

CB

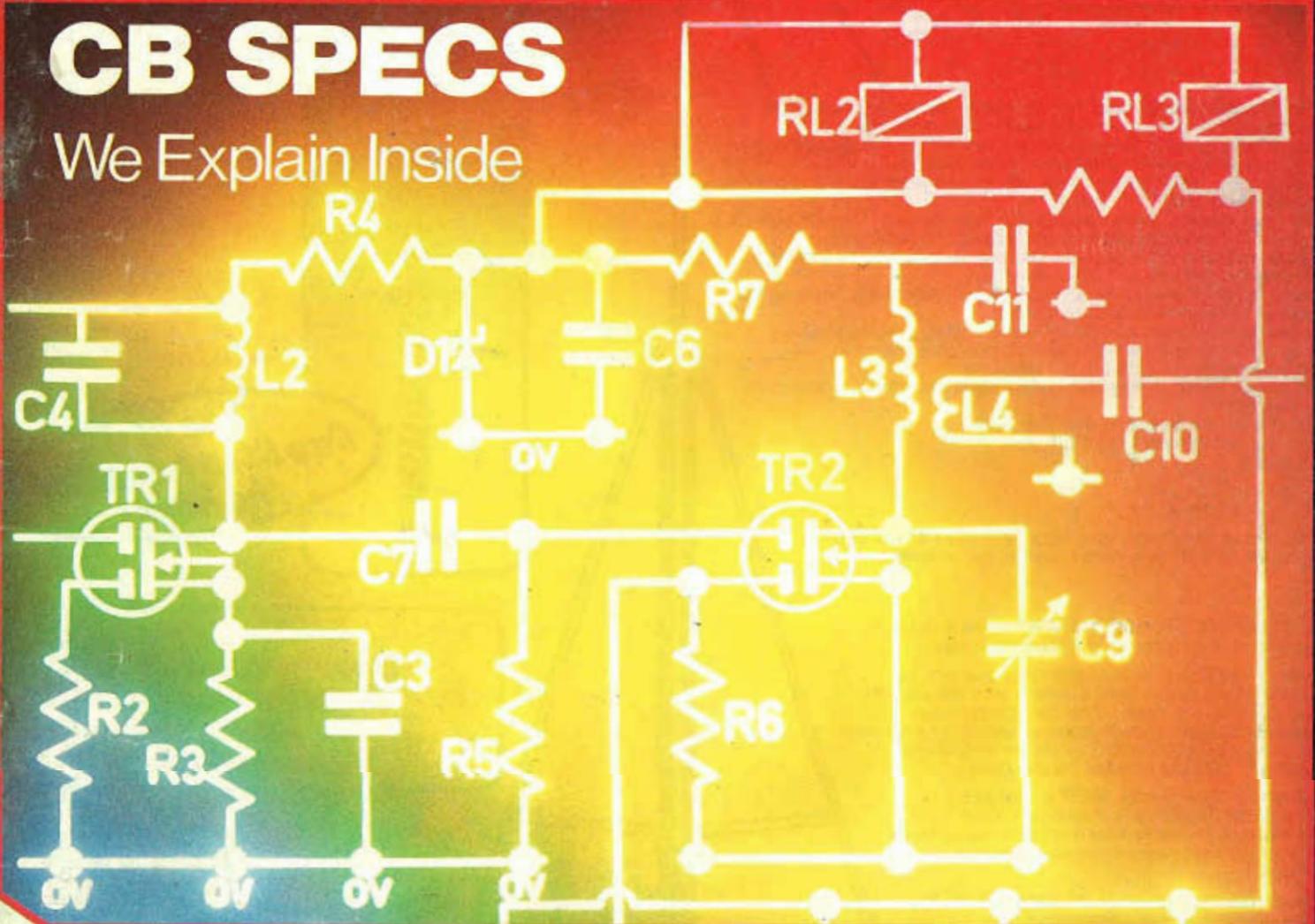
Citizens' Band

Britain's Leading Communications Magazine

99p

CB SPECS

We Explain Inside



RADIO SCANNING

In Search of Signals

CB SURGERY

A Rig Doctor Writes

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be won

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One Step Ahead of
the Rest!

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



CB Citizens' Band

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FEBRUARY 1985 VOLUME 5 NUMBER 3



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In Search of Signals — we look at the fast-growing hobby of radio scanning and check out what equipment is available.

Editor Eamonn Percival
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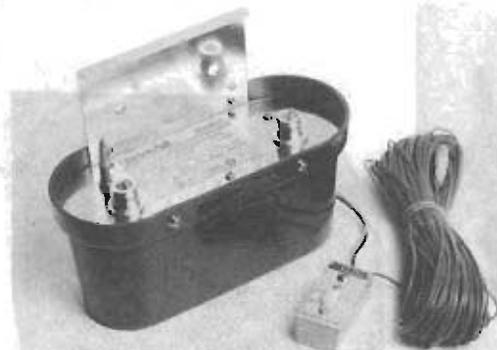


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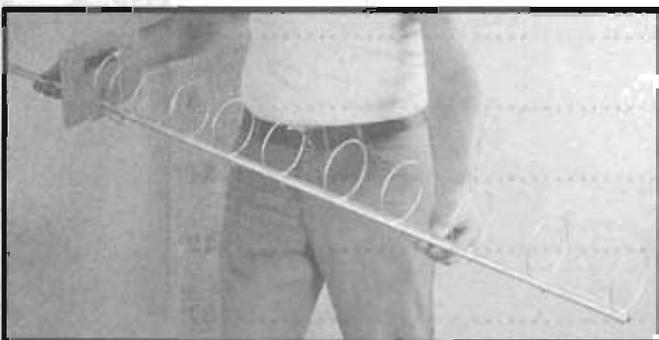
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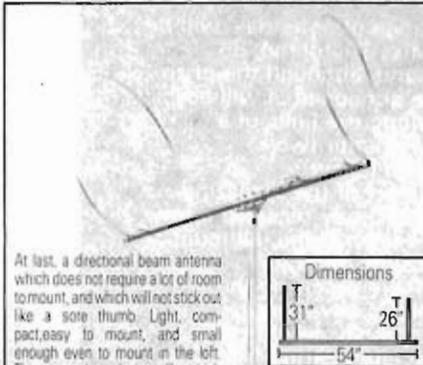
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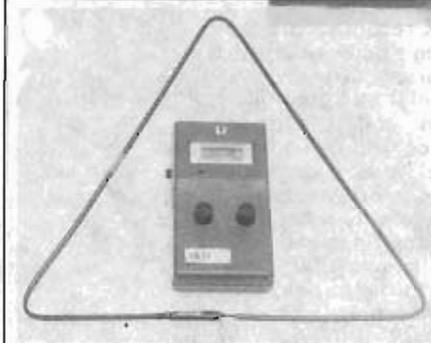
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Yours sincerely,

[Signature]
MANAGING DIRECTOR

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UPDATE

NEWS FROM THE WORLD OF CB

NEWS FROM THE WORLD OF CB

NEWS FROM THE WORLD

Editorial

Elsewhere on these pages you will find a news item about the introduction of the new Commtel 934 rig, which is good news for those of you interested in 934MHz. From the amount of letters I receive, there are a great many of you interested in this frequency and the Commtel will, I hope, be one of the first of many 934 sets on the market.

If you are in the habit of throwing *Citizens' Band* in the bin once you have read it - and I'm sure most of you are not - then go and fish out last month's issue. The reason is that next month we will be running a competition in conjunction with Pixtron UK with over £500 worth of prizes, and the competition is based on their advertisement in the January issue. Also, in a few months' time, Pixtron, who market the

Thorobred range of antennas, will be running a 'Miss Thorobred '85' competition and, although the prize has yet to be announced, it will be something along the lines of a weekend in Paris for two. More details to follow.

On the subject of the magazine itself, I have recently received a few letters from readers who, although they get *Citizens' Band* on subscription, are receiving the magazine late. If any more subscribers are having difficulty, I would appreciate hearing from you. Write to me at *Citizens' Band*, PO Box 35, Wolsey House, Wolsey Road, Hemel Hempstead, Herts. Incidentally, although we moved some months ago, a few readers are still writing to the magazine at the old Golden Square address. Please note the new one - it's a lot quicker.

Eamonn Percival

Cellular Radio Arrives

Any time now, you should be seeing cellular radio in your local Dixons branch. Answercall Vodafone recently announced an agreement to market its full range of cellular equipment and services through the successful consumer electronics multiple, Dixons.

British Telecom and Securicor also recently announced that they have joined forces to provide their Cellnet cellular radio network throughout the country. Both systems aim to cover most of the country by the mid to late 1980s, and both systems will have similar facilities such as call forwarding and conference calls.

Cellnet will be available through their own accredited retailers, while Vodafone will be available through their own national outlets, as well as Dixons, although Dixons will remain Vodafone's exclusive high street multiple retailer.

Up, Up and Away

A young blind paraplegic had the thrill of a lifetime recently when he took a trip in the famous Barrat helicopter. Sixteen-year-old Dee Collins, who is a great CB radio fan, had always wanted to go up in a hot air balloon and so wrote to airports around the country. One of his letters eventually ended up at Barrat Luton, who set out to make the arrangements. Through his CB, Dee contacted lots of people to tell them about the trip and, through them, raised enough money to take

children from a nearby club to a Christmas pantomime and supper. However, on the day, bad weather unfortunately meant that the balloon ride was cancelled but Barrat Luton took Dee for a helicopter ride instead and promised to re-arrange the balloon trip for the spring.

"I'm thinking of changing my CB handle from Longbow to Highflier," said Dee after the flight.

New 934!

Communications specialists Commtel UK recently introduced their new high-quality Japanese 934 MHz personal transceiver.

The Commtel 934 certainly "looks the business" and features an illuminated control panel with green LED channel number display plus high and low sound speakers. It also has reverse polarity protection and its built-in back-up power supply ensures the memory can store information for up to one week after the unit is disconnected from a power source. The microphone is a multi-function, high sensitivity unit with PTT button up and down facilities and the rig is fitted with slider mounts for easy installation and removal.

The bad news? It retails at £469. We hope to get our hands on one for a full review in our next issue. If you can't wait and you've got the readies, the units are available from Commtel UK, Talgold Ltd, Fengate, near Third Drove, Peterborough. Telephone (0733) 313444.

Basket Breaker

A chef from Leeds recently raised £200 for the RAF Association Wings Appeal by pushing a shopping trolley 30 miles.

Dennis Butterworth (whose handle, Grubspoiler, may or may not be appropriate) is a Friend member of the Yeadon branch and this was his second charity "push", his previous one having raised £150. Throughout the journey, he kept in touch with fellow breakers who pledged money towards the appeal.

Our thanks to Peter Farrar-Riley (Maxwell House) of the RAFA for sending us the story and photo.



Grubspoiler plus trolley



Commtel's new 934 rig

News from A.L.E.R.T.

The "Active Line Communications" network and the "Active Line Radio/Rescue Teams" will, in future, come under the heading of "A.L.C./A.L.E.R.T. (UK) Operations" in order to avoid any confusion or misrepresentation by other groups with similar names.

This organisation, which now boasts a membership of over 2,000, is certainly very active. They have recently introduced a new section called "Rangers" for junior members in which young people are trained in various forms of communication including flags, morse, sign language and, of course, CB radio.

A new role, "Staff", has also been introduced for people who are not on CB but who are willing to help with the organisation's many activities, which includes helping with local galas, rallies, agricultural shows, etc. Their address is: 3, Baker Street, Blackburn, Lancashire.

CB to the Rescue

CB radio came to the rescue recently and saved ten deep-sea anglers from disaster in the river Tay.

The drama began when the men decided to abandon their fishing because of a 10-foot swell. Their attempts to re-start the engines failed and they found themselves being blown towards dangerous rocks. The owner began to send distress calls on the boat's CB and the calls were picked up by Tom Gordon, a CB enthusiast from St Andrews.

Mr Gordon was chatting to a friend on channel 26 when he heard a faint voice he vaguely recognised. Moving to channel 9, he picked up what was clearly a distress call and

immediately contacted the coastguard at Fife Ness. The anglers were picked up by helicopter and the boat was towed home by lifeboat.

It certainly was a feather in the cap for CB radio, as a spokesman for the coastguard station said afterwards, "The sea conditions were very rough and there was a heavy swell."

"If another 15 minutes had passed before we heard about the fishermen, they could have been in desperate trouble."

Greybeard's Gleanings

Hello there. As promised I have news on some of the most popular of the varied makes of speech-processors currently available. To date, I've tested the Spectrum Communications SP1000, the Zenith P202, and the Cambridge Kits.

All three of the items tested worked similarly, though the SP1000 didn't allow the use of the mike when the unit was switched off. The P202 was a fine piece of equipment once one had learned how to drive it! The other two were easier to get used to, though the addition of some form of reference scale would have made them easier to use in multi-operator situations. The Cambridge Kit and the P202 used an internal 9-volt battery, whereas the SP1000 needed a 12-volt supply.

All of my test panel said that they thought that the idea of saving money by building the units from Spectrum and Cambridge themselves made these units much more of a 'personal' accessory. It also helped to explain how things worked. Both of these suppliers were quite prepared to assist any purchasers who found themselves in

difficulties. The SP1000 kit (complete with box) costs £14.66, the Cambridge kit costs £17.90 and the Zenith around £32.50 (ready built). The two self-built items are to be found in many amateur radio set-ups, and are highly regarded in those circles.

The addresses are: Spectrum Communications, Unit B6, Marabout Industrial Estate, Poundbury Road, Dorchester, DT1 1YA.

Cambridge Kits, 45, Old School Lane, Milton, Cambridge, CB4 4BS. The Zenith P202 is widely available at all good CB retailers.

Yeti from North Shields writes to tell me that he has found the Altai DM315E echo/power mike to be a worthwhile investment at approximately £19.00 and since he is the second person to tell me about this mike within a week, I reckon that it must be true! Thanks for the QSL, Gary. In answer to all the people that want to know where I got my QSL cards from: CP Associates, The Studio, Ledbury Place, Croydon. (Don't forget to mention "Citizens' Band" when you write!)

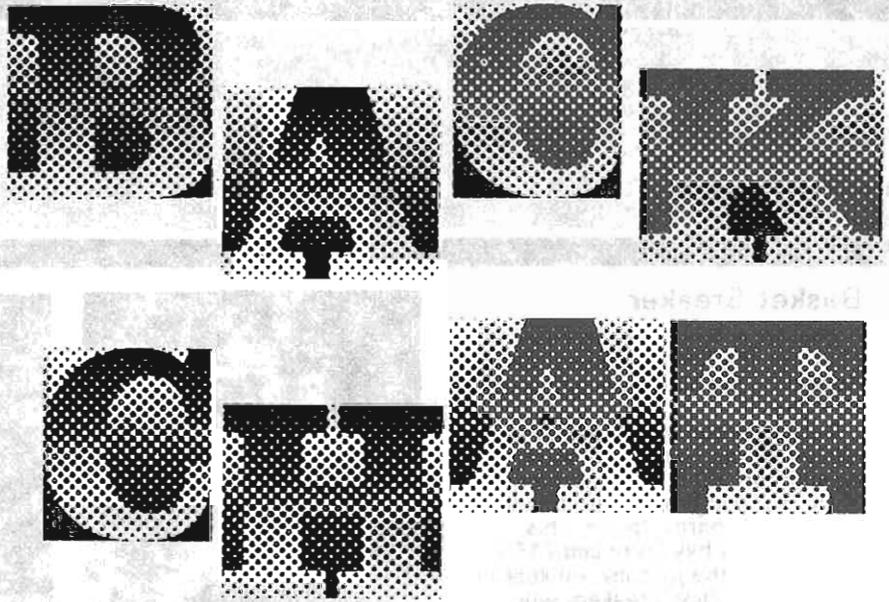
Northwood (Middx) CB & DX Club sound like a good club to me. The President informs me that they have several disabled club members. They also assist disabled newcomers to CB with getting set up and also keep a watch out for their interests. Their address is 28c, Eastbury Road, Northwood, Middx. They could do with a spare rig, twig and PSU to allow newcomers to try out. Maybe a kindly dealer might be interested in this request?

That's it for another month. Keep on writing (SAE please). 73's

The Grey Beard



Another look at what our readers write



Wally Hunting

Two breakers in the Essex area, who wish to remain anonymous, are working hard to clear up the airwaves...

We note with interest your article on the wallies in Update (November issue) and welcome your lead in this matter. We feel it is now time to let people know, through your magazine, what can be achieved from quite humble beginnings i.e. DF loops made up in my shed out of copper pipe, crocodile clips etc, progressing to a well-equipped, accurate, tactfully-operated mobile unit, employing the latest available equipment.

The vehicle is fitted with the Datong 4 twig DF system, mounted on a quick-release plate to a roof rack, and is backed up by the AKD PDF11M hand-held unit, both of which have been featured in your magazine. We work in close harmony with the local police who are on channel 9 under the callsign Smokey One and have received an unofficial call from the DTI, following a letter from us to them. Our effectiveness as a deterrent is undisputed in this area, with a 100% success rate against channel 9 abusers, bucketmouths, dead-keyers and people antisocial to disabled or lady breakers.

Word has spread and we get pleas for help from as far afield as Ipswich, Felixstowe, Southend and Harlow. In order to keep our skills finely honed, we run DF exercises and local breakers who help us see it as a challenge to try and outwit us by whatever means they can. The things they try by positioning and modifying aerials etc are enough to make your eyes water — needless to say, with little success.

At this point, we must stress that we are responsible, tactful and, above all, law-abiding citizens. In 99% of the cases we deal with, finding the offending station and blowing their cover is enough for there is no fun in being a wally whose secret lair is suddenly exposed to public view. In the

1% of hard-line cases, a word in a friendly neighbourhood community policeman's ear, followed by a visit to him, usually does the trick. Any persistent, recurring problem despite the above? At least we have all the relevant information to pass on to the DTI i.e. house, street, times of transmission, frequency and mode used, content of transmission and where possible, taped evidence. That way, our leg-work has been done at least.

Our working experiences, problems and their resolutions, know-how, technical aptitude and application are available to any bona fide club or organisation who can contact us through your good offices. If approached, we can assure them of fruitful enlightenment. It would be nice to know if we are alone in our efforts or if there are other groups operating in a similar manner (cowboy outfits not included).

Spare QSLs?

The Hussar from Lancashire can put any spare QSL cards to good use...

I am writing about a super lady breaker called Suzy Wong (personal, Susie) who is 70 years young and who has been on the rig for nearly a year. She has asked me, through your mag, to thank all her CB friends for keeping her company and for being so kind to her. If any breaker has a spare QSL card to send to Susie, they would be much appreciated. For obvious reasons, Sue wouldn't be able to return. Anyone wishing to help can send their QSLs via The Hussar, 13 Auster Crescent, Freckleton, Lancashire PR4 1JL.

Bucketmouth Busted

John from Ayrshire reports on a tale with a happy (for us, anyway) ending...

I am writing to you concerning "muppets" or "CB wallies". People ask what can we do about them and, if caught, would they be charged. The answer is yes. In my town a few months ago, a certain breaker was using obscene and offensive language

to another breaker. This was recorded and given to the police. Weeks later, they came up with a charge. He was brought before a court here in Ayrshire and was fined £150 so, if people stick in there, I think more "muppets" could be taken to court the same way and we will be rid of them once and for all.

An Irishman Abroad

Justin, who lives in Dublin, offers some opinions of British CB...

I am a regular reader of Citizens' Band since 1982 when I got my first CB radio, a Sharp 40 channel AM. When I had it first, I was on it all my free time but got fed up with it after about four months, as it was becoming boring speaking to the same people all the time. A neighbour who knew about radio then lent me a 120 channel CB with SSB. At the time, there was quite a bit of skip floating around and I remember my first day with the new radio — I made 50 contacts outside Ireland. Before that, I had never spoken to anyone further than 15 miles from my house.

I bought the radio and still have it. It's been converted and now has complete coverage of the 11m band (26.400 — 27.999) AM/SSB. I have spoken to DXers in six continents and I belong to over 20 worldwide CB DX groups, large and small. Over here, we are quite lucky as we don't get any hassle from the authorities unless TVI is caused. The government still has to sort out the pirate radio stations before they sort out CBers.

I was in the UK for ten days last summer and, while there, I bought a Harvard 410T 40 channel hand-held FM CB. The first time I used it was from a hotel bedroom seven storeys high in the centre of Manchester, but I was extremely disappointed with the results. I spoke to about four other breakers and each contact couldn't have lasted more than 30 seconds before another station keyed over me. I then spent some time listening to see what UK breakers were like. As far as I could make out, each QSO consisted of a list of numbers and obscene language.

After this unpleasant start, I discovered that it was not the same all over. I had cause to go to Chester and, on the journey, discovered how useful having a CB handy is. We somehow ended up on a back road but, with the help of local CBers, were directed to our destination. I also had very nice QSOs with breakers in Neston and many little towns and villages in North Wales. The last place I used the CB on the mainland was in Holyhead and, in my opinion, they are the best breakers I have spoken to. They were friendly and polite and gave everybody a fair amount of airtime on busy channels. In all the time I was there, I didn't hear one word of bad language. I also saw CB beat ham radio in Holyhead. A man in the next car had a 2m (144MHz) hand-held radio. In all the time I was speaking to CBers, he could not contact any ham operators.

My very last contacts to the UK

were from the car ferry going back to Dublin. For the first half of the journey I was talking to UK stations and, when in range of Dublin, I sold the hand-held and now continue to transmit on AM and SSB. As far as I'm concerned, they can't be beaten by a 40-channel FM system.



Can Big Brother help?

Obviously knowledgeable about such matters, The Blackjack of Sussex explains how computers could help the state of CB...

In answer to Albatross' letter in the December 1984 issue; yes, there is something that can be done — perhaps not for our present 40 channels but certainly to prevent the CEPT frequencies going the same way. This is it:

- 1) Before a rig can be bought, a valid licence must be produced. Then a log form is filled in with the owner's details and the rig's serial number (important, that) and sent to a central file — set up with our licence money.
- 2) To utilise the information held on computer, the new rigs are fitted with a PROM (Programmable Read-Only Memory) chip which contains the rig's aerial number in binary coded decimal form. This means that the average aerial number would be 32 bits long. The code could be transmitted as a series of high and low tones as the mike is de-keyed. "Oh, no," I hear you cry, "32 tone roger bleeps!" Luckily, when sent at an average computer rate of 1200 Baud (bits per second), the tones would last about 27/1000ths of a second!
- 3) Obviously, this tone would prove very useful. For instance, if a dead-keyer comes into your network, then a quick recording sent to the authorities could result in his tone being decoded and his file being checked. However, if a tone is not present (and it would be difficult to tell by ear), this would mean

he is using an illegal rig.

4) Some other advantages: if your rig is stolen, the serial number is broadcast every time the new "owner" keys up. Also, your tone would be virtually impossible for the average person to duplicate — just in case you were worried about being wrongly accused. But this would be a cheap idea to implement at the factory with perhaps only a couple of quid being added to the price.

5) Disadvantages are that a log form would have to be filled out every time the rig is sold — but, since any trouble caused by the new owner would be traced back to the old owner, this would probably be highly upheld. Another disadvantage is that some breakers may object to the 'Big Brother' attitude, but it is 1984 and do you really want another 20/40 channels of chaos?

Get Something Done

Paul Quasar of the Advance Group writes about their petition...

I am once again writing on behalf of the Advance Group, which is a Kilmarnock based group of CB enthusiasts dedicated to promoting and, more importantly, improving the legal CB system. As many readers of *Citizens' Band* already know, we launched a national petition through this page some months ago. The idea behind the petition is to force the government into introducing new, stricter legislation to cover both the use and abuse of this system. I'm glad to say that all is going well with the Advance Petition and we now have several clubs and individuals throughout the country collecting signatures for us.

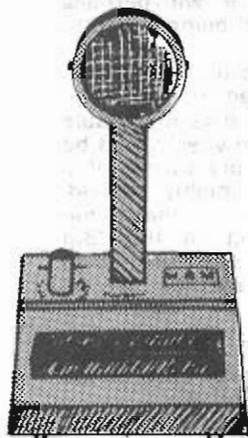
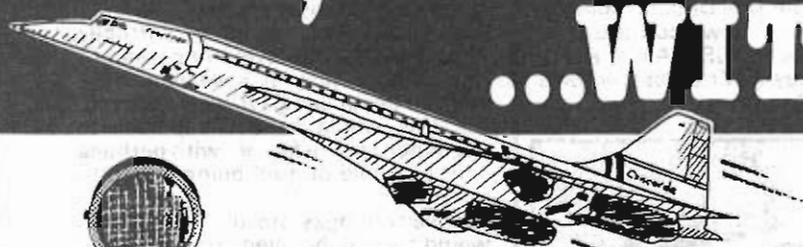
Having said that, there are still many clubs out there who have not yet responded to our previous plea for help. In view of its nature and the fact that all decent breakers stand to benefit if it proves successful, I feel certain that the lack of support by those I refer to must surely be due to ignorance of the existence of the petition.

Any CB club or user who would like either further information on the petition or to offer their assistance in its compilation can, as before, write to me, enclosing a SASE, at Advance Unit 01, PO Box 40, Kilmarnock, Ayrshire, Scotland.

One small point; we experienced a security problem with our PO Box earlier in the year. This has now been cleared up. If anyone wrote to us and got no response, please get in touch again. If any of you sent in a petition return and did not receive a letter of thanks, the same applies.

To those who have already signed the petition or assisted in its compilation, I would like to take this opportunity to thank you very much for your invaluable assistance. To those of you who have not, by choice, signed the petition or assisted in its compilation, I would like to remind you that you cannot fairly criticise the government's attitude to CB until you have made your views known.

UP, UP AND AWAY... ...WITH DIALS



TW-232 DX The exclusive base station microphone with speech compression amplifier is properly improved version of the TW-232S. A lot of striking features make this microphone suitable for use with any kind of communication equipment. The new acoustical design of the microphone housing, and the high permeability protection frame result in a better speech response. A new mike cartridge type with radio communication adapted response curve has been used. The incorporated tone control enables easy pre-emphasis adjustment in FM. But the very reliable shielding against strong high-frequency field-strength

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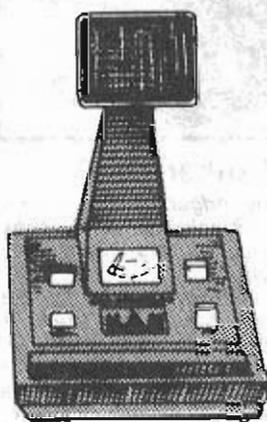


microphone element specially designed to be responsive to voice frequencies, thus resulting in outstanding voice clarity. Frequency response: 300-5000 Hz.

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HM014.
Standard microphone
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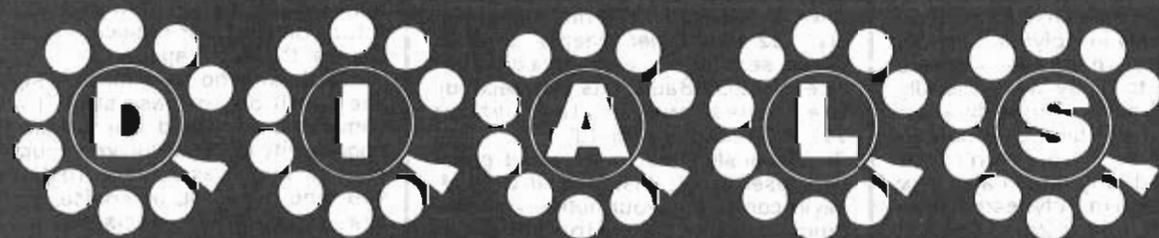
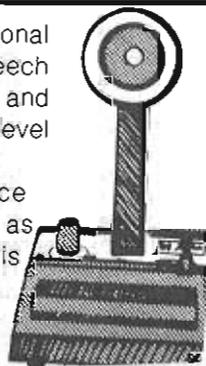


BIG PUNCHER. High-class base station microphone with built-in speech compression pre-amplifier. This dynamic type microphone is provided with volume and tone controls, and a meter for reading both audio output and battery condition. Powered by a 9V battery, but can be used with an external power source. A small trimmer enables adjustment of the maximum audio output to your transceiver, while the very responsive tone control allows microphone adjustment to the user's voice. Frequency response is 300-5000Hz. The BIG PUNCHER is universally wired both for relay and electronic switching.

DIALS PRICE £49.95

TW-232S. The TW-232S is a versatile, omnidirectional base station microphone with incorporated speech compressor amplifier. Excels not only by its rugged and elegant design, but also by the high modulation level capability. It is provided with a high quality dynamic element, and a special lock-switch. The extreme voice clarity makes this microphone very suitable for local as well as for DX-communication. Frequency response is 200-5000Hz. The TW-232S of almost legendary reliability can be used with all types of transceivers.

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CLUB NEWS

News from clubs around the country

Tango Sierra CB Club

As chairman of the Tango Sierra CB Club, Telford, I would like you to give our club a mention in your splendid magazine. We are a 50-strong mixture from all walks of life and we enter into all the local goings-on and enjoy life going to, and receiving visits from, other CB clubs.

Our members will try anything once; we were third in our local carnival, entered our raft in the RNLI races and came 20th out of 70, and we hold the Shropshire record for the Les Evans 24-hour Darts Marathon. In this, not only did we beat the previous record by over 16,000 but, more importantly, raised over £200 for the children's holiday fund.

We are a friendly lot who believe that CB has a very important part to play in our modern-day society.

Big T (Chairman),
Tango Sierra CB Club,
PO Box 431,
Telford,
Shropshire.

to a disagreement with some of the members. Most of the old members who have been with me since the beginning of the BE Group in 1983 have now rejoined the Oscar Bravo Group and we have recently been joined by a lot of new breakers.

Some of the club members seem to think that there could be some QSL cards outstanding and, if this is the case, could I ask club members to write to me at the address below with their QSL card and I will endeavour to reply in 48 hours. The same applies to any outstanding letters from any clubs.

If any club chairmen/chairwomen anywhere in the world would like to write to me, I will send them details of what the OB Group will be doing this year.

Blackeagle (Chairman),
Oscar Bravo DXing Group,
Broadway,
Box 100,
Admag,
Evesham WR11 4EJ.

Fish City Breakers
International DX Club

May I, as Secretary of the newly-

QSL

73's

TANGO SIERRA

51's

P.O. BOX 431
TELFORD
SHROPSHIRE
TF7 4RT

Farewell Bravo Echo

Since the beginning of September 1984, the Bravo Echo Group of Evesham has been disbanded, due

formed FCBI DX Club, take this opportunity of informing you of our club here in Milford Haven. We have been in existence for some three months and, at present, our membership is approximately 30 with additions every day.

The majority of our members are

old hands, having been members of other clubs at one time or another and are therefore very experienced in the field of DXing. The aims of the club are to foster an air of friendship and co-operation through the proper use of CB and to render assistance where possible. Membership is open to anyone aged 16 years or over, life membership costing £2 plus £1 per year afterwards for use of the PO Box.

We organise various functions such as eyeballs and entertainments for our members and are very interested in amalgamating with other clubs whose aims are similar to our own. We QSL 100% and this we would like to emphasise, as many clubs who say they do in fact do not. Holidaymakers and CB enthusiasts are welcome to take part in our activities at the club house which is in the Hubbertson Youth and Community Centre, Hakin, Milford Haven, and we look forward to meeting many.

**Secretary (FCB 01),
PO Box 32,
Milford Haven,
Dyfed,
West Wales.**

Nene Valley Breakers

The Nene Valley Breakers Club has been going for two years and we have a membership of over 105. Membership is accepted on a proposed and seconded system and we eyeball on the first Sunday of every month at the Asian Hall, Lincoln Road in Peterborough, between 2pm and 5pm (admission 30p). Our club meetings are held at the Royal Oak, Walton, Peterborough at 7.30pm on the second Tuesday of the month.

We have raised £50 for the local school for handicapped children and last year raised £539.64p for the paramedics in Peterborough, which enabled them to buy another heart monitoring machine. We are currently organising the sponsoring of a young handicapped boy in swimming 100 lengths of the local school pool. The money raised will help the school to buy a computer and PE equipment.

There are also three other committee members. We meet to discuss the club business once a fortnight. We send out QSL cards 100% and none of our members have let us down so far.

**Magnet (Chairman),
Nene Valley Breakers Club,
PO Box 37,
Peterborough.**

The Brotherhood of CB

November 1984 marked the Brotherhood of CB's first complete year - a very happy year, agreed by all members to have been a great success. The motto on our QSL is the most important rule in our club:



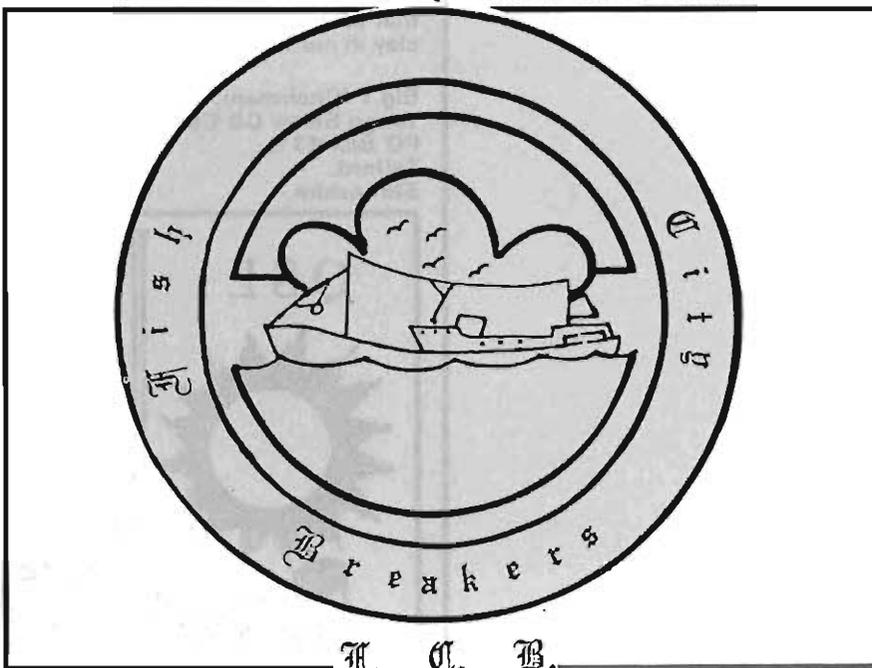
"In You Our Friendship We Trust". Our top membership number is BCB 61, and we meet on the first Tuesday of the month at the Scarlet Pimpernel, West Huntspill, near Bridgwater. There are more interested in membership friendship than number and any good breaker is welcome to apply for membership. Our club night has always been a pleasure to attend and, in fact, we are planning two nights per month to meet.

**Fred (BCB 01),
The Brotherhood of CB,
4 John Street,
Highbridge,
Somerset.**

disabled and our other aim is to make this a family club as a lot of other clubs in the area are not bothered about junior breakers.

We intend to get in touch with other clubs and see if we can organise trips to visit them and invite other clubs to our club which is open every Thursday at 7.30pm at Bucknall WMC.

We think that this club is the first in the country to be backed by their local radio station, and we also have the backing of the IBA. We will be starting a DX club soon with our own PO Box and will be getting DX and QSL cards very shortly which will be available to anyone who writes to us. The address of the club



Signal Radio and Stoke CB Breakers Club

We are a new club, having formed in October 1984 and are in the process of building up our membership which, at the moment, stands at 140. Our aim is to help as many charities as we can. Some of our members are

is: Bucknall WMC, Marychurch Road, Bucknall, Stoke on Trent. If any breaker wants any more information about our club, they may obtain it by writing to me at the address below.

**Alan Hughes (Minnesota Kid),
67 Brundall Oval,
Bentilee,
Stoke on Trent,
Staffordshire.**

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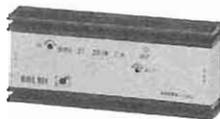
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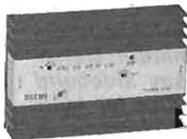
STABILIZED POWER SUPPLY MOD. BRS 27
Input voltage: 220 V a.c. 50 Hz - Output voltage: 13.8 V d.c. - Current: 3 A max. - Stability: better than 0.1% with mains variations of 10% or load variations from 0 to 3A - Protection: electronic with current limiter - Ripple: 1 mV at 3 A load - Dimensions: 155 x 135 x 85 mm - Weight: 1.5 Kg (240 V a.c. supply available) RRP £14.25



STABILIZED POWER SUPPLY MOD. BRS 35
Input voltage: 220 V a.c. 50 Hz - Output voltage: 13.8 V d.c. - Current: 6-10 A - Stability: better than 3% with mains variations of $\pm 10\%$ and load variations from 0 to 10 A - Protection: electronic with current limiter - Ripple: 1 mV with 10 A load - Weight: 4.2 Kg - Dimensions: 180 x 105 x 380 mm (240 V a.c. supply available) RRP £63.55



CB LINEAR AMPLIFIER MOD. BRL 31
Input voltage: 12 - 15 V d.c. - Max current: 2 - 2.8 A - Input power: 0.2-5 W RF - Output power: maximum 28 W AM - Frequency: 26 - 30 MHz - Operation: AM, FM, SSB - Input SWR: better than 1.3, externally adjustable - Dimensions: 120 x 50 x 40 mm - Weight: 0.2 Kg RRP £18.15



CB LINEAR AMPLIFIER MOD. BRL 35
Input voltage: 12 - 15 V d.c. - Max current: 4-4.5 A - Input power: 0.2-6 W RF - Output power: maximum 50 W AM - Frequency: 26 - 30 MHz - Operation: AM, FM, SSB - Input SWR: better than 1.3, externally adjustable - Dimensions: 120 x 79 x 40 mm - Weight: 0.3 Kg RRP £35.75



LINEAR AMPLIFIER MOD. BRL 210
Output power: 100 Watts AM maximum, depending on the input power - Input power: 0.5 - 10 Watt AM, 1 - 20 Watt PEP SSB - Input voltage: 220 V, 50 Hz - Frequency: 26-30 MHz - Operation: AM - SSB - FM - Output impedance: 50 OHM - Input impedance: 50 OHM - Input SWR: better than 1.3, internally adjustable - Instruments: output power indicator and modulation percentage indicator - Control: stand-by, AM - SSB - Protection: mains with 2 A fuse contained inside - Vacuum tube: 6X50P - Dimensions: 174 x 100 x 257 mm - Weight: 4 Kg - 15 pin adjustable 10 pin x RG 56 cable 20 cm long RRP £35.55



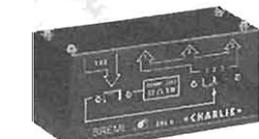
DIGITAL FREQUENCY METER MOD. BRL 8100
Direct insertion between RF source and antenna - Display: 5 digits - Power requirement: 11 - 15 V d.c., 150 mA - Resolution: 0.1 KHz - Gate time: 1 sec - Minimum RF input power: 0.25 W - Max RF input power: 100 W - Range of frequency: 10-150 MHz - Dimensions: (LHP) 112 x 36 x 152 mm - Weight: 245 g RRP £35.65



DIGITAL FREQUENCY METER MOD. BRL 8150
Direct insertion between RF source and antenna - Display: 5 digits - Power requirement: 11 - 15 V d.c., 150 mA - Resolution: 1 KHz - Gate time: 0.1 sec - Minimum RF input power: 0.25 W - Max RF input power: 100 W - Range of frequency: 10-150 MHz - Dimensions: (LHP) 112 x 36 x 152 mm - Weight: 245 g RRP £39.00



SWR METER-WATTMETER MOD. BRG 22
Range of frequency: 2 MHz - 150 MHz SWR meter, 26 - 30 MHz Wattmeter - Input and output impedances: 50 Ohm - SWR and Watt Indicating Instrument: 1 d.c. mobile coil, 50 μ A F.S. - Connectors: SO 229 - Measure of the R.F. up to 1000 W in 3 ranges 0 - 10, 0 - 100, 0 - 1000 W - Weight: Kg 1 - Dimension: 272 x 232 x 83 mm RRP £22.95



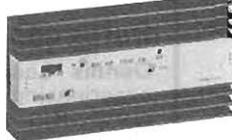
CB ANTENNA SWITCH 3 OUTPUTS WITH DUMMY LOAD MOD. BRL 5 'CHARLIE'
Impedance: 50 Ohm - Frequency range: 0 - 50 MHz - Max power: 500 Watt AM - Insertion loss: 8.7 dB - SWR: better than 1.2 - Connectors: SO 229 - Dummy load: 50 Ohm, 5 W max. It connects by means of the front panel selector - Weight: 0.32 Kg - Size: 121 x 69 x 60 mm RRP £10.95



LINEAR AMPLIFIER MOD. BRL 500
Output power: 500 Watts AM maximum, depending on the input power - Input power: 0.5 - 6 W AM - Input voltage: 220 V 50 Hz - Frequency: 26-30 MHz - Operation: AM - SSB - FM - Input SWR: better than 1.3, internally adjustable - Instrument: class 1.5 mobile coil instrument - Output and SWR indicator, internally lighted - Controls: STAND-BY, AM, SSB, output power switching 250/500 W, SWR reading, on/off current switch (reflected, direct power, 7 Watt) - Protection: mains with 5 A fuse - Vacuum tube set: 5 x EL519 common grid connected - Cooling: by fan - Case: made of 10/10 sheet with two front handles and two handles on the upper cover - Dimensions: 410 x 220 x 210 mm - Weight: 20 Kg (240 V a.c. supply available) RRP £326.85



ANTENNA MATCHER MODEL BRL 15
Frequency range: 25-40 MHz - RF power: 100 W max. - Weight: 0.32 Kg - Dimensions: 120 x 55 x 55 mm - RF power loss: under 5% 0.2 dB RRP £8.80



CB LINEAR AMPLIFIER MOD. BRL 40
Input voltage: 12 - 15 V d.c. - Max current: 7 A - Input power: 0.2-5 W RF - Output power: maximum 15 W AM - Frequency: 26 - 30 MHz - Operation: AM - FM - SSB - Input SWR: better than 1.3, externally adjustable - Dimensions: 160 x 79 x 40 mm - Weight: 0.3 Kg RRP £40.65

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NAME _____

ADDRESS _____

TEL No. _____

I have tried a Sirtel DV275 antenna on top of the 20ft alloy mast which is stayed with six braided steel shrouds but the SWR reading is always in the red. Could you please tell me of a suitable antenna and give me any advice about fitting a CB into a wooden hulled boat?

A Almost any antenna will suffice so long as it is grounded but, since it might be difficult to create a proper earth on a craft such as you describe, I suggest that you obtain a special marine antenna. There are a few about, made specially for CB and a good CB shop should be able to help. You do not say how you have mounted the existing antenna but you should remember that if the antenna is not insulated from the mast on which it is mounted then the radio will see the entire structure as an antenna, resonant at a much lower frequency than 27MHz, which would account for the high SWR.

I can imagine few other problems

first class. I recently spent a day at a similar station at Rampisham, in Dorset, where I was allowed to make transmissions from within the station grounds on any frequency for which I was licensed. I caused no interference to their signals, neither did I experience any from them. It was interesting to note that their own engineers operate an amateur station from the site, using all frequencies including 28MHz, without any problems.

I was also shown their interference log for the last twelve months, which showed only three cases of interference to the surrounding populace, one of which showed their transmissions being received on a domestic vacuum cleaner. I was also taken to the local village pub, where the locals seemed to enjoy an excellent relationship with the BBC staff and, despite talking to some thirty or so people, I did not hear one word of complaint.

Though Beoley might cause a few problems initially, I am confident that

certain that your transmissions are the source of the interference and, if your neighbours will co-operate, this can be made easy by keeping a log of the time of your transmissions and asking them to log the times when they get interference. Comparing times will remove any doubt. It is impossible to offer you an instant cure for the problem without a great deal more information, though either you or your neighbours are entitled to approach the Radio Investigation Service, who will then look in to the problem and offer advice on how to avoid interference.

Under the terms of your licence you are obliged to avoid causing interference and, as a last resort, I am afraid that the RIS have the power to close your station down, though they are unlikely to take such drastic action if a cure can be found.

Oops!

In a reply to A. K. Bryant's question on antenna lengths in the July edition a slip of the pen led me to suggest that



CB at sea (see "A life on the ocean wave")

associated with this type of installation, except where the vessel is fitted with any form of generator, which might give rise to interference, since the wooden hull would offer no shielding. In such a case the easy solution would be to encase the generator in a metal box.

Big Brother?

Up in Stratford on Avon, Mr. R. Dyer (and quite a few others) are more than a little apprehensive . . .

Q. The BBC are proposing to build a World Service radio transmitter near to my home. Could you please tell me how sensitive my rig might be to interference from this station and whether it would be easy to filter out any such interference?

A. It is by no means certain that you will suffer any interference as a result of the proposed Beoley transmitter, Mr. Dyer. Although it will transmit very high powered signals (somewhere in the order of 500 Kw), its aeriels will be highly directional and its equipment

local fears about RF breakthrough are largely unfounded.

TVI time again

From Vincent Miller, (Victory V) in Saffron Walden, comes a heartfelt plea.

Q. I am being accused of causing TVI to my next door neighbours, although both my rig, an Amstrad 901, and twig, a Thunderpole 2, are legal and the aerial is sited about 35 yards away from their houses. Is it possible that I can cause TVI in these circumstances and if so, what can be done about it?

A. The answer to the first part of your question, Vincent, is a simple "Yes". TVI is a very strange phenomenon and can strike almost anywhere, though the fault may not necessarily lie with the transmitting station. Some TV sets are more prone to interference than others and there are a number of ways in which an unwanted signal can get into a TV set.

The first step is to establish for

his antenna was too long for his purpose, when, as pointed out by Tapwasher, of Cornwall, it was actually a bit short, as his SWR was highest at the bottom of the band.

The lower the frequency in use, the longer the antenna needs to be, so that a higher SWR at channel 1 than channel 40 should be evened out by a slight increase in length, whilst a high SWR at the top of the band can be corrected by reducing the length until the antenna resonates through the band.

Thanks to Tapwasher for spotting the not-so-deliberate mistake.

Problems should be sent to:
 • CB Q & A, Citizens' Band,
 PO Box 35, Wolsey House,
 Wolsey Road, Hemel
 Hempstead, Herts

IN SEARCH

Radio scanning is a fast-developing hobby. We look at what scanners are available on the market — and what they can do

Not everyone understands the pleasures to be had from scanning but anyone who has been tuning through the radio in search of Radio 1 and has been fascinated by the stray signals their tranny has picked up will have some inkling of the fun that can be had from eavesdropping.

Scanning is predominantly an American hobby and the state-of-the-art scanners come from America via the Far East and were consequently often in frequency bands that applied to the American communications systems. Nowadays the frequencies to be scanned are usually programmed in to cover the part of the spectrum that you want to listen to.

Most scanners are now microprocessor-controlled which means that the frequency is synthesized rather than crystal-controlled. The microprocessor means that more facilities apart from the frequency synthesis are available than on the early predecessors.

All scanners, if it's not stating the obvious, scan by checking in sequence a set of pre-programmed channels until a signal is located. Many modern scanners also have search, where a specifically nominated range of frequencies within a particular band are searched for signals. Busy channels are stored in a memory and ensures that that frequency is likely to have a signal on when listened to in the future. As scanners now cover a wide frequency range and hunting for signals can be like looking for a needle in a haystack, this is a useful facility that can increase the success rate for the scanner enthusiast.

Delay is also a useful facility. Many older, less sophisticated scanners will resume scanning after a located signal disappears. A delay control will keep the scanner on the frequency for a short space of time to locate a further response.

A store button will let you walk away from your scanner and later recall the channels that have been active in your absence. A priority control will enable a particular frequency to be checked more often and will override other received signals, and such sophisticated additions as digital clocks, 'count'



The Revco 2000E

which keeps track of the number of times that the set has stopped on a particular channel and microcomputer links are now appearing on scanners.

Scanning as a hobby has many devotees who are prepared to pay the often high costs of scanning equipment and to shuffle through the frequencies in search of that elusive signal. We look at several sets available from £160 to £600 to see what you get for your money. The sets mentioned are not always the newest but are tried and trusted products that have proved their worth.

Garex Electronics of Tring, Hertfordshire, are the main distributors for Revco Electronics and the two companies have been continuously associated with programmable scanning monitor receivers for several years and, in fact, were pioneers in this field.

Three types of scanner are available from them at the moment. The Revco RS2000E VHF/UHF scanning receiver (extended coverage version) covers frequencies in the range 60-180 MHz (no gaps) and 380-520MHz. It has a 70-channel memory which is addressable in blocks of 10 for ease of management, and an "automatic search and store" which records active channels in the memory. Other features include the

ability to lock out unwanted channels, count of activity (on a selected channel) and scan or manual control. Its "priority channel" feature, when selected, checks the frequency in



A very up-market scanner — the SX-400.

OF SIGNALS

Memory 1 every two seconds. As well as its internal loudspeaker and telescopic whip for local signals, it has sockets for external antennas and speakers. The price tag of £259 includes VAT and delivery.

The SX200N, from the same people, has four frequency ranges: 26-57.995MHz; 58-88MHz; 108-180MHz; 380-514MHz. Its 16-channel memory can be scanned at



The 16-channel SX200N

two rates — Fast (8 channels per second) or Slow (4 channels per second). Similarly, there are two Seek rates — Fast (10 channels per second) and Slow (5 channels per second). Again, an internal whip and speaker is fitted, its audio output is 2 watts and its



clock is accurate to within 10 seconds a month. Specially designed for the European market, the SX200N costs £299 which includes VAT and delivery.

The very up-market SX-400 features all you would expect from a professional scanner — and more. It covers frequencies in the range 26MHz — 520MHz with a signal-to-noise ratio of 45dB and pushes out 4 watts of audio output. The scan and seek rates are the same as those for the SX200N but the SX-400 has a 20-channel memory. Naturally, it also features selectable channeling, narrow/wide selectable bandwidth,

carrier and audio squelch, priority channel, AM noise limiter and selectable clock.

The unit retails at £598 including VAT, but there are also some interesting optional extras. For instance, extended coverage can be provided by a series of external RF converters, the range according to customer requirement. An external signal strength meter/amplifier with adjustable dynamic range is also available. For an extra couple of hundred pounds, you can buy a special data interface for external computer control. This could enable the user to create a data bank whereby the



The AR 2001 scanner from Lowe Electronics.

recording of frequencies and time could be fed and stored into the computer. This would also provide remote control scanning and high-speed reprogramming of all 20 channels programmed in the computer.

As in most forms of communications, antennas are all-important and Revco's *Revcone* discone antenna, priced at £27.45, is specially designed for use with the SX200N. It is a lightweight broadband antenna designed for monitoring purposes and provides full VHF-UHF coverage. Choice of cable is important, too. Lightweight cable such as UR43 is suitable for 20 or 30 feet but, for greater lengths, low-loss UR67 is better. However, since heavy-duty (10mm dia.) cable such as this is difficult to connect to a receiver, Garex stock a short "tail" of lightweight cable with plugs which acts as a reducer for £1.50. The address of Garex Electronics is: 7 Norvic Road, Marsworth, Tring, Hertfordshire.

The AR2001 scanner from Lowe Electronics was featured in our

September issue but, in case you were unfortunate enough to miss it, the following information is a précised version. The AR2001 covers 25 to 550MHz with no gaps and is a marvellous piece of machinery. As well as the standard features like scan, lockout, priority, clock, search, delay etc, it also features a very informative LED display which shows not only the frequency but also which of the various features have been activated such as lockout, delay, scan and so on. The membrane-type keypad is economical but comprehensive in that many of the entry keys are dual-function. Furthermore, a "bleep" is sounded whenever an entry is made and a buzzer alarms when an illegal command is entered, accompanied by the word "ERROR" on the display panel. It also features computer compatibility so that all the keypad functions could be controlled via a home computer keyboard and various programmes can be written, dependent on the user's level of expertise. The AR2001 is available from Lowe Electronics, Chesterfield

Road, Matlock, Derbyshire, and sells for £365.

The Bearcat range of scanners is well-known in the scanning fraternity and Radio Shack of 188 Broadhurst Gardens, London NW6 are the sole UK distributors of the range. The Bearcat 150 scanner is a 10-channel FM unit which covers frequencies in the ranges 66-88MHz, 144-174MHz and 412-512MHz. It is a mains-only scanner which retails at £159.95.

The Bearcat 200 is a 12v/mains FM scanner with 16 channels. It covers the same frequency ranges as the 150 model and retails at £184.95.

The Bearcat 20/20 is a 40-channel mains/12v scanner which covers the same frequency ranges as the 150 and 200 but with the addition of the aircraft frequencies (113-136). Also, it is AM/FM switchable. At the time of going to press, Radio Shack were out of stock of this model and were waiting for delivery, so the new price has yet to be confirmed, although it is likely to be over £300. All models have audio outputs of 2 watts and all are supplied with integral whips and connections for external antennas.

"The Bearcat range of scanners is well-known in the scanning fraternity..."



The popular Bearcat 20/20.



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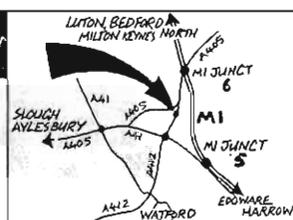


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**David Shepherdson
with the latest news
from clubs
home and abroad**

COMMUNICATION THE QSL WAY

It looks like this month I'd better start off with a few moans and reminders. First of all, may I please, please ask you to check the weight of any QSL package you may send out. A single 13p or 17p stamp is okay for three or four cards, but when you start sending out the great bundles I know most of you do send, your package soon creeps over the 60 gram limit. This month I've actually had a packet without a single stamp on it! Also, to safeguard your post, please try to remember to put your return address on the envelope in case of problems. I've had a letter from David (VS 899) who lets me know that there was another chain letter making its dubious way around. This one, like most, threatened dire things if you broke the chain and you had to send \$1 to the top address and so on. If you get one of these bits of scrap, either chuck it away or send it to me, with a covering note, and I'll fill my bin with it!

The final moan is about piracy! This subject keeps cropping up and this time I've had a few letters about one "QSL'er" and his card. The QSLer who paid for the design and printing has been in touch, as has the artist who were both very angry and upset. Quite what the connection is between Big Foot (Ken) whose card has been ripped-off and 'Count Dracula' of Lewes who has done the photocopying I don't really know. But the Count has lifted, in its entirety, Ken's Big Foot design, whilst keeping Ken's "trade mark" which refers to his living. The Big Foot card has been printed on gloss card and is well worth collecting, while the rip-off photocopy is on matt card and is badly smudged and messy like so many photocopied piracies. When someone has a card designed and printed, they have paid good money for them and someone has the copyright on these! This sort of rubbishy result does not belong on the

UK QSL scene, but in a bin somewhere! Finally on this subject, when I refer to photocopies, I do not mean those which are personal cards or slips of paper with original designs, only these messy rip-offs! Having mentioned Ken (Big Foot) I think it's only fair to mention his club too. This is the excellent Sea Dragon of Norfolk. This club, in return for 5 + of your signed and dated QSL Cards and a large SASE (18p stamp), offers your SD No, (XYL/M if required), ID Card, mini-certificate, exchange cards and invites, club stickers and tourist info. Also available is a club stamp (£3) and club cards (Currie type). For info only, a SASE would be appreciated with a request for same. This applies when writing to any club, free membership or otherwise, as it usually helps them to reply much earlier.

I've got some change of address requests now: first out of the postbag comes Helen (Green Velvet) of Bury; thanks for the view card Helen. Then Joan (Ladybird) who has moved from Baschurch to Kirkby in Ashfield and Jim (Coachman) who's moved from Ocker Hill to Princess End. Jim says thanks to all who've QSLed him in the past and anyone who would like to QSL him will get 100% return. A few more names and addresses here, starting with Mike (Dracula) and his dad (Slimline) who has just started QSLing and would appreciate some help building up their collections. They have a joint gloss card with quite a descriptive cartoon! From the Channel Isles hails Rob (Alchemist) of Jersey with a fine mixture of cards. Thanks for the suggestions Rob, especially about extra pages, but I think you'll have to lobby He Who Must Be Obeyed for that. From St Brelade QSLs George (F M 01) and Eddy (E B). Popping over to Guernsey, I've had a letter and cards from Hi-Flyer No 1000. As mentioned back in the October issue,

Tony (H F 01) promised that the 1000th member would receive his 50p membership fee back, cost of postage and a bumper bundle as well. The 1000th member was Mick (Jet) of St Martins and he is very pleased with his package. Well done Tony! To join the Hi-Flyers, just send 50p and a large SASE plus 6 personal Cards in return for Unit No, ID card, swap cards and invites, stickers etc.

Several months ago, I mentioned the Sefton Breakers Club of Liverpool (SBC). Shortly after that I got a letter from someone who had written to the Club and had the letter returned marked 'P O Box Not Known'. I wrote to George (SBC Chairman) at his home address (which I knew) and it appears that someone had been mucking around with the club's post, but the club is still going strong. Talking about going strong, our congratulations go to Ray (Radio South West) on his marriage to Edith and also to Ray on being elected the new UK Rep for POMA FCCs. For details of these superb collector cards, drop Ray a line enclosing a SASE. Prices start at around £48 per 1000. A threatening note arrived from that Imperial Stormtrooper, Nick (Tie-Fighter Club 01), to remind me that he has some POMA club cards available to members, price on application to Nick please. Several months back I asked for info on the Dutch Trucking Club of

Holland. In last month's issue I mentioned a few words about it, but since then I have been receiving more letters about this rip-off club. If you haven't sent your £12 off to this "club" then *don't!* If you have, all I can suggest is that you contact the Dutch Embassy and see if they would be willing to help. There are many genuine European clubs about, but there are those like the Dutch Trucking, the following (taken from a list in a letter from Toucan Club of Venezuela): Tongenslijpers (Belgium), Leopard Group, Face of Germany, Blauw Baard, Peugeot (Germany) and World Amateur Group, also of Germany. The following clubs are known to have folded: Super Stinkey, Jet Set, Kiwi, Luxembourg Sidebanders. Also Radar QSL card printers have closed down. If you have any forms for these clubs, please do not pass them on so that someone else may lose their money. Anyway, I've a long letter to reply to for Jorgen (Toucan 001) so there may be more info next month from that source.

One European club (of many) that I can recommend as a 100% genuine club is the Voice of Amsterdam DX Group. For only \$2 (US) or equivalent in sterling, you receive your VA No, ID card, prefix list, roster, stickers, QSL card and welcome letter. Extras available include logbooks, QSL cards, stickers and so on. Ron and Caspar

(VA 1 & 2) write very good English and they do return 100%, but allow 6-7 weeks from posting. Another genuine club over the water is the Berliner Bear of Germany. For £3 and 5 of your own cards you can expect your BB No, ID card, certificate, club stamp, exchange cards and invites, tourist info or, for £8 with 30 cards, you get one of the largest club packs I've yet seen. Also the BB Club is running its 1984/1985 QSL competition. There are three classes with 50 prizes in each: Class 1 Best Full Colour Card; Class 2 Best Coloured and Class 3 Best Black & White/Red/Yellow etc. The cards *must* be personal, not club cards, the last date for entry is 30th April and all entries should be sent to Knut (BB 01) direct. There's no entry fee so have a go at winning one (or more) of the 150 prizes!

Some UK Clubs that get a mention here start off with the Sierra Charlie of Southport. Their President (Susan) has written to let me have an update on the club. Their £5 pack (with 10 personal cards) now includes your SC No, ID card, certificate, 15 club cards, exchange cards and invites, XYL/M No (on request), notepad, stickers, roster and club stamp. Also, the club hopes to have some Poma FCC cards soon. Details sent with your pack. The Foresters DX QSL Club of Gloucestershire has club cards available for £5 per 100, or



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 Joan (*Ladybird*)
 Jim (*Coachman*)
 Mick (*Dracula & Slimline*)
 Rob (*Alchemist*)
 George (*Foxtrot Mike 1*)
 Eddy (*Echo Bravo*)
 Mick (*Jet*)
 Ray (*RSE/POMA Rep*)
 676 CPL (*Ross*) Moore
 John (*Dolphin One*)
 Frank (*Pigeon Man*)
 Joyce (*Sherry Brandy*)

16 Timberhurst, off Bridge Hall Lane, Bury, BL9 7NZ.
 71 Southwell Lane, Kirkby in Ashfield, Notts. NG17 8NG.
 20 Greensill Ave, Princes End, Tipton, W. Midlands.
 P P Box 15, Selby, North Yorks.
 Haute Entree, Rozel, St. Martin, Jersey, C.I.
 Flat 4, H Block, Quennevais Park, St. Brelade, Jersey.
 B Don Farm, St. Brelade, Jersey, C.I.
 P O Box 83, St. Peter Port Guernsey, C.I.
 P O Box 106, Canterbury, Kent.
 'Nero' 2.R.T.R., B.F.P.O. 38, West Germany.
 P O Box 106, Canterbury, Kent, CT1 3YN.
 15 Britannia Road, Brentwood, Essex.
 6 Fernbank Drive, Leeds West Yorks, LS13 1BY.

John & Janet (*Jet Liner*)

Jim (*Papillon*)

Barbara (*Mumbar*)

34 Parkside Ter, Cullingworth, Bradford, BD13 5AD
 P O Box 6, Peterhead, Aberdeen, Scotland

P O Box 1, Liverpool. L22 4RT

QSL Club Addresses:

Berliner Bear QSL Swap Club

Boomerang Radio DX QSL Club
 Cutty Sark QSL Club

Foresters DX QSL Club

Freightliners DX/

Great British DX QSL QSL Club
 Hi-Flyers of Cardiff Cardiff, CF5 5BZ.
 Romeo Delta X-ray DX QSL
 Sea Dragon DX QSL Club

P O Box 2923, D-6750 Kaiserslautern, West Germany

P O Box 156, Wolverhampton WV6 9DX.
 47 Gurdon Road, Charlton, London SE7 7RP.
 Paynes Cottage, Popes Hill, Newnham, Glos, GL14 1LD.
 P O Box 314, Brintree, Essex. CM7 7ND.
 P O Box 5, Consett, Co. Durham DH8 8NG.
 428 Cowbridge Rd West, Ely

10 Wallace St, Rutherglen Glasgow, G73 2SA.
 P O Box 2, Sheringham Norfolk, NR26 8TY.

QSL Addresses

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Inverurie, Scotland, AB5 9RY.
P O Box 1500, Caracas
1010-A, Venezuela
S. America.
P O Box 32063, NL-1003 HB
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Ensign Cards

personalised for £6 per 100. The prolific club, Boomerang Radio of Wolves, now offers the following for £6 and 10 of your personal, signed and dated QSL cards: BR No, ID card, certificate, mounted stamp, exchange cards and invites, 14 club cards, roster, tips, seals, pen/key-fob, biro. Roger (BR 01) boasts that they are the first club to offer these free to your XYL/M:- BR No, ID card, certificate and pen/key-fob, biro etc.

Another club that I would like to mention is the Freightliner DX & QSL Club of Essex. There has been a rumour going around in my area that this club has folded. Nothing is further from the truth! Ian has assured that not only is the club still running, but for £2 and 5 cards you can expect a superb package which is well worth sending for. Also, the new Freightliner DX Section has now started. Any FL member can obtain membership of the DX Section for a SASE, or if you'd like to join this, it'll cost you £5 plus cards. For details only, a SASE to Ian please. Ian also mentioned a club called the Jolly Roger of somewhere in the UK. This club owes himself and several others items from over seven months ago for which these people paid £7 each. Can anyone help them with info on this "club" please? It really upsets me when I hear about this sort of unpleasantness. This is not what good QSLing is about is it?

Before I get too depressed, I'll try to cheer myself up with some names from all over! I've a card from Ross Moore serving in West Germany. Ross sends out a super mixture and would appreciate some QSLs from you. (Remember to mark your envelope 'Forces Mail'.) John (Dolphin One) sends a super Poma of Canterbury Cathedral and would appreciate a

mention, so here we are. Frank (Pigeon Man) of Essex sends a nice card out, as does Joyce (Sherry Brandy) of Leeds who uses a plastic card as well as Ensigns. Staying in my area, here's John and Janet (Jet Liner & Silver Star) of Bradford. Jim (Papillon) of Scotland has quite a descriptive card. Thanks for the kind words Jim, flattery will get you anywhere! That's about it, lots more to get through but I'm out of space again. Just time to mention some forthcoming events. There's a QSL meet at the Falcon Hotel, Cliftonville,

organised by the GBDQC and RDX Clubs. Keep watching this column for details.

Anyway, that's it for another month. Sorry there has been so much gloom and doom in the column this month, but these things must be said as they do spoil our great hobby! If you'd like a mention, or have some info, or are organising a forthcoming event then drop me a line and I'll see what can be done. You can send it c/o the magazine or the Dragonrider Club address. If you'd like a reply, please enclose return postage to assist. Until next month, take care and stay lucky.

Dragonrider One

73's QSL FROM 88's

SHERRY BRANDY



Personal JOYCE
6. FERNBANK DRIVE, LEEDS, WEST YORKS

Margate, Kent organised by the Cutty Sark Club of London on the 13th and 14th of April. Admission is 25p per day and many European clubs are expected and all are welcome. For further details please send a SASE and request info from Dave Bradshaw (CS 003). Just in are a few details of the 1985 Easter QSL Convention to be held in Stanley, Co Durham this year. Provisionally, the times are 11 a.m. to 4 p.m. on Sunday 28th April. Admission is free and many UK clubs are expected. This year's meet is being



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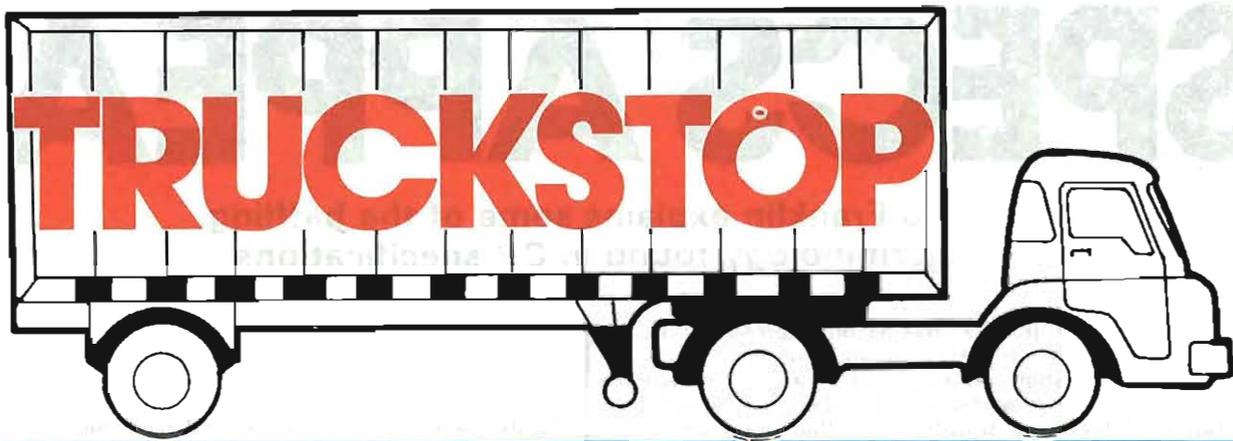
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Gismo describes the lifestyle of a trucker

All breakers are affected by wallies, mike keyers, music players and idiots, but this is, at most, a nuisance to most breakers. Truckers, however, are affected more as they use the CB for directions, road reports (10-13s), smokey and ministry reports. I have received a letter from Bootneck (Bob Morris) of Mattishal, near Trailer Town (Dereham) in Norfolk. He has been pushing big wheels for some time and his XYL (Country Girl) monitors the one-nine on the A47 between Dereham and Canary City (Norwich). Bootneck is the local representative for the Routiers and is a keen CBer. After he read Update in the December issue, he says he wants to know just who to complain to about CB abuse. He goes on to say that we should consider publishing a list of national officers of the Radio Interference Service with their land line numbers. He suggests that if the list was circulated to truckers' clubs and CB organisations/clubs, the chances are that a fair proportion of the idiots would cease to annoy genuine breakers. Good idea, Bob. How about it, Editor?

Now that Bob has reminded me of the Routiers club, it gives me a chance to get going on our working conditions. Drivers must have the worst image of any working man. The long-distance driver — or trucker, as we now like to be called — does a hazardous job, works long hours, performs daily miracles on urgent deliveries and works very efficiently. To be a trucker, you have to be a good driver by passing the HGV test, which isn't cheap nowadays — nor is it easy. Having passed your test, you have to navigate, read maps and work out routes bearing in mind width, height and weight restrictions. This is easier nowadays; just shout for directions on the one-nine! With any luck, an experienced trucker will put you right. Next on the list is loading up, checking on and securing your load. The HGV test tells you nowt about this! Safe and secure loading takes years of experience; learning the quickest, easiest and, most important, safest ways. Incorrect weight distribution is now a costly mistake if you happen to get stopped by one of the three bodies who check up on our weights: smokies, weight-watchers (ministry men) and trading standard weights and measures inspectors, all of whom spend time checking up on our skills.

Drivers' hours mean tachographs (frisbees or spin-a-discs), which show every time you pull up — even for a 10-100! No other industry would put up with the rules and regulations governing a truck driver's hours. We are the only workers who get fined for working too hard or too long. Once again, smokies and ministry men are always pulling up big wheelers to have a shuffy at the discs.

To be a driver, you must have a fair knowledge of mechanics. If you break down or hear noises, you need to have an idea what is wrong before you ring your gaffer. Yet again, there are the wheel-tappers (vehicle inspectors), usually accompanied by smokies, checking

up our vehicles. And, once again, if there is something wrong the driver gets fined.

On our backs we have our gaffers chasing us up if we can't get round quick enough for him. On his back is his customer, and their customer on theirs. Three potential causes of aggro. Add onto this the weather; fog, ice, snow, hail, heavy rain. Even hot summer days can cause problems, by melting tar and overheating cooling systems — not to mention cabs like ovens.

Motorways are not always plain sailing. We have pick and shovels (road works or "paddy's playground" as we used to call them on AM), fender-benders (road accidents) with long tailbacks. The chicken box has saved us from long delays on many occasions.

We have fought our way through a 12½-hour spreadover — what next? We have to find a lorry park and spend the night in an unheated cab. The first rule in Britain is that nobody wants a lorry park near them! Most towns don't have them. If they do, they are expensive, muddy and most have very primitive facilities. Drivers used to earn good money but factory workers earn similar wages nowadays. Even night out money has not kept pace with inflation.

If I have upset any trucker who sees things differently, I apologise. I think that the trucker has the most important job in the country. Everybody depends on everyday supplies and, if every trucker stopped work, the country would grind to a halt within a few hours. Why do we do it? We probably don't know anything better!

There are many organisations for drivers, each one pulling its own way. How about liaising between them to improve the driver's lot? A few that come to mind: TGWU, URTI, Routiers, IRTU, Owner Drivers and numerous trucking clubs. Perhaps we could get these organisations to get their heads together — or should I say get their bodies together! A policy of priorities could be thrashed out and pursued in unison to maximise effect on the authorities. With winter upon us, how about starting off with getting cab night heaters made compulsory?

My one-nine monitor this month is Blue Mint on the west side of Northampton. This cheerful lady is on every morning from 6 to 9am and occasionally during the day, giving out 10-13s on the Mike One and numerous directions to the big wheelers in the Northampton area. Blue Mint is trying to set up a roster of other breakers in the area to cover the whole day. Anybody interested? Blue Mint's biggest problem is to find a clear channel/to move onto from the one-nine. Blue Mint works part-time as a self-employed driver and caterer. She regularly cooks for dinner parties and will even take your granny down to Heathrow if you want! The M1 at this point must be the busiest piece of road in the country, so good luck to you Blue Mint, you're doing a marvellous job.

With the weather at its worst now, keep your wheels off the grass and smokey off your back door, take care 'cos we care. 10-10, Gismo.

SPECS APPEAL

Lou Franklin explains some of the baffling terminology found in CB specifications

Now that CB in the U.K. has become somewhat more respectable it's time to arm yourself with a basic knowledge of what to look for, performance-wise, when trying to buy a good rig. Often you'll discover a wide range of technical specifications that don't seem to agree with the actual performance of the equipment. Manufacturers and salesmen tend to get carried away with their constant game of numbers and one-upmanship, especially when the competition has been fierce. Specifications are an aid to making the right equipment choice, but they can also be very misleading. For this reason I always advise breakers to try an actual on-the-air test in addition to studying the rig's specs. Any reputable CB specialist dealer who expects to do business for very long will anticipate such requests and should be perfectly willing (and equipped) to let you shop-test a prospective rig before you buy.

In this article we'll group CB specs into the main categories of General, Transmitter, Section, and Receiver Section, and then proceed to explain exactly the meaning of all those strange numbers. Before doing so, I wish to detail one extremely important area which is mostly ignored by salesman and buyer alike; namely, the subject of *voltage regulation or stabilisation*. From personal experience repairing thousands of rigs, this is one area that needs more explanation if you hope to purchase the best quality CB rig.

Voltage regulation or voltage stabilisation simply means that the DC voltage used by the rig remains rock-steady and constant, regardless of variations in current demands. Generally, the *transmitter* section requires about three times more current than the *receive* section, and will often be specified in the range of 1.7 DC amps up to about 3.0 DC amps for a SSB rig. Receive mode current consumption is only about 0.6 DC amps on average. This subject becomes very important when planning to operate a mobile unit in the home on a mains converter as many breakers do. (A "mains converter" is simply a special power supply accessory which changes the 220 VAC house mains to 13.8VDC that runs the rig). Many cheap converters are rated at only 2.0 or 2.5 amps continuous output; if the rig draws more than this, strange things may occur! The most obvious is that the rig runs fine during Receive, but trips the breaker or fuses the instant you key up and speak into the mike. Often, though, there can be more subtle effects: instead of turning itself off, it may simply drop a few volts supplying the rig, causing very low transmit power, frequency shifts, "warble" or "chirp" on SSB, or a flickering of the rig's panel lights. Therefore, always insist on a converter capable of *at least* 3.0 DC amps continuous output. And make sure it is in fact regulated, as many cheap ones are not.

Similarly, some base station rigs, regardless of name or popularity, have terrible internal voltage regulation! A base rig has its own internal mains converter, usually on a separate circuit board; some manufacturers have a very nasty habit of using the cheapest, least conservatively-rated parts they can sneak by with, and this also applies to mobile rigs which often use only a simple Zener diode regulator in critical circuit branches. Therefore, you should always test the prospective rig for good regulation; the test is very easy to perform. Hook up the base or mobile rig to the appropriate power source and a dummy load antenna. Then simply key up the transmitter and whistle into the mike; you should not observe any flickering of the rig's panel lights. In a good rig, the lights will maintain a constant brightness.

(When testing a mobile of course, make sure you're using an excellent mains converter; any test is only as accurate as the test equipment being used!) If you notice any dimming of the lights, don't bother testing any further and move on to the next rig model I've seen many rigs having such poor voltage regulation that the panel lights dimmed even whilst *receiving* a strong signal! One final note: many breakers will eventually try "peaking and tweaking" the rig for even greater power output and modulation, with the resultant higher current drain. A rig which performs fine under "legal" conditions may begin showing signs of poor regulation when pushed to its highest power limits. Be aware of this possibility.

General Specifications

Power Consumption: Usually ranges from about 1.7 to 3.0 DC amps, depending upon circuitry and mode.

Frequency Tolerance: This spec is merely a legal requirement of the particular licencing country. Since almost every 40+ channel rig is PLL-synthesized, this spec is easily met. For example, FCC-controlled American rigs specify a tolerance of .005% of centre frequency. So for the U.S. Channel 1, 26.965 MHz, the transmitter may legally operate anywhere between about 26.96351 MHz to 26.966348 MHz, which is $\pm .005\%$ of 26.965. The British specs call for a tolerance of ± 1.5 KHz rather than expressing a percentage; however, at 27 MHz, this computes very closely to about .005% also. PLL rigs easily surpass these requirements and often specify tolerances of .001% or .002%.

Microphone: CB rigs almost universally use a "low-impedance dynamic" mike element. A few rigs have high-impedance elements, but contain a tiny transformer inside so that the output is actually low-impedance, usually in the range of 300 to 1000 ohms impedance. This makes them compatible with solid-state devices which operate on low-impedance principles. A few old American rigs that use valves require high-impedance (100,000 + ohms) mike inputs and for this reason you'll sometimes find a few accessory mikes offering a switchable HI-LO impedance feature. The dynamic type mike is very desirable for CB use; it's rugged, has excellent frequency response, and is immune to the kind of temperature and humidity variations suffered by crystal or ceramic mikes.

One mike feature worth considering is its detachability and type of plug or socket. The familiar European 4 or 5-pin DIN plug is in my opinion the cheapest and least desirable, especially for mobile use. They tend to pull out of the socket easily and are more difficult to repair or replace. The best mike plug is the popular 4 or 5-pin female with threaded locking nut and is found on all the better models.

Antenna Output Impedance: This is universally 50 (or 52) ohms "unbalanced" into a UHF or SO239 coax socket. "Unbalanced" simply means it is designed for use with coaxial aerial cable where the outer shield is earthed. Nothing else noteworthy here, *provided* the aerial is tuned to provide a 50-ohm SWR match to the radio.

Positive/Negative Earth Power Connection: This is a very desirable feature and is almost always included in modern rigs. A few lorries, forklifts, boats, etc have a positive earth electrical system so be sure the rig includes this feature if use in several types of vehicle is planned.

Size, Weight, Humidity, Temperature, etc. These are all rather obvious, with size and weight perhaps the most important. For mobiles, be sure it will fit the planned installation space, and that its weight won't rip it out of the typical cheap plastic car dashboard! A detachable slide mount is a very desirable anti-theft accessory for mobiles too.

Transmitter Specifications

Again, these specs are merely legal requirements. If the FM power limit is 4 watts, you can be sure that's exactly what the specs will claim! Same with SSB, where the power is usually limited to 12 watts "PEP". Naturally, no manufacturer is going to advertise the fact that his equipment is capable of exceeding legal specs, even though in reality most rigs will easily do so.

Modulation: For AM, most CBs employ what's called "high-level" modulation. This means that an actual voice power of up to several watts is being added to the RF power. In fact, for 100% modulation of an AM transmitter, 2 watts of audio power must be added to the 4 watt RF carrier. Although this adds up to 6 watts total, the *legal* power is defined only by the unmodulated RF carrier. AM rigs generally specify their modulation method as "Class B", "high & low level", or "collector-modulated." These all mean the same thing and indicate that the rig is using the most powerful form of Amplitude Modulation. This also explains why you'll see the rig's S/RF panel meter jump when speaking into the mike. Again, the fact that the specs claim modulation capabilities are limited to "90%" or "+90%, - 100%" is really meaningless since such limits can easily be defeated by a simple internal adjustment or part removal.

SSB is actually a more sophisticated and efficient form of AM, but the modulation method is different. With SSB, there is no RF carrier output until you speak into the mike, hence the term "PEP" is used for defining SSB power. "PEP" or "Peak Envelope power" refers to the highest RF output obtainable when modulated by the highest-powered voice signal. The SSB signal mixes with the voice signal very early in the signal generation stage, and that's why for AM/SSB rigs you'll often see the term "high & low level" modulation. High level refers to straight carrier AM; low level refers to SSB. These rigs use exactly the same power amplifiers, but they are connected differently when you change the mode selector switch from AM to USB/LSB. Since SSB is a much more powerful signal, it requires more current consumption so once again, check for excellent voltage regulation in this mode. One of the most common SSB problems related to voltage regulation is that (assuming the transmitter section is wired to "slide" frequency a bit) the voice has a chirpy sound because the voltages which determine the operating frequency are actually changing value slightly.

FM by definition is very different. The RF carrier power never changes regardless of whether or not you speak into the mike; this explains why you'll not see the S/RF panel meter moving in this mode. In fact if you should notice either the meter moving or the lights flickering during modulation, this indicates either the presence of some AM components to the signal or poor voltage regulation. Both indicate poor transmitter design.

Deviation

Frequency modulation is measured by "Deviation" because on FM the carrier signal simply shifts a bit, (+) and (-), from centre frequency when you talk. FM deviation is basically an arbitrarily-selected figure; however this figure will determine the audio fidelity as well as the total amount of space occupied by the FM signal. For voice radio communications, voice frequencies are purposely limited in range from about 300 Hz to 2500 Hz. CB deviation limits of perhaps ± 5 KHz *maximum* give excellent voice quality without taking up too much room in the radio spectrum. Remember, CB channels are spaced 10 KHz apart. If deviation as high as ± 5 KHz were used (for a total of 10 KHz) there is a great likelihood of mutual interference from adjoining

channels. The British spec calls for a maximum deviation of ± 2.5 KHz, which can be defined as 100% modulation for FM. The CB signal will thus occupy a maximum bandwidth of 5 KHz (2×2.5 KHz) which therefore allows a bit of a guard band between channels. Of course, as with AM or SSB, FM deviation can also be easily increased by adjustment of an internal control. IMPORTANT! All similarities to AM end here! Overmodulation on FM (actually, over-deviation) in an attempt to get more "talk power" could possibly make your signal disappear entirely at the received end! Once the signal deviates farther than the receiver bandwidth, it won't even be detected. Sort of like trying to fit a Roller in a Volkswagen parking space; it won't "fit"! With a multimode AM/FM or AM/FM/SSB rig, you might sneak by with a bit of over-deviation because the receiver by design is capable of passing the widest-mode signal, which is AM (typically 5 to 6 KHz wide). Remember also that such deviation may not be compatible for reception on very narrow-band FM-only (i.e. British) rigs. The deviation spec is normally stated as \pm so many KHz, at some modulating audio frequency (such as 1200 Hz) and at such-and-such an audio input level (such as 20 mV). Such figures typify the average voice/microphone characteristics.

Balancing

Carrier Suppression & Unwanted Sideband Suppression: These refer to SSB transmission only. An SSB signal is created by first generating a carrier, mixing it with the voice signal, and then balancing out the carrier in a circuit called a "balanced modulator." Then one or the other sideband, Upper or Lower, is eliminated depending upon the setting of the AM/USB/LSB mode switch. The unwanted sideband is normally removed by passing the double-sideband signal through a very sharp crystal filter. This filter (which, by the way, is also used during SSB reception) is so selective it is able to pass only one of the two sidebands. Therefore these SSB-only specs are an indication of the quality of an SSB signal. For example, if the carrier itself were not fully suppressed, a listener might hear a very annoying squeal or whine ("heterodyne") from the SSB transmitter. An approximate test for carrier suppression is to simply key up the rig into a dummy load antenna, USB or LSB, and, without speaking, observe the S/RF panel meter for any indication of RF output. There should be none. Switch to the opposite sideband and repeat: the results should be the same. If not, this may indicate a poorly-designed SSB rig, but is more likely a simple misadjustment which can easily be cured by a qualified technician. This test is particularly important when buying a used rig; many breakers try "peaking & tweaking" without proper knowledge! Unwanted sideband suppression is difficult to check without special test equipment, but use of a second SSB rig tuned to the opposite sideband might reveal excesses in this area. Carrier suppression and unwanted sideband suppression are both specified in decibels or "dB". A good SSB rig will quote at least - 50 dB unwanted sideband suppression and at least - 50 dB to - 60 dB carrier suppression. The higher the dB number, the better.

Harmonic Suppression: This is the nasty spec that has to do with causing TVI and RFI! At this writing I know of no specific figure for the British FM CB system; however FM by its very nature is much less likely to cause these problems. The figure deals with AM and SSB and basically indicates how weak the "harmonic" signals are as compared to the intended signals. A "harmonic" is simply a multitude of the main frequency; for example, 54 MHz is the *second harmonic* of 27 MHz, and so on. In the U.S., TV Channel 2 operates near 54 MHz so it's obvious what poor harmonic suppression can do here! In the U.K. this is not as big a problem unless operating one of the popular European made AM/FM/SSB rigs. American specs call for at least -60 dB harmonic and spurious signal suppression, which is achieved through a combination of tuned circuits and extra metal shielding in critical areas. With the spec, the larger the

number the better the suppression.

Frequency Response: This is an oft-quoted spec for both Receive and Transmit modes. This indicates the band of voice frequencies permitted to pass through the rig's audio section. For radio communications, the voice range is typically limited to about 300 Hz to 2500 or 3000 Hz. The human voice is a very complex signal, but its greatest power and readability are completely within this range, unlike music which must extend far beyond the 3000 Hz limit for good fidelity. But even more important, by placing limits on the transmitted voice frequencies, we help guarantee that the CB signal cannot occupy so much bandwidth that it interferes with adjacent-channel signals. (Remember, CB channels are spaced at 10 KHz intervals). The way in which AM/SSB signals differ from FM signals with regard to occupied bandwidth is technically complicated, but the intentions are the same; voice frequencies regardless of transmission mode must be limited to prevent co-channel interference. The audio specs mentioned here are those you'll most likely see advertised by the rig manufacturer.

Receiver Specification

This is perhaps the most important area to consider when looking for a good rig! As noted, transmitter specs are strictly controlled by the licensing government and there's little one can do to (legally at least!) change them. However, the receiver specs indicate the *true* test of how much care, quality and engineering go into the circuit design. It does you little good to transmit a signal that's "wall-to-wall" when your receiver selectivity is so poor you can hear all 40 channels at once! Selectivity and sensitivity are the most important receiver specs and are often closely related to each other.

Sensitivity: This is the measure of the rig's ability to pull in those really weak signals which would otherwise be masked by internal noise in a poorly-designed receiver. Sensitivity is measured in "microvolts" or "uV" against a standard amount of background noise. For example, the spec may say, "1 uV for 10 dB S/N" (often called "S+N/N"). This is read as "One microvolt for a signal-to-noise (or signal + noise-to-noise) ratio of 10 dB." AM/SSB receivers normally use the figure "10 dB" as their comparison standard; for FM, it's usually "20 dB", often called "20 dB quieting." What this really means is that the receiver is internally quiet to the extent that a CB signal of only 1 uV (200 million-millionths of a watt across 50 ohms!) will appear 10 dB louder than the normal background noise. The figure "10 dB" is a significant and easily measurable amount which can be detected by ear or instruments. If there were no other interfering stations or atmospheric noise (such as lightning) present, such a signal would be easy to copy. Thanks to advancements in solid-state electronics, a 1 uV sensitivity figure is actually quite high and is typical of even the least expensive rigs! In fact, most rigs specify sensitivities closer to 0.5 uV (AM/FM) and 0.25 uV (SSB). This is indeed a "hot" receiver! The lower the uV number, the better the sensitivity.

Notice, incidentally, that sensitivity specs are usually stated separately for AM/FM than for SSB. In fact, SSB specs are usually hotter (lower uV) than any other mode. The reason is because the receiver bandwidth is narrower on SSB due to the sharper filters used; an SSB signal is only about half as wide as an AM or FM CB signal. With the bandwidth thus narrowed, less noise passes through the receiver (noise tends to be very broadband) and therefore it's much easier to amplify an SSB signal 10 dB stronger than the background noise. It's not uncommon to see published SSB specs of 0.1 uV. Now that's real sensitivity!

Squelch Sensitivity: This is basically a measure of the weakest signal required to "break squelch" with the squelch control advanced just to the quieting threshold point. It is also measured in uV and anything under 1 uV or so indicates a good squelch circuit. What many breakers don't realise is that the farther you advance the squelch control clockwise past the point where the receiver has been silenced, the stronger the signal that

will be required to break squelch. Thus many weaker stations will never be heard at all. Sometimes this is desirable; when travelling in groups you may only want to hear the breaker right near you anyway. Often a maximum signal strength will be specified such that any signal stronger than this will break squelch regardless of the setting of the squelch control. For example, the spec may read, "squelch adjustable, 0.5 uV to 500 uV."

Selectivity: This is very closely related to sensitivity. It does you no good to hear the weakest signals if you cannot separate them! With modern electronics it's actually quite easy to achieve high sensitivity, but selectivity is often more dependent upon the number of circuit components used. Typical CB manufacturing strategy strives to determine how many parts can be removed from the circuit before it stops working altogether. Then they make provisions to add those parts back in, charging you, the customer, extra for the "deluxe" version of the same rig! For this reason you'll often find many marked, but otherwise empty holes in the rig's main printed circuit board; they simply stuff in a few more parts, perhaps add an extra control knob or "idiot" light, and call this the "deluxe" model even though the basis chassis is identical.

The number and complexity of the circuits affecting sensitivity fall into two main types: Use of individual filters for each mode (AM/FM vs SSB), and use of the single - vs double-conversion receiver design.

All the better multimode rigs use individual filters for AM vs SSB or AM/FM vs SSB. (Remember, AM and FM both require about the same receiver bandwidth so a common filter can be used for both modes). If two different selectivity specs are listed, one for AM/FM and one for SSB, this is a good sign that they are in fact using separate filters. This can be easily confirmed by having a technician simply check the rig's schematic circuit diagram or inside the rig itself. There are quite a few multimode rigs, including some very well-known American brands, that only use a single filter. In this case, since AM/FM requires about 5 to 6 KHz of bandwidth and SSB about 2.5 KHz, the manufacturer simply installs a compromised-bandwidth filter that falls somewhere in between, usually around 4.3 KHz. This makes it too narrow for AM/FM, with some distortion in received audio quality, and too wide for SSB, allowing excessive interference to pass through.

Conversions

The second factor is the number of mixer conversions made to the original 27 MHz signal. Signals at 27 MHz are much too difficult to process directly, so they are converted, "mixed", or "heterodyned" down to a more workable frequency range.

Single conversion is usually the sign of a less expensive rig. The incoming 27 MHz signal is mixed with an internally-generated "local oscillator" signal to create a third signal, called the "Intermediate Frequency" or "IF." This IF is most commonly at 10.7 MHz, but a few rigs have used 7.8 MHz, 11.2375 MHz, or 9.785 MHz. Following the last IF stage the audio is extracted and heard in the speaker. Sadly, we're beginning to see a lot more single-conversion rigs lately as manufacturers try desperately to keep their costs down. This is acceptable for SSB if lowered selectivity is compensated through the use of sharp crystal IF filters, but results on AM and FM are quite poor.

A "dual conversion superheterodyne" receiver is far more selective. By taking the resultant IF signal in the above circuit and further mixing it down with another internally-generated signal, a new "low IF" or "second IF" is created. This IF operates universally at 455 KHz, a frequency which can be easily processed with cheap ceramic-element filtering as opposed to the expensive crystal filter required at higher IFs. The important point to remember is: every time a signal is converted to a new frequency range, sharply-tuned circuits are required. These tuned circuits may take the form of actual filter elements or more commonly, tuning coils. If you've ever looked inside a rig, you've seen a number of square metal cans with screwdriver tuning slots on top; these

are the tuned circuits. Double-conversion by definition requires the use of more tuned circuits that single-conversion. The more tuned circuits in the receiver, the better the selectivity factor; it's as simple as that. Therefore, look for a rig specifying double-conversion receiver circuitry, at least on AM/FM.

Selectivity specs are defined as "so many dB attenuation at such-and-such a frequency away from the centre channel." Two different measuring points are normally quoted; make sure that in fact two points are specified or the measurement is meaningless. For example, a typical spec may say, "-6 dB at 3 KHz, -60 dB at 10 KHz." Figure 1 shows two actual selectivity curves, called "skirt selectivity" because they resemble the shape of a skirt. *The narrower the skirts, the better the selectivity.* To say it another way, in our example: "At 3 KHz from centre channel, the received signal has dropped off in strength by 6 dB. At 10 KHz from centre channel (which would actually place it on the next CB channel), the received signal strength has been attenuated by 60 dB." The graph shows that Specification A has the sharper skirt and is therefore better. However, in the real world, an actual side-by-side comparison of rigs under crowded conditions could surprise you because other factors enter the picture.

Image rejection and Adjacent-channel rejection are additional measures of receiver performance. In both cases, the higher the dB figure quoted, the better. Good rigs will specify at least -50 dB image rejection and at least -60 dB adjacent-channel rejection.

Automatic Gain Control or AGC: This is a special circuit designed to maintain a constant speaker volume on AM or SSB regardless of the incoming signal strength. Without good AGC, the weaker stations might never even be heard, and your CB neighbour down the street would blast you out of your chair! AGC is specified as "so many dB change in audio output for signal inputs ranging from (usually) 10 uV to 100,000 uV. The lower the dB figure, the better the AGC circuit. For example, a spec of "less than 10 dB change in audio output for inputs from 10 to 100,000 uV" would be better than one

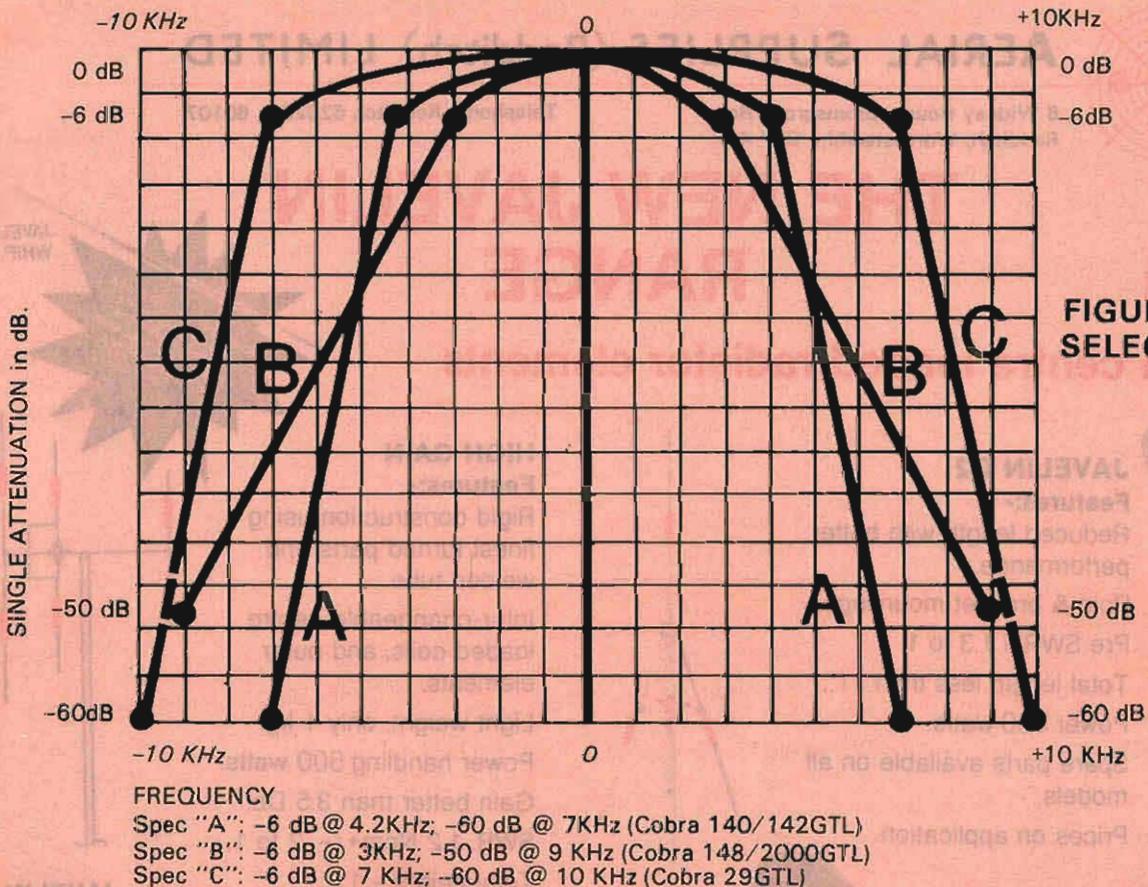
specifying a 20 dB change.

Audio Output Power: A final receiver consideration. All better rigs can provide a 3 to 4 watts of audio output power at about 10% distortion. Anything less than about 2.5 watts will be too weak to hear in a noisy vehicle or for use as a PA system if such use is planned.

There are often other specs described in a manufacturer's sales literature, but the most important ones have been explained here. The manufacturer who does provide even more technical specifications shows that he has taken the time to thoroughly design and test his equipment and is not afraid to state his case in writing to prospective buyers. I'd like to emphasise however that you should never make your buying decision by technical specs alone. Ask for a live demonstration! Check the rig against similar models under the same conditions. The CB specialist shop is usually the best place and should be equipped and (hopefully) willing to demonstrate his products. The less-experienced breaker should try to patronise those shops and then only when *qualified* technical people are available to answer questions.

Finally, try to avoid the age-old trivial question, "Is this piece of equipment any good?" This will only serve to antagonise a salesman and convince him you are a rank amateur. A much better question would be, "What is the best piece of equipment you recommend for the amount of money I'm willing to spend, and what makes that particular piece better than my alternative choices?" (Sorry - that was two questions!) 73s and Happy Shopping!

The preceding article is a small sample of the straightforward and non-technical advice Mr. Franklin has given in many CB-related publications. His book, THE "SCREWDRIVER EXPERT'S" GUIDE TO PEAKING OUT & REPAIRING CB RADIOS has been a popular U.S. "bible" for many years. His book and other CB speciality items are available in the U.K. through Roger Dee and their selected dealers.



**FIGURE 1
SELECTIVITY**

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VANS OR BY IMMEDIATE CARRIER DESPATCH

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wire (Government
Spec)

JAVELIN
WHIP



JAVELIN C2

Features:-

- Reduced length with better performance.
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- Pre SWR'd 1.3 to 1.
- Total length less than 11'.
- Power 500 watts.
- Spare parts available on all models.
- Prices on application.



JAVELIN
'High Gain'

HIGH GAIN

Features:-

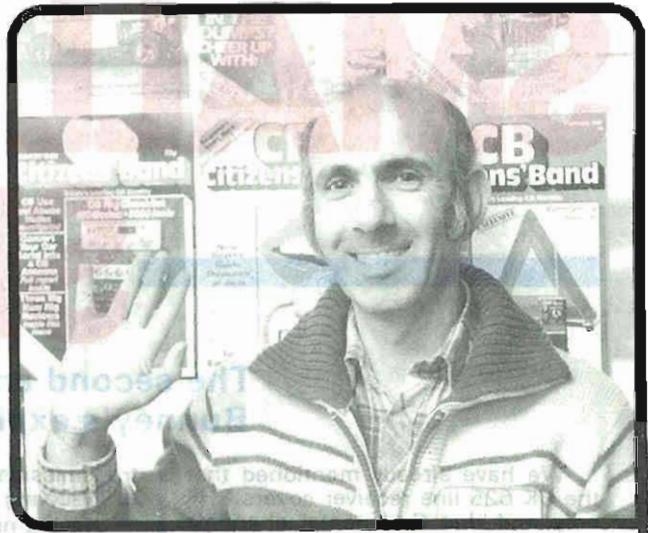
- Rigid construction using finest turned parts and welded tube.
- Inter-changeable centre loaded coils, and outer elements.
- Light weight, only 1 kg.
- Power handling 500 watts.
- Gain better than 3.5 Db.
- SWR. 1.2 Nom +/- .2 to 1.
- Total height - 11'.
- Mounting - 1 1/4" Dia Pole.



JAVELIN
'Mini Beam'

JAVELIN
'Super D'
Dipole

Mack Chat



All around this country there are groups of people that meet regularly on the CB channels. Many of these groups have their favourite channel that they modulate on. In my area we use the channel 8 and the crazy 8, as it sometimes known, has had its share of laughs, dramas and tragedy. Credit for its birth should go to two lady breakers who would disappear from the channels that the local group might be using at the time and go to the 8. But, unknown to them, the rest of the group would follow them. Lady Rymer and Red Coral first started using the 8 just after legalisation of CB. 'Lady Rymer' is the 8's mail box in more ways than one. Any messages for other breakers can be left in the capable hands of Lady R or her husband 'Russel Man', as their rig is on almost 24 hours a day. Also, any goods that need to change hands between the channel 8 breakers may be left at the home 20 of these two lovely people.

Most users of the 8 all live in an area close to each other on the edge of Epping forest and one of the many interesting characters is 'Woodman', who is one of the rangers of the forest. We all remember the time that he caught a 'flasher' in the forest. At the time, he was off-duty and was exercising his dog and had his hand-held CB with him. Well, this bloke was walking towards 'Woodsman' whom I might add is a big man, and as this bloke neared him he opened his coat and flashed his all. What happened aafter this we are not sure but 'Woodsman' captured this bloke and, using his CB and the aid of the breakers on the 8, the police were called.

'Ladybird' and her husband 'Rubber Plant' are both breakers of old. This pair formed the once-famous Big E Club in Tottenham back in the old days. Alas, 'Rubber Plant' is now an ex-CBER as he has passed the RAE but he does still come on the 8 every so often.

The breakers of the 8 are very friendly and are always eager to help each other. Of course we get our share of wallies but the channel 8 breakers have learned how to deal with them. If an antenna needs installing on the roof and the owner is shy of laddery-climbing, then 'Rainbow Warrior' is the one that volunteers to do the climbing. His missus 'Snowy' is a good winder-upper of the male breakers who venture onto the 8 looking for a lady breaker to chat up. If anyone has rig trouble then 'Hifi' is our local rig doctor, and he knows what he is doing as he is a professional and does the repairs for the CB shops in this part of the world. On the 8 we have a few blind breakers who share in the activities on the channel. It was some of the people of the 8 who started the Insight campaign for rigs for the blind in this area. To mention all the handles of the channel 8 breakers (there are about 60 who come on the band from time to time) would take up this whole column but I am sure that you have your own channel in your own area where all the breakers meet and enjoy CB. I would like to mention two breakers, 'Tree Tops' and 'Bulldog', who have left the 8, and we on our local channel dearly miss these breakers.

Abuse

I have recently been trying not to mention the subject that is the biggest thorn in the side of CB, but I feel I must. Yes, you have got it. Channel abuse. Everybody keeps

asking how it can be beaten. At last it seems the authorities are taking action, so I feel it is our duty to help them. My old mate Keith Townsend has already made a few suggestions. To capture these abusers of our frequencies, one has to find them first and to do this can be difficult. Many hours can be spent driving around the streets trying to locate the stations. One idea that I thought of was the Pulsar 27 mini beam from Telecomms which I saw advertised in this mag. It's illegal, you may say. So it is if you transmit on it, but for my idea you would only use it for receiving. It would need at least two or, even better, three breakers in the area to each purchase one of these beams and, if you can afford it, a lightweight antenna rotator. Also required would be ordnance survey maps of your area and compasses. The breakers with the beams would of course be known to each other and mark their locations on the maps. When the local wally does its thing on the channel, each of the breakers with the beams, rotates the antenna for the strongest signal from the wally station and then an accurate beam heading is noted and exchanged with each other over the landline or another clear channel. The beam headings are then transferred to the maps and if you have done your homework correctly, the reading on the map should pinpoint your local wally. If possible, recordings of the illegal transmissions should be made as evidence.

Home Base

Occasionally I might find an item of CB equipment that interests me, but nowadays there does not seem to be many new 27 MHz products on the market. Obviously, I was interested when, a short while ago, I was in my local CB shop and John, the governor of Globe CB, Hoe Street, Walthamstow showed me a home base rig from DNT. What could be new or original in home base rigs, you might ask. Well how many people use mobile rigs for home base units? Quite a lot, I should imagine. DNT have done just this it seems. The B40 FM is not much larger than a mobile and, at first glance, you might think that it is a mobile unit, but closer inspection reveals that housed in the rear is the power supply and mains lead. The only other obvious feature is a pair of pop-up legs on the front underside. The B40 FM features the very basic controls such as volume, squelch, hi-lo power, DX local RF switch, and a normal type 'S' meter. One important feature of this rig is that it is the super-tuned B40 version as it has extra filters for better adjacent channel rejection (bleedover). The size of this rig (9" x 6" x 2") is not large by any means for a base rig and the price at Globe CB is £51. In my view, it's an interesting rig for anyone who requires a base rig but does not have the space for the normally large boxes that have been manufactured in the past. Some of you might be saying that it is not a new rig as you may have seen it mentioned in this mag way back in 1982. Quite true, it was May 82, but I haven't seen this rig on the dealers' shelves until now.

SMALL SCREEN SKIP

The second and final part of Roger Bunney's explanation of TV DXing

We have already mentioned that the UK 625-line receiver covers UHF only and that Continental channels use, in addition, VHF Bands 1 and 3. A further complication is that various European countries use transmissions standards that differ from ours. We use 625 lines with negative-going picture modulation. Negative modulation means that if you look at a TV picture line on an oscilloscope with the synchronising information at each end you will see that the white parts are at the bottom of the waveform (20%), the black parts are at about 77% and synchronising to 100%. Positive modulation reverses this waveform with peak white at 100%, black level at 30% and synch information down to 0%. The two sketches show this clearly. Apart from our 625 lines with negative picture modulation we have FM sound, spaced some 6MHz from the vision carrier.

Eire uses the same standard, so we could take a UK UHF set to Dublin and watch RTE at UHF. We couldn't take a UK receiver to Holland and receive excellent sound and vision since, although negative picture modulation is used, the Dutch space sound and vision 5.5MHz. In fact, most of Western Europe use the 5.5MHz spacing as do many African countries. (If you're emigrating to South Africa, they are using the UK standard at Band 3 and UHF — they also use PAL colour.) Travelling to Eastern Europe finds negative picture modulation still in use but with another sound/vision spacing at 6.5MHz! The variations to our own 6MHz spacing means that we would see an excellent black/white picture on a UK set but the sound couldn't be resolved well — if at all. Colour systems in Western Europe are generally PAL but the Eastern bloc has opted for SECAM. I've not mentioned France — they are the odd one out. Positive picture modulation is used, a 6.5MHz sound/vision spacing is further complicated with the use of AM sound transmission and SECAM colour is thrown in for good measure. You'll need a specific French standard TV to see or hear anything from France (though a lot of South Coast viewers find it worthwhile to nip across on a cheap-day sea trip to buy a French standard TV!) The table shows the main characteristics of each

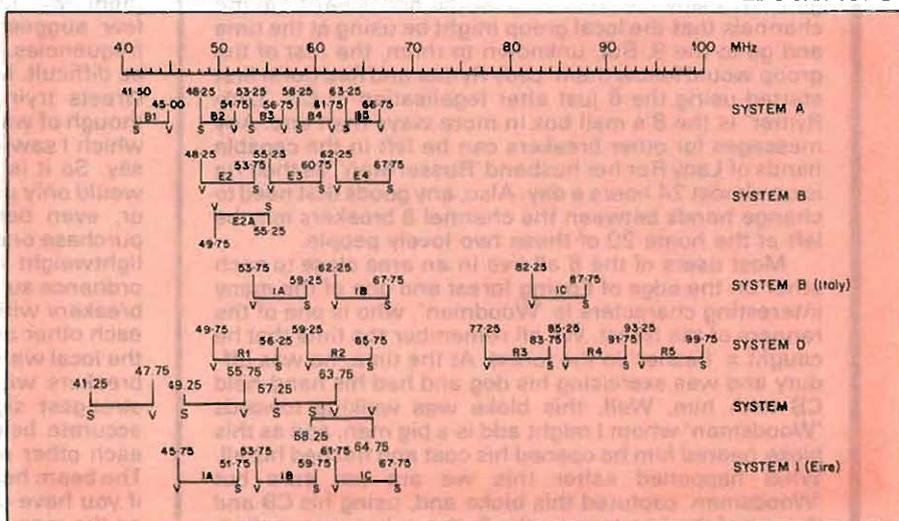
transmission standard that a beginner to TV-DXing is likely to encounter.

Having now a basic knowledge on how the different standard TV signals

have a receiver with a rotary tuner (marked channels 21-68), by a continuous rotation of the tuning knob, you can cover all channels from

Channel Allocations European Bands 1 and 2 (TV)

CHANNEL ALLOCATIONS



WORLD TRANSMISSION STANDARDS

System	Line No.	Overall channel bandwidth (MHz)	Vision bandwidth (MHz)	Sound/vision spacing (MHz)	Vision modulation	Sound modulation	Areas in use
A	405	5	3	-3.5	+	AM	UK (VHF), Closure January 1985.
B	625	7	5	+5.5	-	FM	Western Europe, parts of Africa, Middle East, Australasia (VHF)
C	625	7	5	+5.5	+	AM	Luxembourg (VHF)
D	625	8	6	+6.5	-	FM	Eastern Europe, USSR, China (VHF/UHF)
E	819	14	10	±11.15	+	AM	France, Closure 1984.
F	819	7	5	+5.5	+	AM	
G/H	625	8	5	+5.5	-	FM	Western Europe (UHF). System H has a 1.25 MHz vestigial sideband used in Belgium (UHF)
I	625	8	5.5	+6.0	-	FM	UK (UHF), Eire (VHF/UHF), Republic of South Africa (VHF/UHF).
K	625	8	6	+6.5	-	FM	French Territories overseas.
L	625	8	6	+6.5	+	AM	France, (VHF/UHF).
M	525	6	4.2	+4.5	-	FM	North & South America, Caribbean, parts of Pacific, Far East, US Forces broadcasting (AFRTS), Japan.

arrive at your door, we need a means to resolve these distant pictures on a TV receiver. Most UK households will have at least one TV and the greater majority of these will have upwards of four push-buttons. By various means, it is possible to tune these button positions to other channels but it's very difficult — they were meant to be tuned to a local channel and left. If you

the locals to channels used in adjacent ITV areas. The rotary tuner is the best receiver to use and is often found on imported small-screen monos. With a suitable aerial, amplifier and means of aerial rotation, we can at least start DXing at UHF, enjoying, hopefully, other ITV programmes (regional variations) and, if Tropics are 'up', other signals from further afield, even

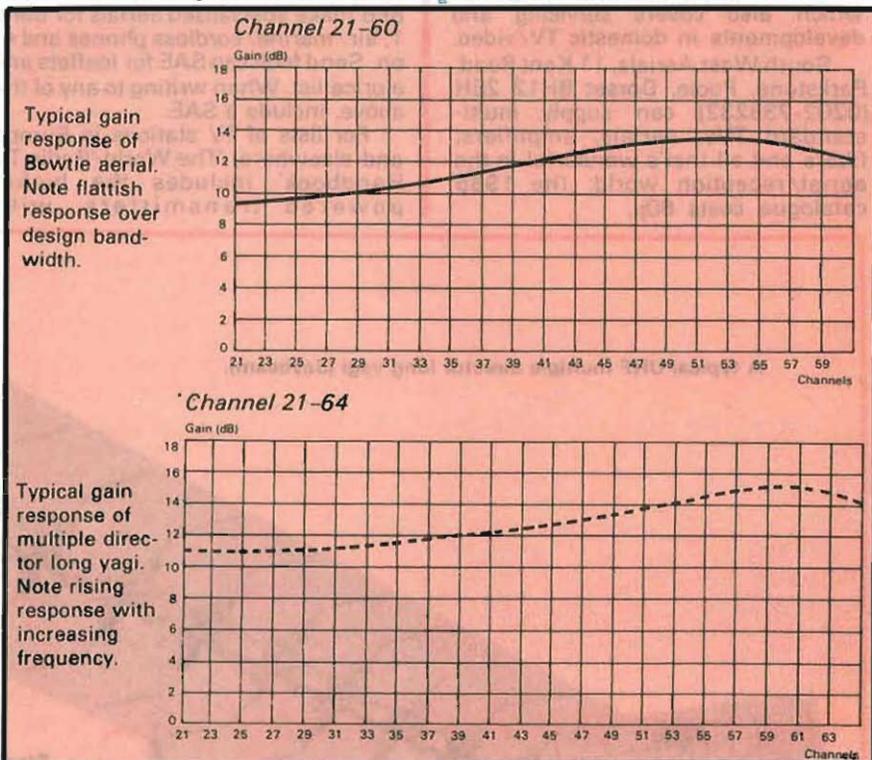
Holland/Belgium and West Germany — albeit with the sound spacing incompatibility. We'll obviously want if possible to attempt Sporadic E type reception with really distant signals at Band 1 — but our TV only covers UHF. There is available a small electronic converter that changes the wideband VHF spectrum of 40-240MHz up to a similar chunk of frequency spectrum bandwidth but at UHF. So, by plugging a VHF aerial into the *upconverter* and the output lead into the UHF TV socket, we can use the UHF TV to tune across the VHF spectrum. Hence the interest in a receiver with a rotary tuning knob. Signals incoming at VHF are therefore converted up to UHF and appear within the UHF tuning coverage. It still won't help you hear the sound of a different standard but if you've a UK colour set you will still see foreign PAL colour. It is possible to buy small-screen mono TVs with multi-sound switching and an address is given later, but for those with more funds, upmarket receivers such as the Luxor and Salora range provide all sorts of facilities, system switching, Teletext and so on (addresses also later).

At this stage, there may be some confusion so I would venture to suggest that the newcomer to TV-DXing would be wise to consider operation at UHF (since he will have a UHF receiver) using a wideband aerial and possibly a medium gain masthead amplifier. This will allow tuning around the band, particularly in good Trop conditions and to get the 'feel' of Band 1 coverage using perhaps an Upconverter in conjunction with a simple wideband Band 1 aerial and a basic indoor amplifier (don't use a masthead amplifier for Band 1, 2 27MHz equals middle of Band 1, and with radio amateurs likely to be using part of Band 1 soon, filtering could be needed before the first amplification stages). A simple dipole, say an old BBC 405-line cut to 8'6" overall will resonate mid Band 1, or use a wideband dipole type from a supplier. Band 1 Sporadic E will allow dramatic reception over long distances with the minimum of equipment and outlay, making it a worthwhile system and cost-effective system.

Whilst touching on aerials, Band 1 is now on the decline in the UK with the closure of 405 lines, and so 'normal' UK manufacturers no longer produce them for the home market. Specialist suppliers of this type of array however do exist, though they are not sold at specialist prices; addresses are given at the end of this article. Several designs of wideband Band 1 aerials are given in my own book on TV-DXing, again see later. Since we have UHF TV, the market place is packed with aerials suitable for wideband UHF DXing. There are two main types of wideband UHF aerial, the long yagi — perhaps with X-shaped directors, and the grid looking array with fan (bowtie) dipoles. The long yagi has a rising power gain with rising channel, so at ch21 for example an aerial may have 10dB gain (relative to 1/2 wave dipole

standard) but by the time you measure the gain at, say, ch60 we have risen to 16dB. A 3dB power gain is doubling the performance in terms of output signal. All long yagis will have this characteristic but with varying gain figures due to length, element number

etc. As the gain rises, so the beamwidth sharpens, i.e. it becomes much more directive. There are many variations of the long yagi and the intending purchaser is advised to discuss his needs with a retailer who knows aerials inside out.



The bowtie type aerial is much less conspicuous and is favoured by DXers due to its relatively flat gain v channel performance. It has a wide beamwidth, but it can be sharpened by stacking two similar aerials side by side and connecting them through a combining filter. The power gain will virtually double when two such aerials are connected together. As with aerials, there is a vast range of masthead aerial pre-amplifiers. At UHF, due to the higher losses through the coaxial feeder, the use of a masthead amplifier will maintain a low noise performance on the receiving system by overcoming the cable loss and thus not adding to noise degradation. Care must be taken that a very high gain amplifier isn't selected, most of us have four strong local channels and the poor transistor tuner in most TVs will just go into complete overload. A low-gain (say 10dB) and, more important, low-noise (less than 2dB) amplifier is perhaps the wisest course to adopt, an indoor amplifier can be used later if necessary. The DC power for the masthead amplifier is sent up the aerial downfeeder, and most UK manufacturers have opted for 12-volt operation, although Continental makers have 15, 18 and 24v. Again, it's best to seek advice from an aerial specialist in the field.

We've covered the very basic parts of TV-DXing. I would advise the beginner to read up about it first, and minimise outlay until you feel you want to proceed further. Band 1 and UHF first; leave Band 3 until later. I would prefer to see a DXer using a

slow motion rotary tuning (single knob) in conjunction with an upconverter for Band 1. A simple aerial and mid-summer Sporadic E will bring Europe to his screen — at least pictures but without sound. When I first started TV-DXing over 20 years ago, I used a straight dipole tied to a 12' bamboo pole from a carpet centre and lashed to a drain pipe. My first afternoon of Sporadic E produced 12 European countries and without any amplification! Signals were very strong, the furthest that memorable afternoon was Budapest ch.R1, nearly 1000 miles away! Several pictures of TV-DX are included to illustrate what can be seen around the UK and Europe.

Further information and references

The BBC and IBA both publish a free guide to TV channels, television and radio transmitters within the UK. Write including a 9" x 4" SAE to: BBC Engineering Information Department, Broadcasting House, London W1A 1AA; or to IBA Engineering Information Service, Crawley Court, Winchester, Hants SO21 2QA. For a transmitter list in the Irish Republic, write to Reception Investigation, RTE Donnybrook 4, Dublin, Eire.

The author of this article has written a book called 'Long Distance Television Reception (DX-TV) for the Enthusiast', published by Bernard Babani (Publishing) Ltd., The Grampians, Shepherds Bush Road, London W6 7NF at £1.95 + 45p

postage, from your local friendly bookshop or from South West Aerials, Poole at £2.40 inclusive. Book number is BP52. It's a complete reference book for TV-DXing in the UK. He also writes a TV-DX column in 'Television' (IPC Magazines Ltd), a technical magazine which also covers servicing and developments in domestic TV/video.

South West Aerials, 11 Kent Road, Parkstone, Poole, Dorset BH12 2EH (0202-738232) can supply multi-standard TVs, aerials, amplifiers, filters and all that's wonderful in the aerial/reception world; the 1985 catalogue costs 60p.

Upmarket TVs from Luxor (UK) Ltd, 87/89 Farnham Road, Slough, Bucks SL1 4UL.

Salora (UK) Ltd, Techno Trading Estate, Swindon, Wilts SN2 6E2.

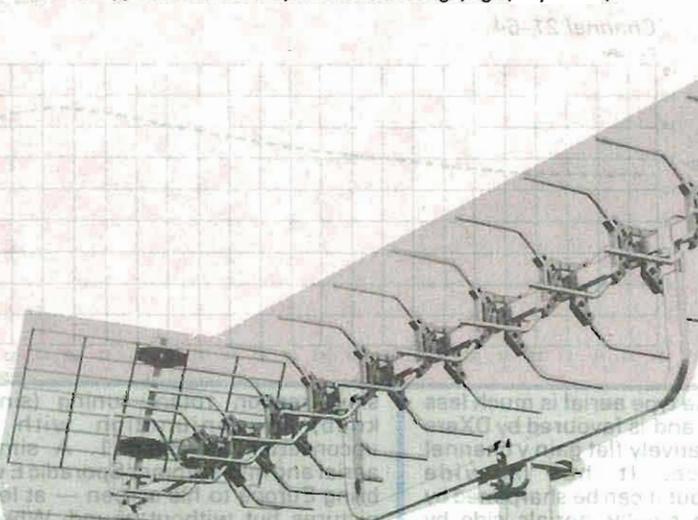
Weston Developments, 33 Cherville Street, Romsey, Hants SO5 8FB make specialised aerials for Band 1, air/marine/cordless phones and so on. Send foolscap SAE for leaflets and a price list. When writing to any of the above, include a SAE.

For lists of TV stations in Europe and elsewhere, 'The World/Radio TV Handbook' includes the higher powered transmitters, with

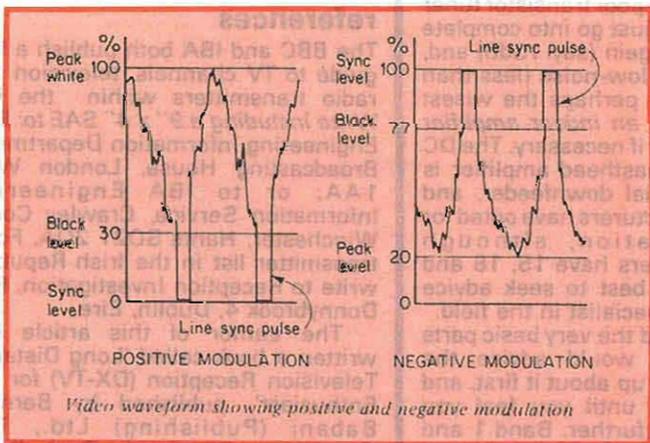
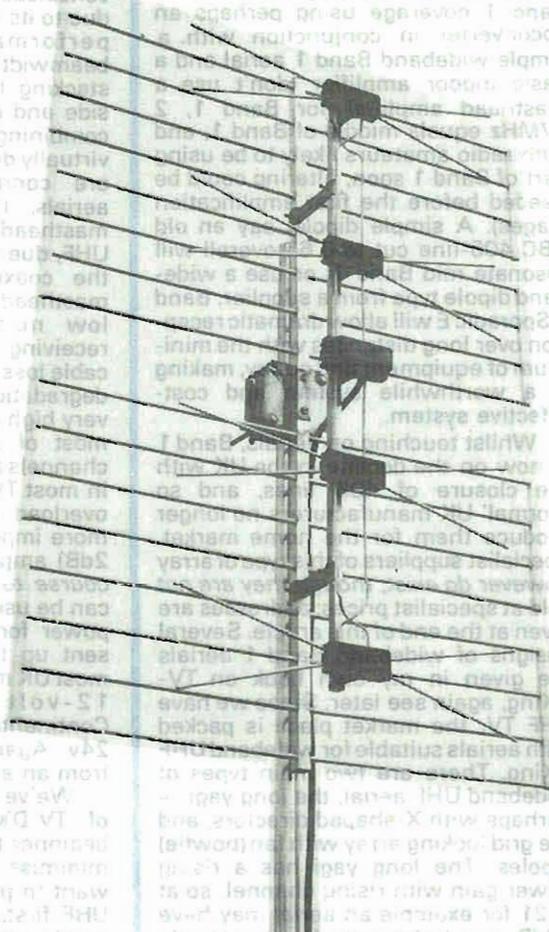
information on networks, transmission standards etc. It's priced at around £10 and is available from W.H. Smiths or Short Wave/Amateur radio equipment stockists. It's an annual publication. The EBU in Brussels lists all TV transmitters in an upmarket listing with bi-monthly supplements updated with new information. It's expensive and thick and intended for the true enthusiast. I'd not advise it for the beginner, but on receipt of a SAE, I'll detail address and cost.

Our thanks to Bernard Babani (Publishing) Ltd for permission to reproduce some of the tables.

A typical UHF multiple director long yagi (Jaybeam).



Stacked bowtie wideband UHF array (Wolsey)



LADY BREAKERS

the voice, exasperated.

"You promised to take part. The treasure hunt, us against the Ipperfield Irregulars. Remember?"

Damn! I thought disgustedly. Unfortunately, I did remember. In a mad moment I had agreed to take part in this stupid treasure hunt. A nearby club had challenged one of our local groups, and although I wasn't a member, I had foolishly agreed to join the team. Now the day was actually here, and it was cold, and drizzly, and I was in a bad mood and had not the faintest desire to go hurtling around the countryside after clues.

"Filly, are you coming or aren't you?" said the voice, impatiently. I looked at my nice warm radiator and tried to think of a good excuse for staying right where I was. But, of course, I had to go — I had promised to participate in the dratted treasure hunt, after all, even if I had proceeded to forget all about it.

And so, half an hour later, there I was in Vulcan's Volkswagen, clutching the mike of his rig, peering at the scrap of paper that held our first clue and trying to look as though I was enjoying myself. Everyone else seemed to be, I had noticed — probably because they had all been waiting for me at the local pub with the best beer. There was the Ipperfield Irregulars team of six, arrogant so-and-so's, planning what they were going to do with the trophy (a huge blow-up Donald Duck, donated by a member of their club who owned a local toy shop), and there was our lot, swilling beer and looking irritatingly jolly.

The clues had been thought up by a local breaker who didn't belong to either of the clubs involved, and staring at the first one, I could tell that the rat had a twisted mind. The idea was that each team, travelling as three pairs, worked together to cover the ground between each clue as quickly as possible. We were using three previously agreed channels for communication, which meant of course that everyone could listen in on everyone else's conversation, with the proviso that conversations were to be kept to a minimum to avoid hogging the air. Vulcan and I were responsible for the first clue; as soon as we sussed it, I was to pass on the next clue to the other two couples, if possible without alerting the other team.

All very childish, of course, but I didn't say so. I'm no killjoy. And besides, I was beginning; in spite of myself, to get interested in the workings of the fiendish brain that had devised that first devilish clue...

"Whoever has travell'd life's dull round, Where'er his stages may have been, May sigh to think he still has found The warmest welcome, at an inn..." I read out laboriously. "A quotation, heaven knows who said it. Must be a pub."

"Oh, very good", said Vulcan sarcastically. "There are only about forty in a five-mile radius from here." We quarrelled for a bit, and then I had an inspiration. Two miles away was a huge, newly-built roundabout, much criticised for its ugliness. Could that be the dull round? And wasn't there some sort of restaurant or grill place there? We drove there and, sure enough, there was a club member sitting in her car inn the car park of a nearby restaurant, waving a slip of paper. We pulled up, triumphant, feeling extremely pleased with ourselves.

"Well done, here's the next clue", she said, cheerfully, coming across to us. "Oh, by the way, you missed the other lot by two minutes..."

Which meant we had nothing to lose by reading the clue out over the air straight away. And so it went on.

All right, I admit it, it was fun. We must have driven the equivalent of a hundred miles that afternoon, chasing false scents and red herrings, and we had a lot of unexpected help from people listening in who were coming up with their own ideas on the solutions. It was a lorry driver passing through who gave me the idea of examining the old signpost in the middle of the Common, which put us ahead at one point, and an old lady listening in (with much amusement) from home who put me on to an obscure farmhouse miles up some dirt track pitted with huge potholes. So what if that was one of the red herrings (she probably lived in Ipperfield!), it was an interesting drive! And so what if Ipperfield won in the end — by that time we were all laughing too much to care, and I don't even begrudge them the blow-up Donald Duck.

Especially since we'll win it back at the return match, to be played in a few weeks' time. Yes, at my suggestion!



Filly hunts for treasure over the air

It was a cold, wet Saturday afternoon, and winter stretched bleakly ahead. I was sitting huddled by a radiator in my front room, listening idly to the chat on my home base, and feeling grumpy and sorry for myself. It took some minutes for the voice speaking my name to penetrate the fog of gloom. Someone was asking for me, but I wasn't sure I could be bothered to answer.

"Filly, if you don't answer pronto, we're going without you," the voice announced. It was just intriguing enough for me to reach out for the mike and answer.

"Filly here", I said, grumpily. "Go where without me?"

"Don't say you've forgotten!" said

GREAT AKD COMPETITION

OVER £100 WORTH OF PRIZES TO BE WON!

1st prize — AKD Precision Direction Finder
 2nd prize — AKD Blackline Signal Booster
 10 Runners-up — AKD CB Notch Filter

Armstrong Kirkwood Developments, manufacturers of some of the best filters available in this country (and it's not just us that think so, British Telecom do too!) are offering one of their DF units, a signal booster (pre-amp) and ten notch filters as competition prizes for lucky *Citizens's Band* readers.

The DF unit has a retail price of £40 and is a precision direction finder of a compact size. It is supplied with a miniature aerial and can be connected to a full size directional aerial. It is very accurate at pinpointing 27MHz CB transmissions and has been used by British Telecom for just that.

The AKD Blackline signal booster is a slimline unit and can be used for both mobile and base station use. It gives a greater than six times increase in the strength of received signals but, during transmissions, the circuit is automatically bypassed to ensure that the transmit signal isn't degraded or the unit damaged.

TVI is a great problem for many CBers and AKD have an extensive range of filters for dealing with the problem. They are supplying ten tuned notch filters as prizes; these are suitable for UHF TV and give a very low insertion loss — particularly important in areas of weak television reception. These filters usually cost £7.50 each.

The competition centres on both the legal requirements and the common sense operation of CB radio and the tie-breaker will consist of one question. Please fill in the answers that you think are correct, fill in the tie-breaker and make sure that you include your name and address (it's surprising how many people forget!). All entries must be sent on the competition coupon that appears below.

The panel of judges will consist of

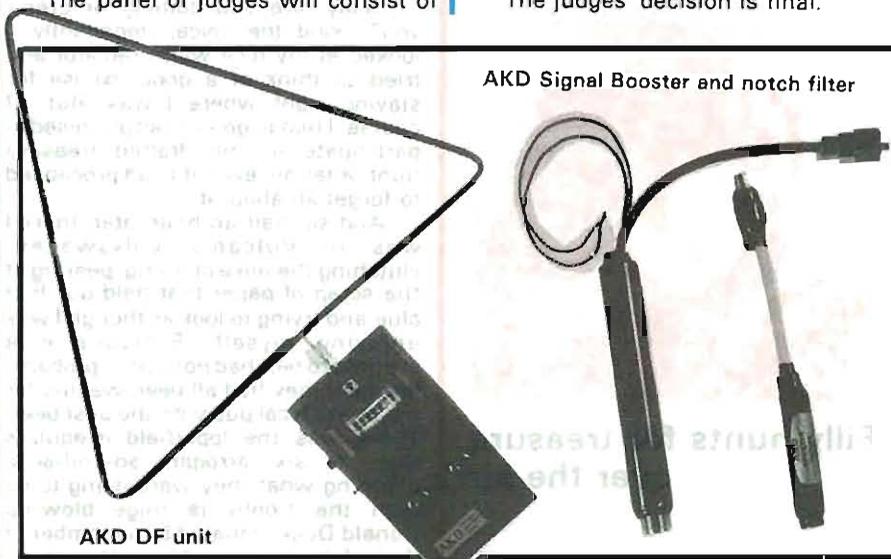
Eamonn Percival (Editor, CB), Sue Sharp (Group Editor, CB) and J. Armstrong of AKD. The competition rules are as follows:

All entries must be received by second post on Friday, 15th February.

No employee of A.S.P. Ltd, Ebony Typesetting or Simpson, Drewett can enter the competition.

No correspondence concerning the competition will be entered into.

The judges' decision is final.



AKD DF unit

AKD Signal Booster and notch filter

Which Channel should be left clear for emergency transmissions?

Which Channel is accepted as being the motorway/mobile channel?

How old must you be before you can have a CB licence in your own name?

What is the maximum diameter of a legal antenna?

On the front of your CB licence, what is the name and year of the act that appears under the crest on the right?

What does R.R.D. stand for?

Tie Breaker

If you could pass just one piece of CB legislation through Parliament, what would it be? (in 25 words or less)

.....

.....

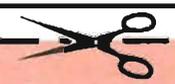
Name

Address

.....

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Please send your competition coupon to:
 February Competition, Citizens' Band, P.O. Box 35,
 Wolsey House, Wolsey Rd, Hemel Hempstead, Herts.



Twonc

JOHN RICHARDSON

BUT ME AM NOT HALF A MAN! ME AM A FULL TIME 100% GENUINE GODLING AND IMMORTAL WITH IT! ALSO ME DO NOT FEEL THE COLD 'COS ME AM FORTIFIED BY LOVELY DELICIOUS NEWCASTLE THAWED NECTAR!

WELL, IF YOU LIKE YOUR BOOZE ON A STICK YOU CAN STAY! BUT IF I DON'T GET TO GO ON A CRUISE I'M GONNA QUIT!

BWAN! NEWCASTLE NECTAR GAVE BAD AN' BUST MY TEEF! THOUGH NOT LIKE COLD!

I'M FREEZING! IT'S THE MIDDLE OF WINTER AND WE'RE HALF NAKED AND YOU JUST SIT THERE!
IF YOU WERE HALF A MAN, YOU'D TAKE ME ON A CRUISE TO THE SUN!

S THERE!
S ZIT!
BOOTE!

KLAK

SLEET!
FROM!

WE WILL FOLLOW RAGDOLL'S ADVICE! ME WILL TUNE IN TO MAGIC ETHER AN' PICK UP CLUES FOR CHEAPO HOLIDAY!
C'MON! THIS IS A BIG DEAL!
C'MON! HI HAY LET'S

THE NEXT CRUISE WILL DEPART IN 10 MINUTES
AHAN! GOTTA! NOW ME CAN TAKE RAGDOLL FOR HOLS IN THE SUN!

SWOOP

THIS VERY SNEER!
CRUISE NOT HERE!
IDIOT! WHAT KINDA CRUISE STARTS AT 800 FEET!
WOY!
I DWAND! ME WILL TAKE A LOOK AN' FIND OUT!
NOT BAY!
DRY LOONY

SHRIEK
DIS KIND!

SCREAM! SCREAM! SCREAM! SCREAM! SCREAM!
SCREAM! SCREAM! SCREAM! SCREAM!
POO! THAT'S WHERE ARTHUR SCARGOUL COMES FROM! ME NOT GOIN' THERE! ME WILL TAKE THIS CRUISE BACK AN' SEE IF THERE'S ONE GONNA TO WHITTY!

HOW WARM IS IT IN MOSCOW?
MERNWHILE... BACK AT BREENHAM COMMON...
I THRY, THOLDER! WOT HAPPARED TO THET JOLLY OLD TETHI MATHILE? HATH IT GORN 'BOOM' YET?
HI DWAND! I AN MAKE IT GO 'BOOM' IF YOU LIKE...
DESTRUCT!

HEY, LOOKIT! LOTS OF TRAMP-LADIES HAVIN' A PARTY! ALSO THEY GOT A FIRE! LET'S DROP IN ON THEM FOR A WARM!
WE SHALL NOT BE MOVED

OH, ALRIGHT THEN! BUT JUTH MAKE IT A LITTLE 'BOOM'...
WE DON'T WANT TO THART ALL THOSE NATHY WOMEN THINGS THROVIN' THITUFF AT US AGAIN, DO WE?
ONE 'BOOM' COMIN' UP!
DESTRUCT!

WE HAVE BEEN...
BLADDY NORN! A PRE-EMPTIVE STRIKE BY THIRTHIDE COMMIE TH!
AN' THAT TH OAS OF 'EM!
GANSH! HAS OUR HERO STARTED WORLD WAR THREE? HOW HE GONNA GET OUT OF THIS? WAD CARES? ME NEITHER! NEY' AN' AN' EN'

CB SURGERY

M T Pickering (B.Eng) writes about
the rigours involved in being a rig
doctor

A successful rig doctor needs special qualities and an understanding wife. He needs to be reasonably competent in his work. He needs somewhere to lock himself away to concentrate on repairs.

He can't expect huge profits from rig repairs. The average CB radio costs less than £40 new, with some, recently, as cheap as £14; secondhand rigs can be bought for less than £10. The result is that any repair costing more than, say, £10 simply isn't worth doing. Home-base rigs can cost more to repair because they are more expensive to replace and sods to work with.

It is a good idea to have a shop frontage. A rig doctor will often use his local garage or car accessories shop as a collection point. Surprisingly, perhaps, this can result in more profit than having customers come to his door, since it gives more time for repair work and attracts more customers. The shop will usually expect a small commission on repairs, but the rig doctor will absorb this by reducing his prices. If he doesn't, then people will still come to the door, hoping to get discount. The advantages of a shop front are many: the shopkeeper is used to dealing with people politely, but firmly. He will act as a buffer against the occasional hassle from the customer. It's likely that he will pay for the repair the moment the rig is returned to the shop. This means cash immediately, without wasting repair time in chasing bad debts with resultant arguments and bad publicity. People no longer come to the door at strange hours (yes, it can happen) and the neighbours stop complaining about "weirdos with aerials that park outside". There is more time to do repairs without people chatting and looking over your shoulder.

Yes, it's nice to keep the customers a few wavelengths away.

It is odd, what customers complain about. I have never, ever had a complaint about the cost of a repair (perhaps because I'm honest and charge fairly), but other complaints are numerous: the most common is that the rig is "off frequency" or "won't get out as far as it should". Inevitably when I collect it and check it again there is nothing wrong at all. People accept reports "on the air" as gospel truth. If "Transistor Bender" up the road says "two pounds and muffled" then the rig doctor must have knackered it.

I have to admit that, occasionally, the complaint is justified. Recently, for example, a gentleman from Liverpool came up here on holiday. On the way he'd bought an echo chamber kit and wanted it wired for his rig. The "kit" was an assembled circuit board in a box. All I had to do was connect the wires to the correct pins on the plug and socket. Next day I received an urgent call from the shop. The guy had returned, tried the echo chamber in his car and all it did was whistle.

Well, to cut the story short, I took the rig and the chamber back to the workshop and discovered that the echo chamber design was faulty and, although it worked on my rig and on the mike checker instrument, it malfunctioned on the customer's rig. A quick circuit modification and all was well. Let that be a lesson to me: always check mikes and chambers on the customer's own rig.

Meddling

I can safely say that 80 per cent of the faults I find are caused by some person's meddling or abuse of the rig in some way. I can't understand why people have to *fiddle*. The jobs would often be cheaper if the owner had left well alone and brought the rig to the shop at the first sign of trouble. I *never* charge for a quick check. Usually it is good for business, since the customer knows he will not be ripped off with an imaginary fault. Sometimes, however, when I return a rig to the shop with the note "No fault found after one hour soak test", the customer curses me to hell. "There must be *something* wrong", he'll say. "I can't get out" or "I can't pull in" (as the actress...)

Invariably, the fault lies in the power supply, the supply lead, the patch lead, or the "other" microphone (which he didn't supply with the rig).

The customer is always right. My customers are *always* right. I set up a system of gaining information in the shop. I was sick of getting rigs for repair with no note attached. I printed some cards, hundreds of them. Each card asked for the owner's name and phone number so I could contact him if (a) I didn't understand his problem (b) the cost might be too high or (c) the rig repair was urgent and he wanted to know when it was finished.

There was also space for the owner to write down the nature of the fault or what he wanted me to do.

You wouldn't believe the things that

are written! "Rig Faulty" is the favourite. Great. That doesn't tell me much I couldn't have guessed. Oddly, these are usually the rigs with nothing wrong at all.

"Gets pulled down". I dread to think what that means and it's not my fault, anyway.

"Crystal blown". This is an easy one. He's connected it in reverse and the protection diode has gone short circuit. Unfortunately, since he's obviously very knowledgeable, it usually means he's "looked" inside it and twiddled every adjuster in sight. That reminds me of a breaker who brought me a Hy-Gain V the *day after* he'd purchased it, new. "Erm, I've adjusted it wrong", he said, sheepishly. "What", replied I, "one of the pots? Which one?". "Thirteen", said he. "Ah, RV13" said I, beginning to remove the mangled screws from the cover.

"No", he countered, "all thirteen of 'em".

If any of my customers are reading this, I do apologise, by the way. But let me give you some advice:

Try, *try* to write down what is wrong with your rig. Simple explanations like "Won't transmit" are helpful. Don't try to be clever and put "RF transistor blown". It probably isn't. Set out the circumstances under which it went wrong. When did you notice it? I don't mean last Tuesday, I mean was the sky filled with lightning and you on top of the hill at the time? Did it go wrong slowly or suddenly? What was connected to it at the time? Have you tried a different microphone/power supply/supply lead/aerial/patch lead/fuse? Write an essay, if you must, but *please* give me the facts. It could save my time and your money. If you have a circuit diagram, bring it in, but *don't* bring the blooming mike bracket, slide mount, patch lead, mounting screws, supply lead or even the microphone unless you think it is faulty. If you are not concerned about scratches, don't bring the box and packing, either. These things get lost.

Take a card with your name and fault report to the rig and, if you want to discuss it or want a quote, write your town and phone number. Don't use terms like "bleedover" which mean different things to different people: write "voices heard from another channel" or whatever you mean. Don't put an unqualified "sounds fuzzy". If it's distorted on receive, say so, otherwise I might think you mean distorted transmission. If you want to switch the Roger Bleep, tell me if I can

use the "tone" switch or whatever. Otherwise I'll have to fit an extra switch which, after I've bought it and dismantled the rig to drill the necessary holes, wired it up and reassembled everything, could cost you an extra fiver! You see how a little thought can save you money.

It is quite important to say what is *right* with the rig, as well as what is *wrong*, otherwise you will be charged for a repair that you didn't want. For instance, if the mike lead is frayed and won't last another year I would repair and replace it. I have a reputation to maintain. So, if you are happy with a frayed lead, say so! If you don't mind a broken or missing knob, or a dud tone switch, then say so.

There are, however some things which will be repaired, regardless. Many power supplies ("droppers") were made very badly, with switches in the neutral wire, fuses wrongly connected, earth connection *pop-riveted* in place. Some home-base rigs had no earth wire at all! If any rig doctor worth his salt finds a fault which affects the safety of the user he will correct the error. There is *no way* that I will return a unit, to the customer, without a secure earth. That means a tag crimped or soldered to the green-yellow wire and bolted to the chassis.

Plugs

Whilst on the subject of mains-operated equipment, I must make one point. It is amazing how many customers *cut off* the mains plug before sending the unit for repair. Whether they need the plug, for Aunt Annie's TV I simply don't know. What I do know is that, before I can test the damn thing, I have to buy and fit a plug. Consequently, I charge for it. If the customer complains that he doesn't need the plug I charge for the removal.

If a plug *is* fitted, by the way, I will check it and if the cable is not correctly clamped or the plug is defective I will make a repair or replace it. I will *not* return it in an unsafe condition. I do not usually charge for labour in safety-related repairs of this nature.

There are a few things which you, the customer, can do to save money, before taking your rig for repair. If the rig is entirely dead, do check the fuse: if that is intact, try a different supply lead and power supply. If there is no sound from the loudspeaker, try another microphone. The microphone in most rigs provides an earth connection for the speaker. If that fails, connect an extension speaker. The wires on internal speakers have been known to corrode or snap. If there is still no audio but the "S" meter is going up and down (obviously receiving) then the audio output chip has probably blown.

Nearly all rigs are fitted with a reverse protection diode rated at 1 amp. If the rig is connected to the supply in reverse then the 2 amp fuse will usually blow before the diode. If a

higher rated fuse is fitted then the diode will probably melt and go short circuit. The fuse will blow and each successive fuse you try will also blow. I have had rigs with 13, 25 and even 35 amp fuses! The rig can burn out completely with a large fuse fitted. It makes sense to fit a 2 amp fuse.

If the rig transmits a carrier, but no modulation, try another microphone. If there is no sound from the speaker, too, then it is almost certainly the audio output chip.

If the rig does not transmit and the red TX light fails to come on then the mike could be faulty. Otherwise, switch on another rig, nearby, on the same channel, without an aerial. If it picks up a transmission from the faulty rig then the RF output transistor has probably blown. You still need the services of a rig doctor, but at least you know it's not serious.

If the rig appears to be working normally, but problems are experienced with transmitting and receiving over more than a mile or two, try the rig on someone else's set-up.

This information is given to help you cure the fault if it lies outside the rig. It is not an open invitation to dive inside with a pair of fence-cutters and a poker.

Watt meters are not very accurate and must be used with a true 50 ohm dummy load (not an aerial or a bulb). Likewise, an SWR meter will give the true reading for your aerial, only when it is connected close to the aerial. If there is more than a couple of feet of co-ax between the SWR meter and the aerial then you will obtain a correct reading only when the SWR is 1:1. That is why chopping the co-ax can alter the readings. Set the aerial with the meter close, *then* move the meter down to the rig end of the co-ax. Do check the reading once a week, but don't leave it

connected as it can cause interference.

Note that a power meter measures *total* power, so if you screw the output filter coils in the rig to let more interference through, you can expect the power reading to go up. This is a dangerous game. The power meter can not tell the difference between power at 27 MHz and interference at 55 or 110 or 220 MHz.

The power meter *on your rig* can be used only as a guide. Note the normal readings on channels 1, 20 and 40 when the system is transmitting properly. If the readings on transmit ever alter then you've got problems with co-ax (including patch lead) or aerial. It is *not*, however, essential to have a low SWR reading. Most rigs will tolerate up to 2:1 without losing any distance, and up to 3:1 is unlikely to cause any damage.

One final point. I mentioned that a rig doctor has to avoid arguments with his customers in order to maintain a good reputation and to avoid losing business. Well, the same applies in reverse. Very few rig doctors depend on repairs for a living wage. Most of us treat it as a pocket-money making hobby (yes, I do declare it for tax) and, therefore, some customers with a reputation for moaning or other annoying habits (like insisting on same-day service) find that, suddenly, repairs are costing more or taking forever. Rig doctors are only human. We make mistakes; we have feelings; we usually do our best; please treat us with respect because we're all you've got.

One last thought: don't expect miracles from your rig doctor. He is not a budding Einstein. If he were, he would be working for NASA not mending your precious rig!



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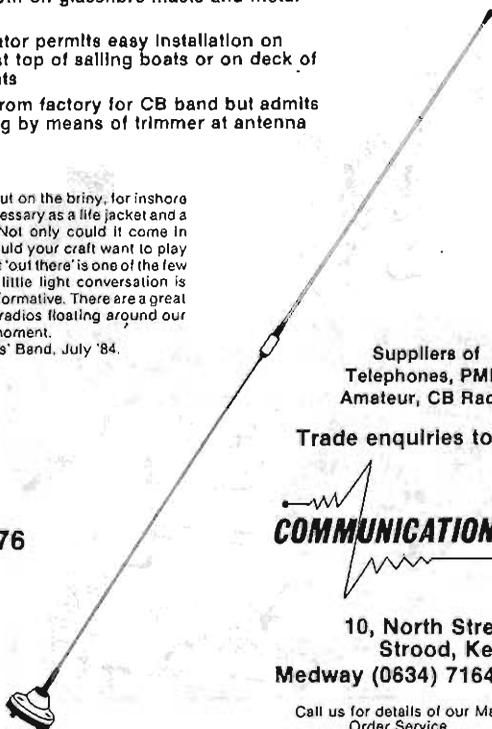


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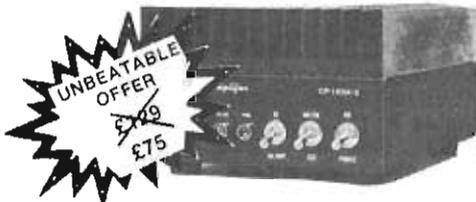
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Due to the popularity of back numbers of this magazine, the Back Numbers department have informed us that the following back numbers only are available at the moment; September, October and November 1983 and February 1984. It is hoped over the next months to build up a stock of back numbers for the previous year's issues i.e. the eleven months preceding the magazine currently available and we will keep you informed of the situation. To order a magazine, fill out the form below (photocopies and handwritten orders are acceptable). The form and your cheque or postal order should be sent to Citizens' Band, Infonet Ltd., Times House, 179 The Marlowes, Hemel Hempstead, Herts HP1 1BB

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We are always pleased to receive letters from readers, but at times it is impossible to answer them all. We do try to eventually get round to answering letters with an S.A.E. but this may take some time.

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!

Telephoning

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.

Back Numbers and Binders

See left for details of back numbers available and the ordering details. Binders for Citizens' Band magazine are also available from the same address at a price of £4.25, inclusive of postage and packing.

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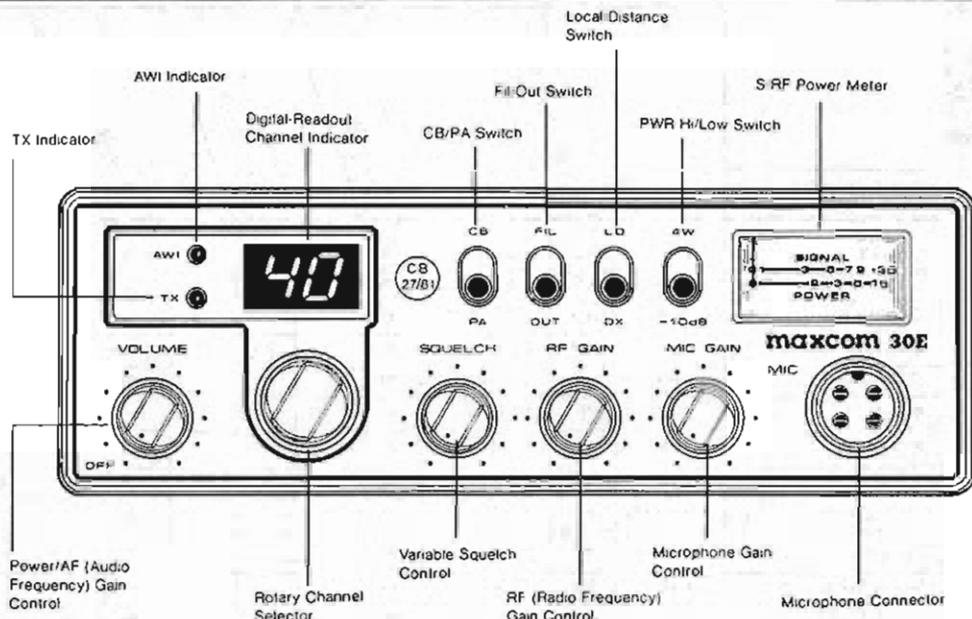
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REFERENCE SECTION



A CB SET AND ITS CONTROLS

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

CHANNEL SELECTION
For choosing the channel you transmit and receive on.

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

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

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

RF GAIN
This controls the reception sensitivity of the set. When decreased the set is less sensitive, and when increased the set is more sensitive to weaker signals. Reducing the gain helps prevent overloading when talking to someone who is very close.
Some sets, instead of having a suitable rotary control, have a flick two position switch marked *local* and *distance*. Full sensitivity is the distant position.

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

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

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

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

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

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

Your set may also have the following controls . . .

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

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

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

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

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

FM RIG CHECKLIST



NAME	MODEL	RETAIL PRICE	NO OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	TOPE CONTROL	S/RF METER	S/RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX. SPEAKER JACK
AMSTRAD	CB901	£40	40	13.8VDC	•			•	•		•	•	•	•	
AUDIO LINE	341	£60	40	13.8VDC	•			•	•	•	•	•	•	•	
AUDIO LINE	340	£40	40	13.8VDC	•			•		•	•	•	•	•	
AUDIO LINE	342	£116	40	13.8VDC	•					•	•	•	•	•	
COLT	295	£49.99	40	13.8VDC	•				•	•	•	•	•	•	
COMMTEL	GT858	£30	40	13.8VDC	•					•	•	•	•	•	
CDMMTEL	GT688	£35	40	13.8VDC	•				•	•	•	•	•	•	
COMMTRON	CB40F	£70	40	13.8VDC	•					•	•	•	•	•	
COMMTRON	CXX	£69.95	40	13.8VDC	•				•	•	•	•	•	•	
COMMUNICATORS	NI-440DX	£60	40	13.8VDC	•				•	•	•	•	•	•	
CYBERNET	BETA 1000	£70	40	13.8VDC	•						•	•	•	•	
CYBERNET	BETA 2000	£85	40	13.8VDC	•				•	•	•	•	•	•	
CYBERNET	BETA 3000	£100	40	13.8VDC	•				•	•	•	•	•	•	
DNT	M40FM SPECIAL	£100	40	13.8VDC	•				•	•	•	•	•	•	
FIDELITY	CB 1000M	£70	40	13.8VDC	•					•	•	•	•	•	
FIDELITY	CB 2000M	£90	40	13.8VDC	•			•	•	•	•	•	•	•	
FIDELITY	20001 FM	£70	40	13.8VDC	•			•	•	•	•	•	•	•	
GRANDSTAND	BLUEBIRD	£50	40	13.8VDC	•					•	•	•	•	•	
GRANDSTAND	HAWK	£30	40	13.8VDC	•				•	•	•	•	•	•	
GRANDSTAND	GEMINI	£60	40	13.8VDC	•	•			•	•	•	•	•	•	
GRANOSTAND	LA 83 934 MHz	£400	20	13.8VDC	•					•	•	•	•	•	
INTERCEPTOR	INTERCEPTOR	£80	40	13.8VDC	•				•	•	•	•	•	•	
INTERCEPTOR	TC400	£95	40	13.8VDC	•		•	•	•	•	•	•	•	•	
INTERCEPTOR	ONE HANDER	£100	40	13.8VDC	•			•	•	•	•	•	•	•	
JOHNSON	JOHNSON	£50	40	13.8VDC	•				•	•	•	•	•	•	
LAKE	MANXMAN 850	£32.50	40	13.8VDC	•					•	•	•	•	•	
LAKE	MANXMAN 950	£37.50	40	13.8VDC	•					•	•	•	•	•	
LOWE	TX 40	£50	40	13.8VDC	•				•	•	•	•	•	•	
MAGPIE	AUTOSCAN 5000	£120	40	13.8VDC	•			•	•	•	•	•	•	•	
MAXCOM	4E	£50	40	13.8VDC	•					•	•	•	•	•	
MAXCOM	6E	£48	40	13.8VDC	•				•	•	•	•	•	•	
MAXCOM	20E	£50	40	13.8VDC	•					•	•	•	•	•	
MAXCOM	21E	£50	40	13.8VDC	•					•	•	•	•	•	
MAXCOM	16E	£40	40	13.8VDC	•					•	•	•	•	•	
MAXCOM	30E	£65	40	13.8VDC	•			•	•	•	•	•	•	•	

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

MOBILES

					ADDRESS	NAME
•	•	•	SL	Report Feb '82	Amstrad Consumer Electronics, 1-7 Gamma Rd., London N17	AMSTRAD
•	•		SL		Telecomms, 189 London Rd, North End, Portsmouth	AUDIOLINE
•				Report Feb '82		AUDIOLINE
•	•					AUDIO LINE
•			FL		K B & Co Ltd, 202 Cheetham Hill Rd, Manchester	COLT
•			SL		Globe, 168 Brooker Road, Waltham Abbey, Essex	COMMTEL
•			SL	Dimmer Switch Features		MMTEL
•	•		FL		Roger D, 831 Mansfield Rd, Notts	COMMTRON
•			FL			COMMTRON
•	•	•	FL	Roger Beep Feature		
•			SL		Goodmans Loudspeaker Ltd., Downley Rd, Havant, Hants PO0 2NL	CYBERNET
•	•		FL	Report May '83		CYBERNET
•	•	•	FL	Report September '83		CYBERNET
•			FL	Report July '82		DNT
•			SL	Report December '81	Fidelity Radio Ltd., Victoria Rd, London NW10	FIDELITY
•	•		FL	Report March '82		FIDELITY
•	•			Report September '82		FIDELITY
•			SL		Bee-Ware Ltd., Ripon Way, Harrogate, N. Yorks.	GRANDSTAND
•	•		SL			GRANDSTAND
•			SL			GRANDSTAND
•				Features combined with Bluebird (Included)		GRANDSTAND
•	•		SL		Telecomms, 198 London Rd, North End, Portsmouth	INTERCEPTOR
•	•		FL			INTERCEPTOR
•	•		FL			INTERCEPTOR
•			FL	Great GT868 chassis	Star Warehouse, Chalk Farm Rd, London	JOHNSON
•			FL		Roger D, 831 Mansfield Rd., Nottingham NG5 3GF	LAKE
•			FR	Report April '83		LAKE
•	•		FL	Report March '83	Lowe Electronics, Medock, Derbyshire	LOWE
•	•	•	FL	Report November '82	Magpie Electronics, PO Box 35, Andover, Hants SP10 2LG	MAGPIE
•			FL		AM House, 9A Old's Approach, Tolpits Ln, Watford, Herts	MAXCOM
•	•		FL			MAXCOM
•	•		FL			MAXCOM
•	•		FL			MAXCOM
•			FL			MAXCOM
•			FL	Report Jan '84		MAXCOM

REFERENCE



NAME	MODEL	RETAIL PRICE	NO OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	TDNE CONTROL	S' RF METER	S' RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX SPEAK
MERCURY	10 40	N/A	40	13.8VDC	•				•		•		•	•	•
MURPHY	DS-602	£25	40	13.8VDC	•							•		•	•
MUSTANG	CB1000	£49.95	40	13.8VDC	•									•	•
MUSTANG	CB3000	£59.99	40	13.8VDC	•				•	•	•			•	•
NATO	40M	£69.95	40	13.8VDC	•			•	•	•				•	•
NATO	2000	£189.95	40	13.8VDC	•	•	•		•	•			•	•	•
OSCAR	OSCAR I	£85	40	13.8VDC	•						•		•		•
OSCAR	OSCAR II	£49	40	13.8VDC	•						•		•	•	•
REFTEC	934	£300	20	13.8VDC	•						•				•
ROTEL	RVC 220	£60	40	13.8VDC	•						•		•		•
ROTEL	RVC 230	£70	40	13.8VDC	•				•	•	•		•	•	•
ROTEL	RVC 240	£90	40	13.8VDC	•			•	•	•	•		•	•	•
SIRTEL	SEARCHER	£40	40	13.8VDC	•						•			•	•
TANDY	TRC2001	£80	40	13.8VDC	•						•			•	•
TANDY	TRC2002	£70	40	13.8VDC	•						•			•	•
TANDY	TRC2000	£100	40	13.8VDC	•			•	•	•			•	•	•
TANDY	TRC1004	£79	40	12VDC	•										•
TANDY	TRC2003	£130	40	13.8VDC	•										•
UNIDEN	UNIACE 100	£69.95	40	13.8VDC	•						•		•	•	•
UNIDEN	UNIACE 200	£89.95	40	13.8VDC	•			•	•	•			•	•	•
WAGNER	9000	£59.95	40	13.8VDC	•				•			•		•	•
WAGNER	COMPACT 40	£25	40	13.8VDC	•						•		•		•
WESTERN	COMPACT 40	£34.50	40	13.8VOC	•						•		•		•
WESTWARD	P.T.2	£159.95	40	13.8VDC 240V	•						•		•	•	•



NAME	MODEL	RETAIL PRICE	NO OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	TDNE CONTROL	S' RF METER	S' RF LED R/O	HI/LO OUTPUT	PA FACILITY	EX SPEAK
AUDIOLINE	345	£139.95	40	240VAC	•			•	•	•			•	•	
COMMTEL		£65	40	240/12V	•						•				
DNT	B40	£T8A	40	240VAC	•						•				
DNT	B2740	£T8A	40	240VAC	•						•				
DNT		£T8A	40	240VAC	•				•	•			•		
FIDELITY	CB 3000M	£125	40	240VAC	•				•	•				•	•
GRANOSTAND	BASE	£220	40	240VAC	•						•				•
HAM INT.	JUMBO	£254	40	240VAC	•		•	•	•					•	•
HAM INT.	CONCORDE II	£164	40	240VAC	•	•	•	•	•					•	•
HARVARD	H401	£149.95	40	240VAC	•			•	•	•				•	•
MIDLAND	76-200	£150	40	240VAC	•						•		•		•
REFTEC	BS 934	£450	20	240V	•										
UNIDEN	UNIACE 300	£149.95	40	240VAC	•			•	•	•				•	•
WAGNER	BASE	£150	40	240VAC	•		•	•	•	•				•	•
WESTWARD	P.T.2	£159.95	40	240V/12V	•						•		•	•	•



NAME	MODEL	RETAIL PRICE	NO. OF CHANNELS	SUPPLY VOLTAGE	SQUELCH	NB SWITCH	ANL SWITCH	MIKE GAIN	RF GAIN	TONE CONTROL	S. RF METER	S/RF LED R/O	HI. LO OUTPUT	PA FACILITY	EX. SPEAKERS
DNT	HF 12/3	£47.55	3	BATTERIES	●										
HARVARD	WT44		40	BATTERIES	●										
KAISER	CBX40	£80	40	BATTERY	●					●					●
MAXCOM	7E	£49.96	40	BATTERY	●										
MIDLAND	75-720	£59.96	40	12VDC	●										
TANDY	TRC1001	£119		BATTERY	●					●					●
WESTWARD	PT2	£159.95	40	Int. Batt.	●					●			●	●	●

PHONE CHECKLIST

Approved phones are marked ●

NAME	MODEL	PRICE	FREQUENCY	RANGE	RECHAR. BATT.	IN USE LAMP	INTERCOM	AUTO DIAL	EXTERNAL ANT.	SECURITY CODE	HANDS FREE
A-PHONE	TP125	£80	49MHz., 1.6-1.8MHz	230m	●	●		●			●
BT	HAWK ●	£155	47MHz., 1.7MHz.	100m		●		●		●	
FIDELITY	WANDERER ●	£170	47MHz., 1.7MHz	200m	●	●	●	●		●	
FREEDOMPHONE	3500	£199	49MHz., 1.7MHz	200m	●	●	●	●			
HANDY PHONE	HP 1001	£199	49MHz., 35MHz		●	●	●	●	●		
MAXCALL		£116	49MHz., 1.7MHz	100m	●	●	●	●			●
MAXCOM	MCP150A	£89	49MHz., 1.6-1.8MHz	800m	●	●		●			
MAXCOM	MCP 120	£70	49MHz., 1.7MHz	700ft		●		●			
MAXCOM		£99	49MHz., 1.7MHz	200m	●	●	●	●			
PACER	7800	£149	49MHz., 1.7MHz	500m	●	●	●	●			
SUPERFONE	CT600	£115	49MHz., 1.7MHz	100m	●	●	●	●			
SUPERFONE	CT650	£199	49MHz., 1.7MHz	230m	●	●	●	●		●	●
SUPERFONE	CT605	£299	49MHz., 70MHz	1Km	●	●	●	●	●	●	

PORTABLES

TX IND. LIGHT	RX IND. LIGHT	CH 9 SWITCH	MIKE POSITION	COMMENTS	ADDRESS	NAME
						DNT
				External antenna facility	Globe, 168 Brooker Road, Waltham Abbey, Essex	HARVARD
•					Telecomms, 189 London Rd., North End, Portsmouth	KAISER
•					A.T.M., AM House, 9A Old's Approach, Tolpits Ln., Watford Herts	MAXCOM
•					Plustronix Ltd., Hampstalls Ln., Newcastle-under-Lyme, Staffs	MIDLAND
					Tante Way, Tower Bridge St, Walsall	TANDY
•			FL	Report Nov '83	The Mill House, Tuckenhay, Tutnas, Devon O80423 936 / 370	WESTWARD

The range of telephones and communications accessories available to the consumer is increasing rapidly. Not all equipment is approved by British Telecom — so look for the tag with the green dot if you want 'BT Approved' accessories.

CORDLESS PHONE

STANDBY	BATT. IND.	PRIVACY BUTTON	COMMENTS	ADDRESS	NAME
•			Report Feb '84		A-PHONE
•	•		Report July '84	Local BT Sales Offices	
•		•	Report July '83 BT Approved		FIDELITY
			Report May '83	Fidelity Ltd., Victoria Rd., London NW10	FREEDOMPHONE
•		•	Report Aug '83	Thanet Electronics Ltd., Reculver Rd., Beltinge, Kent	HANDY PHONE
			Report June '83		MAXCALL
	•		Report Oct '83	Maxon Group, AM House, 9A Old's Approach, Tolpits Ln., Watford, Herts	MAXCOM
•	•	•	Report May '84		
			Report May '83		MAXCOM
			Report May '83		PACER
		•	Report April '83	Superfone Communications, London NW2	SUPERFONE
		•	Report April '83		SUPERFONE
•			Report April '83		SUPERFONE

na Checklist will give you the following information:

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

Length

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

Maximum Power

This is intended as a guide

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

Type

Indicates whether a mobile or base antenna.

Loading

Indicates the type of

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

Mount

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

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

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

NAME	ADDRESSES	MODEL	CONSTRUCTION	LENGTH	MAX POWER	TYPE	LOADING	MOUNT	PRICE RANGE
HAM	Dials Wholesale, Unit B, Block 2, Whitegate Indust. Est., Bathgate, West Lothian	Balcostar DV27 DV27TW	AL	1.2	200	B	C	Bracket	D B B
			FG	1.39	100	M	T		
			FG	1.19	100	M	T		
HOT ROD	Stateside Trading Ltd, Audley Avenue, Newport.	FM UK	SS	1.27		M	B	3/8" Thread	B
LES WALLEN MANF.	Pembroke Works, Ramsgate Road, Sandwich.	Modulator LC M.D.X. Long M.O.X Short Mini M.D.X. Mini 27 Thunderbolt Saturn Exper	SS	1.65	1000	M	B	3/8" Thread	C C C C C B B B D F
			SS	2.00	1000	M	B	3/8" Thread	
			SS	1.65	1000	M	B	3/8" Thread	
			SS	1.10	100	M	B	3/8" Thread	
			SS	1.40	500	M	B	3/8" Thread	
			SS	0.83	200	M	B	3/8" Thread	
			AL	1.00	500	B	CW	Pole/wall	
R.W. BADLAND LTD.	Roetan Trading Estate, Providence Street, Lye, Stourbridge, West Midlands (Lye 3160/5051)	Rebel 1 Rebel II Rebel Raider Rebel Bullet Red Devil	SS	1.5	500	M	B	3/8" Thread	
			SS	1.5	800	M	B	3/8" Thread	
			SS	1.6	500	M	C	3/8" Thread	
			SS	0.61	50	M	B	3/8" Thread	
			SS	1.52	500	M	CW	3/8" Thread	
REVCO	Telecomms, 189 London Road, North End, Portsmouth.	Rovco	SS	1.0	100	M	B	Various	B
SMC	Rumbridge Street, Totton Street, Hants	Oscar CBA 11GP Oscar 11V11S11 Oscar 11CM Oscar 11CE Oscar 11NE Oscar 11SE Oscar 11ZE	SS	1.5		B	B	Mag. Foldover Base Pull up Foldover Base	F F D C C C B
			SS	1.5		B	B		
			SS	1.2		M	B		
			SS	1.2		M	B		
			SS	1.5		M	B		
			SS	1.5		M	B		
			SS	1.5		M	B		
TAGRA	CB Radio Centre, 337 Kenton Road, Middlesox.	T40	SS	1.4	500	M	B	Various	E
VALOR	W.T.A. Electronics Ltd, 111 Cromer Road, Hellesdon, Norwich (0603 47694)	Warrior 650	SS	1.52	1500	M	C	3/8" Thread	C C C C C C C C C C C C C C C C C C C C
		Half Braed 520	SS	1.52	1500	M	B	3/8" Thread	
		Half Braed 510	SS	1.2	1500	M	B	3/8" Thread	
		Half Braed 500	SS	0.9	1500	M	B	3/8" Thread	
		Dial-a-Match 540	SS	1.2	100	M	B	3/8" Thread	
		Rubber Duck 300	SS	0.6	25	M	B	3/8" Thread	
		Pro Ant FLE 27	SS	0.35	25	M	CW	3/8" Thread	
		Road Hog 338	FG	1.52	200	M	B	3/8" Thread	
		Road Hog 335	FG	0.9	1000	M	T	3/8" Thread	
		Road Hog 336	FG	1.2	1000	M	T	3/8" Thread	
		Road Hog 337	FG	1.82	1000	M	T	3/8" Thread	
		Road Hog 337	FG	1.75	1000	M	T	3/8" Thread	
		Road Hog 831	FG	0.6	500	M	T	3/8" Thread	
		Road Hog 838	FG	0.9	1000	M	T	3/8" Thread	
		Road Hog 835	FG	1.2	1000	M	T	3/8" Thread	
		Road Hog 835	FG	1.52	1000	M	T	3/8" Thread	
		Black Magic 333 1/2	FG	0.78	500	M	T	3/8" Thread	
		Black Magic 333	FG	1.2	500	M	T	3/8" Thread	
		Black Magic 332	FG	1.52	500	M	T	3/8" Thread	
		Black Magic 333 1/2	FG	0.76	500	M	T	3/8" Thread	
Black Magic 833	FG	1.2	500	M	T	3/8" Thread			
WTA	W.T.A. Electronics Ltd, 111 Cromer Road, Hellesdon, Norwich. (0603 47694)	Wot Pole 1	AL	1.5	1000	B	B	Pole	C C A B
		Wot Pole II	AL	1.5	1000	B	B	Pole	
		Wot Stick 1	SS	1.5	1000	M	B	3/8" Thread	
		Wot Stick II	SS	1.5	1000	M	B	3/8" Thread	
VAN ORDT	Knight Communications, Unit 19 Britannia Estate, Leagrave Road.	Audio King	SS	1.5	2000	M	B	3/8" Thread	G

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PRINTING for Breakers. Artwork provided if required. SAE for price list: P. J. Printing, PO Box 1, Burnham-on-Sea.

PERSONALISED QSLs 1000 £15, Handcards £9.50. (DIY QSLs 100 £2.50. Handcards £1.10 : 100 of each £3.00 C.W.O. only). SASE for catalogue. Currie QSLs, Room 2, Derwent St., Consett, Co. Durham DH8 8LT.

PERSONALISED QSL Cards. 1000 £15. Handcards 1000 £9.50, cheap logbooks. (SAE samples). CB Print, 89 Derwent Street, Consett DH8 8LT.

LOW COST Rubber Stamps and printing. Free catalogue. Jones, St. Ivy, North Road, Queenborough, Kent. (0795) 665789.

QSL, Cartoon designs to order by return guaranteed. £3.00 inclusive. Enquiries welcome. Cav-Ann, 57 Mytchett Farm, Mytchett, Camberley, Surrey GU6 6AD.

CLUB CARDS

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- ★ Patch lead

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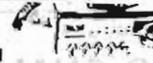
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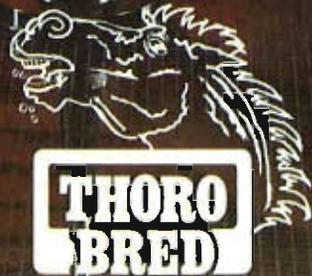
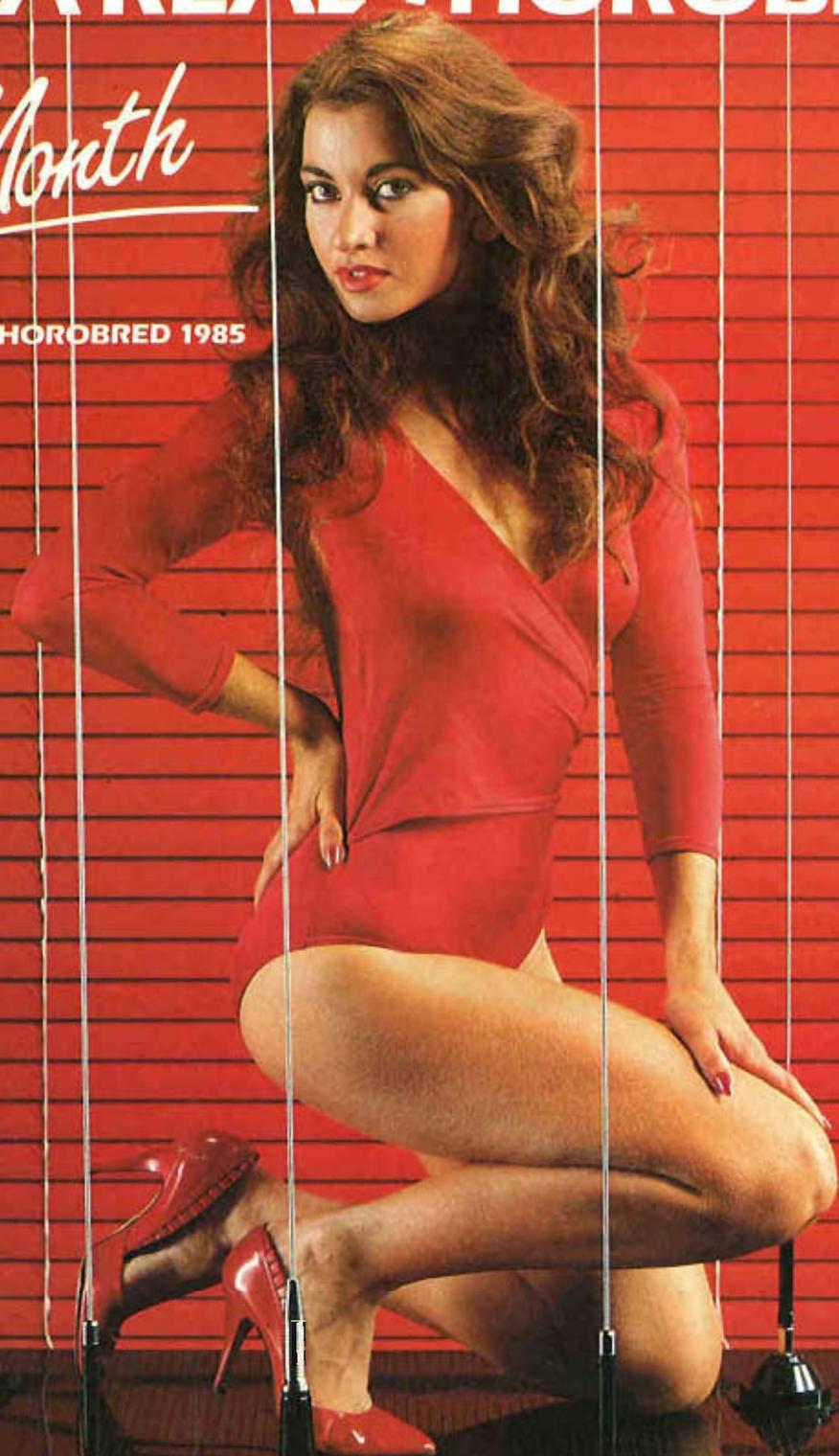


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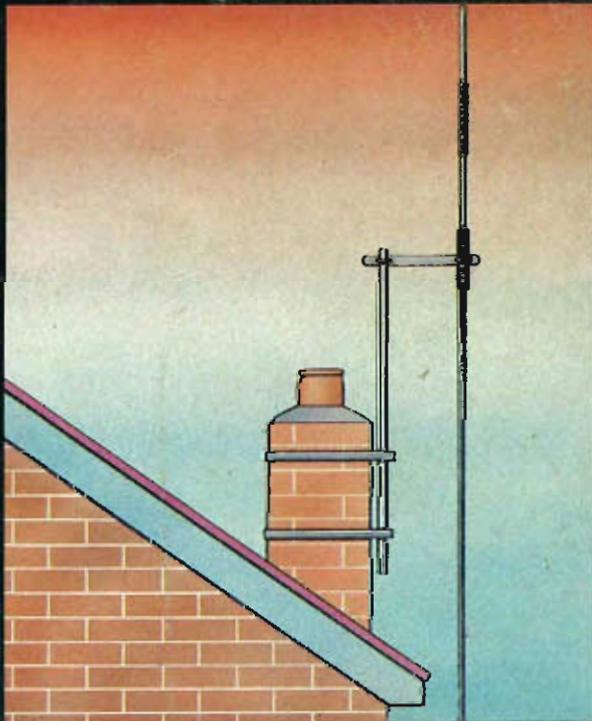
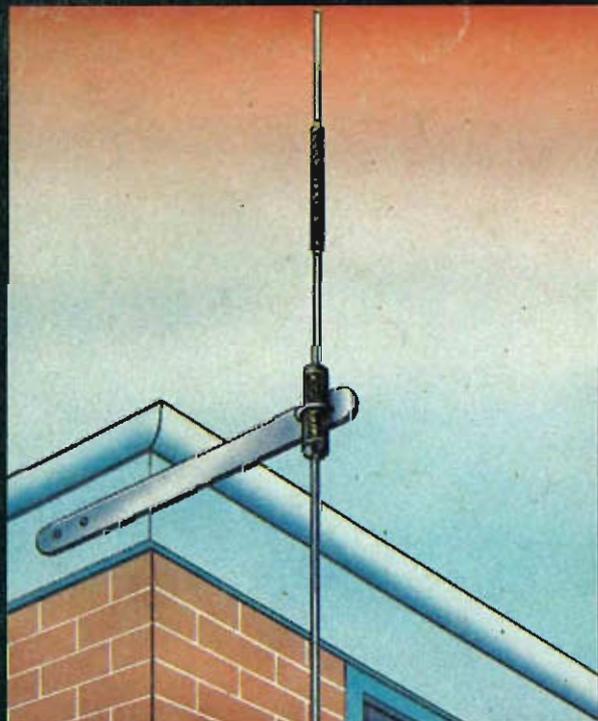
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