

AN ARGUS SPECIALIST PUBLICATION

OCTOBER 1985

CB

Citizens' Band

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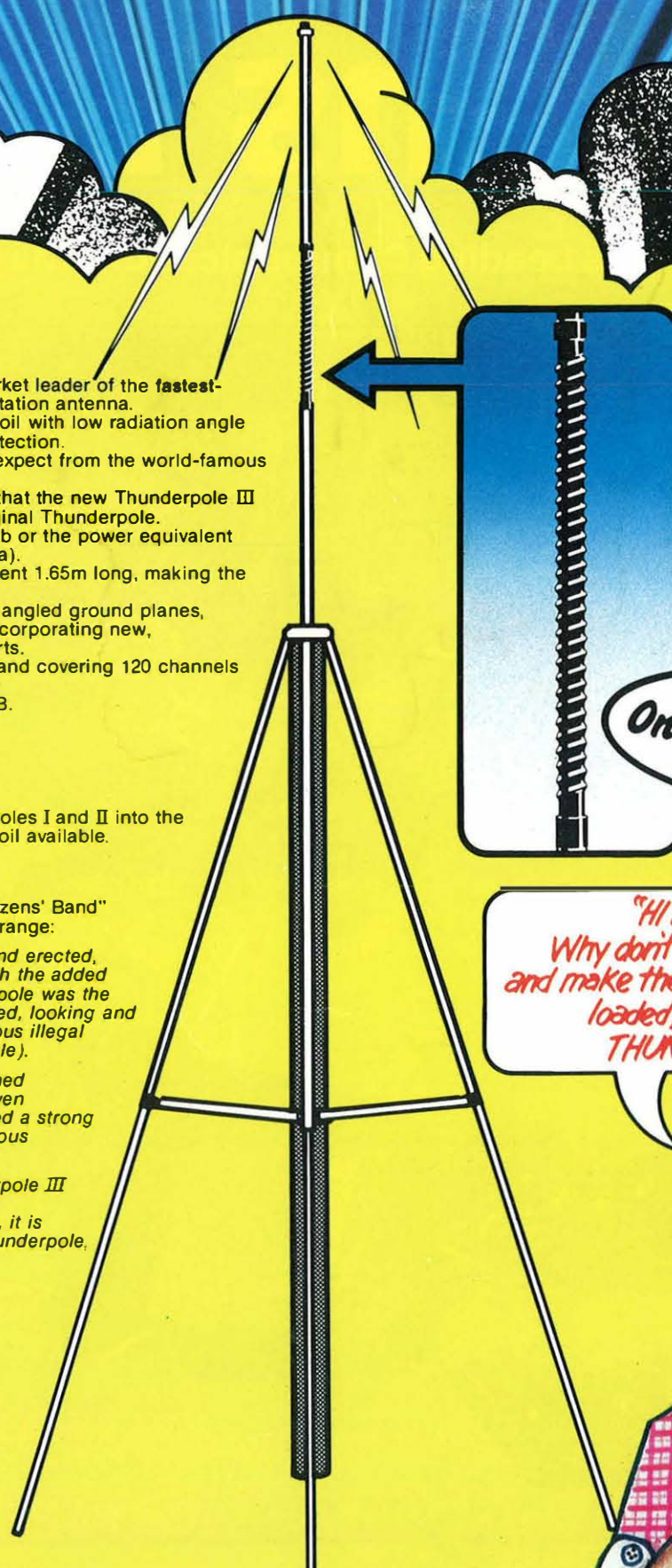
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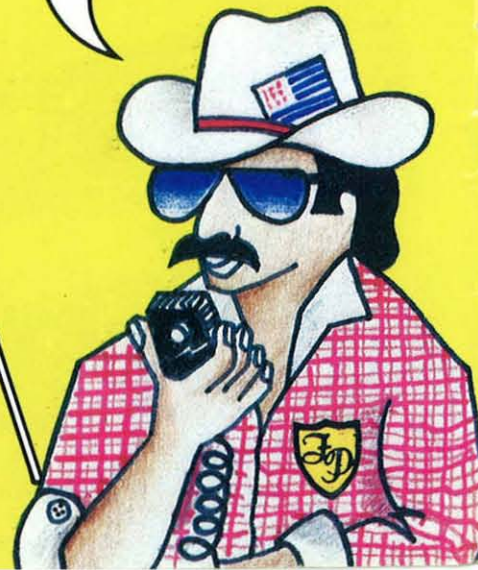
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**WITH
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COIL**

*The III-
One Step Ahead of
the Rest!*

*"HI BREAKERS!
Why don't you jump the skip
and make the trip with the centre-
loaded, helically wound
THUNDERPOLE III"*



CB Citizens' Band

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OCTOBER 1985 VOLUME 5 NUMBER 11



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Trevor Butler takes a close look at the world of plugs, connectors, cables and assemblies.

Editor Eamonn Percival
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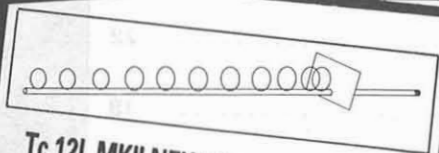
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MODEL 757 100/300 Watts £112 Remote control unit for either unit. £9.95



THE NEW 1985 CATALOGUES
Dear Breaker, It would be impossible to do justice to our entire range of products in just two pages, our 1985 27MHz catalogue does it much better. Packed full of pictures and technical information it is a must for any serious enthusiast. Why not send off £1 for your copy today and in addition receive a £2 Telecomms voucher.
Thousands of breakers have already discovered the speed and efficiency of our mail order team. Helen, Shirley and John pride themselves in giving unparalleled service - no 28 days waiting here, your order is dealt with SAME DAY - and quite rightly.
With the backing of one of the most extensively equipped service departments in the UK you can purchase from us with the assurance that problems should they arise will be dealt with speedily by professionals. Incidentally they can offer full rig checks and repairs at very reasonable rates.
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Yours sincerely
Mike Devereux
MANAGING DIRECTOR



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UPDATE

**NEWS
FROM
THE
WORLD
OF
CB
NEWS
FROM
THE
WORLD
OF
CB
NEWS
FROM
THE
WORLD**

Editorial

A rather disturbing rumour filtered through to these offices a few weeks ago. Somebody out there in CB land was apparently spreading the word that this magazine was closing down and the September issue was to be the last. Well, first of all, I would like to direct this misguided motormouth to the date on the front cover of this issue! Furthermore, we have no intention of shutting up shop — the tens of thousands of our readers are making sure of that. In fact,

over the next few issues, you can look forward to a "higher profile" for this magazine, with competitions, free gifts and lots more.

We hope that there is enough in this particular issue to keep readers satisfied until next month. Trevor Butler takes a look at the various permutations of plugs and sockets available and, talking of screwdrivers, there is also a special feature on CB troubleshooting. Read this before running off to the nearest rig doctor just because the lights haven't come on.

Continuing our coverage of the 934 frequency, F. C. Judd writes a "wouldn't it be nice" article on a possible 934 repeater system, while Mack the Hack looks at a new J34 antenna design.

Well, that's all for this month. While you lucky people may be out there enjoying an Indian summer, spare a thought for our lot in Golden Square desperately trying to get into the right frame of mind for our Christmas issue. Oh well, jingle bells, jingle bells . . .

Eamonn Percival

Pirates Beware

In his interview with Keith Townsend last month, John Butcher promises greater enforcement of the rules and a determined attempt to stamp out licence evasion and abuse. Hot on the heels of this statement comes a Parliamentary statement in which the DTI has announced that the primary function of the Radio Interference Service will change from that of helping to diagnose and cure cases of TVI to one of licence enforcement.

Calling out the RIS to trace the source of TVI will now cost £21 and they will not even come if your TV is not fitted with an external aerial, or if you have not submitted a detailed log of the interference. From the beginning of next year you

must also turn for help to a TV dealer, who must state in writing that he has been unable to cure the problem before the RIS will become even remotely interested.

In his statement, Mr. Geoffrey Pattie MP, Minister for Information Technology, said: "... more resources will be devoted to dealing with pollution of the radio spectrum by those who operate without licences and those who abuse their licence conditions. The RIS have already begun to step up enforcement action in this field and much more will follow. I strongly urge all those who may currently be operating without a licence or without proper regard to their licence conditions to put their position right as soon as possible."

CB Double Wedding

A chance meeting on a CB broadcast led to a double wedding recently.

The first double wedding for 40 years at St John's, Sutton-at-Hone, happened when Carol Woodman married Alex Goodhall, and Carol's brother Peter married Alex's sister Joanne.

There's no chance of confusion, however, as both couples have been together for four years, since Peter and Alex met on CB and introduced each other to their sisters.

Sussex CB Community

News recently reached us of a thriving CB community in the Sussex village of Horsted Keynes, with special emphasis on the care of the elderly, housebound and disabled.

The rector of the village, the Rev Mark Hill-Tout is the man behind the idea. It was triggered off by an emergency at his home while he was out visiting parishioners. His three-year-old daughter poured a bottle of shampoo over his one-year-old son's head and it got into

his eyes. Mr. Hill-Tout's wife did not know her husband's whereabouts and the baby was taken to hospital for treatment. The baby was fine, but it set Father Mark (as he is known locally) thinking.

With the aid of the local CB club, the Mad Men, £2,000 was raised to buy CB rigs to loan out to villagers. A roster of seven people was set up to take early morning roll calls and there are now over 40 villagers with rigs on the network.

Father Mark has now produced a comprehensive guide to setting up CB networks for the elderly in

town or country and has had enquiries about it from all over England. In addition, the network has been featured in local papers, BBC 1, TVS, Channel 4 and Radio Mercury.

The nearby village of Ardingley now has a similar network and another village is looking at the possibility of setting one up.

Our thanks to Black Tom for sending us this information. In addition to running a small farm, he also helps out in the network by delivering medicine, shopping and collecting batteries to be re-charged.

New Phone Launch

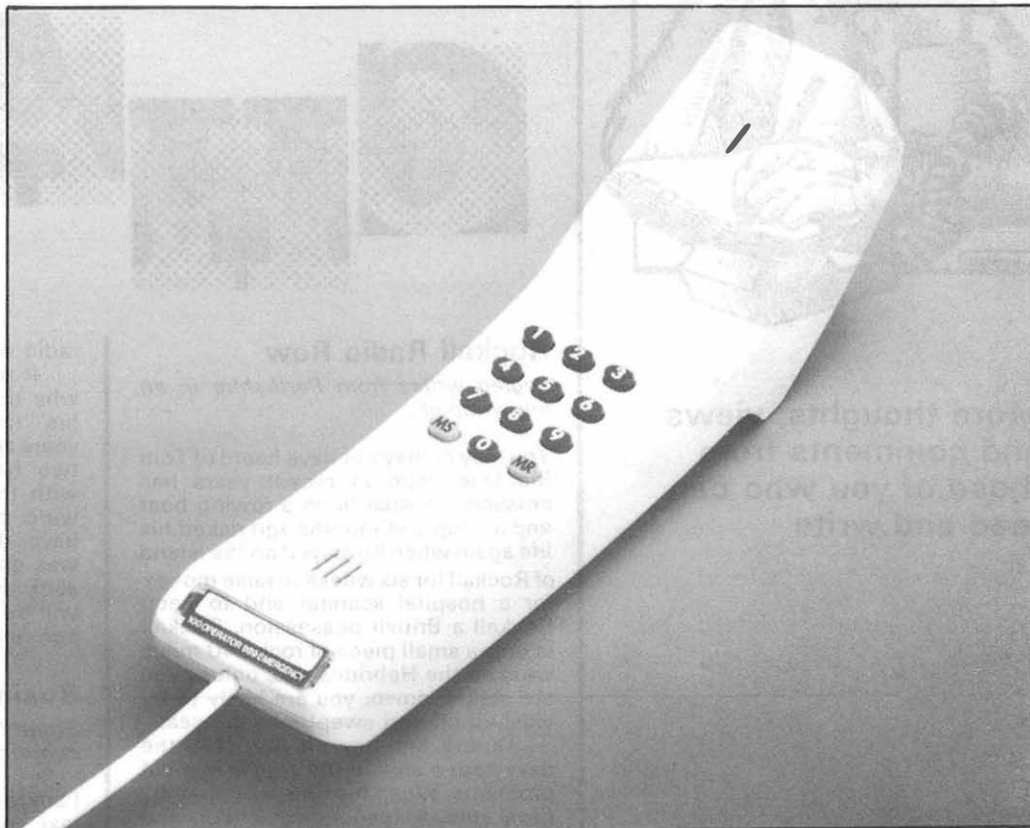
British Telecom Inphone recently announced the introduction of a 10-number memory version of the popular Slimtel one-piece telephone.

The Slimtel 10 is a modern, pushbutton phone with last number re-dial, as well as its memory which will store 10 numbers of up to 16 digits each.

"Slimtel has proved to be one of our best sellers, and is the clear market leader in the one-piece sector," said Roger Empson, general sales manager for British Telecom Inphone.

"We feel the market is ready for a one-piece with a memory, so we have built on the popular design of the Slimtel to develop the new Slimtel 10," he concluded.

Available initially in off-white, the Slimtel 10 costs £34.95 or can be rented from local area offices for £3.25 a quarter.



British Telecom Inphone's new 10-number Slimtel

Big International POMA Meet

The largest international POMA meet of the year is to be held in Hastings in the first week of October.

Over 700 European and UK visitors are expected, along with various trade stands, QSL printers and POMA's UK representative Ray will be in attendance throughout the two-day event to welcome visitors.

The meeting will be held on Saturday 5th October and Sunday 6th October and the venue is the Queens Hotel on the Hastings seafront.

Parking should be no problem as there is car parking for 2000 cars close to the venue.

On Saturday 5th, the times are 9am until 4pm and then 7.30pm until 1am; the evening session will include

a rock 'n' roll disco. The following day, the meet will last from 9am until mid-afternoon.

Between 25 and 30 QSL clubs are expected, including Hastings Castle Club, Firebirds, Kaasdager (Rotterdam), Zwaandji (Holland), Happy World and Old Dutch.

The event coincides, incidentally, with the Hastings Castle Club's first anniversary and should attract lots of publicity as TVS, the local press and local radio have all been invited. It is also hoped that one or two representatives from your favourite magazine will also be there!

For tickets or information, write to HC21, PO Box 75, Hastings, East Sussex or contact Tony Sanders (HC vice president) on 0424-52332.

Lord Nelson for the Disabled

The Blackwater Pirates formed over a year ago to help and assist with all types of charity work, to help monitor channel 9 and to raise money for the handicapped. Their big project at the moment is helping to raise money to build a 400 ton ship especially equipped for the disabled.

The Lord Nelson is being built at this moment and, along with many other organisations, individuals and clubs, the Pirates are helping to raise the £2 million needed to adapt it for the handicapped.

The ship is being built specially for the disabled to take part in weekend cruises or even 10-day holidays. As well as a homebase CB, the special equipment on board will include an audio

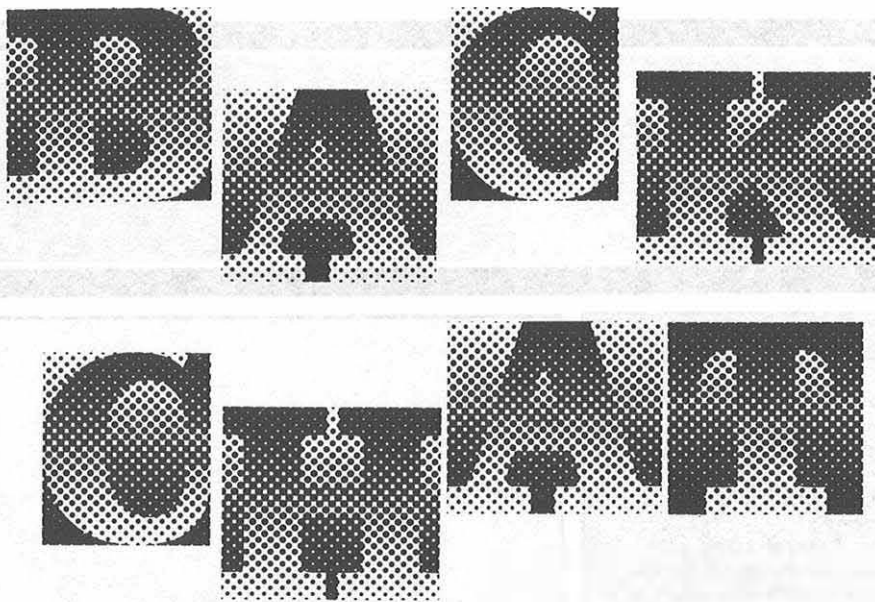
compass for the visually handicapped, signal lighting for the deaf, hoists and power lifts for wheelchairs, special washrooms and a deck tracking system for the safety of wheelchairs on deck. The handicapped will even be able to take the helm thanks to a specially adapted helmsman's chair.

Many will benefit from it and will be able to enjoy the freedom of the sea, make new friends at each port of call (via the homebase on board), become part of the working crew (within each person's capabilities) and generally be made to feel more a part of today's society.

If anyone would like to know more or would like to help, they should contact the Jubilee Sailing Trust, Atlantic Road, Eastern Docks, Southampton, or telephone 0703 31388.



More thoughts, views and comments from those of you who can read and write



Rockall Radio Row

Pegleg writes from Perthshire in an angry mood . . .

You may or may not have heard of Tom McClean, who in recent years has crossed the Atlantic in a rowing boat and a couple of months ago risked his life again when he stayed on the island of Rockall for six weeks to raise money for a hospital scanner and to keep Rockall a British possession. Rockall is only a small piece of rock 240 miles west off the Hebrides and, unless you are staked down, you are likely to be washed off and swept into the sea.

During his stay on the rock, the navy kept a ship in the area in case of problems. When his time was up, they gave him a resounding cheer and escorted him back to port. Now you could say that anyone who does something like that is insane — but not half as insane as our beloved DTI chaps. Those same chaps who are too busy to spare men to clean up our CB have the brass neck to say that they are considering prosecuting him for using ham

radio without a license.

It makes my blood boil. I wonder why those same chaps didn't "raid" his "radio shack" on Rockall! A few years ago, during an Atlantic crossing, two "hams" who were keeping contact with the boat were paid a visit and were told to cease transmitting or have their licence withdrawn. That was gutter level. How low have they sunk this time? I'm sure your readers will be interested to see that the DTI can find men when it suits them.

Business CB

Stuart Foster, from Gloucester, invites comments on the following . . .

I am really fed up with people such as taxi services using CB for business purposes. We have already got to do without channels 9, 14 and 19 for obvious reasons, but I think that when the frequencies start to be used for purposes other than friendly chats and distance networks, then it's time I switched off.

Maybe other readers of this magazine would like to put pen to paper and write in with their views on this subject, as I am sure I am not the only one to suffer from this problem.

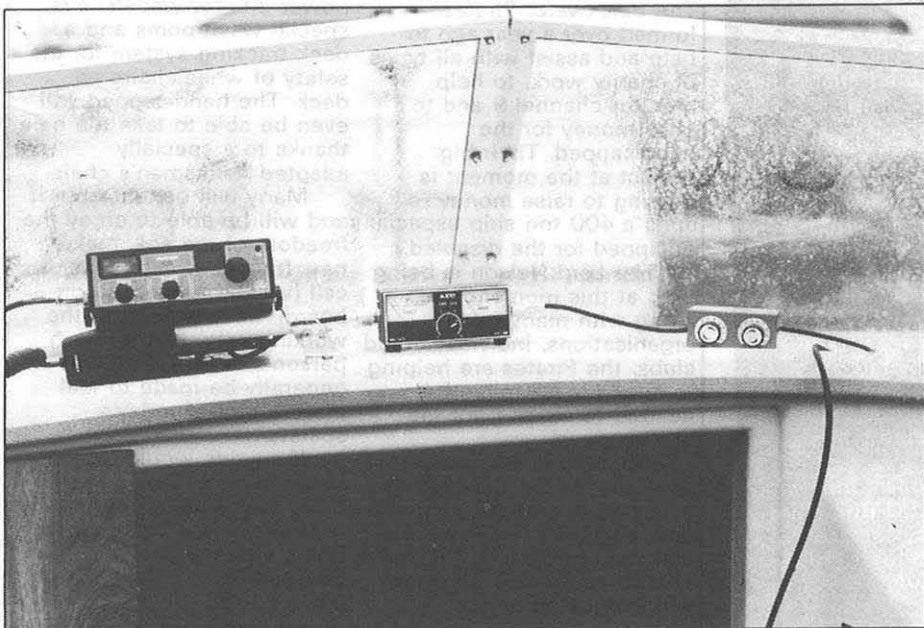
Calling Marine Breakers

Seahorse writes from PO Box 1, Portland, Dorset in search of marine breakers . . .

I am writing to you hoping that marine breakers will answer my request. I enjoy many QSOs whilst I am at sea, and wish to improve these further by compiling a list for other marine breakers.

Any marine breaker who wishes to receive a list should send me a SAE, stating their call sign or handle, normal channel number and rough locations. I would also appreciate any coastal readers writing to me who wish to copy more marine mobiles or who could give details of local events and CB meetings writing to me. In two or three

(Below) Marine breakers wanted



months' time I hope to have enough details to post the lists and, maybe, have more marine QSOs.

More 934 Please

Mick Miller, from Essex, writes in praise of 934 coverage . . .

At last, 934 seems to be making some headway. I decided earlier this year that 27MHz was almost over for me — wallies, keyers and, of course, never a clear channel in my area. So I spent some £600 on my 934 station and have settled into the luxury of adult operation, plenty of clear channels, no keyers etc. Then, when I thought your magazine had no more to offer me, you came up trumps!

I had decided that the July issue would be my last. Inside was a full report on the 934 Nevada pre-amp (of which I am a proud owner) so I chanced my luck with the August issue and wow! A 934 rig review, a special feature on 934 antennas and lots of advertisers with 934 goodies. Is this to be continued or was I just lucky?

How about some 934 antenna tests, colinears, beams, rotators etc? Some of us still don't know how to fit an N-type plug to H100 coax! Come on, the door's open — let's have lots more info on 934 personal radio.

Interference Cured

Eagle Owl, from Chichester, relates his experience with BT . . .

Merlin, the breaker suffering from GPO interference might benefit from our experiences with a similar problem although the trouble we had was not on CB but on the medium and long wave bands of our AM receivers for the normal BBC transmissions.

This manifested itself as a continuous beat on all stations. On carrying a small portable radio about outside we located this as emanating from the telegraph pole close to our back door.

We were advised to contact the Radio Investigation Service of the Department of Trade and Industry at P.O. Box 2500, Aldershot. This was duly done and, a fortnight after a postcard acknowledgment, we received a visit from a couple of their engineers. After investigation they agreed that the interference was coming from the top of our local GPO pole. They called in Telecom engineers who said that there was a faulty component up the pole and that they would replace it. However, there was no improvement when this had been done and they went further. They called in one of the few specialists in this field that they have available and he spent the best part of two days with us sorting out the problem, fitting new components and suppressors to the top of the pole and the line where it entered our house.

This has cured the problem almost completely. In other words it is no longer intrusive on all frequencies. It can be heard if you tune to a blank wavelength and look for it, but to a very



Mick from Essex wants more 934

minor degree.

If the Radio Investigation Service will do this when Telecom interferes with steam radio, then surely they will also do it for a CB user. We found them courteous, friendly and they could not have been more helpful even if it had cost us a fortune. In fact, the total cost to us was several cups of tea when they looked thirsty.

Fewer Illegal Breakers?

From London, Keith Wesley with some thoughts on illegal breakers . . .

Mack's article in the June issue regarding the DTI also left me with some unanswered questions! For a start, what does DTI stand for — and also FCC? Perhaps other breakers new to Citizens' Band (the magazine and the airwaves) may also be less familiar with these initials.

Anyway, since the licence is issued by the Home Office, I had assumed it was their job to sort out the illegal breakers. Not so, it seems! So who are the DTI and how do you contact them?

Living in London, I'm only too familiar with the abusers of the airwaves. I think the majority of us probably ignore the music players and mike keyers since it's a waste of time arguing with them. However, in the short time I've been on the air I have noticed that the illegal breakers do change. Is it possible that some of them have been closed down by the DTI? I'm sure some have damaged their rigs by constant keying and others have just got bored, but some must have got their just desserts!

We all hear stories of 'so-and-so' who was busted for doing this or that, but we never — or hardly ever — read about it in the newspapers. Okay, so illegal CB operators are hardly headline news, but would it not be worthwhile printing the outcome of court cases in your magazine? Perhaps other readers might have opinions on the subject. I'm sure it is possible to get stories from the court from time to time. Perhaps it might give the majority of responsible breakers some hope in the system to which we all contribute £10 per year.

(DTI — Department of Trade and Industry, Waterloo Bridge House, Waterloo Road, London SE1; FCC — Federal Communications Commission, the "American version" — Editor)

City Wallies

Snowdrop, who hails from Scotland, disagrees with Gismo . . .

No, Gismo is wrong (CB July 1985). Scotland is *not* full of wallies, but I agree that our cities are polluted with them. Little wonder good buddies escape to the cleaner, outlying districts at weekends for a few hours of decent modulations with good breakers who warmly welcome them onto the channels. Sadly, the aged, housebound and disabled rarely, if ever, enjoy such excursions.

The answer to the problem of wallies is simple. Firstly, you and I as individuals can alert the RIS as to the identity of the wrongdoers. Secondly, the RIS can institute court proceedings, and *most importantly*, the national and local press can help by giving headline coverage to the offence and to the penalty imposed. Then, the greatest penalty of all — a full-face photo of the offender.

Several instances of this short, sharp and shocking publicity will soon clean CB so come on good buddies. Help the RIS to help us and you journalists, please give full publicity to the filthy-mouthed people who are deliberately spoiling the pleasure of so many. The goodies have everything to gain, the baddies have everything to lose.

Calm Down, Monitors

Jumbo, of Kings Lynn, raises few points on emergency procedure . . .

I was listening to a channel 9 emergency this morning and there was a report of a hit and run incident involving a car and a motorbike. While the local breakers were trying to establish the location and validity of the emergency by talking to the 'victim' on channel 9, a number of so-called monitors began complaining that there was too much talking on channel and not enough phoning of emergency services to relay the message. Due to the circumstances and the 'victim' not being very co-operative, it was a 'wind-up'. Also, a visual check was made, to no avail.

The point is surely that it doesn't matter if people talk on channel 9 if they are trying to save someone's life. As it happened, they didn't call the emergency services — which would have been a waste of time and itself could have caused loss of life if the ambulance could not have answered a genuine call due to a wasted journey on a wind-up.

Please, monitors, don't be so quick to jump in and criticise when someone else is only trying to do their best!

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

Mack Chat



This month, Mack the Hack finds that, for once, it's cheaper to buy than to build

This month I intended telling you of a super design for a 934 beam antenna that my old mate Martin (The Barbarian on 27 or HB619 on 934) had built. When we first tried this "double delta", as he calls it, I was astounded by the gain of this antenna. So dimensions were taken and materials obtained and I set about building one.

The finished article was a work of art, built of copper wire araldited onto a wooden boom and varnished. It looked too good to sit on the top of a pole almost out of sight but, alas, after many hours of trying to match and get the SWR down (which we finally did achieve and the forward gain seemed unbelievable), when I tried this antenna out it didn't work. Well, it sort of worked but not as good as Martin's. After lots of thought, head scratching, studying whilst consuming gallons of tea, measurements were again taken and the only difference we found was

the diameter of copper wire used. Mine was .5mm thinner than the wire Martin had used; could this be the answer?

I might never know because this is where my other mate Mike Machin of Selectronics of Canvey enters the scene. He told me that he was producing a range of 934 beams at a very low price. An early visit was made to his shop and a selection of these antennas was taken away for evaluation. In the past, as I am sure many of the users of the 934 frequency are aware, the antennas available for this frequency were very expensive. The early types we called "modified TV antennas" for obvious reasons. Some worked, others did not. Yet even my simple mind could not fathom out why these antennas should cost so much. A normal outdoor type of TV antenna costs, say, £10 or £15 depending on how many elements and where you bought it. Now the 934 antennas were made out of the same materials and were of similar construction yet the price doubled if not trebled. I know how much the materials cost to produce these antennas and, as most retailers sold them as kits, the construction was left to the purchasers. Nowadays some of these beams have been better designed and constructed but the price is still very high.

The Selectronic range of beams are of the TV type of construction so one might be wary of them as from past experience. One station confirms this theory as he saw these antennas yet purchased another make at four times the price. But do Mike's beams work, you might ask? The ones I took home and tried do. I should point out at this stage that I was not 'given' a range but I 'took' at random from the selection on display so there was no question that these test antennas were in any way 'special'. Selectronics' range of beams comprises a 4-element 5dB (£7.50), an 8-element 7.5dB (9.95), a 12-element 12dB (£12.50) and a 16-element 14.5dB at only £14.95. Cheaper than TV antennas, aren't they? I wonder if 934 antennas work on TV.

At these prices you can now see why I gave up building my own antennas. I know there is a personal satisfaction in building an antenna that works but most people involve themselves in DIY antennas to reduce the costs. At the prices mentioned, it can't be worth the hassle and frustrations that is sometimes experienced in DIY projects. At the mention of these multi-element beams, some people out there in CB land might be having fits, crying, "Illegal, naughty, nasty, brain-damaging beams" Catch 22. The 934 licence conditions says a maximum of 8 watts out of the back of the rig and a maximum of 25 watts out of the end of the antenna, and one can achieve this with the aid of a multi-element antenna.

Now take my set up as a typical example. A Delta One rig with 5 watts out of the back. These 5 watts have to "travel" 22½ metres along my coax losing 4 watts on the way. It then feeds (confession time) a pair of co-phased 12-element beams that will show me about 20 watts out of the business end, 5 watts short of what I am legally allowed to produce, yet the antennas are, at the present, illegal. If I were to use the legal 4-element antennas, I would end up with about 2½ watts. The moral of this tale is there ain't none if you want to get the best from your equipment.

The greatest enemy of some 934 users is the cellular radio telephones. The latest practice by which some 934 stations are trying to combat this problem is to mount their beams in the horizontal plane. It seems that, by doing this, the interference is reduced and at times completely obliterated. Another practice that is also found to work is that if one keys up momentarily over the interfering cellular phones they clear the channel. What happens, it seems, is that the computer that controls the channels sees the interference and moves the callers to another clear channel. All this is done in a fraction of time without the phone users experiencing any change.

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A CB radio out on the briny, for inshore boats, is as necessary as a life jacket and a box of flares. Not only could it come in very useful should your craft want to play submarines but 'out there' is one of the few areas where a little light conversation is both fun and informative. There are a great number of CB radios floating around our shores at the moment.

From Citizens' Band, July '84.

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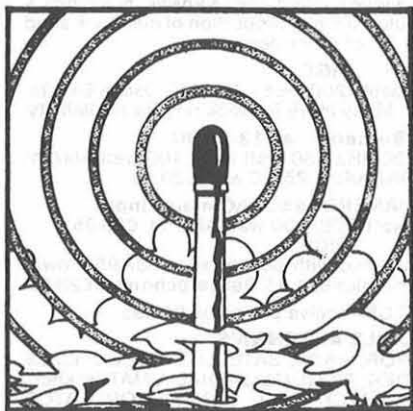


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Antenna Review



Mack the Hack looks at a new quarter-wave cellular and 934 antenna

The simplest of all antennas must surely be the half-wave dipole, just two elements each of a quarter-wave length of the frequency that one wishes to operate on.

For mobile use, a standard quarter-wave would be the next simplest to construct and use. There are no loading coils to make or match although for some frequencies a quarter-wave might be too long (even illegal) to use mobile. On 934MHz a quarter wave element measures just 3" (76mm).

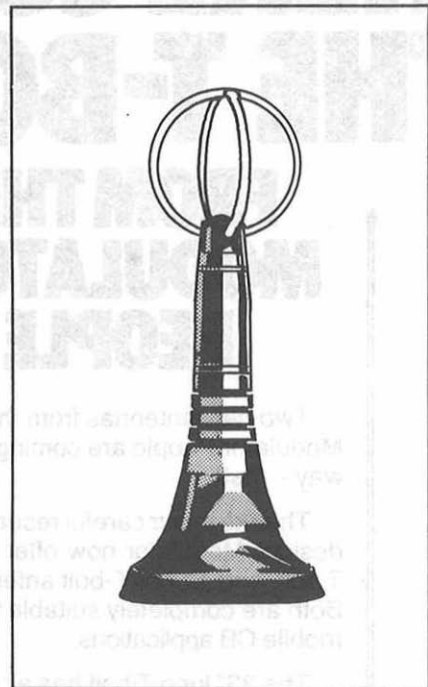
Many might ask why should one want to use a quarter-wave antenna mobile on 934MHz when even a four-element colinear only measures a foot or so in length. I suppose the answer to that could be why use an antenna longer than one needs and the cellular radio antennas do not need to be very efficient as there are switching repeaters for this mode at regular intervals dotted around the country. As some of you may be aware, it is possible to use these cellular radio antennas on the 934 CB frequency and, from Communications of Strood, we received the Allgon 3129 quarter wave cellular and 934 radio antenna.

—NEW— 934/CELLULAR —TWIG—

'What's that then?' one could ask when you first view the Allgon 3129; only close examination reveals what it is. Just 76mm long from its base, the top 27mm is formed into two loops set in one another at right angles, a strange looking device indeed. The Allgon 3129 is quoted in the specifications and instruction manual as a specially designed unity gain, quarter-wave, low profile antenna with a double ring that makes the antenna exceptionally broadband. The 3129 has a bandwidth of 200MHz from 800-1000MHz, and is constructed from stainless steel and brass with a matt black finish. This miniature antenna comes complete with mount (1119) and five metres of good quality coax.

The fitting instructions supplied with our test sample is very comprehensive. Although, primarily, this antenna is for fitting through a 'hole in the car roof', it can be satisfactorily fitted to a gutter mount, but attaching to some magnetic mounts may be found difficult as the 'L' shaped base measures 45mm with the coax permanently attached. I encountered this problem when I attempted to fit the antenna to an old Reftec magmount, that I had laying around but I satisfactorily fitted the antenna to a gutter mount instead. If one wishes to install this antenna to the roof of a vehicle, there are two fitting options: either a 14mm hole can be cut for fitting the mount from the underside of the roof, or a 18mm hole if the antenna is to be fitted from the top i.e. coax fed through first. All fitting methods are fully illustrated in the supplied instructions.

With the Allgon 3129 attached to one side of my vehicle and the Les Wallen colinear that I normally use attached to the other side, I checked the SWR and had a reading of 1.1 to 1 all through the 934 band. Both antennas were fed into a dash-mounted change-over switch that, in turn, fed into my Cybernet Delta One. On a journey heading east, my first contact was with another mobile station on the M25 which was travelling in the opposite direction. The Allgon 3129 worked well without any sign of the mobile flutter that you sometimes get with the longer colinear antennas. I was also impressed with the range because when the other station became noisy as the distance increased, I switched to the colinear and, as



The Allgon 3129

expected, the signal strength of the other station increased.

During my journey, I also made contact with other base stations and the performance of the Allgon quarter-wave was as expected. On some stationary tests, I found the radiation patterns were uniform in all directions. You should bear in mind that a quarter-wave antenna has unity gain against a normal legal type antenna that has a gain of 3dB. In conclusion, I think the Allgon 3129 quarter-wave mobile antenna is very smart with an unusual appearance, extremely well made and simple to fit. Performance is as good as any other quarter-wave 934 antenna that I have used. The price of this antenna (£23.68) is rather expensive considering that for a few pounds more one could purchase a colinear. However, the advantage of the Allgon 3129 on the 1119 base is that the 3129 is easily detached with the help of a spanner and the other antennas in the Allgon range (the 3127 standard quarter-wave or the 3128 colinear) are interchangeable. The Allgon range of 934 antennas are available from Communications, 10 North Street, Strood, Kent.

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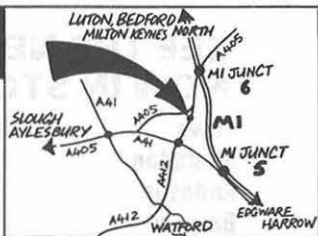


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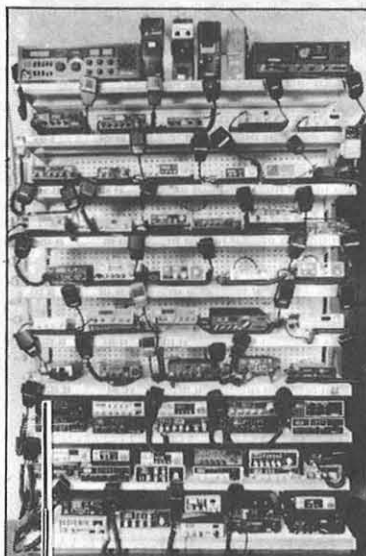
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This photo taken a few weeks ago shows a typical stock selection. We actually had over 90 different units in stock both new and secondhand.



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Superior quality base load with a big reputation. Has whip fold over facility for garaging, car parks etc. Manufactured in Japan to very high standards, this is one of the top antennas.

With body mount M-type lead and connectors with complete gutter mount assembly.

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TAGRA K120

The unfortunate dollar exchange rate means that K40 imported now would be over £40 to buy. This European made lookalike comes from an excellent manufacturer (Tagra make most Avanti copies today based on the original specifications). The K120 gives comparable performance and is easy to tune with a good band width.

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CENTRE LOAD MAGMOUNT

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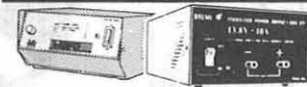
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All mikes are supplied wired and with battery. Please quote CB make and model.

CB RADIOS



We can offer a 160 channel conversion on any new radio we supply. This gives low-mid-high band FCC plus the legal 40. If you want your own radio converted just post the unit to us and send £48.00 to cover conversion and return postage.

CB RADIOS

AUDIOLINE 340



£52.00

This compact mobile Uniden Boarded Unit quite rightly enjoys a first class reputation. Features Volume, Squelch, Hi-Low Tone Control and variable power switch. Generally accepted as being one of the finest, most reliable units on the market with superior bleedover rejection the 340 has to be top of the list when choosing a mobile. **Audioline 340 40Ch £52.00 160Ch £97.00**

ONE HANDER AUDIOLINE 342

£64.00

The greatest security CB ever - you just unplug it and take it with you! Slim calculator-style hand unit has all the control features - LED Display, Up/Down Scan, Volume, Squelch, Hi-Low Power, Channel Lock-on Switch, Tone Control and Internal Speaker plus of course the usual excellent Uniden Circuitry which gives crisp, clear copies. The compact power box which feeds the hand unit stays away out of sight under your seat or in the glove or dash. Beat the car thieves and still enjoy excellent CB performance.

Audioline 342 40Ch £64.00 160Ch £124.00

UNIACE 200

£82.00

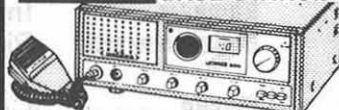


Specifications as for the Uniace 100 but this unit has in addition variable mike and RF gain, bass/treble tone control and a dimmer facility. The Uniace brand is unsurpassed for quality and performance.

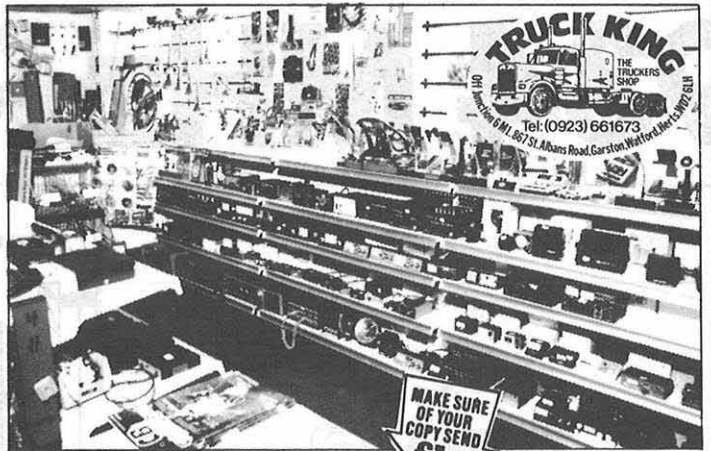
Uniace 200 40Ch £82.00 160Ch £127.00

UNIACE 300 BASE STATION

£169.00



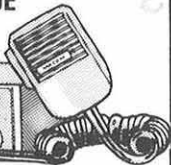
Without a doubt the finest Base Station made for the UK market it features Volume, Squelch, Tone Control, PA facility 240 or 13.8 volt power feed, variable power and mike gain, but the crunch is in its excellent circuitry and filtering which kills bleedover and cross-mod without being deaf. **40Ch £169.00 160Ch £214.00**



CB RADIOS

MAXCOM 30E

£64.00



This top of the range radio features crystal filtering, RF & mike gain, PA facility, DX switch, tone switch and high SWR indicator. (This radio is featured in 'Citizens Band' reference section). Excellent value and performance. **Maxcom 30E**

40Ch £64.00 160Ch £109.00

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40Ch £85.00 160Ch £130.00

DNT B40FM 40 CHANNEL BASE STATION



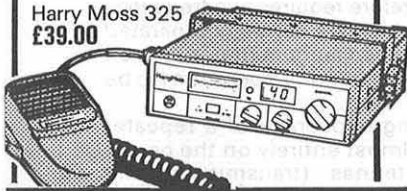
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40Ch £65.00 160Ch £110.00

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| Midland 4001 | £62.00 |
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| Commтел 934 | £395.00 |

SECONDHAND UNITS

Many people phone us each day asking about secondhand radios. We don't publish lists as the turnaroud on these units is rapid. As a guideline we usually have the following or near equivalents. Fidelity 1000/Transcom 2000

- | | |
|----------------|--|
| Around £18-£20 | Midland 2001/Colt 295/Route 66 |
| Around £25 | Uniace/Audioline/York/Rotel |
| Around £35-£55 | These are general price guides, we also get a lot of one offs. In the past month we've had through several 148's, Jumbo 2, Wagner Base, Sommerkamp/Belcom, Tristar, Harvard/Realistic hand helds and many others. Please phone for requirements. We always price and describe fairly and offer a one month warranty with most units. Remember we also buy in or part exchange most radios. |

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PLEASE USE A SEPERATE SHEET OF PAPER IF YOU NEED MORE ROOM OR DO NOT WISH TO CUT YOUR MAGAZINE.

934 MHz REPEATER

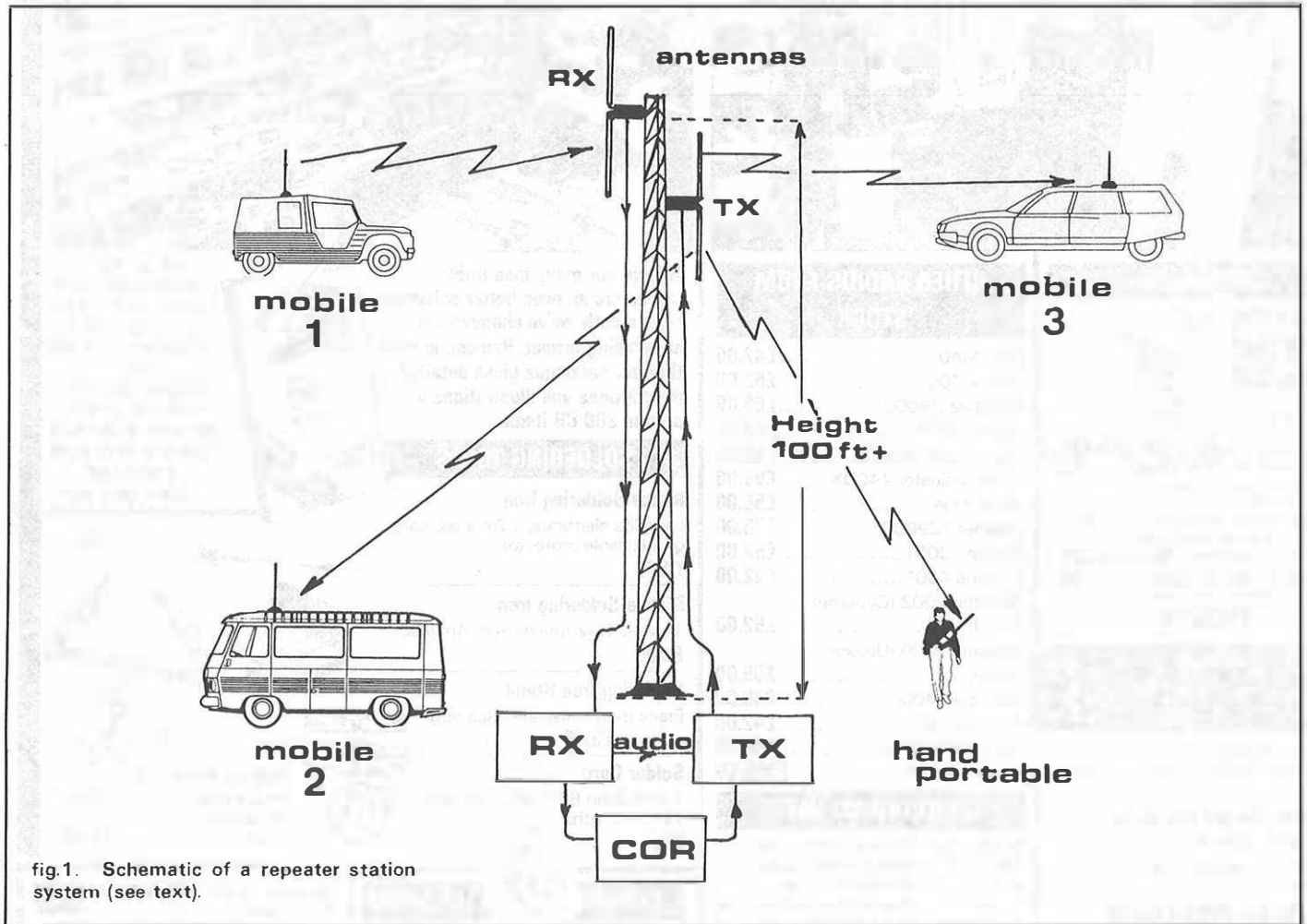


fig.1. Schematic of a repeater station system (see text).

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

Whilst the 934MHz CB band can provide station to station ground ranges equal to and in many instances greater than, those obtainable on 27MHz the use of a repeater station can easily double, or even treble average ground range, especially for mobile operation. Radio amateurs in almost every country have long since proved the value of VHF and UHF repeater stations and in the UK alone there are about 160 VHF and/or UHF repeaters at present in continuous operation, day and night. With the exception of the mountain regions of Scotland and Wales, it is quite possible to drive from virtually any part of the country to another on main trunk roads or by-

In the first of this two-part article, F C Judd outlines the functions and technology of repeater stations

roads and rarely be out of range of a repeater station. One VHF repeater properly sited can provide coverage for a whole county allowing mobile or fixed stations, otherwise out of range of each other, to make contact. There is often a bonus too when tropospheric conditions are good and it is not unusual during these periods for stations, fixed or mobile, to make contact through a repeater a hundred miles or more distant. Aside from radio

amateurs, many other services also use repeater stations to provide greater VHF or UHF communication ranges and the idea is of course extended to the use of satellite repeaters which permit VHF/UHF contact between different parts of the world.

How a Repeater Station Functions

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

The range coverage of a repeater depends almost entirely on the height of its antennas (transmitting and receiving) above ground. At VHF and

STATION SYSTEM

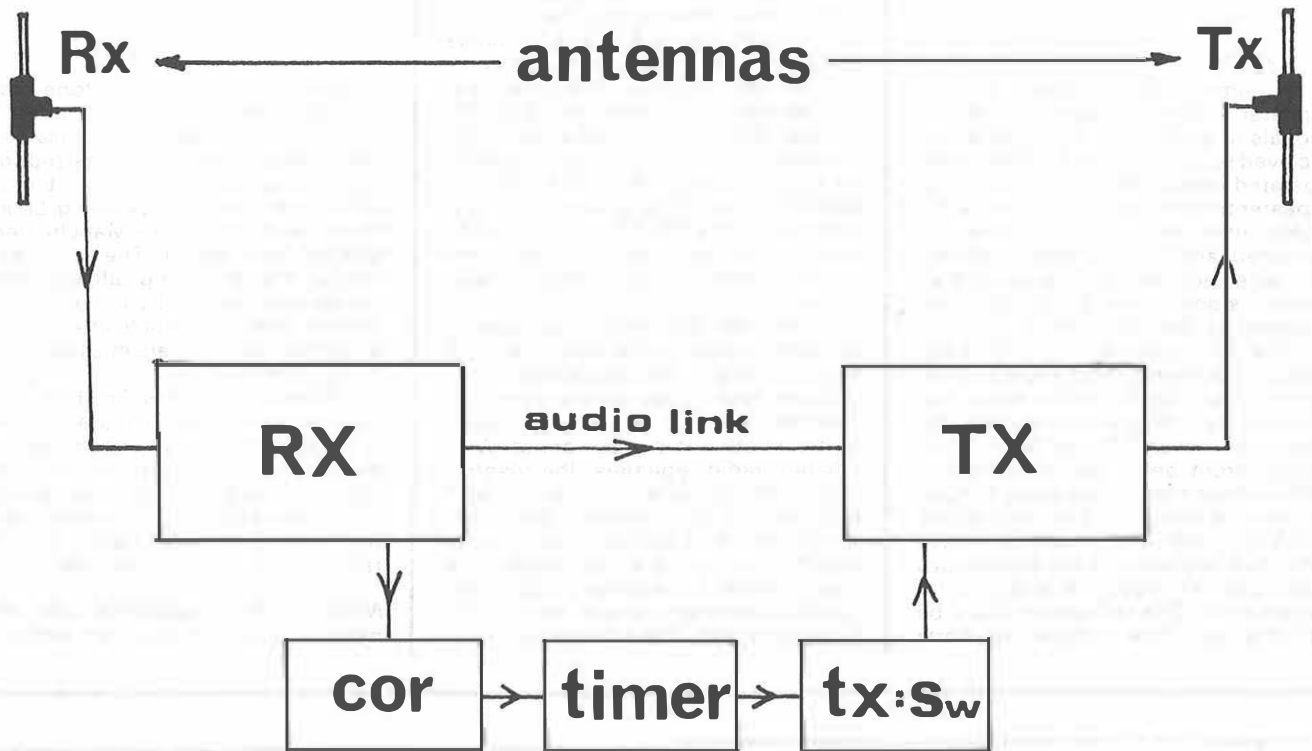


fig.2. Basic principle of a repeater station for duplex operation.

UHF (934MHz) *radio distance* is somewhat greater than visual line-of-sight distance but can be extended very considerably by using very high antennas. In terms of *visual distance*, the higher one is above ground the further one can see. The same applies to VHF and UHF radio and a transmitting antenna at a height of about 150 feet above ground has a *radio distance* in the region of 30 or even 40 miles depending on frequency, transmitted power and the nature of the surrounding area. Using omni-directional antennas, reception and transmission can be achieved over a more or less circular area with a radius equal to the radio distance obtainable. For example, a mobile station at, say 20 to 25 miles from the repeater can make contact with another station at more or less the same distance in the completely opposite direction from the repeater thus establishing a total communication range of some 40 to 50 miles. This would not normally be possible by direct path transmission with commonly used omni-directional antennas at low heights as would be on a mobile station.

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

The General Technology of a Repeater Station

A repeater station is normally designed to be quite automatic in operation and

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

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

"The range coverage of a repeater depends almost entirely on the height of its antennas. . ."

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

The full circuitry for a repeater station is of course much more sophisticated than fig 2 might imply. For instance, special precautions must be taken to prevent the re-transmitted signals from being picked up by its own receiver which could easily happen because of the close proximity of the antennas and the relatively small difference between the two frequencies used, one for reception and one for transmitting. The difference could be as little as a few hundred kilohertz

depending on the frequency band. For example, on the 2 metre amateur radio band a repeater *output* (transmitting) may be on 145.600MHz whilst the *input* (receiving) will be 600MHz down from this or at 145.000MHz. On the 432MHz amateur band the transmit and receive frequencies of a repeater are separated by 1.6MHz. At 934MHz (CB band) the frequency separation for a repeater would need to be at least 2MHz which means that the existing band of 934.025 to 934.975 would be of no use. The band required to accommodate 20 repeater channels (two frequencies per repeater) and 20 simplex channels, making a total of 60 channels with the present 50kHz spacing, would be 934.025 to 936.975MHz. This provides a total bandwidth of 2.950MHz and a 2MHz spacing between a repeater input and output channel i.e. receiver and transmitter.

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

"One other requirement of a repeater station is a means of identification. . ."

morse-code as an audio tone signal and generated by logic circuitry. For CB radio use, it should be possible to use an electronically synthesized voice to give a prefix such as GCB — together with two letters for location e.g. London North — as GCBLN — Manchester as GBCMC and so on. The modulation level of the identifying call, whether in morse-code or synthetic voice, is set at a low level so as not to interfere with a normal voice transmission being made at the time.

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

Next month: a suggested plan for a national 934MHz repeater system.

MAIL ORDER ADVERTISING

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Cybernet Delta 1 — Commtel NPR

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More names and addresses from David Shepherdson



COMMUNICATION THE

QSL WAY

I'd like to start off this time with a little update from last month's charity information slot. I now have the results of the Ghost Rider Leukaemia Appeal and Auction. On behalf of the Appeal, the Committee would like to thank all breakers and QSLers who sent QSL cards, albums and donations. The actual auction of cards raised £153.50, and the amount handed over to the Tyne-side Leukaemia Research Fund, since the start of the year, is over £2,150 which is to help find cures and to help victims of this disease. One bit of bad news, however, is that the Ghost Rider, after whom the Appeal was named, has now contracted another form of leukaemia. Well done to all those who have helped to raise such an amount and good luck to the Ghost Rider. Thanks to Norma (Dark Lady) for letting me have the above information.

Some names and addresses now, then a few club details. First up is David (Shandy Man) who sends in a mixture of club and personal cards from Bolton. A selection of D'Zine cards have been turning up of late on my doorstep. (I'm sure my postman thinks I'm trying to give him a hernia.) These D'Zine cards include some really excellent designs and Don's artist, whoever he (or she) is, has a nice way with a pen! I'm looking at Tom (Capricorn) of Stockport's as I write this. Also, Len (Granite King) writes from North Wales asking for both a mention and for me to pass on his, and many other breakers', thanks to Don of D'Zine for the great QSL cards he has designed and supplied to them. Someone new to QSLing is Michael (Firefly) of Essex who wants a mention to get him off to a good start and he promises to QSL 100% and, yet again, it's a D'Zine card! From Filey hails Sierra Mike who says he is a 100% QSLer and would like a mention so he can expand his collection. He also enjoys Mass Eyeballs and SWL Radio. From the States comes a very nice card from the Steinbocks (Bill and Giggles) who, in addition to QSL cards, collect State-Map and

Capitol View Cards, and also X-rated cards and photos. From Jim (Sweet Pea) comes a selection of cards, both personal and club; he would love to hear from you and swops 1-4-1.

Okay, a round up of some club news now. Rather than mention the clubs that are in these pages so often (if only because they bother to let me know their news regularly), this month I'll run through some of the clubs which appear to keep a lower profile than those. First is the Cobra 148 International of Leeds. Arthur, who runs the club had some bad news recently which tied him up for a while and so he was unable to reply to the post for a time, but he is now back in the swing. To join this club costs only five or more cards and a SASE. Club extras available include gloss club cards at £4.50 per 100, club stamp (with ink pad) at £4 (including postage) and two-colour decals at 15p per dozen plus a postage stamp for their return to you. Cheques/PO's are accepted and should be made out to Cobra International.

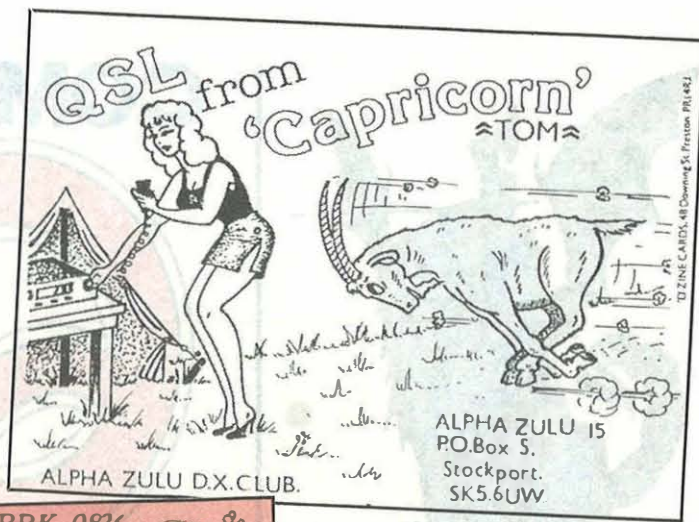
Just a small point here; several people have written in and asked me to mention to whom cheques and PO's should be made out when sending to clubs. Well, this depends on whether or not the club even accepts cheques or postal orders at all. Where I have information I'll pass it on. If your club has any preference about this matter, please do let me know so I can update anyone who is interested.

Back to the clubs, next up is the Sugar Whiskey International QSL DX Group of Goole. For £3 (cash) and one to ten of your personal QSL cards plus a view card of your area, you'll receive your SW No, ID card, Union Jack stickers, club AD sticker, frequency charts, 'Q', Morse and RST codes, phonetic alphabet, 15 club cards, exchange invites and cards, and a membership certificate. Extras available include glossy club cards at £3.00 per 50, 15 Union Jack stickers for £1, club stamp at £4 and club AD labels at £1 per 200. The club also operates the

QSL Burea which has now been going for over three years. The Bureau is now extending its service to overseas members and for information on either the club or the Bureau, you should write to Stuart or Linda enclosing a SASE or IRC (International Reply Coupon, available from your local Post Office) for their reply. The club also has a new membership certificate available and if any SW members who have not got one would like to have one, then drop the club a line, again with SASE and ask for yours.

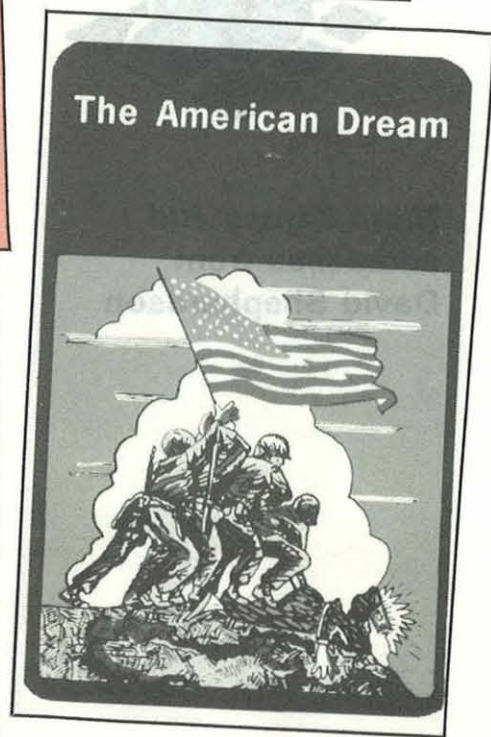
News up from the Freightliner DX/QSL Swap Club that Barry, who took over from Ian, who handed it over a while ago to set up and run the DX section, has now got the club running smoothly and to join this club costs £5 plus five of your QSL cards. In return you receive your FL No, club certificate, 25 club cards, QSL certificates, club stamp, exchange cards and invites, DXing info, 'Q' codes etc, and some local "vein" cards, sorry Barry, View cards! Whilst in the area, there is of course the new Yankee Truckers Club which costs £3 and five personal signed and dated QSL cards to join. For this you get your unit No, colour wall certificate (2), ID card, unmounted club stamp, five club cards, exchange cards and invites etc. Extras available include club cards at 20 for £1 and a mounted club stamp at £3. Cash or postal orders (not cheques) should be made out to Ian (not the club).

Whilst mentioning trucks, or trucking, let's not forget that the Dutch Trucking QSL Club of Rotterdam (Holland) is getting a better reputation now, thanks to the hard work of its new President Fred (Ijsco) and, going by several letters I have had over the last few weeks, it's going to be a good one again. For £8 and 20 of your cards, you receive your unit No, colour ID card, colour certificate, club stamp, exchange cards and invites. In the past, this club has had its bad times, but hopefully this is now over and the club, with Fred at the wheel, will go on to better and better things. Good luck Fred. Anyway,



several people have been in touch to assure me that Fred is 100% genuine and that he is doing his best to help the people who were stitched up by the *original* President. My special thanks go to Tony (ex-Cutty Sark), Ray (POMA Rep, UK) and Jimmy Brown (President of the Kaasdrager Club, Holland). Thanks again to all who helped to sort this matter out.

For info on the Kaasdrager (Cheese-Bearers) QSL Club, please drop Jimmy a line, *but* please do remember that when writing to any QSL club, always help them to reply by sending return postage. For the overseas clubs, this should consist of one or two IRC's (see above). I'm afraid that I cannot say how much it is to join, as I do not have an up-to-date application form for the Kaasdragers.



The news in from the Papa Bravo of South Wales (no connection to the PB, late of Preston) is that they recently had their 500th member join and that QSLer received their membership, a plaque and 50 free club QSL cards. To join this club, which, it must be said, is getting a very enviable reputation, costs £1, five or more of your QSLs and a large SASE, for which you receive a PB No, (XYL free), stickers, welcome latter, 10 club cards, RST, 'Q', 10, 11 and 13 codes, phonetic alphabet, exchange cards and invites and info on Wales. Also, the use of the Club PO Box is now available to member, *but* please remember that in such cases, it is up to you to ensure that the club has a supply of suitable SASE's to forward any post to you!

Up in Scotland there is a radio group known as the Cumbernauld International RG. I have been asked to point out that this club is more a radio group than a QSL club, but it does number QSLers among its members. Membership costs £6 plus a selection of your cards for which you get a package including unit No, mounted

QSLer Addresses:

- David (Shandy Man)
- Tom (Capricorn)
- Len (Granite King)
- Michael (Firefly)
- Sierra Mike
- The Steinbocks (Bill and Giggles)
- Jack (Whiskey Romeo 67)
- Ross (RM 311)
- Maureen & Tony (Music Lady and Big 6)
- Bill (The Buccaneer)
- Jim (Sweet Pea)
- MIM (Isopod Lady)
- PO Box 27, Bolton, Lancs.
- A.Z. 15, PO Box 5, Stockport, Cheshire.
- PO Box 10, Llandudno, North Wales.
- 147 Lodge Road, Writtle, Chelmsford, Essex.
- PO Box 1, Filey, North Yorkshire.
- 16 Anson Street, Chicopee, Mass. 01020, USA.
- PO Box 417, Brentwood, Long Island, N.Y. 11717-0417.
- 676 Cpl. Moore, MT "NERO" 2 RT, BFPO 38.
- PO Box 18, Reading, Berks.
- PO Box 36, Hythe, Kent.
- PO Box 20, Farnborough, Hants.
- PO Box 4, Whitley Bay, Tyne & Wear.

rubber stamp, exchange card and invites, tourist info etc. The club card is a superb glossy very colourful and well-printed one, although I do seem to remember seeing a very poor pirated photocopy of it at one time. I feel it is a shame when anyone does this sort of thing with our great hobby and it is very upsetting the people who did the original artwork, and can also land the pirate in court when the printer/designer (or whoever holds the copyright) drops on them like a ton of bricks!

A couple of other points I cannot stress enough as so many people do not seem to be bothered at times. Always put your return address on your envelope; if it gets damaged, or cannot be delivered for any reason, it can be returned to you *unopened!* Also, when sending cash abroad, for your own



Kaasdragers, Old Dutch Fisherman, Zwaantje, Golden Wings and Happy World QSL clubs. The entry fee is 30p per day booked in advanced, or 50p on the day. Contact the Secretary (H C 21), PO Box 75, Hastings, East Sussex.

From the States comes a letter and cards from Jack (W R 67) who says thanks for a mention earlier this year, but how about UK QSLers putting a little personal info on their cards instead of "Got your AD from CB mag"? Go on, personalise your cards! From BFPO 38 in West Germany my ol' mate Ross has let me know he's back in the area and says sorry to anyone who has been kept waiting, but he broke his right hand!

I recently received a real bundle of cards from Maureen and Tony (Music Lady and Big Six) of Reading, plus a long letter from MIM (Isopod Lady) who asks that if you get a card of hers or Shadow Man with a Gateshead PO Box, don't bother; the club which uses that, seems to have folded as she can

COMMUNICATION THE WAY

QSL Club Addresses:

- Cobra 148 International PO Box TR7, Leeds, West Yorkshire.
- Cumbernauld International PO Box 218, Cumbernauld, Glasgow.
- Dutch Trucking QSL Club PO Box 62266, 3003 GE Rotterdam, Holland.
- Foxtrot Lima DX Club PO Box 455, Braintree, Essex.
- Freightliners QSL Club PO Box 314, Braintree, Essex.
- Golden Wings QSL Club Semarangstraat B, NL-9715 JW Goningen, Holland.
- Ham International Owners PO Box 8, Mirfield, West Yorkshire.
- Hastings Castle (Meet AD) PO Box 75, Hastings, East Sussex.
- Kaasdrager QSL Club PO Box 6841, NL-3002 AVR Rotterdam, South Wales.
- Papa Bravo DX Club of Wales PO Box 2, Ferndale, Mid-Glam., South Wales.
- South East Iowa Radio Group (Bob T. Dowd), PO Box 1531, Ottumwa, Iowa 52501, USA.
- Sugar Whiskey/QSL Bureau PO Box 7, Goole, Yorkshire.
- Yankee Truckers QSL Club PO Box 455, Braintree, Essex.
- Dragonrider Club 3 Tarn Villas, Cowpasture Rd, Ilkley, W. Yorks.

QSL Services' Addresses:

- D'Zine (Printers) 36 Cannon Street, Preston, Lancs.
- Ray (POMA UK Rep) PO Box 102, Canterbury, Kent.

When writing to any of the above clubs or services for info etc, please do remember to include return postage for their reply; it helps!

safety, register it, it is a lot safer!

An American Group is the South East Iowa Radio Group which costs \$3 (US) and five personal cards to join. This is in fact the overseas equivalent to the UK free-membership clubs, and they have to ask for the money to cover the extra postage required to get your pack back to you. For your \$3 you get your unit No, (XYL/M free), ID card(s), exchange forms and cards, extras etc. From the HAM International Owners Club of Mirfield comes the news that Martyn (26 HI 01) has been in contact with the makers of HI Rigs to the effect that there is a new distributor in the UK and that he has the details of this. If you are interested in owning, or already own an HI rig, then please contact Martyn who I'm sure will be happy to help, but please do remember a SASE. To join the HAM Int Owners Club, you must first be the owner of a HAM rig, then membership costs £3 for which you get life membership, unit No, ID card, 10 club QSL cards, labels, engraved badge, free use of the Club

PO Box (until renewal) and Martyn has arranged that members can obtain discounts from many stockists of radio equipment. Extras available include a club stamp at £3, embroidered badge for £1 and QSL cards at £5 per 100. The club also has some regional reps in many areas and a competition is due to be held any time now in conjunction with the Warriier Group in Berkshire.

Well, I was going to pass on some info from some printers, but I'm nearly out of room again, so I'll have to hold that over until next month and I'll go right into the only event I know of this year. This is the Firebirds/Hasting Castle POMA swop meet being held on the 5th and 6th of October at the Queens Hotel, Hastings. In addition to the two above, the following clubs are involved in the organising of it: the

get no reply or cards passed on via that one. Lastly for this month, a right bundle of cards and certificates, post-cards and local interest leaflets just in from Bill (The Buccaneer) of Hythe in Kent; worth sending a few cards off for. Lastly, as it's getting close again, I'd just like to remind you that the multi-coloured Dragonrider Xmas QSLs are once again available at the bargain price of £2.50 per 100 (UK) or £3 (Europe). If you want a mention, then drop me a line and I'll see what can be done, if you have any praises or complaints, let me know and we'll see what happens if you need a reply then please enclose suitable return postage as I regret that I cannot promise a reply otherwise. All the best until the next time.

Dragonrider 001

GETTING SW

Using the right connector for the job is essential, not only to ensure satisfactory operation of the equipment but also for safety's sake. Do manufacturers use the correct type of plug and socket arrangement?

A glance through any good electronic distribution company's catalogue will reveal a complex display of all manner of connectors, adaptors and leads. Although confusing initially, we can say that those available fall into several categories: audio, RF, DC volts and mains voltages.

Taking the first of these sections, audio, here a wide variety of connectors is available to facilitate the use of both balanced (screened) and unbalanced audio lines with simple twisted-pair or multicore cables being further variants affecting the type of plug to suit the requirement.

Professional users incorporate what are known as 'XLR' series plugs and sockets in their audio systems. These are manufactured for low noise and high reliability with much internal strength and such that they cannot be connected the wrong way round (reverse polarised). These will prove very good in domestic operation, can withstand rough handling, have no loose components and make a latched connection whilst incorporating a self-adjusting strain relief but they're expensive!

A 240 volt mains version is also available, with the same features although not suitable for connection to equipment for domestic use as defined by the Electrical Equipment (Safety) Regulations 1975, but widely used by professional organisations.

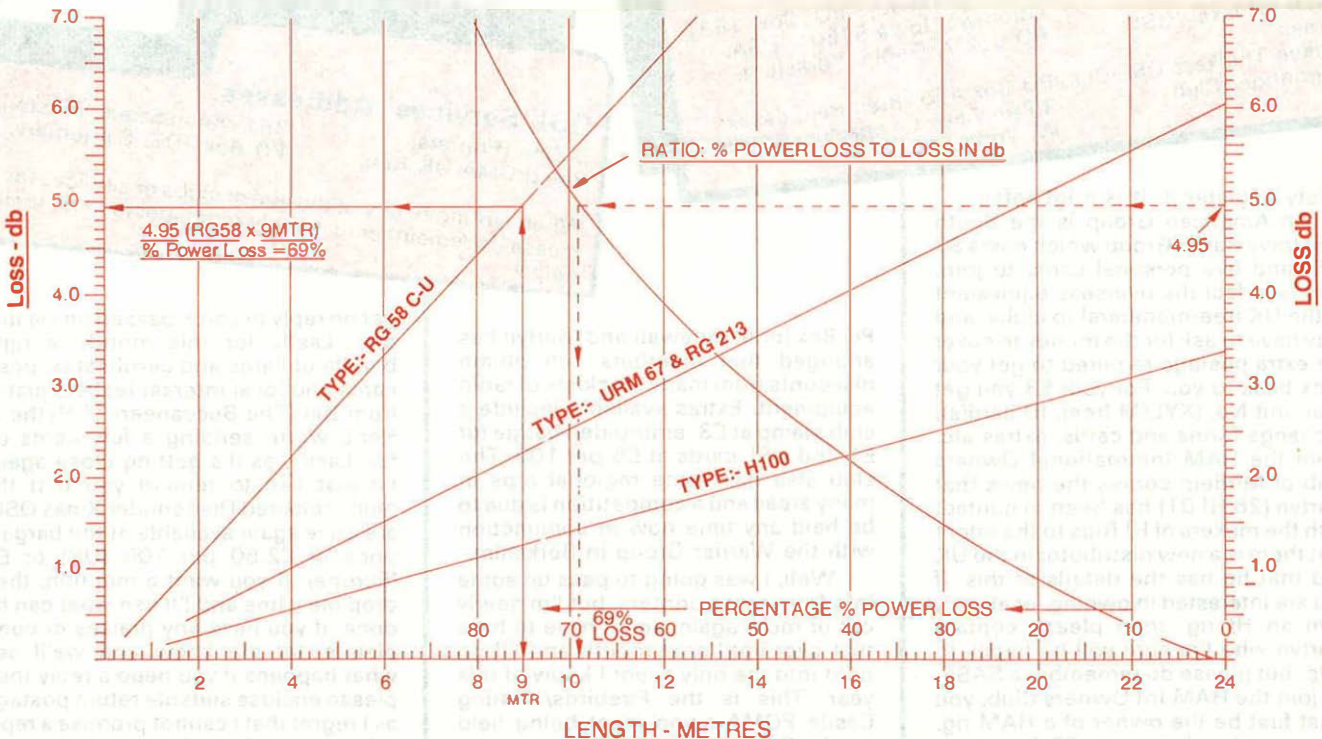
The DIN style audio connectors are widely known and used; the best type have silver plated pins, and a further

advantage is found with the latching type which don't fall apart during use. Several types are available from two-way speaker to five-way, in either 180 degree configuration or 240 degree, right up to seven way. Although actually rated at 100 volts DC and 2 amps they are generally used as low voltage audio connectors, rather than with 100 volt line amplifiers.

Both screened and insulated types are to be found, having either die-cast metal or plastic bodies to the cable-mounting, free plugs or sockets. The chassis-type sockets come with exposed connections to the rear and require an insulation boot. DIN connectors are both easy and simple to use and provide a reasonable audio connection at relatively low cost.

Another "cheap" connector is the good old phono style, used by most Japanese hi-fi manufacturers. Again, both screened and insulated plugs are

COAX CABLE LOSSES - AT 934 MHZ



WITCHED ON

available for this connector which gives a single pole, screened outlet per plug, thereby reducing cross-talk, the interference from one signal to another across adjacent connections.

Jack connectors come in various sizes, although the basic principle is the same. The smaller sizes are employed for speaker outputs while the larger are used for headphone outputs. 2.5mm, 3.5mm and ¼ inch sizes provide the necessary variations, with two (mono) and three (stereo) pole options, again with plastic (insulated) and metal (screened) plugs, free cable sockets and chassis mounted sockets as well.

An equally large range is on offer to cover the needs of low voltage DC, typically 12v to power rigs and accessories. Single pole 1mm plugs and sockets are typical with normally moulded Acetal plastic bodies and silver-plated contacts a 1 amp rating is common. Variations on a theme are similar 2mm versions and 4mm fused variety, sometimes referred to as banana plugs, a nickel-alloy plug with a stainless steel spring to maintain adequate contact pressure with the associated socket.

Typically used in power supplies for the DC tappings, a useful alternative is the stacking variety, with colour-

coded plastic shells to indicate polarity. These allow for several plugs to be connected in parallel to the one outlet. Either solder or screw fixing is required.

Apart from the, now standard, three square-pin domestic 13 amp mains plug, an increasing amount of equipment is being fitted with IEC mains plugs and sockets, especially in hi-fi equipment. Three pinned with European acceptance, they can withstand a current of 6 amps at 240 volts AC, reaching British Standards BS4491 and CEE22 there are available: chassis plugs; fused chassis plugs; double fused chassis plugs; printed circuit board mounting plugs and straight as well as angled cable sockets.

The final area of connectors to look at, and perhaps the most crucial, from the point of view of the CBer, is that for RF or antenna cables, patch leads and occasions where a constant impedance transmission line is essential. Probably the most common as far as CB is concerned (although not for 934MHz users) is the Series UHF or PL259 plug with associated SQ239 socket. They are robustly designed for general purpose, low-cost applications and are suitable for a wide range of small to medium size cables. The impedance is not constant and there

will, consequently, be a degree of voltage reflection. However, they are generally satisfactory in operation at frequencies up to 200MHz and in certain circumstances even up to 500MHz with diminished performance. They have a peak working voltage of 500v and a proof voltage of 3000v peak.

Several different materials are used to make the dielectric, the insulation between the centre contact and the screen (braid), and the recognised best is PTFE, although other cheaper alternatives are employed. The plugs may be used with Uniradio M67 cable or with a small adaptor for UR M63 or UR M76 or UR M70 RG62A/U or any 6.4mm cable with a large adaptor.

We shall be dealing with cables and fitting various types to plugs and sockets later in this article. The basic principal of the PL259 and SO 239 mating is for the male plug's centre contact to slip inside the centre barrel of the socket and for the sleeve ring to screw over the complete assembly to make the screen connection.

A far superior connector for use with RF application is the 'N' type series. Screw-coupled coaxial connectors, which incidentally are fully interchangeable with the US military sockets specification MIL C-39012, are available in both 75 and 50 ohm versions. They may be used with a broad range of co-axial and prove effective with operating frequencies up to 4GHz.

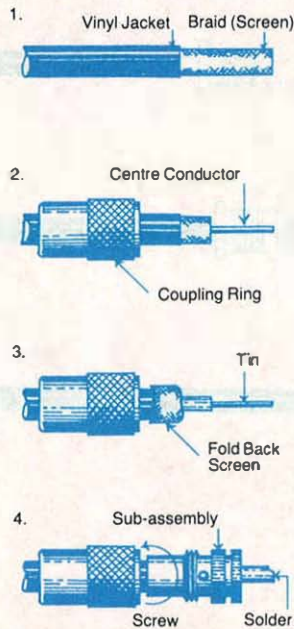
They have, as standard, PTFE insulation for peak voltages of 1000v and provide water-resistant joints with the silicon rubber sealing gaskets, again available in both solder and crimp formation; they incorporate an improved system to ensure safe centre-pin connection and a good outer connection. So to achieve a good quality electrical and mechanical connection on your antenna feeder, especially when operating 934 MHz, employ 'N' type plugs and sockets.

Equally good, although suitable only for thinner types of cable, which will present great signal losses, particularly at higher frequencies, are the BNC series. These are small bayonet-lock coaxial connectors and are probably the most widely used of all, although somewhat ignored when it comes to CB equipment.

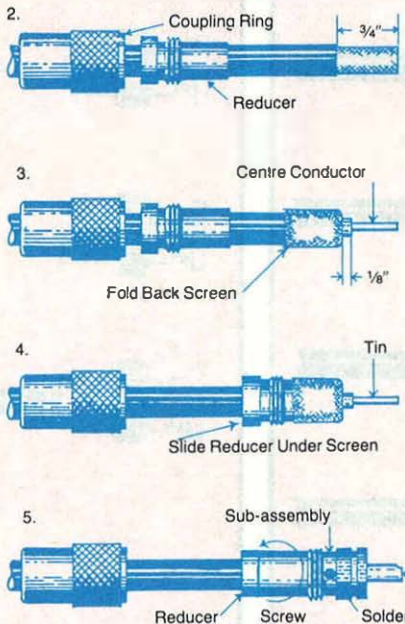
There are many different cable and chassis mounting styles including many US military specification types as well as Post Office and BBC designs. Both 50 and 75 ohm systems are catered for with cables up to 9mm

Assembly instructions for PL259-BNC plugs.

SCREW TYPE PL259



REDUCER TYPE PL259



diameter. Modified versions allow for high voltage use and for 'push-on' mating. With a PTFE insulation, these constant impedance items have a maximum working frequency of some 4000 MHz at 500v peak working.

So much for the antenna plug, but what about the cable to go with it? Having established that a coaxial type is required with an insulated centre conductor and some sort of screen, usually braid, deeper thinking rules out microphone and general-purpose screened cable because it is of non-constant, and often un-stated impedance. It is essential for the

“... any transmission line losses will also affect reception of signals ...”

efficiency of the entire system that the correct impedance cable is used — normally 50 ohm for CB use. The transmit side of the rig must 'look into' the correct impedance at the output socket, along the cable (transmission line) and into the aerial. The cable will present a certain loss dependent upon its characteristics, and the longer it is, the more the loss. If the system is not correct, these losses will be very great

indeed and much of the precious power being transmitted will end up as wasted energy and not in the ether where it is required.

RF cables should meet BS 2316 and they are then allocated a uniradio number. The following types are commonly available:

UR M43: High quality, single .9mm solid conductor, copper braiding, 50 ohm. Attenuation (loss) 1.3dB at 100MHz for a 10m length, 4.46dB at 1000MHz. 5mm diameter.

UR M67 High quality, seven .77mm stranded conductor, 50 ohm. Attenuation .68dB at 100 MHz and 2.52 dB at 1000 MHz. 10.3mm dia. Equal to RG 213/U type.

UR M70 High quality, seven .19mm stranded conductor, copper braiding, 75 ohm. Attenuation 1.5dB at 100 MHz and 5.2dB at 1000 MHz per 10m length, 5.8mm dia.

UR M76, High quality, seven .32mm stranded conductor, copper braiding, 50 ohm. 1.6dB attenuation at 100 MHz, and 5.3dB at 1000 MHz per 10m length, 5mm dia.

RG58C/U: High quality, 19 .18mm stranded conductor, copper braid 50 ohm. Attenuation at 200 MHz, 2dB per 10m and 3.1dB at 1000MHz. 5mm dia. Equal to Alpha 9158 and Belden 8262.

RG59B/U: High quality, single .6mm conductor, copper braid, 75 ohm. 1.3dB attenuation at 200 MHz over 10m and 4.6dB at 1000MHz. Dia 6.15mm. Equal to Alpha 9059B and Belden 8263.

At higher frequencies, including the 934MHz band, even the best of the above "standard" types still prove quite "lossy" and improved design has led to the introduction of H100, not to

the same standard as professional heliax, upon which it has been based, but at a considerably lower price. At 934MHz a much greater dielectric heating of RF components will be expected than, say at 27MHz, and when this occurs, transmission loss increases. Table 1 shows four popular co-axial cables with respective losses at varying lengths. It can be seen that H100 type comes out on top. It is of semi-rigid design; this makes it harder to work with than other cables, but still well worth the effort. Telecomms of Portsmouth produce a useful information sheet explaining the fitting procedure when using H100 with 'N' type plugs.

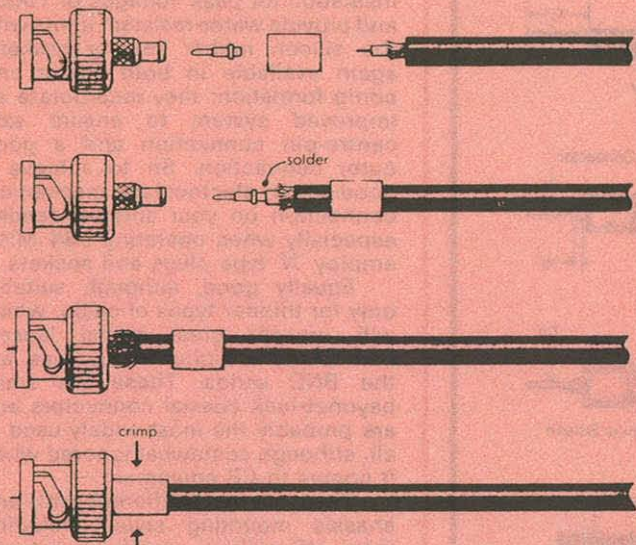
It is claimed that there are many manufacturers producing cables to sub-standard quality, and printing an acceptable RG number on the drum. Many of them, it is believed, have low quality, poor density braid, and it is therefore very important to ensure that any cable purchased is of the highest standard and from a reputable manufacturer.

It should be borne in mind that any transmission line losses will also affect reception of signals, the sensitivity and noise figure and, therefore, any receive pre-amplifier should be placed as near the antenna as possible.

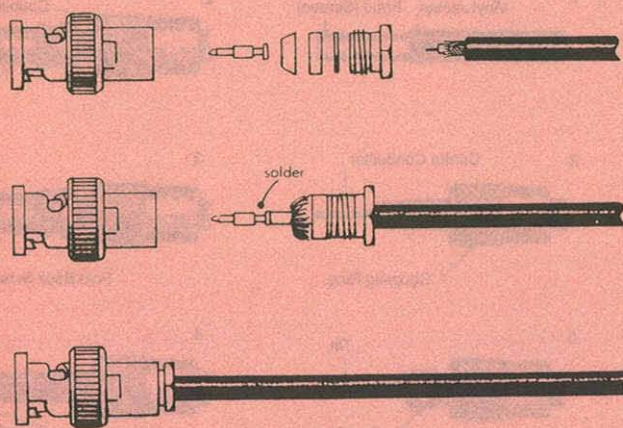
There are then, many factors which need to be carefully considered before installing a personal band radio system, particularly with regard to the aerial connector and cable used. For further reading any reliable electronics manual may be consulted, and information gained from sources such as old "Radio Spares" catalogues and suppliers' data sheets.

(Our thanks to Telecomms for permission to use their 934 cable loss graph and to SSE for their assembly diagrams.)

BNC CONNECTOR CRIMP TYPE CABLE ASSEMBLY



BNC CONNECTOR SOLDER TYPE CABLE ASSEMBLY



LADY BREAKERS



Filly gets herself in a jam

Never mind the likes of *Dallas* and *Dynasty*, or even our own home-grown *Coronation Street*, *Brookside* and *Eastenders*. All those writers and producers of soap have missed the best scenario of all.

Sitting in a traffic jam in a British motorway.

No, seriously. Think about it. A traffic tailback is a microcosm of society. You've got your rising young business executive, your harassed parent taking the kids on holiday, your single independent-minded career girl, your hippy, your football/golf/rugby/cricket fanatic, your company director in his or her

Rolls, your debutante — maybe even a prince or a duke on a good day.

They're all there, traffic jams are no respecters of social standing, and you don't have to bend over backwards to fit them all naturally into your plot. All you have to do is create an accident on a motorway — preferably one with its exits few and far between — and Bob's your uncle.

This brilliant idea came to me, you've guessed it, while I was sitting in a 14-mile tailback on the local Big Slab the other day. Needless to say, the warning came to me a second too late — have you ever been warned of a jam on a motorway in time to avoid it? I had just sailed past the last exit for 20 miles when the radio crackled and I was urged to avoid the stretch between junctions 9 and 10 at all costs. Cursing to myself, I relayed the message to all the other poor suckers who might be listening, slowed down, rounded a bend and joined the back of the queue.

Normally, I approach a motorway well equipped for just such an eventuality — iron rations, sleeping bag, pack of cards — but all I had with me on this occasion to amuse me was a bar of chocolate and CB radio. The chocolate lasted me for all of two minutes, but, as it turned out, CB provided enough entertainment for the duration.

First, of course, came the discussion of the cause of the accident. One of the most maddening things about being stuck in a tailback is not knowing what caused it and how long it might be. Fortunately, there was a breaker up at the front of the queue, who was able to pass on the message that the source of the trouble was a jackknifed lorry and a few crunched cars — no one seemed to be seriously hurt, and there was no fire or lethal gallons of fuel or acid pouring out, so everyone felt able to make a few jokes.

This turned into heated debate as several truckers responded to the criticism of their profession implied in some of the jokes.

I listened to their pithy comments with some amusement, bordering on alarm when it seemed one or two of them were prepared to descend from their cabs and sort out the motorists responsible for a couple of particularly provocative remarks. They were soothed, however, and then a few more voices joined in.

Suddenly, there were about 20 stranded breakers cluttering up the

channel, and people started to move into other channels. Idly, I flipped between channels and conversations — and opened up a whole new world of soap opera!

One conversation was an intriguing three-way affair — I mean that in the general sense — between a well-spoken and rather supercilious law undergraduate, a Baptist minister, and an abrasive woman with a northern accent in her fifties. Yes, all stereotypes, I know, but that's the way it was. It soon became clear that the minister was the umpire in a fierce political debate which, it became gleefully clear, the undergraduate was going to lose.

On another channel, a company director — I'm sure he was in a Rolls, he certainly had a chauffeur — was reminiscing about the D-Day landings with an elderly German tourist, and while I listened a farmer chipped in asking if either of them had ever bumped into his father on Sword Beach (they didn't think they had).

Elsewhere, a group of parents were discussing the lamentable state of education, joined after a while by the German tourist, who turned out to be a headmaster in his own country, and the supercilious undergraduate, fleeing from humiliation at the hands of the northern lady. He was soon on yet another losing wicket, defending private education.

A group of girls were more than holding their own in a conversation with a bunch of football fans — on the question of whether girls should play 'men's' sports — until the company director joined in, to tell the fans that they were a disgrace to Britain. Why, they asked. He wasn't really sure.

And so it went on, for the best part of two hours. In the course of it, I heard at least two dates made ("see you at the next services"), the problems of at least three marriages sorted out by a huge pool of amateur but enthusiastic marriage guidance counsellors, advice dispensed on everything from starting up your own business to getting your first book published, and the problems of the world put right (theoretically) in a dozen different ways. And fascinating listening it made, too.

Don't think I actually *watch* television soap opera. Oh dear me, no. I don't know who Pamela Ewing will marry, now that Bobby's dead. But don't think you can steal my idea for Britain's answer to *Dallas*. The script is even now winging its way to ITV...

CB TROUBLESHOOTING GUIDE

Judging by the workload of many rig doctors, it's safe to assume that, quite often, CB transceivers *do* develop faults. However, many of these problems can be easily rectified. If your TX is "muddy", there is no need to rush your rig to the nearest CB specialist. In most cases, problems of this nature can be sorted out in minutes — and you don't need a degree in electro-engineering to be able to do it.

Before we get into the problems, causes and cures, the most important factor of all is that of safety. Before adjusting anything electrical, you must be aware of any dangers involved. All

GUIDE

rigs which run off ordinary household current carry high voltage — enough to be potentially lethal. You shouldn't do much harm to yourself with a normal 12 volt mobile rig, but it *is* possible to blow your rig if you are not set up correctly.

The first rule is never unscrew the rig with the power lead still connected. Not just in the case of homebases but mobiles too. Next, make sure that the correct fuse is being used before turning the rig on. When testing or working on the rig, ensure there are no metal

objects around the unit.

Again, if the rig can be checked in its installed location, it may be possible to trace the fault without taking it to a rig doctor. All external items can be checked and their effect on the performance of the rig can be established. Many people take rigs to a service engineer after removing them from their installations and, consequently, if no fault can be found on the engineer's test bench, they have to be re-installed to locate the problem.

In the main, the most common problems are external to the rig — check the antenna, microphone, cables and wires before sending the rig away or opening it up yourself.

Symptoms, Causes and Cures

When the rig is switched on the fuse blows	It's likely that there is either a short in the circuit or that a transistor has blown. Check that none of the internal wires or components are touching the external screws or bolts.	Close stations sound distorted	Try turning the RF gain down. Remember, if the stations are very close, they can sound distorted anyway.
No illumination, display or receive	Check that the rig is actually plugged in. Make sure the power switch is in the 'on' position. Check the fuse. If the fuse is blown, replace it with the correct fuse. Do <i>not</i> run a small wire across instead. This can cause further damage to the unit.	Distorted modulation	Try turning down the microphone volume. Check antenna adjustment. If you are using a power mike, it could be turned up too high.
Receive is intermittent, lights or display blinks	Connection between rig and battery or rig and power supply is faulty. Check connecting cables and plugs. Check the fuse holder and ground connection. If home base, check the mains plug. Wiggle the power lead and the antenna coax to see if the lights blink as you do so.	Transmission whistling or howling	Check the microphone lead. Check the wires in the microphone itself. If you have a power mike, try turning it down.
Display is illuminated but the rig does not receive	Check that the squelch control is not turned up too much. Check the microphone cable. Make sure that the PA switch is set to 'CB'. Wiggle the microphone lead and connector	Your voice is coming through the speaker when transmitting	Check the CB-PA switch. Check all speaker leads in case they're grounding to the car body. Check the microphone, lead and connector for shorts.
Nothing from the rig but a hum	Could be that the microphone is not plugged in. If it is a home base unit, check that the power supply has not blown. Test the rig with either a car battery or another psu	Not getting out more than 1/2 mile, no reading on power meter	Take an SWR reading. Ensure antenna load and plate adjustment screws are set correctly. Could be the fault of the final resistor having blown.
Hiss from the rig	Check the antenna and the antenna connection. Even if it looks OK, undo the connector and put it back again. If this affects the hiss, check some other channels and contact another station.	Intermittent transmission	Possibly a loose connection. Check the microphone and microphone lead. If it occurs on transmit <i>and</i> receive, check the antenna and coax lead. Also check the antenna ground.
Copying only stations nearby	Make sure the antenna is connected. Take an SWR reading. If the reading is high, there could be a short in the coax. Turn up the RF gain control.	During transmission, the fuse blows	Could be a blown power transistor. Check that any screws or bolts are not touching or shorting internal components. Check also for a short in the antenna connections.
The S-meter moves but the received signal is distorted	Try adjusting the squelch control. If you have an extension speaker, plug it in and if it sounds OK, your internal speaker may have blown. Check speaker wires.	You are unable to transmit when the mike is keyed, stuck in receive mode	First, check microphone and microphone on/off switch. Excessive tugging on the microphone cable can pull some of the connections loose from their respective pins.
		No modulation, although a carrier signal is present	Check the microphone and its cable. Check the CB-PA switch.
		No modulation, no carrier signal	Check the microphone and cable. Check other channels.
		One or more channels dead	Phase locked loop not working. Check channel selection control.

Now that we have looked at symptoms and possible causes, we may have isolated the problem to one of the external parts; for example, the microphone, extension speaker, power etc. There now follows a step-by-step guide to check and, hopefully, cure these problems.

Power Lead

1. Turn the rig on. If it is wired into the car's electrical system, ensure that the ignition is on.

2. When most rigs are turned on, there is some form of indicator which lights up. It may be the channel selector or the meter illumination. If something lights up, then the power lead is OK. If nothing lights up, check the fuse.

(a) If the fuse is OK, then power is not reaching the rig. If possible, check the voltage along the cable.

(b) If the fuse is blown, replace it with a fuse of the right value. If it blows again, there is probably a short circuit in the receiver.

(c) If the replacement fuse does not blow, key the mike. If keying the mike causes the new fuse to blow, there is probably a short circuit in the transmitter.



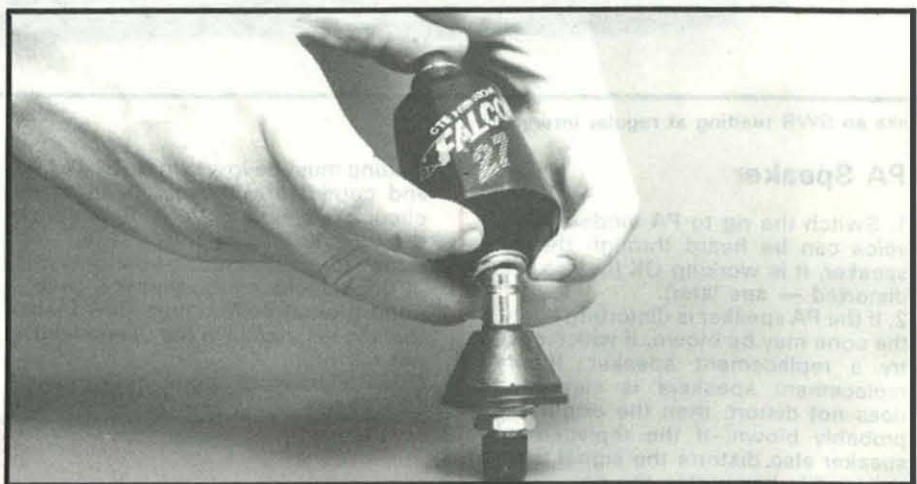
Trouble with your set up? It may simply be a faulty mike

Microphone

There are three symptoms or problems which *may* be due to a faulty microphone; the transmitter cannot be keyed, there is no transmitter modulation, or there is no output in PA mode. If any of these problems crop up, disconnect the microphone and replace it with one you know is working.

1. If the problem is still there after substituting mikes, the trouble lies within the rig.

2. If the problem is cured by replacing the microphone, then the original one is faulty.



Check your antenna connections

Antenna

1. If you have a power meter, key the transmitter and take a reading. If the power output reading is abnormal, then the trouble is in the rig itself.

2. Measure the SWR and:

(a) If the SWR is 2:1 or less, the antenna and cable are perfectly OK.

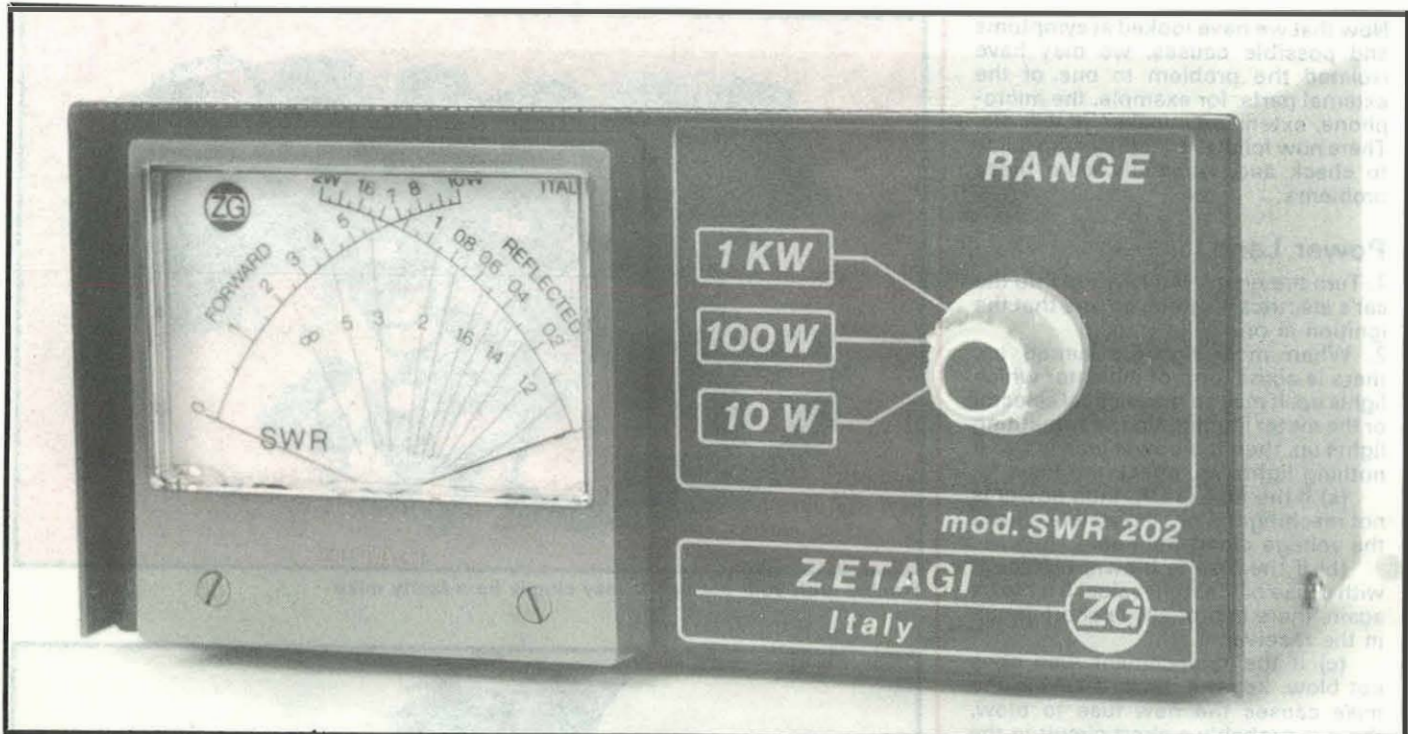
(b) If the SWR is higher than 2:1, then there is a mismatch. This may be due to the antenna being damaged,

the cable being crushed or the connectors having been fitted improperly.

(c) If the reading is very high, then there is either an open or short circuit, for example the cable not being connected — or even sliced in two.



Is your rig plugged in?



Take an SWR reading at regular intervals

PA Speaker

1. Switch the rig to PA mode. If your voice can be heard through the PA speaker, it is working OK (unless it is distorted — see later).
2. If the PA speaker is distorting badly, the cone may be blown, in which case try a replacement speaker. If the replacement speaker is clear and does not distort, then the original is probably blown. If the replacement speaker also distorts the signal then, the trouble lies within the rig.
3. If nothing comes through the PA speaker, try a replacement speaker. If the replacement speaker works, the original is probably blown. If nothing comes through either speaker, the fault probably lies within the rig.

Extension Speaker

- If you have an extension speaker fitted:
1. Turn the squelch down and the volume up. If any received signals or noise comes through, the speaker is OK.
 2. If signals coming through are badly distorted, disconnect the extension speaker and see if the internal speaker (in the rig) is also distorting. If the internal speaker is distorting, the trouble is in the rig. If the internal speaker is not distorting, try fitting a substitute extension speaker.

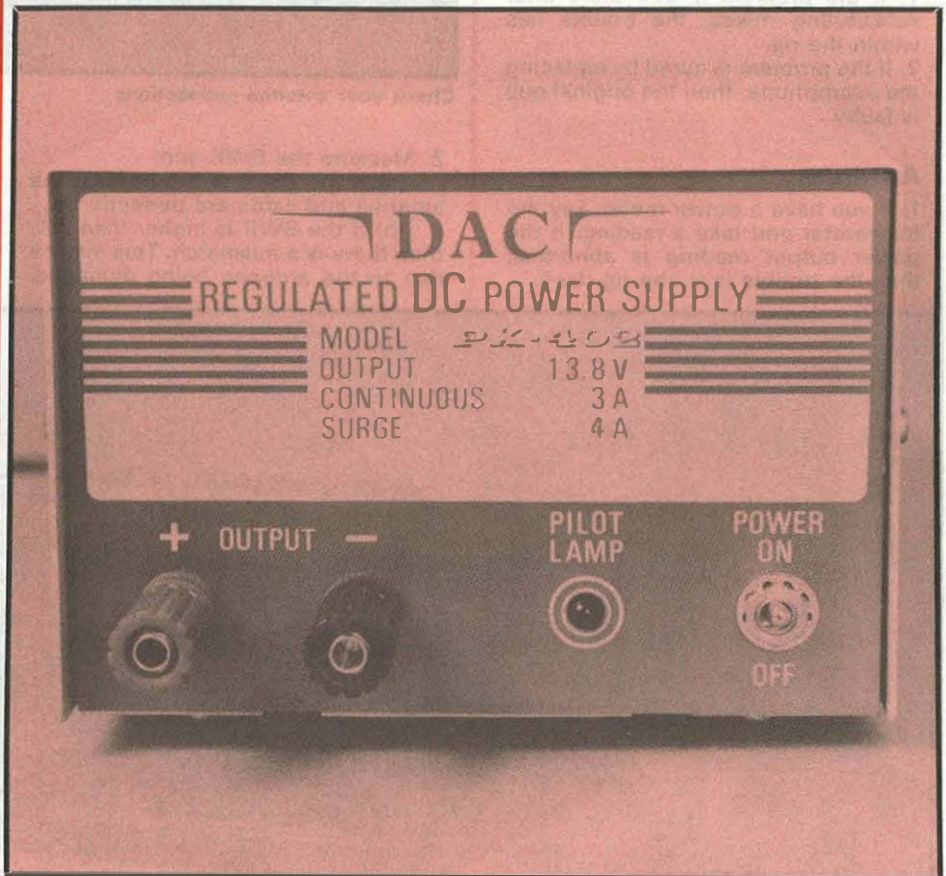
Conclusion

In conclusion then, having performed all these checks on external parts and having found them to be all operative, it follows that the fault must lie within the transceiver itself. Disconnect the rig and take it to an engineer for servicing.

When your rig is returned from the engineer, put the rig back into the vehicle and check the SWR. The SWR

reading must be lower than 2:1 to find and correct any mismatch. In many circumstances, a high SWR can blow the transmitter's final RF stage. If the radio still does not perform well in the vehicle, check that you have a good ground connection. Check also that the resistance in the power lead is not too high. Other causes of poor performance

include low battery voltage or poor voltage regulation from the car's electrical system. Inadequate noise suppression on the vehicle can lead to ignition interference and electrical disturbance. Remember, it's quite possible that the same radio set up will perform much more efficiently in this year's BMW than in a clapped-out Cortina!



Is your rig just humming? Check your power supply

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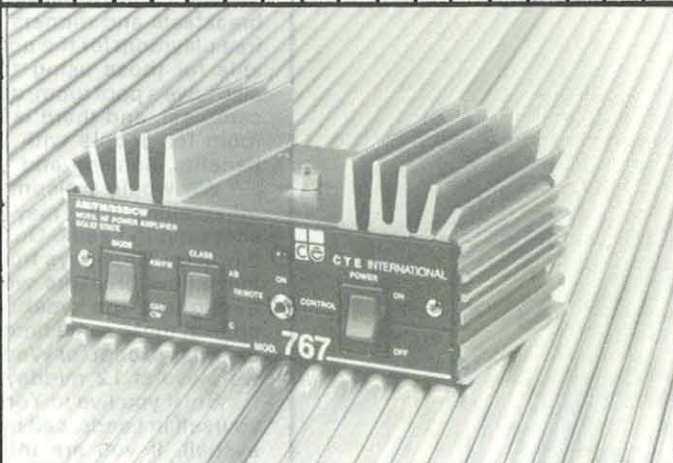


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CLUB NEWS

Update on new CB clubs around the UK

Time Off Breakers Club

We are a recently formed club of unemployed breakers who have got together in the unemployed centre in Leeds. Here, the unemployed CB enthusiast can call in and eyeball his friends. We have a rig set up in the centre and can give directions. We also try to keep bucketmouths off the air — they are not tolerated in our club.

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 would welcome visitors from other clubs who may be visiting or shopping in Leeds. Our main meeting day is on Thursdays from 9am to 5pm but fellow breakers will be welcome throughout the week. The centre is open at these same times from Monday to Friday except for Wednesdays when we close at 12 midday.

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

**Scooby Doo (chairman),
TUC Unemployed Centre,
Market Buildings (2nd floor),
Vicar Lane,
Leeds.**

CB International (Essex)

Further to the April Issue of Citizens Band, I would like to bring you up to date on how CB International (Essex) is progressing. Regarding the membership of the club, things are going fairly well and we are close to reaching 100 members on the register. This we consider to be a real achievement considering the club was only formed in August last year.

With regards to the children's home which we support, I am pleased to say that the club has now installed a complete CB station in the home. This is now in use by the children, as a form of therapy, and they are watched over by a club member every Sunday morning. The equipment was obtained and purchased by donation; the power pack was donated by Green Dragon on Herne Bay, and a top-loaded base station antenna was donated by Coastal CB and Trophy Co of Clacton, but the club would also like to thank everyone who donated goods or time to write to us for this worthy cause.

The club is also providing birthday presents for the children (five so far) and we are having two pedal go-carts belonging to the home completely refurbished by M&R Commercials of Clacton who have donated their time and skill to do this. One of our members has entered the Colchester Marathon to raise funds so that our club can carry on with other activities. Could I also thank The Grey Beard for his letter recently.

**Vendor (Secretary)
CB International (Essex),
Long Acre,
Chisbon Heath,
Weeley,
Clacton,
Essex**

Delta X-Ray DX Group

I would like to inform you of the new DX group we have started in Kidderminster. It is called the Delta X-Ray Group and is solely for DXers of long distances. We started about four months ago and have 26 members.

Membership costs £3, which includes PO Box use. Extras include QSL cards, charters, phonetic codes, list of countries and other goods. We meet once a fortnight on a Tuesday and one

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Joe 90 Stuart
GROUP ORGANIZER

WDX 01

**WORTHING DX & QSL GROUP
PO BOX 404
WORTHING, WEST SUSSEX
BN14 7EB ENGLAND U.K.**

of our aims is to bring a good name back into Kidderminster which was lost when FM was brought out. If anyone is interested, please drop us a line.

Delta X-Ray DX Group,
PO Box 48,
Kidderminster,
Worcs

Port of Larne Radio Club

Our club was formed in February and, at present, we have over 40 members on our books. Recently, we held a sponsored modulation in the South Antrim Hills and, to date, this has raised over £100 for the Moyle Hospital in Larne.

The club meets every two weeks on a Tuesday night in the Bodega pub in Larne and, if anyone wishes to join us as they pass through the town they will be made most welcome.

The Condor (Assistant Secretary),
Port of Larne Radio Club,
PO Box 20
Larne,
Co. Antrim,
N Ireland

**Delta X-Ray
D.X. Group**

PO BOX 48
KIDDERMINSTER
WORCS., DY11 7JX
ENGLAND

© Curtis QSL

Worthing DX & QSL Group

I am writing to let you know of the recently formed Worthing DX & QSL Group. Membership commenced on 25 June this year and, to date, we have 24 members, including one from Middlesex. WDX members are UK FM, multimode and licensed amateur radio users.

We do not have a 'meet'; we are simply a group of keen DX and QSLers with a PO Box facility. May I please point out that we are not a QSL swap group, but the conditions of our membership state that all our members must reply to all QSL cards received as a result of a QSO. Group members collect their cards from my home QTH, but I forward mail to the distant members if they supply the SAEs.

Joe 90 (Group Organiser),
Worthing DX & QSL Club,
PO Box 404,
Worthing
West Sussex

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PORT OF LARNE RADIO CLUB

Larne

q.s.l.

Plymouth Devils Club

I am writing to tell you about our club and what we do. We belong to the Plymouth Devils DX Club and meet once a fortnight at the Maritime Social Club in Plymouth. Membership is 50p and so far we have over 100 members.

We do a lot for charity, trying to raise money for the Freedom Fields hospital appeal and also for St Lukes Hospital in Plymstock. We organise other events like marathons — last year we went on a CB marathon, non-stop CBing for 500 hours.

Folksinger (Secretary),
Plymouth Devils & DX Club,
PO Box 91,
Plymouth,
Devon

International Screwdrivers

May I, as chairman of the International Screwdrivers, through your magazine send our best regards to all our members in the UK. We now number 75 members throughout the world.

We are, of course, interested in new members and making contact with other DX radio groups. If any of my counterparts in other DX groups would like to contact me, we most certainly would co-operate and try to make our hobby all the more interesting.

Tony (Chairman),
PO Box 33,
Lismore,
Co Waterford,
Ireland



A Harvard base station owner has the rainy day blues (see last letter)

than is available here, since, even in the closer European countries, modes of operation, types of equipment and even frequency allocations differ considerably. As for a comprehensive list of calling channels, this might prove impossible, since these can vary from region to region. Perhaps the Editor might consider this question for a future article.

The third question I leave to our readers, some of whom may be in a better position than I to answer it.

Bright lights?

M R Mckay, of Bramdon, Durham, has a few problems during the first few minutes after he switches on . . .

Q. When I switch on my rig I can only get an S1 reading for about the first two minutes, even when the incoming signal is being generated locally. However, after about two minutes the reading improves, though I have found that I can reduce this time by keying the mike.

I do not wish to become known as a mike keyer and would be grateful if you can help me to overcome this problem, which seems to have the local rig doctor baffled, and which I have not experienced with other rigs.

A. Your problem is entirely due to the working temperature of the rig's components. Just like a car, a radio transmitter will not work efficiently until it has warmed up and, since any form of

transmission, even a plain carrier, considerably increases the internal heat, it is easy to see why keying the mike shortens the warm-up time.

Although the temperature coefficient of the circuit governing your S-meter may have altered with age, this is not a problem I would worry about and the simple answer seems to be to switch the rig on a few minutes before you wish to commence transmission, in order to allow it to warm up first.

Rainy day blues

Up in St Andrews, Fife, Kenneth Harris seems to be suffering the effects of this year's wonderful summer . . .

Q. I recently bought a Harvard H407 base station and use a Modulator Expert antenna. Ever since I combined the two I have had nothing but problems.

Although the SWR is perfectly normal on dry, sunny days, it rises alarmingly when it rains and I do not hit people as hard as I did with my previous rig, a Harrier CB HQ.

In setting the SWR to suit the Harvard I discovered a dent about 1/2" along the ground plane radial and so I cut it off. Could this cause the problem?

I am also considering buying a Ham International Big Mac antenna and wonder whether it would be any better than the one I have now?

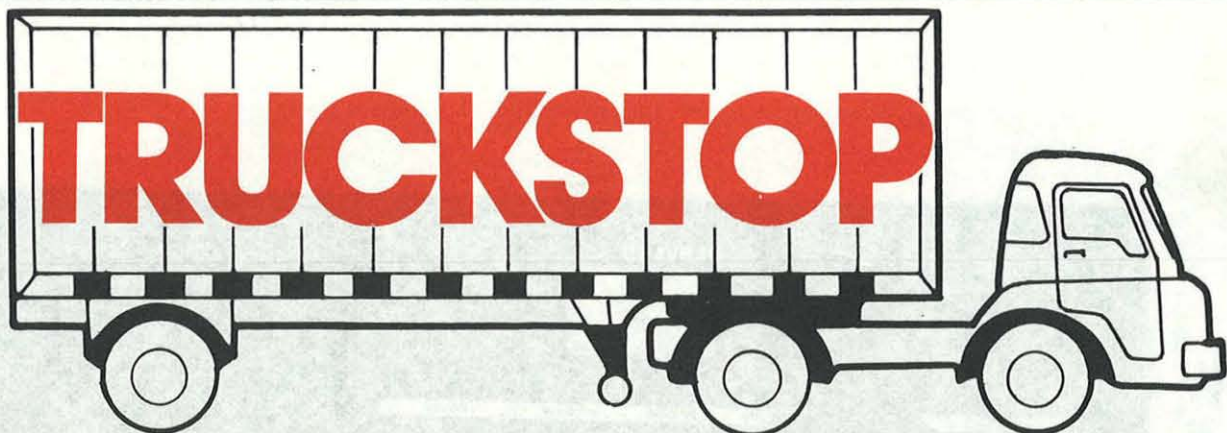
A. The fact that there was a dent in the ground plane radial of your antenna would have made absolutely no dif-

ference to its performance, though the fact that you have cut it out seems, from what you tell me, to have had little or no effect, since the SWR under normal conditions is well within acceptable limits. Having said this, I do not advise anyone to go chopping lengths off ground planes without reference to an accurate VSWR bridge, since it can be very difficult to rectify any imbalance thus created.

It might surprise you to learn that everybody's SWR goes up in wet weather and, before someone writes in to argue the point, if yours doesn't, then try a new meter. The important point here is to ensure that the rain cannot penetrate the cable joint as it runs off the antenna. If it does get in then your SWR will fail to return to normal when the weather improves. Make sure that all connections are watertight and, if possible, leave an upward facing loop in the cable, close to the antenna, so that any water which does get in cannot run right down the length of the cable.

Your point about lack of signal strength seems to me to have little or nothing to do with the antenna, which I assume is sited exactly as it was for your earlier rig. It may well be that your present rig is developing less than the full 4 watts and it would help to get it checked on a good quality power meter. Adjustment is something which you should leave to a competent engineer.

Both the Modulator Expert and the Ham International Big Mac are excellent antennas and I doubt whether there is much to choose between them in terms of performance.



More thoughts on truckers, trucking, truckstops and other words beginning with truck — from Big T

Hello readers, especially fellow truckers. I hope at least some of you enjoyed my first page in the September issue of our magazine or at least found something of interest in it. Each month I hope to give you my thoughts on trucking and CB happenings all over our country. Perhaps if any of you lads and ladies have anything to say, praise or criticism, will write to me via the magazine.

Well here we go again, I shall start this month with a moan of my own — why do so many of my fellow truckers have such 10-1 set ups? Most have perfectly good rigs but do not seem to realise that without a good twig they are wasting their time. Day after day I see the lads with their coaxial cable wrapped round and round the sun visors or the mirror arm, coax trapped in the doors and quite often cut half way through when, with a little thought and time (of which we have plenty when we are waiting to get unloaded), they could improve their set ups 500%.



Whilst on one of my trips to Scotland, I called at the Carlisle Truck Stop for my half hour meal break and got talking to Alan who runs a CB repair and for sale van. Alan tells me he is open for business 8.30 am until late, some nights not closing until midnight — he seems very reasonable with his prices so any of you lads needing new gear or your old repairing, give him a call.

Charity

Recently I went to a very good eyeball in Birmingham and was pleased to meet many of my old friends, some

of them truckers and some I have copied many times but had not met. Amongst them was Leyland (Roy) and his wife Papermate (Pearl). These two breakers come from the Halifax area and they both do so much for charity and I was told (not by them) that last year alone they had handed over £3,000 to a local charity to purchase a mini bus. When I asked them about this, they asked me if I could, through the magazine, give their thanks to everyone who had sent them donations — well done all you breakers and Roy and Pearl, more power to your elbows.



“... a moan of my own — why do so many of my fellow truckers have such 10-1 set ups?”

Cafe of the month

This month I have chosen The Hollies cafe, which is situated near Cannock on the A5 with easy access from the M6 gate 12 northbound, ¾ mile, gate 11 southbound, 2 miles. The cafe is open 24 hours a day for 363 days a year closing only on Christmas and Boxing days. It has a

four acre lorry park with fuelling facilities — the food and service is first class and very reasonably priced. There is also a limited range of CB equipment for sale at the adjoining shop run by the owner's daughter, Dawn. Until last year two of our best known monitors, Green Goddess and Barley Wine, operated from the Hollies but due to constant harassment from local morons both girls have gone down. The owner, Derek, told me that they are hoping to come back in the near future. I sincerely hope they do as they have been missed very much by the trucking fraternity. Anyone wishing to contact the Hollies, telephone Cannock (05435) 3435.

Grateful

Monitors for the month of October are Cawley Control and Orange Control. Between them they do a splendid job covering one of the busiest sections of motorways in the country. They cover from Birmingham through to the M1/M6 junction also taking in a considerable section of the M69. From 6 am to 6 pm there is always a monitor available to give assistance — well done breakers from one of the many grateful truckers.



My own club, the Tango Tangos (Telford Thunderbirds), of which I have the honour of being chairman, recently held a 1960s music-only night — it was a tremendous success and during the evening a collection was made for the Live Aid appeal and £55.50 was raised. I would like on behalf of myself and all the Thunderbirds to thank everyone involved.

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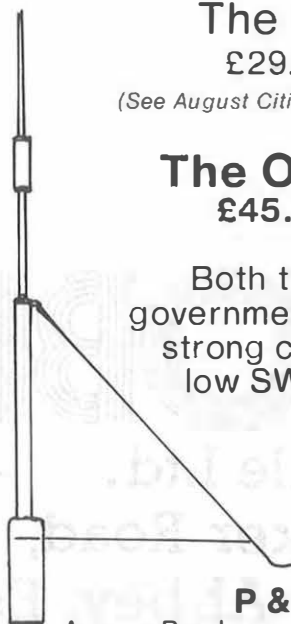
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October 1984	Cybernet 934MHz.
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December 1984	Panoramic CB scanner
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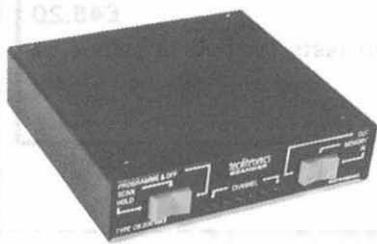
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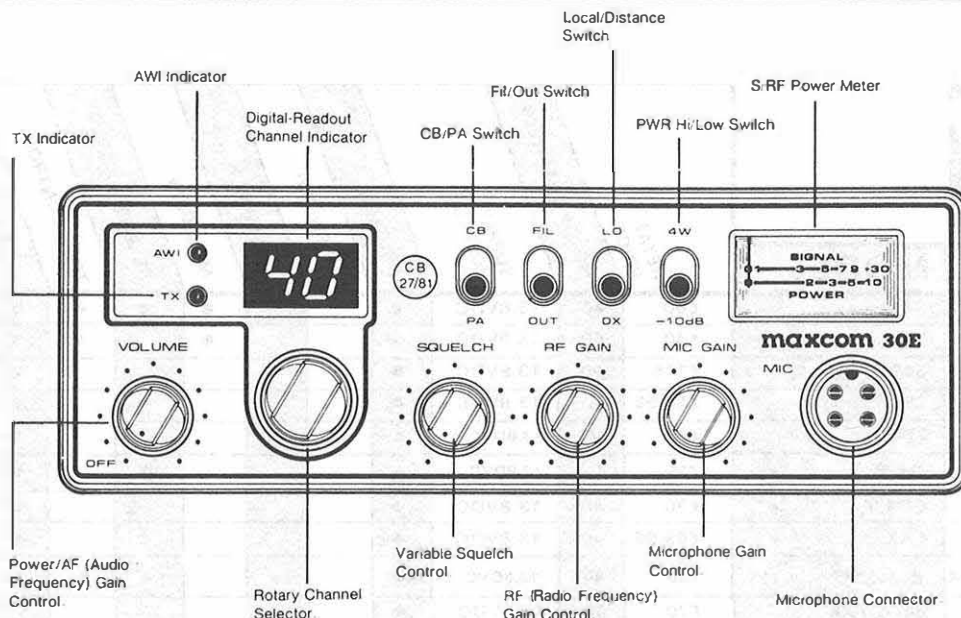
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REFERENCE SECTION



A CB SET AND ITS CONTROLS

VOLUME

Sometimes called *Audio Frequency Gain* control. Usually combined with the 'power on' switch. The volume control will only increase or decrease the loudness of the incoming signal—it won't alter the strength of it or affect the transmitted signal.

CHANNEL SELECTION

For choosing the channel you transmit and receive on.

CHANNEL INDICATOR

Displays, usually by LEDs, the channel you have selected. Some channel displays are of liquid crystal or fluorescent. The digits are normally bright red, green, orange or blue and visible in all but the most direct sunlight.

SQUELCH

The squelch control is used for quieting background hiss or the babble of distant signals. The control is turned slowly, usually to the right, until the background noise disappears. The squelch circuit will then only open to let through a stronger signal than those you have quieted out. As soon as the stronger signal goes, the circuit closes. Care must be taken not to turn the squelch control up too far, as then only a very strong signal will open it.

SIGNAL/RF METER

On most sets this is of the 'moving needle' type against an analogue background. Some sets do have a bar of LEDs that light up to show the strength of either the received signal or the transmission. It shows the *relative* strength, not a reading in dB or Watts. These meters cannot be 100% accurate and different rigs will give slightly different readings for signals of the same strength.

RF GAIN

This controls the reception sensitivity of the set. When decreased the set is less sensitive, and when increased the set is more sensitive to weaker signals. Reducing the gain helps prevent overloading when talking to someone who is very close.

Some sets, instead of having a suitable rotary control, have a flick two position switch marked *local* and *distance*. Full sensitivity is the distant position.

MIC. GAIN

Adjusts the sensitivity of the microphone amplifier circuit and controls the audio from the microphone that is used to modulate the signal.

CB/PA SWITCH

This switch turns your CB set into a low public address amplifier, when an external speaker is fitted into the socket on the back of the rig. Anything said into the microphone is amplified and broadcast through the speaker and not transmitted from the antenna.

TOPE OR FILTER CONTROL

This can either be a rotary or flick switch. It controls the tonal quality of received signals in accordance with the user's preference.

POWER ANTENNA

Reduces the transmitter power from 4 Watts to 0.4 Watts. The attenuator should be used if your antenna is mounted more than 7 metres above the ground.

RX/TX INDICATORS

These light emitting diodes light up to show if you are receiving (RX) or transmitting (TX).

ANTENNA WARNING INDICATOR

This is a warning indicator which is activated by trouble in the antenna system e.g. a bad mismatch or damage to the antenna or cable. You should stop transmitting if this lights up, and correct the problem.

Your set may also have the following controls . . .

CHANNEL 9 SWITCH

This is an 'over-ride' switch that will immediately select channel 9 without using the channel selector to find it. It is fitted to save time in an emergency.

DELTA TUNE

This is not a common feature on British sets, where frequency and stability are closely specified. It is a fine tuning device for tuning in stations that are operating slightly off frequency.

DIMMER

Works on the same principle as a domestic light dimmer, and reduces the amount of illumination on displays and dials on the CB set. A few sets have an automatic dimmer built in, which measures the lighting level through a photo-electric cell and adjusts the illumination accordingly.

ANL/NOISE BLANKER

The Automatic Noise Limiter or Noise Blanker is designed to reduce interference from a car's ignition system by desensitising the receiver slightly. If the ignition circuit is already adequately suppressed it will not make any difference.

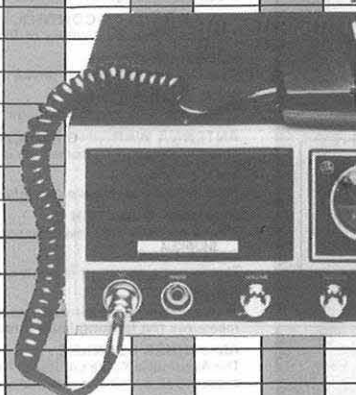
CHANNEL BUSY/FREE INDICATOR

This is usually a LED that illuminates when a particular channel is in use or is free. This is gauged by the amount of 'traffic' on the channel which has to be at a certain level before the indicator is activated. Sets have either a 'free' or 'busy' indicator, not both.

FM RIG CHECKLIST



NAME	MODEL	RETAIL PRICE	NO. OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	TONE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAKER JACK
AUDIO LINE	341	£60	40	13.8VDC	•			•	•	•	•	•	•		
AUDIO LINE	340	£40	40	13.8VDC	•			•		•	•		•		
AUDIO LINE	342	£115	40	13.8VDC	•					•	•			•	
COLT	295	£49.99	40	13.8VDC	•				•	•	•	•			•
COMMTEL	GT858	£30	40	13.8VDC	•					•	•	•			•
COMMTEL	GT688	£35	40	13.8VDC	•				•	•	•	•		•	•
COMMTRON	CB40F	£70	40	13.8VDC	•					•	•	•		•	•
COMMTRON	CXX	£69.95	40	13.8VDC	•				•	•	•	•		•	•
COMMUNICATORS	NI-440DX	£50	40	13.8VDC	•				•	•	•	•		•	•
CYBERNET	BETA 1000	£70	40	13.8VDC	•						•	•		•	•
CYBERNET	BETA 2000	£85	40	13.8VDC	•				•	•	•	•		•	•
CYBERNET	BETA 3000	£100	40	13.8VDC	•				•	•	•	•		•	•
INTERCEPTOR	INTERCEPTOR	£80	40	13.8VDC	•				•	•	•	•		•	•
INTERCEPTOR	TC400	£95	40	13.8VDC	•		•	•	•	•	•	•		•	•
INTERCEPTOR	ONE HANDER	£100	40	13.8VDC	•			•	•	•	•	•		•	•
JOHNSON	JOHNSON	£50	40	13.8VDC	•				•	•	•	•		•	•
LAKE	MANXMAN 850	£32.50	40	13.8VDC	•					•	•	•		•	•
LAKE	MANXMAN 950	£37.50	40	13.8VDC	•					•	•	•		•	•
LOWE	TX 40	£50	40	13.8VDC	•				•	•	•	•		•	•
MAGPIE	AUTOSCAN 5000	£120	40	13.8VDC	•			•	•	•	•	•		•	•
MAXCOM	4E	£50	40	13.8VDC	•					•	•	•		•	•
MAXCOM	6E	£48	40	13.8VDC	•				•	•	•	•		•	•
MAXCOM	20E	£50	40	13.8VDC	•					•	•	•		•	•
MAXCOM	21E	£50	40	13.8VDC	•					•	•	•		•	•
MAXCOM	16E	£40	40	13.8VDC	•					•	•	•		•	•
MAXCOM	30E	£65	40	13.8VDC	•			•	•	•	•	•		•	•



This listing includes most of the rigs available for FM CB. Some rigs are still not on the market, but may be picked up second-hand or may be found in old stock at some shops. The prices quoted are recommended retail prices or typical price — they may vary considerably from shop to shop and area to area.

MOBILES

					ADDRESS	NAME
●			SL		Telecomms, 189 London Rd, North End, Portsmouth	AUDIOLINE
				Report Feb '82		AUDIOLINE
●						AUDIO LINE
			FL		K B & Co Ltd., 202 Cheetham Hill Rd, Manchester	COLT
			SL		Globe, 168 Brooker Road, Waltham Abbey, Essex	COMMTEL
			SL	Dimmer Switch Features		COMMTEL
	●		FL		Roger D, 831 Mansfield Rd, Notts	COMMTRON
			FL			COMMTRON
●	●		FL	Roger Beep Feature		
			SL		Goodmans Loudspeaker Ltd., Downley Rd, Havant, Hants PO0 2NL	CYBERNET
●			FL	Report May '83		CYBERNET
●	●		FL	Report September '83		CYBERNET
●			SL		Telecomms, 198 London Rd, North End, Portsmouth	INTERCEPTOR
●			FL			INTERCEPTOR
●			FL			INTERCEPTOR
			FL	Great GT868 chassis	Star Warehouse, Chalk Farm Rd, London	JOHNSON
			FL		Roger D, 831 Mansfield Rd., Nottingham NG5 3GF	LAKE
			FR	Report April '83		LAKE
●	●		FL	Report March '83	Lowe Electronics, Matlock, Derbyshire	LOWE
●	●		FL	Report November '82	Maggie Electronics, PO Box 35, Andover, Hants SP10 2LG	MAGPIE
●			FL		AM House, 9A Old's Approach, Tolpits Ln, Watford, Herts	MAXCOM
●	●		FL			MAXCOM
●	●		FL			MAXCOM
●	●		FL			MAXCOM
●	●		FL			MAXCOM
●			FL			MAXCOM
●			FL	Report Jan '84		MAXCOM



REFERENCE



NAME	MODEL	RETAIL PRICE	NO OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	STONE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAK
MERCURY	10 40	N/A	40	13.8VDC	•				•		•		•	•	•
MUSTANG	CB1000	£49.95	40	13.8VDC	•						•			•	•
MUSTANG	CB3000	£59.99	40	13.8VDC	•				•	•	•			•	•
NATO	40M	£69.95	40	13.8VDC	•			•	•	•	•			•	•
NATO	2000	£189.95	40	13.8VDC	•	•	•		•	•	•			•	•
OSCAR	OSCAR I	£85	40	13.8VDC	•						•				•
OSCAR	OSCAR II	£49	40	13.8VDC	•						•			•	•
ROTEL	RVC 220	£50	40	13.8VDC	•						•			•	•
ROTEL	RVC 230	£70	40	13.8VDC	•				•	•	•			•	•
ROTEL	RVC 240	£90	40	13.8VDC	•			•	•	•	•			•	•
SIRTEL	SEARCHER	£40	40	13.8VDC	•						•			•	•
TANDY	TRC2001	£80	40	13.8VDC	•						•			•	•
TANDY	TRC2002	£70	40	13.8VDC	•						•			•	•
TANDY	TRC2000	£100	40	13.8VDC	•			•	•		•			•	•
TANDY	TRC1004	£79	40	12VDC	•						•			•	•
TANDY	TRC2003	£130	40	13.8VDC	•						•			•	•
UNIDEN	UNIACE 100	£69.95	40	13.8VDC	•						•			•	•
UNIDEN	UNIACE 200	£89.95	40	13.8VDC	•			•	•	•	•			•	•
WESTERN	COMPACT 40	£34.50	40	13.8VDC	•						•			•	•
WESTWARD	P.T.2	£159.95	40	13.8VDC 240V	•						•			•	•



NAME	MODEL	RETAIL PRICE	NO OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	STONE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAK
AUDIOLINE	345	£139.95	40	240VAC	•			•	•	•	•			•	•
COMMTEL		£65	40	240/12V	•						•				
HAM INT.	JUMBO	£254	40	240VAC	•		•	•	•					•	•
HARVARD	H401	£149.95	40	240VAC	•			•	•		•			•	•
HARVARD	WT44		40	BATTERIES	•									•	•
KAISER	CBX40	£80	40	BATTERY	•						•				•
MAXCOM	7E	£49.95	40	BATTERY	•									•	•
TANDY	TRC1001	£119		BATTERY	•						•			•	•
UNIDEN	UNIACE 300	£149.95	40	240VAC	•			•	•	•	•			•	•
WESTWARD	P.T.2	£159.95	40	240V/12V	•						•			•	•

MOBILES

SR JACK	TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS
•	•			FR	Report July '83
•	•			FL	
•	•	•		FL	
•				FL	
•				SL	Report January '83
		•		FL	Cybernet 134 chassis rep. April '82
				FL	Report Oct '83
•				FL	Cybernet chassis
•	•	•		SL	Cybernet chassis
•				SL	Cybernet chassis
•				FL	
•	•			SL	
•				SL	
•				SL	
•				—	
				SL	Report Nov '82
•				SL	Report Sept '82
•	•			FL	Report Feb '83
•	•			SL	
				FL	Report Nov '83

ADDRESSES	NAME
E.M.S. Communications, Grove St, Wantage, Oxon OX21 7AD	MERCURY
K.B. & Co Ltd, 202 Cheetham Hill Rd, M/cr.	MUSTANG
	MUSTANG
Roger D, 831 Mansfield Rd, Nottingham NG5 3GF	NATO
	NATO
S.M.C. Runbridge St, Totton, Hants SO4 4OP	OSCAR
	OSCAR
Rotel Hi-Fi, 2-4 Erica Rd, Stacey Bushes, Milton Keynes	ROTEL
	ROTEL
	ROTEL
	SIRTEL
Tame Way, Tower Bridge St, Walsall, Staffs	TANDY
	TANDY
	TANDY
	TANDY
	TANDY
	TANDY
Cravenminster Ltd, Unit 8, Ind Est, Llandudno Junct, Gwynedd	UNIDEN
	UNIDEN
Western Electronics, Fairfield Est, Louth, Notts	WESTERN
Westward Electronics, The Mill House, Westward Tuckenhay, Totnes, Devon 086423 336/370	WESTWARD

BASES & PORTABLES

SR JACK	TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS
•					
				FR	Report December '83. Also comes with telescopic antenna
•				SL	
•				FL	
					External antenna facility
•					
•					
•				FL	Reviewed August '83
				FL	Report Nov '83

ADDRESSES	NAME
Telecomms, Portsmouth end Globe, Essex	AUDIOLINE
	COMMTel
	HAM INT.
	HARVARD
Globe, 168 Brooker Road, Waltham Abbey, Essex	HARVARD
Telecomms, 189 London Road, North End, Portsmouth	KAISER
A.T.M. AM House, 9A Old's Approach, Tolpits, Lane, Watford, Herts	MAXCOM
Tame Way, Tower Bridge Street, Walsall	TANDY
Cravenminster Ltd., Unit 8, Industrial Estate, Llandudno Junction, Gwynedd	UNIDEN
Westward Electronics, The Mill House, Tuckenhay, Totnes, Devon 080423 336/370	WESTWARD

ANTENNA CHECKLIST

The Citizens' Band Anter

Name
Lists antennas by name and model number and gives you, where possible, the name and address of the manufacturer or distributor.

Construction
The majority of home base antennas are made of aluminium and mobile antennas from stainless steel, but fibre glass can be

The D.T.I. specs for CB antennas are now more liberal than those originally in force, with the base loading restriction removed to permit any type of loading as long as the antenna is 1.65m in length (or less) and no more than 55mm in diameter. This revised checklist now includes the many new antennas released after this change of heart.

NAME	ADDRESSES	MODEL	CONSTRUCTION	LENGTH	MAX POWER	TYPE	LOADING	MOUNT	PRICE RANGE
AERIAL SUPPLIES	Aerial Supplies (Redditch) Ltd. 6 Widney House, Bromsgrove Road, Redditch, Worcs. (0627 62620/60107)	Silver Star	AL	1.5	100	B	B	Pole	D
		Silver Arrow	AL	1.5	500	B	B	Pole	E
		Javelin	AL	1.64	500	B	C	Pole	E
		Javelin Dipole	AL	1.64	500	B	C	Pole	C
ALLGON	Communications, 10 North Street, Strood, Kent.	Various	FG SS AL	Various	Various	B M	T C B C W B	Various	A-H inc.
		466	SS	1.4	10w	Marine	C W B	Mast/Cabin	F
ARMSTRONG	Stateside Trading Ltd. Audley Avenue, Newport, Shropshire	SAM 10	SS	1.06	1000	M	B	Surface	F
		SAM 20	SS	1.06	1000	M	B	Spring Surface	F
		TAK 10	SS	1.06	1000	M	B	Boot lip	T
		TAK 20	SS	1.06	1000	M	B	Spring Boot lip	G
		MAG 10	SS	1.06	1000	M	B	Mag.	G
		MAG 20	SS	1.06	1000	M	B	Spring Mag.	G
		BDY 20	SS	1.06	1000	M	B	Side	G
		PEC 20	SS	1.06	1000	M	B	Side, Fold over & Quick Disconnect	G
ARCHER	Tendy Corp. Tameway Tower, Bridge Street, Walsell, West Mids.	21-904	SS	0.5	50	M	B	3/8" thread	D
AVANTI	CB Radio Centre Ltd., 337 Kenton Road, Harrow, Middlesex	AV 241	SS	1.22		M	B	Stud	D
		AV 241T	SS	1.22		M	B	Trunk	E
		AV 241M	SS	1.22		M	B	Mag.	E
		AV 241MM	SS	1.22		M	B	Mag.	G
BANDIT	Telecomms, 189 London Road, North End, Portsmouth	B10	SS	1.42		M	B	Mag.	G
		B15	SS	0.61		M	B	Mag.	F
		B15	SS	1.22		M	B	Mag.	F
		B20	SS	1.42		M	B	Mirror	F
		B30	SS	1.42		M	B	Drill Thru	E
		B30	SS	1.22		M	B	Drill Thru	E
		B40	SS	1.42		M	B	Various	D
		B40	SS	1.22		M	B	Various	D
		B50	SS	1.42		M	B	Various	D
		B50	SS	1.22		M	B	Various	D
BREMI UK LTD.	Unit 6, Innage Park, Holly Lane Industrial Estate, Atherstone, Warks.	B27S	SS	1.62	1000	M	B	3/8" thread	C
		C27S	SS	1.38	1000	M	C	3/8" thread	C
		HB27S	AL	1.55	1000	M	T	Pole	E
CB SERVICES	97 Crab Lane, Harrogate, North Yorks.	Bullwhip	SS	1.5		M	B	Various	C
		Knuckleduster	AL	1.5		B	B		D
COMMTEL	Near Third Drove, Fengate, Peterborough	Rocket	SS	1.5		M	B	3/8" thread	
		Shuttle	FG	1.5		M	B	3/8" thread	
		Starlight	SS	1.5		M	B	3/8" thread	
		Shuttle Ster		1.5		B	CW	3/8" thread	
		Signal searcher	AL	1.5		B	B	Clamp	
		Messenger	SS	1.5		B	B	Pole	F
FREEMAN AND PARDOE	Tything Road, Arden Forest Ind. Est. Alcester, Warks.	Invader	AL	1.5	250	B	B	Pole	E
		Thunderpole II	AL	1.5	500	B	B	Pole	F
		Thunderpole III	A1	1.65	500	B	C	Pole	F
GAMMA AERIAL PRODUCTS	Lye, West Midlands, (0384 891132/891474)	Skybreaker	AL	1.5		B	B	Pole	D
		Avenger	AL	1.5		B	B	Bracket	C
		Lofty	AL	1.5		B	B	Bracket	D
		Skybreaker II	AL	1.65		B	C	Pole	E
		Avenger II	AL	1.65		B	C	Bracket	E
		Lofty II	AL	1.65		B	C	Bracket	E
		Firefly	SS	1.65		M	C	3/8" thread	E

na Checklist will give you the following information:

used in some models. The list tells you what material the antenna is manufactured from.

Length

The legal maximum length of an antenna is 1.65m, base or mobile.

Maximum Power

This is intended as a guide

only, as the law only permits an effective radiated power of two watts. The power rating will give some indication of sturdiness. Figure refers to watts.

Type

Indicates whether a mobile or base antenna.

Loading

Indicates the type of

electrical loading of the antenna; top, centre, bottom or continuously wound.

Mount

This gives some idea of the mount or type of mount appropriate for the antenna concerned. Home base antennas are usually pole

mounted, but can be house gutter mounted. Mobile antennas are either mag. mounted by a strong magnet, attached to the car gutter or boot lid edge whilst others are physically attached in the same way as a car radio antenna. Mobile antennas with 3/8" thread usually will fit a range of mounts.

KEY		
Construction	Loading	B — £5-£9.99
SS — Stainless Steel	T — Top	C — £10-£14.99
AL — Aluminium	C — Centre	D — £15-£19.99
FG — Fibreglass	B — Base	E — £20-£24.99
Type	CW — Continuously wound	F — £25-£29.99
B — Base	Price Bands	G — £30-£39.99
M — Mobile	A — £1-£4.99	H — £40 plus.

NAME	ADDRESSES	MODEL	CONSTRUCTION	LENGTH	MAX POWER	TYPE	LOADING	MOUNT	PRICE RANGE
HAM	Cognet & Co, Whitegate, 12 Farden, Bitterley, Ludlow, Salop	Big Mac	AL	9.9m	2k	B	B	Various	H
		Thunderbird	AL	6.5	2k	B	B	Various	G
		Hipower	AL	6.5	2k	B	B	Various	G
		Quatro	AL	5.0	2k	B	B	Various	G
		Saxy	AL	7.5	2k	B	B	Various	G
HOT ROD	Stateside Trading Ltd, Audley Avenue, Newport.	FM UK	SS	1.27		M	B	3/8" Thread	B
LES WALLEN MANF.	Pembroke Works, Ramsgate Road, Sandwich.	Modulator LC	SS	1.65	1000	M	B	3/4" Thread	C
		M.D.X. Long	SS	2.00	1000	M	B	3/4" Thread	C
		M.D.X. Short	SS	1.65	1000	M	B	3/4" Thread	C
		Mini M.D.X.	SS	1.10	100	M	B	3/4" Thread	B
		Mini 27	SS	1.40	500	M	B	3/4" Thread	B
		T-Bolt	SS	0.83	200	M	B	3/4" Thread	B
		Saturn	AL	1.00	500	B	CW	Pole/wall	D
		Exper	AL	1.00	1000	B	C	Pole/wall	F
MARKSMAN	Markman Products, PO Box 40, Milton Keynes MK8 2UT (0908 668918)	Mister Stick	SS	1.19	Above legal limit	M	C	3/4" UNF	D
				1.63					
R.W. BADLAND LTD.	Roefen Trading Estate, Providence Street, Lye, Stourbridge, West Midlands (Lye 3160/5051)	Rebel 1	SS	1.5	500	M	B	3/4" Thread	
		Rebel II	SS	1.5	500	M	B	3/4" Thread	
		Rebel Raider	SS	1.5	500	M	C	3/4" Thread	
		Rebel Bullet	SS	0.61	50	M	B	3/4" Thread	
		Red Devil	SS	1.52	500	M	CW	3/8" Thread	
REVCO	Telecomms, 189 London Road, North End, Portsmouth.	Revco	SS	1.0	100	M	B	Various	B
SMC	Rumbridge Street, Totton Street, Hants	Oscar CBA 11GP	SS	1.5		B	B		F
		Oscar 11V11S11	SS	1.5		B	B		F
		Oscar 11CM	SS	1.2		M	B	Mag. Foldover Base	D
		Oscar 11CE	SS	1.2		M	B	Pull up	C
		Oscar 11NE	SS	1.5		M	B	Foldover Base	C
		Oscar 11SE	SS	1.5		M	B		C
		Oscar 11ZE	SS	1.5		M	B		B
TAGRA	CB Radio Centre, 337 Kenton Road, Middlesex.	T40	SS	1.4	500	M	B	Various	E
THORO'BRED	Pixtron UK Ltd, 10 Victoria Street, Nawark, Notts. (0836 74688 Telex: 377627)	Z 27	SS	1.52	1700	M	B	3/8" Thread	B
		Z Mag	SS	1.52	1700	M	B	3" Dia Magnet	C
		251	SS	1.50	100	M	B	5" Dia Magnet	C
VALOR	W.T.A. Electronics Ltd, 111 Cromer Road, Hellesdon, Norwich (0603 47694)	Warrior 650	SS	1.52	1500	M	C	3/8" Thread	C
		Half Breed 520	SS	1.52	1500	M	B	3/8" Thread	C
		Half Breed 510	SS	1.2	1500	M	B	3/8" Thread	C
		Half Breed 500	SS	0.9	1500	M	B	3/8" Thread	C
		Dial-a-Match 540	SS	1.2	100	M	B	3/8" Thread	C
		Dial-A-Match 530	SS	0.6	25	M	B	3/8" Thread	C
		Rubber Duck 300	SS	0.35	25	M	CW	3/8" Thread	C
		Pro Am PLB 27	SS	1.52	200	M	B	3/8" Thread	E
		Road Hog 338	FG	0.9	1000	M	T	3/8" Thread	D
		Road Hog 335	FG	1.2	1000	M	T	3/8" Thread	D
		Road Hog 335	FG	1.52	1000	M	T	3/8" Thread	D
		Road Hog 337	FG	1.75	1000	M	T	3/8" Thread	D
		Road Hog 831	FG	0.6	500	M	T	3/8" Thread	D
		Road Hog 838	FG	0.9	1000	M	T	3/8" Thread	D
		Road Hog 835	FG	1.2	1000	M	T	3/8" Thread	D
		Road Hog 836	FG	1.52	1000	M	T	3/8" Thread	D
		Black Magic 333 1/2	FG	0.76	500	M	T	3/8" Thread	D
		Black Magic 333	FG	1.2	500	M	T	3/8" Thread	D
		Black Magic 332	FG	1.52	500	M	T	3/8" Thread	D
		Black Magic 333 1/2	FG	0.76	500	M	T	3/8" Thread	D
Black Magic 833	FG	1.2	500	M	T	3/8" Thread	D		
WTA	W.T.A. Electronics Ltd, 111 Cromer Road, Hellesdon, Norwich. (0603 47694)	Wot Pole 1	AL	1.5	1000	B	B	Pole	B
		Wot Pole II	AL	1.5	1000	B	B	Pole	A
		Wot Stick 1	SS	1.5	1000	M	B	3/8" Thread	C
		Wot Stick II	SS	1.5	1000	M	B	3/8" Thread	B
VAN ORDT	Knight Communications, Unit 19 Brittanie Estate, Leegrave Road.	Audio King	SS	1.5	2000	M	B	3/8" Thread	G

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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).

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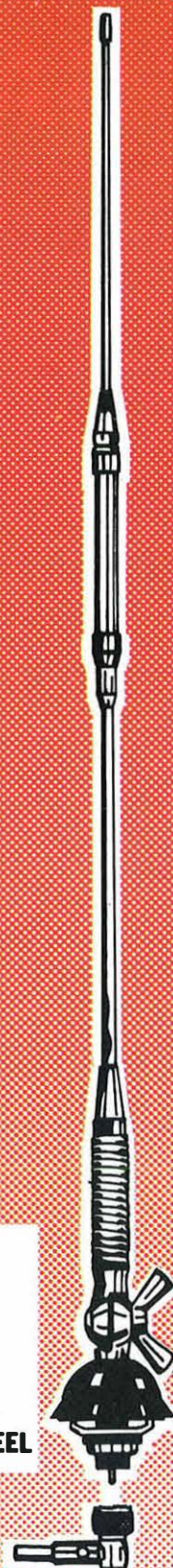
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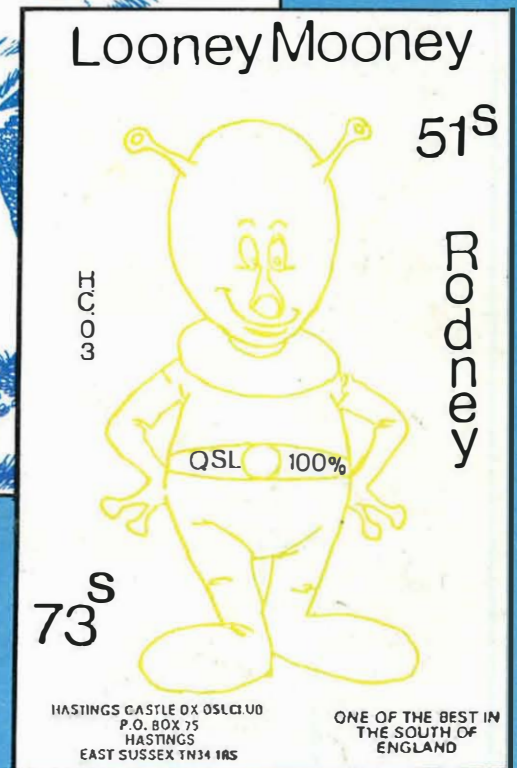
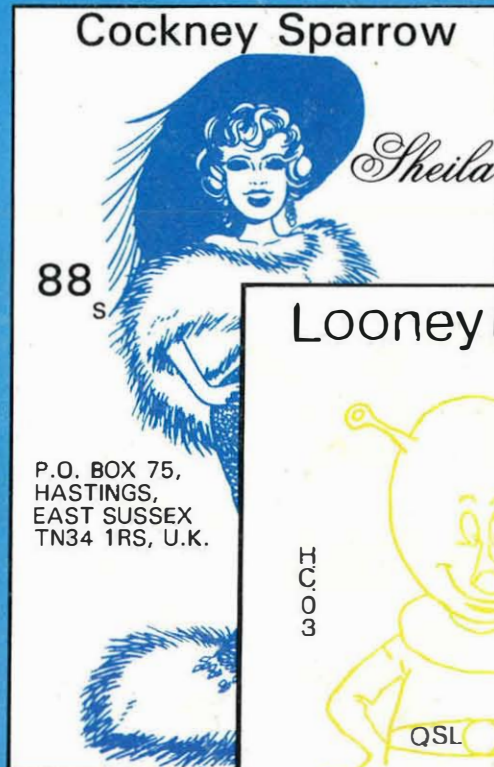
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