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Citizens' Band



Inside this month

We take a look at the market for handheld CB transceivers.

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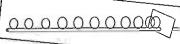


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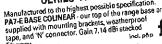
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NEWS FROM THE WORLD OF CB NEWS

FROM THE WORLD

CB

NEWS FROM THE NORLD

UPDATE

Editorial

An interesting story reached us recently in the form of a newspaper clipping about a family who, in trying to cross the Wash, got hopelessly lost and caused a bit of panic between local monitors and the coastguard. It seems a family from Hull left Yarmouth to take their new cruiser home—without aid of charts, compass or marine radio.

Instead, they were being directed on CB by a friend of theirs who was travelling along the coast by car. Worse still, they were using channel 9 for their contact. When they got into difficulty, they chanced to remark that they may need the coastguard. Local emergency monitors heard this and set about informing the coastguard. This happened twice over the weekend trip but, on both occasions, the coastguard found they weren't really needed as they were not in any real difficulty.

One of the most astonishing aspects about the story is that the family told the local newspaper that the monitors were "jumping the glory gun" in that they only said they *might* need the coastguard. When they realised that they didn't need help, it was too late as the monitors had already set wheels in motion.

The family claimed that they did not need a compass as they were following the coastline, and that they had lost their charts overboard in rough waters. Apparently, they had had engine trouble and had hit rocks as well.

Coastguards described the voyage as "crazy" and "naive" and yet the family found it necessary to have a go at the monitors for trying to help! What were they doing using channel 9 in the first place, we ask ourselves?

Oh well, elsewhere in this issue, you will find the new Radiotechnic rig reviewed, as well as a look at a popular antenna from Spain. In addition F. C. Judd concludes his article on a 934 repeater plan and Keith Townsend wonders 'Where have all the handhelds gone?'.

One last point: we regularly receive letters from readers wanting us to send them circuit diagrams and suchlike for various rigs, old and new. We are sorry to have to tell you that we simply don't keep a stock of them, so save your stamps. When we find someone who can supply this type of information we'll let your know. Bye for now.

Eamonn Percival

New Frequencies for Smokey

The Home Office are about to start work on a £64 million project to replace the whole of the police mobile radio system in England and Wales — excluding London.

— excluding London.

Over 25,000 police radios are involved and the project will take until 1990 to complete. The plan means that engineers will be visiting more than 250 hilltop sites to install equipment which will transmit and receive on the 150 and 140MHz wavebands. The present bands of 100 and 90MHz are too close to many BBC and commercial VHF radio broadcasts.

The new radios are likely forces to be convet to cost about £300, half the the end of 1986.

price of the present ones, and will have up to 256 channels— at the moment, the maximum is the Metropolitan Police's 15 channels.

Each force's patrol cars will be able to use the radio systems of other forces, which is not always possible at the moment.

Mr Peter Owen, head of the Home Office telecommunications directorate said: "The complexity is quite horrendous. We are confident that we can do it, although we're apprehensive about squeals from the police during transition. If we fail the police will be listening to Radio Onel"

It is expected that Kent will be one of the first police forces to be converted, around the end of 1996

Talking Rigs

The Royal National Institute for the Blind contacted us recently to see if they could find a supplier of talking rigs - rigs which have been converted to audibly inform the user that they have selected channel 9. Unfortunately, we have drawn a blank so far. If anyone knows of a supplier, they would be doing a lot of blind breakers a favour by contacting Don Roskilly at the Royal National Institute for the Blind, 224 Great Portland Street, London W1N 6AA. Better still, they could speed things up by ringing him on 01-388 1266.

Thumbs Up for CB

It was nice to read in a Plymouth paper recently an article headed 'Citizens' Band radio is winning over its critics', written by David Mudd, MP for Falmouth and Cambourne. In the article, he explains why he has changed his opinion of the CB enthusiasts who he once thought of as the "anarchists of the airwaves".

He mentioned that, when legalisation was being discussed in Parliament, he had reservations about it. Since then, he says, he has changed his mind after learning that, in fact, "CB operators have become a great source of help and co-operation to the police and the community in general."

Mr Mudd also makes mention of the Citizens' Observer Group (COGS), an organisation which was created after representatives from 12 local CB clubs had held a meeting at Falmouth with senior police officers and had established a liaison with traffic police Cambourne centre, so that they could act as dozens of pairs of extra ears and eyes in cases of missing persons or stolen cars.

RIS Man Attacked

We recently learned of an of the thousands of pounds radio, there is nothing to be Birmingham, in which a mem- equipment installed in it. ber of the DTI's Radio Investimissions.

gation Service required hospi- not always seen eye to eye radio users. tal treatment after being with the RIS but we have no attacked by a group of youths, hesitation in condemning acts the first act of this nature to whilst attempting to track the of this nature. Although some come to our notice, though source of illicit radio trans- radio operators may disap- we are grateful that they are In the attack, which took occasionally even their met- sincerely hope that those place in the early hours of the hods we urge the entire radio who are disposed towards morning, the man was dragged community to bear in mind violence will bear in mind the from his car and beaten un- that these are ordinary men, image of the entire radio conscious. He was left at the carrying out their everyday community before taking the side of the road by his attack-duties and that they are entitled law into their own hands and ers, who then drove his car to do so, unmolested. What- we extend our sympathy, tothrough the plate glass window ever the rights and wrongs of gether with our wishes for a of a nearby shop before driving the various campaigns for the speedy recovery, to the RIS away and stripping the vehicle legalisation of many forms of officer concerned.

incident which occured in worth of radio monitoring gained from violence which, when it occurs, merely dam-Citizens Band magazine has ages the reputation of all

> Unfortunately, this is not prove of their objectives and few and far between, but we

CB to the Rescue - Again

An attempt to climb England's 300 highest peaks was interrupted recently when the Climathon team had to helt their journey to help an injured man to safety.

The team - led by the aptly named PC Nick Nutter was attempting to scale 330 peaks above 2,000 ft in order to raise money for Cystic Fibrosis. Attempts to reach the Climathon back-up team by radio failed but another climber managed to contact police with his CB radio.

Sound Sense

Many readers will, in addition to having a CB installed in their vehicle, also have some form of in-car entertainment. Those with a few bob to spare might like to know that Volvo recently launched a new range of radio/cassettes.

Top of the range are the ETR and the MTS. Both have a three-band (LW/MW/VHF) radio with electronic tuning and a digital display, a search facility and pre-programmable stations; the ETR has 15, whilst the MTS has a staggering 78! Each set also features an auto-reverse tapedeck.

The MTS also has the ability to overcome the limitedrange restriction of VHF transmission. With a conventional VHF radio, a journey of any length usually means switching from one frequency to another to stay tuned to one particular programme. With the MTS \bar{s} microprocessor tuning system the ten memories can be used to select a programme and, no matter how long the journey, it will switch automatically to the frequency of the strongest transmitter Recommended prices are £287.50 for the ETR and £488.75 for the MTS.



The Volvo MTS (see left)

CB Charity Saboteurs

Two Cornwall men who tried to sabotage a charity CB marathon to raise money for deprived children recently admitted that they did it for revenge.

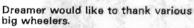
The two said that they interrupted the 50-hour

marathon in aid of disabled children at the Churchtown Farm Field Study Centre because they wanted an apology for being called names over the air several weeks before.

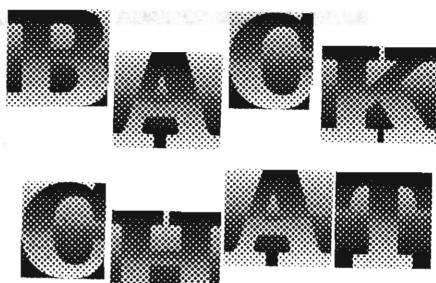
The Cornish Guardian reported that one of them admitted that he had used bad language over the air and put an elastic band around the mike to play music during the marathon. His rather pathetic excuse was that at least the music was from Live Aid so it was doing another charity some good! We say that two wrongs don't make a rightl



More thoughts and opinions from readers







Thank You, Breakers

Dreamer, from Northampton, wants to thank a few people . . .

I have just read Big T's column in your magazine and found it very interesting so I thought I would like to send my thanks to all the big wheelers who help me keep employed through their generosity.

Let me explain. I live in Shoe Town and, due to fares being too high, I use the old thumb to get down the slab to London. When I am late or when I get dropped off at a bad junction and feel I will never get a lift (you know, the one car an hour and raining cats and dogs situation), I resort to my trusty handheld on channel 19.

If any breaker passing gate x would give a lift to this breaker heading for gate 15, it would be appreciated", chortle. Quite soon, I am usually heading home to my nosebag. It's not only big wheelers who help, but also cars and, after a long day at work, the "Yes breaker, I'm going that way" is very welcoming.

would like to say thanks to all those good buddies. I'll copy you on the 19 sometime between the starting gate and gate 15 (or in the opposite direction in the morning).

Spot-on?

The Conductor lives in East London and is concerned about accuracy . . .

Firstly, a very many thanks for a great magazine, but let's get straight to the point. It is noticed that a great many breakers boast that their rigs are perfectly on channel, even after having been attended to by professionals. On further investigation, I found that at least three who claimed that they were "on channel" were as much as 1000Hz to 1250Hz off frequency. After all, not all equipment is spot-on. In fact, to speed things up, a really spoton signal generator is not even in a workshop, hence the fact that the rigs are often not on frequency despite the allowances of plus or minus 500/800Hz.

Some time ago, it was the pride and joy of magazines to publish 'homebrewed' test equipment. How about (a) a signal generator using crystals only to give 455Kz — 10.240000 (10.240460) — 27.791250MHz so that by changing or switching a crystal, with a small output, anybody could check his own rig accurately - noting that not all breakers are thick. Just change the crystal and have a very accurate check; (b) a modulation meter with, of course, some degree of accuracy so as not to break the law. It is noticed that a lot of breakers tweak up a rig, altering every preset in it and then cause havoc by not only being off frequency but also greatly overmodulating. This causes not only bad copies to whoever answers them but also causes interference to other people in the area.

How about it? Two items spread over two or three months. There are a lot of breakers capable of making such equipment without any headaches and even they would be pleased to put the 'wallies' rigs in good order without the very high cost of shop bought items. Sorry to be so long-winded but we all definitely need items like these.

Let's Get Together

Nimrod, who hails from Wigan, has little faith in monitoring organisations...

Several times in the past, suggestions have been made for a national UK CB organisation. Sometimes, it is suggested that one or other of the CB magazines should run it. Well, Mr Editor, how about it, seeing as there is so much talk about cleaning up the airwaves, plus all the talk about the new frequencies being introduced. I would suggest that now is the time to form such a club in the hope that, together, we can clean things up and, hopefully, stop the same thing happening to the new service if and when it is given to us. Let's face it, you are the last remaining CB magazine here in the UK and you know the needs, wishes and hopes of the British CBer. You have the ear of those that matter and, via the magazine, you can pass any info on to the CB masses. So how about it? Put out a readers' survey to feel out your readers. I think you will be surprised at the answers.

One way or another, I have been involved with the various groups who supposedly speak on behalf of the UK CBer whatever the mode, but I have found that all of them leave a lot to be desired. It's a case of "Yes, we will speak for you but you mustn't rock the boat, your face must fit and you must hink along our lines". I think it's about time. As they say, a new broom sweeps clean.

I'll give you an example of the situation now. On Sunday, 8th August, a minibus carrying disabled people got into difficulties on the M6. The driver gave a call on channel 9 but it wasn't heard by any of the so-called REACT monitors, who supposedly cover the Wigan area. My lady wife, Silver Bell, took the call although she wasn't a monitor, but she was unable to help because of the usual thickheads who use channel 9 for a play area. However, thanks to several local breakers who Silver Bell was able to contact, the plight of the disabled passengers was sorted out.

I write this in the hope that, it any of the so-called REACT monitors are reading this that they will feel a little smaller. These so-called monitors are only too keen to come on channel and say that they are a REACT member and that we can leave things to them. One local REACT member said later that they couldn't monitor channel 9 as they were elsewhere monitoring a funrun. Perhaps REACT HQ would like to comment on this, as I seem to have read somewhere that the REACT group in a given area should have at least one channel 9 monitor whatever else they might be doing.

There is another point I would like to be cleared up. I always understood that any such monitors should, apart from having a CB rig, have a telephone in their own home or at least have access to one at all times. Many of the

Wigan "monitors" have neither. Comments from REACT would be welcome.

My final point regarding channel 9: people ask why others have no respect for this channel. Well, is it any wonder when the deadlegs hear a call on channel 9 and nobody takes it up?

Unanswered Questions

'Jim' from the Southampton area is disappointed about the recent statements made by John Butcher MP...

Regarding Keith Townsend's "Question Time" feature in your September issue, what a load of old rubbish Mr John Butcher was speaking! Talking about bucketmouths, he stated that once his department has name, address, location, time and contents, then they can take action. We in the City of Southampton have done this with five known bucketmouths, DJs and the like and believe me they are still on channel. Can nobody put a stop to these people?

Mr Butcher goes on to say that the licence holders have dropped in number. What does he expect? If his department do not act, why on earth should we pay for a licence? A group of breakers got up a petition to this effect and handed it in to the Home Office and nothing happened at all. This was in August 1983.

I, and my fellow breakers here in Southampton, believe that the only way to clear up CB is to take action ourselves. The DTI are only going after the licence holders because it is much easier, rather than trying to trace someone they don't know. If the TV detector vans can do it, then why can't the DTI?

A Change for the Worse

Lyndon, from somewhere in the UK, doesn't think a change is a good idea...

Do the authorities really know what they are letting themselves in for by making the 'naughty forty' legal and taking away the legals? As a low, mid, high/AM, FM, SSB station, I use the FCC naughty forty quite often and I know that when sideband skip comes up (which is quite often) you can hardly get out at all.

Furthermore, stations will still use the present UK 40 channels, stations will use burners to get over the SSB QRM, and people who are sick of QRM from Continental stations will go onto illegal bands such as low or low low.

Hit for Six

From Maidstone, Babycham II enjoys helping truckers...

Someone recently queried what happened on the 06. Well, I monitor the 06 more or less all day from approximately 5.30am until 7 pm, giving out 10-13s to the big wheelers and other mobiles.

They suggested that, as I was on air most of the day, to stay on the 06 as it would be easier for them to find me if any help is needed or to help report

any RTA etc.

I also help them by giving directions to places or firms that they do not know. This, of course, goes against the grain with the wallies, and I very often get keyed out. Mostly they take pleasure in stopping an RTA coming through but, as I tell them, perhaps their relations may need help one day. The most pathetic excuse is that they want to use the 06 for a change — even though there are several clear channels. Even if I do move off the 06, the keyers follow so I return to it.

Anyway, many people say it's nice to know where to find help and ignore the wallies, so I just press on regardless. So now you know what happens on the 06.

The state of CB

Airman writes from Leicester about our age-old problem . . .

I have just invested in a CB rig. As a pensioner I thought it would be good fun to talk to other people. However, while testing for SWR, I was appalled at the signals I received. The bad language and music playing has put me off at the moment. However, I intend to carry on a bit longer to see if I can copy anyone other than these spoilers. I can't understand that the BBC detector van can look for licence dodgers while nothing can be done to track down these people — why pay for a licence?

Cough Up

Papillon writes from Aberdeen about a worthy cause . . .

At the beginning of August, four members of our club, including myself, went to a place called Cairn-a-Mount, which is 1500 feet high, to do a sponsored 48 hour modulation in aid of the Friends of the Special Nursery and Nazareth House, both in Aberdeen. The Special Nursery is an extension to the existing maternity unit and will be built solely by donations, as the NHS say they cannot afford it. Nazareth House is a home run by the nuns.

Last Friday, I checked our donations and I found £22 had been donated — and that included a total of £10 from three donations. After having over 220 copies from the length and breadth of our country, I would have thought that, after giving £50 million to Ethiopia, the people who promised donations might have been able to muster at least £50 to save our own children.

If any breakers have lost the address, it is: Bradley & Bingley, Sponsored Modulation, 28 Broad Street, Peterhead, Aberdeen, Scotland.

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



More questions, with answers from Smart Alec



Morse Code Mayhem

Big R. J., from Fraserborough, Scotland, offers a most interesting problem . . .

Q.I am writing in the hope of finding a remedy for what appears to be a strong Morse code signal, which I can hear on all forty channels.

My rig is a Communicators N1440DX and is attached to a Thunderpole aerial. I have tried it out on a couple of different aerials but the effect is the same. At first I blamed the problem on either a local radio station, or maybe a nearby power transformer but, since it remains the same when the rig is used from other houses and since other rigs are unaffected, I am back to square one.

A. This is one of those problems to which there are a number of possible solutions and, to offer a comprehensive diagnosis I would need to witness the interference myself. For instance, are you certain that what you are hearing is Morse code? I ask because whilst a power transformer might well generate an interfering signal it certainly would not be code. However, fet us proceed on the assumption that you are, in fact, hearing code.

Even in this case I need more information than you offer in your letter. For example, does the signal occur only on a quiet channel, or is it only present when you can hear a normal CB signal? In the first instance, of clear channel interference, I would be inclined to believe that one of your intermediate frequency stages is receiving the signal directly and passing it onto the following receiver stages, or that a strong signal is being rectified by the speaker leads, from where it would go straight to the speaker.

If, on the other hand, the interfering signal only occurs in the presence of a normal transmission on the same channel, I would suspect that the mixer stage of the receiver is being fed wrong information. Again, this is poss-lbly due to signal reception at the IF stage, which is then fed to the succeeding stages, where it mixes with the products of these stages, to produce the effect you are hearing. Alternatively, the mixer oscillator may be misaligned, in which case it will pump the wrong product onto the final stages.

To effect a cure, let's play the

percentages. Firstly, alter the length of the rig's speaker leads. This will alter the frequency at which they respond to unwanted RF signals and ensure that they do not act as an aerial for some unwanted signal on an unknown frequency. Secondly, get someone who can read Morse code to listen to your problem. He will tell you for certain whether the signal is true code, or merely electrical interference and, if it really is code, then he may be able to identify the source of the problem from the content of transmissions.

If you then still have the problem I suggest you take the rig to a qualified radio engineer, for re-alignment.

Alternatively, your difficulty may simply be that the rig is wide open to electrical pulses, in which case, again, I recommend the attention of a qualified engineer.

In either case, the problem definitely originated within your receiver and is not the fault of either your location, or your antenna.

The Spanish Position

G. H. Freeman, of Swindon, wants to know whether CB is legal in Spain and, if so, in what form? Here I am indebted to David Harding, of Kent Coast Monitors, for the answer...

Q. Can you please advise me of the CB sutuation in Spain? Do they use either the British frequency allocation, or FCC frequencies and what power output level is permitted?

I would also appreciate any information which you might have on the CEPT frequencies to which we are changing, together with some idea of when this will happen.

A. Spanish CB seems to be a somewhat confused affair. Their most recent legislation appears to date from 1981, when they were permitted the use of ten channels, somewhere within the FCC band, with a maximum power output of 500mW. Both AM and FM are available, though it appears that the authorities, such as they are, prefer the use of AM. I say "authorities, such as they

I say "authorities, such as they are" because in reality it seems to be a case of anything goes. Spanish operators seem to use all manner of frequencies with impunity and without regard to

Problems should be sent to: CB Q&A, Citizens' Band, 1. Golden Square, London W1R 3AB power output limitations. One recent edition of a Spanish CB magazine carried an advert for a multimode rig capable of operating continuously from 25 to 30MHz, with an output of 25 Watts on AM/FM and 45 Watts on SSB.

Unfortunately, we have been unable to find out just what the attitude of the Spanish Customs Officers is likely to be, when confronted with a rig which does not meet their regulations but our information suggests that the situation is much the same as in Italy, where it is a case of the weakest going to the wall.

Your second query, on CEPT proposals, is much easier to answer. In his recent interview with Keith Townsend (CB September), John Butcher MP explained that for various technical reasons, the CEPT frequencies, which coincide with the FCC allocation, (26.965 to 27.405MHz) could not be introduced before, at the earliest, 1987 and that only the use of FM would be allowed.

Sideband Swamp

Somewhere down in the wilds of Wales, Digger is just asking for trouble . . .

Q. I have a sideband rig which I use for DXing. The problem is that I cannot stop it from causing TVI, no matter what I do. I have tried the use of low pass filters, mains filters and various other devices which were "guaranteed" to cure the problem but all to no avail.

The rig is a Cobra 148 GTL, which is connected to a Sigma IV by about 40 feet of coax.

A. The main reason why the Government has consistently refused to licence sideband transmission at 27MHz, is the fact that television sets are designed to receive single sideband signals. This makes the likelihood of breakthrough from SSB CB transmissions far greater than from either a full AM signal, in which both sidebands are transmitted, or FM, in which the amplitude remains constant, though, since SSB is, in effect, a form of AM transmission, similar interference can orcur when an AM signal is present.

27MHz is neither more nor less disruptive in this respect than any other frequency but the effects are more likely to be noticed because of the fact that CB operates in far closer proximity to television sets and other domestic equipment than any other form of radio service and this is the

root cause of your problem.

Re-siting your antenna may help. Since you mention a 40 foot cable run, I assume that the aerial is very close to your TV aerial. Using something a little less punchy than a Sigma IV might also reduce the problem but the real cure, assuming that you intend to continue to use this mode of transmission, lies in adequately shielding the various stages of the television



A sidebander is having — and causing problems (see Sideband Swamp)

and this, even where it is practicable, is a job for an expert. Even then the results may not be what you are looking for. In some types of TV set particularly some older models, it is absolutely impossible to adequately protect the various points at which an unwanted signal may enter and, even where internal protection has been accomplished, this offers no protection against "swamp", which occurs when the strength of unwanted signal is so great that the TV antenna is unable to reject it in favour of the TV signal it is seekina.

It is an unfortunate fact of life that TV design will need to be dramatically improved, at significant cost to the viewer, before ŠSB CB stands even a remote chance of becoming legal.

Ultra-high Hopes

Tony Collins, from Birmingham, is considering 934MHz . . .

Q. I have been on 27MHz for about two years now but I am quickly losing patience with the antics of the small number of idiots who wish to spoil things for everyone else. I have been told that this problem does not exist with 934MHz CB and I am very tempted to try it. I would like your opinion of its worth before spending the large amounts needed to get on the higher band.

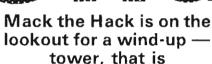
For example, how reliable are the rigs and what sort of range can I realistically expect? I have also heard rumours of certain dangers from this frequency and wonder whether they are true.

 ${\sf A.}$ Let us take your last question first. I really do not know whether the reported dangers of UHF transmissions are true or not but I sure hope that I never get to learn the answer by experience. I would always err on the side of caution in matters of this nature and stay well clear of a 934MHz antenna if I thought it was in use. However, all the documents on this subject seem to suggest that the danger only exists in close proximity to the aerial, so that a base station antenna, provided that it does not have too much gain, should cause no problems.

As far as practical range is concerned, 934MHz is not really suitable for mobile use and is at its best under line-of-sight conditions. If you live on a reasonably high site you should have little difficulty in at least equalling the oerformance of 27MHz equipment, especially if using one of the small multi-element aerials which the specification permits.

I have little practical experience of the differences between one UHF rig and another but have been very impressed with both the audio quality and received signal reports of those which I have tried. As far as reliability is concerned, I know that many of the early rigs left something to be desired but those problems seem to have been overcome in the models currently available and the only problem I foresee is that you may need to take the set to someone who specialises in UHF, since many dealers and engineers will not have the special equipment needed to test and repair them.





oll on Christmas now that the summer holidays are over - that is if you could call it a summer. I suppose someone up there must like me as I took my two weeks in the early part of July and that was the two weeks that the sun showed itself this year. I went to my usual spot near Clacton in Essex and, of course, I took my hobby with me. The 27 is still very useable and, at times, it is what I would consider almost dead with very little life on most of the 40 channels during the day. Evening time is when the 27 comes to life. The channel abuse is very limited but it does seem to increase during the summer weekends when the many weekenders like myself arrive from the towns to their holiday caravans or bungalows.

I have only encountered four other 934 stations in this area, and one of these I expect we will soon lose as he recently passed the RAE and could drift off to other frequencies. Situated on the coast, I am not many feet above sea level and when conditions are good for 934 working I do better square-wheeled on the beach. Under normal circumstances, I can copy stations well into Kent and, at times, Suffolk.

A week or so before my holiday, on a very windy evening, one of my neighbours knocked on my door to inform me that one of the guys supporting my antenna pole had come adrift. Sure enough, one of the guy eyes had pulled out of its mounting and the pole had gained another bend. After a hasty repair, all was well once more but I had now decided that somehow a more stable antenna mounting system was in order. After my holiday I would start hunting around for a suitable wind-up tower. I was waffling on the 934 box with Martin (HB619 Barbarian) whom I first met way back in the naughty 40 days in this area and whose holiday QTH is only a few hundred feet from my own holiday QTH. There is also John (JH 354 Skipjack) and Simon (SB 271 Home Brew). Mention was made about the misfortune of my home antenna installation and that I was in the market

for a new tower. It was revealed by John that a station Ivan (IGS) in Ipswich had a tower for sale. This station was contacted, details and price were exchanged and, after being told that others were interested in this tower, I was forced into immediate mobility Ipswich-wards accompanied by Martin.

Not knowing Ivan's QTH or the Ipswich area, it was arranged that John would talk us in on 934 as far as he could, then some other stations on route would take over, finally passing us over to Iban to guide us to his home. We also had 27 on board in case contact was lost on the 934. As you may be aware, mobile to mobile working on 934 leaves a lot to be desired; mobile to base working is better but it is dependent on the terrain. Best of course is base to base. So off we set. John expertly guided us as if he was in the vehicle with us and contact was kept until we were well into Suffolk. At one time, when contact was failing, we switched to 27 and we were suprised to find that contact was worse than the 934 even though the channel was clear, so we switched back to 934 and John handed us over to Ivan who boomed through and directed us to his home. The other stations were not needed.

As for the tower that we went to see, it was not what I expected. It was a Rohn multi-band HF antenna that consisted of a 24' lattice tower with a pole (antenna) through the top and matching stubs for other HF bands. On seeing this I could visualise, with some work, it being transformed into a wind-up tower suitable for my needs, and the price was right. The structure was loaded onto the roof rack of my car, cash changed hands, refreshment was taken and we headed back.

We were also invited to the local CB club meet. The ODX club meets in a small hall in the village of Frating. What a difference to the boozy pub meets of the past. When we arrived, the meeting was in progress with the committee heading the hall and club events were being discussed. This was eventually concluded and tea and cake followed. Whilst the final of the club's darts competition was played, the rest of the members discussed CB.



A most enjoyable holiday was had thanks to the CB people of the area. On Sunday 18th August I attended a field day that was organised by the South East Essex group members of the 934 club UK. Again, the weather was fine which makes these outdoor eyeballs more successful. Faces and bodies were matched to the voices and a good time was had by all.

In the past I have been very anti preamp, believing that the secret of success was in the antenna. But how wrong can one be, when it was pointed out to me that one would need a lot of aluminium to obtain the gain one does with a preamp. So, I was tempted to try one of these devices and at last I can now hear the stations that told me they have been hearing me for ages but I could not hear them because I lacked the masthead preamp.

As you may be aware, the preamps also tend to pick up the cellular radio telephones at times and I am also led to believe that these telephone conversations can be very interesting. For the first week, I heard very little of this phone interference until a few days ago I switched on my rig and, with the preamp on, I can pick up an endstop signal of radio phone interference; not just speech but digital tones and other carriers. Even without the preamp I am hearing telephone conversations.

Annoyed, angry, and frustrated? Yes, I am. It seems that the cellular radio phone people have upped the power on their switching repeater stations and I am not the only 934 user to suffer. So what is the answer we are asking? Go flatside we are told, so within the next few days my windup tilt-over tower must come down and my antennas turned to the horizontal mode. What about the vertical colinears that we have? These will also pick up the cellular interference. Must we discard these as, if all we users of the 934 go horizontal as recommended it will be difficult to work mobile stations? Again, there is an answer and that is we must build mobile and base omnidirectional horizontal antennas such as the Halo, Lambda, or even Omni VS. Those people that have gone flatside say that it does reduce or eliminate the interference.

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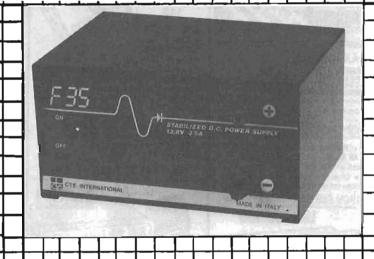
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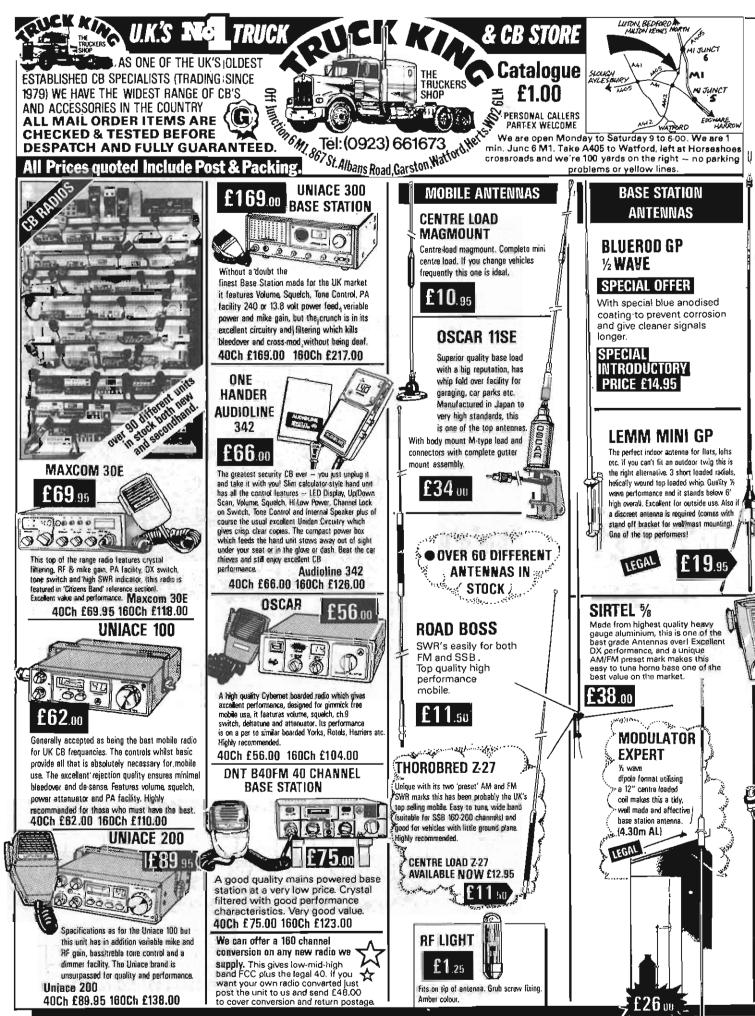
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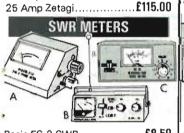
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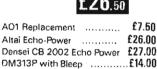
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CB BOOKS

Arriving this month, from Lou Franklins CB City Company in the USA four invaluable handbooks for Technicians and Rig Doctors.

PLL DATA BOOK CB PLL **Buy BOTH** DATA BOOK these two for£12

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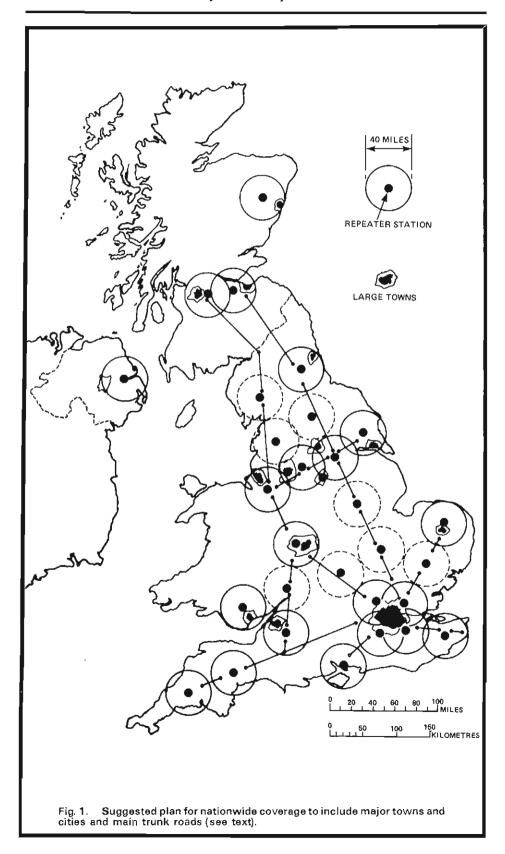
signal by making radiation pattern more parallel to the ground.



Turn over for more 15.55

934 MHz REPEATER

F. C. Judd concludes his two-part article on how a 934 repeater system could work



o doubt the first questions to be answered are who pays for the repeater stations, who installs them and who is responsible for maintenance and running costs etc? Let us take the amateur radio repeater system as an example and which at present in the UK involves about 160 fully operational stations, all paid for, installed and maintained by the radio amateurs themselves. The stations are licenced by the Home Office via the Radio Society of Great Britain, A repeater station system for 934MHz CB radio could be organised on the same basis.

Each amateur radio repeater is used mainly by those in the area served by the repeater and a local group is appointed to deal with initial construction, installation and maintenance on a purely voluntary basis. The initial cost for the equipment is raised from the area users by individual subscriptions and/or fund raising by other means. After this the area users make a small annual subscription toward maintenance and running costs and any rental that may have to be paid for the repeater site. The benefit of any repeater is mutual to all radio amateurs regardless of which area repeater they subscribe to. In other words - You may use our repeater if you happen to be in our area and vice-versa.

Obviously a national repeater station network must be carefully planned with regard to unnecessary overlapping of areas which would occupy channels that might well be denied to others in another area. Ideally, therefore, an appointed committee or controlling body would be needed to vet all applications for repeater station installations and to allocate appropriate frequency channels for the areas concerned. For example, with 20 repeater channels available, they would probably have to be shared by a hundred or more repeaters although this is quite practicable providing repeaters sharing channels are far enough apart so as not to cause interference to each other. The 432MHz amateur radio repeater system which covers the whole country has a total of 108 repeaters sharing 16 channels.

Guide to a system

Firstly frequency allocation and, as already explained, this would require a bandwidth of 2.950MHz to provide 20 repeater channels and 20 simplex channels. SIMPLEX means direct station to station operation and the term DUPLEX is often used to denote repeater operation. The primary function of a repeater is to greatly extend the working ranges of mobile stations who have the disadvantage of an antenna at low height and consequently lower radiation efficiency. They also

STATION SYSTEM



have the problem of greater attenuation of signals due to variations in surrounding terrain. However, this does not bar the use of repeater stations by home based operators providing they don't hog the repeater channels when mobiles need them.

A suggested frequency allocation to cover the number of repeater and simplex channels already mentioned is shown in Table 1. Although there is a total of 60 separate channels (1 to 60) the repeater INPUT and corresponding OUTPUT channels are designated R1, R2 etc, whilst the simplex channels are denoted by S1, S2 etc. with S9 as an emergency channel and S10 as a general calling channel. As an example, if you were working through a repeater and using the channel number R12, you would be transmitting to it on a frequency of 934.575MHz. When your set is switched to receive it would automatically be tuned to the repeater output (R12) but to the frequency being 936.575MHz. The repeater is therefore occupying two channels, the normal numbers of these in order of frequency being 12 and 52 respectively. When operating simplex on say S2, you would be occupying only the one frequency for both transmitting and receiving, in this case channel number 22 or frequency 935.075 MHz.

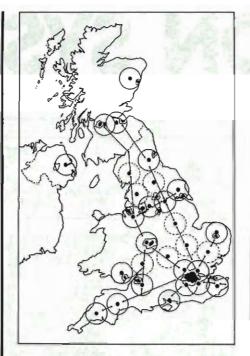
Repeater Location

Since repeater stations have the greatest use in highly populated areas it follows that most of them, as with amateur radio repeaters, would be located close to those areas as for example large cities like London or Birmingham and other major towns, Many large towns are often fairly central to a county and a single repeater station carefully sited could well cover the town and a substantial portion of the county itself. Since the primary function of a repeater is to cater for mobile transmitters some thought should be given to the coverage by repeaters along main trunk roads. Although a repeater might cover a town and part of a county at one end of a trunk route, say Birmingham and local area, another may be needed to provide continuity along the intermediate portion of the route and, at the same time, cater for towns along, or situated near, the route. A study of the 934MHz repeater location map (Fig.1) will give some idea of the planning needed to accomplish as wide a coverage as possible, not only for individual towns and suburbs but for main trunk roads as well. Please take into consideration that the distribution of repeaters shown in Fig. 1 is only a suggested plan but is based on the locations and coverage provided by the amateur radio repeater network at present in operation. The repeaters ringed by a solid line circle would

CHANNEL Number in order of 50kHz specing	FREQUENCY MHz	TABLE 1 Repeater Number INPUT	Repeater Number OUTPUT	Simplex Channel Number
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. Total	934.025 075 125 175 225 275 325 375 425 475 525 575 626 675 725 775 826 875 925 935.025 075 126 175 227 327 327 427 327 427 327 427 327 427 327 427 327 427 427 427 427 427 427 427 4	R1. R2. R3. R4. R5. R6. R7. R8. R9. R10. R11. R12. R13. R14. R15. R16. R17. R18. R19. R20. — — — — — — — — — — — — — — — — — — —	H1. R2. R3. R4. R5. R6. R7. R8. R9. R10. R11. R12. R13. R14. R15. R16. R17. R18. R19. R20.	S1. S2. S3. S4. S5. S6. S7. S8. S9. S10. S11. S12. S13. S14. S15. S16. S17. S18. S19. S20.

cover adjacent large towns whilst those ringed by a dotted line circle would cover sections of trunk roads and other towns along them. Mountain areas such as those in Scotland and Wales could not be covered efficiently by VHF or UHF repeaters although there may be a few instances where a fairly large town and its outskirts might be usefully served if the CB radio population were large enough. Note that a very large and densely populated area like Greater London would almost certainly need three or four repeaters to cover both the inner city areas and outer suburbs some of which are located in surrounding counties like Essex and Middlesex. A large town like Birmingham and its suburbs might also warrant more than one repeater for the same reason.

Again like amateur radio, the type of UHF transceivers required to cater for both simplex and repeater operation would be somewhat more expensive than anything at present on the maret. Such sets are much more complex to begin with because of the additional facilities required. The most obvious requirement would be the necessary switching and provision for the additional channels needed for both simplex and repeater operation (duplex). Power output now rated at 8 watts would be adequate but antennas for both mobile and home base stations would need to have as much gain as the government specification would allow. A 4-ele-



ment vertical colinear should provide a reasonable amount of gain if carefully designed and therefore give increased ERP. Being omni-directional, such an antenna would be suitable for mobile, homebase and repeater station operation.

The only other requirement in the tranceiver is a tone burst generator for

activating the repeater 'through' audio system etc. Naturally, the additional channels, switching and tone burst facility would bring the cost of a set to about that paid for an amateur radio UHF transceiver with similar facilities and which averages at around £300 to £400.

No doubt the question will be asked - why not a repeater system for 27MHz? Technically this would be possible as would dual-band repeaters (e.g. 27 to 934MHz) but as far as 27MHz is concerned there would not be sufficient channels available unless the frequency band were extended down to at least 26MHz and with a channel spacing of not more than 25kHz. The frequency bands above and below the present licenced 27 MHz band are already occupied by other services. This may well be the case where 934MHz is concerned as allocation for radio telephone systems and other services communications have already been made within the spectrum 900 to 1000MHz. Nevertheless a repeater system for 934MHz would be well worth pressing for. Nothing ventured nothing gained.

References:

Amateur Radio Operating Manual. R. J. Eckersley. Published by The Radio Society of Great Britain.

Radio Amateurs VHF Manual. Published by The American Radio Relay League.



Struck, M. Book, Collins of the Coll A New Addition

And now, the Modulator People

This antenna has quality, reliability and looks as

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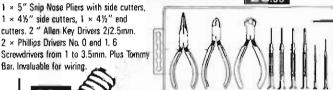
for security, garaging or car parks. A very

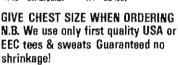
useful accessory, high quality finish.

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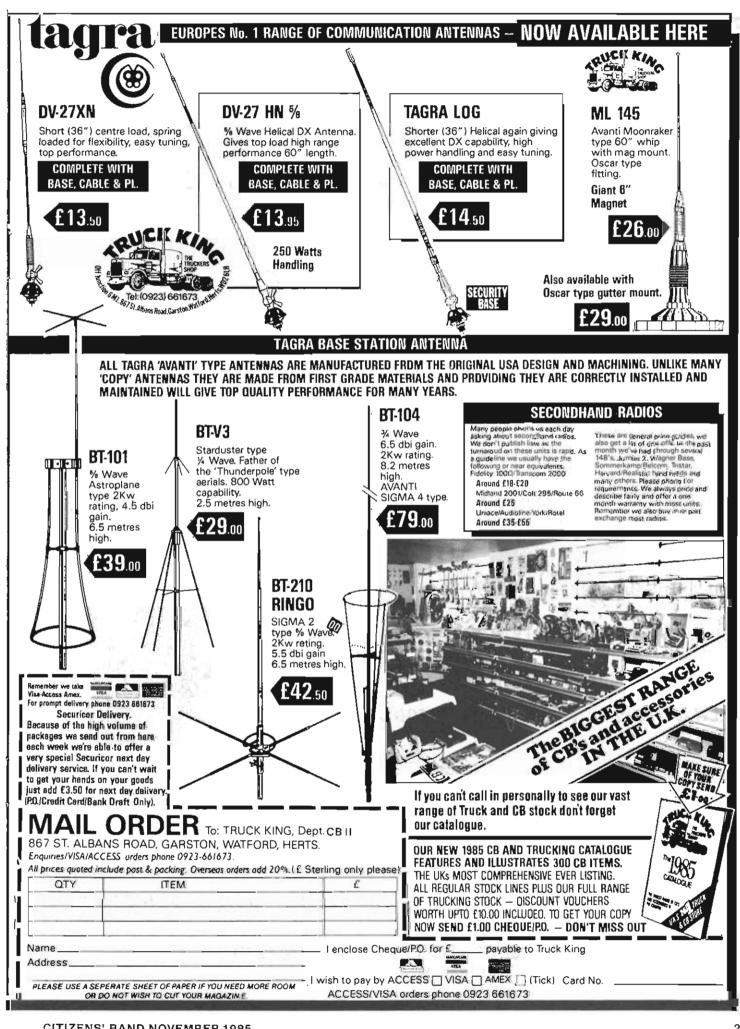
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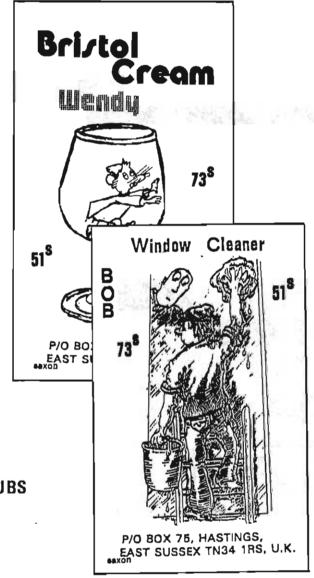


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David Shepherdson with more news about QSL clubs and QSLers

ight, this month, I'll start off with a few names, then as promised last time, a run through of details from some printers. But first, a little good news for everyone who uses the post as much as a QSLerl As you will probably have heard by now, the cost of posting your QSLs is altering anytime now, but instead of increasing (as usual), the cost of a first class stamp remains the same (until March I've heard) and the second class comes down a penny this month! However, parcel posting went up last month and Overseas postage rates will do so shortly. So please take care to ensure your QSL packs have the right postage on them. Also, please put your return address on each card and envelope you send out If your address is not on your cards, then you cannot expect many replies! In the case of your envelopes, if there is any problem with delivery, then it can be returned to you unopened. Be safe, not sorry!

A letter and bundle of some new Currie "Collector Series" cards in now from Dennis (Applejack) of Durham and these have to be some of the best Des has yet done! Obviously, it is a matter of personal preference as to what sort of cards anyone likes, but these are really something special. From Norfolk, comes a bunch of cards of all types from Ken (Big Foot - Sea Dragon President) including a "D'Zine" card, a couple of new Currie "In-dependent Artist" Cards, and a POMA Full Colour card. (For the FCC collectors,

COMMUNICATION THE

its number is 85/3240.) Ken's club costs a mere five personal cards and a large SASE for a tremendous package which even includes a certificate and club pen! Extras include a club stamp (£2.50), club QSLs at £2.50 per 100 (Curries) and £6.50 per 100 (POMAs). The club accepts only cash or postal

orders, NO cheques.

Back to the names with a bunch of cards from Doug (Golden Eagle) and a couple of his friends who have just started OSLing, Christine and Robert (Kiwi and Lampman) who are using a different type of card. Rather than having their cards printed in hundreds or thousands, they had a rubber stamp firm (Ben Nevis of Hull) make up a design as a stamp and they then stamp out the cards as required, and they do use card, and they are pretty effective. Drop them a card and see! A selection of club and view cards in from Stephen (Pot Black) of Birmingham who wants a mention and promises to reply to anyone who sends him some cards. From Aldershot, come some Cavalry Animation cards in from Maureen (Busy Lizzy), for details of CA cards, keep reading.

From my of mates John and June (Desford Duck and Snowflake), a few gold block cards of various colours and designs. Last card for just now is from Ron (Fishkeeper) of the Cutty Sark QSL Club of London; this particular one is another POMA card (No. 85/3138). Membership of the Cutty Sark costs £4 and five cards for a bumper bundle including stamp, certificate, etc.

Right, as I promised last month (before I ran out of room), some details on some printers who want to print you some cards. One thing though, this is not a complete list of printers, just some that have dropped me a line recently. If you are interested in obtaining further details on any of their services, please contact them direct for samples and current prices. Just to show no favouritism (big words) I'll mention them in alphabetical order.

Therefore, first up is Cavalry Animation International of Surrey. This firm supply individual cartoon-style

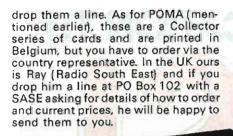
cards, in black and white. The costs work out at £3 for the illustration, and £3.75 per 100 cards. There is a little note on the letter I have; "now in colour at no extra charge". If you fancy some details on these cards, or from any printer mentioned in these pages, drop the printer in question a line and ask for info, with a SASE to assist, of course, and please mention where you saw their details. Obviously, the design on any card is a matter of personal taste, but I quite like the "Captain Cook" one!

Moving on to Des of Currie Cards, a regular of these pages, if only because he keeps me up to date with what has been happening to him. He has sent me some news of his latest ventures. First, he has now supplied several thousand cards to the Berliner Bear Club of Germany making this his first German order. The cards come in red and blue ink on white gloss card and are available from Knut (BB 001) to BB members. Write to Knut for details and prices and, again, don't forget an IRC for return postage. An IRC, or International Reply Coupon, is the equivalent of a UK SASE and are available from you local Post Office.

Staying with Des for a moment, he can now offer a selection on some 40 one-inch diameter, circular stamps. Prices at £1.50 plus 20p postage each, or orders of five or more are postfree. SASE to Des for details and designs, order form etc please. He can also offer a selection of rude ones, and can also supply personalised stamps, so get in touch with him if interested, I see Des is also offering a new type of card; this is a numbered series and from the samples I've seen (see above, Dennis - Applejack) they are going to

be rather sought after!

Another firm offering a very wide range of cards to the QSLer is Impact Graphics. The cards they do range from straightforward black ink outlines on plain or coloured card, through multi-coloured right up to gold foil designs. The backs can be plain or have a radio report on of various designs. For prices, samples etc please



DX QSL Group of Bradford. Membership of this one costs £6 and ten personal signed and dated cards, for which you get a bumper bundle incorporating your YR No, ID card, certificate, mounted stamp, 10 club cards, envelopes, DX certificates, seals, exchange cards and invites, club pen, key fob, log sheets, tourist info and



OSLer Addresses:

Denis (Applejack)

Ken (Big Foot-SD 001) Doug (Golden Eagle)

Christine and Bob (Kiwi and Lampman) Stephen (Pot Black)

Maureen (Busy Lizzy)

John and June (Desford Duck and Snowflake) Ron (Fishkeeper)

Lillian (Blue Lagoon)

Peter (AN #355) Robin (Red Mountain)

Martyn and Rose (EDX #16) Angie (Symphony) GBQDC #271, PO Box 5, Consett, Co Durham. PO Box 2, Sheringham, Norfolk. 19 Hardwick Rd East, Worksop, 39 Manton Crescent, Worksop, Notts 91 Ryde Park Road, Rednal, MAD #9, PO Box 14, Aldershot Birmingham. 59 Manor Road, Desford, Leics. 16 Alanthus Close, Lee Green, London, SE12. 210 North Road West, Plymouth, Devon. PO Box 6, Grimsby. Park View, Culgarth, Penrith. PO Box 5, Livingstone, Scotland.

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THE DAYGL Special Edition Card
In attendance of NORTH APPLAN OF CAUB
Sth April 1985, in Stanley, Co. Durham CASTLE NOTTINGHAM SWAP 0.S.L.

> Castle Built in There has been a Cooke on this site since 1488

Moving on now to Styla Print of Lincs. This is run by "Special K" who caters more for the DXer or QSLer who wishes to buy cards in hundreds, not thousands. Obviously, for full details and current prices, you should get in touch with him but, as a guide, the prices I have are for non-gloss cards costing £7.00 per 100, gloss at £8.00 per 100, and in both cases a photo may be added (at £1 per 100 extra), and postage is, again, £1.00. Also eyeball cards are available, as indeed they are from most of the above printers.

Okay, a round of some club news now, continuing from last month (and probably into next tool), with a few of the clubs which don't get the most coverage in these pages. By gum, I must have this one a while! So, with apologies to Karl, here's some info on the Kilo Mike Whiskey DX-QSL Club of Notts. By this time the Club should be past the first 500 members mark, and membership is available for a reasonable 50p, five personal cards and a SASE For this, you'll get your KMW No, ID Card (XYL/M free), five club cards. welcome letter, exchange cards and invites, stickers, RST and 'Q' codes, phonetic alphabet, etc. Extras available include a mounted club stamp for £4, club QSL cards at £2.50 per 100 and stickers at 50p per 100. Cheques accepted (UK only) and should be made out to the KMW DX/QSL Club.

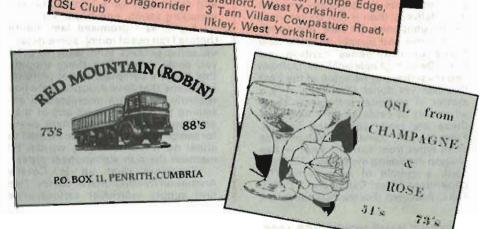
Local to me is the Yorkshire Rose

QSL Club Addresses Antequera QSL DX Swap Berliner Bear QSL DX Club PO Box 2923, D-6750 Cutty Sark QSL Club Dayglo QSL Club Kilo Mike Whiskey DX-QSL Club Nottingham Castle QSL Swap Club

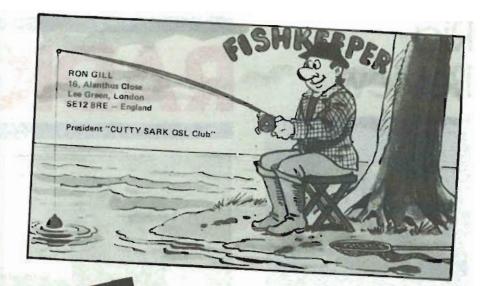
Romeo Delta X-Ray Club Sea Dragon DX QSL Club Sierra Tango DX Club Yorkshire Rose DX QSL Group DR One c/o Dragonrider

PO Box 92, Antequera, (Malaga). Kaiserslauten, Germany. 16 Alanthus CLose, Lee Green. London, SE12 13 Syenite Place, Rostrevor, Co Down, Northern Ireland. 43 Spencer Street, Mansfield, Notts. 41 Nottingham Road, New Basford, Notts. 10 Wallace Street, Ruthergien, Glasgow, Scotland. PO Box 2, Sheringham, Norfolk. PO Box 314, Braintree, Essex. 28 Farmhill Road, Thorpe Edge, Bradford, West Yorkshire.

735



roster. Next up is the Nottingham Castle QSL Club; to join this one costs £4 and 10 cards for which you receive your NC No, ID card, 10 club cards, club stamp, exchange cards and invites. club cards are also available at £3.50 per 100. Over there in Northern Ireland is my old pal Sean of the Dayglo Int' QSL Club; membership of this one costs only a SASE and three personal cards and if possible, a local view card, There are now over 1,600 Dayglo members worldwide making the Dayglo the largest QSL club in Northern Ireland. Extras available include gloss Currie cards and, now, a new design Currie card showing a local scenic feature. For prices please contact the club direct. The last Club for just now is the Sierra Tango DX Club of Braintree. Membership costs £5 and a few of your cards. In return, you receive your



The same

57 Mytchett Farm, Mytchett, Camberley, Surrey. PO Box 5, Consett. Co Durham. QSL Service Addresses 57 Moor Street, Earlsdon, Coventry. Cavalry Animation 42/44 Princes Road, Hull, International PO Box 102, Canterbury, Kent. Impact Graphics Ltd 1 Overton Close, Navenby, Lincs. Humberside. Des Currie Ben Nevis (Stamps) When writing to any of the above addresses, always try to help.

the firm/club to realy by enclosing return poetage. POMA (UK Rep - Ray) the firm/club to reply by enclosing return postage. Styla Print

this year, so I'll hold what I do have until next month as I am fast running out of room. An update on a previous request for info on the Zulu Echo of Saffron Walden has come my way to the effect that the club no longer runs local meetings etc, due to work commitments of the president, but now runs mainly as a PO Box for members. My thanks to Angie (Symphony) for this.

Well, that's it once again. If you want a mention then drop me a line with a card or two and I'll see what I can do. If you have any praises or complaints, again let me know and if

BRAVO BRAVO AM/FM DX GROUP

Line

D Hoard your OSO will

C Reserved vises card via

You've Eyeballed

Lampman

DX

AND MA-MA ON

OF ON CLUB MERLY

CLUB

ST No, membership certificate, roster, stickers, 10 club cards and 10 QSL certificates, exchange cards and invites.

Now, I've had a letter in from Lillian (Blue Lagoon) of Plymouth and she has a sad story to tell. Back in October last year she sent money off to the Kowhai QSL Club in New Zealand. Since then she has sent other letters asking if they received her application and, if so, where was her package? She has been in touch with Otago, also in New Zealand, and he contacted the Kowhai Club on her behalf and they said that they had received her money and letters, and that the pack would be sent immediately. This was in February and, so far, nothing! Can anyone help Lil on this score? If so, please drop her a line, thanks. If she gets her pack, and let's me know, I'll let you know.

A message recently received from Dougle of the RDX Club in Glasgow lets me know and asks me to pass on the news, that he was involved in an accident earlier this year where a drunken driver ran him off the road and he has spent several weeks laid up, unable to deal with any post, but hopefully he will be feeling a lot better by now. All the best Dougie. Another message now from Peter (AN 355) who I mentioned a couple of months ago after receiving a letter from a Spanish club mentioning him, but without an address. Anyway, Peter has dropped me a line and says that anyone who is interested in info or in joining the Antequera QSL DX Club of Spain, he will be glad to forward membership details to you. I believe that membership currently costs £8 (UK). From Penrith in Cumbria comes a note and some cards from Robin (Red Mountain) who would like a mention and last, for this time round, from Livingstone in Scotland hails Martyn and Rose (EDX #16) who promise a super package, but please do remember, to get a good package back, you should send a package you would like to receive.

As for the Forthcoming Events, with it getting on to the end of the year, I don't have any info on any for

you are organising any event that will be of interest to the readers of this mag, let me know (in good time please, not a fortnight or so before it!). If you need a reply, then please do enclose suitable return postage as I am unable to promise a reply otherwise, and finally just a reminder that the multicoloured Dragonrider Christmas QSLs are still availabe to members at the bargain prices of £2.50 per 100 (UK) and £3 per 100 Europe. That's it, all the best until next time.

Dragonrider One

Rig Review

RADIOTECH



Chris Peterson takes a close look at a brand new rig from Radiotechnic



t's been quite a while since I reviewed a 27MHz rig. For a long while it seemed that every "new" rig that came along was just another Cybernet or Maxcom in a different box! However worthy these rigs may be, it becomes difficult to think of anything new or informative to say about them on the fifth or sixth review!

Telecomms of Portsmouth have tried to liven up my existence a bit by sending us a sample of the new Radiotechnic rig to play with. Actually, to call even this rig new is pushing it a bit, since it bears an uncanny resemblance to the Radiotechnic Supertuned M40 special that we reviewed in July '82! Even Telecomms seem to agree with us, as the accompanying letter claiming this to be the first new rig in the UK for over a year had a distinctly tongue-incheek ring to it! However, for all that, the original Radiotechnic Supertuned M40 Special was one of my favourite rigs, and the result of a further three years' experience have been incorporated in this latest version.

Perhaps it would be wise at this point to reflect on the chequered career of the original DNT M40 rig, which initially was anything but promisingly Although built in Hong Kong, the design work was carried out in Europe. For this reason, the circuitry involves more conventional components than Japanese designs. The original DNT M40 looked very promising on paper, but soon showed up some alarning problems in practicel It was probably one of the few rigs to suffer worse bleed-over problems than a Maxcom, and also proved to have rather dubious reliability! It soon became rumoured that DNT stood for Do Not Touch (I) and the rigs rapidly vanished from suppliers' shelves.

In fact, the bleedover problems were soon found to be caused by two separate design faults. The first mixer was a truly abysmal piece of design, and the second mixer was incorporated in the 3357 IC, which also has a questionable reputation.

Radiotechnic, unlike some other suppliers, took the criticisms of the rig to heart and came up with a couple of relatively simple modifications which, together with careful re-alignment, completely transformed the rig. The results were dramatic. At the time we tested it in July '82, the Supertuned M40FM Special was the best performing rig we had tested. Although since then we have found other rigs of comparable performance (the Magpie for example) the M40 Special was the first and most compact.

The Radiotechnic RT852 incorporates all the original modifications to the M40FM design as standard. In addition, Radiotechnic carry out further fine tuning work when the rigs arrive in the UK. This consists primarily of changing a few component values for optimum performance, remounting a few components which have proven mechanically troublesome in the field, followed by a careful re-alignment of critical stages in the circuit. The squelch, incidentally, is of an entirely new design, incorporating a blend of noise level and carrier level control.

All these actions are as a direct result of three years of experience in commercial use. When the prices of CB rigs collapsed a couple of years back, the original M40 Special at £90 was left high and dry. Rather than persevere in a depressed public market, Radiotechnic withdrew to concentrate on the farming and transport industries. In the farming and commercial industries,

IC TECHNOLOGY

the need for reliability in CB prompted the company to work on a number of modifications which resulted in the launch of the RT852. A version with "cat call" is also available. With over a thousand rigs now installed in tractors and other commercial vehicles around the country, Radiotechnic are putting a tentative toe back in the general CB market, and offering the RT852 for £69.95 for an introductory period. This may seem a high price compared to the majority of rigs available, but as with anything else, you get what you pay for . . .!

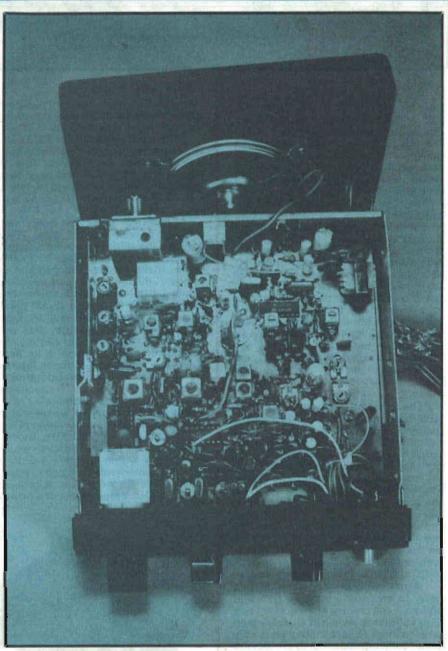
Like the original M40FM, the RT 852 is an attractive and compact design. The case is 165mm deep, 155mm wide and 50mm high. On the rear panel is an S0259 socket for antenna connection and a 3.5mm jack socket for an external speaker. The power lead is hard wired to the rig and passes through a strain relief grommet into the back panel.

On the front panel, the microphone is connected by a five-pin DIN connector on the lower left hand side. This connector had a nice positive action, unlike some we have come across. Immediately above it is a horizontal slide switch marked DX-LOC. This acts as a switchd two-position RG gain control. To the right of the switch is a large horizontal edgewise Signal Strength/TX Power meter. This has a nice clear white pointer against a black background. To the right again is another horizontal slide switch marked LO-HI, which is the 10dB attenuator control. Below the meter is the Volume/Off control and

"All essential controls are present, but are in such a form as to prevent a cluttered appearance."

alongside it the Squelch. Between the squelch and volume controls is a pair of LED indicators. The lower one is red and indicates TX mode. The upper one is green and indicates channel free, or more correctly squelch closed! On the extreme right is the rotary channel selector switch, and above it a green LED channel display.

This is an attractive and compact rig. All essential controls are present, but are in such a form as to prevent a cluttered appearance. All necessary mounting hardware is supplied, along with a comprehensive yet concise instruction book. It's good to see that our criticisms of the original M40 instruction book have been heeded, and the new manual is one of the better ones we have come across. It also now includes a circuit diagram, but strangely



omits a microphone wiring diagram. This could make wiring alternative mics a bit difficult for those of a non-technical background.

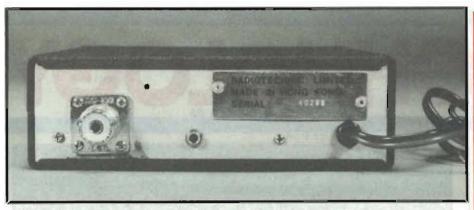
Technicalities

The negative lead of the rig is hard wired to the chassis, so don't try and install it in a positive earth vehicle without qualified advice. Positive earth for vehicles went out of fashion about 20 years ago, so this shouldn't be too much of a problem!

The synthesizer is a three-crystal design based on a Motorola 145106, rather than the more usual Sanyo or

Toshiba dedicated IC. Whilst this is more complex to set up, it does make changing frequencies relatively simple. This fact has not gone unnoticed by the amateur radio fraternity, who have made considerable use of these rigs on the 10 metre amateur bandl Bearing in mind the fact that, in a couple of years time, CB will be moving to the new CEPT frequencies, this is a very astute movel

The receiver front end is a dual gate MOSFET RF amplifier. Bias to gate two is switched from the front panel affording a simple but effective RF gain control, The first mixer is JUGFET. The original M40 had an NPN transistor at this stage which was responsible for that rig's



early downfall!

Following the first mixer is a crystal filter for the first IF. The original M40 had only a ceramic filter at this point. The second mixer is contained within the 3357 IC. This mixer was always designed to work with a crystal filter, and suffers from terrible cross-modulation and blocking problems if a

crystal filter is not used.

The 3357 also contains the second IF amplifier, quadrature detector and squelch circuitry. The second IF is filtered by a pair of CFU 455 G filters. Normally G rank filters would be considered too wide in bandwidth for 10 KHz channel spacing, but using two of them redeems the situation. Using two filters increases the insertion loss, so a single NPN transistor is placed between the filters to restore the gain. The squelch circuit is a noise-triggered type that is better suited to FM operation than signal-level derived types. Audio output is handled by a TDA 2002 IC capable of delivering a generous 2 watts into 8 ohms.

The mic amp consists of a pair of NPN transistors working into a diode limiter. The transmit section is almost conventional, consisting of a line up of four NPN transistors including the output stage. Slightly unconventional is the method of achieving the 10dB attenuation. Rather than just reduce the supply of volts to the output stages, the circuit bleeds off a bit of RF from the output, rectifies it and uses the resulting DC voltage to alter the bias on the driver transistor. This is effectively a sort of DC negative feedback loop, and should be extremely stable.

Also slightly unusual is the use of a relay to switch the antenna between transmit and receive modes. Most rigs don't bother to switch at all, relying on a pair of back to back diodes and a very small coupling capacitor to protect the receiver front end. This has advantages as far as blocking and cross-modulation is concerned. Those diodes can cause problems if you next door neighbour is running 100 watts on an adjacent channell However, relays do have a reputation for long-term reliability problems, especially when used in damp environments to switch low level signals. In view of the work that Radiotechnic have done to "ruggedize" this rig, it's somewhat surprising to find a relay at this point. To be fair it is a hefty relay, and well shielded. No doubt had Radiotechnic thought there were any shortcomings in this area they would have done something about it!

Facts and Figures

The RT852 was run through our standard lab tests to check for deviations from the legal requirements.

With a supply voltage of 13.2 volts as recommended, the power output was measured as 5 watts. This is slightly more than the 4 watts specified, but within a 1dB measurement tolerance. The 10dB attenuator reduced the out-

put by exactly 10dB.

As far as harmonics were concerned, everything was beeter than 70dB down on the carrier except for a couple of spurs of -65dB in the 800-1000MHz region. In theory, everything should be at least 72dB down, and some specified bands better than 79dB down. The original M40 Special met all these figures. In view of the slightly high output, we must assume that our sample has been knocked slightly out of adjustment somewhere in its brief but hectic life. None of these figures are likely to cause any operational problems. All channel frequencies were within 40Hz of nominal.

With the mic supplied, we were able to achieve a maximum deviation of +/-2.37 KHz (Spec is +/- 2.5 KHz), though a more realistic figure for speech would have been within the +/- 1.5 KHz official requirement. Using an external tone source we were able to achieve +/- 2.94 KHz. Careless use of a power



mic could lead to slight over-deviation. The limiter is apparently of the "soft" variety.

Moving on to the receiver, in the DX mode we recorded an incredible 0.14uV PD for 10dB S/N. This is the most sensitive receiver we have ever tested, and was only just within the scope of the very expensive signal generator used for the tests. Even in the LOC mode we measured 0.53uV PD for 10dB S/N. That is the sort of figure we expect from a good rig with the RF gain turned up not down! In the DX mode, S9 corresponded to a signal level of 2.5uV PD. In the local mode, it was 20uV PD. Max squelch would permanently mute the receiver, and minimum squelch left is wide open.

In summary, the transmitter was slightly out of spec, though it must be said that this was a well travelled demonstration rig. The receiver is extremely sensitive.

On The Air

The original Supertuned M40 FM Special was one of the most impressive rigs it has been my fortune to review. It was a real little jewel, and I returned it with great reluctance. The RT852 continues that tradition. With the receiver in the LOC mode, it was definitely more sensitive than either my own crystal filtered Cybernet, or a Midland 3000 which were used for comparison trials. There was never a

"I was able to pull in stations that were totally inaudible on other rigs..."

hint of blocking or cross-modulation even in the most extreme conditions. In the DX mode, the receiver sensitivity was almost ridiculous! I was able to pull in stations that were totally inaudible on other rigs, though getting back to them was a problem for obvious reasons! However, I thought on occasions that I was able to detect the first hints of blocking in the presence of extremely strong signals in this mode. It has to be said that it was still considerably better than anything else available for comparison at the time! At first I thought that the receiver was excessively sensitive, that Radiotechnic had overdone it and would be advised to reduced the sensitivity slightly. On reflection, however, perhaps they have got it right. City dwellers could leave it on LOC, have a receiver of good sensitivity, and never suffer from blocking, whilst those out in the sticks could switch to DX and take full advantage of that incredible sensitivity.

On the transmit side the rig performed faultlessly throughout the test period. The audio, both transmitted and received, is not quite as crisp as some, but is smooth and perfectly

clear.

The compact size of the rig and its comprehensive but uncluttered controls make it a delight to operate. The Supertuned M40 Special overcame all the criticisms of the original M40. The RT 852 carries that one stage further by tidying up the remaining loose ends and adding the wonder ingredient 'Improved Reliability'! The price may still seem on the high side, but the performance more than justifies the cost. Although we have spoken at length about the Supertuned M40, the RG 852 really is a different animal in that no less than 48 new modifications have been incorporated into the latest model.



LADY BREAKERS





Brave Filly goes to the rescue in a tricky situation

nce in a lifetime, an opportunity comes along for everyone to show what they are made of. Some drag people from crashed cars or rescue them from burning buildings. Some foil bank robberies, haul drowning people out of the sea, drag them back from the brink of the cliff, dive in front of a lorry to push a child out of the way. And I had my opportunity too, a few days ago, albeit not quite so melodramatic . . .

Up until then, I'd lived a mundane sort of a life, nothing very spectacular, certainly nothing even remotely heroic. The only time I'd ever seen anyone in trouble was when someone keeled over on a crowded tube train, and I simply sat there rooted to my seat while about a hundred people rushed to help, all apparently knowing exactly what to do.

Mind you, I'm sure I saved several unwitting citizens of a small Kentish town once from a grisly death on the roads when I restrained my reeling husband from driving home after a particularly uproarious party. But that was Life, not drama. So when my turn came at last, I was caught thoroughly unprepared.

It happened late one afternoon. I was driving home from the station after an exhausting day in London, listening with half an ear to the CB radio, when I suddenly realised All Was Not Well. At first I wasn't even sure what it was that was wrong, I only knew that my subconscious was ringing warning bells. I looked around, but the road was empty in both directions. Then I realised it was the voices on the radio that weren't

It sounded as though the voices, a man's and a woman's, were actually together, in the same place, with one voice nearer the mike than the other. It was the woman's voice that was clearest, and she was obviously ill at ease, while the man's was in the background, trying to sound soothing. l listened.

Look", the woman was saying, "it's late, later than I meant to be, I really ought to be getting home. I'm really grateful for the lift . . .

I wondered why she was holding the mike, she was obviously not talking to anyone on the airwaves. She went on saying it was late, mentioned the guy by his first name, and it suddenly occurred to me that maybe - just maybe - she needed help. I pulled over to the side of the road and sat, wondering what to do. I couldn't talk to her until she let go the button, and perhaps it would be jumping the gun to call up help on the emergency channel

And I found myself slipping into the it's-nothing-to-do-with-me-whyshould-I-interfere trap. It really is hard to interfere in something like that. Maybe it's a fear of getting involved, being dragged into a messy situation that's none of your making. Maybe it's simply a matter of not wanting to

invade anyone's privacy, or a desire not to look silly. I sat there thinking, if I can hear all this, so can other people, maybe they'll deal with it . . . and I started up the car again.

But then I saw a mental vision of the newspaper headlines the next day: 'Hitch-hiker attacked', or something worse. And I thought, what if it was me in trouble, trying to ask for help.
It sounded as though the woman

had stopped transmitting, so without giving myself more time to think I picked up the mike and said brightly, 'Hey, is that you, Earth Mother (the first handle that came into my head)? Where are you? It's Filly, I came out to see if you wanted a lift home."

There, I thought, if there's no problem, she can ignore that. And if there is a problem, she can be Earth Mother, if she likes. There was a pause, and I could hear my heart thumping ridiculous, I wasn't the one in trouble. Then I heard the woman's voice again,

breathless and relieved.

'F-Filly? Yes, I'm — I'm in Redbarn Lane, someone kindly gave me a lift but he's going to drop me off here aren't you," she said, meaningfully, to her companion. I strained to hear, but couldn't catch any response. I hadn't a clue where Redbarn Lane was, but the voice had been so clear that I was sure it couldn't be far, and the least I could do was try and find it. In the end, someone directed me to it, and after about a mile I passed a woman trudging down the lane, wearing smart city clothes.

She was very nervy and a bit wary of me at first, but when she gathered it had been me on the radio she was glad to accept a lift to the station. It had been much as I thought, she had been attending a conference and had accepted a lift from another delegate she didn't know very well. It had become clear on the way that the lift had strings attached.

Being a breaker herself, she had unobrusively picked up the mike, in the hope that by making the conversation public she could defuse the situation. I had been in the right place

at the right time.

Well, OK, so maybe it wasn't quite on a par with hurling myself under the wheels of a juggernaut to rescue a toddler, but I shall always be glad I didn't switch to another channel and simply drive away . . .

Antenna Review



This month, it's a case of Viva Espana, as Gordon Blackwell checks out the popular Tagra K120

TASTY TA

e, the high-paying public, have become brainwashed over the years to accept only the best, or at least what we believe is the best — such is the power of advertising. Well known brand name products are bought in their millions often solely because they are recommended by some T.V. personality ("well she uses it, so it must be good"), while cheaper imitations are viewed with scepticism.

It's human nature, I suppose, that conditions us to pre-judge cheap copies as inferior and perhaps there's a bit of snobbery creeping in there too. We don't like to be seen to be cheapskate and more often than not buy a particular item because it's in vogue, even though a cheaper product would

probably do just as well.

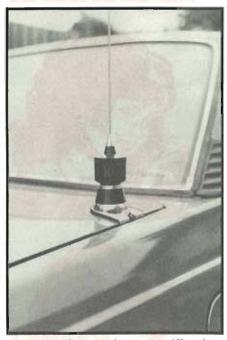
The Japanese, however, have done much to change our attitude towards cheap imitation in markets ranging from cameras to musical instruments, but in the world of CB it is a Spanish company called Tagra that is rapidly stealing a lead in the market. Specialising in antennas, the company takes the best on the market, generally improves them and then somehow manages to push them out at amazingly low prices.

With this in mind, Citizens' Band magazine decided to have a look at one of their most popular models, the base-loaded K120, for this month's antenna review. Modelled on the highly acclaimed K40, Tagra have increased the band width of their version to cope with 120 channels (hence the name). While this improvement is of no real significance to the 40-channel CB users, it does mean a better general performance across the entire 40 channels. At £25, it is just over half the price of its American counterpart, but believe me, this cheapy is no 'nasty'. It's well made, it looks good and above

all, it works — very well.

The K120 is supplied ready assembled in an attractive two-piece plastic box (no frantic tearing of shrink-wrap here) and comes complete with a separate 5.5 metres of coax, fully plugged and ready for immediate installation. Our test sample was supplied with a boot lid mount but it can be fitted to the full range of mobile mounts available.

For the experienced CBer, fitting the K120 is a doddle, which is probably why full detailed instructions are not supplied, although you do



get an interesting specification sheet. However, the newcomer might have some difficulty and would therefore, I'm sure, appreciate some fitting instructions and perhaps even some useful hints, such as guidance on where and how to lay the cable.

The mount slips easily over the edge of the boot lid and is fixed in position by two large grub screws (a 3mm Allen key is supplied for the use of). A shaped rubber pad protects the paintwork on the boot, but if you are fitting this type of mount, don't forget to scrape away some of the paint on the inside of the lid so that the screws make good contact with the metal. The mount also features a handy 15° tilt for correct vertical alignment on a sloping boot. The coil, identical to that of the K40, is simply screwed onto the mount and when removed for security, a plastic screw-on cap can be fitted to the mount to protect the coil socket.

A 1.54m meter tapered stainless steel whip is supplied which drops straight into the top of the coil and is secured with the standard grub screw (again a suitable Allen key is provided). A good 40mm is available for SWR adjustment. Despite the reduced wind resistance of the tapered whip, it is still, naturally, susceptible to a certain amount of bending at speed, so out of interest we gave it a blast at speed and can

GRA

report that there was no significant drop in performance. It could of course be argued that if you're travelling at speed, you shouldn't be transmitting anyway, for safety's sake if nothing else.

It is claimed that the SWR adjustment on the K120 is minimal and the final reading should be down to 1.25:1, remaining fairly stable across all 40 channels. Unfortunately, on our test sample we were unable to get below 3:1 and it wasn't until we were right up against our publication deadline that we realised it was because it was mounted on a hatchback, producing not only a poor ground plane but an extremely distorted radiation pattern as well.

In spite of these constraints, the K120 performed remarkably well and at one point was clearly received at S5, Radio 5 by a stationary mobile* (with what can only be described as a 'toy' antenna) 10.5 kilometres from the test vehicle! We, in turn, were pulling in his poorly transmitted signal at S3, Radio 4. In fact throughout the entire test, good clear signals were maintained at all times and even at our test limits we were receiving and being received at strengths of between S6 and S8. We were so intrigued by these rather surprising test figures that we have decided to carry out further tests on the K120 using a different vehicle and hopefully getting a better SWR. Watch out for the results of these tests in the 'Update' pages.

Meanwhile, our thanks go to Knight Communications Ltd of Leagrave Road, Luton, for their co-operation during our test difficulties and of course for supplying the test sample.

*Sarcastic note to Editor: Only CB could tolerate such a contradiction of terms.

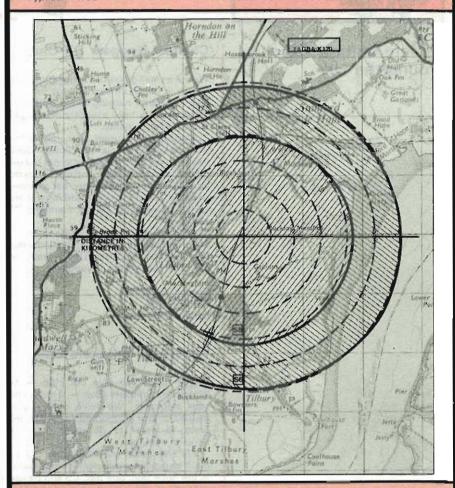


ANTENNA REVIEW DATA PANEL

SPECIFICATIONS

Model
Type
Length
Frequency range
Max power handling
Impedance
Cable supplied
Maunting details
Supplier
Typical Price

TAGRA K120
BASE LOADED MOBILE
1.54 METRES
27MHz
250W
50 Ohms
5.5 Metres coaxial
universal
Knight Communications Ltd
£25



REVIEW VERDICT

Performance XXXXX SWR adjustment — Construction XXXX Installation XXXX Instructions — Value XXXXX

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

The Tests

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





Update on new CB clubs around the UK

Channel Hoggers DX Club

We are a small group of 12 members based mainly in the south east London area. The club has been running since September 1984 and we have monthly meetings in the chairman's home.

If any breaker copies all members, they will receive a special certificate. During this year, we have managed to get our own club cards, certificates, and rubber stamps as well as most stationery our members need for keeping records and logs of their QSLs. Incidentally, all our members QSL 100%.

All club matters are decided on by a majority vote and not by one individual. We also find your magazine a great help with the information it supplies.

Stevedore (Bill), PO Box 616, London SE9 6QR

Wanderers Breakers Club

Please could you give our club — the Wanderers Breakers Club — a mention in your magazine. We have only a small membership at the moment but we hope to grow, in order to do more local and national charities.

We also travel and visit other clubs as much as possible and take CB very seriously in the hope that, one day, CB will be used properly in the way it was originally intended — to help people such as disabled, elderly and housebound. We ask for a mention in the hope that other interested clubs may contact us.

Effelunk (Vice Secretary), Wanderers Breakers Club, c/o 97 Cavill Place, Anlaby Road, Hull

Organisation Radio Clubs

May \$, through your excellent magazine, introduce our club which has been in existence for nearly four years now and which has over 150 official members.

We hold annual DX sponsored modulations to help disabled or housebound people to get on the air via CB radio. We meet every Wednesday at the Robin Hood public house on Ripley Market at 7.30pm.

Our annual subs are £4 or £1.25 per quarter. We run eyeball, trips, functions etc and food is provided for members and visitors who, I may add, are made very welcome by our own already super crowd. Keep up the excellent work on what is now regarded in our area at the Top Mag.

Grizzly Adams, PO Box 33, Ripley, Derbyshire

Kent Coast Pirates DX & QSL Swap Club

I am writing to ask if you could please mention a recently formed club in the south east of England, namely the Kent-Coast Pirates DX & QSL Swap Club, which is situated in Hythe.

The Club was formed on August 13th this year and the cost of enrolment is £4 for a small pack and £8 for a large one, which includes a rubber stamp and life membership.

Being situated on the coast, we are able to contact a fair amount of marine mobiles and continental breakers, examples of which include Natural Gas (Ron) and Papa Juliet (John) from Boulogne. Anyone wishing to enrol in the club should contact the address below.

KP 01, PO Box 36, Hythe, Kent

Whiskey Tango International DX Group

I am writing to you concerning the Whiskey Tango International DX Group of Northern Ireland, of which I am the Scottish Director. We are a group based in Co Antrim in Ireland and we have been established since August 1980. Since that time, we have a membership of over 260 in 26 different countries.

The club meets in the home of the group secretary (Maureen, WT1 31) on the last Thursday of each month to discuss and put into operation various aspects of the WTI.

Membership includes an ID card, wall certificate, WTI QSL cards, WTI club stickers, information sheets plus various other articles from the WTI club. We are in

the process of changing our club stamp so anyone who wishes one will be kept informed.

May we also take this opportunity to say how very sorry we were to hear that old Greybeard had to give up his column, but we sincerely hope that from time to time we will hear from him and we wish him all the very best - and, of course, all the very best to whoever might fill his shoes as he's not a very easy act to follow.

Back to the club, anyone wishing to join should send a SASE, together with £3 life membership fee to the following address.

Walter (WTI 001), PO Box 1B, Ballymoney. Co Antrim, Northern Ireland

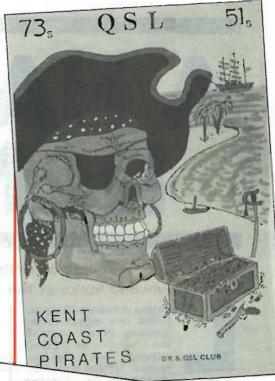
Steel City Breakers Club

We, the Steel City Breakers Club, have been formed for just over a year and now have 73 fully paid-up members. We meet every Wednesday night at the Staniforth Arms pub in Staniforth Road, Sheffield 9. Admission is 20p for members or 30p for visitors. Snacks are provided free of charge, we have bingo twice a month and a childrens' night once a month.

We visit as many clubs as possible and any clubs or individual members wishing to visit us will be made most welcome. We also do lots of charity work, mainly for local charities. Hoping to hear from other clubs in the near future.

Toymaker (Jean), Steel City Secretary, PO Box 275, Sheffield.

Yorkshire





INTL WOX UNIT ND: QSO WITH DATE...... TIME FREQ/CHANNEL.... MY TX/RX BASE O MOBILE OTH

D PSE OSL D TNX OSL

Welsh DX Club

The "Three Feathers Sidebanders" and the "Welsh DX Club International SSB DX Group" are managed at the moment by myself. The TF was given to me by the old chairman because he could not run it anymore, whilst the WDX Group was set up by me last Christmas.

Membership of the club costs £3 (UK and Eire) or \$6 (US) for overseas. Although most members are SSBers, members may use any mode (even legal FM!). The club frequency is 27.555 USB or contact via 14 AM. We have members in Greece, Northern Ireland, England, Wales and even Canada. For information, please send an SASE.

Chris (TF25/WDX001), Club Organiser, Threa Feathers Sidebanders/Welsh DX Club, PO Box 23, Caerphilly, Mid Glamorgan, S Wales



A HANDFUL OF HANDHELDS

Why is there such a scarcity of handheld CBs these days? Keith Townsend looks at the pros and cons of 'walkie-talkies'

ooking at today's CB scene, I find one aspect rather puzzling. Where have all hand-helds gone? Although we regularly receive letters from fellwalkers, hikers and even the occasional cyclist, telling us just how useful small portable rigs can be, there seems to be very little mass interest in these compact portables. If my own experience is typical, then they can be hard to find in the shops and only a couple of breakers I have spoken to in recent weeks would even admit to owning one.

Clearly not the tool of the DXer, hand-held rigs, even with limited performance, still come in handy from time to time, as I discovered recently when trying to install a particularly recalcitrant antenna on the roof of a

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EXT. ANTENNA

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Some 'extra' facilities, usually to be found on quality handhelds

friend's home. Would the SWR come down? Would it heck as like and, after an uncountable number of journeys up and down a ladder, pressing buttons and turning screws, I decided to enlist the aid of a friend. The distance between us was about thirty yards and, since speaking trumpets are something of a rarity in this neck of the woods and I felt singularly disinclined to shout myself hoarse, we decided to communicate via CB. Now this rather novel idea would have worked fine but for one small problem. No hand-held!

It took over an hour to locate what we needed and, in passing, added considerably to British Telecom's profits for the year but, suitably armed, I climbed back to my lofty perch and that was when I discovered problem number two. The natty little portable, kindly loaned by a friendly dealer, was equipped with a grand total of two channels, both of which appear to be very popular indeed in this area and our brief exchanges, interspersed with polite offers of apology to those using the channels, were punctuated with loud protests of "Gerroff the channell" "Sling yer 'ook!" and less choice phrases inviting us to make our presence felt elsewhere. Our explanation of the fact that we had only limited facilities did not seem to carry very much weight at all.

Wayward

Undaunted, we attempted once more to obtain the co-operation of our wayward antenna. Nearly an hour later, and with a notable lack of success, we decided that perhaps our location left something to be desired, and so moved the whole shooting match to the other side of the roof. Needless to say, this added to both the time taken to complete the job and the amount of use to which we put our hand-held. Not to mention the amount of abuse which our use of the frequencies engendered, with the inevitable result that communication over even the small distance required became less and less reliable as the tiny batteries subsided into the sunset.

Despite the fact that we did eventually



succeed in establishing the offending antenna to our satisfaction, the trials and tribulations of that afternoon set me thinking about the whole concept of hand-held rigs. Clearly we would have experienced fewer problems if we had been equipped with a 40channel rig but, apart from the fact that we had not even considered it necessary, no such rig was available and our friendly dealer informed us that we were indeed fortunate that he had been able to lend us the two-channel job, since demand for hand-helds was so little that he rarely bothered to order them.

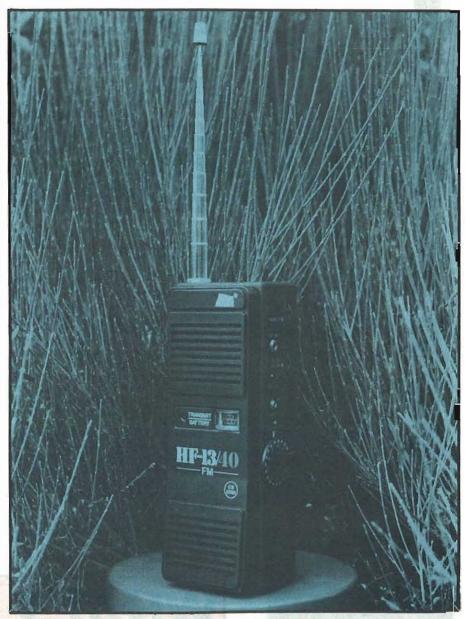
He went on to explain that although there were some excellent portables being produced, their usefulness was limited by a number of factors. Battery life was, in his opinion, the most significant drawback. You could, he explained, run up quite a significant bill in a very short time using dry cell batteries. Many hand-helds require as many as eight cells and their usefulness could be counted in hours rather than in days. Even the use of Ni-Cads, although it worked out very much cheaper in the long run, had its problems. Not only was the initial outlay greater, incurring the added expense of a charger but, since roughly four hours of use could easily equal fourteen hours charging time it was necessary to carry at least one, if not more, spare sets of Ni-Cads if you were likely to be away from a source of mains electricity for any appreciable time.

Range

Operational range has also proven to be another drawback for the portable operator, particularly in built-up areas. Although a combination of low power

"... I am convinced that there is a future for small, easily carried CB equipment."

output and small antenna is capable of quite impressive results in flat, open country, in general it has proven inadequate to overcome the problems of densely populated areas, where buildings, traffic and even the neon street lights can combine to affect signals over even quite short distances. Neither is the solution simply a matter of using larger amtennae, as might be the case with either a base or mobile station. No-one is seeking to cause injury to others and so safety dictates that portable rigs use short, often highly capacitive antennae and this again tends to reduce their effective output. Our dealer friend did offer one word of warming to those who use portables fitted with telescopic whip antennae, when he pointed out that the SWR could be quite dramatically affected by



DNT HF-13/40

an antenna which was not fully extended, or, in the case of screw-in types, where it was not screwed all the way home.

Some of the abuse which handheld operators have reported as being common must also be put down to the problem of inadequate range. By their very nature, hand-helds are inclined to be a bit deaf and checking for a clear channel can be something of a hit and miss affair. A stronger station listening to the frequency may be working another which is way beyond the reception range of a portable rig, with the result that a heated exchange often occurs when the portable operator unwittingly causes interference on the channel. Simply asking if the frequency is in use should, but does not always, solve the problem. One of the main characteristics of FM transmission is that a receiver will hear only the strongest available signal, so that a base or mobile, well within the normal range of a nearby portable will not hear the question if he is receiving a signal from a stronger station. Patience is required by all parties if such minor problems are to be solved amicably.

Manufacturers could do a great deal to help the portable market, though. For instance, many such rigs are equipped with red LED displays, which become instantly unreadable at the first hint of sunlight and the thumbnail controls with which portables are equipped leave a lot to be desired and, although there are serious difficulties attendant upon trying to achieve good audio quality from very small speakers, I am sure that the audio quality of many small rigs could be improved.

Repairs

Economic repair has, of late, become yet another problem, with many operators finding that the cost of parts and labour involved in, for instance, the replacement of a PA device is higher than that of some new rigs, with the result that almost all but the better quality portables have become throwaway items.



The very handsome Kaiser CBX40

Despite these difficulties, I am convinced that there is a future for small, easily carried CB equipment. In rural areas hand-helds have demonstrated their value time and again. They are ideal for organisations such as Scout groups and others who may wish to maintain contact in situations where they are only just out of sight of each other. Indeed I know one breaker who claims that he would have starved to death long ago, but for a pair of 500mW rigs. You see, he is forever tinkering with old cars and reckons that his hobby leads him to lose all track of time. Were it not for his wife's ability to notify him of meal times and other such trivia, by calling from the house to the garage, my friend assures me that he would be but a shadow of his present self.

Since first taking a serious look at the question of hand-helds I have increased their share of the market by a grand total of two, which have already repaid the modest outlay required, as I can now keep in contact with my children whilst they play with their friends, or call my wife whilst she is out shopping. Nor will I need to go hunting for a suitable means of communication the next time I get conned into spending a windy Saturday afternoon crawling about on somebody else's roof.

I am sure that CB could play a larger part in the marshalling of sports, carnivals and other outdoor events, if only the organisers would give it a try. I am sure that local breakers would cooperate, in exchange for a little advance notice, as they did in my area not so long ago. Our local carnival is a pretty big affair, with processions, cavalcades and all the usual outdoor activities. For a few days before the event we asked

that channel 30 be left clear on the Saturday in question, so that it could be used for liaison between the various marshalls. Not only did we get the full co-operation of the local breakers, but many of them volunteered their services as marshalls, car park attendants and the like. The local CB club even put on a display of their activities among all the other sideshows. CBers love to be involved and, given half a chance, will enter into the spirit of most organised events. So, if you are considering organising any event where communications would be an asset, try your local CB club, then you will find out just how useful hand-held equipment can be.

Breakers could also do considerably more to popularise portable rigs. Many see them as little more than a toy but this is not really the case. Subject to their obvious limitations, there are some very good sets to be had, many offering the full four watt output ovar the entire range of channels and I have seen one most attractive rig with an external mike and belt clip, which makes it very convenient, both to carry and to use. Mobile and base station operators might also be a little more considerate of hand-held use. Remember that many small rigs have only a couple of channels and be prepared to move to another if an operator explains that his choices are limited. If your contact becomes interrupted by the use of a portable in the vicinity, consider the possibility that he cannot hear the other end of the conversation and ask him to move. Most people respond far more readily to a polite request, rather than a shouted demand to "Gerr off the channel" and, with a little goodwill on all sides, there is room enough for all

WHAT'S IN STORE

While the numbers of handheld units available have decreased over the past year or so, there are still a few to be found around the dealers, and so we took a look at those we could find.

The Kaiser CBX-40 is a rather handsome little unit, which comes complete with leather carrying case and earphone. As well as the usual volume/on-off, squelch and channel selector controls, it also boasts a hi-lo power switch and a channel 9 selector. The meter doubles as an S/RF power and battery condition indicator. On one side, there's a PTT button, which also incorporates a tone-call, whilst on the other side there are sockets for external speaker/earphone, external DC power supply and a battery charging connection. It's a 40-channel job and sells at just under £100.

The DNT HF13/40 is a ½ watt, 40channel unit which also incorporates volume, squelch, channel selector and tone-call controls. In addition, there is also an S-meter and facilities for external power, external antenna and battery charger. It sells for around £40.

The Harvard 410 is a popular 2

watt, 40-channel handheld with a 1½ metre telescopic antenna. Again, the usual controls are included, along with a tone-call PTT and a channel 9 switch. Facilities for battery charger and external antenna are also present.

The Maxcom Speakeasy is more of a walkie-talkie in that it is a short-range (expect to get out about ¼ or ½ mile) single channel set. It has a built-in antenna, is voice operated, comes complete with headset, and is powered by a single 9v battery.

The Maxcom 7E will be well-known to readers of this magazine. It's a 4 watt, 40-channel unit which works off either its own 12v power load from a car cigar lighter or from standard or rechargeable 1.5v batteries. For mobile use, its telescopic antenna can be detached and fitted onto its own magnetic base.

Obviously, the units mentioned here are not the only handhelds you will see in the shops but we feel they are a representative assortment. If we have missed any out which are widely available . . . I'm sure you'll let us know!

WHAT MAKES THE

WESTWARD PT

THE BEST MONEY TRANSCEIVER CAN BUY?



BASE USE No other base station offers an advan-ced, active power supply with very low noise, and automatic standby on the internal battery-when the mains has falled, you may need that emergency

MOBILE

MOBILE
No other mobile can be instantly transferred from one vehicle to another, be isolated from the vehicle electrical system, for less interference, and give FULL performance in TX & RX.

PORTABLE

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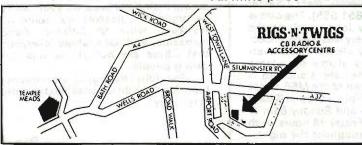
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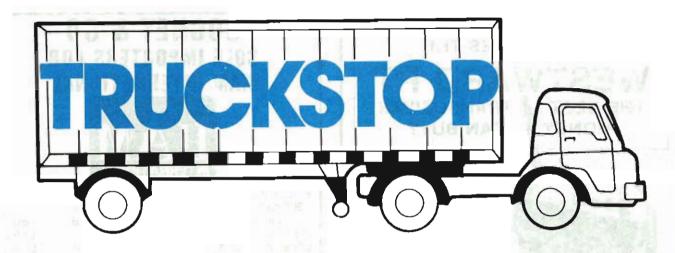
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ell here we go again, fresh from a week's holiday in sunny Devon. Whilst there, I renewed many old friendships and copied lots of new friends and I am glad to report that CB in Devon is alive and kicking.

On my last trip up to Barrow-in-Furness I copied Pagan Lady who informed me that there is to be a marathon in the Bolton area. My ears pricked up when I heard that the lads doing the running were fellow truckers. I did not get too much information but Pagan Lady said she would let me know how things go via our PO Box. I believe there is to be a presentation in the near future which I hope to attend — I will let you know how the lads do.

I followed with great interest the truck racing at Silverstone and was very impressed with the performance of the Mercs, having driven one myself and finding it superb in wet conditions. It was a shame to see the winner had to cheat, though, and I was delighted when he was disqualified. Personally, I think he should be banned from any future events as we truckers have had our image tarnished enough in the past by the cowboys.

At long last, I think the public are beginning to see what a vital role we play in the economy as without us there would be no food in the shops, no fuel in the garages, in fact very little of anything so, come on you lads, let's show the public what we can do and when you see the kids pulling imaginary air horns, give them a wave and, more important, give them a smile. Our local evening paper ran two articles on the race encouraged somewhat by a local firm entering a truck 50,000 attended on what must have been one of the wettest weekends of the year.

A few months ago, Gismo spoke about the state of CB in the large Scottish towns. About every third week, I run north of the border to Glasgow, Ayr, Cumbernauld, East Kilbride etc and what he said was no understatement. The language is foul and the 'ladies' seem nearly as bad as the 'gents'. Channel 19 plays more music than Radio One. This is not good enough; why don't the DTI do something about this? We all pay our licence fees and, sadly, this problem is not only confined to north of the

This month, our trucking correspondent Big T tells us about new CB friends he met while taking a well-earned break

border. Many of our big towns and cities have the same problem. I am sure that with all the sophisticated equipment at the disposal of the DTI, they could surely catch these offending stations in a matter of hours but all they seem interested in is checking for breakers without licences. Come on DTI, we pay your wages so how about helping us for a change.

One of my regular runs is Butlins, Minehead, and I usually travel down the A39 Bridgwater to Williton Road, which, of course, means going through the dreaded walls. Time after time I meet other vehicles and, if it's cars or light commercials, I can usually struggle by, but if it is another artic then that's when the fun begins. I believe lots of the local truckers go via Taunton: I dread to think what it is like on Saturday mornings when you get Butlin campers on the homeward trip and the new ones coming in with all the coaches and caravans; it must be very hectic then. I believe this is one of the worst accident black spots in the county so, if any members of the local council read this, perhaps you could suggest a set of traffic lights as I believe this would solve the problem once and for all.

For this month's 'Cafe of the Month', I have chosen the Dunkirk Transport Cafe, Great Mollinton, Near Chester (telephone 0244 851 655). The cafe is owned and run by Joan and Reno, the food is good and very reasonably priced, the staff are very pleasant and overnight parking is available on a large patrolled park. The cafe is situated ¼ of mile from the end of the M56 and ½ mile off the A41. They are open 7 days a week (Saturday and Sunday 8am to 6pm, Monday to Friday 24 hours) with food available throughout the night.

I have not chosen a monitor this

month but hopefully will have enough information for the next edition so, instead, may I on behalf of all truckers and mobiles thank all the monitors up and down the country for their invaluable help.

As I said in my first column, I enjoy the DXing side of CB and go to eyeballs all over the country, this week being no exception. Dragonfly, myself and several of the Telford Thunderbirds went to Gloucester to an eyeball run by the Spartan CB Club. The weather was kind to us for a change and a good time was had by all. Many thanks to Roy (Consul) for the invitation. Beside the usual stalls, games, etc, there was a nice display of trucks. I must admit the Scania 142 with its chrome wheels, tanks etc was a joy to behold and a credit to its owners.

Whilst on the subject of eyeballs, I would like to close this month's article with an idea that I would love to see happen, that being a national eyeball which hopefully could be sponsored by Citizens' Band magazine and held on August Band Holiday Sunday and Monday of 1986. The venue could possibly be in the Midlands to make it more equidistant for breakers travelling north, south, east or west and if sufficient interest was shown I would love to attempt one so, any of you lads and ladies out there interested, please write to our Editor letting him know and perhaps we may be able to twist his

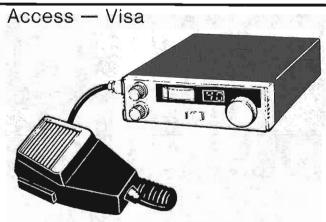
Whilst in Gloucester, I spoke to the majority of breakers who said they would support such a function. If we could organise this event I feel sure we could attract several thousand breakers and any money being made could possibly be donated to Helen House Hospice, Oxford, which we have seen recently on TV and read about in the national papers. If we could bring some pleasure to these dying children during their short lives, we could justly be proud of ourselves, so, come on breakers, write to Citizens' Band magazine and let's show everyone that CBers are not all morons but caring people.

Hopefully I have given you all some food for thought so until next month, stay lucky.

Big T



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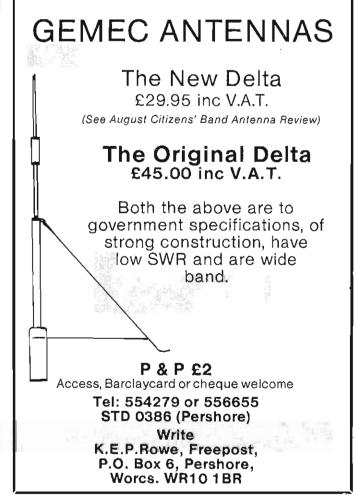
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WANTED: Cobra 2000 home base, working or not working. Please telephone Lowestoft 731932.

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WANTED: Any handheld CB transceiver. Please telephone before 4pm Hertford 553256. Ask for Gerry.

WANTED: Any type of CB radio (AM, FM, USB, LSB) or mikes to break down for spares. Non-working or working. Anything taken, will pay postage. Write to A Tyler, 32 Field Lane, High Heath, Pelsall, Walsall, West Midlands.

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AUDIOLINE 341 mobile rig, new condition. Telephone Nuneaton 349156.

FOR SALE: Cybernet Delta One 934MHz radio, plus P7E antenna, only five months old, perfect condition £290 ono. Contact Richard Miller, 59 Littledaen, Yate, Bristol or phone Chipping Sodbury (0454) 318770.

FOR SALE: Superstar 2000, excellent condition, AM/FM/SSB/CW, 26.065 — 28.305MHz, £100 or swap good communications receiver 0.15 — 30MHz, AM/FM/SSB, digital readout. Telephone Morpeth 760467.

TRIO TR7730 2m FM TX/RX, 5/25 watts, 5 memories, scan from microphone, 144/148MHz. Immaculate with mobile bracket and in original box, complete with 6-element quad base antenna to match. £190 ono. Telephone Bod on Luton (0582) 454055.

COLT 1600DX AM/FM/USB/LSB, over 600 channels, very good condition, many continental contacts, variable output, £130. Also, 200 watt linear for above, £40. Telephone Pilning 2701.

WANTED: Headphone socket and back PCB for Audioline PT-345. Ring Truro 78911.

FOR SALE: York CBS 869 home base plus accessories. £50 or nearest offer. Maxcom 7E handheld, as new with rechargeables and charger, £30. Telephone Berkhamsted (04427) 73080.

WANTED: Please can anybody help me out with a Chat Back for a CB radio as we are having great difficulty in buying one. It is required for a blind breaker. We are willing to buy at a reasonable offer. Telephone Carol on Ashtead 77640.

SUPERSTAR 2000 200-channel USB/LSB/AM/FM, £140 ono. Telephone (0934) 23872 and ask for Andy.

COBRA 148 GTL DX, very good condition. Will sell or exchange for Ham International Jumbo or Concorde II. Cobra has 10kHz jump for black holes. Also, operator's and service manuals, including original standard microphone. For more information, contact Adam on Clare (0787) 277582. SUDBURY SUFFELK
FOR SALE: As new, BNRES RAE

FOR SALE: As new, BNRES RAE course, includes all books and all but one test paper. For more details please write or ring. £20 plus postage or WHY? G1PGH, Jon, 67 East Street, Selsey, West Sussex. Telephone Selsey 605779.

SWAP cards? I QSL 100%. Write to Tango Victor, PO Box 4, Montrose, Angus.

SHORT wave receiver, AR77 vgc, £40 ono, Trio QR666, £75 ono. Sale due to dole. Write to B Alborough, 55 Torquay Gardens, Redbridge, Ilford, Essex.

HAM International Concorde II for spares or repair, hence low price £25 ono. Telephone Oxford (0865) 65213.

WANTED: Remote-control microphone for the Tandy Easy Rider mobile CB rig, or circuit diagram for same. Telephone N Copage, on 021-742 4033.

COLT Excalibur SSB model 160DX, FM/AM/LSB/USB, 160 channels, 26.51MHz to 28.305MHz, mint condition £160 or very nearest offer. Telephone (05097) 3901.

FOR SALE: Amstrad 901 40-channel FM, vgc (only three months old), £20, genuine reason for sale. Phone 0325 84377 or write to Mr M Frise, 202 Yarm Road, Darlington, Co Durham.

LECTRONICS

Rugby's new Radiocommunication centre now open for the sale of Ham radio, CB, radiotelephones, telephones & answer machines, & car telephones. Listed below a small proportion of our stock send for list of other items.

RIGS

Maxcom 30E-£64.95, Fidelity 2001-£51.45, SMC Oscar-£45.95, DNT Homebase-£69.95. Many more in stock ring for availability.

Mobile Burners - all 13.2v DC

IND TALC AML213, 26-30MHz 180 watt SSB, 100 watt AM/FM £70.00. MOONRAKER 25/30 watt £20.45.

HOMEBASE BURNERS—250v AC mains input ZETAGI B132 200 watt SSB, 100 watt AM/FM, £99.95. MICS

HAM-MASTER 4200 Base mic with built in amp. £37.95. Power mic's from £8.95. Altai echo mics £21.95. Densei echo mics £23.95.

MOONRAKER CB receive pre-amps £14.95

MOBILE ANTENNA'S

SATELLITE REBEL MINOR; \$5.00, SATELLITE REBEL; \$5.25, SATELLITE REBEL RAIDER; \$6.50,VALOR DIAL-A-MATCH short; \$12.95, VALOR DIAL-A-MATCH long; \$13.95, MODULATOR THUNDERBOLT; \$7.95, MODULATOR SUPER THUNDERBOLT; £8.45, MODULATOR SUPER MODULATOR 2; £13.95.

HOMEBASE ANTENNA'S

AVANTI SIGMA 2; £46.00, THUNDERPOLE MK3; £23.95, MODULATOR EXPERT; £21.95, SUPER SATURN; £24.95

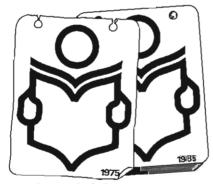
LIMPET MAGNETIC MOUNTS, Large; £8.95, LIMPET MAGNETIC MOUNTS, Small; £6.95, GUTTER MOUNTS WITH CABLE, BASE & PLUB; £7.25, GUTTER CLAMPS (cast); £4.25, SNATCH PLATES; £5.25

Many other items in stock - power packs, speakers etc. etc. send for lists. All items plus carriage, ring for cost, or better still call & see us, we are on the A4071 Rugby to Leamington road. Opening times 9.30 to 5.30pm Tues. to Sat. closed all day Monday & Sunday.

151 Bilton Road, Rugby, Warwickshire. TEL: 0788 76473

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-the first decade



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Adult Literacy & Basic Skills Unit PO Box 213 London WC1V 7ET

For help with Reading and Writing 101-405 4017

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Do you suffer with Bleedover, Crossmod, Images? Our Custom Crystal Filter provides dramatic improvement in selectivity, satisfaction guaranteed.

Suitable for the following rigs:

ı	CB MASTER	Puma	STALKER
ı	85020	Viking	ST 9 F DX
ı	3600	Viking 2	SUPERSTAR
ı	COBRA	HY-GAIN	360 FM Mk 1
ı	148 GTL DX Mk 1	3 2703	360 FM Mk 3
ı	148 GTL DX Mk 3	5 2795 Mk 1	2000 Mk 1
ı	GTL 150	5 2795 Mk 2	2000 Mk 2
ı	COLT	5 2795 DX	2200
ı	320	5 8795	TRISTAR
ı	320 FM	INTEK	747
ı	485	1200 FM	777
ı	720	LAFAYETTE	797
ı	870	HB940	848
ı	890	1200 FM	SUITABLE MAIN
ı	1200 DX	1800	BOARD No.
ı	1200 Excalibur	MARCO	PB010
ı	1600 DX	444	PC879
ı	1600 Excalibur	747	PC893
ı	FORMAC	Excalibur 1	PC999
Į	80	MAJOR	PTBM 059
ı	88	M120	PTBM 094
ı	120	M588	PTBM 106
ı	HAM INTERNATIONAL	M360	PTBM 121
ı	Concorde 1	MIDLAND	PT8M 125
ı	Concorde 2	6001	PTBM 131
ı	Concorde 3	7001	PTBM 133
ı	Jumbo 1	NATO	PTBM 137
ı	Jumbo 2	2000	PCMA 001
ı	Jumbo 3	PRESIDENT	51
ı	Multimode 2	McKinley	Please state chassis
Ì	Multimode 3	Grant	number required.

Complete with simple-to-fit instructions £9.95 inc. GOLF COMMUNICATIONS
RICKMANSWORTH, HERTS WD3 2XE PO BOX 60,



OMEGA POWER

Charges for Harvard Handheld etc. Charges 10 AA size Nicads ... £4.50 Ea. PP3 size rechargeables..... £3.50 Ea. AA Nicads rechargeables ... £0.60 Ea. New replacement mikes complete with 4 pin mike plugs wired for Cybernet & Ham radios £4.00 Ea. Top quality mike clips screw type...... £0.30 Ea. Good quality patch leads (assembled PL259 to PL259 type) in UK each one individually tested RG58/U approx 1 ft long.... £1.10 Ea. approx 2 ft long.... £1.25 Ea. PL259's RD built in reducer... £0.35 Ea.

Please add 50p P & P Thanks

Omega Power 14, Meredith Road, Worthing, Sussex BN14 8EA

Citizens' Ban

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The following issues of Citizens' Band are still available as back numbers. The cost of each magazine is £1.50. This includes packing and posting. Please allow 28 days for delivery.

October 1984 November 1984

December 1984 January 1985

February 1985 March 1985 April 1985 May 1985

June 1985 July 1985 August 1985

September 1985

Major feature

Cybernet 934 MHz. CTE antennas

Panoramic CB scanner SWR survey and Breaker's

Understanding CB specs.

Commtel 934 QSL History Jungle CB Catcall rig Amateur Radio. Uniace 934

John Butcher interview October 1985 Plugs and cables guide

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To keep your copies of Citizen's Band neat and tidy, binders are available to hold 12 copies of the magazine. Each binder costs £5.00 and this price includes packing and postage.

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£16.90 £22.00

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\$28.00

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Airmail

£48.50

Each subscription lasts for twelve issues of the magazine.

Infonet Ltd, Times House, 179 The Marlowes, Hemel Hempstead, Herts. HP1 1BB. Tel: 0442 48435.

- Please send the following back numbers of Citizens' Band, price £1.50 inclusive.
- Please send Citizens' Band Binders price £5 each inclusive.
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Total cost of Order £ Please allow 28 days for delivery

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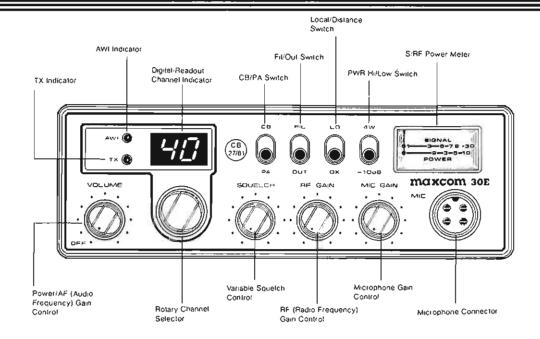
Please debit my Access/Barclaycard (delete as necessary)

Card

No.

Post Code Date Signature

izens'Band



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 after 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 circul 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 LEOs 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 strongth.

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

TONE OR FILTER CONTROL

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

POWER ANTENNA

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

BX/TX INDICATORS

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

ANTENNA WARNING INDICATOR

This a warning indicator which is activated by trouble in the antenna system e.g. a bad mismatch or damage to the antenna or eable. 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 funing 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 ear's ignition system by desensifising 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

REFERENCE =

FM RIG CHECKLIST

40	13.8VDC	SQUELCH NB SWITCH	12		1 0	1 5	1 0	1 4	100	1 A	Alling
40			AMI SWITCH	MIKE GAIM	RF GAIN	TOWE COME	S. R.F. METE	S/RF LED	HI. LO OIM	PA FACIUTY	1 3
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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.

TK IND. LIGHT	CH 9 SWITCH	COMMENTS	ADDRESS	NAME
100	SL		Telecomms, 189 London Rd, North End, Portsmouth	AUDIOLINE
	1000	Report Feb '82		AUDIOLINE
	BOX		RESIDENCE OF THE PROPERTY OF THE PARTY OF TH	AUDIO LINE
100	FL		K B & Co Ltd., 202 Cheetham Hill Rd, Manchester	COLT
31	SL		Globe, 168 Brooker Road, Waltham Abbey, Essax	COMMTEL
100	SL	Dimmer Switch Features	Marie Walter Committee Com	COMMTEL
	FL		Roger D, 831 Mansfield Rd, Notts	COMMTRON
	FL			COMMTRON
	FL	B Bass Karbura		TOTAL STREET
		Roger Boep Foature		OVERNIET
170	SL FL	Report May '83	Telecomms, 198 London Rd, North End, Portsmouth	CYBERNET
	and the said	Report September '83		CYBERNET
300	SL	Hepott September 55		INTERCEPTOR
	FL			INTERCEPTOR
200	FL			INTERCEPTOR
100	FL	Great GT868 chessis	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
100	FL	Report November '82	Magple Electronics, PO Box 35, Andover, Hants SP10 2LG	MAGPIE
70	FL		AM House, 9A Old's Approach, Tolpits Ln, Watford, Horts	MAXCOM
	FL			MAXCOM
	FL	-		MAXCOM
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	FL			MAXCOM
(5)	FL	Report Jan '84		MAXCOM
	100			
			muscom/apollo 16E	
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1		STILL STATE OF THE	5 0 3 9 730 TX TX PWR	
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MERCURY	10 40	N/A	40	13.8VDC		Jan 1									1.
MUSTANG	CB1000	£49.95	40	13.8VDC	•				310					•	•
MUSTANG	C83000	£59.99	40	13.8VDC					•	•	•			•	•
NATO	40M	£59.95	40	13.8VDC				•	•	•	•			•	•
NATO	2000	£189.95	40	13.8VDC		•	•		•	•	•		•	•	•
OSCAR	OSCAR I	£85	40	13.8VDC					353	-	•				6
OSCAR	OSCAR II	£49	40	13.8VDC	9						•			•	
RADIOTECHNIC	SUPERTUNED M40	£59.95	40	13.8VDC	•				3000		•				
RADIOTECHNIC	RT 852	£69.95	40	13.8VDC		3			1		•		•		
ROTEL	RVC 220	£50	40	13.8VDC	9						•				
ROTEL	RVC 230	£70	40	13.8VDC	9				•	•	•			•	
ROTEL	RVC 240	£90	40	13.8VDC				•	•	•	•			•	
SIRTEL	SEARCHER	£40	40	13.8VDC	9						•	_	Dept.	•	
TANDY	TRC2001	£80	40	13.8VDC			No.		1000	10	•		•	•	
TANDY	TRC2002	£70	40	13.8VDC							•			•	•
TANDY	TRC2000	£100	40	13.8VDC				•	6					•	
TANDY	TRC1004	£79	40	12VDC									•		1777
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	•								•		0
WESTWARD	P.T.2	£159.95	40	13.8VDC 240V	•						•		•	•	•



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NAME	MODEL	RETAIL PRICE	No.	SUPPLY SE	Sour	1888	ANI CH	WINE MITCH	Br. SA	ZON'S	SAF	SAF	M. F.	PA PA	S. ACIUM
AUDIOLINE	345	£139.95	40	240VAC	(3)	3.3		•	•	•	•	Sugg		•	
COMMTEL		€65	40	240/12V	•	Ye.					•				
HAM INT.	JUMBO	€254	40	240VAC	0	500		•	•					•	
HARVARD	H401	£149.95	40	240VAC	•	1		•	•		•		•	•	100
HARVARD	WT44	B 19 L	40	BATTERIES	0	5	III CON							37.3	
KAISER	CBX40	£80	40	BATTERY		Torrest.						1.0		-33	
МАХСОМ	7F	£49.95	40	BATTERY								1 118		-M	
TANDY	TRC1001	£119	100	BATTERY		6	102					-33		•	1
JNIDEN	UNIACE 300	£149.95	40	240VAC				•		•	•	1 1		•	197
WESTWARD	P.T.2	£159.95	40	240V/12V	•				- 52	1	•			•	

MOBILES

2						
	ADDRESSES	NAME				
3	E.M.S. Communications, Grove St. Wantage, Oxon LX21 7AD	MERCURY				
. 1	K.B. & Co Ltd, 202 Cheetham Hill Rd, M/cr.	MUSTANG				
-		MUSTANG				
100	Roger D, 831 Mansfield Rd, Nottingham NG5 3GF	NATO				
- 1	The second of th	NATO				
	S.M.C. Runbridge St, Totton, Hants SO4 4OP	OSCAR				
100	THE ROLL AND THE SHOOT DO NOT THE SHOP	OSCAR				
100	Rediotechnic Ltd, Rue des Buttes, St Mary, Jersey, C.L/23 Telford Rd, Fern	RADIOTECHNIC				
100	Down Industrial Estate, Fern Down, Wimborne, Dorset	RADIOTECHNIC				
. 1	Rotel Hi-Fi, 2-4 Erica Rd, Stacey Bushes, Miton Keynes	ROTEL				
		ROTEL				
		ROTEL				
- 10		SIRTEL				
	Tame Way, Tower Bridge St, Walsall, Staffs	TANDY				
		TANDY				
		TANDY				
1		TANDY				
48		TANDY				
0 88	Craveminster Ltd. Unit 8, Ind Est. Llandudno Junct. Gwynedd	UNIDEN				
		UNIDEN				
	Western Electronics, Fairfield Est, Louth, Notts	WESTERN				
3	Westward Electronics, The Mill House, Westward Tuckenhay, Totnes,	WESTWARD				

FR Report December '83. Also comes with telescopic entenna SL FL External entenna fecility FL Report Nov '83 FL Report Nov '83

Report July '83

Report January '83

Report Oct '83

Report July '82 Report Nov '85

Cybernet chassis

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Cybernet chassis

Report Nov '82

Report Sept '82 Report Feb '83

Report Nov '83

Cybernet 134 chassis rep. April '82

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BASES & PORTABLES

	ADDRESSES	NAME
	Telecomms, Portsmouth and Globe, Essex	AUDIOLINE
-		COMMTEL
		HAM INT.
1		HARVARD
	Globe, 168 Brooker Road, Waitham Abbey, Essex	HARVARD
	Telecomms, 189 London Road, North End, Portsmouth	KAISER
	A.T.M., AM House, 9A Old's Approach, Tolpita, Line, Watford, Herts	MAXCOM
	Tame Way, Tower Bridge Street, Walsell	TANDY
	Cravenminster Ltd., Unit 8, Industrial Estate, Liandadno Junction, Gwynedd	UNIDEN
	Westward Electronics, The Mill House, Tuckenhas, Totaes, Devon 080423 336/370	WESTWARD
d	AND ADDRESS OF THE PARTY OF THE	

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.

vised checki ntennas relea	ist now includes the many r ased after this change of hea	new art.	CONSTRUCT	F	POWE	1	LOADING	5	RAMO
NAME	ADDRESSES	MODEL	CONS	LENGTH	MAX	TYPE	LOAL	MOUNT	PRICE
AERIAL SUPPLIES	Aerial Supplies (Redditch) Ltd. 5 Widney House, Bromsgrove Road, Redditch, Worcs. (0527 62620/60107)	Silver Stat Silver Arrow Javelín Javelín Dipole	AL AL AL AL	1.6 1.6 1.64 1.64	100 500 500 500	B B B	8 C C	Pole Pole Pole Pole	DHEC
ALLGON	Communications, 10 North Street, Strood, Kent.	Verious 466	FG SS AL	Various	Various 10w	B M Marine	T C B CW C/B	Various Mast/Cabin	A-H Inc.
ARMSTRONG	Stateside Trading Ltd. Audley Avenue, Newport. Shropshire	SAM 10 SAM 20 TAK 10 TAK 20 MAG 10 MAG 20 BDY 20 PEC 20	555 555 555 555 555 555 555 555	1.06 1.06 1.06 1.06 1.06 1.06 1.06	1000 1000 1000 1000 1000 1000 1000 100	M M M M M M	B B B B B B B B B	Surface Spring Surface Boot lip Spring Boot lip Mag. Spring Mag. Side Sold over & Quick Disconnect	+++00000
ARCHER	Tandy Corp. Tameway Tower, Bridge Street, Walsall, West Mids.	21.904	SS	0.5	50	м	В	%" thread	D
AVANTI CB Radio Centre Ltd., 337 Kenten Road. Harrow, Middletex		AV 241 AV 241T AV 241M AV 241MM	\$\$ \$\$ \$\$ \$\$	1.22 1.22 1.22 1.22		M M M	B B B	Stud Trunk Mag. Mag.	DEES
BANDIT	Telecomms, 189 London Road, North End, Portsmouth	B10 B15 B15 B20 B30 B30 B40 B40 B50	555555555555555555555555555555555555555	1.42 0.51 1.22 1.42 1.42 1.22 1.42 1.22 1.42		M M M M M M M M M M M M M M M M M M M	88888888	Mag. Mag. Mag. Mirror Drill Thru Various Various Various Various	GEFFEEDOOD
BREMI UK LTD.	Unit 6, Innage Park, Holly Lane Industrial Estate, Atheratone, Warks.	B27S C27S HB27S	5S SS AL	1.52 1.38 1.56	1000 1000 1000	М М В	B C T	%" thread %" thread Pole	COM
CB SERVICES	97 Crab Lane, Harrogata, North Yorks.	Bullwhip Knuckleduster	SS	1.6 1.5		M B	8	Various	ōō
COMMTEL	Near Third Drove, Fengate, Peterborough	Rocket Shuttle Starlight Shuttle Ster Signel searcher Massenger Signel keeper	SS FG SS AL SS SS	1.5 1.6 1.6 1.5 1.5 1.5		X	8 8 8 CW 8	%" thread %" thread %" thread Clemp Pole Clamp Tripod	E.c.
FREEMAN AND PARDOE	Tything Road, Arden Forest Ind. Est. Alcester. Warks.	Invader Thunderpole II Thunderpole III	AL AL A1	1.5 1.6 1.65	250 500 500	8 8 8	B B C	Pole Pole Pole	EF
GAMMA AERIAL PRODUCTS	Lye, West Midlands. (0384 891132/891474)	Skybreaker Avenger Lofty Skybreaker II Avenger II Lofty II Firefty	AL AL AL AL AL	1.5 1.5 1.65 1.65 1.65 1.65		88888	#BBCccc	Pole Brecket Pole Bracket	mm#:000

REFERENCE

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.

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Construction	Loading	B-£5.£9.99
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Түрө	CW - Continuously wound	F- £25-£29.99
B — Base	Price Bands	G-£30-£39.99
M — Mobile	A-£1-£4.99	H- £40 plus.

FG — Fibreglass Type B — Base M — Mobile	CW — Continuously wound F — Price Bands G —	£20-£24.99 £25-£29.99 £30-£39.99 £40 plus.	CONSTRUCTION	HES	K POWER		LOADING	TAI	E RANGE
NAME	ADDRESSES	MODEL	CON	LENGTH	MAX	TYPE	107	MOUNT	PRICE
нам	Cognet & Co. Whitegate, 12 Farden. Bitterley, Ludlow. Salop	Big Mac Thunderbird Hipower Quetro Sexy	AL AL AL AL	9.9m 8.5 6.6 5.0 7.5	2k 2k 2k 2k 2k 2k	8 8 8 8	8 8	Various Various Various Various Various	HGGGG
нот воо	Stateside Trading Ltd. Audley Avenue, Newport.	FM UK	SS	1.27	16676	М	В	%" Thread	В
LES WALLEN MANF.	Pembroke Works, Ramagate Road, Sandwich,	Madulator LC M.D.X. Lang M.D.X Short Mini M.D.X. Mini 27 T-Balt Saturn Exper	SS SS SS SS SS AL AL	1.66 2.00 1.65 1.10 1.40 0.83 1.00 1.00	1000 1000 1000 100 500 200 500 1000	M M M M M M M M B B	8 8 8 8 CW C	%" Thread Pole/wall Pole/wall	CCCBBBDF
MARKSMAN	Marksman Products, PO 86x 40, Milton Keynes MK6 2UT (0908 668918)	Mister Stick	SS	1.19 1.63	Above legal limit	M	С	%"UNF	D
R.W. BADLAND LTD.	Roetan Trading Estate. Providence Street, Lyo. Stourbridge, West Midlands (Lye 3160/5051)	Rabel 1 Rebal II Rebel Raider Rebel Bullet Red Devil	\$5 \$8 \$8 \$8 \$8	1.5 1.6 1.6 0.51 1.62	500 500 500 50 50	M M M M	B B C B CW	%" Thread %" Thread %" Thread %" Thread %" Thread	
REVCO	Telecomms. 189 London Road, North End, Portsmouth	Revco	SS	1.0	100	M	В	Various	8
\$MC	Rumbridge Street, Totton Street, Hanta	Oscar CBA 11GP Oscar 11V11S11 Oscar 11CM Oscar 11CE Oscar 11NE Oscar 11SE Oscar 11ZE	55555555555555555555555555555555555555	1.5 1.6 1.2 1.2 1.5 1.6 1.5		8 B M M M M M M	8 8 8 8 8	Mag. Foldover Base Pull up Foldover Base	FEDCCCB
TAGRA	CB Radio Centre, 337 Kenton Road, Middlesex.	T40	SS	1.4	500	M	В	Various	E
THORO'BRED	Pixtron UK Ltd. 10 Victoris Street, Newark, Notts. (0636 74688 Telex: 377627)	Z 27 Z Mag 261	88 88 88	1.52 1.52 1.60	1700 1700 100	M M M	8 8	⅓" Thread 3" Die Megnöt 5" Die Megriet	BOO
VALOR	W.T.A. Electronics Ltd. 111 Cromer Ryad. Hellesdon, Notwich (0603 47694)	Warrior 650 Helf Breed 520 Half Breed 510 Half Breed 510 Half Breed 500 Diel-e-Match 540 Diel-e-Match 530 Rubbar Duck 300 Pro Am PLB 27 Road Hog 338 Road Hog 335 Road Hog 335 Road Hog 337 Road Hog 838 Black Magic 333 Black Magic 333 Black Magic 333 Black Magic 833 Black Magic 833	SS SS SS SS SS SS FG FG FG FG FG FG FG FG FG FG FG FG FG	1.52 1.52 1.2 0.9 1.2 0.5 0.35 1.52 0.9 1.2 1.76 0.8 0.9 1.2 1.52 0.76 1.2	1500 1500 1500 1500 1500 100 25 25 200 1000 10	M M M M M M M M M M M M M M M M M M M	C B B B B B B B B B B B B B B B B B B B	Thread	000000000000000000000000000000000000000
WTA	W.T.A. Electronics Ltd. 111 Cromer Road, Hellesdon, Norwich. (0603 47694)	Wat Pale 1 Wat Pole II Wat Stick 1 Wat Stick II	AL AL SS SS	1.5 1.6 1.5 1.6	1000 1000 1000 1000	B M M	8 8 8	Pole Pole %" Thread %" Threed	B C A B
VAN ORDT	Knight Communications, Unit 19 Brittania Estate Leagrave Road	Audio King	ss	1.5	2000	M	В	%" Thread	(3

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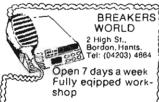
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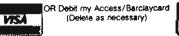
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