cards, 20 in all, a similar number of stickers, and the club stamp which, whilst well designed and cleanly cut,

FORTHCOMING EVENTS:

- Firebirds*, PO Box 9, Brighton, E. Sussex.
28-29th June, at the Old Vic Hotel, Lichfield Street, Wolverhampton.
- Romeo Victor*, PO Box 7, Bargoed, Mid Glamorgan, Wales.
28th June, at the Bargoed Leisure Centre.
- Grand Prix International du Camion*, on 31st May 1 June at the Paul Ricard Circuit, Le Castellet, Nr. Marseille, South France.
(NB: Location of event, *not* a contact address.)

QSLER ADDRESSES:-

- Don (*Copycat*) PO Box 19, Coventry.
- Pat and Reg (*Blue Girl and Collie Man*) PO Box 14, Stone, Staffs.
- Kevin (*Joker*) VR 877, PO Box 105, Folkestone, Kent.
- Barrie and Joan (*Airwolf and Silver Squirrel*) PO Box 5, Consett, Co Durham.
- Co Durham.
- Irene (*& Family*) 20 Newbury Avenue, Melton Mowbray, Leics.
- Tony (*Penny Black*) 21 Kingsley Road, Farnborough, Hants.
- Philip (*Pony Express*) JP 45, PO Box 20, Workington, Cumbria.
- Joe (*Kneebone*) & Gary (*Yorkie Bar*) PO Box 9, Liskeard, Cornwall.
- George (*Browndog*) PO Box 29, Nuneaton, Warwickshire.
- Also:- Colin (*Triple X*), Kenny (*Music Man*), Joe (*Postman Joe*), Kathy (*Cheshire Lady*), Will (*Carrier*) and Bob (*Country Man*)
- Alice (*Blue Eyes*) 24 Falcon Way, Kenton, Harrow, Middx.
- Kevin (*Rebel*) PO Box 25, Amesbury, Wilts.
- Lillian Broome (*Blue Lagoon*) 104, St Giles Road, Tile Cross, Birmingham.
- George and Barbara (*Sandtank and Mumbar*) PO Box 1B, Bootle, Merseyside.

is unmounted. A selection of local view cards are included, as is a small bundle of tourist info, the value of which is debatable, at least it is if your French is as bad as mine! But, there again, the same is true of a UK club sending UK tourist info to France. A selection of 10 European QSL cards plus, in this case at least, an uncut 4-part FCC Series card and then, apart from the usual exchange invites and a supply of LL invites for you to pass on, there is the "Lima Lima Membership List". However, this is *not* just a roster, but includes an English translation of a welcome letter and an introduction to the club's annual journal (available for another \$17 per year!) and how to become an "Active" member. In the back of the book is also a list of recommended clubs and societies but I note that, at the time of writing, a couple of the names should not be there as they have folded. Current exchange rates suggest that getting \$17 is the best value as that will cost you £12 whilst 150FF costs £15 according to the exchange rates quoted in my local newspaper.

Anyway, that's it once again, if you would like a mention, drop me a line, *but* don't expect to see anything for a month or three. If you have some info, or want some, get in tough and if I can help, I'll do my best. If you are organising or intend to organise a forthcoming attraction for QSLers and Cbers, let me know, in plenty of time though please, and if you want a reply to any of these, remember to include either return postage or a SASE. That's it, catch you next time, take care 'til then.

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CLUB INVITATIONS
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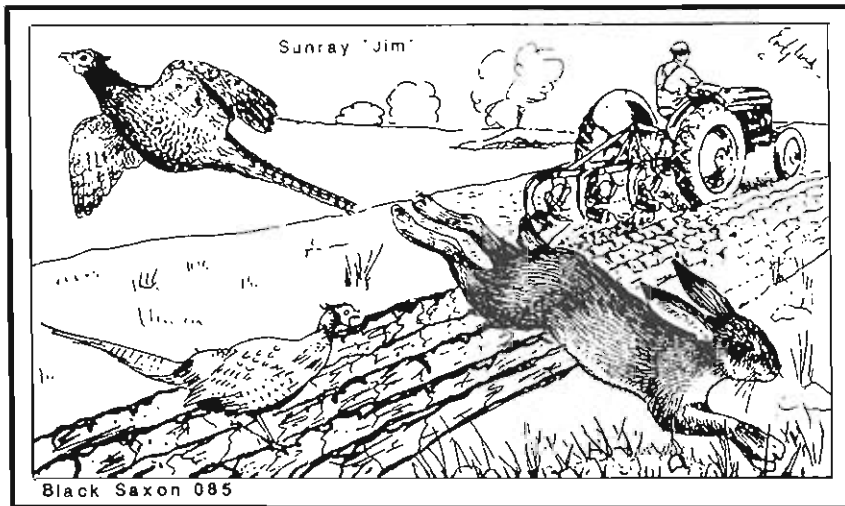
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LADY BREAKERS



Against all odds, Filly organises a CB club

I had never actually joined a CB club myself, mostly because of a harrowing experience I suffered when I once helped set one up. I still wake up in the night, sweating, convinced I am back in September 1983 and the next committee meeting of the Rhesus Man Six group is about to take place . . .

Why it was called Rhesus Man Six, I have no idea, it was just one of the peculiar decisions made by a very peculiar committee. I'm not sure why they wanted to involve me in the first place, perhaps it was to lend the fledgling club a little respectability. I'm reasonably well-known in the area — well, that's what *they* said — and I suppose they needed as many sub-

scriptions as they could con out of potential members.

It's even more of a mystery why I let myself get involved, I should have sensed danger when the membership secretary called for me on the night of the first meeting, wearing pink and yellow striped hair and a ring through his nose. Not, I hasten to add, that I'm prejudiced against people with pink and yellow striped hair and rings in odd places. Perhaps it was the naked female tattooed on his forehead that should have made me pause . . .

But I went along anyway. It was the first attempt to set up a club in the area, and I thought it deserved support. OK, so they had a bizarre membership secretary, but it was quite a feat finding someone willing to take on the thankless task of wresting subscriptions out of people every year, and what's wrong with a little eccentricity, anyway?

Unfortunately, the rest of the committee turned out to be cast in the same mould. Not exactly the same, there were variations. Some had purple hair, for example, and huge swastikas tattooed on their backs (one or two had come topless, it was a warm September). They were all male, which made me feel just a touch self-conscious, and their language was, shall we say, a trifle colourful.

It turned out eventually that they wanted funds to finance an ultra-right-wing newsletter, which they thought they could disguise as a CB club newsletter. Since most breakers are not, as they had thought, closet National Front sympathisers, it turned out to be not such a good wheeze after all, and the venture collapsed very quickly, with a bit of encouragement from me. But, as you might imagine, it put me off clubs for quite a while. Other genuine clubs soon started up, and I would join in their activities when asked and help them out, but I never committed myself.

However, I simply couldn't resist sticking my oar in when I came across the trials and tribulations of one local club, who had better remain nameless.

They were very well-meaning, but they simply hadn't anticipated the problems of running a club. They had a lot going for them — a membership of around 30, people with valuable skills, capital assets including a working duplicator. But they lacked one important ingredient — team spirit, and the ability to sink their differences in the cause of the common good.

I heard about the club's problems

from one of the members, who asked me piteously to attend the club's AGM and help sort things out. I dithered, but when I was finally convinced that no-one on the committee had ever so much as dreamed of wearing a ring through their nose, I decided it was time to put the past behind me.

The AGM was a shambles. No one had produced an agenda, so the discussion was aimless and kept getting diverted into such trivial channels as whether or not the QSL card should have colour on it. No one kept minutes, so no one could remember previous resolutions for carrying them out. No-one even seemed clear on what the club was meant to do. Some wanted rallies and competitions, some felt the club ought to be raising money for charity, some obviously wanted nothing more than an occasional opportunity to meet at a local pub for a drink and a chat, and resented their subscriptions being used for anything else.

When it became clear that different members were paying different subscriptions, simply because no one had ever co-ordinated membership, all hell broke loose. Then someone said, "Hey, this is getting us nowhere. We've got Filly here, how about asking her what we should do?"

I had taken care to sit in the darkest corner, but it didn't save me. Thirty pairs of eyes swivelled my way, and a sudden silence fell. It was obvious that the ground wasn't going to come to my rescue by swallowing me up, so I did the only thing I could to avoid losing face. I took charge. My voice might have been a trifle squeaky at first but over the past year I had been involved in the affairs of a number of clubs, and the experience stood me in good stead. After about five minutes, I started to enjoy myself.

I can't flatter myself that I put the whole show to rights in one evening, but I did get them to set up and elect a proper committee with well-defined responsibilities, and they did agree on what their activities should be. One or two people were encouraged enough to come forward and offer their skills — one as an events organiser, one as a newsletter editor. Certainly, they went away feeling more positive about the whole thing.

A good evening's work, Filly, I told myself, going home that night. Only one problem . . . I had in a mad power-crazed moment allowed them to elect me chairman!



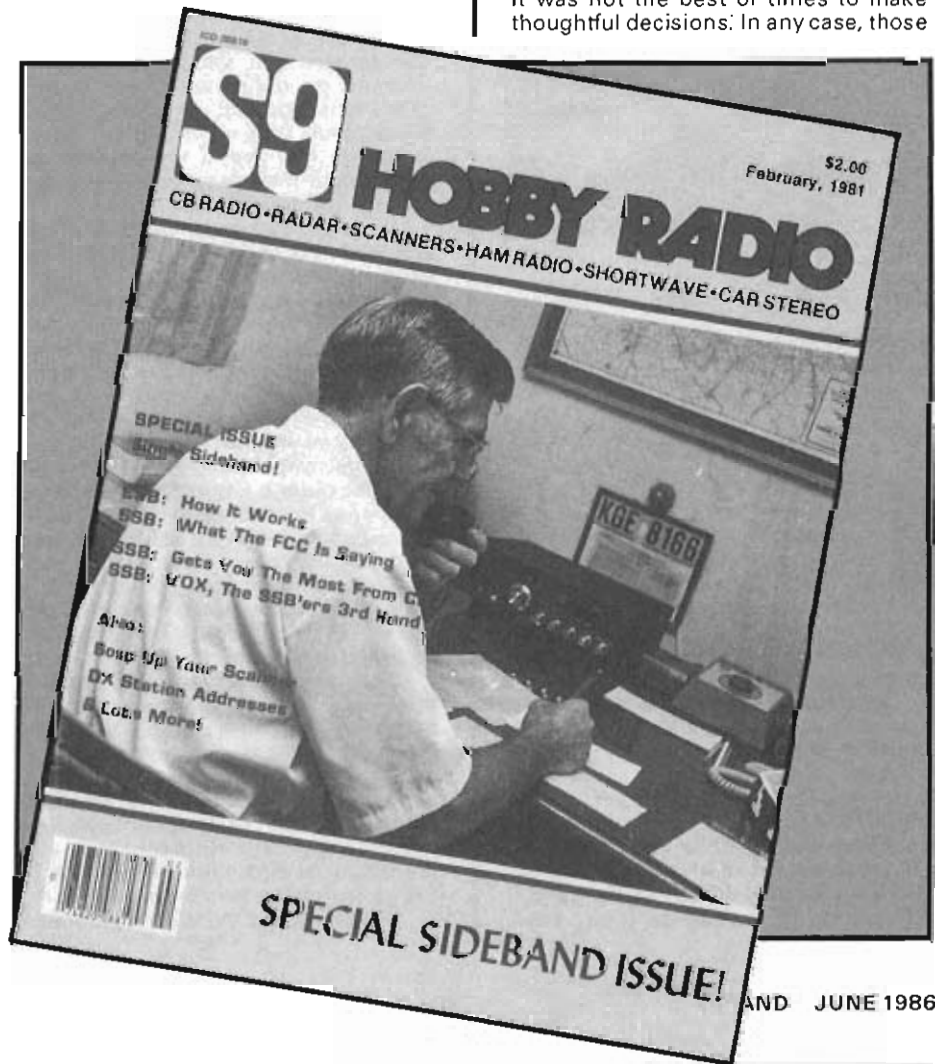
In this, the first of an occasional series, we introduce Captain Sparx who, this month, reminisces about sidebanding

CAPTAIN SPARX ON THE WAVELENGTHS

Once, when I was more affluent than I am now, I sent a sheaf of mazoolah to the USA for an annual sub to a prestigious CB/SSB journal. Though they cashed my cheque, they sent *no* mags and by the time they finally responded to my complaints, aided by the Better Business Bureau, the mag was a mere month or two away from closing. In that sense, I have played my own inestimable part in subsidising US CB. The subject of sidebanding came up recently in *Citizens' Band*, the sort of topic that makes any radio old-timer sigh for the Good Old Days when men climbed Mount Everest just to see if they could pick up Ma on Channel 27, from somewhere near

Detroit.

Sideband might have become the main plank in the aspiring breaker's platform, rather than 27MHz AM of the FCC variety, had it not been for the sunspots. Long distance skip, though thoroughly illegal, gave the FCC frequencies more glamour than might have been applied by a team of Hollywood make-up artists. Transient, like all the pleasures of life, but nevertheless creating a vague idea that 27MHz AM was the Ultimate in World Communication. Of course, we had all kinds of odd ideas. British Telecom spent vast sums on an unpleasant vulture named Buzby, in order to encourage use of the land-line telephone — rather like offering extended gargling as a pleasant way of spending an evening. It was not the best of times to make thoughtful decisions: In any case, those



sidebanders illegally operating in the old UK thought that they should not mention the delights of sideband operation too loudly, in case the buffoons noisily disrupting AM (and later legal FM) turned their attention to sideband.

The 'snob value' of SSB was inherent in the operation. A veteran CBER in the USA told me that anyone trying to make contact on a SSB conversation would get the cold shoulder unless he/she was 'accredited' by one of the various starch-shirt SSB groups. These wondrous academies of learning existed merely to 'vet' applicants for membership, and thereby the access to SSB chat. One could not help thinking of Groucho's famous comment: "I wouldn't want to be a member of any club that would let me in."

America's popular 'S9 Hobby Radio Magazine' was, as its title suggests, heavily into sideband. Its best known editorial director, Tom Kneitel, wrote a highly acceptable book on sideband operation and, for all I know, still wears the appropriate mantle as one of America's most knowledgeable operators.

Some indication of the High Moral Tone of SSB was provided in the Special Sideband Issue, dated February 1981 (gee, only five years ago? Seems more like a century). In a superb piece of understatement, the magazine noted that sidebanders had become a bit clannish, seeing this aloofness as the only way of maintaining their "com-

munications paradise". It was suggested that the SSB operators were converts to a mystical brotherhood (and sisterhood), having given up at last on the wayward behaviour of most AM operators. Still, at their best, the SSB operators offered an intelligent use of the medium. In Australia, incidentally, the UHF frequencies had something of the same potential.

Network

The Sideband Network launched in 1964, helped the cause and for a while it was hoped that Britain would be a European base of the Network, as and when SSB was legalised. From my own recollections of Sagely Sidebanders back in the early 1980s, I'd say that most, and probably all, were more interested in conversation than cassette music, and some were obvious candidates for ham radio later on. Certainly, The Sideband Network has always tried to encourage a sense of mutual interest and competence. As someone in 'S9' wrote, "One of the greatest helps to the continuing growth of sideband is the decline in the opportunity to carry on a decent conversation on the AM channels." True enough. In some places, you even had self-appointed channel-masters who ruled the airwaves with a rod of high wattage only turning their rig off if you asked nicely and were always humble about it.

Like other serious users of CB radio in its diverse shapes and sizes, the Sidebanders did not always get on with the Federal Communications Commission, especially in respect of expansion of SSB (legally as distinct from adjusting the supplied equipment). In the end, equipment manufacturers in the USA got discouraged, and the handsome array of AM/SSB rigs once abundant in the stores diminished by way of choice, even though other goodies came along. Few would claim that SSB achieved the high hopes of its advocates back in the late 1970s/early 1980s. Maybe it could have a renaissance but now we have other things demanding an opening of the piggy-bank, not least the possibilities of 934MHz, and soon, satellite communication for all.

Someone explained it like this: the SSB operators made it hard for newcomers to join in because they wanted to protect their hygienic and pure airwaves. The SSB rules of the road 'discouraged infidels'. As manufacturers could only survive on the bases of market expansion, that may have been that. I don't think that sideband has entirely gone, and maybe it is due for a renaissance — given the real charm of the medium. I daresay if the Victorians had enjoyed SSB as well as all those High Morals, the Prime Minister would have legalized it long before now. Trouble is, would those effete sidebanders have allowed Queen Victoria to join in the conversation?

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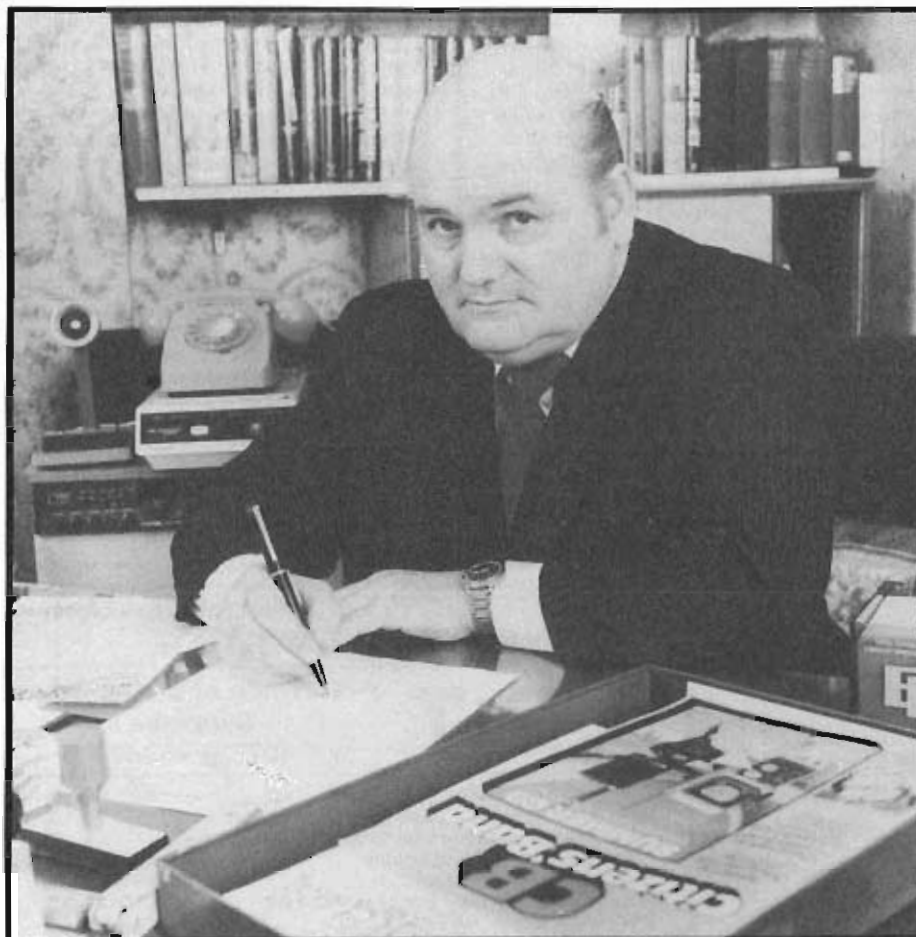
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CLEAN~UP CAMPAIGN



Royston Williams, chairman of MSGB Ltd

There are many monitoring groups throughout the country who listen for emergencies or abuse of the airwaves. Here, we speak to Royston Williams, chairman and MD of Monitoring Service Great Britain Ltd

C.B. Interview Chairman & Managing Director (Mr Royston Williams) of Monitoring Service Great Britain Limited.

Q. Who are M.S.G.B. Ltd. and what is their function on C.B. radio?

A. Monitoring Service Great Britain Limited is a National Monitoring Service. We serve two functions. One, to provide a national channel 9 monitoring service, staffed by voluntary CB operators. Two, to provide a tracking service, reporting on CB abuse directly to the R.I.S. (Radio Investigation Service) of the Department of Trade and Industry. To this end the commercial side of M.S.G.B. Ltd. has purchased sophis-

ticated tracking equipment to track down the offenders who abuse the system.

Q. How long has M.S.G.B. Ltd. been in operation?

A. M.S.G.B. (Voluntary Organisation) was launched on the first January 1984, M.S.G.B. Limited was incorporated on the 15th February 1985 and M.S.G.B. (Voluntary Organisation) was incorporated into the Limited Company on that date.

Q. What areas have M.S.G.B. Ltd. D/F units been active in?

A. Our D/F units have been active from as far away as Eastbourne up through Sussex to the Surrey border, West London and parts of Central London.

Q. Do M.S.G.B. Ltd. concentrate on channel 9?

A. This is an emotive subject with many CB operators and monitors alike, but we have to accept that, although channel 9 is used and recommended as an emergency channel it is not a protected channel. All we would ask is that when an emergency takes place, the operators who are using the channel take a stand-by to allow a monitor to deal with the emergency. This company is concerned with the abuse that takes place on all forty channels. Therefore, channel 9 will receive no special attention.

Q. Will monitors be involved in any tracking operations?

A. No, this is the sole responsibility of the commercial side of the company.

Q. Who, then, operate the tracking units?

A. In the main, we enlist the help of licenced radio amateurs; we feel that in order to obtain an unbiased report, people unconnected with CB will give the unbiased reports we need. One must remember that, as a company, our integrity must be beyond reproach when tracking offenders.

Q. Once your company has submitted reports to the Radio Investigation Service, will they act on it?

A. We have no reason to believe that they will not, providing we give them the hard evidence that John Butcher has asked for. Most CB operators think that the R.I.S. is not active, let me assure those people who abuse the system, that it is only a matter of time before the R.I.S. knock on their door, as they have already done in many hundreds of cases on FM CB.

Q. Do you report all offences to the R.I.S.?

A. No, it is not our intention to report minor infringements of the licence conditions to the R.I.S. Our policy is to give CB operators a friendly warning first. We explain to them that we are a private company reporting on CB abuse

to the R.I.S. and that *if* reported, they *may* be prosecuted by the R.I.S. Most CB operators do appreciate this warning and in 99% of cases do not re-offend. Quite obviously, CB does require some policing, and if the 'Softly-Softly' approach works, then it will save time and money. The hard core of people who have no respect for other CB operators and abuse the system will be tracked down and reports filed with the R.I.S. for them to deal with.

Q. *Has M.S.G.B. Ltd. the authority to enter premises and confiscate equipment?*

A. Most certainly not. Any confiscation of equipment or legal action can only be implemented by the Department of Trade and Industry.

Q. *How is your campaign progressing for the Clean Up of the Airwaves?*

A. I think that our contribution, be it in a small way, in tracking offenders, will help alleviate some of the problems. Recently, I had a meeting, at the House of Commons, with the Chairman of the 'All Party' committee on CB (Major Sir Patrick Wall MP) who vigorously supports our campaign. The meeting was most constructive, and my comments will be passed on to the Parliamentary Under-Secretary of State for Industry (Mr John Butcher MP), who incidentally, is also genuinely concerned at the abuse that takes



One of MSGB Ltd's tracking vehicles

place on CB. One must remember, that John Butcher was also a supporter for the legalisation of CB in this country.

Q. *Do M.S.G.B. Ltd. have a special relationship with the R.I.S.?*

A. In short no. This also applies to any other department of the D.T.I. We do, of course, correspond with the R.I.S. and RRD with regards to our tracking operations, and will co-operate with these departments, indeed, as many other organisations and companies do in the normal course of business. We merely act as a private company who track CB offences and report them directly to the R.I.S.

Q. *Do M.S.G.B. Ltd. liaise with any other channel 9 organisation?*

A. Yes, we liaise with THAMES 9 Monitoring Service in Middlesex and some REACT units in Sussex. In fact, the REACT unit in Horsham liaise extremely closely with our Senior Controller in Sussex, and have produced a rota system of both groups of monitors to obtain the maximum coverage of channel 9. This kind of co-operation can only do good for channel 9 as we all do the same job.

Q. *Have any CB clubs approached you to become affiliated members?*

A. Yes, we have had some clubs affiliate with us. They feel that no national body is representing the views of the British (FM) CB operator. There must be many FM clubs throughout the country who have many questions on their minds, regarding the future of CB in this country. Why not affiliate with M.S.G.B. Ltd., put your questions in writing and our Director of PR and Club Co-ordinator (Steve Donohue) will pass them on to the appropriate department of the DTI.

Q. *Who do people contact if they wish to become members or affiliate?*

A. They can either contact the National Recruiting Office at 8, Church Road, Roffey, Horsham, West Sussex or the Director of PR and Clubs Co-ordinator at 430, West Wood, Windmill Hill, Runcorn, Cheshire.



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CHANNEL CHANGES?

Although the government were about the only ones to give serious consideration to a UHF CB service prior to its introduction, the 900MHz band is steadily proving its potential as a means of public communication in many parts of the world. Switzerland has its own 934MHz CB service, with other countries looking likely to follow suit. Even America, the home of CB radio, has been casting sidelong glances in the direction of the upper reaches of the spectrum, of late and Japan took the whole idea one stage further when it introduced its Personal Radio Service, with numerous technical refinements, at 903MHz. As we reported last month, there are growing signs that the Japanese system might become the model for a multinational experiment.

Although as yet uncommitted, the Dept of Trade and Industry is currently considering the draft specification recently issued by the European consultative body, CEPT, for a 79-channel personal radio service covering the entire 933/934MHz band. Back in 1981, when the present UHF service was introduced, it was envisaged that the 50kHz channel spacing might, at some future date, be halved to allow 40-channel service and pressure from user groups for this change has been mounting of late but the recent distribution of the CEPT draft specification leaves us wondering whether a full scale expansion of the service might not be on the cards.

Innovations

Preliminary examination of the draft proposal suggests that it might easily have been largely translated from the 903MHz service already in use in Japan. In fact the only real difference seems to be the choice of frequencies, apparently dictated by international interest in the present use of 934MHz. Selective tone calling, a fixed calling channel and automatic channel selection are all among the options discussed, along with user identification, in the document, which includes detailed technical standards as well as proposals for marking licensed equip-

With the DTI considering a draft specification for a personal radio service covering 933/934MHz, Keith Townsend looks at what the future might hold

ment in a similar manner to that currently in use for CB rigs in this country. There is also a suggestion that if the service is to be truly international some form of type approval will be necessary to avoid manufacturers having to meet the differing regulatory standards of each participating nation.

Like both the present 27MHz and 934MHz CB services, PRS would employ simplex communication and only phase or frequency modulation would be permitted but both the manner of making contact and then continuing a conversation would be somewhat different. Reduced channel width would allow for use of 79 channels, which would be split into two blocks, each channel occupying a bandwidth of 2.27kHz (channel 1 at 933.0MHz, likely to be designated the automatic calling channel, to which each rig would return at the end of each contact, with communication channels broken only at 934.0MHz) in order not to interfere with the already designated Swiss calling channel. The possibility of a proliferation of privately designated calling channels would be avoided by automatic selection and it seems that the only controls available to the user are likely to be an on/off/volume switch, antenna socket and power plug.

Once contact was established the really ingenious bit would take over, as the originating radio automatically scanned the full range of communication channels and memorised the number of the first clear one it encountered. In the certain knowledge of a

clear channel it would then return to the calling frequency, where it would transmit a coded tone to the station with which it had previously made contact. On receiving the tone, the station would automatically re-tune to the same clear frequency, where contact would continue uninterrupted, as all other searching stations would automatically ignore that frequency until such time as the contact was ended. Although I foresee possible occasions on which those wishing to make a call might find themselves without a free channel through which to work, I firmly believe that this disadvantage will be far outweighed by the ability to maintain contact without constant in-band interference as others search the band for a free channel.

Selective tone calling

Another standard feature of PRS, present in very few of the current generation of CB rigs, is likely to be the optional use of selective tone calling. With this mode selected each operator can place calls to specific stations, since his signal will not open the squelch of any radio not programmed to respond to the specific tones contained in the originating transmission. I understand that each rig would be capable of a large combination of possible call tones, to minimise the likelihood of accidentally accessing the wrong station.

Auto identification

Although the idea was rejected by the Home Office at the time of legalisation, many early campaigners favoured the inclusion of some electronic means of identifying the source of a transmission and various estimates suggested that the incorporation of some form of sub-audible tone device would add no more than fifty pence to the cost of a rig. Japanese PRS has incorporated a similar suggestion from its inception and provision for such a facility is included in the current CEPT proposals.

Again the variety and number of tone combinations is almost endless, avoiding the likelihood of duplication,

though the specifications does not make it clear whether each individual tone would need to be registered or whether it would merely be used to trace a transmitter known to have been causing problems. Neither does it appear to specify whether tones should be sub-audible.

Power levels and suppression

The present draft specification calls for a carrier power slightly lower than the 8 Watts currently permitted at 934MHz. It suggests a maximum of 5 Watts and although individual administrations will probably be left to determine their own antenna specifications and erp levels, the document goes on to state that the effective radiated power of radios fitted with an integral antenna should not exceed the permitted carrier power.

Although the standards for suppression of harmonic and other spurious radiation are, in some respects, more rigid than those applying to the present CB service they do not appear to be out of line with those applicable to other recently introduced services at UHF and should present few problems for potential manufacturers.

Prospects for Britain

Like all other CEPT recommendations, the proposal for a Personal Radio Service is not binding upon any member country and the DTI appears anxious to stress that the present specification is only a draft, liable to numerous

changes after discussion by more than 20 different national administrations before its adoption can even be considered. Even when a final specification has been completed there is no obligation upon any individual country to adopt its proposals but we are optimistic that the present document heralds considerable improvement in both the quality and stature of UHF public communications.

Licensing and regulatory matters appear, as yet, to have received little consideration beyond the suggestion that it would be necessary to alter the present system whereby a single licence covers both the 27 and 934MHz bands and we understand that there would need to be a considerable period of consultation with interested groups before regulations could be formulated, assuming it were ultimately decided to adopt the proposal.

Initial reaction, both from present 934MHz users and others wishing to see wider public use of the spectrum appears favourable. Those who have experienced the present Swiss system, seemingly something of a mixture of our present service and the draft CEPT proposals, assure me that adopting such a system would result in a trouble-free service with very considerable potential for both the individual and the small business user. The possible increase in number of available channels is being greeted enthusiastically on all sides, with everyone seemingly most interested to learn the terms of any

proposed regulations designed for the service.

Clearly discussion of any future changes at 934MHz are, as yet, at a very early stage, with numerous different interests to be consulted and considered. As with any other proposal intended to increase spectrum usage the authorities will want to give very careful consideration to its possible effects on other services, as well as to the way in which it should be used. Discussion with other countries will also need to take place, in order to ensure a consensus of opinion on technical matters before there can be any chance of a truly pan-European service but our initial research has shown considerable support for the idea among those responsible for radio regulation in several European countries, many of whom have already sent representatives to Japan to report on the effectiveness of their 903MHz facility. Even then, given that European governments seem to find enough difficulty in agreeing on almost anything these days, I feel certain that if this exciting prospect is to become reality we have at least two or three years to wait before the first Personal Radio Service licences are likely to be issued.

Citizen's Band will, of course, be keeping you up to date with any further developments in this area. In the meantime we would welcome your views on the matter, together with any practical suggestions which you feel would enhance such a service.

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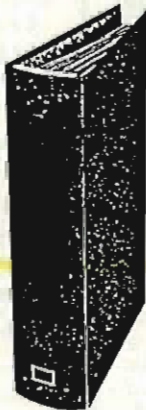
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Please allow 21 days for delivery



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14 Buxton Road, Heavily, Stockport. 061 477 6483.

Sole importers of this new carrying case. Ideal for Camping, Mountaineering, Walking, (even Space Travel!!) Send £6.95 plus 75p post and package now, and we will send you this case and aerial bracket.

Callers welcome.



PORTABLE CARRYING CASE FOR THE UNIACE 100!

TRADE - TRADE
24 Hour Delivery Service

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Lineage:

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Semi display: £7.70 (plus VAT) per single column centimetre.

Ring for information on series bookings/discounts.

All advertisements in this section must be prepaid.

Advertisements are accepted subject to the terms and conditions printed on the advertisement rate card (available on request).



01 - 437 0699

Send your requirements to:

Citizens Band Classified,

ASP LTD., 1 Golden Square, London W1

ACCESSORIES

WHOLESALE

Giant vans with unrivalled giant range of CB and accessories. At your shop's doorstep regularly. Or come and see us.



WE DELIVER NATIONWIDE

DEALERS contact us today for our

BEST SERVICE

Pama House, 433 Wilmslow Road,

Manchester M20 9AF

Tel: 061-445-8918

061-434-5701

Telex: 666762

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MODS/U DO

Promote Your Club!

Embroidered Badges and Jumpers, T-Shirts, Sweatshirts, Bomber Jackets, Ties, Pennants, Hats.



For Brochure Contact

A S PROMOTIONS

Room 31, 555 Lea Bridge Road
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Full Colour QSLs 1000 £55
● Personalised QSLs 1000 £15 ● Eyeball Cards 1000 £10 ● Embroidered Patches 100 £100 (sample £2) ● Club Stamps - Mounted 50 £50 ● (Patches 3" dia. in up to 9 colours. Club Stamps 1" dia.)

★ *DIY QSLs 100 £2.50*
Eyeball Cards 100 £1.10
DIY Bargain Pack 100 of each £3

SASE for details: CURRIE QSLs
Room 2, 89 Derwent St., Consett,
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EYEBALL CARDS with matching motif QSLs to your own design. Done in metallic hot foil on coloured gloss card. Tonbridge For details ring 0732 354026. (Tango Polecat). B.J.S. Printing.

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HIGH CLASS QSL cards. Competitive prices, free artwork. SAE for samples stating Ham or Breaker to J. S. Coates, 57 Worrall Street, Morley, Leeds. LS27 0PJ.

LIMA TANGO DX Group life membership £2. Cards, stickers and lots more. PO Box 17, Lowestoft, Suffolk NR32 5ET.

SIERRA TANGO DX Club, membership £8, rubber stamp, cards, certificates, patches, stickers, keyfob, pen, extras. P.O. Box 314, Braintree, Essex.

WANTED

WE BUY CB RADIOS & ACCESSORIES. All types wanted **URGENTLY** except antennas. Unless in quantities. **BEST PRICES PAID** by return. Postage refunded, 1 Kg =, £1.33 to 5 Kg =, £2.50, and so on. Purchase example, Mint Maxcom basic Radio £20.00. Mint Multy Facility Radio up to £200.00. We even pay £5.00 for complete scrap radios. Quantities Purchased. Post now for Cash by Return to, **RE COMM 58** Fountainbridge, Edinburgh EH3 9PY. 'If you do not wish to accept our offer, return our cheque, and your equipment will be forwarded by return.'

934 NEVADA HRA 900 mast-head pre-amp. Tel: 0394-460474.

MIDNIGHT BOARD £10. Roger-K and 8 tones. Many others. S.a.e. for list: Giso, 119 Downland Drive, Southgate, Crawley, Sussex RH11 8QT. Tel: 0293-543899.

YOU SEE!! THEY WILL NOTICE YOUR ADVERT IN CB

PHONE NOW ON
01-437-0626 for details

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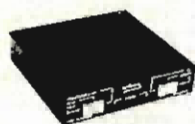
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ACCESSORIES

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BRITISH MADE SCANNERS 40 CHANNEL SCAN WITH MEMORY

Fits most rigs — Easy fitting instructions
SPECIAL PRICE £24.95 inc VAT & P&P

Please send name and address with cheque made payable to
PAMA & CO.

or telephone your order — Access or Visa.

433 WILMSLOW ROAD, WITHINGTON, MANCHESTER M20 9AF 061-445 8918



ACCESSORIES

UNUSUAL ROGER BLEEPS

Higain 5 bleep—add that very distinctive Higain sound to your legal rig — confuses everybody!

HG5B £9.95
Programmable morse character. Up to 18 different letters by simple switch selection—K-tone, R-tone, V-tone, etc you choose (different one for every day of the week!).

PMCB £12.95
Trimphone bleep. Gives a blast of ringing tone when you de-key—very piercing!
TMFB £9.95
K-Tone. Standard amateur type.

RKTB £10.95
GBPB £8.95
Pip bleep
All types available with relay PTT switching—add £1.80 and Suffix (R) to order codes. Bleeps are supplied ready built with full fitting instruction. Prices include VAT and postage.

INTERCOMMS
7 Stillwood Road, Ascot,
Berkshire SL5 0PY
Tel: Ascot (0990) 20234

RIGS & TWIGS

PARKSIDE CB CENTRE

Harvard 10-4 2 Channel, Hand held £13.50, Harvard 40 Channel, Hand held £59.95, Maxcom 7E, £69.95 (with free charger), Harvard Good Buddy £39.95, Audioline 340 £49.95, Fidelity 2001 £49.95, Interceptor £49.95, Maxcom 30E £58.95, Radiotechnic RT852 £68.95, Uniace 200 £89.95, Rotel RVC240 £89.95, Cybernet Beta 3000 £89.95, Uniace 300 Base Station £159.95, Fidelity 3000 Base Station £69.95, Harvard H-407 Base Station £93.95, ES880 £41.95, RA201 Reverb £31.00, ES990 £41.95, Bremi 25W Burners £14.95, Zetagi B300P Burner £109.95, Cybernet Delta 1 934MHz Transceiver £355.00, 934 Antennas, Cable and Fittings also stocked, H.P. available. Extensive Stocks of Mobile and Home Base Equipment. Telephone Orders available + P+P, S.A.E. for details

THURSFORD, FAKENHAM, NORFOLK. Tel: (0328) 77402



ACCESSORIES

NATO 2000 OWNERS. Getting bleed over, cross mod images? Our custom crystal filter provides dramatic improvement in selectivity. Simple to fit instructions provided. (Also fits Superstar 2000, Tristar 777). £9.95 inclusive. Golf Communications, P.O. Box 60, Rickmansworth, Herts WD3 3PZ.

EXPANSION BOARDS for SSB & UK FM Rigs. Expand legal rigs by up to 120 extra channels FCC £24.95. Add UK channels and extra bands to SSB/FM rigs. From £9.95. Crystals supplied. SAE details: 16 Bainbridge Close, Grange Park, Swindon, Wilts SN5 6BD.

PLANS

SURVEILLANCE DEVICES, Bug Detectors, Voice, Scrambler, Directional Microphone, Many others. SAE for list, Plan Centre, Old String Works, Vye St., Ledbury HR8 2AA.

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Turner mics and base mics. Quads from £69.99. Densi base mics with graphic equaliser. Avant! antennas.

**32 Canmore Street,
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Tel: (0383) 739110**

BOOKS & PUBLICATIONS

SERVICE MANUALS

Ham Concorde 2, Ham multi-mode 2, Ham Jumbo 2, Ham Viking, Ham Puma, Cobra 148 GTL DX, PC 879 and PB010, Colt 1600 DX, Tristar 777, York 863, York 861.

All above at **£6.00 + £1.00 p&p** each.

Other rigs and spare parts available.

CBT

**1 Prince of Wales Road,
Swansea. (Tel: (0792) 463821.**

COMPONENTS

SPEAK EASY

Components at competitive prices. Send S.A.E. for catalogue. Over 1,000 top quality components covering CB, car stereos, Hi-Fi etc.

SPEAK EASY

**141 Merry Street, Motherwell,
Strathclyde ML1 1JP.
Telephone 0698-53809**

CRYSTALS

CRYSTAL FILTERS 10.695 MHz, 7 kHz BAND WIDTH, 1k impedance, HC-18/U, 3-lead. Direct replacement for old ceramic filter in most rigs £3.80 inc. VAT/post. CRYSTALS. Many common frequencies in stock at £4.50. Ordered frequencies not in stock will be made in 8-10 weeks. Faster delivery available. Trade quotes for quantities. Many other types of crystals and filters. SAE lists. Gollidge Electronics, Merriott, Somerset TA16 5NS. Tel: (0460) 73718.

THE GENUINE 934 CAVITY FILTER

If you suffer from Cellular Radio interference then this Cavity Filter could help reduce the problem. NO connections needed to the inside of the Rig. Just connect between the TX and the Antenna. Easy to adjust and lock in position. Can be left in line at all times.

Price £26.45 incl.

**Paul Sergent (G40NF)
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XXX ADULT VIDEO CLUB

Our girls will give you the intimate details.
NOW RING: 0924-471811
(24 hours) or write:
A.V.C., P.O. Box 12,
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COPY DEADLINES for CB are as follows

**AUG - 11th June
ISSUE**

**SEPT - 9th July
ISSUE**

**OCT - 12th Aug
ISSUE**

**Phone Julie Dyson
on 01-437-0626**

BACKCHAT

The original backchat is back to give a talking channel readout on rigs using the LC7 137. Ideal for mobile or white stick breakers. **£14.95 inc** (uniden version available £20.95)

UNIDEN MANUAL

At last one service manual to cover the rigs using this popular board.

i.e. Audioline, Realistic, Uniace. **£3.95 inc**

**S.J. TONKS (CB Components)
18 Simmonds Place, Wednesbury,
West Midlands.
021-526 3154**

QUALITY I.C.'s, transistors etc. CB Guide Book, originally £2.95, now 75p. Orders over £5 post free, other 50p. S.A.E. for lists. Cybernet—Nevada 934MHz equipment. CB patches 10p. Tower Components, 201 Freeman Street, Grimsby, Sth Humberside. (0472-360037).

**COMPONENTS: TA 7205
£1.50, MB 3712 £1.50, LC7
137 £2.99, MC3357 £2.99,
Output Transistor £1.50,
Bleedover Filter £2.99, LA44
22 £1.99, LA1230 £1.99.
Telephone: (0603) 46294.**

**Keep Your Ear
to the Ground in
CB
Phone 01-437-0699
for advertising details**

ACCESSORIES

WHOLESALE

Giant vans with unrivalled giant range of CB and accessories. At your shop's doorstep regularly. Or come and see us.



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Telex: 666762

CB
Citizens' Band

BREAKER BASES

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PATCHWAY CARS CB CENTRE

Gloucester Road, Patchway, Bristol. Tel: (0272) 694331.
Mon-Fri 8-5.30pm, Sat 8-4pm, Sun 10-2pm.

Retail dealer stocking all types of CB and communications equipment including

CYBERNET DELTA-1, 934 and CORDLESS TELEPHONES.

DEVON

AGRIMOTORS

Merton CB & Radio Centre
Merton Garage & Post Office, Merton,
Nr Oakhampton EX20 3DZ

Open 6 days 9-6

(Sundays by appointment)

Specialists in 934MHz

Suppliers of all 27Mhz and 934Mhz equipment
Tel: 08053-200

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CB CENTRE

CB Radio Specialists.
Commercial CB Radio Services.
Fast CB repairs service. Open 7 days.

The Motorists Shop,
207 Ashton Parade, Lenthall Ave,
Grays, Essex RM17 5AA.

Contact Bruce Wood
(0375) 383 428.

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BREAKERS WORLD

2 High St.,
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Open 7 days a week
Fully equipped workshop

MON-SAT 10.00am-6pm
SUN 10am-1pm.

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VIDELECTRIC CB RADIO CENTRE

1 Windsor Parade, Barton-le-Clay
Tel: Luton (0582) 882247

CB SALES & SERVICE OUR SPECIALITY

Open 9-6 Mon-Sat, Sun 10-12 noon.
Closed 1-2 Mon-Sat. All day Wednesday.

MAIL ORDER WELCOME

(4 miles north of Luton on A6)

ESSEX

CB RADIO & MODEL HOBBIES

Parndon Mill, Parndon Mill Lane
(next to rugby club), Harlow.
TELEPHONE: 0279 418817

Open: Mon-Sat 9.30am-6pm
Sundays 10am-12am.

GLOUCESTERSHIRE

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A Division of D.E.S.
(Established 1978)

Block 38, Upper Mills Estate,
Bristol Road, Stonehouse Glos.

Tel: Stonehouse 6710

Junc. 13, M5, Stroud exit.

First right past the Ship Inn.

Open: 9-5 Mon-Sat.

Sales/Repairs/Mods

Plus: OSLs/Eyeball cards,
P.O. Box Facility.

The most complete C.B. Centre in the Country
Apologies to our customers for
inadequate directions in April Breaker Bases

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934MHz 27MHz

Largest selection of Mail
CB Equipment Order
Service

Communications Centre
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Herts WD3 1QP.

Tel: (0923) 775577/770634

Mon-Sat 9am-6pm

Wed 9am-1pm and 3pm-6pm

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A wide range of CB radios,
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always in stock.

300 yards from J5 of M4
Open Mon-Sat 10.00 am - 6.00 p.m.

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Everything for the 27MHz &
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or SWL.

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Tel: Ely (0353) 740306

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Tel: 01-504 9652

Open Tues-Sat 10am-5pm
Large range of CB equipment.

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CB WORLD



2 Market Way, Portsmouth,
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Wholesale and Retail SAE for price
list.

PORTSMOUTH 732234

3am-5.3 pm Closed Wednesday

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Ring Julie Dyson on
01-437-0626

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IMAGEFREE

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Open 7 days a week.
Stockists of 27MHz 934MHz and
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Mail Order Available.

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Sundays 9-12pm.

Possible the cheapest in East
Anglia.

Mail order or Securicor delivery.

P. SQUIRE (ANDOVER) LTD.

19 Bridge Street, ANDOVER, Hants
Tel: 0264-52623

SPECIALISTS IN CB SALES AND SERVICE

Very large selection of Rigs and
Accessories.

Repairs, Conversions - Reasonable
prices. Expert Advice - Free.

Open 8.30 to 5.30 (excl. Wed. & Sun.)

ACCESSORIES

WHOLESALE

Giant vans with unrivalled giant range of CB and accessories. At your shop's doorstep regularly. Or come and see us.



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DEALERS contact us today for our **BEST SERVICE**

Pama House, 433 Wilmslow Road,
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Tel: 061-445-8918
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Telex: 666762



BREAKER BASES

KENT

ONE STOP ELECTRONICS
126A Maidstone Road,
Rochester.

Tel: 0634 400179

The shop for the sale & servicing of all radio communication equipment. Components available. Open 7 days a week.

LINCOLNSHIRE

27/934MHz cb
LINCOLNSHIRE AGENTS FOR NEVADA 934



Come and see us at
Mitler Telecommunications
The Parade, Cherry Willingham,
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(24 hour answering service.
Free parking for up to 60 cars)

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ALPHA'S CB CENTRES

224 Balaam Street, London E13
Tel: 01-471 5509
Open: Mon-Sat 9am-7pm:
Sunday 10am-2pm

ALSO
EX ZULU/ONE/FOUR,
132 Leytonstone High Road, E15.
Tel: 01-555 8045. Open: Mon-Sat
9am-5.30pm.
T/A Balaam St. Motors

HENRY'S

934MHz and 27MHz
CB and accessories
catalogue S.A.E.

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01-724-0323
Open 6 days a week

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Full Range of
CB Accessories &
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Latest range of
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Specialists in all types of
Radio Communications.
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CB, Taxi, Ham, Cellular Phones
Open: Mon-Sat 9-5, Sun 11-2

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BIRMINGHAM'S LARGEST
CB SPECIALISTS
*appointed Birmingham's Cybernet
934 stockists
*appointed K.S. Services expansion
engineers.

24 HOUR FM RIG REPAIR SERVICE
BY MAIL ORDER, £15 INCLUSIVE
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REDNAL, BIRMINGHAM
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G4RJM with 38 years in The Radio
Trade. Ham Equipment urgently
wanted. Open: Mon-Sat 9-6
WE WELCOME ALL CB'ers

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PHONE US FIRST 27+ 934 now in
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Speedy Repair Service. All leading
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Discount CB/Anything electrical.
Savings just a phone call away.
Used CB bought and sold.
CB REPAIR SPECIALISTS

CB CB SEE ME!! WISSEY VALLEY CB CENTRE

West Dereham Road, Wretton,
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EAST ANGLIA'S LEADING CB RETAILER
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COMMUNICATIONS
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OX14 1JD

Tel: 0235 - 21400
Open: 6 days Mon-Sat
9-5.30
Instant credit facilities. Agents for
934 MHz. Wholesale, Retail and
MAIL ORDER
Send £1.00 for catalogue.



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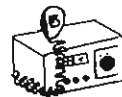
YOUR SOMERSET BASE STATION

The Triangle, Castle Cary,
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Large selection of rigs, cordless
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parking. 9am-1pm, 2pm-5.30pm.

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Surrey's biggest
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Low prices, technical know-how.
Repairs, 934 and Amateur.
Cobras and Yaesu wanted.

34 Aldershot Rd., Guildford G74434

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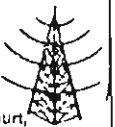
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TEL: Ipswich (0473) 75476

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CB 934 and electronic
components

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Open: 7 days. Mon-Sat 9.30-6.30
Sun 11.30-2.30. Retail & Wholesale

ACCESSORIES

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Giant vans with unrivalled giant range of CB and accessories. At your shop's doorstep regularly. Or come and see us.



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DEALERS contact us today for our **BEST SERVICE**

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Tel: 061-445-8918
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Telex: 666762



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Brighton, Sussex
Mail order service. Access/Visa

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CB-PMR-CORDLESS PHONES
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South Yorkshire. DN1 3LZ
Telephone Doncaster (0302) 66352

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Beech Wood
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Blairadam, Kelty,
Fife, Scotland.
Telephone: 0383 739110

SCOTLAND

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CB Radios from £25 to £250
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Professional 2 Way Radio
Systems from £195.

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0723-373914
or eyeball at:
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SCARBOROUGH,
YORKSHIRE**

**THINK YOU COULD'VE PUT IT
BETTER YOURSELF!
PHONE FOR ADVERTISING DETAILS
NOW ON 01-437-0699**

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CB Rigs 55 Van Road, Caerphilly, Twigs
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Easy parking. 10am-1pm. 2-15pm-6pm
6 days. Keen prices. All accessories.
Good service by Rig Doctor.

CLASSIFIED ADVERTISEMENT — ORDER FORM

Please place my advert in **CITIZENS' BAND** for issues commencing as soon as possible.

RATES OF CHARGE: 35p per word per issue (minimum 15 words)
£7.00 per single column cm. Please indicate heading you
require and post to: **CITIZENS' BAND, Classified Dept., 1
Golden Square, London W1R 3AB.**

Please use **BLOCK CAPITALS** and include post codes.

Name (Mr/Mrs/Miss/Ms)
(delete accordingly)

Address.....

Tel No..... Post Code.....

Signature..... Date.....



SHARMANS WHOLESALE

3 Bury New Road, Manchester M8 8FW

Tel: 061 834 9571 Telex 665446 SHARMA G

*Now the Sole Importers
and*

Distributors for the
MAXCOM MX7E

*Portable Mobile
Transceiver*

DISTRIBUTORS FOR:

HARVARD[®]

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CTE INTERNATIONAL[®]

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WALLEN
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Extensive ranges
of CB equipment in
stock at the best prices for you!

TRADE ONLY



Instant, Fully Portable and Mobile 4
Watt, 40 Channel Transceiver
Complete with antenna, magnetic
mount, power connector, battery pack,
carry case and belt clip.
Squelch and Volume control, TX
indicator and attenuator switch.

RING NOW FOR OUR SECURICOR DETAILS!

934 MHz PERSONAL RADIO

The Nevada Range

Join the growing number of people discovering this exciting radio band.

934 MHz offers 2 way high quality communications from 10 - 250 miles (according to location/weather conditions).



THE CYBERNET DELTA 1 934 MHz TRANSCEIVER

Has been engineered specifically for the UK market using latest "state of the art" technology.

- Sensitive RX (0.25 μ V for 12 dB SINAD).
- 16 memories available.
- Auto/Manual scan and search facility.
- External 'S' meter socket.

£355 + £5 DELIVERY
HP available (subject to status)
£35 Deposit (Apr. 36.8%)

7.



POWER SPLITTER

Enables the co-phasing of any two similar 934 MHz antennas to give an additional 3 DB gain.

£24⁵⁰

HRA 934 L IN-LINE GaAs FET PRE-AMP



A super new ultra-low noise pre-amp which fits in line on any base or mobile installation. Guaranteed to give a staggering increase in received range. Extremely low noise 0.7 DB NF. 20 DB gain.

£125

HRA 900 MASTHEAD PRE-AMPLIFIER

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£139⁹⁵

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This precise and extremely accurate meter features an illuminated scale, low loss 'T' type connectors and twin meters for both power and SWR measurement. Power 0-50 watts in two ranges.



£89⁹⁵

REMOTE ANTENNA SWITCH

High quality weatherproof masthead mounting switch. For switching 2 antennas with one cable feed.

£59⁹⁵

HAS-2

Remote DC switch for mast head antenna switch



£6⁹⁵

WR 900 SWR/POWER METER

A low cost unit measuring power to 100 watts in three ranges.

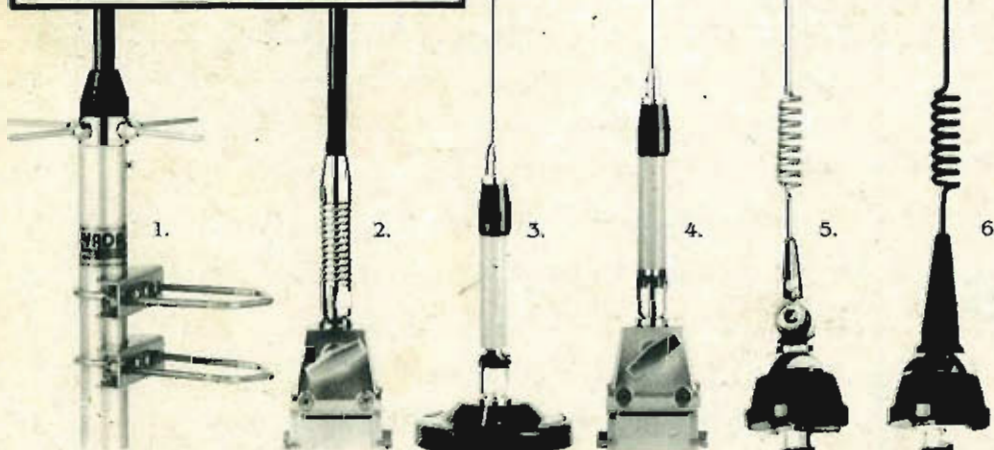


£49⁹⁰

ANTENNAS

Manufactured to the highest possible specification.

- | | |
|--|------------|
| 1. PA7-E BASE COLNEAR
Gain 7.14 dBi stacked 3/8 array. | £66 |
| 2. P714-RE
High gain gutter mount, mobile antenna. | £44 |
| 3. P7-ME
High gain mobile magnetic mount antenna. | £44 |
| 4. P7-E
High gain gutter mount mobile antenna. | £44 |
| 5. G900A
Low profile, bolt thru mobile antenna. | £25 |
| 6. G900R
Low profile bolt thru mobile antenna in black. | £25 |
| 7. Tc 12L MKII 12 ELEMENT BEAM
A new aluminium version of our successful 12 element loop quad. Gain: 18dBi. | £49 |



NEVADA 934

Professional Series

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Nevada 934 MHz Catalogue with full details and specifications of the complete range is available from Telecomms £1.00.