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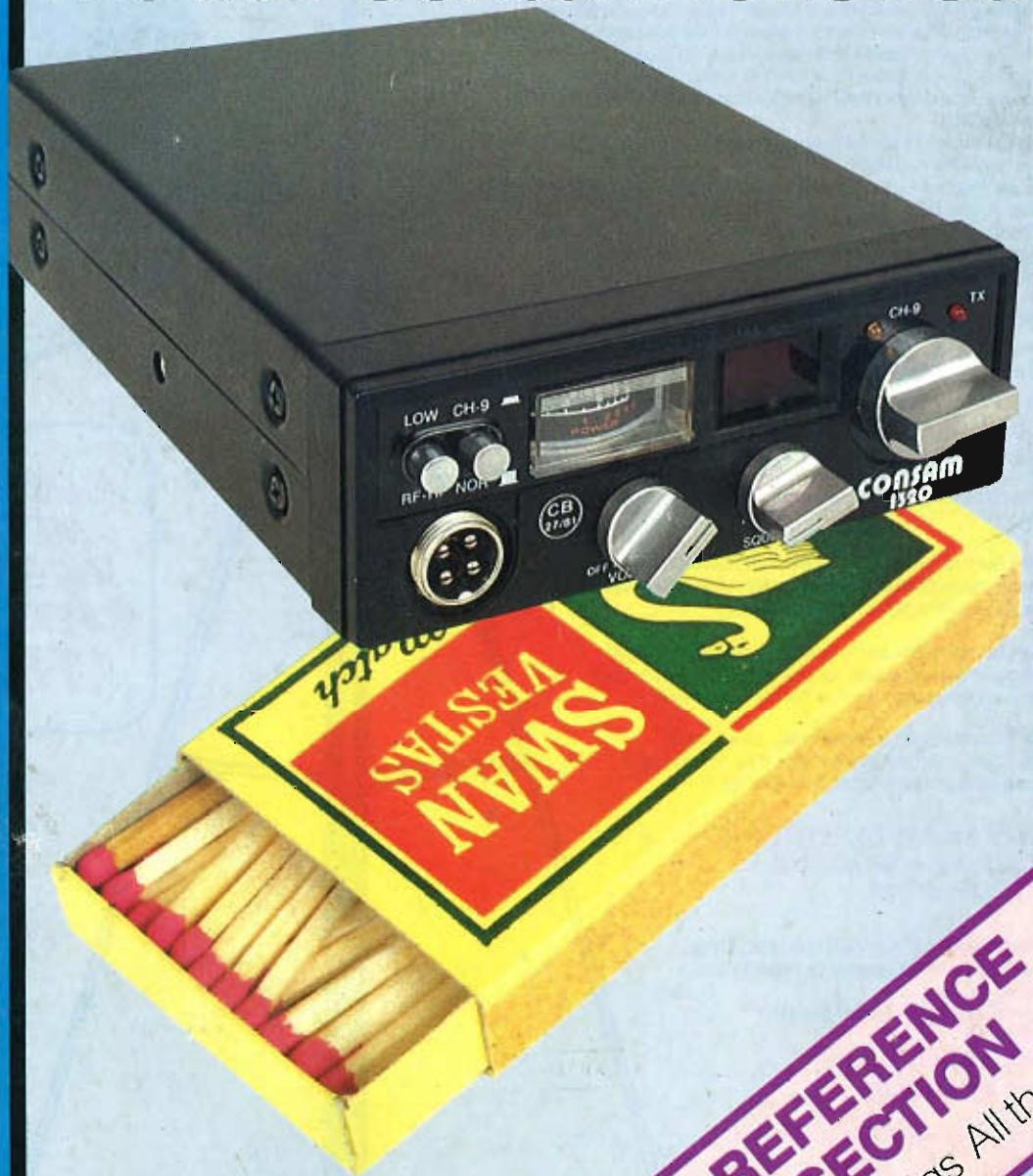


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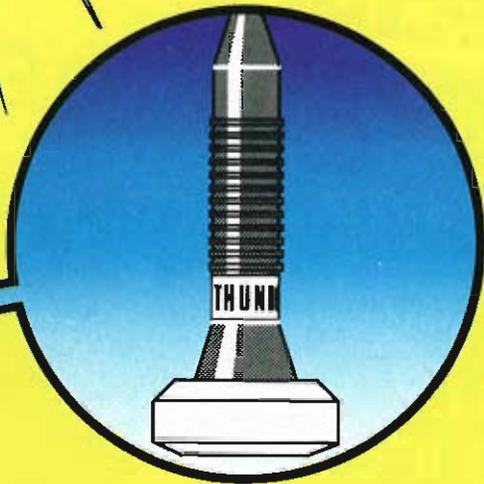
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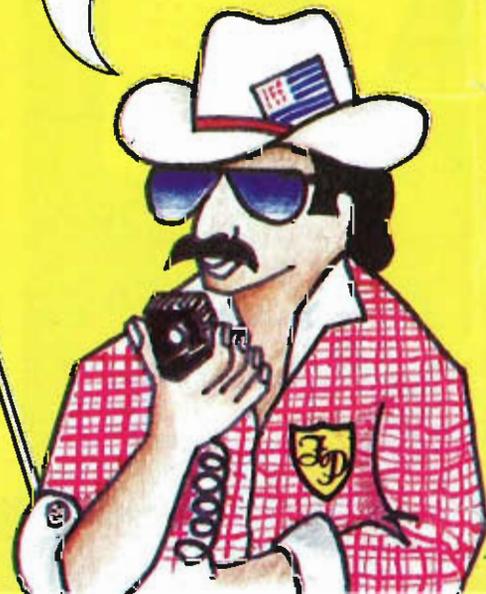
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Citizens' Band

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Cover This Month

The Consam 1320, small, neat and cheap, is featured balancing on top of a matchbox on this month's front cover. At that price, it's a steal . . . which leads on to the next bit of this column.

There were a gang of crooks who were a mean bunch that wouldn't stop at anything. They burgled, stole and, even worse, swore on CB.

One night they decided to rob the local CB shop, and quietly slipped into the shop, one by one. The trouble was, it was a small shop and there were seven of them. In the tangle of getting into the shop, one of them trod on the shop's cat. The cat yelped, but the crooks went on.

An alert breaker heard the cat, looked out the window and saw the thieves. He immediately phoned the police, who turned up just as the gang were about to leave the shop. They were all carted off and charged. When the gang went to court they were found guilty and given long jail sentences.

Hence the saying TOO MANY CROOKS COPPED THE LOT!!

Thanks to Matthew Pringle of Alnwick in Northumberland for inspiration and help with this little gem.

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UPDATE

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

Burnt Out?

I know this is not a new phenomenon and that breakers have been complaining about this almost since the introduction of CB, but why are other breakers obsessed with knowing how old you are?

I've not had much chance to go on channel recently. New to the magazine and with Christmas publishing schedules that gave me a few hours off over Christmas Day, I've barely had time to switch on Radio One, never mind spreading the warmth of my personality over the airwaves.

So last Sunday evening I thought I'd see if they had missed me on channel. Fighting my way through the evening dating service, I eventually found someone to talk to. We'd barely said two words to each other when the other breaker (I won't give his handle, it's not family reading) asked 'How many candles are you burning?'

Well, not to put too fine a point on it, I have reached an age when you start counting backwards, not forwards, so, partly out of reserve and partly out of devilment, I said 'Why, does it matter?'. He assured me it didn't but went on to ask again. I politely skirted around the subject again.

Video Break

VIPCO, a leading video software distributor, has announced a special deal for videophiles that includes a popular CB film, Breaker, Breaker.

You may remember that we have featured this film in a CB competition in the past. The film is centred on a trucker seeking revenge against a corrupt and violent family who control Texas City. The film combines Chuck Norris' karate skills and his CB friends that he has made on the road.

Now for the special deal.

He came back with 'I think you sound about 24'. Mentally thinking 'flattery will get you everywhere' I said 'Well, how old are you then', he promptly came back 'Too young for you' and I didn't hear anymore from him.

Joking and hurt feelings aside, there seems to be far too much of this going on. It's inevitable that younger breakers are going to use CB to improve their social life — I would if I were 16. But age shouldn't be a barrier to who you will or will not talk to.

One of the most interesting copies in my area is an elderly chap called Bill. He has some pretty positive opinions, particularly political, which he will let you know about at length, but he's not adverse to talking about most things. But, on the whole, it's the older people that speak to him.

This isn't just a fact of CB, I suppose, rather a fact of life that younger people are impatient of the older generation and vice versa, but 'ageism' is a nasty and pointless 'ism'. Bill is interesting to talk to if you are 16 or 60 so why make the distinction?

The Government, or rather the Department of Trade and Industry, has announced changes in the licence conditions for CB radio. These are discussed

in detail in the magazine, so I won't repeat them, but it is encouraging to see that these changes were discussed and revised in consultation with CB users and their representatives. We have had legal CB for over two years and it would seem that the teething troubles have taken longer to resolve than everybody had hoped. With greater cooperation between users and administrators we may well see the beginnings of the service we all hoped for.

These revisions came into force on the 5th March of this year.

Now for another item of news, on a sadder note. Mike Newbold, author of 'Communication the QSL way', has decided to call it a day. Apart from contributing his monthly column to us, he has a full time job in the emergency services to cope with and is beginning to wonder what a private life is. He has not been too happy either with some of the recent developments within QSLing and he has come under personal attack from individuals who have decided that Mike isn't doing things the way they would like. This has got increasingly bitter and, as Mike says, this isn't what QSLing is all about. So he's decided he has had enough.

I'm sure you join me in wishing Mike the best of luck.

Sue Sharp

The eight films available are recorded on a three hour, high quality cassette that can be bought for just £8.95. This leaves at least 80 minutes running time on the cassette for the purchaser to record his own programming, as well as having the film to watch. Alternatively, after the film has been viewed, the tape can be recorded over from the beginning as a three hour cassette.

This is very good value when pre-recorded cassettes cost anything from £20-£40 these days and a blank cassette costs



from £5 upwards. More details and ordering information is available from VIPCO Ltd., VIPCO House, Unit 6, Chapmans Park Industrial Estate, High Road, Willesden, London. NW10 2TE. Telephone 01-451 0255.

UPDATE

Special

Keith Townsend takes a look at the recently announced licence changes

Within the next few weeks those applying to renew their CB licences will find themselves being handed a new licence form, with rules and conditions somewhat different to those of their old licence.

The result of over twelve months consideration by members of the Radio Regulatory Department, the new conditions are intended to clear up some of the misconceptions which have arisen since CB was introduced and to lay greater emphasis on the responsibility of the operator. Most of the new clauses were originally suggested by leading CB groups and the final decisions as to their inclusion are the result of protracted negotiation which, although it has tended to delay the introduction, has resulted in a form of licence which should, with a little goodwill on the part of the authorities, offer far less protection to those who choose to abuse the service.

The first and most obvious change is that from the date of introduction of the new licences they will only be valid when taken out in the name of a person aged 14 or over. Designed to shift responsibility for the way in which CB is used by the younger generation, this rule is clearly explained in a much enlarged condition 2, outlining those eligible to operate equipment under the terms of the licence. Besides allowing transmissions to be made by those under 14, so long as they are under the direct supervision of either the licensee or someone appointed by him, this section now also permits use by anyone else under the supervision of the licensee, thus removing the anomaly whereby anyone who did not have their own licence would, strictly speaking, be open to prosecution for using a friend's rig.

For the first time this new licence takes account of ancillary equipment. Condition 5 explains the user's responsibility to ensure that not only the radio but also its accessories must be maintained so as not to cause interference to other services. Another new rule, designed to bring the licence into line with common practice, is what which formally admits the use of 'roger beeps'. This same clause, Condition 7, should also put an end to the arguments about music, since it

clearly states "The transmission of music in any form is not permitted.". This may appear self evident to most breakers but it is pretty certain that this form of wording would make prosecution for this form of abuse far easier than that of the previous licence, in which transmissions were merely to be made in plain speech.

Obviously the RRD had in mind the question of copyright infringement when putting together the prohibition on music and also in the inclusion of an entirely new clause banning the re-transmission of any radio or television broadcast material, though why they should separate these rules with the inclusion of a ban on the installation or use of repeater stations is a little beyond me. The question of repeaters is really a matter for further discussion. It is not envisaged that they could ever be introduced at 27MHz but considerable interest in their use at 934MHz is emerging and more time is needed to evaluate the possibility of permitting their use at that frequency.

Sea B

An interesting addition to the rule prohibiting the use of CB in any form of aircraft is a line explaining that you may only use a rig on board any form of ship so long as you have the Master's express permission. A very sensible inclusion, this rule takes account of the fact that many medium and large vessels are crammed full of sensitive electronic equipment, whilst most small craft would suffer no ill effects. On balance this rule has been well thought out and is far more satisfactory than the alternative, which would have been a blanket ban on water-borne CB transmitters.

As expected the prohibitions on advertising and the transmission of obscene or offensive messages remain in force and, in line with other forms of radio licence, the Secretary of State has the right to entirely revoke CB licences, either by means of an announcement by the BBC, or by publishing a notice in various newspapers.

Many of the changes occur in the schedule to the licence and these make interesting reading. The RRD apparently still harbours some technical misgivings about the idea of combining a CB rig with an ordinary broadcast receiver, so, unlike most countries, Britain still

prohibits combined sets. Nevertheless the schedule contains the most significant change of all.

At long last the prohibition on all but base loaded aerials has been lifted and replaced by one allowing the use of any form of antenna not exceeding an overall 1.65 metres in length and 55mm in diameter, excluding the ground plane. Although this does not allow any significant increase in aerial size its real benefit lies in the fact that a whole range of readily available but hitherto "illegal" aerials such as the Firestik become acceptable, as do the majority of centre and top loaded aerials. Clearly the original regulation was over restrictive and had never been accepted among the breakers. Hopefully the problem will solve itself as breakers enjoy greater freedom of choice and dealers can legitimately offer a wider range.

The RRD remain resolutely opposed to the use of dipoles and other half and $\frac{5}{8}$ th wave antennas on the grounds that they offer too much chance of interference to other services and also give an unfair advantage within what is, after all, meant to be a short range service.

Fine Or Imprisonment

In a number of general conditions towards the end of the schedule we are reminded that we are not allowed to use power amplifiers and that the erection of antenna and the use of radios may be subject to local planning regulations and that permission may be needed to use a radio on some private and public sites. We are also reminded that we risk a fine or even imprisonment for operating or installing any CB gear that is not covered by a current licence.

The final words of the document will, it is hoped, bring a little cheer to those members of the various organisations who monitor channel 9 in the hope of helping others. In a box right at the end of the licence are the words "in particular... note that channel 9, although not a substitute for the 999 service, is used for emergencies and assistance only."

No single step can eradicate all of the difficulties faced by those with a genuine desire to see the CB service succeed. At this stage we can only hope that the new licence represents the first step in the right direction.

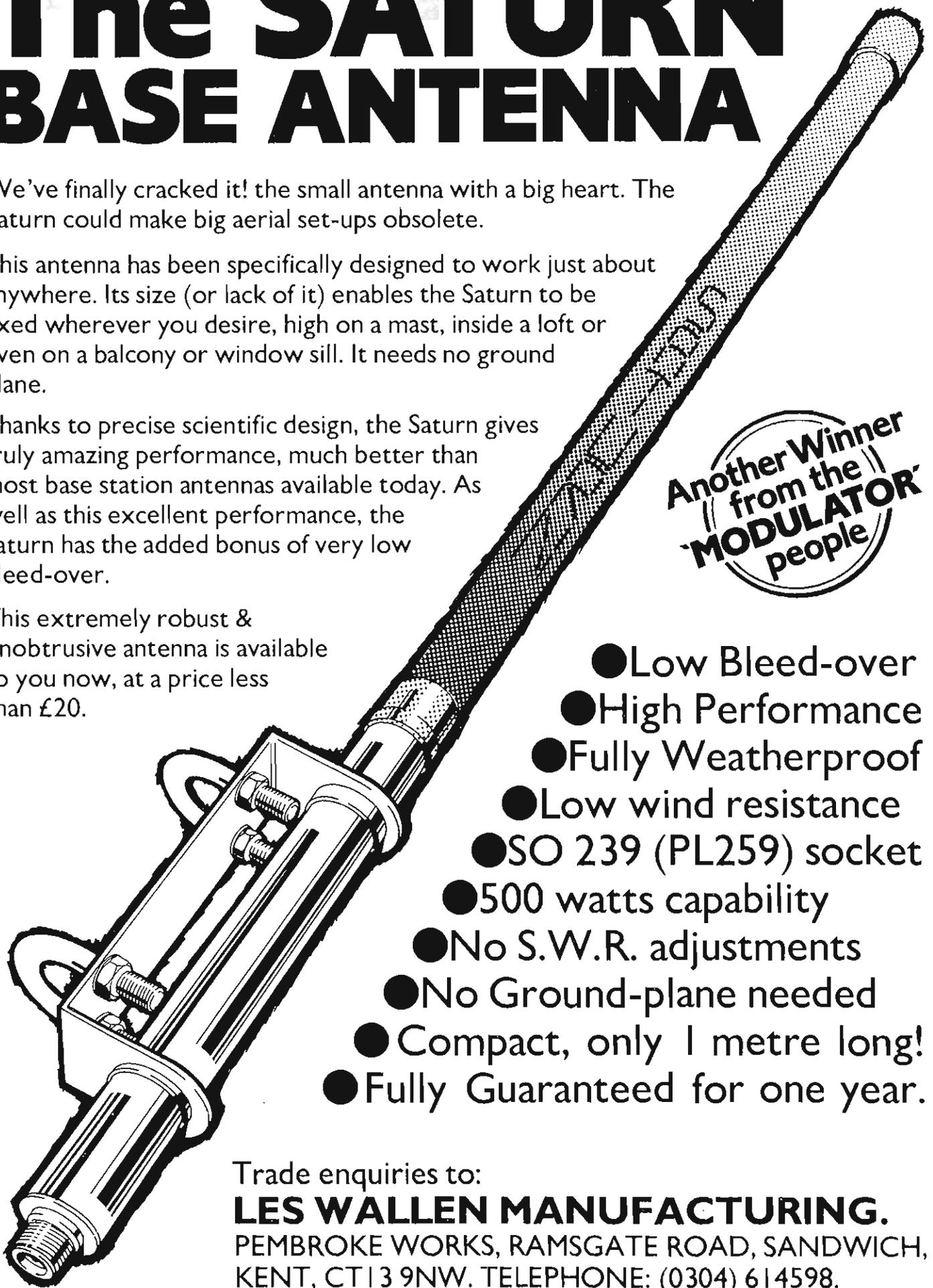
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the performance of my equipment. What's my best bet? Improve my rig with modifications or accessories or should I buy a better rig? Then again do I need a better antenna or mike?

The main problem is reception. I seem to be getting out O.K., but if I turn the squelch up I get practically nothing. I operate with talk over the top of background noise. Functional but not pleasant.

Again there are a few options open on this problem. It may be that your set, for one reason or another isn't very sensitive. Modifications can be done to improve the sensitivity of the set, or it may need realigning if it is faulty.

There are all sorts of goodies to add to your set but many of them are gadgets rather than useful accessories. From your point of view, the best thing would be a pre-amplifier. This amplifies the received signal and is best situated near the aerial, although this isn't essential. Beware, as it will amplify all the received signal - not just the bit you want to hear.

You should also check that the equipment is properly installed, although if there was something amiss, I would have expected it to show up on 'transmit' before now. A better mike is not going to make much difference to reception and power mikes are not very effective with FM anyway.

Although the York range are good, mid priced rigs, you may find that another set, particularly if it is more expensive, has a better receive section. You may want to consider this, but I would think it is more important to identify the cause of the poor reception before spending a lot of money on new equipment. Is there a lot of CB use in your area - are you picking up a high level of general channel noise? Are friends getting better results? You mustn't expect, whatever the publicity leads you to expect, clear, individual voices over the ether if there is a high volume of CB users in your locality.

There is no reason that you shouldn't get good performance from the equipment you have so check it all out first.

SA

QSL request

Deborah Hughes from Feltham in Middlesex wants to know about QSLing...

QI am writing this letter to enquire about QSL cards. I am new on channel and reading your magazine was the first I've heard about QSL.

Can you advise what QSL cards are and the point of it all. I would like to start a collection but I don't know what the first move is. If you have any QSL cards, perhaps you could send some to me to start off my collection.

At this one is really for our QSL supremo, Mike Newbold, but as the letter was addressed to me I'll see



what I can do.

The spirit of QSL cards goes back to the amateur radio users. In the 'Q' code (which is an internationally recognised list of abbreviations) QSL stands for verification of contact and a QSL card became a decorative way of confirming the details of a radio contact, listing equipment, a reception report, atmospheric conditions and, usually, a greeting.

This carried over to CB as many AM operators were having national and international contacts on CB. Their QSL cards became highly attractive as they were well designed and often printed in colour - becoming collectors items in themselves. After a while, CBers started collecting the cards themselves, some in the same way that people collect matchboxes and some as a method of increasing their range of 'CB' friends.

There are two schools of thought about CB QSL cards. There are those who feel quite strongly that QSL cards should be used as the Q code says, for confirming with another operator that you have copied him and to give a written record of his signal. The other, and probably larger group, collect and swap cards as a hobby and as a very good way of making friends who are also interested in CB. It's not for me to say which group is right - I doubt if there is a right or wrong in this case anyway!

Many QSLers, whether 'swappers' or purists, belong to QSL clubs. These give members a selection of things for their membership fee, generally including club QSL cards, a club stamp, membership lists and other assorted goodies. QSLers almost always have their own personal cards printed too, but if you are a newcomer or rather broke at the moment, people are usually happy to receive postcards of the area the sender comes from or hand produced ones.

Lists of QSL clubs and contacts appear regularly in 'Communication the QSL way'.

If you are interested in involving yourself in QSLing then I suggest that you speak to other people in your area on channel and find out from them

what clubs they belong to, where they have their cards printed etc. This isn't a 'cop-out' - these people will be able to answer your individual questions much better than I can in print and their personal recommendations will be much more helpful.

SA

Pre-amp Poser

Trevor Duke in Manchester is not convinced by all he has been reading about pre-amplifiers recently...

QI have heard a lot about CB pre-amps recently - you have mentioned them in your magazine in reply to other readers questions and round our way they seem to be the latest accessory. I've used my mates one for a few days and found that it didn't really make any difference - it brought up the signal but not the modulation.

As I have pointed out to Steve Derrick this month, a pre-amplifier will amplify everything - wanted signal, bleedover, background hash, the wally in the next road with a 50W burner... As the pre-amp amplifies the incoming signal, it pushes the needle over on the signal meter, but the auto gain control inside the rig will only let so much through. It appears that the pre-amp is improving the signal but not the modulation, and this is really the case.

In a way, an aerial pre-amp is a mixed blessing - the sensitivity of the antenna to distant signals is improved but it won't do anything to help your rig get back to them!

SA

Problems should be sent to
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145 Charing Cross Road
London WC2H 0EE

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CB Magazine JUNE 1983

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What CB Magazine said in April...

All in all, we have to say that this is the best rig we have tested to date.

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J.W. from Sheffield

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Mack Chat

**Dream, all I have to do is dream . . .
Mack has news on the Warlock
dual CB rig.**

When I wrote in the December issue of this magazine that I was intending to jack it all in I was serious, and it was not a journalistic trick to gain sympathy as some have believed. The response from you, the readers, was tremendous and even now the letters are still being received with your support, sympathy, and some ideas for making the channels cleaner. I've written many times about this problem and you may feel that it is becoming boring but almost every letter I received agrees that it is bad news that the dedicated breakers have to put up with abuse of CB frequencies. But the big question still remains; what can one do? Some of the letter writers ask 'Who can we write to with our complaints and what action would be taken?'

I was surprised at some of the ideas of what is classed as abuse. Everyone agrees that dead keyers, music players and funny voiced individuals are the standard abusers, but yet others believe that it could be wrong for fellas to chat up girls or vice versa over the frequencies. I can't see the harm in that myself. In my days it was done at dance halls and cinemas and anyway CB should be used for communication and a bloke chatting to his bird on CB is communicating and it's cheaper than the landline. (I should know, I've got an 18 year old daughter). Another interesting point that arises is the belief that many breakers living in large towns cause much of the pile-ups on channel. In an attempt to find a clear 'space' two stations wishing to converse pick the channel with the lowest 'S' reading. So if these stations are say ½ mile apart then even if they pick a channel with S9 of noise or other stations chatting, so as long as they can hear one another they will carry on ignoring any pleas from other stations that the channel is 10-6. Too many people using too few channels in large towns is the real problem. Some of you say that to cure the abuse on the channels, find the culprits and do nasty things to them but I made similar suggestions once and it certainly upset some people and I had quite a few letters from you saying it was not worth breaking the law or taking the law into ones own hands.

So one answer could be to use what legal aid that is available. Those of you that read Sue Sharp's interview with the Radio Regulatory department may have lost heart by the RRD statement that there is not a lot they can do to cure the frequency abuse. As we all know, they tell us they don't have the manpower to roam the streets wally hunting.

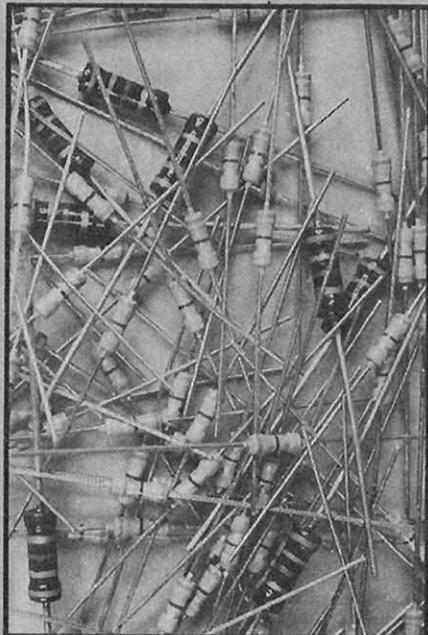
One letter that I received from Deerstalker of Steel City tells me he and some of the other cheesed off breakers formed a club to DF and identify the wallies, but at a meeting where a solicitor was present they were told that there was nothing legally they could do. But I believe that there is. If your CB causes interference with a neighbours telly or hi-fi, what do they do? They go to the Post Office, fill out the appropriate form that is sent to the RRD and your station is inspected. Right, now if you have



a local wally that is causing interference, go to your local Post Office, fill out the form and send it to the RRD. It would help, of course, if you could trace the wally's home 20 (DFing equipment does work). Make notes of days and times that wally is doing his thing and pass this on to the RRD with the form. Now you out there who have problems, think about it but not for too long and then go and do it. Help the RRD to help you.

O.K. enough of the bad news now for the good side of CB. Wasn't it refreshing to read in January's edition of this mag about the Shetlands, and how well CB works for the islanders. It goes to prove that the rural based breakers are very lucky. Another interesting letter was from Dave Moss of Cleveland who sent me a copy of an article from ROSPA's publication 'Care on the road' Oct 83. At first it goes on about the use of hand mikes whilst mobile and the dangers involved. Then it turns to the good use of CB and tells of some of the monitoring groups. Much praise is given to a breaker that listens and uses channel 19 for traffic information. Based in a top flat of a tower block in Birmingham, Tiny Tears monitors 19 from 7 am until 9 am with reports for users on the M6 between junctions 4 and 8 and it seems she is well known by many CBing motorists passing through this part of the country.

Now settle down, relax, close your eyes and dream. Hold up, if you close your eyes you can't read the following. Imagine a rig as wide and as deep as an Audioline 341 (160mm x 217mm) but a little higher (70mm). Now in this rig you have an Audioline 341 27MHz. rig plus a 934 meg rig, using all the latest electronic components. On the front panel is the usual 341 controls, but a multi colour LED display would show the usual 40 channels FM, 20 934 old channels would be displayed in another colour and 20 new 934 channels in yet another colour for whatever mode is selected. Of course when the extra 20 channels are allowed the necessary modification would be a very simple operation. On the rear of the rig would be 2 antenna sockets for 27 and 934 and switched from the front panel. How much should this rig cost? Let's see, a Reftec costs £299, a Grandstand 27MHz. rig plus converter for 934 £399, so I suppose a dual rig (not a converted rig as Grandstand) would cost lots. But as we are dreaming, let's dream of under £250. Good ain't it? But it's not a dream, all the above is fact. Its a rig called the Warlock and by the time you read this it should be available. Produced and marketed by Everite, 4 Coventry Road, Hinckley, Leics. Want one?, then form a queue behind me. Further details from Everite, but please send SAE. (See ads). Whilst on 934, during good lift conditions in the beginning of December (lift is the equivalent of skip on VHF and UHF) a 934 station based in Banbury, Oxon, claims to have worked the following stations. Biggin Hill, Kent, 80 miles. Canvey, Essex, 90 miles. Gillingham, Kent, 95 miles. Norwich, Norfolk, 100 miles and Lowestoft, Suffolk, 135 miles. Is this a record for 934. Perhaps you know better?



SQUELCH IT OUT

R. A. Penfold tells you how to make a handy little device that will be more sensitive than the built-in unit in your rig. It will work on amateur radio equipment too.



Using a CB in a noisy environment (such as a moving vehicle or a room in which a television set is operating, for example) the intelligibility of the transmitted signal can be severely impaired by the high background noise level. Even if the words can be heard, the background noise is rather tedious for anyone trying to copy the transmission!

This problem can become more severe when using a speech processor, a transmitter having built-in speech processing or automatic modulation level control. During the brief pauses that occur during normal speech, the audio sensitivity can rise quite significantly as the audio processing circuits try to modulate the transmitter with the signal produced by the background noise!

There are several ways of combatting this problem, such as the use of a noise cancelling microphone which phases out signals that emanate some distance from the microphone, but not those which originate quite close to the micro-

phone. There is also an electronic method of giving an apparent reduction in the transmitted ambient noise level, and this is achieved using a form of Squelch circuit. A circuit of this type normally attenuates the processed signal, say by about 20 dB, but gives no attenuation when the operator is speaking into the microphone and there is somewhat higher input level.

This greatly reduces the background noise level during pauses in the speech signal, which is when the noise is most obtrusive. There is no reduction when the speech signal is present, but this signal tends to largely mask the noise and make it comparatively unimportant. The result is an apparent reduction in the noise level, with the wanted signal tending to stand out more clearly.

This Squelch Unit is designed for use with a high impedance dynamic microphone, but its sensitivity is high enough to permit its use with most low impedance dynamic types as well. The circuit is battery powered and simply connects between the microphone and the transceiver. Of course, the

NOTES:
 IC1 IS CA3130T
 Q1 IS BC179
 Q2 IS 2N3819
 Q3,4 ARE BC109
 D1,2,3 ARE 1N4148
 LED1 IS TIL220

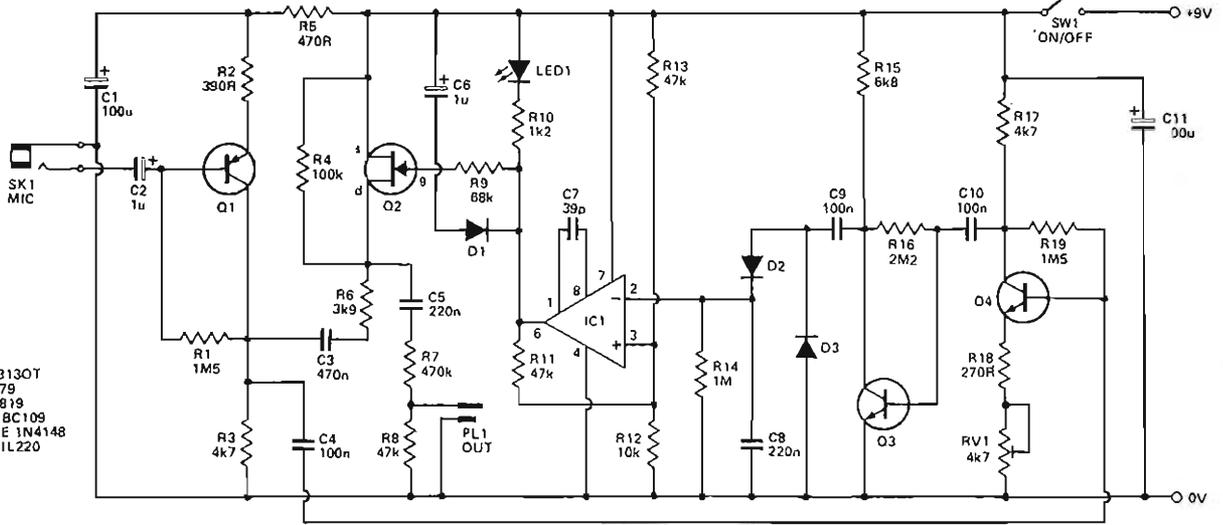


Figure 1. The circuit for the CB Squelch Unit.

unit could possibly be used to advantage with public address or disco equipment, though better results will be got from a circuit specifically designed for wideband audio rather than narrow-band communications.

It is based on special ICs, which have excellent noise and distortion figures, operated as voltage controlled amplifiers, rather than as attenuators.

The Circuit

The full circuit diagram of the Squelch Unit is shown in Figure 1. The input preamplifier uses Q1 in the common emitter mode, with R2 to provide negative feedback; this boosts the input impedance of the unit to a suitably high level to match a high impedance dynamic microphone.

A simple JFET VCA is used, formed

by R6 and the drain-to-source resistance of Q2. With the gate of Q2 at or near the positive supply potential, Q2 is biased hard on and has a drain-to-source resistance of only a few hundred ohms; this gives a loss of about 20 dB or so through the VCA. When Q2 is cut off, it exhibits a drain-to-source resistance of about a thousand megohms (if its gate is taken to almost the negative supply potential) and losses through the VCA are then negligible. R7 and R8 form the output attenuator.

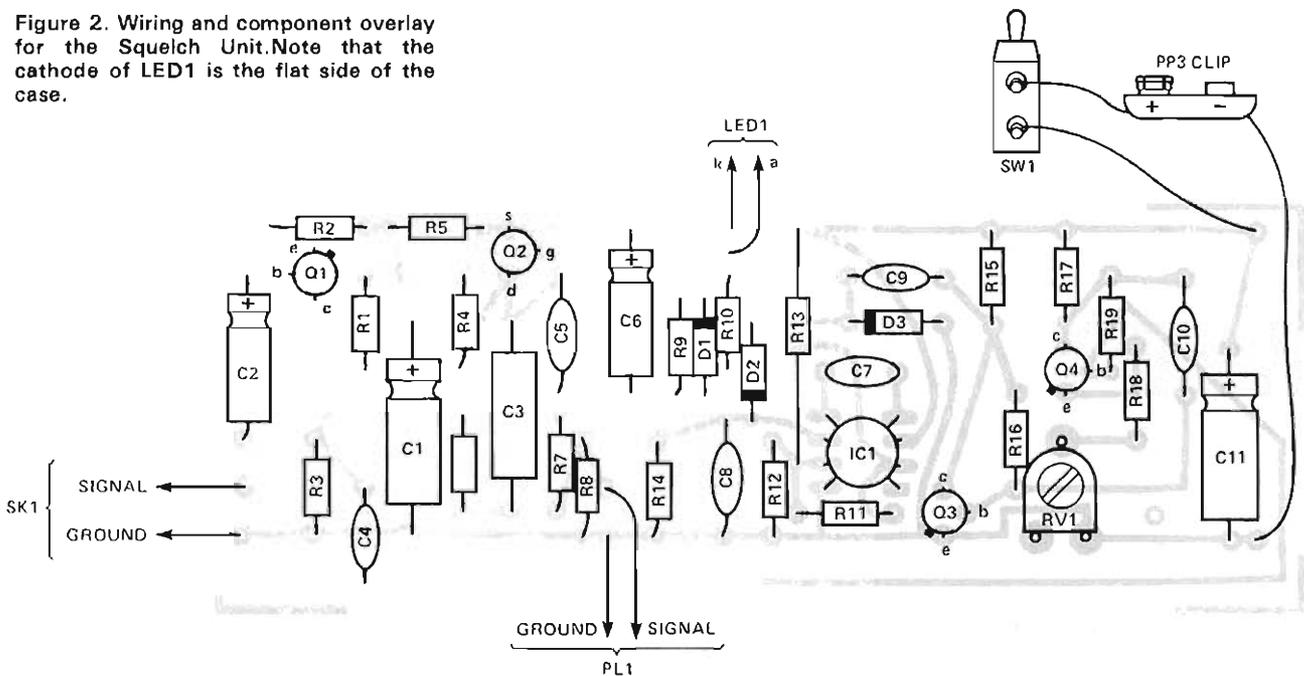
Some of the output from Q1 is coupled by C4 to another common emitter stage based on Q4, and from here the signal is coupled by C10 to a further common emitter amplifier, this time using Q3. A controlled amount of negative feedback is applied to Q4 by RV1 so that the gain of this stage can

be varied from a little less than unity, at maximum value, to around 24 dB (16) at minimum resistance. By adjusting RV1 it is possible to set the sensitivity of the unit at the correct level.

The output of Q3 is fed to the inverting input of op-amp IC1 via a rectifier and smoothing circuit consisting of D2, D3, R14 and C8. The positive output of this network will be sufficient to activate IC1 when there is a speech signal present, but not when there is only the weaker, background noise signal.

The op-amp, IC1, is used here as a variety of Schmitt Trigger. When there is no speech signal, the output is in a high state so that the indicator LED1 is switched off. The JFET Q2 is biased on, providing a low impedance path to OV through Q2 and the battery, thus

Figure 2. Wiring and component overlay for the Squelch Unit. Note that the cathode of LED1 is the flat side of the case.



heavily attenuating the input (noise) signal. However, when the inverting input goes more than about 2V5 positive, as it will when there is a speech input, the output of IC1 goes low; LED1 turns on and Q2 is biased off, removing the low impedance path to 0V and producing minimum attenuation of the signal.

The attack time — the time taken by the VCA to switch from low to high impedance — is very rapid, whereas the decay time is slowed down by R9 and C6; this ensures that there is minimal noise generated by the VCA as it returns to the high attenuation (low impedance) state. It can sometimes happen that, due to the nature of the input signal, the VCA will switch rapidly between states, several times in succession, the slow decay time set by R9 and C6 also prevents this undesirable effect. Diode D1 ensures that R9 and C6 do not effect the rapid attack time.

Construction

All the components, including the battery, will readily fit into an aluminium box measuring about 133 x 70 x 38mm. SK1, D4, and SW1 are mounted on the front panel; SK1 is a four-way DIN type on the prototype, however, this should obviously be varied to suit the plug fitted to the particular microphone used. An exit hole for the output lead is drilled in the rear of the case and this lead is fitted with a plug of the same type as fitted to the microphone. Many communications microphones have a press-to-talk switch and consequently use a 4 way lead and plug. If the unit is used with a microphone of this type, the appropriate two pins of the SK1 simply connect direct to the corresponding two leads of the output cable.

The printed circuit board is detailed in Figure 2. Construction is mostly straight forward; IC1 is a CMOS device, though, and it is thus necessary to observe the normal handling precautions. Use pcb pins at points on the board which will later be connected to off-board components.

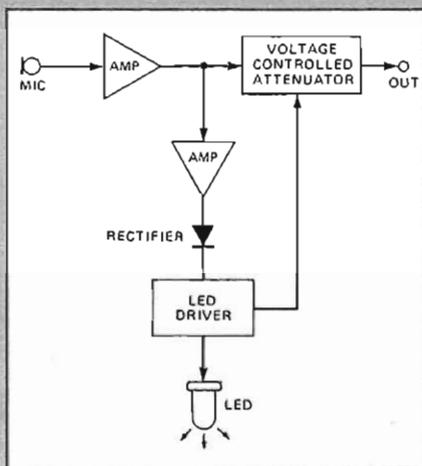
Mount the finished board on the base panel of the case using 6BA fixings, including spacers to prevent connections on the underside of the board short circuiting through the case. Leave sufficient space for the PP3 battery at one side of the component board. The remaining wiring is then completed, as show in Figure 2.

Setting Up

It is only necessary to set RV1 to the correct level before the finished unit is ready for use. This is adjusted by trial and error so that the ambient noise level does not trigger the VCA, but the speech signal does so reliably. Indicator LED1 lights up when the unit is activated and this greatly simplifies setting up.

How It Works

The main signal path contains an amplifier, a voltage controlled attenuator,



ator and a fixed attenuator. The gain of the amplifier is balanced by losses through the attenuator so that the unit has unity gain overall. Pre-amplification is necessary to provide a high signal level to the VCA input, so that unwanted switching pulses generated by the circuit are small in comparison to the speech signal. The attenuator then restores the signal to its original level.

Some of the preamplifier output is amplified further, then rectified and smoothed to give a DC signal which is proportional to the average input level. This drives a trigger circuit whose output switches from a high to a low when the DC signal is more than about 2V5 positive. The output from the trigger controls the VCA and an indicator LED; a low switches the VCA to its zero attenuation state. When the trigger output is high, the LED is switched off and the VCA gives about 20 dB or so attenuation of the audio input.

The unit is adjusted so that with only noise present, the VCA is in the high attenuation condition, but when there is a voice signal, the trigger switches the VCA to zero attenuation. The LED is ON when the unit is passing a signal.

The smoothing circuit is designed to give a fast attack time, switching rapidly as soon as it detects a speech signal, but a slow decay so that the ends of words are not chopped off by too rapid switching back to the high attenuation state.



Parts List

RESISTORS

(All $\frac{1}{4}$ watt 5% carbon)

R1, 19	1M5
R2	390R
R3, 17	4k7
R4	100k
R5	470R
R6	3k9
R7	470k
R8, 11, 13	47k
R9	68k
R10	1k2
R12	10k
R14	1M
R15	6k8
R16	2M2
R18	270R

POTENTIOMETERS

Rv1	4k7 miniature horizontal preset
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CAPACITORS

C1, 11	100u 10V axial electrolytic
C2, 6	1u 63V axial electrolytic
C3	470n C280 polyester
C4, 9, 10	100n C280 polyester

C5, 8	C280 polyester 220n
C7	C280 polyester 39p ceramic disc

SEMICONDUCTORS

IC1	CA3130T MOSFET op-amp
Q1	BC179 silicon PNP transistor
Q2	2N3819 silicon N-channel FET
Q3, 4	BC109 silicon NPN transistor
D1, 2, 3	1N4148 signal diode
LED1	TIL220 5mm red light emitting diode

MISCELLANEOUS

SW1	SPST miniature toggle switch
SK1	4-pin DIN socket (see text)
Aluminium case; PP3 battery clip; PCB LED fixing washer; output lead; output plug (as required); wire, solder, etc.	

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Mounts		
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SOWM Wing Mount	4.60	1.00
SOCA Cable Assembly	5.35	1.50

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SMC 251	Cigar lighter adaptor.....	£0.45
T3-170L	SWR Relative power twin meter.....	£14.95
S3-30L	SWR mini type.....	£8.80
WD202	SWR/Deviation Meter.....	£13.50
100LP30	Low pass filter.....	£5.75
150CX3W	Coax switch 1 in 2 out.....	£7.30
100TU27	Antenna tuner unit.....	£7.30
PL36PL	Jumper 3 RG58, PL259's.....	£1.85
UR76	Superior RG58 per metre.....	£0.29
UR67	Superior RGB per metre.....	£0.67
PL259	UHF plug fits RGB/U.....	£0.55
UG176	Reducer fits PL259 to RG58/U.....	£0.15
SMC 478-267	Din plug 5 pin 180°.....	£0.35
SMC 586	Microphone clip magnetic.....	£0.60
SMC 585	Microphone clip adhesive.....	£0.30
FSP1	Extension speaker.....	£11.15
SMCP8	3.5mm Mont jack plug.....	£0.15



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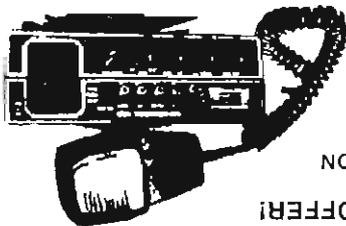
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Interference



An antenna on it's own is a harmless enough animal — the problems arise when we attach a rig to it. What sort of problems are likely to arise?

INTERFERENCE KILL OR CURE

Last month we looked at the ways in which antenna can contribute toward TVI but we are not going to cause much interference unless there is a rig on the other end. So, this month, let's do just that and see what sort of problems we are likely to get.

The first thing we notice is that the outer case of the rig is made of metal. As well as providing a neat finish to the rig this ensures that the various signals which are generated by its various stages are not allowed to escape into the air, where they might easily give rise to TVI.

Harmonics

Every radio transmission, regardless of frequency or source, brings with it the possibility of harmonic radiation, both from the desired frequency and the frequencies within the rig from which it is developed. Harmonic radiation occurs at those frequencies which are a direct multiple of the originating frequency, so that the harmonics of, say 27.8MHz. will be 55.6MHz., 83.4MHz., 111.2MHz. and so on. Harmonic radiations are considerably weaker than the signal frequency but, since 27MHz. is not the only crowded part of the spectrum, these unwanted radiations can cause interference to a number of other services. To use our own example, 111.2MHz. is within a aeronautical navigation band, in which a significant amount of interference might prove disastrous.

Modern CB rigs are designed to offer good suppression of harmonic radiation but it is inevitable that some harmonic content is radiated with the desired signal and the original decision to permit only base loaded antennae was based upon the premise that the coil would further attenuate harmonics to minimise the amount being radiated by the whip. There is little that the CB operator can do to prevent harmonic radiation, other than to ensure that his equipment is maintained in good order and operated well within the limits defined in the handbook.

Rig 'tweaking' can dramatically increase harmonic output. Although it may be within the design capability of your rig's components, a power increase of fifty percent at 27MHz. will offer no perceptible improvement in performance but may increase harmonic radiation by as much as three hundred percent.

External Power Amplifiers

The use of an external power amplifier can result in numerous problems where none existed before. To achieve

any measurable increase in signal strength over even a modest distance requires a multiplication factor of ten. For example, if your signal from a rig developing 4W is being received a few miles away at S4 you would need to develop 40W to increase the strength to S6 and around 400W would be required to bring it up to S8. Unfortunately a tenfold increase in transmitted power brings with it ten times the likelihood that you will 'swamp' a nearby TV antenna and raises the level of harmonic output by considerably more than ten times. Most power amplifiers, even those described as 'linear' are non-linear in output, with the result that unwanted radiation is often multiplied to a greater degree than is the desired signal.

External power amps have yet another unfortunate effect in that they cause the design capability of the rig's internal power amplification stages to be exceeded, often leading to the need for expensive repairs.

There is a large array of accessories available for use with your CB rig, some of which are designed for inclusion in the feeder line to your antenna and care should be taken to evaluate their likely effect on interference when choosing them. On one hand the inclusion of a low-pass filter will minimise harmonic radiation whilst, on the other, an SWR bridge might increase it.

Most low-pass filters for use in CB are designed to prevent the transmission of frequencies above about 300MHz. To the wanted frequency, in our case 27MHz. the filter will appear as a half-wavelength of coax, through which is signal will pass unhampered, whilst higher frequencies will be short circuited by the filter's parallel capacitors and impeded by its coils.

Standing Wave Ratio Meter

There appears to be a popular misconception among many breakers, that a station operated with a low SWR will not cause interference, when, in fact the value of SWR has no effect whatsoever in this respect. Of course it is necessary to maintain as low an SWR as possible in order to ensure that the maximum transmitted power but breakers in general seem to place far too much emphasis on an attempt to achieve the impossible.

SWR readings are, in effect, little more than an indication of the impedance match between rig, coax and antenna. Cheap SWR meters are notoriously inaccurate and, in many cases, are reliable only insofar as they

indicate whether SWR is rising or falling as the result of antenna adjustment. That magical figure of 1:1 is an impossibility since unity can only be achieved on a single spot frequency and the impedance match will vary as different channels are selected. An SWR meter which shows the same reading throughout the band is simply telling lies. An SWR of 1.5:1, if accurate, means that ninety six percent of the power being delivered to the antenna is radiating and any improvement will be marginal.

The SWR meter exhibits the same characteristics as a length of coax but has a meter across it which, by means of diode switching, may be used to measure either the power delivered to the antenna or that reflected from it. These diodes can be the direct cause of TVI. In use their rectification of current is capable of producing harmonic radiation, which can easily find its way into a nearby TV set and distort the signal. For this reason it is advisable to make occasional use of an SWR meter, rather than to regard it as a permanent feature of your station. Where a low-pass filter and an SWR meter are used in conjunction it is advisable to place the SWR meter before the filter. (Fig. 1).

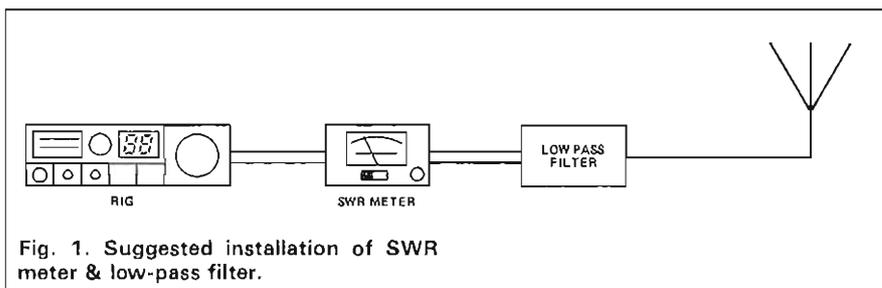


Fig. 1. Suggested installation of SWR meter & low-pass filter.

As a general rule it is advisable to avoid joining two or more lengths of coaxial cable. The inclusion of joints will inevitably attenuate the power of the signal being delivered to the antenna and, in the case of a poor connection, can result in excess radiation from the feeder, as each connection can have a loss of 3dB, or half transmitted power.

If the use of an antenna matching unit proves necessary it should be installed after the low-pass filter as it will cause no interference.

Receiver Interference

The receiver section of your rig may cause interference, especially if it is operated with the outer casing removed. The sound coming from the speaker is the result of the interaction of a series of stages which produce RF energy of their own at frequencies other than 27MHz, which, if allowed to radiate, will affect the output of similar stages within either a TV or broadcast receiver. These radiations are very low powered and should cause no trouble so long as the rig is adequately screened and is not operated in very close proximity to another form of receiver.

It is possible in certain circumstances that base station operation may result in interference because the

lead from the mains, through the power supply unit to the rig acts as a somewhat inefficient antenna. By this means energy will be conducted along the supply line, to re-emerge at a receiver in a nearby house. It is reasonable to suspect that this may be the cause where the interference occurs three houses from the source of transmission. Domestic electricity is commonly generated via a three-phase system, in which each phase feeds every third house and since interference generated in this manner will only occur via the phase from which the transmitter is being operated, it will only affect equipment fed by that phase. Filters specifically designed to solve this problem are readily available at most radio shops and should be inserted in the supply lead to the rig, taking care to observe polarity. (Fig. 2).

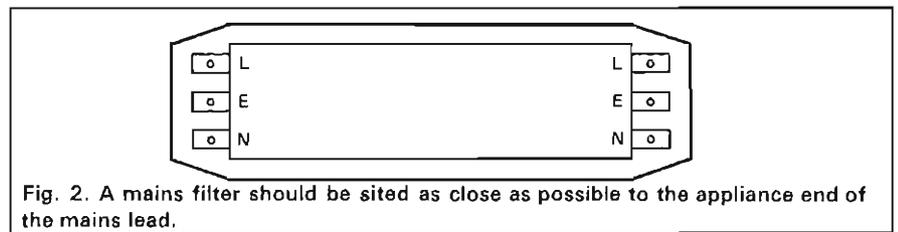


Fig. 2. A mains filter should be sited as close as possible to the appliance end of the mains lead.

Unwanted Responses

So far we have only looked at interference which is more or less directly attributable to the transmitting station or the way in which it is being operated but this only shows half of the picture. Many cases of TVI which are initially blamed on CB or other forms of transmission are subsequently found to be the result of an unexpected response to the presence of RF at one or more stages within the TV set.

Like any other receiver, a TV set comprises a number of stages, using many different frequencies to produce the pictures and sound, offering a number of points at which interference can begin. It would be a simple and very inexpensive process to eliminate such problems at the point of manufacture but this would inevitably reduce the sensitivity of the set. Though the effect would not be noticed in an area of strong reception it might be considerable where signal strength is not so good. Understandably, TV manufacturers prefer to cure individual problems, rather than design sets so as not to be affected. After all, the incidence of TVI is less than five percent of the sets in service.

In general valve operated sets suffer less interference than do those

using transistors, since one valve did the job of four or five transistors and the more transistors you have, the more opportunity for interference to develop. In high amplification stages, such as the tuner and intermediate frequency (IF) stages, valves are usually screened by a metal canister but this is less common elsewhere within the circuit. Screening valves will render them far less susceptible to unwanted signals, and in some cases, may be all that is necessary.

Our old friend, the diode, is another common carrier of the dread disease. Many of the diodes within a TV set have an outer case of clear plastic and rely upon only the paint with which they are covered to prevent them from rectifying stray RF. I have met more than one case where a scratch in the paint has been directly responsible for

TVI and, since this is not always obvious, it can take quite a lot of tracing.

Many modern TV sets can be operated by means of a remote control unit, leaving room for even more interference. The synthesised frequencies from the remote control unit are detected by integrated circuits within the control unit of the TV, then rectified by a large number of diodes. Interference from this source may be cured by means of decoupling capacitors but, like most modifications to TV sets, this is not a job for the inexperienced. It commonly requires thirty or more capacitors and is best left to a qualified engineer.

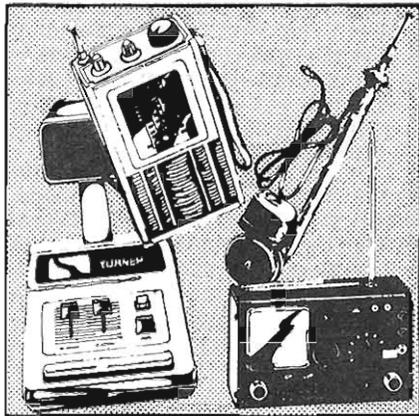
It is worth remembering that not all TVI is due to nearby radio transmissions. Any metal object can act as a reflector and simply moving the TV about might solve your problem.

As a general rule it is wise to leave all internal TV modifications to an expert. Curing one problem can easily cause another if the likely effects of the modification are not fully understood. There is, of course, the additional problems that most modern sets employ a live chassis. Since the antenna is at earth potential, touching both at the same time can have spectacular results.

The causes and cures of TVI give rise to endless argument and no brief explanation can begin to wipe it out. As soon as a cure is found so another cause may arise. Often we, as breakers, can cure the fault. Even more often we can prevent it but even the most experienced sometimes need help from the professionals. Never assume the cause of TVI without checking your facts: you can so easily make the problem worse.

CB

Equipment Review



Base Station operators usually find that it is easier to use a dedicated base station microphone, if only because it means that they do not have to hang on to the PTT. This month Andy R Giles has been looking at two of the models that are currently available.

STATION MASTERS

One of the joys of base station operation is using a 'real' microphone. The ones that are supplied with most rigs are acceptable but their quality is usually not as good as dedicated base station microphones. They are also not very convenient to use for any length of time as the push-to-talk switch has to be held in while transmitting whereas base ones have a lockable PTT. I would be quite happy if rigs were sold without microphones, as some amateur ones are, because I never use the fist

microphone. At home I have a Silver Eagle base microphone — I couldn't afford the Gold one — and in the car I use a boom microphone that has a metal gooseneck attached to the sun visor and the PTT on the gear change. I don't think that I could even find the microphones that came with my rig, now, it's been that long since I used it. I have definitely become used to the luxury of 'hands free' operating both at home and when mobile.

TW-232DX

I have been playing with two base station microphones that recently came into our office. The first one I examined was the TW-232DX from Ham International. It's a very chunky unit that has a nice solid feel to it, possibly because the case is die cast metal. It has a pleasant matt black finish that is so smooth that it looks as though it has been anodised. The wire mesh that covers the microphone insert is surprisingly sturdy and it has been brightly chrome plated to give a nice contrast. The PTT switch is a wide black bar on the base of the unit. It can be used normally or it can be locked in the 'ON' position by flicking the small black lever (which is appropriately marked 'ON').





The wide PTT switch, which is lockable.

In the top left-hand corner of the baseplate there is a rotary Output Control. This adjusts the gain of the internal pre-amplifier and should be set with the aid of another breaker who can report on your signal while you are adjusting it. On the underside of the base there is a hole in the metal plate through which a small pre-set pot is visible. This does not appear on the circuit that comes with the unit but it seems to be a pre-set Output Level control, so if the control on the top does not have enough range, try twiddling the one underneath.

Also on the underside is the battery compartment. This is for the PP3 that is needed to power the pre-amp. The lid of this little box gave me no end of trouble and I never did manage to get it to stay on for than about five minutes. Despite this minor problem, I still think that this is a very nice microphone.

Sadelta Echo Master

The Sadelta Echo Master is an impressive looking gadget. It's broad baseplate is matt black with white edges. The PTT switch is bright orange and it can be used normally or locked in the on position by sliding it to the right while it is pressed down. Moving it to the left releases it. Just to the left of the PTT are two slider controls. The right-hand one is the gain control for the internal pre-amplifier. This should be used in conjunction with the VU meter that is in the top right-hand corner of the baseplate, as well as checking how it sounds on channel by asking for signal reports.

On the rear of the base, there is a small rocker switch. This turns the echo facility on and off. The left-hand slider control adjust the degree of echo and the correct setting can only be found by trial and error. There are those who think that any echo is too much but many people like the sound that these things give. Comments on the air range from 'Sounds like you've got your head in a bucket' through 'Are you transmitting from your toilet?' to

'Blimey — sounds like the Voice of God'. Lots of echo is available and as someone famous once said 'Those who like this sort of thing will probably find that this is the sort of thing that they like'. I liked it even without the echo feature. It's nicely made and I especially liked the microphone neck. It is a metal tube with a universal joint at it's base that allows it to be switched in almost any direction. The microphone head is covered by a foam rubber wind shield that not only helps to cut out the breathy sounds from those who insist on having the microphone almost up their noses, it also stops toothless breakers spitting on the electret microphone insert when they are trying to pronounce sibilants.

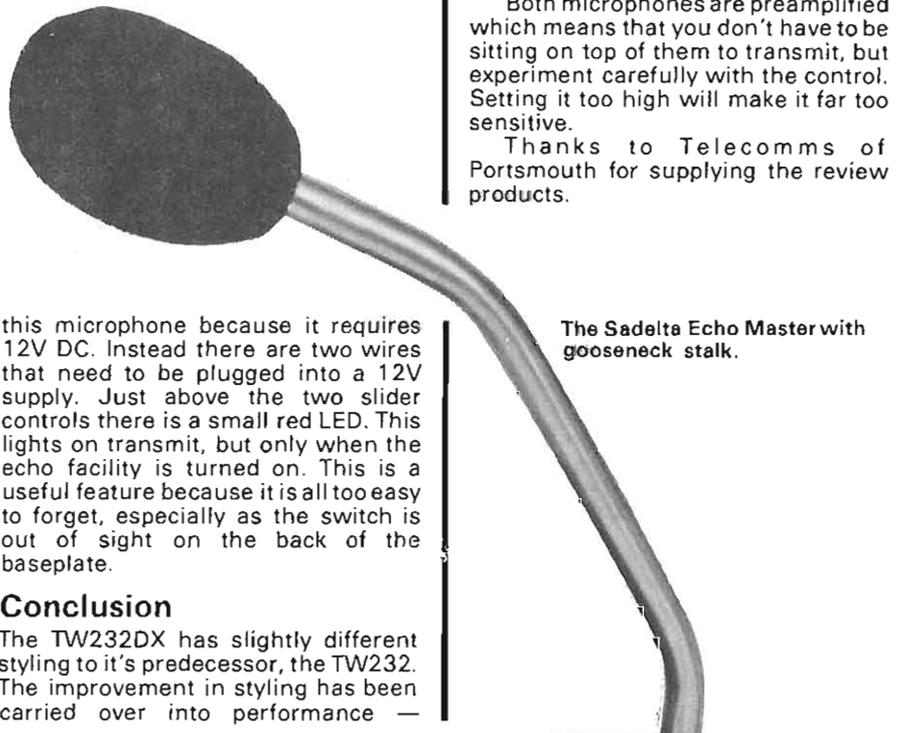
There is no battery compartment in

probably due to the better compression. There is more gain too. At £38 it is over £5 more expensive than the earlier model, but if £32 is worth it for the other version, then the extra five is worth the improvements that have been made.

The Echo Master comes in at a hefty £57.50, which takes some justifying at your bank manager. It is intended to be versatile though. As well as being suitable for CB, Sadelta claim that the mic. is good for P.A. applications like discos, when the reverberation effect comes into it's own. The variable echo effect needn't only be used for special effect either. When finely adjusted it can compensate for lack of depth in modulation — which accounts for it's growing reputation amongst breakers for getting though when other mics. can't.

Both microphones are preamplified which means that you don't have to be sitting on top of them to transmit, but experiment carefully with the control. Setting it too high will make it far too sensitive.

Thanks to Telecomms of Portsmouth for supplying the review products.

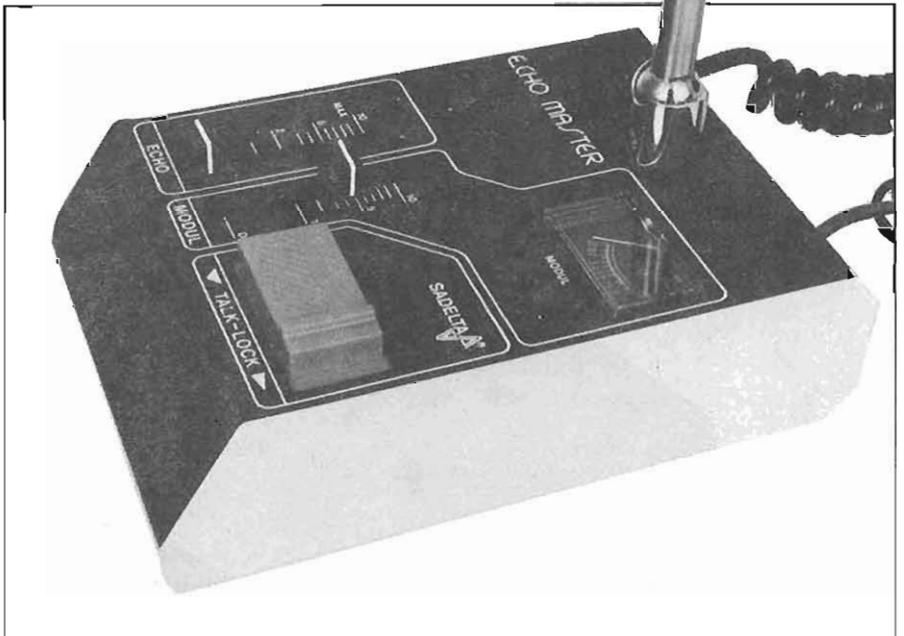


The Sadelta Echo Master with gooseneck stalk.

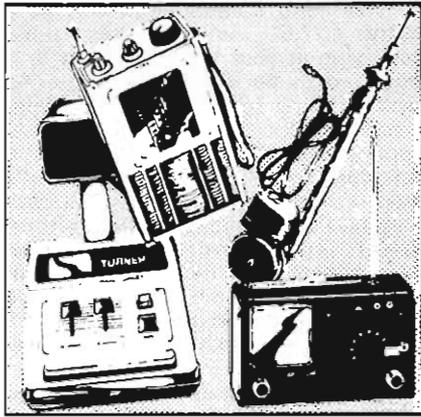
this microphone because it requires 12V DC. Instead there are two wires that need to be plugged into a 12V supply. Just above the two slider controls there is a small red LED. This lights on transmit, but only when the echo facility is turned on. This is a useful feature because it is all too easy to forget, especially as the switch is out of sight on the back of the baseplate.

Conclusion

The TW232DX has slightly different styling to it's predecessor, the TW232. The improvement in styling has been carried over into performance —



Equipment Review



Thomas Russel takes a look at the Uniden Extend-A-Phone and uncovers a dastardly plot in the process.

EXTENSION COURSE

The truth can now be told. The massive profits reported by The Post Office and British Telecom are not what they seem. The Post Office profit was almost certainly as a result of the chain letter craze that had one half of the country greedily writing to the other, heedless of the mathematical limitations of the venture. Who started it? Work it out for yourself . . . 'nuff said . . .

British Telecom's profit is equally suspicious. It all seems to have started when cordless telephones first appeared. Just watch anyone who tries out a cordless phone for the first time, they have to make a call, irrespective of whether they actually *need* to make a call or not. Nine times out of ten it's to Dial-A-Disc or the speaking clock. The fact that the music is awful or they've got a super-accurate watch on their wrist is irrelevant. Some checking with Telecom revealed that there were around 300 million calls to TIM last year and 100 million calls to Dial-A-Disc! Is it a coincidence cordless phones are now legal?

Enough meandering, time to look at what promises to be one of the cheapest cordless telephones on the market. The Uniden Extend-a-Phone should be selling for around £40; less than half the cost of a typical cordless phone. So what's wrong with it? In short, nothing. No sacrifices have been made as far as operational

characteristics are concerned, it's a genuine two-way, duplex (talk and listen simultaneously) cordless telephone. The savings have been made in two areas, however. Firstly, it's nowhere near as powerful as a typical cordless phone (costing twice as much). The useable range is around 30 metres. It may not sound a lot but that's more than enough to be useful around the average house and small garden. The second saving has been with the dial-out facility. Unlike normal cordless phones the keypad on the Extend-A-Phone is fitted to the base transponder. To make an outgoing call you must be near the base unit; the handset is only capable of taking incoming calls. That may or may not be a limitation for some. Personally I feel that the real benefit in a cordless phone is the ability to take incoming calls (unless I carry my address book around with me I cannot





usually remember anyone's telephone number!)

Plumbing in the Extend-A-Phone is relatively straightforward. It comes with a plug; however, unless you're blessed with a socket the two wires have to be connected across the two wires that connect to a normal phone. The base unit has to be plugged into the mains and that's it.

Cosmetically the Extend-A-Phone

is quite pleasing. Operation is via one three-way switch on the handset (off/standby/talk) and a simple press-to-mute switch that disconnects the microphone. The keypad on the base unit has a re-dial capability (the star symbol is a re-dial function too). Two LEDs show that the system is low (on the handset). The handset is powered by ni-cads which would appear to have enough capacity to run the phone for

around 36 hours with normal use. A full charge takes around 12 hours.

In Use

Sound quality on incoming calls is about average; a little bassy and muffled but 100% intelligible — no problem for Dial-A-Disc fans. Outgoing speech quality is excellent. There is nothing to suggest that anyone could tell that the line was anything other than normal. At the limits of the phone's range or when using it near unfavourable objects (metal filing cabinets, TVs etc) there can be a degree of local interference but this can be avoided by simply moving the handset a few inches.

I suspect that the receiving stages in the handset may be a little over-sensitive (possibly to compensate for the low transmission power), so there can be some annoying interference from nearby cordless phone installations on the same channel (500 metres or less). A quick check beforehand with any local cordless phone users to check up on which channel they're using might not come amiss.

To Sum Up

The Extend-A-Phone is not a full-specification cordless installation but within its limitations, and considering the exceptionally low price, it functions admirably. The relatively short range and the lack of dial-out facility may prove to be a limitation for some but I suspect that the facilities offered by the Extend-A-Phone are quite adequate for most of us, most of the time. The Extend-A-Phone has much to offer, and it's well worth considering before you spend £100-plus on a more elaborate model.



CORDLESS PHONE REVIEW DATA PANEL

Model Uniden Extend-A-Phone
Distributor Various
Typical Price £40

Features	Yes	No
Rechargeable Batteries	<input checked="" type="checkbox"/>	<input type="checkbox"/>
IN USE Lamp	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Intercom Facility	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Auto Redial	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Privacy Button	<input checked="" type="checkbox"/>	<input type="checkbox"/>
External Antenna Facility	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Security Code	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hand Free Operation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Range	35m	

FREQUENCIES

1.6 — 1.8MHz
49.8 — 49.9MHz

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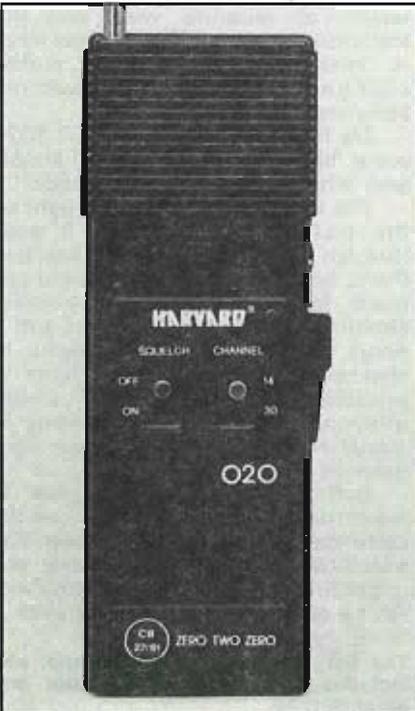
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**Norman Raven,
National Director of
T.H.A.M.E.S. lets us
in on his choice of rig
and explains the
reasons behind his
selection**

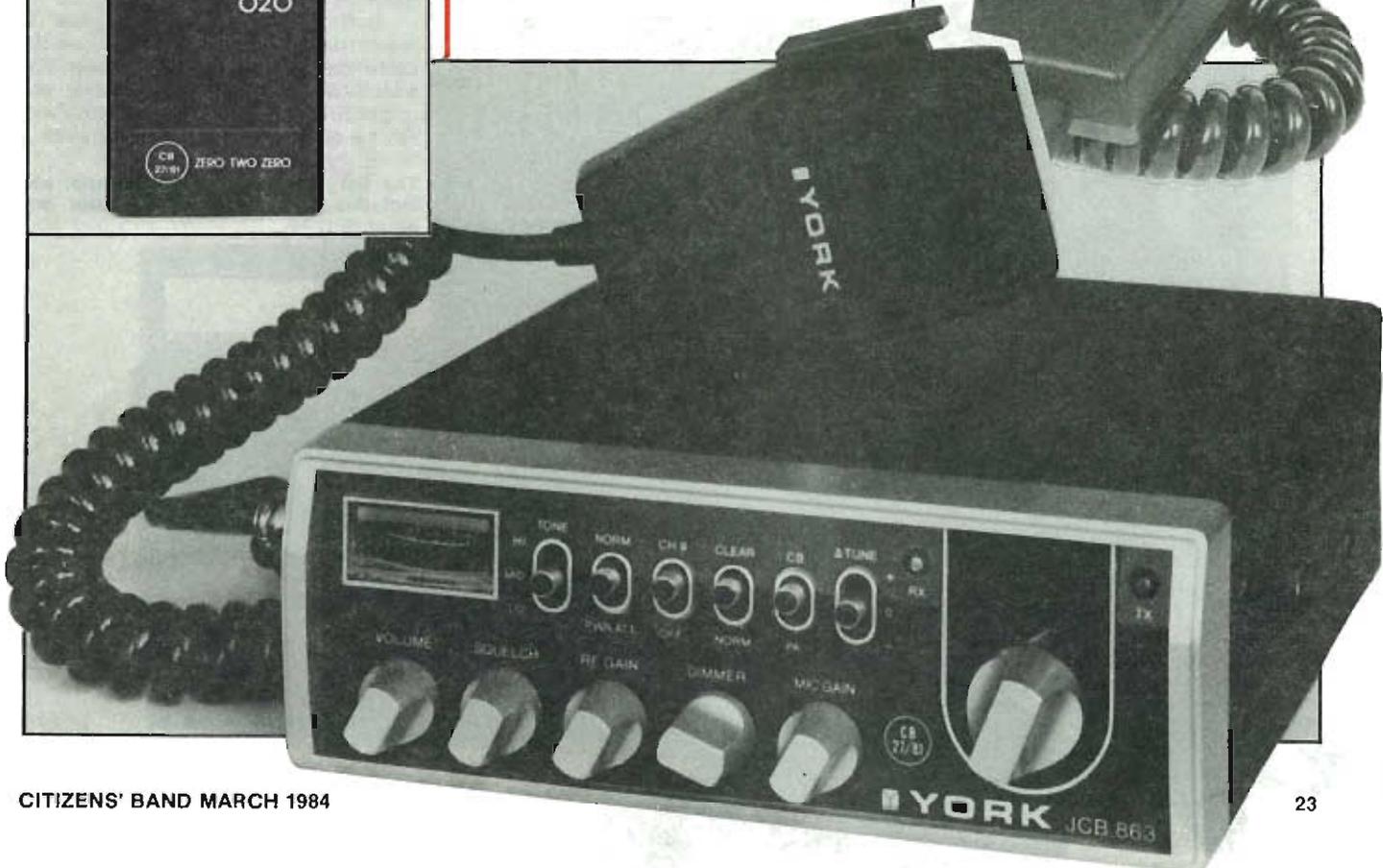
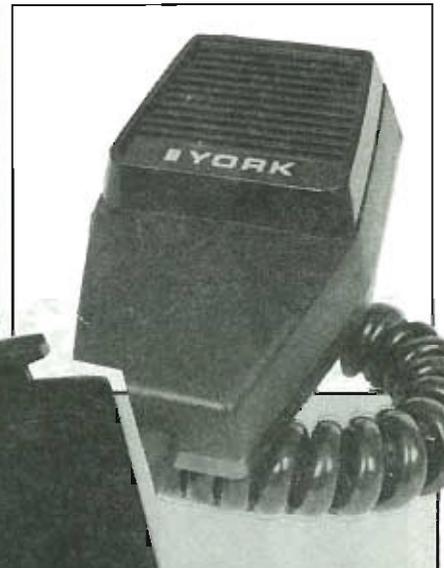


As National Director of Traffic Help and Monitoring Emergency Service (T.H.A.M.E.S.), I have a lot of contact with breakers—either in need of help or at fetes etc. On the day of legislation I was faced with the decision of what FM rig to buy. I had examined many samples at various shows and some looked very impressive, but many of them, however, would not be on sale for many months—indeed, some never appeared at all!

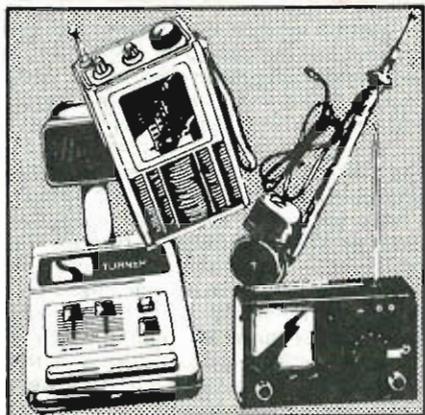
I finally decided to buy a York JCB 863. This particular rig is fitted with a Cybernet board which has proved it's worth. For mobile use, I use a gutter mounted Oscar antenna and this combination has given excellent results in both distance and clarity. I have experimented with some power mikes whilst mobile, but without noticeable improvement and have reverted to the standard dynamic mike. I must admit I like to use the telephone handset type on some occasions, especially if spending a long time using the rig.

When I attend searches or public events with T.H.A.M.E.S. I usually take three handheld rigs, one Harrier, an Alba with forty channels and a Harvard two channel. I have found the forty channel rigs extremely useful and I keep them fully charged at all times. The two channel rig is pocket sized and is good for contacting control points but I must say that their receive range exceeds their transmit range.

Until a couple of months ago my home base consisted of my York rig with the usual power pack and S.W.R. meter. Since then I have been trying out an Atron CB507 Home Base, which is similar in looks to the Grandstand set. It's performance has impressed me and is by far the best rig I have tried. The Atron has a built-in clock and can be pre-set to turn on and off when required. One unusual feature of the Atron is a clarifier and I believe this stems back to the AM days. Unlike many FM rigs, the CB507 is fitted with a tape socket and the recordings I have made via this is very clear. The rig also has headphone and PA sockets with power and S.W.R. meters. I use the Atron with a Thunderpole II antenna and although it was somewhat difficult to erect due to the shape of my roof, it was certainly worth the effort as the reception and transmission quality are excellent and suit me admirably for the odd racket but, more importantly, for monitoring channel 9.



Equipment Review



AROUND THE WORLD IN MEGAHERTZ

CB radio has certainly opened some doors for people who previously knew nothing about radio communications and the variety of transmissions that wing their way around the world. Some have taken the step of becoming radio amateurs, whilst others have been seduced by the magic of eavesdropping on conversations and broadcasting from exotic spots around the globe.

As most people realise, their bedside radio, whilst picking up Radio 2 and their local I.L.R. station, is going to struggle looking for Radio Peace and Progress in Moscow. There is a variety of equipment available for the short wave and DX listener, from antiquated ex-army gear to the latest Racal (with a price distance between the two of some £2,500). For an enthusiastic newcomer, Uniden have come up with the CR 2021, a communications receiver that covers short wave and the FM broadcast band.

The CR 2021 comes well packaged in a robust, colourful box that should have protected it on its journey from Taiwan. Rather confusingly, the box bears a prominent picture of, and an endorsement by, Jack Nicklaus, the golfer. (Would you buy golf clubs endorsed by Marconi?)

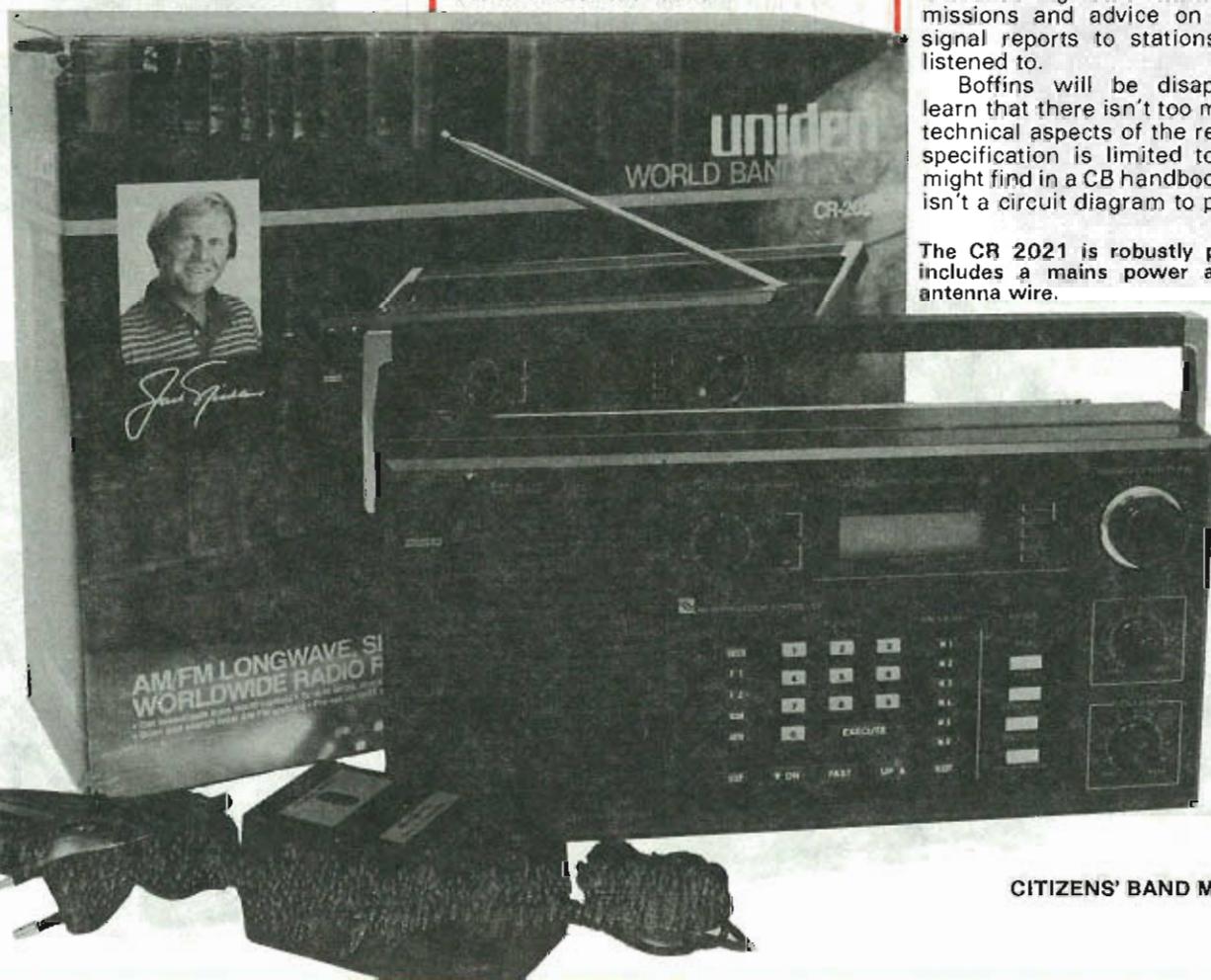
When you get the box open, you will find a mains power adaptor, a length of antenna wire and the instruction manual. The receiver itself is finished in a satin black plastic casing and weighs in at 1.6Kg (without batteries).

My first reactions to the CR 2021 were 'blow me, what a lot of knobs' and 'where's the instruction book?'

The instruction book casts light on the multitude of features. It goes through the various controls, explains them, how they work and how to use them, follows with a brief troubleshooting guide, specifications and a short, but good introduction, to shortwave radio, where to listen to broadcasting and amateur transmissions and advice on sending in signal reports to stations you have listened to.

Boffins will be disappointed to learn that there isn't too much on the technical aspects of the receiver. The specification is limited to what you might find in a CB handbook and there isn't a circuit diagram to pore over.

The CR 2021 is robustly packed, and includes a mains power adaptor and antenna wire.



There is rather a 'portable' feel to this radio. It has a carrying handle and to bear this out, has facilities for connecting to a car radio battery — and a 'cigarette lighter' lead is available as an extra. The CR 2021 is very flexible as far as power supplies go. As mentioned, it will operate from a car battery, from mains voltage through the included transformer or from internal batteries (6 'HP 11' type). Two HP7 batteries should be fitted whatever type of power is used, as these are necessary for the memory and scan to operate whilst the receiver is switched off. Without them, these facilities have to be re-programmed every time the set is switched on.

Antenna connections on the rear of the set.



The receiver will tune from 150KHz to 30MHz in selectable 1KHz, 3KHz, 10KHz and 30KHz steps and 76MHz to 108MHz VHF in 50KHz steps. A fine tune is provided to fill in the gaps between the computer controlled steps and to clarify single sideband stations. You will have realised from the photo and comments like 'computer' that the CR 2021 frequency selection is done by micro-processor. Setting the frequency to be scanned or remembered is done through a calculator type keyboard. This seems tricky at first, but programming the memories and scan is covered clearly in the instruction book. What buttons to press and in what order is backed up by a list of international broadcast station frequencies to practice with. If you input something impossible, the display will politely ask you to 'try again'.

I checked the digital frequency readout against several amateur radio beacons and BBC broadcasts, and they were commendably accurate. I did run into a slight problem with seeing the readout at some angles, but this often happens with digital displays — either turning the radio away from the light or laying it down as illustrated on the box should cure that problem.

The signal provided by the built in telescopic or rod antenna is adequate for portable use, but as with any radio, the performance can be significantly improved by providing a decent aerial — you won't ferret out rare, faint DX without it. I am pleased to see that the CR 2021 has two terminals at the back

for the connection of an external antenna and there is a control on the front to tune it in, so there is no excuse! Uniden provide a length of wire to act as an alternative, and an improvement was noticed when this was used. The instructions also point out the need for a ground wire, and carries all the usual warnings about safety during storms etc.

The signal strength meter is a row of LED's which are a good idea in a portable receiver, as they are more robust than the delicate moving needle type. Which you prefer is a matter of taste.

I used the Uniden extensively whilst I had it on test for listening into amateur sideband transmissions and the clarifier proved very straight forward to tune in. A filter can be switched in to limit the passband to help reduce noise when listening to SSB and CW. RF gain is selected by a three position switch.

I missed having a squelch control when listening to CB. The resultant noise from listening in a built up area got quite tiresome!

Other features include a full size jack plug for headphones, a miniature socket for earplugs or an extension speaker and 'sleep', similar to those found on bedside digital clock radios.

A quick peek inside the case revealed no less than eight printed circuit boards and 11 IC's. Everything was neat and tidy with all the sensitive or noisy parts enclosed in metal screening.

For interest, I used a Sony ICF 2001 for comparison with the CR 2021. Performance was similar, with computer control, sensitivity, selectivity and audio quality running neck and neck and I wouldn't be surprised if they used the same microchips. The Uniden styling is different to the ICF 2001 and its successors, with the

Uniden looking the more sturdy and functional. My initial reaction would be that the Uniden looked more like a piece of serious radio equipment than the Sony.

In use, I found the CR 2021 very satisfactory for a receiver of this type. The audio, whilst not deafening, is up to standard, whilst on FM broadcasts with headphones it was excellent. It comes into its own when tuning to a specific frequency as you are spot on with very little effort. For casual tuning round, some people may prefer an analogue dial and a delicate hand.

In a way, the Uniden spans a gap that the big electronics companies are just beginning to notice and fill. It's not as cumbersome or expensive (or, to be honest, sensitive) as amateur communications receivers, but it's certainly far better than the usual range of domestic radios. The CR 2021 strikes me as being ideal for the person that is getting interested in DX listening, is reluctant to commit themselves to the hundreds of pounds that can be spent on communications equipment and wants a good radio into the bargain. It is stylish enough to use as a general purpose radio (as I said, the FM broadcast reception and audio is first class), so it can be left in the living room and not consigned to the work bench or cupboard when not in use.

All in all, very good performance from a compact, portable communications receiver.

The Uniden CR 2021 has a typical price of £200, but is currently available at a special price of £160 from Telecomms in Portsmouth. The CR 2021 is distributed by Cravenminster Ltd, Unit 8, Conway Road Industrial Estate, Llandudno Junction, North Wales, 'phone 0492 613232. Thanks to Telecomms for the loan of the review set.



Smart enough for the living room, sensitive enough for short wave listeners.



A bumper selection of QSL contacts and cards this month. QSLers get your pens out for a mammoth writing session.

COMMUNICATION THE QSL WAY

COMMUNICATION THE QSL WAY

Citizens' Band Magazine List of QSL Contacts

MALCOLM FISHER	Aughnish, Ramelton, Co. Donegal, Rep. of Ireland.
GERARD McDERMOTT	Ballaghadorg, Letterkenny, Co. Donegal, Rep. of Ireland.
MARVIS STEELE <i>Crazy Annie</i>	1920 Avenue P, Lubbock, Texas. 79408, U.S.A.
KEITH EASTON	32 Brown Hill Crescent, Southfields, Northampton, NN3 5BH
BARRY HENSON <i>Andy Capp</i>	10, Station Road, Awsworth, Notts. NG16 2RF.
LOES HENSON <i>Dutch Lady</i>	10, Station Road, Awsworth, Notts. NG16 2RF.
PAT HARRIS <i>Lamplight</i>	2, Cardigan Street, Chaddesden, Derby, DE2 6DW
ALEX BLACK <i>Squeezebox</i>	25, Warmanbie Road, Brydekirk, Annan, Dumfries. DG12 5ND.

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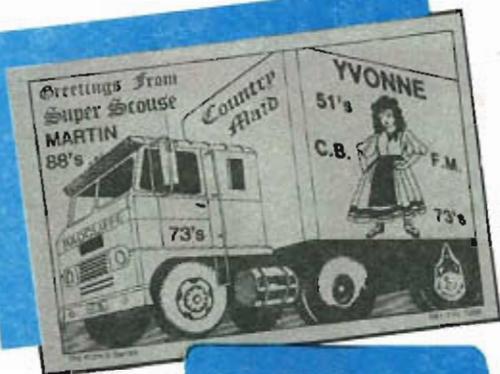
CHAINNE *19* TIME *08X*

MODE *AM*

REMARKS: *A TALKER EA 3:20 QRP
SLOOPER 1:20 QRP
EVIDELY 2:00 PM*



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Citizens' Band Magazine List of QSL Contacts

DEN BRAY <i>Birdman</i>	49 Watery Lane, Scale Hall, Lancaster, LA1 2SL.	HARALD SCHULTZ <i>Jacky</i>	Mergellstrasse 2, 2100 Hamburg 90, West Germany.
RAY	72 Courtney Road, Dunkirk, Faversham, Kent.	JOHN O'HARA	P.O. Box 6, Limavady, Co. Londonderry, Northern Ireland.
KEVIN BARTON <i>Thunderbug</i>	P.O. Box 10, Salisbury, Wilts. SP2 9JL.	HANS & JANNY <i>Jumbo & Lady</i>	P.O. Box 50, 8250 AB Dronten, Holland.
COLE JACKSON <i>Red Devil</i>	P.O. Box 233, Brighton, Sussex. BN2 2YW.	EDDIE WATTS <i>The Saint</i>	P.O. Box 2, Sheringham, Norfolk, NR26 8TY
Steve Silver <i>Hot Shot</i>	15 Wavell Road, Swindon, Wilts. SN2 1LD.	KEITH MARTIN <i>The Goldfinger</i>	P.O. Box 2, Sheringham, Norfolk, NR26 8TY.
JUDITH <i>Michelin Lady</i>	P.O. Box 7, Langley Moor, Durham.	KENNETH HOLLOWAY <i>Bigfoot</i>	P.O. Box 2, Sheringham, Norfolk, NR26 8TY.
JOHN <i>Michelin Man</i>	70 Taylor Avenue, Bearpark, Durham	T. YEWEN <i>Rambler</i>	171 St. Marks Road, Glebefields Estate, Tipton, West Midlands.
STAN & GWYNETH HASSELL <i>Buccaneer & Knitting Needles</i>	72 Mackworth Road, Porthcawl, Glamorgan, South Wales.	DAVID MORGAN <i>Rasputin</i>	28a Lon-y-Felin, Garnswllt, Ammanford, Dyfed, S. Wales.
CAROL <i>Ladybird</i>	4 Taylor Road, Ashstead, Surrey. KT21 2HY.	ROBERT <i>RDX 515</i>	P.O. Box 2, Ballieston, G69 6EG, Scotland.
ALF JACKSON <i>The Mekon</i>	15 Coaster Steps, Southend-on- Sea, Essex SS1 2ST.	JOHN WHYTE <i>Papa Bravo 19</i>	1 Manuel Court, Kilbirnie, Ayrshire, KA25 6DL. Scotland.
BOB DURRANT	20, Beresford Street, Shildon, Co. Durham. DL4 2JH.	MARTIN & YVONNE <i>Super Scouse & Country Maid</i>	17, Williamson Avenue, Radcliffe, Greater Manchester.
MARK LEWIS <i>Blue Max</i>	Police Station, Ford Street, Clun, Shropshire, SY7 8LD.	BETTY <i>Country Girl</i>	P.O. Box 93, Oldham, Lancs. OL8 3XE.
		DAVID & JOAN <i>Jail Breaker & Night Cruiser</i>	14, Boardale Avenue, Moston, Manchester. M10 1LQ.



Antenna Review



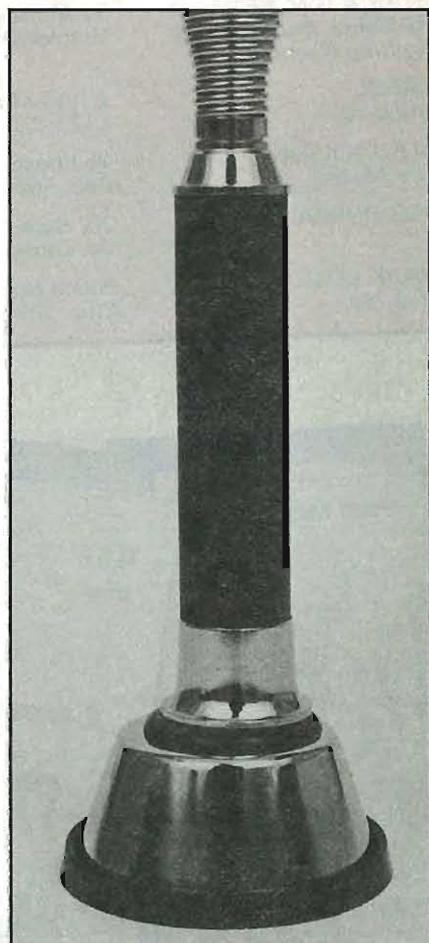
A complete antenna, with cable, at under a tenner. Brian Wright checks it out.

449 ON THE LINE

Many mobile antennas available consist of just a loading coil and whip. This can save money for those breakers who already have a suitable mounting. Nowadays, though, when natively a breaker might prefer to choose his or her own type of mounting. Nowadays, though, when even nails come in packets, one would like to buy a complete antenna system in one package. Some manufacturers have always supplied their antennas in this way and not all of these complete systems are expensive. The 499 mobile antenna from Audioline, the well known supplier of rigs and other consumer electronic equipment, is a smartly packaged complete inexpensive mobile antenna system and is the subject of this month's Antenna Review.

The Audioline 449 is supplied bubble packed on a coloured cardboard backing — this enables the purchaser to see exactly what is inside. In fact all of the necessary items to get you on channel are included apart from a rig. This antenna is body or gutter/bootlip mounted, the chrome gutter mount being supplied. If mounted on the car body a 10mm hole will be required. Fitting the antenna to the gutter mount or car body is almost identical and is fairly straightforward.

The cable supplied has a PL259 plug fitted to one end and another plug type fitting on the other. This fitting, which has a thread at its base, should



have the washer supplied slipped over it and then be passed through the underside. If the gutter/bootlip mount is being used, the chrome cup supplied should be slipped over the protruding plug threads. This cup covers the guttermount and gives the appearance of a magmount. When mounting direct to the vehicle body the cup is not used. Next a black plastic sealing washer is dropped over the threads. The 24mm chromed section is then unscrewed from the base of the loading coil and screwed onto the thread protruding through the mount. This nut section has flats for a spanner and but there is nothing with which to hold the plug and thread section, therefore pliers will be required to stop this rotating when being tightened. Care has to be taken now when the loading coil is screwed back onto its base, as the plug pin (now protruding out of the base) enters the socket in the coil base as the coil housing is screwed on. This can twist the pin in its insulator if the socket is tight, thereby breaking the centre coax wire. If the pin is a tight fit in the socket we would recommend that you carefully spring the socket open until an easy sliding fit is obtained.

Coil Assembly

The coil assembly consists of a 100mm long 25mm diameter black plastic section, on top of which is a close wound spring section which in turn has a chromed receptacle for the whip. The 0.85 metre-taper ground stainless steel whip is held in position with the usual grub screw, for which an Allen key is provided. In fact two keys are provided, the other being for the larger screws in the guttermount.

Tuning is by the usual method of adjusting the whip up and down and if necessary cutting a small piece off the whip.

On test the Audioline 449 performed quite well for an antenna of this size and no real problems were encountered on test, although contact was lost once in a very difficult spot on our test route.

Instructions are quite adequate with a very useful exploded diagram included. These are printed on the rear of the backing card, thus not only can the customer see all of the contents, he can read the instructions as well before deciding to buy.

In conclusion we would say that the Audioline 449 is a useful antenna system, which gives adequate performance for the breaker. The test sample was mounted in our usual boot position and should be better if roof-mounted of course. This antenna would be especially useful to the new breaker as it is complete with cable and means of mounting. The Audioline 449 should have a good service life if assembled correctly and priced at around £9, is good value.

A comparable antenna in appearance and performance that we have tested would be the Binatone Power Pole 07/5515.

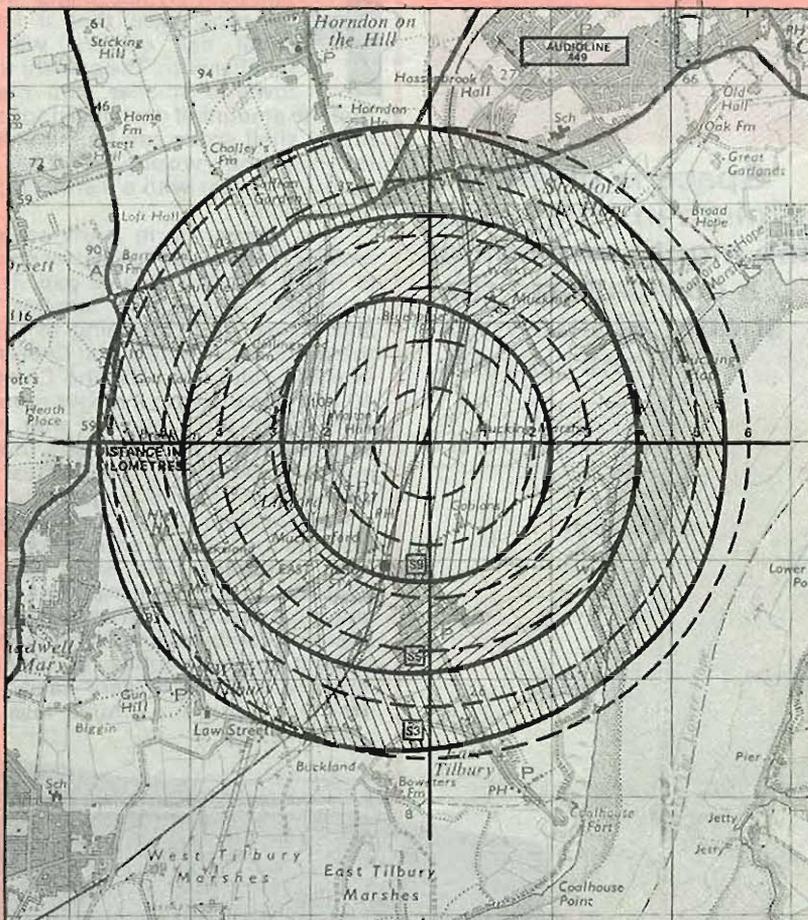
Our thanks to Lucky Numbers of Hayes for supplying the test sample.

ANTENNA REVIEW DATA PANEL

SPECIFICATIONS

Model Audioline 449

Type Mobile
Length 1 Metre
Frequency Range 27MHz
Max Power Handling
Impedance 50 ohm
Cable Supplied Yes (with plugs)
Mounting Details Gutter, bootlip or body
Supplier Audioline
Typical Price, £9



REVIEW VERDICT

Performance XXXX
SWR Adjustment XXX
Construction XXX
Installation XXX
Instructions XXXX
Value XXXX

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 stars 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 pre-arranged route that orbits the stationary test vehicle, sending and receiving signal reports at measured intervals. This is then repeated with the test antenna on the mobile test vehicle and the signals are sent and received between a stationary vehicle. A standard rig and antenna is used in all the tests. With the results obtained we are able to draw up the radiation 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 panel of CBers for comment.

Rig Review



Space is often at a premium in small cars. This month we look at a compact rig that should fit into most tight corners.

BLACK ON THE ROAD

Fitting CB's into cars that seem hell-bent on not taking one is an experience that a lot of small car owners will be familiar with. The current trend towards smaller cars means that the amount of dashboard space or parcel shelf space can be minimal — leaving the would-be CBER or accessory adder with a distinct lack of spare room.

The answer is, in many cases, a smaller rig that stands a better chance of fitting into the elusive gap. There have been a range of smaller rigs about since the beginning of CB — there are small Rotels and Cybernets available, plus sets like the Compact 40 and anyone with a longer memory will recall the Jaws II that was particularly prized for its size (not so much for fitting into a small car but easily hidden from prying eyes).

The Consam 1320 is a neat little rig that has the twin advantages of being very compact and very cheap. Available at £30 generally, my local emporium has had it on special offer at £25. This combination of size and price make it an ideal mobile rig. It will fit into the majority of cars easily and does not represent a huge loss if it goes 'missing'.

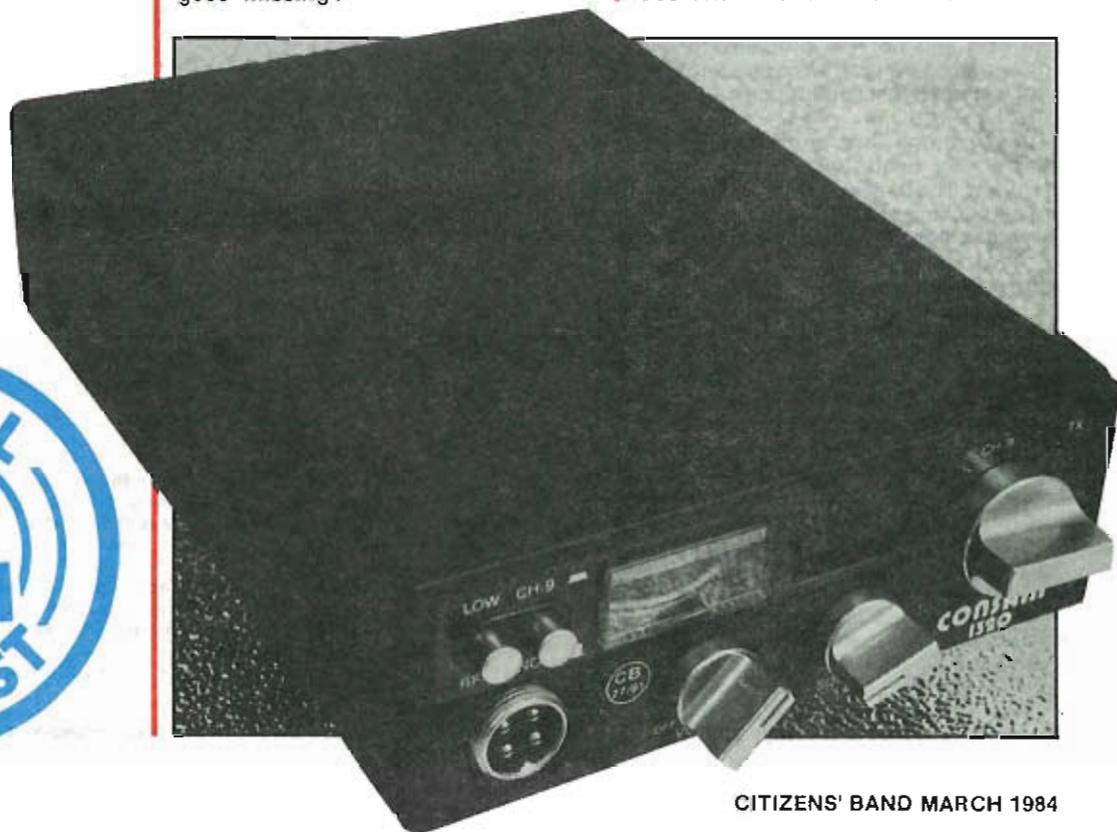
It immediately scores in my book with its appearance. I've said before that I like a matte black finish rather than a lot of glistening chrome and the front fascia of the Consam is completely black apart from controls and indicators. Because of its size, there is a minimum of controls.

Starting with the top left hand corner, there is a push button attenuator and a channel 9 selector. This is followed by an illuminated S/RF/Power meter, digital channel display and selector. Just above the selector switch are two lights; one for channel 9 indication and a TV indicator.

The bottom left starts with a minus point as far as I am concerned — the mic. socket. This is an old beef and I doubt if moaning will change anything, but if anyone out there is listening, please put microphones on the right hand side! Next in the line is a rotary off/volume control and a squelch control. And that's it.

The microphone has a four pin, lockable connector so it isn't likely to fall or pull out. The back panel has a power socket, the antenna plug and a jack for an extension speaker.

The controls were easy enough to use and finished in a matte chrome.



Although not knurled, this chrome wasn't too slippery in use and the controls had a positive feel when operated.

The set actually measures 7" x 5 1/8" x 1 3/4" (excluding knobs).

In use, the set was easy to operate as it has a minimum of controls, which certainly makes for safer driving. The set that I had for review had problems with the meter, as signals that I usually measure at S8 and beyond were barely causing the needle to flicker at S2-3. I am sure that this is due to faulty alignment of the meter, rather than any inherent design fault — and it's a perverse law that says the receiver will always get the piece of equipment that has a problem! Once I got over the disconcerting effect of a booming signal over the air registering a wobble on the needle, I found the Consam had reasonably good reception. Incidentally, whilst talking about the meter, I was at first rather dubious of the black background with red and white 'dial' markings, but in practice I found it quite easy to read.

Back to reception. I did get some copies from five miles away, and this was whilst mobile. This is good going for an urban area, but I did seem to drop out unaccountably in areas which I can usually reach quite well. In hindsight I am inclined to put this down to other conditions rather than the rig, as there seemed to be no reason for it.

The audio was fairly average — most sets are much of a muchness in this respect, unless they are expensive or have bad audio amplification. I thought the Consam was a touch above some of the cheaper sets I have heard.

Again, bleedover rejection seemed reasonable. I have breakers in very

close proximity to me, so it is almost asking the impossible for a rig to reject all of it. The 1320 did better than some of the rigs that I have tried.

Transmissions reports from other breakers varied. Most of them were good, although one or two referred to the signal sounding 'a bit tinny' or, the ruder 'got your head in a bucket'. But again, this is not an uncommon complaint.

On looking inside the set, I couldn't find anything to explain the occasional drop-out on transmit which is why I am inclined to think this was a vagary of the weather or terrain. Inside, the set meets the standard of most Far Eastern sets in that it is tidy enough and the standard of construction is typical of similar sets. This probably sounds as if I am saying very little, but taking a long time to say it, but there is not much to be said about the construction of this rig that hasn't been said about a lot of others.

Operating Manual

The operating manual that comes with the set is good. I think that the standard of handbooks has improved since the introduction of CB as many of the earlier ones left out circuit diagrams and parts layout. The majority of the rigs that I see now include these details in the accompanying book.

The hand book has all the usual features like controls and how to use them, mounting instructions, antenna installation etc, but also has details on how to use CB and 10 codes, the factors affecting CB transmission and reception and a short trouble shooting section and the circuit details mentioned above.

My conclusions on this rig will not



come as a surprise. For the money, it is good value, as there was nothing glaringly wrong with the set or its construction. It is obviously aimed at the cheaper end of the market and, as such, has a lot in common with other equipment that is available, right down to the LC 7137 chip.

Its main advantage is its compact size. Whilst not winning any prizes for the smallest rig available — the Compact 40 for example is smaller, it is a small, neat set that gives an average performance at a good price. The dimensions should help it fit into a car that is pushed for space and would stop it looking unwieldy in a small car. It's nicely presented with a good handbook and if stolen or irretrievably broken the lost value is not high.

Thanks to Lucky Numbers of Hayes for the loan of the review equipment.

RIG REVIEW DATA PANEL

Model Consam 1320

Distributor

Typical Price £30

Features

PA Facility

External Speaker Jack

TX Indicator Light

RX Indicator Light

PA Indicator Light

S/R/F Meter

Hi/Low Power Switch

ANL/NB Switch

CH9 Switch

Variable RF Gain

Mike Gain

Delta Tune

Tone Control

LED Channel Readout

Yes No

Features	Yes	No
PA Facility		●
External Speaker Jack	●	
TX Indicator Light	●	
RX Indicator Light		●
PA Indicator Light		●
S/R/F Meter	●	
Hi/Low Power Switch	●	
ANL/NB Switch		●
CH9 Switch	●	
Variable RF Gain		●
Mike Gain		●
Delta Tune		●
Tone Control		●
LED Channel Readout	●	

Facilities

Ease Of Controls

Built In Speaker

Microphone Location

Cabinet Construction

Quality Of Control Switches

Channel Indicator Readability

Mounting Bracket

Hand Book/Instructions

	Superb	Good	Fair	Poor
Ease Of Controls		●		
Built In Speaker			●	
Microphone Location				●
Cabinet Construction			●	
Quality Of Control Switches			●	
Channel Indicator Readability		●		
Mounting Bracket			●	
Hand Book/Instructions		●		

Specifications

Modes Of Operation

No. Of Channels

Weight

Dimensions

Supply Voltage

RF Output Power

Frequency Stability

Swamping

Sensitivity (RX)

Spurious Emissions

FM Only

40

—

7" x 5 1/8" x 1 3/4"

13.2V nom

4W

Spec

Spec

Spec

Spec

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CB VERDICT

Range

Clarity of TX

Clarity of RX

Ease Of Controls

Ease Of Installation

Performance

XXX

XXX

XXX

XXXX

XXXX

XXX 1/2

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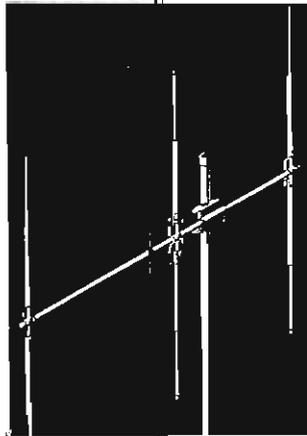
CHATTERBOX

Hi there once again, all you Chaps and Chapesses out there. Hope you are all surviving the Great British Winter successfully and haven't had too many twigs blow down in the process!

And talking of twigs brings me to the first point in this month's informative epistle — beam antennas. We've been giving a bit of stick to the three element Spitfire beam of late (£39.95) and as all serious DXers will tell you, there is no substitute for a directional beam for the long range stuff.

Apart from concentrating all your signal in the direction you want it to go, there is also the added advantage that from the receive angle it cuts down on all the unwanted rubbish from all the other directions.

Of course, unless you want to spend half your time manhandling the beast you will need a rotator to do all the work for you (£49.95) and this comes complete with control box to save you moving from your warm rig-side. Nice to know that so many of you do read this little column. In January I was singing the praises of the



Sadelta Echomaster base mike (£57.56) and many of you have now taken my advice and given one a go.

Thanks to all you Breakers who took the trouble to write or call back to say how impressed you were. Biggest problem in most areas still seems to be bleedover, and almost every second call is from someone asking what to do to get rid of it. Well, there is one rig that will give you better protection than just about any other; or should I say there is a range of rigs?

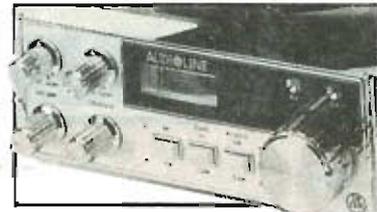
The Audioline is the one. From the PT345 Base Station (£139.95), through the mobile 341 (pictured at £59.95) to the more basic 340 (£39.95), they are all exceptionally well filtered, and I've noticed that most of the really distant QSL cards I receive seem to be from Breakers running one or the other of the range.

Real radio DX enthusiasts will welcome the new B300PS Linear. Covers all frequencies from 2MHz to



30MHz with 200 watts of power AM/FM and 400 watts SSB, variable through six positions, and incorporating a switchable pre-amp all in the price (£119). And the latest news from Ham International is that they should have us a tasty 934MHz rig by the end of the month. And by the way, the new 1984 Telecomms Catalogue has a section on 934 goodies.

Don't forget, if you have already received the old catalogue and want the new edition for only 50p, tear off the top corner of the front cover and send it in with the greenshields. Oh, and remember to say whether you want a Log Book or a Jargon Book. See you again next month. Till then, remember that Telecomms were the people who brought reliability to CB Mail Order shopping — so tell all your friends.



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Bob Jenkins

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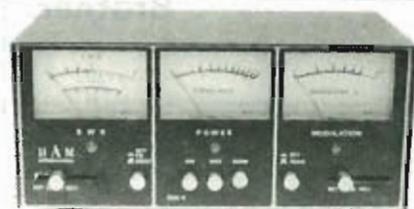


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Squinnie the Pooh offers his thoughts on CB and the way it's working. He thinks that the answer lies in our own hands and 1984 should be the year of the Big Buddie rather than Big Brother.

STAND UP BE COUNT

Nearly two and a half years after CB came officially to the UK, and, if you are to believe the evidence of your eyes and ears, those old-time breakers who fought so hard and were so instrumental in bringing legalisation about have all given up in disgust and either turned amateur or turned to Match of the Day as alternative Saturday night entertainment.

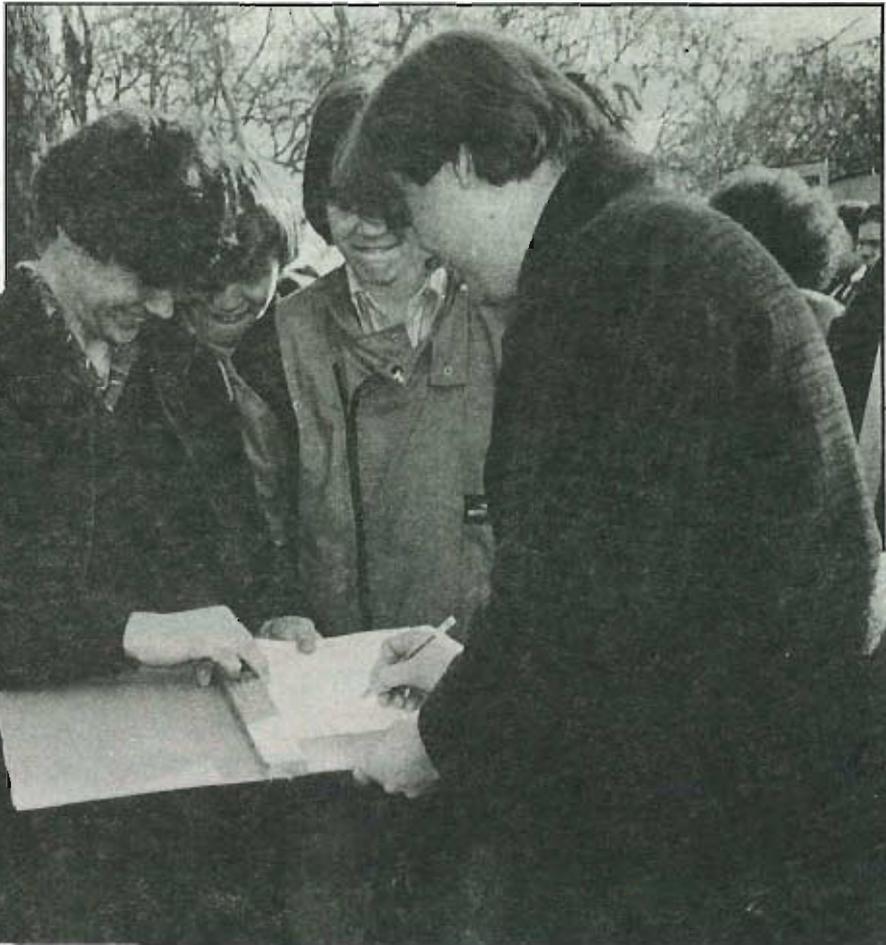
However, with CB, as with all other walks of life, it is as well not to take too much notice of what at first seems to be the obvious. For a good few years I worked as a disc jockey, and there too, the golden rule was not to take too much notice of what people were saying. If you did, you would end up playing a constant stream of requests for the minority, and the silent majority would soon become even more silent — by leaving. In other words, it is always the extremists who make the most noise. Those in the middle, fairly content with their lot, usually get on with the job in hand and say naff all!

If you listen to the CB extremists they will tell you that all the

inadequate 40 channels are cluttered with wallies, bucket-mouthing, keying out, playing music, etc., but if that were the case, how come so many new rigs, together with bigger and better accessories, are sold each week? Surely all the sales are not going to hordes of wallies who have nothing better to do with their money?

No, the truth is far from that. In fact, the vast majority of people on channel are pleasant, sensible breakers, whose rigs are a welcome diversion from their everyday routine, as well as fulfilling useful functions of communication. In other words, CB to the majority, is a hobby with practical benefits.

The way of the diehard enthusiast, jacket covered in American CB badges, CB slang permeating every sentence, are now strictly numbered, and, in my own humble opinion, that is not at all a bad thing. The image of CB, already slightly tarnished from its piratical AM days, has received several severe blows from a national press only too keen to knock it, and the mysterious, pseudo-Yankee image nurtured by the original enthusiasts did little to



Enough pressure, brought about through petitions, letters, rallies and decent press publicity, can only serve to convince the authorities . . .

AND ED

improve the situation.

Legalisation, apart from the fact that it was, in most people's opinion, handled very badly, brought CB to the masses, or at least that was the general idea. At first, the original image kept a lot of potential newcomers at bay, but slowly the message has gotten through. Sadly, there is no method available to truly calculate the number of breakers currently on channel, but the number must run well and truly past the one million mark.

Which means that there are potentially twenty five thousand breakers vying for every channel nationwide. Which means that there is going to be a lot of noise on every channel, and also means that if only one per cent of breakers are wallies or idiots, then the country is faced with ten thousand morons, all doing their best to screw up the system.

But is that really any reason to throw in the towel. After all, there were plenty of wallies about in pre-legalisation days, and any one who tells you different is talking through other orifices apart from his mouth. Surely, those of you who campaigned so long and hard must have realised that once CB was legal, numbers would multiply dramatically, and that the number of wallies about would increase pro-rata?

Human nature being what it is, no matter what you give the general public, there will always be those about who will abuse it. Hoax telephone calls, vandals, burglars, all these have been with us for more years than most of us care to remember, but we don't all rush off and stick our heads in the gas oven, do we?

No, indeed we do not. We continue to make the best use possible of the system we have, and, taken that we all agree that there are many flaws in it, we start a campaign anew, putting pressure on the authorities to bring in the changes we all know are needed. Never mind if the initial reaction from the powers-that-be is one of disinterest. That is exactly how the government of the day greeted the original campaigners for legal CB, and that ended in a victory for democracy.

Obviously, every time an idiot performs over the air he is doing nothing to help the case of the decent breaker, but the wallies, and indeed the moaners who throw in the towel,



Count the number of times that CB has bought fast help to the scene of an accident are only a very small minority. Now is the time for Average breakers to stand up and be counted.

Enough pressure, brought about through petitions, letters, rallies, and decent press publicity, can only serve to convince the Home Office that they must move to tighten up the laws to curb the idiots, and at the same time we should all be concentrating our efforts at home on making sure that the interference we might be causing our neighbours is cut to a minimum, if not cut out all together. In fact, there are very few cases where TVI cannot be eliminated, provided that care and patience is exercised, and if we are all responsible, sensible breakers we would have the world believe, then it is our duty to make sure that those around us can enjoy their leisure with the same freedom from interruption we ourselves are fighting for.

And the fewer irate TV addicts and HiFi enthusiasts we leave in our wake, the better our chances of convincing the government that we are right.

So let us all put our thinking heads on, and instead of wailing at the negative side of CB, let us all concentrate on the positive aspects. Think of all the housebound, disabled, lonely people who have found a new outlook through CB, where they can take part in a hobby on equal terms with the rest of the world, and even enjoy certain advantages, and that alone makes it worthwhile.

Add to that the thousands of motorists every day who are able to skirt round traffic jams, find fuel in out of the way places, get directions to the back of beyond, or receive help in breakdowns, and count up the number of times that CB has brought fast help, Fire, Police or Medical, to the scene of an accident or other crisis, and you start to realise how great an asset your rig is, even with all the current restrictions and problems.

Count up the number of CB clubs operating throughout the country, and then try to add up all the funds they have raised for charity or the efforts they have put in for the community in general, and you might be excused for asking why the hobby has such a bad image.

The reason for that is as old as the hills. Joe Public is generally more interested in bad news than in good, so the Press latch straight onto any good bit of scandal that involves CB. Deserted wives, wife swapping, prostitution, petrol fiddling; all these make good press, but the good news will get coverage if we make sure the media get to hear about it.

So all the Club Secretaries, Chairmen, and even individual breakers should consider mounting a crusade in 1984 to bombard their local newspapers, radio and TV stations with every snippet of positive CB information, and eventually they will realise that we are to be respected and reckoned with.

Most towns have at least one CB club, sometimes as many as three or four, so how about getting your local rag to put together a regular CB column? At the moment the local press judge CB to be a minority interest, but if they get enough mail landing on the mat every day, they will soon change their tune.

So roll up the sleeves and get stuck in. George Orwell reckoned 1984 as being the year of Big Brother, but we can make it the year of the Big Buddies. With the help of pressure from the EEC, by the end of this year we could yet have a totally open and legal 27MHz system. But it is up to you!

Let us know what you think. Are you a moaner and a wailer, or would you be prepared to keep up the fight. After all, November 1981 was only one victory in the fight. There is still work to be done and a whole war to be won.

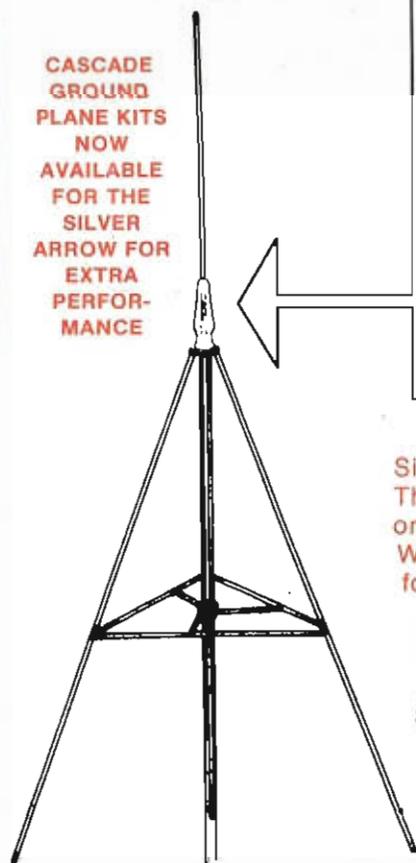


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Mack's cry of despair has struck a chord with some of our readers, who know only too well the way he feels. The international section is with us again — are we the magazine that reaches where others don't?

Mack Back Chat

Ron Underwood from Northampton sympathises with our resident cabbie.

After reading Mack Chat's pessimistic column, lots of which I agreed with, I nearly went 10.7 myself until I received a QSL from a Portlock, Somerset station that I had copied in spite of the wallies and mike keyers.

In the Northampton area we often switch on in the evenings to a breaking channel keyed out with music (and bad music at that) and keyers or bucket mouths upsetting the few breakers trying to have an intelligent conversation.

It's a great shame because CB radio could be such a useful social tool for many housebound or disabled people — and it is at times during the day when the channels are relatively quiet.

Anyway, one night a month of good DX copies with breakers who are, like myself, responsible CB users, is enough to ensure that 'Apollo 5' will still be heard around the Northampton for some time to come.

Lastly, just a word for Mack. Don't let them grind you down, mate! And don't ashbox your 27MHz. rig as you will still want to speak to some of us 11 metre diehards, even though you have now got your ham ticket.

More Mack Chat

The Deacon in Sheffield also has some comments on Mack the Hack's intended departure . . .

First may I congratulate you on persuading Mack the Hack to stay on writing for your mag. I was sorry to read that he had considered leaving but under the circumstances I can understand why.

The way that Mack feels is the way a lot of breakers feel, myself included, with the state of CB today. There is a lot of talk about giving us more

channels to use etc., etc., but when all is said and done the only way is by better legislation and tighter control. The authorities say they do not have the manpower or the money to do anything about clearing up the airwaves, but there is always someone there if we use an illegal frequency. As to the financial side, what has happened to our licence fees?

At £10 a time over the past two years they should have collected something in the region of sixty million pounds. Surely the cost of producing and maintaining a piece of paper and virtually nothing else does not cost as much as that? The Radio Amateur licence covers much more than CB licences do, is only £12 and is relatively easy to obtain. So, please, along with Mack and the rest of the sensible people on CB, help us to push for tighter laws to govern CB and for more staff to police the frequencies. As an old AM breaker, I can still remember the days when CB was fun.

I'm afraid that the income from CB licences is nothing like the figure you mention — with about 500,000 licences issued over the past two years, that adds up to a total income of £5,000,000. A lot of money but not as much as you estimate. The government also have to pay a large sum to the Post Office for acting as collecting agents for the licence fee. Whilst I'm with you every inch of the way in campaigning for a better system, is the best way to get it with further legislation? The legislation that there is now doesn't deter offenders — are they likely to take notice of more regulations?

Danger from Trevor

Back to the subject of channel use. Trevor Dangerfield feels very strongly about it . . .

WHY, WHY, WHY must people on channel 19 talk continuously? I am a road user who feels very strongly

about people who rabbit on 19.

19 is a calling channel for mobile use, NOT a talking channel. If you talk on 19 it is no use to anyone who needs a 10.13. The people who do this give the excuse that a, they are licenced and b, it is the truckers channel. *This is rubbish.*

If you talk on 19 you may miss that vital 10.13 you need but you don't care — or do you?

Trevor nearly had the paper bursting into flames with the heat of his feelings! Anyone want to take up the challenge and give the other side of the story?

New York, New York

From Islip Terrace in New York has come a letter from Lenny, also known as Lima Victor 2001 . . .



The Lima Victor 2001 of New York has come to the FM airways of the U.K. Since the end of October, this station has enjoyed over 100 contacts with your FM channels 37-40. I received many more cards and copy reports from 5dB to well over 30dB+ from all over England. I would like to thank all stations who sent cards and we are listening for other contacts or reports at 4pm. everyday (U.K. time) on channels 37 to 40 FM. 73's to all of England.

Thank you, Lenny, and 73's to you too. The FM system takes such a knocking at times, it's nice to hear from an enthusiastic user — even if he shouldn't be using it.

Correspondence Course

Echo Foxtrot 27 from Zimbabwe in Southern Africa has a request for readers with a bit of spare time and handy with a pen . . .

I would like to convey a request, through your magazine, to any interested persons. I am very interested in radio and would like to get in touch with anyone interested in the following topics — CB radio in general, radio wave propagation (27MHz. and 934MHz. included), S.W.L., antennas and associated subjects.

I would also like to get in touch with any generous person who can help

me with regard to joining the various S.W.L. groups (also European groups if possible), in such ways as fees, addresses etc.

I will be grateful for any information sent and will reply to any correspondence received.

Readers will be able to write to Glenn at the following address: Mr G. Glidden, P.O. Box 1389, Gweru, Zimbabwe, Southern Africa.

Freaky Mode?

Pathfinder One in Hertfordshire has an answer to Farmer Brown's letter in the December edition of Citizens' Band . . .

Hey . . . I Farmer Brown of the West Midlands should understand that the only reason most of us bother using the FM mode is because we don't want

hassle from Busby or any other authority . . . most real good buddies would agree that the Aristocratic Mode has (always) produced better type breakers than the Freaky Mode, which seems to comprise mainly of (as we all know) morons, misfits and other dolts who, upon acquiring their FM gear have no idea how to use it — and end up being wallies.

There are some elderly breakers on FM who are forever moaning about kids on channel, yet some of my best local copies are with such 'kids' and they do take a lot of stick from the older complainers on channel.

As to DXing, CB is supposed to be a form of local, social radio — and those wishing to DX really ought to clear off the CB bands, sit their R.A.E. and DX on the proper (amateur radio) bands. To use CB for DXing and long distance nets during the day time and early evening hours is extremely selfish and inconsiderate. After all, it does so happen that CB is the only real medium for many housebound and disabled folk and therefore CB should be used as it was intended to be in the first place. Let's hope that the Telecom Bill will result in the eventual proper use of CB.

Well, there's plenty to think about in that letter. Is FM for the morons, misfits and dolts? Surely my memory isn't that bad — I can remember some of those on AM too.

Future CB

J. H. Clifton of Wolverhampton headed his own letter 'Future CB' and is obviously worried that CB in this country doesn't have a future . . .

This is my first letter to your magazine, which I have taken since it's first issue. I am an avid CBer and club member and having a second bash at my R.A.E. and it seems to me that British breakers will be like the pirates (Radio Caroline) if they do not get it together as the R.S.G.B. has done — and that we shall fall behind our Euro CB friends.

I wrote to Per Kim Hardysoe of Denmark after seeing his letter in your magazine (he was offering to help CB travellers to his country) and he wrote a very informative letter back, with QSL cards and some information that surprised me. It seems that Europe is going to be better off than U.K. breakers, as Per Kim's equipment is 26.435 - 27.705 MHz., AM/FM with SSB, no antenna limit and he covers nearly all Europe, all the U.K. and even the U.S.A. legally.

What's good for one is good for all and it seems that the British CBer is going to be left in the cold, with no power or push behind him. So, CBers and clubs of the U.K., let's get it together like the R.S.G.B. so that we can have some muscle or we shall be pushed into the wilderness.

I'm not altogether sure that Per Kim's equipment is strictly legal in Denmark Mr. Clifton. The frequencies you mention are 500KHz. below and 300KHz. above even the FCC allocations and Denmark only permits 0.5W. Per Kim may well belong to the happy band of pirates you were talking about. It remains to be seen if the CEPT proposals are adopted throughout Europe — if they are we might all well have the same system.

Monitor Register

An idea from Patchwork of Hatfield that could be very useful for fellow CBers and motorists . . .

I read with much enjoyment any comments on monitoring, as I am a channel 19 monitor myself. I can certainly appreciate your articles.

I wonder if it's possible to compile a list of regular monitors and their location. It would be interesting to see just how many of the country is covered by the service. It would also give mobile readers some idea of who to call in various parts of the country.

If any monitors would like to write and give me their 20 and details, the I'll try and make the list myself.

And we will gladly publish it, Patchwork. Channel 19 monitors who would like to contact Mrs. Carter can write to her at P.W 19, Box 73, Hatfield, Herts.

Letters intended for publication should be addressed to: Backchat, Citizens' Band, No. 1, Golden Square, London W1R 3AB.



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Filly becomes the talk of the neighbourhood as she sets off in hot pursuit of four drunken men . . .

LADY BREAKERS

I never cease to be amazed at the variety of uses to which CB radio can be put. Take weddings, for example. I must admit, I have never been able to take much pleasure in weddings. I only have to remember my own — 30 minutes of madness saddled me with *him* for life. Cynic that I am, I look at the Rolls or the Daimler sweep by, brave white ribbons fluttering, and think to myself — *fools!*

Oh, well, I suppose it's not that bad really — I think the harrowing event that took place a fortnight ago has put me off weddings for a while.

It happened like this. An old school friend of mine who has been living in some outlandish part of the country decided to come back to the district to get married, but the evening before the Big Day, she rang me with a problem. The route to the little parish church from her father's farm, somewhere in the depth of the countryside, is long, obscure and tortuous, and worse, runs past several tempting country pubs. I gathered from one or two enigmatic comments that Scott, the groom, could not be relied upon either to find the church or bypass the pubs.

I could see what was coming. "Surely you've taken him along the route?" I said, hopefully.

"Yes, but it really is complicated . . . he's sure to get lost . . ."

"Well, isn't there someone who knows the way who can go with him?" I suggested, grabbing at such straws as I could find.

"No one else is going to the church from here, and with Scott and his best man, and the two ushers, there's no room. *Please*, Filly, just stop off on your way to the church and let him follow you . . ."

Well, you know me, can't ever say no to a friend, and at two o'clock the next day I turned up at the farm to pick up my flock. They piled into their car, looking distinctly hilarious, and I guessed they's been fortifying themselves with the odd can or two. My suspicion was confirmed by the odd way the car weaved about as it followed me through the lanes. Just my luck, I thought sourly, if they end up in a ditch.

But all was well until roughly halfway to the church, when I looked in the mirror — and they weren't there.

I didn't panic. I had passed The Old Shepherd half a mile back and I had a

shrewd idea they might have stopped off for more fortification. I pulled over and waited for a few minutes, then drove back to The Old Shepherd — and they weren't there.

I still didn't panic, although I probably would have done if I hadn't picked up a voice on the radio at that precise second. I snatched up the mike.

"Rosie, is that you? Are you anywhere near Deadwood Lane?"

"Hello Filly. As a matter of fact, I'm on my way to the Duck and Pond for a quick pint. Want to join me?"

I explained that I had problems, and asked her if she had seen a blue Lancia being driven somewhat erratically anywhere in the vicinity.

"Funny you should mention that. It passed me a few seconds ago, heading for the Old Fox, at a guess. They'll get themselves arrested if they don't watch out".

That would really get the marriage off to a flying start, I thought, making in my turn for the Old Fox. On the way, Rosie came back to me with another sighting of the fugitive car.

"I've been talking to Wild Rover", she said. "He's just leaving the Land of Liberty and he says a blue Lancia has just pulled up." I did a high speed three point turn, nearly went into the ditch, and set off for the Land of Liberty cursing under my breath and wishing all men were at the bottom of the sea.

But thanks to my two fellow breakers, I ran them to earth, hauled them out of the public bar and installed them in the Mini, which is not designed to take five. I have had pleasanter journeys, which didn't involve being crammed in a confined space with four rollicking males breathing beer down my neck, but I got them to the church with minutes to spare. We passed the bridal car on the way.

Trouble is, word had got out that Filly had been discovered in hot pursuit of four men, and even seen driving off with them to an unknown destination. It was talked about for a week.

So don't talk to me about weddings. As it happened, that particular one went off (eventually) without a hitch, and two weeks later they're still doing fine, so I hear. So far . . .

THE G.A.P. AVENGER

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We have taken a base loaded legal radiator with a single "ground plane" threaded with coaxial cable through the "ground plane" and finally supported the antenna at it's base rather than at it's centre.

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- * Impedance ... 50 ohms.

Could this be the ultimate in LEGAL antennas?? ... We think so!!

1983 Gamma Aerial Products Limited.

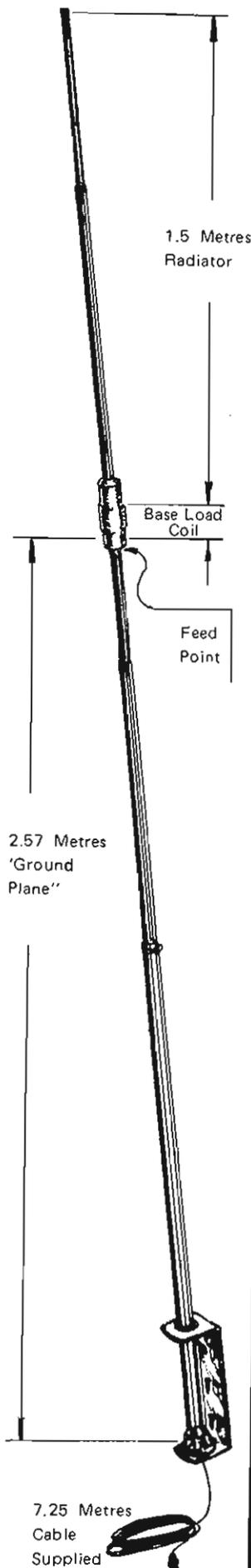
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LYE 891132
LYE 891474



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Ham 232S Processor Base Mike.....	£34.99 (D)
Ham 232DX Processor Base Mike.....	£39.99 (D)
Ham Antenna Matcher with through switch.....	£10.99 (C)
Set Brackets (will fit York, Rotel etc).....	£3.99 (A)
Ham Bracket Screw (will fit York, Rotel etc).....	each £1.00 (A)
Ham 6-9 amp Power Supply.....	£34.99 (E)
Ham 10-12 amp Power Supply.....	£49.99 (E)
Ham Thunderbird Base Ant 5/8 wave.....	£26.95 (E)
Ham Hypower Thunderbird 5/8 wave.....	£34.95 (E)
Ham Big Mac Base Ant 7/8 Wave.....	£69.95 (E)
Ham Frequency Counter plugs into Ham models.....	£45.00 (C)
Frequency Counter 6 digits.....	£49.99 (C)
Ham Viking (plus U.K.F.M.).....	£65.00 (E)
Ham Puma (plus U.K.F.M.).....	£85.00 (E)
Ham extension speaker with filter.....	£7.25 (B)
Ham Hand book.....	£3.00 (A)
Ham Multimode II Front Fascia.....	£8.00 (B)
Ham Concorde II Front Fascia.....	£8.00 (B)
Ham Service Manuals (state model).....	£6.00 (B)
Ham replacement mike (as originally supplied by Ham).....	£8.99 (B)
Ham LA 120 100 watt am/im - 200 watt ssb variable with preamp.....	£129.95 (E)
Ham LA 60 50 watt am/im - 100 watt ssb variable with preamp.....	£79.95 (E)
SEIF reverberator RA 201.....	£34.95 (D)
Cobra 148 GTLDX Service Manual (PC879).....	£6.00 (B)
Cobra 148 GTLDX Service Manual (PC010).....	£8.00 (B)
Multimode II plus UK F/M.....	£145.00 (E)
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ACCESS AND BARCLAYCARD ACCEPTED

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CLUB NEWS

Catching up on the club listings this month — we wouldn't want to leave you without anywhere to go on a winter evening!

Just a few letters, first, though, to empty the Club News post bag.

North Ilford Breakers Club

I am writing on behalf of the above named club to tell you about a couple of very good and worthwhile events which we have organised.

Firstly, on the 31st October, we held a Grand Halloween Dance at Lord's Night Club, Cranbrook Road, Ilford. This was to raise money for a fourteen year old girl, Lisa Kirkley, who is an avid CB user, handle Star Girl. She suffers from Leukemia and is awaiting a bone marrow operation, as soon as it is possible. This very special young lady has already done a 25 mile sponsored walk to raise money for other Leukemia sufferers. We hope to be able to give back to this lady a small part of what she has given to others.

We also held a 50 hour sponsored modulation on the 26th November for another worthwhile charity.

Any breakers that require more information about any future events, please do not hesitate to come along to our club night, which is every Monday night at Lord's, Cranbrook Road, Ilford.

Malcolm Kay (White Diamond)
North Ilford Breakers Club
Lord's Night Club,
Cranbrook Road,
Ilford,
Essex.

Yankee Bravo QSL Club

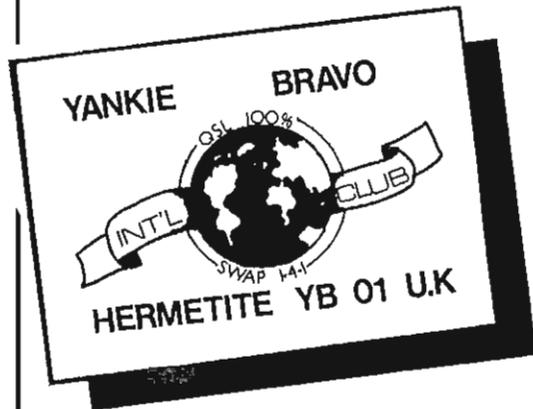
Many thanks for your mention of the club in the November edition of Citizens' Band. We now have over 220 members in 11 different countries and have grown quite rapidly since we started in July 1983. Readers wishing to become members will receive a club package on receipt of three QSL cards or local view cards, plus a large S.A.E.

I enjoy receiving swap QSL's and I return 100% but I am mainly interested in improving the club and getting more members — I look forward to having 1000 members.

The local QSL club, Zulu Echo, has included Yankee Bravo information in their news letter,

which should help boost membership. All the best.

Sean Gooch, YB 01
Gernel,
Woodend Green,
Henham,
Bishops Stortford,
Herts,
CM22 6AZ.



Echo Delta DX Group

As avid DX'ers from sidebanding to early morning UK FM networks, we have decided to start a DX group that will initially cater for South London operators.

Hopefully as membership mushrooms, we will go 'international' and tie up with a sister DX group in Europe.

The group is aimed primarily at the operator who QSL's and is genuinely interested in advancing his or her knowledge of proper radio techniques. Out go the club packages and all the frills, in come DX'peditions, home and mobile DX competitions and a proper log book, club QSL's and the use of a P.O. Box, naturally.

Membership enquiries should be addressed to the address given below.

The Warrior, Echo Delta 01,
Echo Delta DX Group,
91 Landells Road,
Dulwich,
London,
SE22 9PH.

CLUB DIRECTORY

ENGLAND BEDFORDSHIRE

LEIGHTON QUADS

Chairman: Brian Jenkins
P.O. Box 36,
Leighton Buzzard,
Beds. LU7 8AM
Meet: Chequers Public House, Eaton
Bray, Beds. Last Wed. of the month,
8.00 pm.

CORNWALL

HAYLE BREAKERS CLUB

Chairman: Mrs. S. Blewett
31 Bayview Terrace,
Hayle,
Cornwall.
Meet: Hayle Rugby Club, Friday
8.00 pm.

CUMBRIA

CUMBRIA TIGERS

Chairman: T. M. Walters
4, The Crescent,
Bransty,
Whitehaven,
Cumbria.
CA28 6RE

SIERRA FOXTROT CB RADIO GROUP

Chairman: Tom Jenkinson
6, Wells Close,
Moorchose,
Workington,
Cumbria.
Meet: Ship Launch, Marshside,
Workington. Sunday, 7.30pm.

NOTTINGHAM

34 CB BREAKERS CLUB

Chairman: S. Clark
3 Combs Walk,
Hyson Green,
Nottingham.
NG7 6DR
Meet: Fox Valley Hotel, Basford.
Friday 7.30pm

HAMPSHIRE

RADIO RAMBLERS QSL AND DX CB CLUB

Chairman: F. C. Barnes
P.O. Box 31,
Havant,
Hants.,
PO9 5TL
Meet: Bedhampton Social Hall. Last
Wed. in month, 7.00pm

HEREFORDSHIRE

WYE DEAN DX'ERS

Chairman: Ken (Marinaman)
P.O. Box 3,
Ross-on-Wye,
Herefordshire,
Meet: Club Room, Crown and
Sceptre. Alternate Weds.

HERTFORDSHIRE

FUN TIME BREAKERS CLUB

Chairman: A. Evans
323 Galley Hill,
Gadebridge,
Hemel Hempstead,
Hert.
Meet: Gadebridge Youth Club.
Sunday, 4.30pm.

LONDON

WHISKEY HOTEL BREAKERS CLUB

Chairman: Black Hank

P.O. Box 228,
London,
NW2 2LE
Meet: Midland Arms, Church Road,
NW4. Thursday, 8.00pm

SCOTLAND

ECHO BRAVO RADIO CLUB

Chairman: Ann McClorey
5 Burnside Terrace,
Strantaer,
Wigtownshire.
Meet: Golden Cross Lounge, Stran-
aer. Alternate Mons., 8.00pm

VIKING RADIO DX & QLS CLUB

Chairman: Malcolm
P.O. Box 31,
Lerwick,
Shetland.
Meet: Channel 31, Tuesday, 7.00pm

4 VICTOR SIERRA DX CLUB

Chairman: George
P.O. Box 21,
Ayr,
Scotland.
Meet: The Thistle Inn, Ayr. Alternate
Thurs, 7.30pm

WALES

CUCKOO BREAKERS CLUB

Chairman: Gypsy Roamer
P.O. Box 2,
Newbridge,
Newport.
Gwent.
NP1 4XN
Meet: Crosskeys Rugby Club.
Alternate Thurs. 8.00pm

EAGLE BREAKERS CLUB

Chairman: Mrs. P. Parry,
P.O. Box 12,
Caernarvon,
Gwynedd.
Meet: Talybont Club, Caernarvon.
Last Thurs. in month. 8.00pm.

CITIZENS' BAND CLUB DIRECTORY REGISTRATION FORM



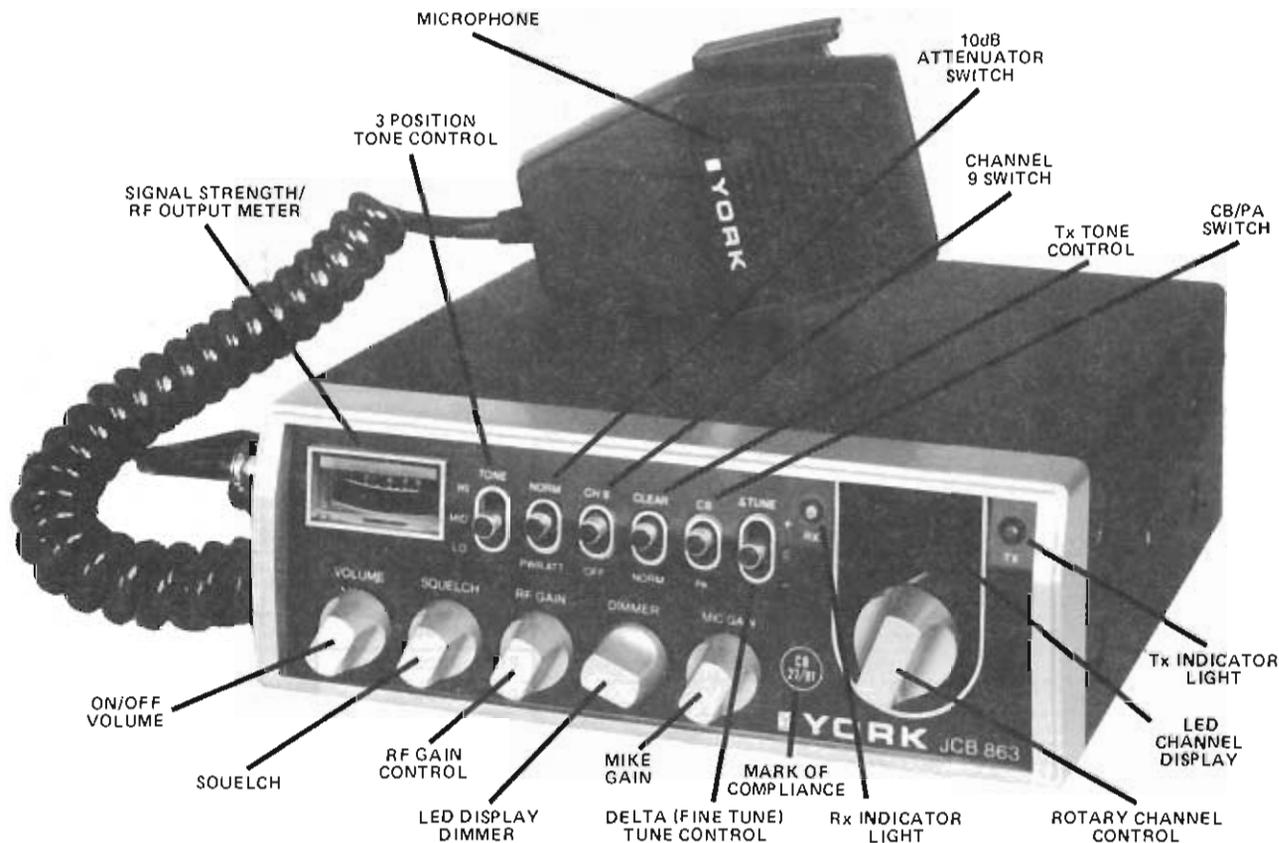
CLUB NAME ()
 CHAIRMAN ()
 Secretary ()
 PR Contact ()
 Contact Address ()
 (Tel No.)
 MEETING PLACE, DAY AND TIME ()

 No. of members
 Position in club
 Fee/sub etc (Committee members only please)

Please mark (*) information that may be published.

Citizens' Band

REFERENCE SECTION



SQUELCH

For anyone who has never used a rig before, this is probably the control that is the most difficult to understand. It exists to remove the background noise, that hissing sound that you can hear when there isn't a signal present. Nothing happens when the squelch knob is turned slowly clockwise, until it reaches a point just above the level of the background noise. Then, suddenly, the noise will totally disappear and you will hear nothing at all until a signal that is stronger than the background noise is received. This signal will cause the squelch to *open* and you will hear it, but as soon as it disappears, the squelch will *close* again and no sound will come from the rig. Care should be taken when adjusting this control because the higher it is set, the stronger the incoming signal has to be in order to open it. For the best results, the control should be left at the position just past the point where the background noise vanished. It will then let through any signal that is stronger than the background noise but not the noise itself.

RF GAIN

This is a variable attenuator that cuts down the amplification which is given to incoming signals and the more it is turned, the less the gain of your rig. This helps to prevent overloading when you are talking to someone who is very close by.

SIGNAL STRENGTH/RF METER

This is a dual function device that shows the relative strength of the signal you are receiving and of the signal you are transmitting. The S-Meter is usually calibrated 1-9 and the nearer to the 9 the needle is when you are receiving a

signal, the stronger that signal is. If someone asks you for a signal report, all you need to do is quote the number that is indicated on your S-Meter. This will give them a good idea of how well you are receiving them but you should remember that this is a *relative* indication and another rig under exactly the same circumstances could well give a reading that is 2 or 3 points different.

The same applies to the RF Meter. It also gives a *relative* indication of the power, you are putting out and it doesn't give a reading in watts. When you have properly tuned your antenna, you should note the position of the needle when you transmit, it should be around the 8 mark. If it suddenly moves from this position when you are transmitting, you should immediately re-check your antenna as there will almost certainly be something wrong with it.

NOISE BLANKER

These two functions are often combined on one switch and although they operate differently, they both exist to cut down interference. Most ANL systems work reasonably well but an NB is a far more efficient device that will remove almost all of the crackles and pops that are caused by interference.

LEDS (RX TX)

The appropriate one of these light emitting diodes lights to show if you are transmitting or receiving.

PA/CB

This switch turns your rig into a low power public address amplifier when it is set to the PA position. There is a socket on the back for an exten-

sion horn type speaker to be plugged into and anything you say into the microphone will be amplified and broadcast through the speaker.

MIC. GAIN.

This control alters the amount of audio from the microphone used to modulate the outgoing signal. When it is set to minimum, you are transmitting a blank carrier regardless of whether you speak into the microphone or not but when it's set to maximum, your signal is at almost 100% modulation.

HI/LO

This switch cuts down the output power of your rig so that you can conform to the rule on the back of your licence that says that you must reduce your power by 10 dB if your base station antenna is more than 7 metres above ground level.

CHANNEL SELECTOR

This is the knob that you use to change channels.

CHANNEL INDICATOR

This window displays the number of the channel in use. Most sets use LEDs for this display but some manufacturers prefer to use liquid crystal or fluorescent type displays. Displays will normally be bright red, orange or green and visible in all but the most direct sunlight.

CH 9 PRIORITY

This switch allows you to go immediately to channel 9 without having to use the channel selector.

FM RIG CHECKLIST

MOBILES

NAME	ADDRESSES	MODEL	NO. OF CHANNELS		
			SUPPLY VOLTAGE	RETAIL PRICE	
AMSTRAD	Amstrad Consumer Electronics, 1-7 Garman Road, London N17	CB901	40	13.8VDC	£40
AUDIO LINE	Telecomms, 189 London Road, North End, Portsmouth.	341	40	13.8VDC	£60
AUDIO LINE		340	40	13.8VDC	£40
AUDIO LINE		342	40	13.8VDC	£115
BARRACUDA	Halfords Motor Accessory Shops	GT 868	40	13.8VDC	£70
BARRACUDA		HP 940	40	13.8VDC	£85
BINATONE	Binatone House, Beresford Av., Wembley, Midds.	BREAKERPHONE	40	13.8VDC	£99
BINATONE		RDUTE 66	40	13.8VDC	£79.95
BINATONE		5-STAR	40	13.8VDC	£100
COLT	K B & Co Ltd, 202 Cheetham Hill Rd, Manchester	295	40	13.8VDC	£49.99
COMMTRON	Roger D, 831 Mansfield Rd, Notts	C840F	40	13.8VDC	£70
COMMTRON		CXX	40	13.8VDC	£69.95
CYBERNET	Goodmans Loudspeakers Ltd, Downley Road, Havant, Hants PO0 2NL	BETA 1000	40	13.8VDC	£70
CYBERNET		BETA 2000	40	13.8VDC	£85
CYBERNET		BETA 3000	40	13.8VDC	£100
DNT	Radiotechnics Ltd, Grove Way Bel Royal, St Lawrence, Jersey CI	M40FM SPECIAL	40	13.8VDC	£100
FIDELITY	Fidelity Radio Ltd, Victoria Rd, London NW10	CB 1000M	40	13.8VDC	£70
FIDELITY		CB 2000M	40	13.8VDC	£90
FIDELITY		20001 FM	40	13.8VDC	£70
GRANDSTAND	Bee-Ware Ltd, Ripon Way, Harrogate, N Yorks	BLUEBIRD	40	13.8VDC	£50
GRANDSTAND		HAWK	40	13.8VDC	£30
GRANDSTAND		GEMINI	40	13.8VDC	£60
HARRIER	Dixons Photographic Ltd	CB MOBILE	40	13.8VDC	£49
HARRIER		CB X	40	13.8VDC	£89.99
HARVARO	Harris Overseas Ltd, Harvard House, 14-16 Thames Rd, Barking, Essex	400M	40	13.8VDC	£80
HARVARD		402 MPA	40	13.8VDC	£69.95
HARVARD		H403 GOOD BUDDY	40	13.8VDC	£50
HARVARD		420M	40	13.8VDC	£100
INTERCEPTOR	Telecomms, 189 London Road, North End, Portsmouth	INTERCEPTOR	40	13.8VDC	£80
INTERCEPTOR		TC400	40	13.8VDC	£95
INTERCEPTOR		ONE HANDER	40	13.8VDC	£100
JOHNSON	Star Warehouse, Chalk Farm Rd, London	JDHNSON	40	13.8VDC	£50
KAISER	Kaiser Electronics Nevrotstrasse 21-25, Waldorf Baden, W. Germany	UK 40	40	13.8VDC	£TBA
LADYLINE	Market Drayton, Salop	OUASAR	40	13.8VDC	£80
LAKE	Roger D, 831 Mansfield Rd, Nottingham NG6 3GF	MANXMAN 850	40	13.8VDC	£32.50
LAKE		MANXMAN 950	40	13.8VDC	£37.50
LOWE	Lowe Electronics, Matlock, Derbyshire	TX 40	40	13.8VDC	£50
MAGPIE	Magpie Electronics, PO Box 35, Andover, Hants SP10 2LG	AUTOSCAN 5000	40	13.8VDC	£120
MAXCOM	A.M. Telecommunications, AM House, 17 Shepherds Way,	4E	40	13.8VDC	£50
MAXCOM	Rickmansworth, Herts	6E	40	13.8VDC	£48
MAXCOM		20E	40	13.8VDC	£50
MAXCOM		21E	40	13.8VDC	£50
MAXCOM		16E	40	13.8VDC	£40

Remember — Shop around as prices can vary

REFERENCE

On the following pages you will find listed just about all of the CB rigs available for use on UKFM CB. We have split the reference section into three parts; mobile base and portable to make individual rigs easier to find.



SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	STONE CONTROL	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAKER JACK	TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS	
•				•	•		•	•	•	•	•	•	SL	Report Feb '82	AMSTRAD
•			•	•	•			•		•	•		SL		AUDIOLINE
•			•		•									Report Feb '82	AUDIOLINE
•					•			•		•	•		—		AUDIOLINE
•				•	•		•	•	•	•			FL	Great GT868 chassis	BARRACUDA
•			•	•	•		•	•	•	•	•	•	FL	Cybernet chassis	BARRACUDA
•			•		•			•	•	•	•		—	Report Feb '82	BINATONE
•					•			•	•	•			FL	Report Dec '81	BINATONE
•			•	•	•		•	•	•	•			SL		BINATONE
•				•	•		•	•	•	•			FL		COLT
•					•		•	•	•	•			FL		COMMTRON
•					•			•	•	•			FL		COMMTRON
•					•		•	•	•	•			SL	Ultra compact performer	CYBERNET
•			•	•	•		•	•	•	•	•		FL	Report May '83	CYBERNET
•			•	•	•		•	•	•	•	•		FL	Report September '83	CYBERNET
•			•	•	•		•	•	•	•			FL	Report July '82	DNT
•					•		•	•	•	•			SL	Report December '81	FIDELITY
•			•	•	•		•	•	•	•			FL	Report March '82	FIDELITY
•			•	•	•		•	•	•	•				Report September '82	FIDELITY
•					•		•	•	•	•			SL		GRANDSTAND
•				•	•		•	•	•	•	•		SL		GRANDSTAND
•	•			•	•		•	•	•	•			SL		GRANDSTAND
•					•		•	•	•	•			SL	Report Feb '82	HARRIER
•			•	•	•			•		•	•		SL		HARRIER
•					•		•	•	•	•	•		FL		HARVARD
•					•		•	•	•	•	•		FL		HARVARD
•				•	•		•	•	•	•	•		SL	Report December '82	HARVARD
•				•	•		•	•	•	•	•		SL		HARVARD
•			•	•	•		•	•	•	•	•		SL		INTERCEPTOR
•	•		•	•	•		•	•	•	•	•		FL		INTERCEPTOR
•			•	•	•		•	•	•	•	•		FL		INTERCEPTOR
•				•	•		•	•	•	•	•		FL	Great GT868 chassis	JOHNSON
•					•		•	•	•	•	•		FL		KAISER
•				•	•		•	•	•	•			FL	First marine rig	LADYLINE
•					•		•	•	•	•			SL		LAKE
•				•	•		•	•	•	•			SL		LAKE
•			•	•	•		•	•	•	•	•		FL		LOWE
•			•	•	•		•	•	•	•	•		FR	Report April '83	MAGPIE
•					•		•	•	•	•			FL	Report March '83	MAXCOM
•			•	•	•		•	•	•	•			FL	Report November '82	MAXCOM
•					•		•	•	•	•			FL		MAXCOM
•					•		•	•	•	•			FL		MAXCOM
•					•		•	•	•	•			FL		MAXCOM
•					•		•	•	•	•			FL		MAXCOM

considerably from CB shop to CB shop!

MOBILES

NAME	ADDRESSES	MODEL	NO OF CHANNELS	SUPPLY VOLTAGE	RETAIL PRICE
MICROLINK	Waman-Freed Ltd, 82 Golders Gr. Rd, NW11	CB401	40	13.8VDC	£115
MIDLAND	Plustronics Ltd, Hempstalls Ln, Newcastle-under-Lyne, Staffs	2001	40	13.8VDC	£70
MIDLAND		3001	40	13.8VDC	£80
MIDLAND		4001	40	13.8VDC	£90
MIDLAND		2001T	40	13.8VDC	£100
MERCURY	EMS Communications, Grove Street, Wantage, Oxon, LX21 7AD	10 40	40	13.8VDC	N/A
MUSTANG	KB & Co. Ltd, 202 Cheetham Hill Rd, M7 6r	CB1000	40	13.8VDC	£49.95
MUSTANG		CB3000	40	13.8VDC	£59.99
NATO	Roger D, 831 Mansfield Rd, Nottingham NG5 3GF	40M	40	13.8VDC	£69.95
NATO		2000	40	13.8VDC	£189.95
OSCAR	S.M.C. Runbridge Street, Totton, Herts SO4 4OP	OSCAR1	40	13.8VDC	£85
OSCAR		OSCAR II	40	13.8VDC	£49
RADIOMOBILE	Goodwood Wks, North Circular Rd, London NW2 7JS	201	40	13.8VDC	£80.90
RADIOMOBILE		202	40	13.8VDC	£120
REFTEC	RF Technology, Leyton Avenue Ind Est, Mildenhall, Suffolk	934	20	13.8VDC	£200
ROTEL	Rotel Hi-Fi, 2-4 Erica Rd, Stacey Bushes, Milton Keynes	RVC 220	40	13.8VDC	£50
RDTL		RVC 230	40	13.8VDC	£70
ROTEL		RVC 240	40	13.8VDC	£90
SHOGUN	Colliers Fm, Froith, Henley-on-Thames, Oxon, RG6 6NR	SHOGUN	40	13.8VDC	£100
SIRTEL	24 Allric Sq, Off Maxwell Rd, Woodston Ind. Est, Peterborough	SEARCHER	40	13.8VDC	£40
STEEPLETONE	Park End Works, Croughton, Nr Brackley, Northants	SCB1FM	40	13.8VDC	£103
TANDY	Tame Way, Towar Bridge St, Walsall, Staffs	TRC2001	40	13.8VDC	£80
TANDY		TRC2002	40	13.8VDC	£70
TANDY		TRC2000	40	13.8VDC	£100
TANDY		TRC1004	40	12VDC	£79
TANDY		TRC2003	40	13.8VDC	£130
UNIDEN	Cravenmoor Ltd, Unit 8, Industrial Estate, Llandudno Junction, Gwynedd	UNI ACE 100	40	13.8VDC	£69.95
UNIDEN		UNI ACE 200	40	13.8VDC	£89.95
VIPER	Radio 88, Barking, Essex	VIPER 88	40	13.8VDC	£29
WAGNER	Knight Communications Ltd, Unit 19 Britania Est, Leagrave Rd, Luton	9000	40	13.8VDC	£59.95
WAGNER		COMPACT 40	40	13.8VDC	£25
WESTERN	Western Electronics, Fairfield Estate, Louth, Notts	COMPACT 40	40	13.8VDC	£34.50
YORK	Sulkin (UK) Ltd, 73 Grosvenor Street, London W1X 9DD	JCB 861	40	13.8VDC	£69
YORK		JCB 863	40	13.8VDC	£89



REFERENCE



SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	STONE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAKER JACK	TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS	
•			•		•		•	•	•	•	•			FL		MICROLINK
•			•		•		•	•	•	•	•			FL	Report August '82	MIDLAND
•			•		•		•	•	•	•	•			FL		MIDLAND
•			•		•		•	•	•	•	•			FL		MIDLAND
•			•		•		•	•	•	•	•			FL	The talking rig	MIDLAND
•			•		•		•	•	•	•	•			FR	Report July '83	MERCURY
•			•		•		•	•	•	•	•			FL		MUSTANG
•			•		•		•	•	•	•	•			FL		MUSTANG
•	•	•	•		•		•	•	•	•	•			SL		NATO
•	•	•	•		•		•	•	•	•	•			SL	Report January '83	NATO
•			•		•		•	•	•	•	•			FL	Cybernet 134 chassis Report April '82	OSCAR
•			•		•		•	•	•	•	•			FL	Report October '83	OSCAR
•			•		•		•	•	•	•	•			FL	Cybernet chassis Report October '82	RADIOMOBILE
•			•		•		•	•	•	•	•			FR	Report September '81	RADIOMOBILE
•			•		•		•	•	•	•	•			FL		REFTEC
•			•		•		•	•	•	•	•			FL	Cybernet chassis	ROTEL
•			•		•		•	•	•	•	•			SL	Cybernet chassis	ROTEL
•			•		•		•	•	•	•	•			SL	Cybernet chassis	ROTEL
•			•		•		•	•	•	•	•			SL	Up market elegance Report June '82	SHOGUN
•			•		•		•	•	•	•	•			FL		SIRTEL
•			•		•		•	•	•	•	•			SL		STEEPLETONE
•			•		•		•	•	•	•	•			SL		TANDY
•			•		•		•	•	•	•	•			SL		TANDY
•			•		•		•	•	•	•	•			SL		TANDY
•			•		•		•	•	•	•	•			SL		TANDY
•			•		•		•	•	•	•	•			—		TANDY
•			•		•		•	•	•	•	•			SL	Report November '82	TANDY
•			•		•		•	•	•	•	•			SL	Report September '82	UNIDEN
•			•		•		•	•	•	•	•			SL	Report February '83	UNIDEN
•			•		•		•	•	•	•	•			FL		VIPER
•			•		•		•	•	•	•	•			FL		WAGNER
•			•		•		•	•	•	•	•			FL		WAGNER
•			•		•		•	•	•	•	•			SL		WESTERN
•			•		•		•	•	•	•	•			SL	Report October '81	YORK
•			•		•		•	•	•	•	•				Cybernet 134 chassis	YORK



REFERENCE

BASE STATIONS

BASES



NAME	ADDRESS	MODEL	NO OF CHANNELS	SUPPLY VOLTAGE	RETAIL PRICE
AUDIOLINE	Telcomms, 189 London Road, North End, Portsmouth, Hants.	346	40	240VAC	£139.95
DNT	Radiotechnics Ltd, Grove Way, Bel Royal, St Lawrence, Jersey CI	B40	40	240VAC	£TBA
DNT		B2740	40	240VAC	£TBA
DNT			40	240VAC	£TBA
FIDELITY	Fidelity Radio Ltd, Victoria Rd, London NW10	CB 3000M	40	240VAC	£125
GRANDSTAND	Bee-Ware Ltd, Ripon Way, Haregate, N Yorks	BASE	40	240VAC	£220
HAM INT.	Telcomms, 189 London Road, North End, Portsmouth, Hants.	JUMBO	40	240VAC	£254
HAM INT		CONCORDE II	40	240VAC	£164
HARRIER	Dixons Photographic Ltd	CB HQ	40	240VAC	£130
HAVARD	Harris Overseas Ltd, Harvard House, 14-16 Thames Rd, Barking, Essex	H407	40	240VAC	£125
HARVARD		H401	40	240VAC	£149.95
JOHNSON	Star Warehouse, Chalk Farm Rd, London	XK 2000	40	240VAC	£99
MIDLAND	Plustronix Ltd, Hempstalls Ln, Newcastle-under-Lyme, Staffs	76-200	40	240VAC	£150
UNIDEN	Cravenminster Ltd, Unit 8, Industrial Estate, Llandudno Junction, Gwynedd	UNIACE 300	40	240VAC	£149.95
WAGNER	Knight Communications Ltd, Unit 19 Britannia Estate, Loggrave Rd, Luton LU3 1RJ	BASE	40	240VAC	£150

PORTABLES

NAME	ADDRESSES	MODEL	NO OF CHANNELS	SUPPLY VOLTAGE	RETAIL PRICE
BEAR	Air Bear (UK) Ltd, Wortley, Sheffield	RBH 35	3		£44
BINATONE	Binatone House, Beresford Avenue, Wembley, Middlesex	LONGRANGER	40	BATTERIES	£59.95
DNT	Radiotechnics Ltd, Grove Way, Bel Royal, St Lawrence, Jersey CI	HF 12/3	3	BATTERIES	£47.55
HARRIER	Dixons Photographic Ltd	WT1	2	BATTERIES	£25
HARRIER		WT2	40	BATTERIES	£59.99
HARVARD	Harris Overseas Ltd, Harvard House, 14-16 Thames Rd, Barking, Essex	0-2-0	2	BATTERY	£20
HARVARD		410T	40	BxAA cells	£69.95
HARVARD		10-4 CONVOY	2	BATTERY	£19.95
HARVARD		H6	2	BATTERY	£29.95
KAISER	Solid State Electronics (UK), 41 Twyford Ave, Shirley, Southampton (Tel: 0703 780335)	CBX40	40	BATTERY	£80
MAXCOM	A.T.M., AM House, 9a Olds Approach, Tolpits Lane, Watford, Herts	7E	40	BATTERY	£49.95
MIDLAND	Plustronix Ltd, Hempstalls Ln, Newcastle-under-Lyme, Staffs	75-720	40	12VOC	£59.95
TANDY	Tama Way Tower Bridge St, Walsall	TRC1001		BATTERY	£119

HAND HELDS



It's much more fun breaking from home when the car's too cold to start - and it saves petrol!



SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	TOONE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAKER JACK	TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS
•			•	•	•			•		•					AUDIOLINE
•								•		•				FL	Review May '82
•								•		•				FL	The most expensive base!
•								•		•			•	FR	Report May '82
•								•		•			•	SR	Report May '82
•								•		•				FL	FIDELITY
•								•		•				FL	GRANDSTAND
•	•	•	•	•	•			•	•	•				FL	HAM INTERNATIONAL
•	•	•	•	•	•			•	•	•				SL	HAM INTERNATIONAL
•								•		•				FL	HARRIER
•								•		•				FL	HARVARD
•								•		•				FL	HARVARD
•								•		•				FL	JOHNSON
•								•		•				FL	MIDLAND
•								•		•				FL	Reviewed August '83
•								•		•				FL	UNIDEN
•								•		•				FL	WAGNER

Why not get out and about with a portable rig? Not only is it fun, there's fresh air too.



SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	TOONE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAKER JACK	TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS
•										•				-	BEAR
•								•		•				-	Report July '82
•										•				-	BINATONE
•										•				-	DNT
•										•				-	HARRIER
•										•				-	HARRIER
•										•				-	HARVARD
•										•				-	Report April '82
•										•				-	HARVARD
•										•				-	HARVARD
•										•				-	HARVARD
•										•				-	Report August
•										•				-	KAISER
•										•				-	MAXCOM
•										•				-	MIDLAND
•										•				-	TANDY

ANTENNA CHECKLIST

Here's a brief intro

Name

All antennas have a number or name. Or both. Here we tell you what it is.

Construction

Most mobile antennas are made of stainless steel and most home based ones are made of aluminium. This is not always the case though. There are fibre glass mobiles

The Home Office specs for CB antennas are lean and bordering on the mean. Still within that basic framework manufacturers have come up with some good designs. This newly laid out antenna checklist should help you

CONSTRUCTION	LENGTH	MAX POWER	TYPE	MOUNT	PRICE RANGE
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NAME	ADDRESSES	MODEL	CONSTRUCTION	LENGTH	MAX POWER	TYPE	MOUNT	PRICE RANGE
AERIAL SUPPLIES	Aerial Supplies, 6 Whitney House, Bromsgrove Rd, Redditch, Worcs. (Tel 0527 82620)	Silver Star	AL	1.5	100	B	Pole	D
		Silver Arrow	AL	1.5	500	B	Pole	E
		CBA 1500	SS				Various	C
ANTENNA INC.		12510 Telecomm	SS	0.9		M	1/2ths	D
		Super Persuader	SS	1.5		M	Mag	F
		MR611	SS	1.2		M	Mag	G
		M710	SS	1.6		M	1/2ths	G
		AS M125	SS	1.14	150	M		C
AS M 128	SS	1.14	150	M		C		
ANTENNA SPECIALISTS	Antifence Ltd, Aylesbury, Bucks HP19 3BJ	AS M131	SS	1.14	150	M	gutter	D
		AS MR440	SS	1.2	100	M	mag	D
		AS MT178	SS	1.2	150	M	mag	D
		AS M510	SS	1.2	200	M	1/2"	D
		AS M2000	SS	1.5	150	M	1/2"	D
		AS 9B12	SS	1.2	150	M	mag	D
		IC 85	SS	1M		M	mag	D
		IC 80	SS	1M		M	spring-based mag	D
		IC 15	SS	1		M	trunk	C
ANTLER	Shakespeare Performance Antennas, Botton Rd, Market Drayton, Salop	IC 20	SS	1 1/2		M	roof	D
		IC 30	SS	1 1/2		M	gutter	E
		IC 40	SS	1 1/2		M	mirror	C
		IC 80	SS	1 1/2		M	mag	C
ARCHER	Tandy Corp, Tame Way, Tower Bridge St, Walsall, W. Mid	21-904	SS	0.5	50	M	1/2" snap	D
ARMSTRONG	Stateide Trading Ltd, Audley Ave, Newport, Shropshire	SAM 10	SS	1.06	1,000	M	surface	F
		SAM 20	SS	1.06	1,000	M	surface with spring	F
		TAK 10	SS	1.06	1,000	M	boot lip	F
		TAK 20	SS	1.06	1,000	M	boot lip	G
		MAG 10	SS	1.06	1,000	M	with spring	G
		MAG 20	SS	1.06	1,000	M	magnetic	G
		BDY 20	SS	1.06	1,000	M	with spring	G
PEC 20	SS	1.06	1,000	M	side & fold over & quick disconnect	G		
TAK 101	SS	1.06	1,000	M	boot lip illuminator	G		
AVANTI	CB Radio Centre Ltd, 337 Kenilow Rd, Harrow	AV 241 (Moonraker)	SS	1.22		M	stud	D
		AV241 T	SS	1.22		M	trunk	E
		AV241 M	SS	1.22		M	mag	E
		AV241 MM	SS	1.22		M	super mag	G
BADLAND	Badland, Roman Ind Est, Providence St, Lye, Stourbridge	B10	SS	1.22			mag	G
BANDIT	Telecomms Ltd, 189 London Road, North End, Portsmouth, Hants	B10	SS	1.42		M	mag	G
		B15	SS	0.51		M	mag	F
		B16	SS	1.22		M	mag	F
		B20	SS	1.42		M	mirror	F
		B30	SS	1.42		M	drill-thru	F
		B30	SS	1.42		M	drill-thru	F
		B40	SS	1.22		M	various	E
		B40	SS	1.22		M	various	E
		B50	SS	1.42		M	various	D
		B50	SS	1.42		M	various	D
B50	SS	1.22		M	various	D		
C. BRIT	C Brit, Unit 3, 5 East Lane, Wembley, Midx	Stringray Whiplash	AL	1.5	500	B	pole	G
			SS	1.5	25	M	1/2"	C
CT INTERNATIONAL	CT International, CTE (UK) Ltd, Unit 3, Mitcham Ind Est, 85 Streatham Rd, Mitcham, Surrey	MG27	SS	0.91		M	mag	C
DIAL-A-MATCH	WTA Electronics Ltd, 111 Dronner Rd, Halesden, Norwch, (Tel 0606 47694)	Rubber Duck -	R	0.3		M	1/2"	C
		530 (Cherokee)	SS	0.61		M		F
		531 HBF	SS	0.61		M		F
		531 SMF	SS	0.61		M		F
		540	SS	1.22		M		E
		541 H8F	SS	1.22		M		E
		541 SMF	SS	1.22		M		E
520 (Halfbreed)	SS	1.27		M		C		
DIGITEK UK LTD	179 181 Streatham Rd, Mitcham, Surrey	Falcobn 27	SS	1.5		M	various	D

duction to the world of antennas and what we tell you in our checklist.

and stainless steel home based antennas.

Length

The longer the better is always my motto. As long as it's not over 1.5 m. Otherwise it's illegal. We tell you the exact length.

Maximum power

This is given as a guide only. The law allows for a maximum

two watts. However, the higher the maximum power figure given the sturdier the antenna will be.

Type

It's no use buying a home base antenna if you want to use your rig from the car. We tell you which are which Mobile or Base. At the moment the number of mobile

antennas far outweigh the number of home based ones. But there are more and more home base antennas coming onto the market.

Mount

The majority of mobile antennas are held in place by a magnet — these are called mag mounts. Others are attached by means of a clamp

to the boot or edge of the roof. Some are drill-through antennas which are just the same as normal car radio aerials.

Home based antennas are poles, tripods or gutter mounts. Tripods are free standing and gutter mounts are attached in a way similar to trunk or bootmounts.

Key:	C: £10 - £14.99	G: £30 - £38.99	AL - Aluminium	B - Base
Price Bands	D: £16 - £19.99	H: £40 Plus	FG - Fibreglass	
A: £1 - £4.99	E: £20 - £24.99	Construction	Application	Note: Prices are given as a guide only.
B: £5 - £9.99	F: £25 - £28.99	SS - Stainless Steel	M - Mobile	

CONSTRUCTION	LENGTH	MAX POWER	TYPE	MOUNT	PRICE RANGE
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NAME	ADDRESSES	MODEL	CONSTRUCTION	LENGTH	MAX POWER	TYPE	MOUNT	PRICE RANGE
DIXONS	Dixons Photographic	Harrier	SS	0.9	—	M	Mag	D
HOT ROD 200	Hot Rod 200, Sixeside Trading Ltd, Audley Ave, Newport, Shropshire	FM UK	SS	1.27	—	M	1/2"ths	B
FREEMAN & PARDOW	Freeman & Pardow, Tything Rd, Arden Forest Ind. Est, Alcester, Warwick	The Invader The Thunderpole	AL AL	1.5 1.5	250 500	B B	pole pole	E E
CB SERVICES	87, Crabs Lane, Harrogate, N. Yorks HG1 3BD	Bullwhip Knuckleduster	SS AL	1.5 1.5	—	M B	various	C D
MIDWEST		Dial-a-tune Dial-a-tune	SS SS	0.61 1.22	500 2	M M	various various	C D
MODULATORS	Lee Waller Manufacturing, Pembroke Works, Sandwich Rd., Sandwich, Kent	MOBILE LC MOBILE SC MDX LC MOX SC 934 BASE 934 MOBILE VHF MOBILE VHF BASE 27 L/C BASE 27 OX BASE	SS SS SS SS SS FG FG SS SS AL AL	1.3 1.3 1.5 1.5 1.5 1.5 1.3 1.3 1.5 1.5 1.5 1.5	1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000	M M M M M B M M M B B B	Pole Gutter Pole Wall Pole	C C C C C H C C C D D D
MOTOROLA	Motorola, Tylors Rd, Stretford, Herts	EC106M	—	—	—	M	—	F
OCT.	Unit 1 Earlsfield Lane Ind. Estate, Grantham, Lincs	K40 Z27	SS SS	1.4 1.45	500 200	M M	various various	G B
PANORAMA	Panorama, 73 Wadham Rd, London SW15 2LS	CB27	SS	1.22	—	M	mag	B
PRIOWW		KT40	—	1.5	—	M	trunk	C
REVCO	Telecomms, 189 Linden Road, North End, Portsmouth, Hants	Revco	SS	1	100	M	various	B
SHIRA		SYS 206M SYS 203C MA 82	SS FG	1 0.75 0.91	—	M M M	mag trunk —	C C C
SIRTEL	Siriel, 24 Ailce Sq, Off Maxwell Rd, Woodston Ind. Est, Peterborough	GP Messenger GP Signal Keeper	SS SS	1.5 1.5	—	B B	clamp tripod	E F
SMC	S.M.C., Runbridge Street, Totton, Hants SO4 4QP	Oscar Base CBA 11GP Oscar Base II/III Oscar IICM Oscar IICE Oscar IINE Oscar IISE Oscar TMCAS	SS SS SS SS SS SS SS	1.6 1.6 1.2 1.2 1.5 1.5 1.6 1	— — — — — — —	B B M M M M M	— — mag foldover base 'pull-up' 'locking- collar' foldover base trunk	F F O B C C B
SPYDER		Spydar	AL	1.5	—	B	pole	B
TAGRA	CB Radio Centre Ltd, 337 Kenon Rd, Harrow	T40	SS	1.4	500	M	various	E
THOROBRED	OCT, Unit 1, Earlsfield Lane, Grantham	251 Z27 Locktune	SS SS SS	1.6 1.5 1.5	—	M M M	various 1/2" various	C B C
WITCHSTICK	CJM Motor Factors, Hill Farm Ave, Leaverston, Watford, Herts 08273-74846	Witchstick homebase	AL	1.5	—	B	—	E
WTA ELECTRONICS	111 Cromer Rd, Helmsdon, Norwich, Norfolk	Wot Pole Wot Mag	AL SS	1.5 1.5	—	B M	pole mag	
VAN OROT	Van Orot, Knight CB Specialist, 204 Dunstable Rd, Luton, Beds	Audio King AKO-100	SS	1.5	2,000	M	1/2"	G

CB Citizens' Band

READER SERVICES

BACK NUMBERS

Simply fill out the form below — photocopy it or write a quick note if, like me, you don't want to spoil your file copy — pop in your cheque or postal order and sit back and wait.

CITIZENS' BAND: PO Box 35,
Wolsey House, Wolsey Road,
Hemel Hempstead, Herts
HP2 4SS.

JANUARY 81/82/83
FEBRUARY 82/83
MARCH 81/82/83
APRIL 81/82/83
MAY 81/82/83
JUNE 81/82/83
JULY 81/82/83
AUGUST 81/82/83
SEPTEMBER 82/83
OCTOBER 81/82/83
NOVEMBER 80/81/82/83
DECEMBER 81/82/83

NAME

ADDRESS

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It is assumed that letters we receive are intended for publication unless they say otherwise. Letters for particular features like Back Chat, Q & A and Club News should have that marked on the envelope and the correspondent's full name and address, although this will not be published if requested. Readers who are hoping for publicity for events, competitions and 'other happenings' should bear in mind that the magazine goes to press at least two weeks before the magazine appears in the shops, and editorial copydates are usually a month before the 'press' date. Please remember this when sending any information in.

Writing for CB

We welcome readers contributions, especially if they cover a new aspect of CB or are D.I.Y. projects. Unless you are experienced in contributing to magazines you may not be aware of how work should be presented — if in doubt write for advice!

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It is very difficult to deal with telephone queries, especially technical ones, as most of our energy has to go into putting the magazine together. If you can deal with it by letter, please do.

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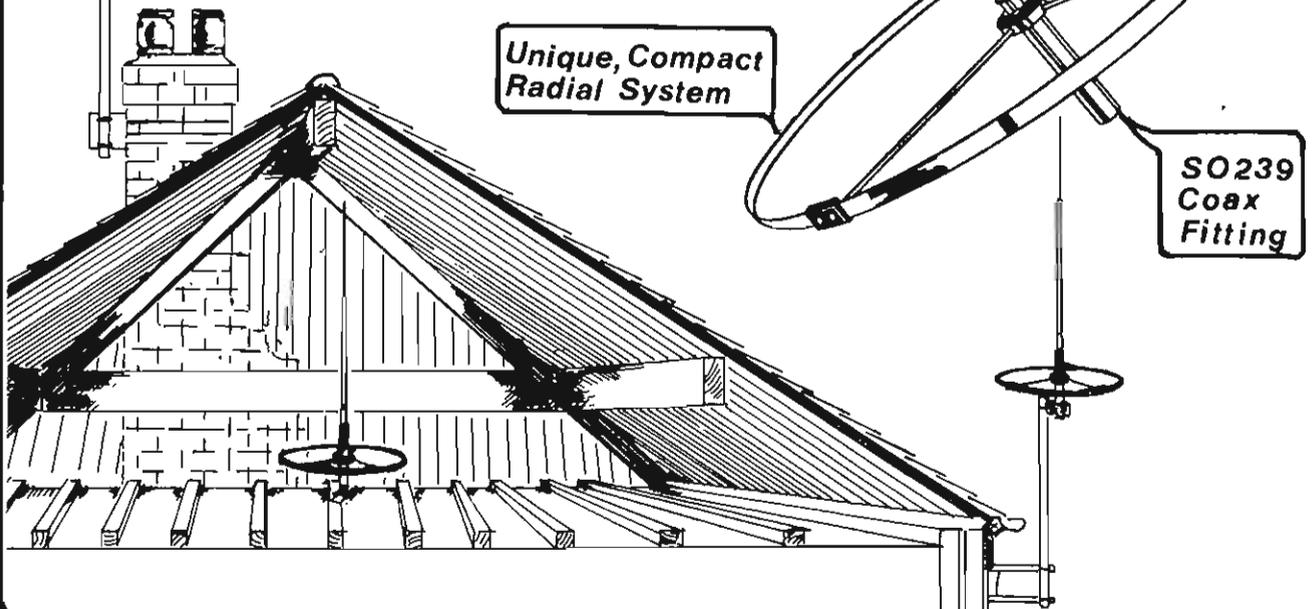
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