

CB

AN ARGUS SPECIALIST PUBLICATION

CITIZENS' BAND

FOR BRITAIN'S 250,000 CB USERS

HERE COMES THE SUN

Branch in to DX

CB AND COMMON SENSE

The rights and wrongs of operating

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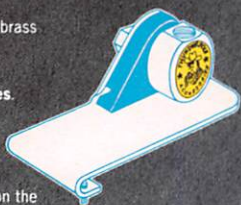
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CB

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July 1988

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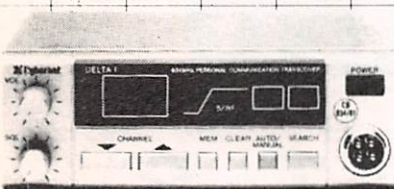
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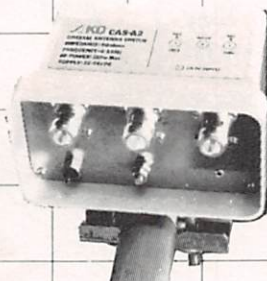
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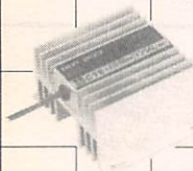
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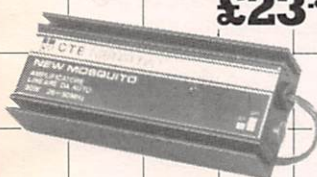
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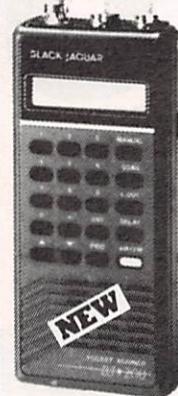
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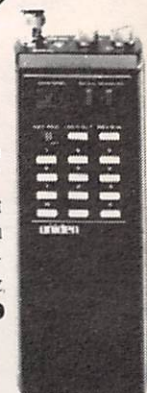
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NEVADA COMMUNICATIONS

189 LONDON ROAD PORTSMOUTH HANTS PO2 9AE

UPDATE



Editorial

Yeah, yeah, yeah, we know. We omitted the components' list for Vic Brown's DIY base mike project in the May issue. We apologise for this and hope to publish it in the next issue. For those of you who have written or 'phoned, photostats will be on their way as you read this. The freelance designer who lost the list will be suitably hung, drawn and quartered.

On a personal note here, I should like to thank the staff at BBC Television Centre for

their courtesy and co-operation in producing the BBC Radio Scotland programme, "Head On", in which I was honoured to be invited to talk about citizen's band radio in a feature called "Whatever happened to ...". In this case, it was CB radio! Whatever *did* happen to CB? The theme of the radio slot took the line that CB was dead and buried, but don't worry readers, your valiant editor soon put them right!

Elsewhere in this issue, you will — we hope — find lots of stuff to interest you (notice I didn't say "Loadsafeatures"?). After a short break, we re-introduce our Q&A section, so if you have any problems with CB, why not drop us a line? Also, we look at the impending spurt of sunspot activity and what it will do for DXers, keen to get that long-distance contact.

Last but not least — certainly not least — we investigate the threat of the 934MHz band's future, with regard to SRR, what will happen? Only the Shadow knows!

Simon Braval

Radio of the Future

Volvo launch RDS and they claim that in-car listening will never be the same.

The driver of a car fitted with Volvo's new user-friendly RDS radio can switch on, touch a button to select a channel and stay tuned without adjustment while driving the length and breadth of the country. In the case of national stations (like Radio 2) with multi-transmitters, the set will automatically re-tune to the strongest signal.

Drastic reduction of the need for manual tuning is a major safety factor with the new set. With a single press of the "automatic" button, this radio will self-tune in a few seconds to the six strongest stations available on a given channel. The name of the station held will appear on a digital display (eg. Oxford, London, LBC News); a further touch of the same button will bring up successfully the other stations in the group.

Should the driver be anxious to hear traffic information, the use of a pre-set "traffic"

button results in the radio selecting only stations which relay RDS traffic bulletins. It will also be possible for urgent traffic messages to be pre-coded so that the set automatically cuts in with them — even when the tape deck is playing.

RDS (Radio Data System) is an agreed European Broadcasting Union standard with twelve countries adding it to their networks. Both the BBC and the IBA have already started coding many of their transmissions. Ultimately, the codes will also identify different types of programmes, like news, classical music, light music, drama, etc. so that an RDS radio will be able to self-select by subject.

The Volvo RDS owner may also ask the radio to display the exact time — not the best approximation that the car clock can achieve, but Greenwich time (or BST) which is now broadcast continuously and relayed by every BBC RDS transmitter. So this clock will never be wrong and will never need



Correction

Unfortunately, there were a couple of errors which crept into Richard Shireby's article "Fact or Fiction" (CB May 1988).

On Page 15, column 2, the bottom three lines read: "The correct deviation level is about 2.5Kcs and must never exceed 2.5Kcs". This should read: "The correct deviation

level is about 2.2Kcs and must never exceed 2.5Kcs".

On page 15, column 1, tenth line down, the author writes about the type of aerial he has on his own vehicle. He

incorrectly stated that it was a Bantex 'Ranger' when, in fact, it was a Bantex 'Hunter'.

We apologise for these errors and hope that nobody was confused!

Sharp Practice

After more than two years of deliberation, the DTI is about to publish its new order prohibiting the manufacture, importation and sale of all forms of CB transceiver which do not conform to the performance specifications recently issued for CB transceivers operating within the CEPT frequency band. Whilst this order is primarily designed to prevent

resetting.

The system was developed by Swedish Telecom with Volvo as a natural partner in developing suitable receiver.

The BBC in England, together with the Swedish and Irish radio networks, have been transmitting since mid-1987, using Volvo receivers to help develop and test the system. The next phase will include the rest of the United Kingdom, France, West Germany, the Netherlands, Norway, Austria, Switzerland and Italy.

This international co-operation is not just academic, for the EBU standard means that, while the range of facilities may vary, the coded signals will have the same meaning in every participating country. At a later stage, RDS will be able to provide not just local traffic bulletins for the motorist on his way to Dover, but corresponding local information in English as he drives away from Calais.

The new Volvo RDS radio will be available through any UK Volvo Dealer within the next few weeks, priced from £517 plus VAT and fitting. The separate cassette player TP-701 will be available at the same time, priced from £152 plus VAT and fitting.

unapproved rigs from coming on to the UK market, it will also render users of unapproved sets liable to prosecution in just the same way as if they were using sets capable of AM transmissions or of operation outside the approved frequency bands.

Unfortunately, type-approval in one European country does not automatically mean that a rig conforms to British standards and there are already numerous examples of such equipment on the UK market. Notable among these are the Breaker 40FM and Satcom 40F models. The Satcom rig, also marketed under the Atron label, has been approved for use in the Netherlands and many examples of this model carry the legend 'PR27/NL' to denote that fact. Prospective buyers should be aware that this stamp does not make them legal in this country. Occasional Satcom 40Fs have also turned up sporting the 'PR27/GB' mark, which would suggest that they had been approved for use in the UK. Beware! They have not! Anyone offering to sell you such a set as suitable for use in this country may well be liable to prosecution under the Trades Description Act.

Retailing at around £150, the Satcom rig represents a considerable investment. It also represents a very poor one, since using it will lay you wide open to prosecution for

Lincoln Century Award

Many of our readers may be interested to learn of the reintroduction of the Lincoln Century Award.

This award originated in 1969 but has not been promoted for several years now although some seventy



using unlicensed equipment and, once the new order comes into force, the permanent loss of your rig.

Our advice to anyone who has bought any CB transceiver which does not carry the appropriate UK type-approval mark, on the understanding that its use was covered by their CB licence is to return it to their supplier and demand that it be replaced with a properly approved set of equivalent value. If the dealer appears reluctant to comply with this request, you should approach your local Trading Standards Officer, who may well confirm our belief that, since the equipment was sold as being suitable for use in this country, yet clearly is not, you may be entitled to redress under the terms of the Sales of Goods Act, and your rig was 'not suitable for the purpose for which it was supplied'.

In the case of such sets marked 'PR27/GB', the mark represents a clear indication

that the rig meets UK standards. Since it does not, this is a clear breach of the trades descriptions laws. Again, a trading standards officer should be consulted if you are in any difficulty.

It appears likely that once the new prohibition order is in force, DTI officials will take swift action against manufacturers, importers and retailers found to be selling unlicenseable rigs. No-one can yet say what their attitude might be toward individuals caught in possession of these rigs but they are unlikely to turn a blind eye to their use for very long.

The bottom line is DON'T BE CAUGHT OUT! If you are offered either a Breaker 40FM, or Satcom/Atron 40F, or any other rig which does not bear the appropriate marking, DON'T BUY IT and if you already own such a rig, TAKE IT BACK before you render yourself liable to a very considerable fine, or worse.

five awards were made.

The award is open for operation on all bands by all classes of operator, including short wave listeners, and may be gained through interest and perseverance rather than having to weed out once-in-a-lifetime stations. A slight revision to the original rules has now been made due to the

advent of new bands and the changing Class A to Class B ratio but the general format is similar to that published in most magazines when the award was introduced.

For more information, contact the Lincoln Short Wave Club c/o City Engineer Club, Central Depot, Waterside South, Lincoln.



LINCOLN SHORT WAVE CLUB





QUESTIONS & ANSWERS

NOISY NEIGHBOURS

Noisy Neighbours :: Back to Basics :: The Good Old Days :: Cordless Confusion :: Digital Dilemma

Noisy Neighbours

Adrian Hoare wants to monitor channel 19 in and around his home town of Tarbert in Argyll - a perfectly reasonable ambition, but ...

Q Could you please help me with a problem? We have to contend with several 'splash merchants' in our local area; you know the kind of thing — mod level turned up full, splattering onto adjacent channels, a real nuisance!

A friend of mine has cured this problem by fitting crystal IF filters, instead of ceramic filters, in his receiver. Could this be done with my Uniden 200? The filters shown in the circuit diagram are FL055 and FL056 (the second could be FL066 but the writing is too small to read). I would be delighted if it could be done as I enjoy monitoring 19 continuously when driving.

A Before you start spending your time and money trying to cure a problem that's not of your making, why not try the diplomatic approach first? Reading between the lines of your letter it sounds as if your local 'splash merchants' are known to you, even if they're not, they shouldn't be difficult to track down if their equipment is as messy as you infer. Simply suggest to them that their transmissions are almost certainly interfering with other people, besides yourself, and that sooner or later

someone will complain to the authorities, so it's in their interest to clean up their act.

As far as the modifications your friend has suggested are concerned, it will depend entirely on how close you are to the source of interference, and more importantly, how much power they're using. No crystal filter in the world can deal with RF breakthrough, and it may just be that your friend's mod worked because he is further away from the problem — try his rig with your antenna. Unfortunately without knowing more precisely the nature of the problem it's difficult to give specific advice. It's doubtful whether you should gain much by tinkering with the filters in your rig, they're pretty efficient to begin with; you would probably be better off having the rig's front-end alignment checked out by a competent (and well equipped) rig doctor.

Back to Basics

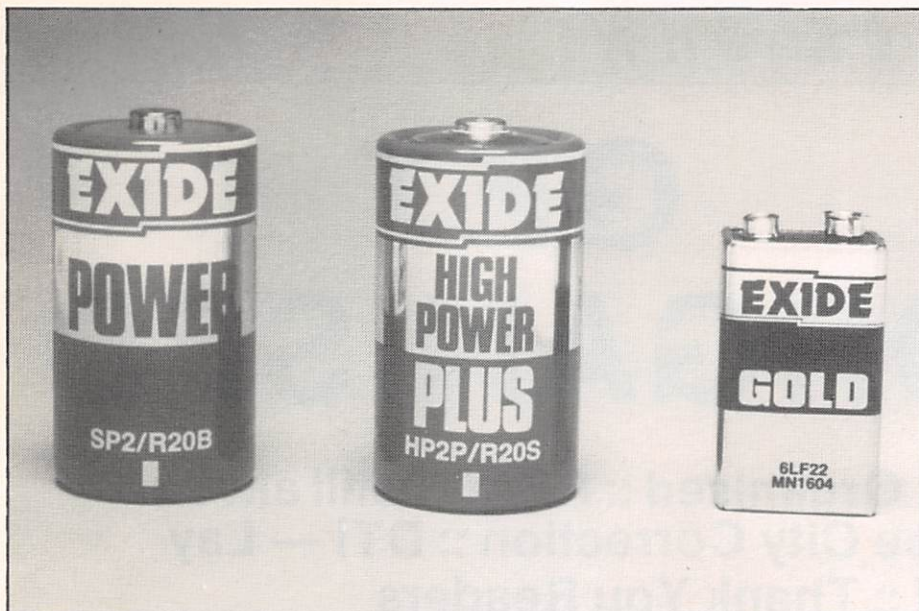
Michael Smyth of Cambeltown wants to set up a base station - but where does he begin?

Q I am writing to you to ask what exactly would I need to convert my mobile CB into a base station? I live in a ground-floor flat, and have no access to the loft. Could I use my mag-mount antenna?

A First things first — do you have access to the roof? Indoor antennas, especially at ground level are rarely satisfactory. Failing that, could you mount a 'balcony' or wall-mount type antenna outside your flat? If the answer is no to both of these questions then you should seriously re-think the whole business as the only people you'll be talking to will be the next door neighbours when they come to complain about the interference on their TV. Making-do with a mag-mount and biscuit tin is rarely worthwhile,

Below: Mobile to base conversion requires a power supply





Above: Always check your batteries

(though doubtless hundreds of you will now write in and tell us how well it works), but generally speaking it usually is a complete waste of time.

Let's now suppose that you have been able to put a roof or wall-mounted antenna, the first thing you'll need is a suitable mains-power supply. There's plenty to choose from and they're not all that expensive — take a look through the ads in *Citizens' Band*. You'll need one with a power rating of at least 3 amps but don't skimp; you may want to add-on other devices later on, so look for something in the 5 to 10 amp range. A base-station mike is also a good idea — again there's plenty to choose from so make sure you see, and try as many as possible. Don't worry too much about fancy features: compatibility with your rig (check with your local dealer), and ease of use are much more important. Finally, if you haven't already got one, get a good SWR meter. It's especially important to keep an eye on antenna alignment on a base station set up, particularly when the installation may be less than ideal.

The Good Old Days

Dave Saloman from Birmingham has asked us to settle an argument about the old days of CB - who better to ask than the country's oldest and most popular CB mag?

Q I've been a CBER on and off for the last ten years, well before all this FM and 934 stuff came out. A couple of weeks ago, when I was telling a couple of young 'uns about the old days, when CB was illegal, I mentioned that some of us used disguised antennas, that looked exactly like normal car aerals. They didn't believe me, saying that such a thing wouldn't work, or if it did, you

could probably spot it a mile off. Tell me I wasn't dreaming — there's a pint in it for you if you can put them right.

A You were not dreaming. We had to look way back through the *Citizens' Band* archives to find one though. Back in January 1981 (before CB was legal in the UK) we were quite bold and actually tested a couple of so-called disguised antennas using AM rig. One was manufactured by Sparkomatic; the other came from an unknown far-Eastern source and was known simply as the M10. They both cost around £16 and were stainless steel telescopic designs. The Sparkomatic was the least convincing; it had a loading coil built into the top section — needless to say is was quite thick, and although it was coloured grey, it did look a bit suspicious. The M10 had its loading coil built into the base so it looked exactly like a normal car aerial. As we noted at the time, neither of them worked particularly well, but in those days the airwaves were comparatively quiet and discretion was often more important than range. Now, how about that pint ...

Cordless Confusion

H.K. Alinson of North Weal has a problem with his cordless telephone - what's that got to do with CB? Well, read on ...

Q I've got a Freedom Phone 3500 cordless telephone which I have been using now for a couple of years. Within the last couple of months I've noticed that the range, from the handset to the base station, has dropped off; down to just 50 to 60 feet in the open. I took it to my local rig

doctor who told me that there was nothing he could do with it as he didn't have a circuit diagram. Being a bit of a dabbler, I decided to have a go myself. I reckon that as the handset is picking up the base station okay, the problem must be with the receiver circuitry in the base unit. Now, my question is, can I increase the sensitivity of the receiver by fitting an aerial amplifier, between the telescopic aerial and the receiver input? If so, which one should I use as the frequency is probably different to those used for CB.

A You would be wasting your time and money trying to fit an aerial amplifier to your cordless phone — even if you could find one that worked at the appropriate frequency. In any case it's unlikely that the fault lies with the base station receiver. The first thing your rig doctor should have checked were the Ni-Cad rechargeable batteries in the handset. They have a limited life, (only 2-3 years under the conditions in which they're used), and it's far more likely that they've reached the end of the road and need replacing.

Digital Dilemma

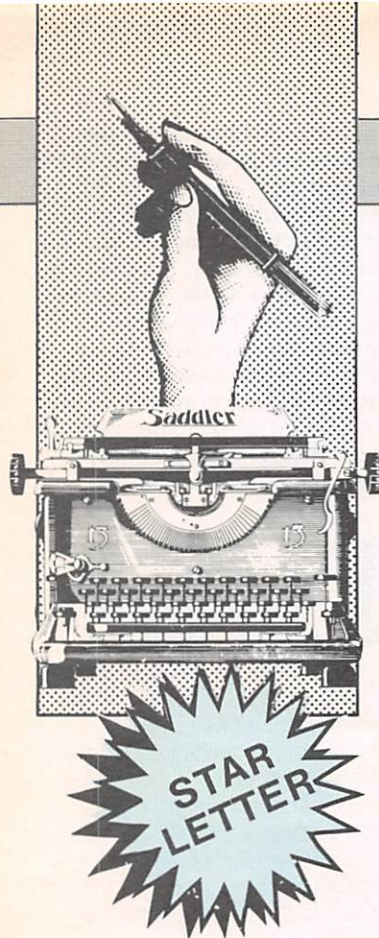
Stan Willis from Southend has a problem with his Audioline rig - changing channels has become a tricky business.

Q I don't know if you've come across this one before but my Audioline 342 (one hander) has developed a strange fault that makes it almost impossible for me to tell which channel I'm on. The fault appears to be with the up-down channel selector. Instead of counting through the channels one by one, the display seems to jump certain channels, and sometimes I can't get channels 2, 8, 18, 28 or 38 at all! The rig works well otherwise. Is this a common problem, and what is the cure?

A The 'missing' channels numbers give a good clue here. Check whether or not there is any modulation on the affected channels — if there is then the fault is most certainly confined to the LED display and driver circuitry. We're not aware of this being a particularly common problem — this is the first one we've come across in fact. However, from the symptoms you describe it doesn't sound too serious. In view of the cramped circuitry inside the 342 handset and control unit we advise against any DIY expeditions, instead hand it over to your local rig doctor (assuming of course that the guarantee has expired).

GET ORGANISED

**Get Organised :: REACT still alive ::
Tripe City Correction :: DTI — Lay
Off! :: Thank You Readers**



Get Organised

Mike Charlie 117, who resides in Northampton, is not the only one unhappy about the DTI ...

As a user of CB radio for some seven years now and, I might add, all modes on frequencies between 26 and 28MHz, I have read, with interest, letters from other readers concerning the new CEPT frequency allocation (Sept, 1987) on which I am active.

It pleases me to be able to say that in my experience, so far, all the stations I have worked are operating their rigs with courtesy and the respect their chosen hobby deserves, probably because many of them are now or have previously operated SSB DX or are very interested in DX contacts even if limited by operating totally legally!

I know this to be the case, as I have worked several stations that were regular contacts in the early days of 27/81 when, if memory serves, operating conditions were very similar to the CEPT frequencies now.

Most of these people were, like myself, totally disillusioned with 27/81 because of poor operating and other reasons still evident today on said band and, therefore, fled to other modes and frequencies especially the superb DX talk powers of SSB, even with moderate RF power levels!

As for myself, I had a very enjoyable twelve months with a re-crystalled Yaesu FT707, 80 watts RF power and a 3 element Yagi beam (naughty I know) but alas it all had to end. I had to move QTH due to work, and financial pressures

ensured I was QRT for approximately eighteen months and a very good friend of mine got busted for using SSB on 26.405 MHz which also influenced my decision to sell up at the time.

Since my purchase of a Satcom Scan 40 for the mobile I have derived much pleasure and hope to do so in the future. However, a black cloud has appeared on the horizon with the prospect of getting hundreds of foul-mouthed, mike keyers and music players (in the minority I will accept) descending on the CEPT channels from above when the 27/81 band is withdrawn by our DTI, whom as everyone knows owns every Cycle Per Second of the radio spectrum (cutting sarcasm?) judging by the revelations regarding the future of the 934MHz personal radio allocation.

Even though they say they are consulting the two user groups of this band, they propose to withdraw same in the near future making many expensive rigs redundant and their operators very angry after spending all their hard-earned cash, average base station cost £500+ to my knowledge, as I also worked this band for a short time in 1986.

When you look at legislation regarding CB in this country it is a typical example of British Bureaucracy:

A. 1981 DTI allocates CB frequencies totally different to those used by the rest of the world.

B. 1987 DTI, Under pressure from EEC, allocated the common CEPT frequencies.

C. 1990 DTI plans to withdraw original allocation.

This leaves approximately 500,000 27/81 specification rigs in circulation which will be used regardless of what the DTI dictate!

Talk about making a rod for their own backs. Gasp! It's about time the DTI recognised the need for a properly organised and planned CB service from 26 to 28MHz with 4 watts FM and 12 watts SSB separated from FM, with antennas of, say, a halfwave in length giving roughly unity of gain over a dipole. Here, I would totally support Colin Reynolds', very sensible possible licensing suggestions in his letter (*CB Magazine* March 88).

For the record, I am currently studying to take the Radio Amateur Licensing Examination in December of this year and even with a 'G' call sign, should I pass, I will not be deserting the CEPT frequencies or the good friends I have made there unless the system deteriorates to the level of the 27/81 Band.



Thank You Readers

One of our most popular writers, Paul Coxwell, writes a few words of thanks ...

Doesn't time fly? It's now two years since I first wrote for *Citizens' Band*, and I would like to thank everyone for ploughing through my articles and for all the kind comments received, both directly and through the magazine, especially with regard to "CB In-Depth".

I am always open to comments on past features and ideas for future articles, so if any of you have anything to say, whether just a simple comment or a wild ambitious idea please do not hesitate to contact me via the magazine.



For those of you who use computers as well as CB radio and enjoyed some of the computer-related articles, there are more in the pipeline. If you have any ideas you can contact me direct via Telecom Gold, on mailbox 72:MAG32001, or associated telex service.

Thanks once again to you all.

Tripe City Correction

Blunderbuss of the Tripe City Breakers points out a mistake ...

In your April issue, you stated that the second TCB mass eyeball will be held on the 27th of August at the Barton Equestrian Centre, three miles north of Preston. Although this was the original intention, we were let down with that venue and changed it to August 20th at the Barton Village Hall (on the A6).

Our club meets every alternative Friday at the Loveclough Social Club on the old

DTI - Lay Off!

Tin Can writes from North Yorkshire with some heartfelt comments about the DTI ...

After reading the May issue of your magazine, I felt I had to put pen to paper as, like many other citizens' band users, I am getting a bit sick and tired of being pushed around by the DTI.

After just purchasing a new frequency station (Satcom at £165), which I have since found out is illegal to use, they are now telling us we may be going to SSB. These new frequency rigs are costing between £100 - £250 to buy and it is going to be a waste of time buying them if, as I have found out, we will not be able to use them in the early 1990s.

How come, when we're in the Common Market, the DTI tell us that it is illegal to use sideband rigs like the Cobra, Nato's and Ham International when they are all legal to use in the rest of the Commonwealth?

I think it's about time that the DTI left us CBers alone with the eighty channels we have now and let us have the GP's and things instead of these legal aerials which cause a lot more interference. I also think that the British should be able to use Nato's and Cobra's legally, because the people who use these rigs are not the ones causing trouble. The

DTI should put the licence fee up to £50 or more a year and let the British CBers use these frequencies and get the old breakers back on — especially from the old AM days. It's about time they concentrated on catching the people who mike key on breakers, bucketmouth, tweak up rigs and play music and leave the ordinary CBer alone. They always seem to pick on people who have illegal rigs and twigs when they are not causing people any aggro like these other idiots.

It's not always the young kids to blame, it's usually the late teens and early 20's. I have been on the new frequencies for seven months and, for the past three months have had a mike keyer (30+) every night — and what are the DTI doing about it? I pay £12 for a licence — along with many others — and this is what we're getting. Twelve years ago, when I was on AM, there was none of this carry on and then they wonder why we resort to these so-called illegal rigs when we're not causing half as much aggro as these other idiots. I do hope you will publish my views as I am sure many others will agree with me. CBers should be friendly towards each other. Never mind all these new, different rigs, if the DTI were to pull their finger out we wouldn't need all these new rigs.

Lastly, I would like to thank you for editing such a good magazine every month. It's a pity the DTI cannot do the same about these idiots on CB.

REACT Still Live

Mary writes from Ipswich with news of her REACT team ...

A recent article in your magazine has reached us and prompted our team to reply. Ipswich REACT is a well known group being on the East Coast with large docks all round such as Felixstowe, Harwich and Ipswich. We are very busy on Channel 9.

We cover a lot of social events, like marathons and sponsored horse rides.

These are just a few of our activities. We have thirty one full members, seven associate and two honorary members. We take approximately two hundred calls a week and during the October gales, we took that amount in one day. We have just been put on the emergency list by the County Council which means we can be called out any time day or night. So, as you can see, we are not dead this end of the country.

A56 between Burton and Rawtenstall in Lancashire. Admission is 20p, but this includes supper.

Incidentally, the Barton one is our second mass eyeball and swap meet, not

just our second eyeball!
(We're glad to put the record straight, Blunderbuss - Ed.)

SSR vs 934

Smart Alec looks at the implications of Short Range Radio

It is now a couple of years since we first reported the fact that the government was considering some radical changes to the 934MHz CB service. Now we can confirm their intention to introduce a new service in that area. To be called "Short Range Radio", the new service will operate on a wider band of frequencies than those currently available to CB users and will employ extremely sophisticated transceivers incorporating an automatically selected calling channel and digitally encoded selection of operating channels, designed to minimise the risk of interference from other contacts within the band. It will also differ from the present CB service in having one hundred and twenty channels, as opposed to the twenty originally specified for UHF CB.

In a recent statement, Industry Minister, John Butcher announced that the CB specification, MPT321, will be withdrawn as from the end of this year, in favour of a new, as yet unpublished specification covering the wider band of frequencies from 933 to 935 MHz. In making his statement, Mr. Butcher was careful to point out his department's intention to ensure that the present users of 934MHz, whom the government currently estimate to number around three thousand, would be assured of the right to continue using their present equipment for a number of years to come. He also said that the new SRR service would be introduced in such a way as to protect the rights of UHF CB operators. Withdrawal of the CB specification will not affect the use of existing equipment. It will simply prevent future manufacture and importation.

The idea behind SRR comes originally from Japan, where a similar facility has been available at around 903MHz for a number of years and has proven to be very popular, with an estimated 44,000 sets currently in use. Britain is not the first European country to emulate the Japanese in this respect, with Switzerland already having such a device, based on the same range of frequencies it is proposed to allocate in this country but with somewhat different technical parameters. It is, in fact, the

hope of European harmonisation which has led Britain to opt for the precise part of the band already chosen by the Swiss, in the knowledge that other European countries are looking closely at the idea.

So what now? What, if anything, does the future hold for the present UHF user? Asked for his views, Mike Machin of the 934 Club, UK, was less than optimistic. He told me, "Our first and most pressing problem is to overcome the fact that some people seem to believe that they will no longer be allowed to use their rigs once the specification is withdrawn. This is simply not the case and we must emphasise the fact that it is only the technical specification and not the licence which is to be killed off in December. I have heard prophets of doom on the band, categorically stating that they might as well sell up now, before their rigs become unusable. Nothing could be further from the truth!" Mike also expressed the opinion that this misconception had been reinforced by a number of inaccurate comments in some radio journals following the Minister's announcement.

Mike has his own doubts about whether SRR will prove as universally popular as its champions might wish. He said, "We see little to suggest that SRR rigs will be any cheaper than the present generation of CB gear. The Japanese housewife might be perfectly willing to spend up to four hundred pounds for a rig she can take shopping with her but I cannot see her British counterpart being prepared to do so, especially since SRR will offer no greater range than our present rigs". Looking at the market for UHF rigs, he said, "Our estimate of the present number of users is pretty similar to the government's. Rigs change hands pretty easily on the second-hand market but most dealers seem to agree that there is very little demand for new ones, so that the number of users remains fairly constant. It is unrealistic to assume that simply changing the name, increasing the number of channels and adding a few bells and whistles will create a significant increase in demand for this part of the spectrum".

On the future of the 934MHz Club, Mike

told me, "It is difficult to assess the long term future. So far as we are concerned, we intend to continue to use our present rigs, and to recommend other 934 users to do the same. The most effective way to maintain continued allocation of our band is to use it as much as possible. The government bases its policies for the future on the number of licences in force and I doubt it can ignore the wishes of some three thousand people from all parts of the British Isles". He added, "934 Club, UK will continue to represent the UHF CB user for as long as he is there to be represented, and that looks like being a pretty long time. At a recent AGM our members, some five hundred in all, were solidly behind us and we are confident of their continued support so long as we represent their views fairly, both to government and to the wider public at large".

Asked about the international prospects for Short Range Radio, Mike told me that Belgium, Holland and a number of Scandinavian countries are very interested in the idea, though he was unable to confirm their exact degree of involvement. "I have lost count of the number of times we have been told that the Netherlands has introduced a short range radio service", he told me, "but the truth is that they have not yet done so and nobody seems to know when they will. How can they, when the final CEPT specification has not yet been published?".

Mike was quick to point out that this list of countries did not include Switzerland. "The Swiss already have their own system. They are unlikely to change it to suit us and since manufacturers seem to favour a completely new generation of rigs there is little chance that the Swiss system will harmonise with anything currently under evaluation".

For another view, I contacted former CBA President, James Bryant. As a veteran campaigner, it was to James that the government first explained its intention to allocate 934MHz as a CB frequency. He was sceptical then and is less than happy now. "Given the technical advantages of UHF, we would have liked to see the 934MHz allocation

succeed and I am sure that the only reason why it never really took off was the very severe restrictions imposed on it by the way in which it was specified. Rigs had insufficient range to suit the wider public need and I have always contended that they were overpriced. Though manufacturers and dealers would have us believe otherwise, it should have been a simple matter to produce a rig to retail for between a hundred and fifty and two hundred pounds. That no-one chose to do so must be a strong contributory factor in keeping down the number of users".

Thinking of the present 934MHz users, James told me, "934MHz was the government's own choice for a CB frequency and in fairness it should now take every possible step to make sure that the users get full value for their money. Officialdom refused to listen when we suggested an alternative VHF allocation. They went to considerable lengths to assure us that 934MHz was the only possible slot for CB, yet here they are, only a few years later, wanting to change the game plan. If, on the other hand, they had accepted our suggestion of just one megahertz at VHF, we would, by now, have a CB service that was the envy of the world and they would be free to allocate frequencies in the 900MHz band to any number of new services. As their reallocation of TV Band III to business mobile use has shown, our suggestion was perfectly practical.

In radical mood, James suggested, "in the long term, the fairest thing that the

government can do once it decides to phase out the present CB service, is to give the three thousand or so users free licences on the new services for life. This would go some way to compensating them for the disruption which they are ultimately likely to suffer, though, having read Mr Butcher's announcement, I feel that there is still considerable life left in the 934MHz service. Enough life, in my opinion, to justify users in holding onto their rigs".

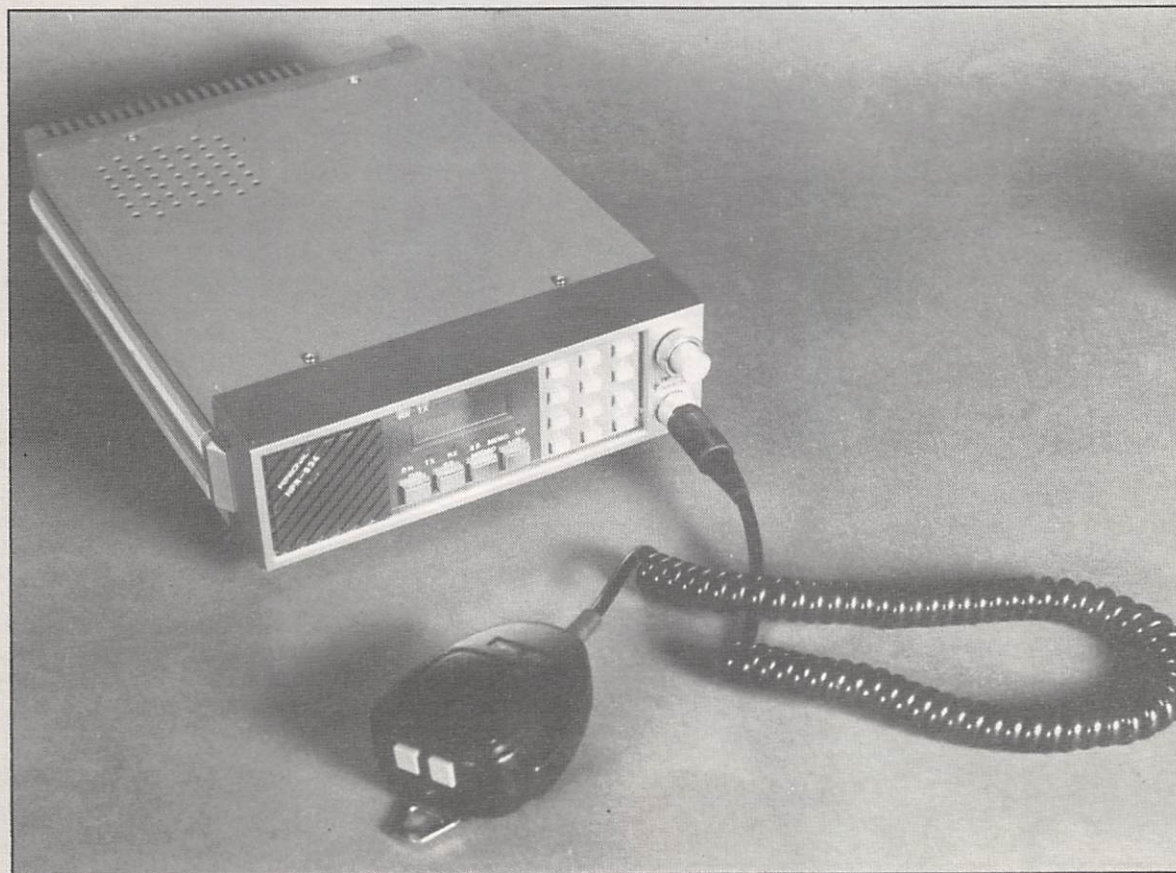
As to the future of SRR, James expressed the hope that potential users would give it a fair try, once again pointing out the fact that the ruling factors would be price and effective range. He said "I welcome the technical innovation which short range radio is set to introduce but once again I must emphasise the fact that this should not hike up the price of rigs. Although much of it is new to the public domain, digital transmission is a well tried and tested technology which contains nothing to justify the high price being suggested and there is terrific scope for any enterprising manufacturer prepared to look realistically at production costs and profit margins".

Of performance, he said, "It is to be hoped that the final specification is not too restrictive in terms of power output, antenna design and receiver performance. The general public are not necessarily radio enthusiasts, so that for SRR to gain wide acceptance it must offer a high degree of useability at moderate cost. In short, although much

beloved among enthusiasts, one public UHF facility has failed to take off in a big way and I cannot help but see the danger that its successor will go the same way".

A number of people have suggested that SRR might prove useful to the business community. James was sceptical. "I can see little that the businessman could do with SRR that he cannot already do more efficiently with a cellular telephone", he said, adding, "if price forecasts are correct, the original cost will be about the same and the business community might well regard the connection fees and call charges on cellular radio as money well spent if it ensures uninterrupted contact over long distances". He also pointed out that VHF business radio looked a far cheaper proposition, the only drawback being the fact that licences for SRR would be far easier to obtain.

Mildly surprised by the apparent lack of enthusiasm for Short Range Radio, I went in search of the manufacturers' view. For Motorola, Alan Hudson was far more optimistic. He estimated the potential for a million sets throughout Europe, though he foresaw the band being most attractive to business users. He told me, "Although the same people might use it for recreational purposes at weekends, we see its greatest market lying with the business user who needs mobile communication over a limited distance". He estimated that effective range for a set properly installed in a car would be in the order of about ten kilometres and suggested that this would be ideal for





people such as doctors, who might need to maintain contact with their surgery over a radius of no more than three to four miles. He also saw a great potential for hand portable equipment on large industrial sites, where key personnel could maintain contact via SRR at all times.

I asked Mr Hudson why he believed that such a limited facility might prove more attractive to business than, for instance, cellular radio or any of the currently available PMR services. He told me, "So far as cellular radio is concerned it is not the capital outlay that really matters but the running costs. Typically these work out at around £70 per month. This is fine if you need, and are prepared to pay a high grade service with almost unlimited range but SRR would be free of running costs to the man needing only short range communications". In respect of PMR, he pointed out that the present bands were already crowded and suggested that a new UHF facility would relieve much of the pressure on these bands.

To illustrate his point, he cited the case of the existing German 470MHz band, pointing out that despite its being restricted to about 10km range it had proven very popular with business users, most of whom were finding the range more than adequate. He added, "I feel sure that a UHF facility offering similar range would prove equally useful throughout the rest of Europe.

Asked about its international implications, Mr. Hudson told me that at least ten other countries were interested in the idea, which he reminded me was unlikely to become a reality for at least the next two years. He even expressed the likelihood that although they already have their own one-off system, the Swiss would ultimately fall into line once a more universal service was in full operation. He would not commit himself when asked if SRR sets would be produced in this country, saying that a company like Motorola must now think in terms of Europe. He did, however, voice the personal opinion that he would like to see some rigs being produced at his company's Basingstoke plant.

Of the 934MHz service, Mr Hudson pointed to the fact that users need not suffer interference from SRR equipment, even when the two services were working in parallel. He said, "Because SRR sets will be able to search for a clear channel they will automatically ignore any frequency which is already in use, so CB users have nothing to fear on that score". He also explained his own concern to see that CB users were allowed continued use of their present equipment for some years to come.

So what are the implications of this latest CEPT idea? Will it interest the public at large, as it has in Japan, or will its use become restricted to the business sector? We are unlikely to know for some considerable time.

MICKY THE MENACE



Thoughts of Chairman Filly: kids and CB don't mix

This was the inescapable conclusion of my latest hideous experience with a junior member of the human race. In this instance, my nephew Micky, six years old but already a veteran in the ways of mischief. Are kids born knowing how to dismantle the comfortable, well-ordered lives of their aunts or what?

Anyway, this fiend in small human shape was deposited on my doorstep by my sister, who rang the doorbell and very wisely ran away. The note pinned to his cute little duffle coat announced that she and her husband had been ordered to go away for a holiday by their doctor, in order to avoid an incipient nervous breakdown, and would I mind looking after Micky for a week?

An incipient nervous breakdown, I thought, eyeing the angelic little face beaming up at me. Brought on by what? I thought I could guess; the last time I encountered my nephew, he had given my (best) jumper to his new kitten to play with, buried my purse in his sandpit, stuck plasticene all over my car, dismantled my watch and thrown orange squash all over me in a temper tantrum. And that was in the space of one afternoon.

What could he accomplish in a week?

Well, there was no help for it, I couldn't leave the little monster roaming the streets. He'd bring the village to a shuddering halt.

I brought him in, sat him down on the sofa, toyed with the idea of handcuffing him to the old bedstead in the loft for the week then decided I might fall foul of the NSPCC, and told him instead not to move an inch while I went to fetch him some orange juice.

I was only gone two minutes, but when I came back he had already got behind the television and was amusing himself ripping out the aerial. I hauled him out, tried to explain to him what 'electrocution'

meant, then tried to interest him in a cartoon programme. Bugs Bunny was too dull, it seemed — Transformers was the thing. Unfortunately, Transformers were not on. In desperation, I took him for a drive.

Thoughtlessly, I turned my rig on, seeking relief for my disordered nerves. He was fascinated, of course.

"Who that, Auntie Filly?" he piped, listening to a voice seeking directions to the motorway.

"No-one", I said, harassed. "Just the radio. Do you want to go to the park and play on the swings?"

He dismissed the idea with scorn. "Swings are for babies", he said indignantly. "I want to play with that".

"That", of course, was the rig.

"Well, you can't", I said. "Micky, I said no — Micky — don't touch that!"

Fortunately, he had done no more than change the channel.

"nother voice!" he said excitedly. "Where did the man go?"

"Down a deep hole, which is where you'll be going if you don't behave yourself", I said grimly.

He eyed the rig, then me, consideringly. I looked him squarely in the eye. "Touch that again, and I'll throw you in the duck pond", I told him. He seemed to feel that he had met his match, for he said nothing more, merely contented himself with carefully unscrewing the window winder handle off the door.

It was easy enough to keep him away from the rig in the car, but my base station was more vulnerable. My only hope of handing him back to my sister in one piece, neither electrocuted, drowned, strangled by stray cables, scalded by the kettle, or murdered by the neighbours was to keep him permanently under my eye.

It would have been easier to have kept a hyperactive flea under my eye.

He could vanish in the twinkling of an eye, and I would find him under something, on top of something, taking something apart. Visitors ceased coming to the house. A collective shudder ran through the village when I appeared at the end of the high street, bouncing little imp in tow, chubby face red and beaming under his jaunty little cap.

In spite of my best efforts, he got to the television (pushed it off its stand and almost squashed his foot), spilt milk all over the hi-fi, defrosted the freezer and clambered inside the washing machine. The cat disappeared and did not show its face again for a fortnight. I was wondering how long it would be before the base station went the way of the TV and the hi-fi, but oddly enough, it turned out to be my salvation.

He was a sharp little devil and he caught on straight away to the fact that this exciting box with knobs and glowing displays was related in some way to the other exciting box in the car. He also realised this was no ordinary radio ("because it doesn't play pop music, does it, Auntie Filly?").

Once it was firmly brought home to him that the was not going to be allowed to take it apart, he was quite content to sit beside it, perched on the arm of the sofa, and listen to the interplay of voices. Sometimes he would join in, not realising the voices couldn't hear him. I suddenly found myself with hours of peace. The highlight of his week was the moment I allowed him to speak to *Big Jane* over the microphone (he informed me he was going to marry *Big Jane* when he was a year or two older). Unfortunately, he chose to seize the opportunity to make revolting farmyard-type noises over the air.

I didn't think he had worked out how to use the mike to transmit, and I couldn't remember ever leaving him alone with the rig. But for several days after he had gone, I got some distinctly funny looks when I walked up the high street. And some odd responses when I called anyone up on the air.

And I wonder ...

by

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TRANSISTORS	BD244C	35	MRF237	3.36	2SC1306	1.21	2SK33	40	LA4460	1.47	NE567	52	FCC CONVERSION BOARDS	
AC128	29	BD245C	84	MRF238	13.64	2SC1312	09	2SK192	25	LA4461	1.47	NE645	1.37	FOR CB's on the old UK spec using the LC7137 synthesiser we can supply a conversion board to allow operation on both the sets of 40 channels. Technical help is available.
AC176	20	BD246C	75	MRF450	13.50	2SC1318	10	3N201	1.11	LA4500	1.65	NE646	1.23	
AC187/8	22	BD317	1.78	MRF450A	13.80	2SC1359	13	3SK40	1.27	LB1405	2.24	PLLO2	5.70	
AD149	75	BD318	1.79	MRF454	22.94	2SC1384	23	3SK48	2.71	SO42	2.50	RC4558	51	
AD161	40	BD507	65	MRF455	19.80	2SC1398	60	3SK88	4.5	TA7061	78	TA7217	1.19	
AD162	40	BD508	87	TIP29C	26	2SC1413	3.50	3SK97	1.66	TA7120	58	TA7222	1.24	
AF124	42	BD529	54	TIP30C	29	2SC1674	15	40673	1.30	TA7130	46	TA7227	2.07	
AF127	33	BD530	99	TIP31C	28	2SC1675	13			TA7137	61	TA7240/1	1.98	
AF239	32	BD901	46	TIP32C	33	2SC1678	1.07	IC'S		TA7204	1.38	TA7270/1	1.86	
BC107	11	BD902	49	TIP33C	67	2SC1815	10	AN240	1.13	TA7205	96	TA7274	1.90	
BC108	07	BF115	36	TIP34C	67	2SC1909	91	AN6551	73	TA7208	1.40	TA7280	2.31	
BC109	13	BF173	26	TIP41C	27	2SC1923	13	AN7131	1.37	LC7120	2.75	TA7310	91	
BC114	09	BF180	12	TIP42C	27	2SC1942	1.98	AN7140	1.18	LC7130	3.26	TA75902	97	
BC141	26	BF184	32	TIP47	52	2SC1945	3.63	AN7178	2.47	LC7131	2.88	TBA800	1.38	
BC142	19	BF185	24	TIP120	38	2SC1946	12.62	BA402	59	LC7132	2.89	TBA810T	49	
BC147	11	BF194	11	2N3055	28	2SC1947	3.78	BA521	1.35	LC7137	3.15	TC9109	4.31	
BC170	11	BF195	06	2N3054	95	2SC1957	56	BA656	92	LM301	35	TDA1010	1.10	
BC182/L	06	BF196	09	2N3055	42	2SC1969	1.58	CA3086	91	LM311N	56	TDA1011	1.37	
BC183/L	07	BF197	15	2N3771	1.16	2SC1970	1.48	CA3089	2.45	LM317T	78	TDA1020	1.99	
BC184/L	10	BF198	06	2N3772	1.31	2SC1971	2.82	CA3240	1.39	LM324	41	TDA1510	3.18	
BC213/L	07	BF199	09	2N3773	1.40	2SC1972	8.25	HA1319	2.16	LM329	46	TDA1512	3.12	
BC213/L	10	BF200	21	2N3819	35	2SC1973	58	HA1322	1.82	LM380N	1.32	TDA1515	3.71	
BC214/L	08	BF244	39	2N3886	1.10	2SC2002	25	HA1338	2.31	LM383	3.50	TDA1903	82	
BC238	06	BF245	29	2SA473	46	2SC2028	1.25	HA1339A	3.80	LM384N	2.90	TDA2002	63	
BC308	06	BF255	05	2SA564	10	2SC2029	1.12	HA1342A	3.80	LM386	1.15	TDA2003	76	
BC327	06	BF256	31	2SA608	11	2SC2078	55	HA1366W/WR	1.72	LM387	2.10	TDA2004	1.68	
BC328	11	BF259	25	2SA673	13	2SC2086	49	HA1367	2.64	LM3900N	78	TDA2005	1.40	
BC546	05	BF324	22	2SA678	38	2SC2092	1.32	HA1368/R	1.63	M51102	1.85	TDA2006	76	
BC547	05	BF337	28	2SA683	20	2SC2097	21.09	HA1374	2.11	M51513	1.86	TDA2020	1.81	
BC548	05	BF422	23	2SA684	28	2SC2099	19.25	HA1377	1.73	M51514	1.12	TDA2611A	86	
BC550	14	BF423	23	2SA699	66	2SC2166	83	HA1388	2.77	M51515	1.94	UPC1028	98	
BC558	06	BF469	18	2SA733	13	2SC2236	26	HA1389	1.39	M51516	2.22	UPC1032	73	
BC639	11	BF470	45	2SA966	28	2SC2290	23.61	HA1392	1.90	M51517	2.22	UPC1156	2.05	
BC640	14	BF950	60	2SA999	10	2SC2312	2.95	HA1394	2.72	MB3712	2.06	UPC1181/2	89	
BD124P	50	BFY50	25	2SA1012	67	2SC2314	30	HA1397	2.55	MB3730	2.06	UPC1185	1.75	
BD131	38	BFY51	24	2SA1015	08	2SC2320	10	HA1398	2.57	MB3731	2.15	UPC1188	71	
BD132	38	BFY90	50	2SB525	25	2SC2395	16.20	HA13001	1.60	MB3756	1.83	UPC1230	1.49	
BD135	22	BFY51	24	2SC380	09	2SC2539	10.79	LA1201	73	MB8719	4.12	UPC575	79	
BD136	23	BFY90	50	2SC495	40	2SC3020	12.90	LA1230	1.27	MC1310	65	UPD858	1.65	
BD137	23	BU205	74	2SC536	10	2SD234	46	LA4032	1.99	MC1350	1.41	UPD816	5.34	
BD138	28	BY208A	89	2SC710	10	2SD235	68	LA4102	84	MC1723	30			
BD139	21	BU208D	103	2SC711	09	2SD235	68	LA4117	94	MC3357	1.54			
BD140	25	BU326A	99	2SC730	3.67	2SD313	41	LA4140	58	MC3359	2.54	V REGS		
BD201	33	BU406	63	2SC828	10	2SD325	36	LA4201	1.15	MC13002	3.05	7805	27	
BD235	28	BU406D	1.29	2SC900	27	2SD330	46	LA4220	1.41	MC145106P	4.19	7812	27	
BD237	27	BU426A	89	2SC930	17	2SD380	4.26	LA4250	2.23	MM55108	3.00	7815	35	
BD238	31	BU508A	96	2SC945	08	2SD471	26	LA4400	2.59	NE545	2.38	7905	49	
BD241	34	BU508D	1.11	2SC1060	59	2SD837	79	LA4420	1.32	NE555	16	7908	49	
BD242	33	BU526	1.11	2SC1061	57	2SD880	36	LA4422	1.02	NE555	56	7912	49	
BD243C	34	BU536	1.40	2SC1096	71	2SK30	37	LA4445	1.35	NE565	1.01	7915	49	



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COMMUNICATION THE

QSL WAY



More names and addresses from QSLers all over the world, courtesy of David Shepherdson

As promised last month I've details of the Formula One Club, more events throughout the country and some new addresses for clubs which have been taken over or passed to new Presidents.

To start off then, you should have this issue just in time for me to remind you about the Sheffield Annual Eyeball held at the British Steel's Sports Ground, Bawtry Road, Tinsley. If you are planning to attend, then there are various organisations promising displays, along with many of the UK clubs expected to be in attendance. There will also be a very special guest in the shape of Sheffield's own Errol "Bomber" Graham, the world boxing champ! For those coming up from the South on the M1, not the A1 (M), turn off at junction 34's first island, following the signs for Bawtry on the A631. For those coming from the North, then look for the second island!

Then, over the weekend of 25th & 26th of June, there's the Firebirds' POMA Swop Meeting. Afraid I've no details on where it's held, but it's usually a hotel in Hastings. Note also that the Firebirds have a new address. The same Sunday, the North Wales Breakers are holding their 1st Eyeball which they hope will become an annual event. This is being held at the Nova Complex, Central Beach, Prestatyn in North Wales from 11am until 4.30, with an evening of entertainments between 7.30 and 11.00. Elsewhere the Kilo Mike DX Group is holding its first Eyeball at the Kirby Muxloe Sports Club, Ratby Lane, Kirby Muxloe with many QSL clubs attending, including the new Formula One Club. The event runs from 10am until 4pm and admission is free.



QSLER ADDRESSES:-

Tony (*Rabbit*)
Peter & Gwynneth

TB239, PO Box 201, Wolverhampton, WV10 9HH.
Rossharbour, Leggs PO, Co Fermanagh,
N Ireland.

Peter (*CDX 001*)
Viv (*Scoutmaster*)

PO Box 2, Crook, Co Durham, DL15 8LX.
13 Brewer St, Pontlottyn, Bargoed, Mid Glam,
CF8 9RE

Jan (*Superman*)

21 Nicholson Rd, Stornoway, Isle of Lewis,
PA87 2NY.

Brian (*Runabout*)

18 Oak Lane, Ambrosden, Bicester, Oxon,
OX6 0SH.

Dave (*Hotel Mike 20*)

PO Box 11, Hampton, Middx, TW12 2RL.

Early in July, there's the Bravo Bravo Group's Beach Eyeball and Fun Day on the beach at Southport on Sunday the 10th. Admission is free as it is a pure Eyeball, not a specific card swap meeting, but of course everyone is welcome. There is a charge for car parking, however, made by Southport Council. Meet by the Shrimp Carts, Weld Road Entrance, about a quarter mile south of the pier.

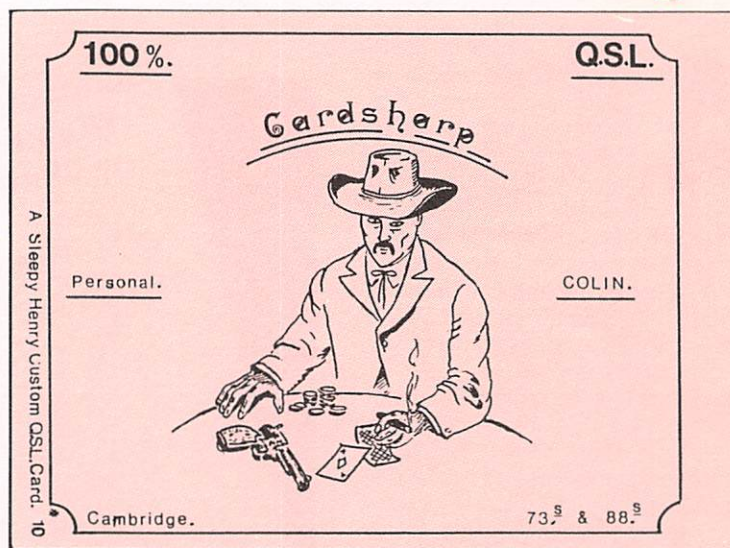
Another July meeting, but with an international flavour, is the Memminger Moon's 1988 International CB Meeting in the Stadium Hall, Memmingen, South Germany from 1900hrs Saturday 9th at a cost of £3 (10DM). I have a UK address being that of Tony (*Black Knight*), PO Box 236, York, but please remember a SASE for his reply. Tony has details of hotels in the area etc.

Other events in July I know of include the Mile Oak Breakers 6th Annual South Coast Eyeball at the Portslade Community College from 10.30 until 5.30 on the 17th, admission free with Grand Raffle, Club and trade stands, tombolas etc. And the last one is on the 31st of July at Longleat Safari Park organised by the Warminster Eagles.

Now, I have the information on how to join the new Formula One QSL Club which I have been promising for the last couple of months. This club was officially launched at the Stanley Eyeball held on April 17th and all being well, I hope to have some room starting next month to include a few names of all those avid QSLers who spotted me hiding and said Hi! (and other words!)

Back to business now with the details on how to join and how much it all costs. Basic membership to the Formula One is free for a large SASE stamped with a couple of 1st or 2nd class stamps and five of your very own personal (*not* Club) QSL cards. This 'Warm-Up' pack gets you your FO Membership number, ID Card, some swap cards, stickers and President's cards and various Club info. For £2 you get the "Lap 1" package which holds the "Warm-up" plus the Club stamp, Lap 2 costs £3 and you get 10 Club cards on top of Lap 1's package. Lap 3 costs £5 but you get 50 Club QSL's, Lap 4 costs £8 and you have 100 Club QSLs. The final package is Lap 5 which costs £10 and is as Lap 4 but the 100 QSLs are personalised with the details you should supply, ie name, handle and address. The Club accepts cash and UK postal orders and extra Club QSLs are available at £7 per 100, or £4 for 50.

One point I must raise here; a couple of months back I mentioned that my own Dragonrider QSL Club has some new cards available to members. Due to rising costs, these now cost £5 per 100 and are as follows: official Club card No 7 shows the Castle design, and Cards 8-11 show the "1988 Dragon" designs and come in a pack of each design. All cards are in the



QSL CLUB ADDRESSES:-

Firebirds	54 Boyne Road, Hastings, E Sussex, TN35 5NZ
Kilo Mike DX	PO Box 1, Kirby Muxloe, Leicester.
Bravo Bravo	PO Box 9, Southport, Lancs.
Memminger Moon	PO Box 1722, D-8940 Memmingen, South Germany.
Mile Oak Breakers	PO Box 161, Portslade, Sussex.
Warminster Eagles	PO Box 13, Warminster, Wilts.
Formula One QSL Club	PO Box 14, Brighouse, W Yorks, HD6 2SE.
Roman City/Currie Card Clubs	18 Beech Sq, Columbia, Washington, Tyne & Wear, NE38 7HH.
Eastern Star International	PO Box 184, Norwich, Norfolk, NR8 6RJ.

When writing to any QSL Club or Firm, always include return postage to assist with their reply, it does help.

QSL SERVICES ADDRESSES:-

Currie Cards	89 Derwent St. Blackhill, Consett, Co Durham, DH8 8LT.
Raymac Display	No. 2 Showfield Ind. Units, Pasture Lane Ind. Est., Morton, North Yorks. (Send £2 for sample pack & £4 credit towards order)
Sharp Graphics	PO Box 3, Grangemouth, FK3 9BD. (0324-473432).
Scottish CB Newssheet	C/o 'Arnail,' Patison, Neilston, Glasgow, G78 3AT. One year's Subscription £2.10.

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News here of the Freightliners, Yankee Truckers and the Rebel Truckers, all previously run by Ian (*Conman*) about

whom I have been getting a few letters asking for info. I can now tell you that the first two clubs have been closed as has the PO Box in Braintree and all mail should have been returned to the sender. The Rebel Truckers, which I have been

informed is a fairly new Club which Ian started shortly before he decided to finish QSLing is now in the capable hands of Mark (*Earlybird*) who also runs the Firebirds QSL Club of Hastings. Please note also that there is a new address for the Firebirds Club. Mark has asked me to request any members of the Rebel Truckers to please drop him a line as he has no information on any members, not even how many there are so any Rebel Truckers reading this, please let him know who you are.

Another club which has changed hands is the Roman City of Co Durham. This was passed on from Barrie & Joan (*Airwolf* & *Silver Squirrel*) who have called it a day with their QSLing to Dennis (*Applejack*) of the Currie Card Collectors' Club and Currie Card Bank. Anybody who has been waiting for a reply from the RC Club Dennis says to drop him a line and he'll give them any help or info he can.

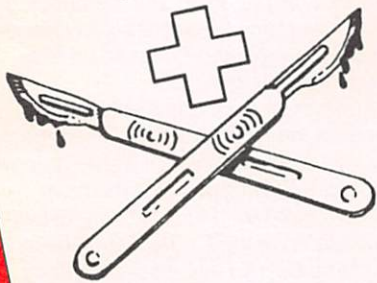
I think I had better consider digging into the pile of outstanding letters and personal cards now or I'll be in deep! Top of the pile is a letter and bundle of cards from Tony (*Rabbit*) of Wolverhampton who suffered with a fire which wiped out most of his card collection so he has asked me to say a big thank-you to all the people who have been helping him to build his collection back up. From "serious" collectors of the Currie Numbered Series cards in Northern Ireland comes greetings from Peter & Gwynneth who mainly DX and from Crook in Co Durham a set of Currie and Hot Foils by Sharp Graphics turn up from Peter.

From Wales a package of personal cards, floaters and all sorts of stuff appears from Viv (*Scoutmaster*). Especially for Currie Collectors Viv also has control of two cards in the series, numbers 23 and 409.

Afraid I've had some complaints now about a couple of clubs. Can anyone shed some light on the following please: Sierra Delta DX QSL Club of Stourport. Jan (*Superman*) sent money off in September 1987 to join and has had nothing yet in return. The Papa Bravo Swap Club of Wales, Brian (*Runabout*) of Bicester has been trying to get in touch with the Club since August last year. The Sierra Alpha CB Club of Wales, Dave (*Hotel Mike 20*) sent money off in January 1987 and he is still trying to get some return from them. Anyone who has info on the clubs or if the clubs concerned would please get in touch with the person in question to hopefully solve all problems. Another club which one or two people have complained to me about is the so-called Invitation Exchange Centre in Germany. This club has been contacting various UK clubs and in general causing quite some ruckus and offending many club presidents.

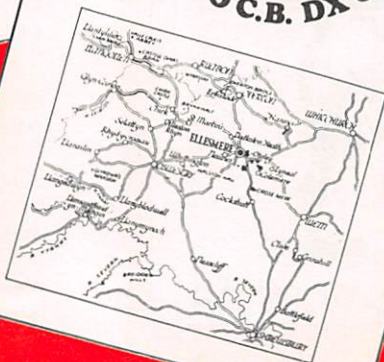
This month I would like to include another in the occasional series of

73's FROM PARAMEDIC



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FORTHCOMING EVENTS:-

June 18th Monklands DX Group International Meet at Xaverian College, Coatbridge, £1 11am 'til 5pm. Buffet £3 (8pm 'til midnight) PO Box 7, Airdrie.

June 19th Sheffield Charity Eyeball, British Steel Sports Ground, Tinsley, Sheffield all day. Admission Free. PO Box 275, Sheffield.

June 25th & 26th. Firebirds POMA Swop Meet. No other info received.

June 26th — North Wales Breakers Eyeball Nova Complex, Central Beach, Prestatyn, 11 'til 1630 & 1930 'til 2300. PO Box 35, Prestatyn.

June 26th — Kilo Mike Eyeball, Kirby Muxloe Sports Club, Ratby Lane. Admission Free 10 'til 4.

July 9th & 10th — Memminger Moon CB Meeting, Stadium Hall, Memmingen, South Germany from 1900 Sat onwards. Admission DM10 (about £3).

July 10th — Bravo Bravo Beach Eyeball & Fun Day out, Southport Beach all day. Admission Free, Council Car Parking charges.

July 17th — Mile Oak Breakers Eyeball, Portslade Community College, Portslade, 1030 'til 1740. Admission Free.

July 31st — Warminster Eagles Eyeball at Longleat SafariPark! PO Box 13, Warminster.

August 13th — Romeo Hotel Eyeball & C&W Evening, Footballer's Arms, Radcliffe, Manchester. 1000 'til 1700 & 2000 'til 2330. Tickets £1.20. PO Box 2, Radcliffe.

August 13th & 14th — Trail Blazers Eyeball at the Old Vic Hotel, Wolverhampton. 50p per day, Sat 10-4 & Sun 10-2. Sat Entries 8-12.30pm £1. PO Box 201, Wolverhampton.

August 27th — Tripe City Breakers Eyeball, Barton Equestrian Centre, Nr Preston. PO Box 14, Accrington.

Browses Through a Club's Package. I know it's not being all that occasional of late, but I do have quite a few to get through! As usual I would like to stress that it is *not* a "Club of the Month" slot but a bit more detailed examination of the club's package. The club involved this time is the Eastern Star International QSL & Exchange Club of Norwich. Membership to this club can be taken out in two different ways, a mini package is available for £4 plus 10 of your own cards (Personal QSL or viewcards showing your address), or the full package which is the one spread around me as I write, which costs £8 plus the 10 cards. The main differences between the two are in quantities of cards, type of patch and club stamp.

The package arrives Recorded Delivery in a good strong "Jiffy" bag full to the brim! Obviously you get your "ES" membership number and ID card, a nice A5-sized certificate which is in effect of a scroll, (there's one set for you, and one for your XYL/M too), a bundle of exchange QSLs from "ES" members, and another bundle from non-members. President Jean (*Super Star* herself) includes a welcome letter which gives details of how the Club started and then there's a copy of the Club magazine. I mentioned some months ago that I had been sent a "History of CB" as invented by the Romans and said that I was sure I had seen one in which the Red Indians had done so.

Jean has pointed out that it was her Newsletter that contained this article! Then there is a number of "ES" Invites for you to pass on, a selection of invites from other clubs who are members of the "ES" and who Jean recommends. A leather keyfob, a fully-mounted rubber stamp, a multi-coloured sew-on patch (the mini package has a smaller leather patch instead), twenty "ES" Club cards for your own use, local tourist information and viewcard, a number of Jean's own QSL cards and a club freebie for yourself. In addition, there are a number of information sheets including a brief guide to QSLing, hints & tips, 10 Code, a price list of club "goodies" such as the various cloth patches (there are four in all at the moment), club cards (for example the new Series 3 card depicting the Three Wise Men which costs £6 per 100 plus postage). That's it. A massive package with which I doubt very much you would be disappointed to receive! Cheques are accepted, made out to Eastern Star and you should receive your package within a week!

Anyway, that's it again for this month, take care and I'll catch you again next month. For a mention, for yourself or club, drop me a line, direct to 3 Tarn Villas, Cowpasture Road, Ilkley, West Yorks, LS29 8RH. If you want a reply, then please do include return postage and if it's about an event, please mark the envelope "EVENT" nice and clear so I can spot it easily.

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USA CB Returns To Base

David Lazell reports on a recent trip to Vancouver

Going to Vancouver to buy a CB magazine may seem a real expensive alternative to popping into your friendly neighbourhood newsagent. Of course, CB (on the FFC frequencies at that) is still doing well in British Columbia, all things considered, but the population is reckoned to be an average of three per square mile. That definitely cuts down the number of CB Buffoons and Bad Breaths. Anyway, a family expedition to the snows of Vancouver, Banff, Jasper and other gentle places permitted a search of the news-stands for magazine relating to CB radio, providing us with evidence of how things have advanced since the demise of *S7 Hobby Radio* and *C.B. Magazine* some years ago. There was a certain sore point in this matter, as I sent a postal sub to a U.S. magazine, and only had a couple of copies (and that only after a lot of mail) before it closed. There was no refund of the balance of my sub, giving

me a new definition of what is meant by 'Lend Lease'.

S7 Hobby Radio was also a good read, and as its title suggests, had much on side-band, though it was also strong on vintage C.B., clandestine radio and a great deal more. *C.B. Magazine* was on the whole stronger on human interest stories, with detailed copy on good deeds with the rig. As we picked up a copy of *Popular Communications* a mere mile or two from the Pacific coast line, we were amazed to see that the ghost of *S7 Hobby Radio* seemed to be walking in style. Some of the features in this monthly might well be wholesome echoes of that late lamented monthly *S7*; checking the details, we discovered that Tom Knietael, one time editor of *S7* is editor of *Popular Communications* — so we know why the inspiration continues. Tom Knietael is a well known writer on CB, even in Britain, his time on sideband was something of a classic.

Currently doing well States-side is Mr Knietael's *Top Secret Registry of U.S.*

Government Radio Frequencies (25 to 470 MHz) not quite as famous as a certain book called *Spycatcher* — also available in Canada and the U.S.A., by the way, no questions asked — but certainly as joyful to the scanner user.

That brings me to what lecturers called 'Point Two' or even 'Point Six': *Popular Communications* is much into scanners, and now incorporates *Scan Magazine*, the official publication of the Scanner Association of North America. Only a few years or so ago, *Scan* was a neat little pocket-sized magazine, but little backed by advertising — I believe that a scanner company helped produce it. U.K. monitors will be interested to learn that the Scanner Association of North America, known to chums as SCAN, does some good work backing up 'Neighbourhood Watch Schemes' and many other genial items, offers a video-describing ways in which scanner users can help the fight against crime. Alas, American videos do not work here, as the U.S. transmission system, NTSC ('Never Twice the Same Colour', as some call it) is incompatible with PAL. Anyway, if you want to know more, the relevant address is: Scanner Association of North America, P.O. Box 414, Western Springs, Illinois 60558, U.S.A.

Incidentally, the Managing Director of the Association, Robert Hanson, writes a singularly useful column for *Popular Communications*. Pirate radio — sometimes described as 'free' or 'clandestine' broadcasting — gets a page in the magazine, continuing a tradition as least as old as the Toonerville Folks comic strip. Some of the pirates in the U.S.A. are plain old eccentrics, out to do

terrible things like make people laugh, without paying admission or licence fee. Of course, magazines in Britain have to be careful about this sort of coverage — I knew a publisher who had an official flea in his ear for mentioning a pirate in kindly terms. Still, *this* esteemed journal is on the side of the law! A final comment — CB radio in the USA as in Britain has moved into associated interests, including satellite communication, and listening in to ELF (Extremely Low Frequency) operations as and when this is possible. Now and then, the scanner users have some differences of opinion with the authorities re scrambling of signals — sometimes considered pointless in view of the mountain of pirate decoders alleged to be in picnic distance of the Rockies.

I must admit that after being away from US CB for a while, it is interesting to see how in some respects, the more things change, the more they remain the same.

But we had the strong impression that the future looks remarkably like an electronic scanner. Another useful publication with a limited circulation is *Monitoring Times*, edited by Bob Grove, whose *Shortwave Directory* — a guide to utility stations from military and aerospace to RTTY and FAX — is an ideal gift for the fellow who is never satisfied with what he can pick up already. Bob's address is Grove Electronics, 140 Dog Branch Road, Brasstown, North Carolina 28902. As we ran out of bucks, and longed for a sight of

Ian MacGaskill, the weatherman, we were reminded that one of the world's most ancient and most learned amateur radio journals is still circulating widely in the USA, Canada and lots of other places. In fact, *C.Q.* (76 N. Broadway, Hicksville, New York 11801) is even older than I am.

REACT's latest advert in the C.B. magazines has a nice feeling, too: 'For twenty five years, our people have endured long hours and tough working conditions without pay. And nine out of ten would do it again'. REACT these days is in Wichita, Kansas, a place where skip ought to do well, all things considered.

CB is so grown up in the USA and Canada these days that the old query as to one's handle is rarely known. More often, the talk is about equipment, frequencies and how far you have got making your own satellite communication kit. *Popular Communications* costs \$3.50 in the Canadian news-stands, ie. a couple of quid, somewhat less in the States, if you can pick it up. Given my own problems in actually getting copies in return for hard cash in the past, I would advise postal subscription only if you first get an undertaking from someone more important than the i/c coffee vending machine that they can handle it. *Personal Communications*, by the way, is at 76 North Broadway, Hicksville, New York 11801, which you will observe is the same address as C.Q. Many of the excellent short-wave interest books on sale in Canada, and in the USA are available in Britain, but one can describe the trans-Atlantic enthusiasm only as 'fervent and well-informed'.

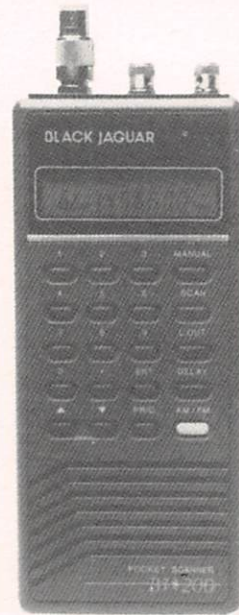
By the way, the moose in some places we learned have an odd habit of staring into one's window in the evening, perhaps hoping for a view of the TV set. You could mistake one for one of those chumps you heard on the channel the other day; they both have that same blank expression!



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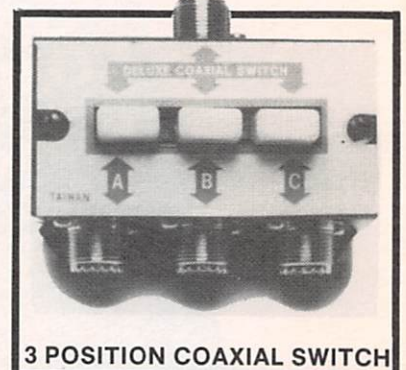
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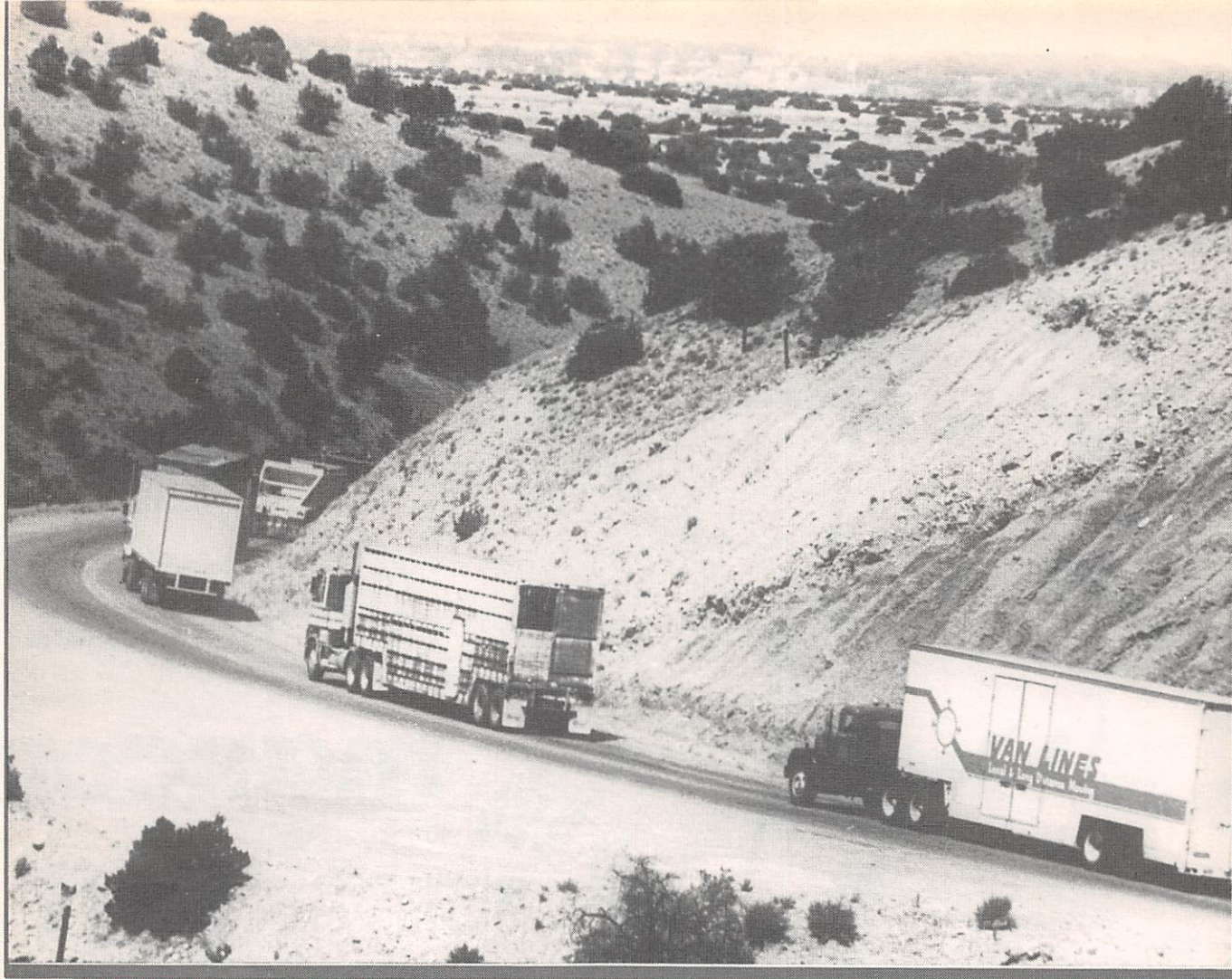
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The original USA licence specified channels.

It is a great source of amazement to many how when using a CB radio some people seem to lose all track of common sense. Not everyone can be expected to be perfect all the time, but you can go too far to the opposite extreme. We present here a few ideas to keep in mind, both the obvious (to most people!) and the not so obvious.

Any recent, sane newcomers to the scene may be forgiven for thinking that

some of these points are ridiculously obvious; wait until you've been around a few months and you'll realise that the guy who said there's no such thing as a stupid question never used CB! Common courtesy seems sadly lacking in the world today, and CB is the epitome of it. If you are a normal, sensible person then please excuse the comments here — they are not aimed at you; if however you fall into the other category then please take note!

1. The main points to bear in mind when using CB are *consideration* and *tolerance*. CB can be put to many varied uses, both good and bad. The original intention of CB as a means for everyday folk to send messages when they need to seems to have been lost in the mists of time. Strange as it may seem these days, CB was set-up precisely for that purpose. It was an inexpensive alternative to private mobile radio equipment on VHF for small companies, and just about the only means outside of regular radiotelephones for families to talk to each other (a license being unlikely to be granted for private VHF radiophones).

People using the service as originally intended are by far in the minority nowadays. Most users take it as a kind of long distance social club for general talk about whatever happens to be "in the air" at the time (excuse the pun). The point being made here is that neither type of user is right or wrong; if you feel you can't or don't want to be part of a particular aspect of CB (whether general chatter, technical talk, or whatever) you don't have to — there are plenty of other channels to switch to.

This is where the tolerance comes in; some people seem to feel that because they don't like a particular topic of conversation they have the right to try and stop other people talking! Personally I find the "What's your handle? What's

CB and Common Sense

Paul Coxwell suggests a little more consideration and tolerance on citizens' band radio

your twenty? How old are you? Goodbye" type of contact extremely boring and pointless. However, I defend the right of anyone to this type of contact if that is what they want. Similarly, I do not expect the people who find technical electronics talk boring to tell me I shouldn't be using CB for it! There seems to be a growing trend to knock people who use the radio for everyday things like calling home to say they're stuck in a tailback on the freeway and will be late for dinner. To the inconsiderate people who make fun of this we can only say whatever is wrong with using CB for that purpose? It is after all the type of use for which the system was originally designed.

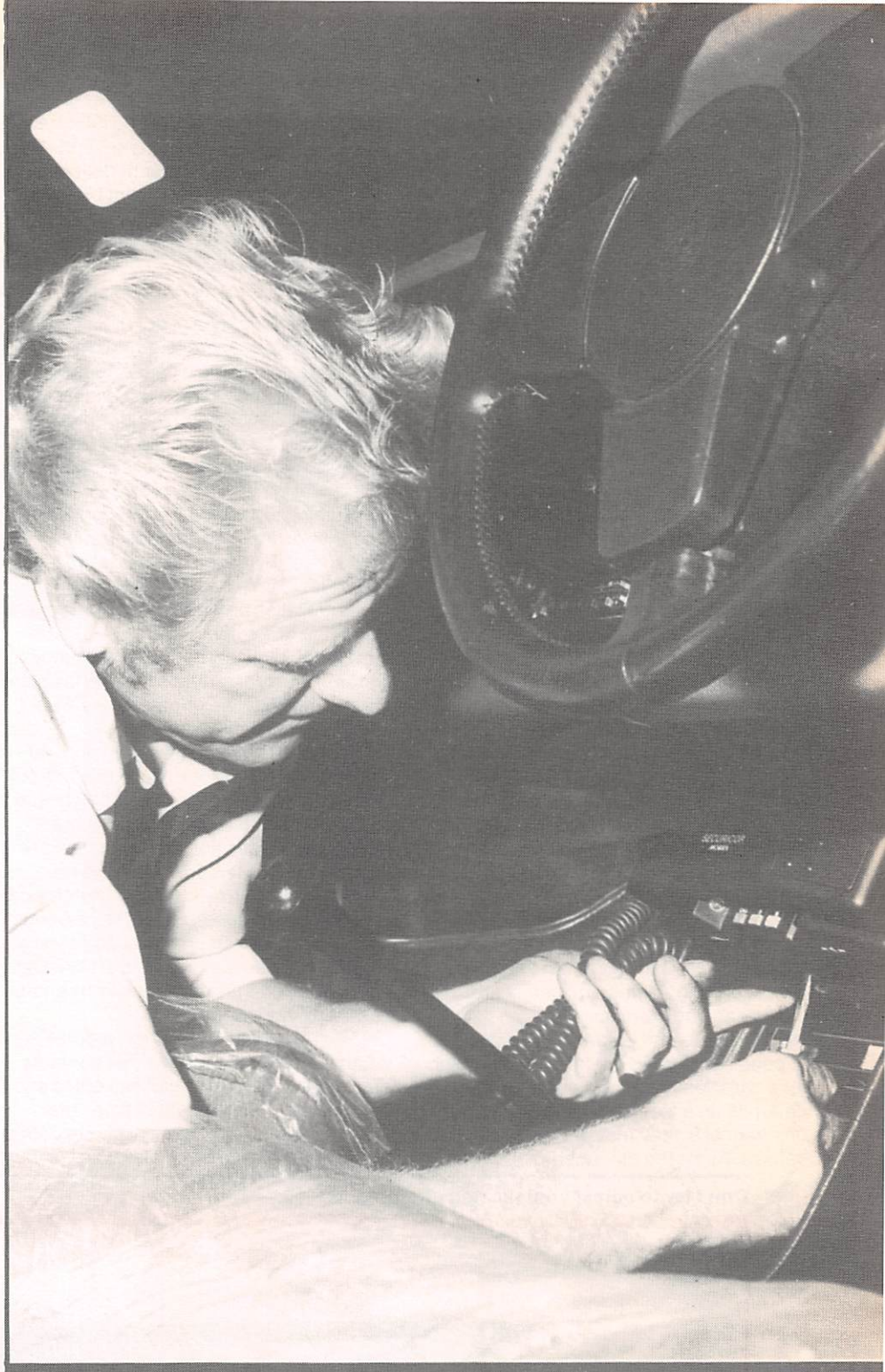
2. That point made, we move on a little. Let us start with a question. How many times on hearing two strangers talking privately in the street do you go barging in between them and ask them what their names are and where they live? Most of you, I'm sure, answered never or not very often. Nothing is more infuriating than trying to have a quiet chat with a friend and being interrupted every two minutes by someone you've never heard of before asking who you are, where you are, what their signal strength is, and then departing. We now have a good case for applying consideration. If the channel is obviously supporting a network where the other users *want* extra stations to join in, or you are known to someone on the channel and you know you will be welcome there then fair enough. But please be considerate, and if you hear two or three people holding what is obviously a "private" (as much as it can be on the air) conversation then either just listen or go some place else to talk.

Emergencies are a different matter of course, but asking things like "Am I coming in at +30?" or "What sort of rig are you running?" hardly qualify! Much of this has been said before, and will, no doubt, be stated again at some point in time. It is not a God-given right that when you say "QSK" or "Breaker on the side"



Use channel 9 for emergencies.

that you must be allowed in on the conversation. The people already there have every right to ignore you if they want



Make sure the rig is fixed in a suitable location.

to, or politely tell you to go somewhere else. Notice the "politely;" there is absolutely no need for abuse. When trying to break in on a contact between people you do not know, please think about this. By all means say "QSK" or whatever a couple of times, but then wait. It is extremely annoying when trying to listen to someone, to have someone else persistently talking over them every ten seconds without having the decency to wait and then see if you want them to join in or not. If after three or four tries you have not been through into the conversation, they either can't hear you or they don't want you in, so be considerate and leave — don't keep

trying to break in for the next ten minutes.

3. If you have an output power attenuator use it if you can. This may come as a shock to some users, but you do not need 50 watts to talk to someone a mile away! Using higher than the authorised output power has become one of those socially acceptable crimes, no worse than speeding or illegal parking, but if you must then don't use it if you don't have to. Using low-power when this gives satisfactory results can help ease channel congestion in densely-populated areas. An example may help. Imagine two users, A and B, a couple of miles apart having a nice cozy little chat. Now

imagine two more users, C and D, also a couple of miles apart, but, say, ten miles from A and B. If all four stations used high-power they may well cause interference to each other's conversations, so they'd probably wind up using two channels. If all four switched to low-power, then C and D would be fairly weak to A and B and vice versa. If all of them turned up their squelch a little they could all be on one channel and not even hear the other conversation. Immediately there is now a free channel that can be used by two other people. Or four. Or six.

4. Now a moan about channels. Nobody has a right to use any particular channel. Using courtesy you may use a channel if it is not in use by other people at that time. We all make mistakes occasionally and jump on someone else's channel, but having discovered that you have committed this "offence", be graceful about it, apologise and move. The result is that everyone is happy. If two people in the distance want to use the same channel as you and it doesn't interfere with you, why not let them? So long as you can hear whoever you want to, why bother? Turn up your squelch and you wouldn't even know those other fellows were there.

The only channel that is officially designated for a special purpose is channel 9. The people who use this for exchanging pointless chatter and, even worse, playing ... (well, you can't call it music can you?) are selfish, inconsiderate and probably the same sort of people who send out the fire service on fake calls. Maybe if their safety ever depends on a message getting through on channel 9, they may come to their senses. As for the other channels, it is a

case of give and take. Calling channels, whilst not being official, are nevertheless in common use and to the benefit of all concerned, so please respect them and move to another frequency for anything other than the briefest of messages.

5. Let's clear up a point about using CB for business, as there seems to be a large percentage of users who feel that people who use Citizens' Band for business use are highly-illegal, dangerous criminals who should be banished from the air for good. Using CB for business purposes is not illegal in any way whatsoever (assuming the radios are all licensed etc.). Taxis seem to get most trouble with this sort of thing. Leaving aside the question of whether a business wants their activities broadcast on such a public medium (remember "Carry On Cabbie" where the rival taxi company took their fares?), the fact remains that the taxis are perfectly within their rights to use CB for that purpose if they so desire.

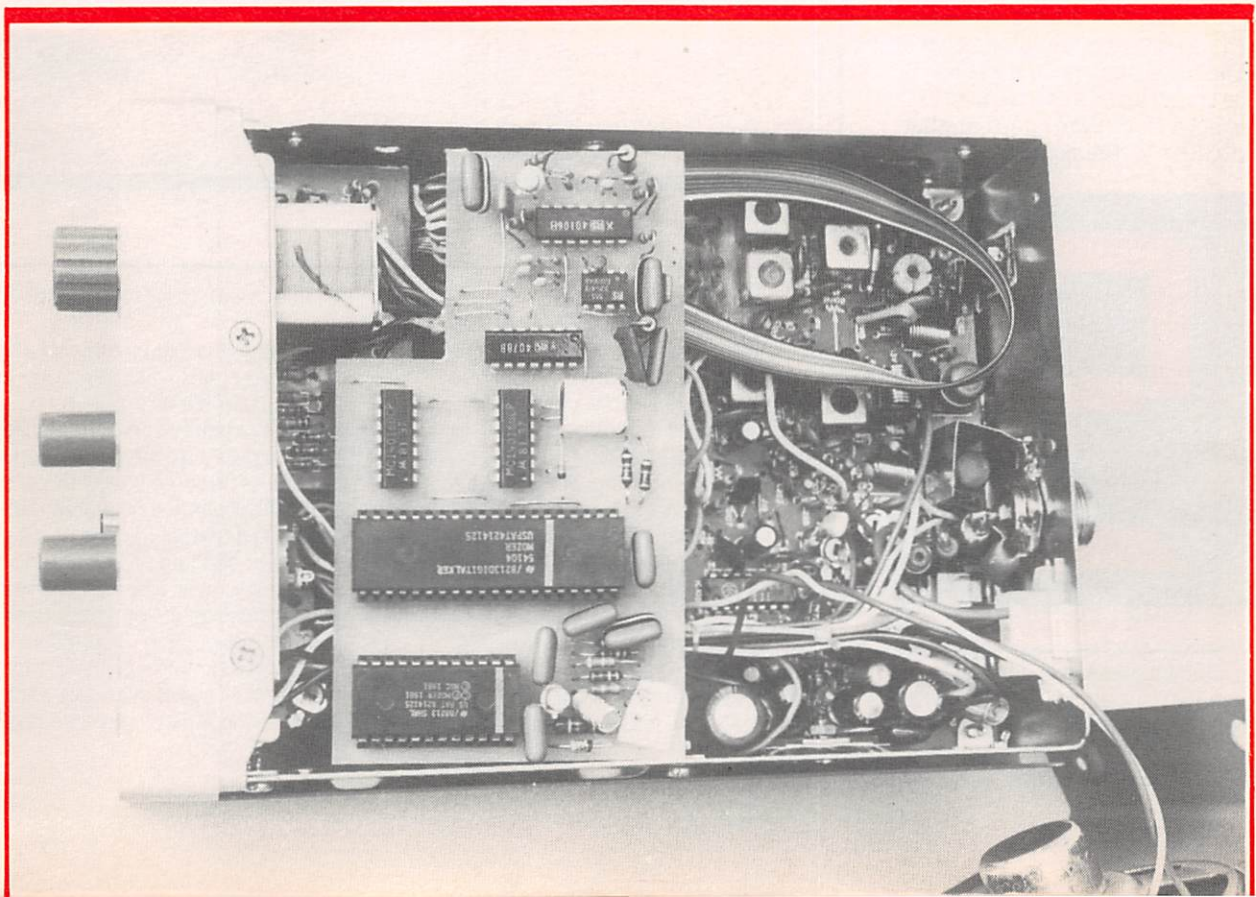
They also have an unwritten right (at least in the CB licence) to do this without being continually harrassed and abused by self-appointed vigilantes who are under the impression that what they are doing is illegal. It is the latter who are breaking the law by causing interference to the taxis! In case you feel the argument is a little one-sided, the taxis do not have the right to transmit on top of an existing conversation thus causing interference, as many of them do.

The American CB licence, a great many years ago, required that contacts on any particular channel be kept to a certain maximum length of time, after which the channel must not be used for a while, in case someone else was waiting

to use it. In many ways it is a pity that this is not the case on the British licence, and in no longer the case in America. In Britain the problem is worse due to the more densely packed population. The resolution to this problem must simply be live and let live. We are not restricted to a couple of channels with modern equipment (except handhelds sometimes) so if a taxi-company (or any other company for that matter) in your town uses a certain channel, then it is in the best interests of both of you to avoid it. You won't interfere with them and they won't interfere with you that way. Easy really isn't it? True, there is nothing to say you should, but the licence does not have a clause that says "At all times you will do your best to be awkward!" To sum up on business use then, to broadcast a message on the calling channel at ten minute intervals saying "Come to Acme Services Inc. for all your radio requirements" is illegal. To call the delivery boy in his van to ask him to take Mr Smith's groceries round is a legitimate, legal use of the system.

6. Now let's move off the air to the equipment itself. It never ceases to amaze me the sets that are awaiting repair simply because the owner tried to "improve" them by haphazardly adjusting (with a hammer!) everything in sight inside them. I wonder if they would do the same to their televisions, microwave ovens, cars, etc. Regular readers of the magazine will have heard this from me before — if you don't know what you're doing, don't! Why on earth some people try to adjust complex electronic circuitry when they don't even know one end of a

Don't try to adjust complicated circuitry.





CB is an expensive alternative to private mobile radio.

screwdriver from the other is one of the great mysteries of CB radio! You run the risk of damaging the set beyond repair, and causing havoc to TV and radio reception in your neighbourhood, not to mention interference to other CB users. In the case of some items of equipment you also stand a pretty good chance of damaging yourself if you don't know what you're doing (possibly fatally). Equipment can be made unsafe for other unsuspecting people, or could cause a fire. Is that what you really want? With mobile equipment make sure the "rig" is fixed in a suitable location. Do you really want it to hit you if you ever had to stop quickly? Is it really such a hot idea to mount it in position X so that the microphone cord gets twisted round the gear-shift, steering column, and occasionally falls under the brake? At times it may just be inconvenient, but there comes a time when it is downright dangerous. I'm not one to advocate never using a transceiver while driving (apologies to the editor for the hoards of mail that will no doubt flood in on this subject), but it is a little risky trying to

switch channels, adjust the volume, key the microphone, change gear, turn a corner and avoid pedestrians all at the same time. Use discretion.

Another point that bears mentioning again is base-station antennas. If you really think you're strong enough to balance thirty feet up a ladder in a tree, hold another thirty feet of steel mast with twenty feet of aluminium antenna on top above your head, all in a 20mph wind then who are we to stop you? Please look before you leap; we have lost enough people to overhead power lines as it is. Crashing through your roof with an antenna on top of you isn't too healthy either.

7. Finally, and with the summer season in full swing, very important at the moment. Beware of going to meet people you have talked to on the air. You may be a normal, sane human being; the voice at the other end of the radio-link may not. If you must go meet someone you do not know very well, take a friend, preferably three or four and preferably large enough and old enough to deter any suspect meeting.

Don't arrange to meet someone in secluded surroundings. Pick a spot with as many people around as possible, like a crowded shopping mall. In a perfect world it would not be necessary, but unfortunately the motto must be don't trust anyone until they prove they can be trusted. Would you go to meet a stranger who happened to get your phone number and asked you to meet him/her somewhere? CB is no different.

It is very difficult to be objective on a subject such as this when you are fairly close to it. I make no apologies for many of these personal observations, they are no doubt similar to many of your opinions. We will end with the comments we started with: the main points are to be considerate of other users, tolerant, and above all, use some common sense.

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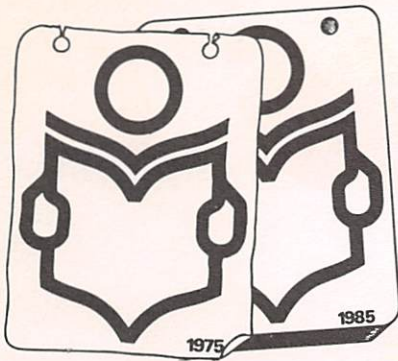
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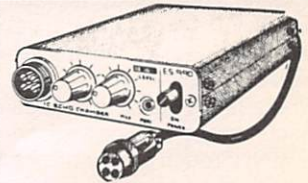
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Here Comes The Sun

One factor that greatly influences radio communication, as you may have deduced from our front cover this month, is the sun. We are entering a realm where scientists at the wavefront of technological development still do not have all the answers, and nature may often catch us by surprise. Whereas it is possible to accurately calculate such things as the current flowing through a resistor, or the RF voltage of an antenna, we have not yet reached a state where anyone can predict the exact communication conditions for any given point in time.

Solar Activity

Mention propagation and the sun to any radio fanatic and sunspots come instantly to mind. Sunspots have been noted and recorded long before man even considered radio communication. In case you haven't yet heard, sunspots rise and drop in numbers in a cycle, lasting on average eleven years, although the cycles have been known to be as short as nine years or as long as thirteen years. The maximum and minimum points are not always identical either. A typical example was the peak in 1958, which was much higher than usual, causing much extraordinary activity on the air. Unlike many things in the technical world, the cycles do not follow fixed, regular sinewave patterns. The rise to a maximum is usually much shorter than the decay to minimum, but neither slope is clearly defined.

Where does all this lead us? Well, the sunspot activity on the sun affects its radiation. Apart from the obvious heat

and visible light, the sun also emits other types of radiation.

The two most significant to radio communications are ultra-violet light and charged particles. The former travels at the same speed as visible light — a little under 300,000,000 meters per second (approximately 186,300 miles per second). This is also the speed of radio waves and electricity. The distance of the sun from earth is such that light takes around eight minutes to reach us. The charged particles travel much slower, and may take many hours before their influence is noticed. The radiation from the sun varies, sometimes gradually as with sunspots, sometimes suddenly, as with a solar flare. We will see how this radiation from the sun affects the way radio-waves travel around earth momentarily, but first we must take a look at our atmosphere.

Earth's Atmosphere

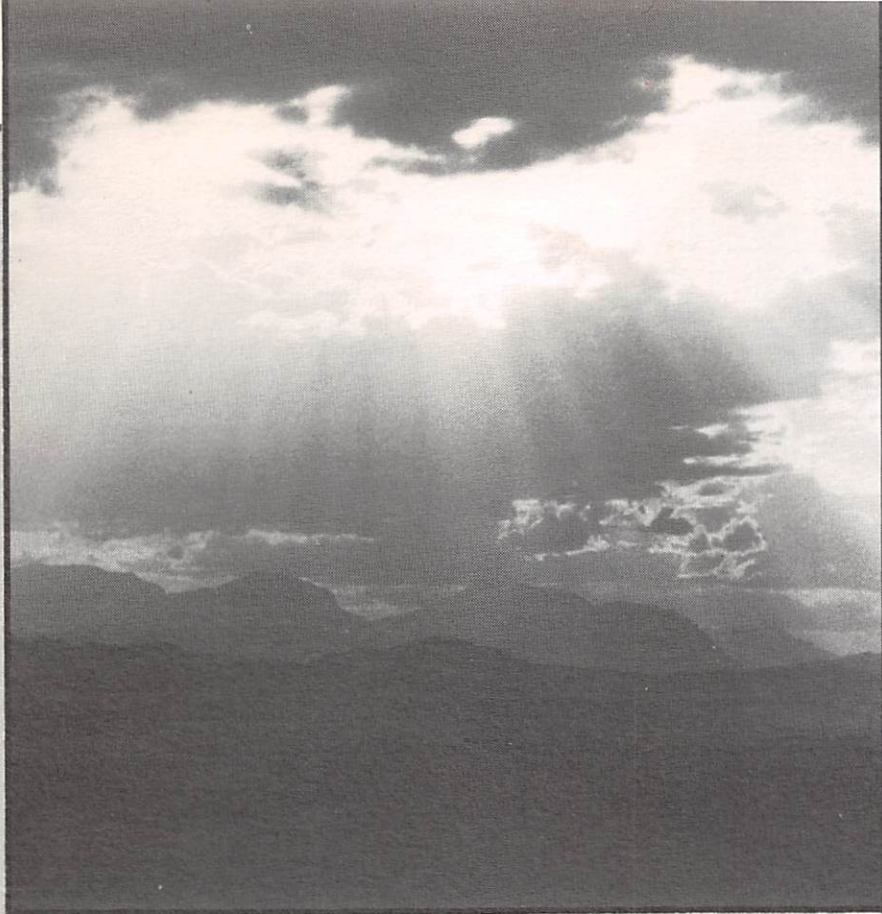
A signal leaving a radio antenna may be considered to consist of several parts. There is a ground-wave, which is subdivided into the surface wave and the space wave. The former is guided purely by the earth itself, and the latter is composed of the direct wave from the antenna and the reflected wave from the ground. The part of the wave that concerns us here is the ionospheric or skywave. This is the wave that leaves the antenna at an angle somewhat above the horizon, and goes up into our atmosphere. If it weren't for the ionosphere around the globe this wave would be lost in space, so it is the ionosphere we will now examine in greater detail.

It is a slight misconception to say that

the ionosphere acts as a giant mirror and reflects radio waves. In reality it is not a single thin surface that reflects, but a large area of atmosphere that refracts. Refraction is the gradual "bending" of a wave, and this is the process that causes waves to be returned to earth. For many practical purposes however, it is possible to assume a straight reflection, but do bear in mind that this is an over simplification.

The ionosphere is a region with unclearly defined edges, some sixty to two hundred miles above the earth's surface. Within this region are a surplus of free ions and electrons, which when ionized by the sun's radiation can cause the refraction of radio waves. We do not have time to go into the detailed physics of this, otherwise this issue will be rather heavy and expensive! The ionisation of the atmosphere in this way results in several "layers" of ionosphere. Once again, these are not clearly defined, but each layer is a concentration of relatively dense ionisation, with progressively lower levels above and below. These layers are generally categorised into four areas, D, E, F₁, and F₂, D being the layer at the lowest altitude.

We shall start at the F layers, these being mainly responsible for most long distance communication. At night the two F layers merge together to form a single F layer some one hundred and seventy five miles above the surface of the earth (remember that these figures are very approximate). During the day F₁ and F₂ split once again, at altitudes of around one hundred and forty miles and two hundred miles respectively. The refraction we mentioned a while ago is due to the ionisation of these layers;



ionisation brought about by radiation from the sun. At sunset we therefore see a gradual reduction of ionisation in these layers, reaching a minimum just before sunrise, at which point the ionisation increases once again. Because however, at this height the air is very thin, the recombination (or de-ionisation) takes place very slowly. We shall return to this subject after a brief look at the other layers.

The E layer has its region of maximum ionisation centred around seventy miles. At this lower altitude the air is still dense enough that ions created by radiation recombine to form neutral air fairly quickly. The effect of this is that the E layer can only maintain its ability to refract radio waves during sunlight.

ionisation of this layer practically disappears after sundown.

Finally, we have the D layer, which is lower still, and only appears during daylight hours. Lower frequency radio energy is virtually all absorbed by this layer during the daytime, which is why you get stations from a long distance on the regular AM broadcast band mostly after dark.

Absorption and Refraction

Several factors affect a layer's ability to refract a radio signal. As a radio wave travels through the ionosphere some of its energy is lost through setting ionised particles in motion. This is called absorption, and affects lower frequencies

more than higher frequencies. Absorption also increases as the amount of ionisation in the layer increases, and with the density of the atmosphere at that point. Sound complicated? You bet it is, and we're barely scratching the surface here! The higher the frequency of the radio waves, the more ionisation is required to cause enough refraction to bring them back to earth.

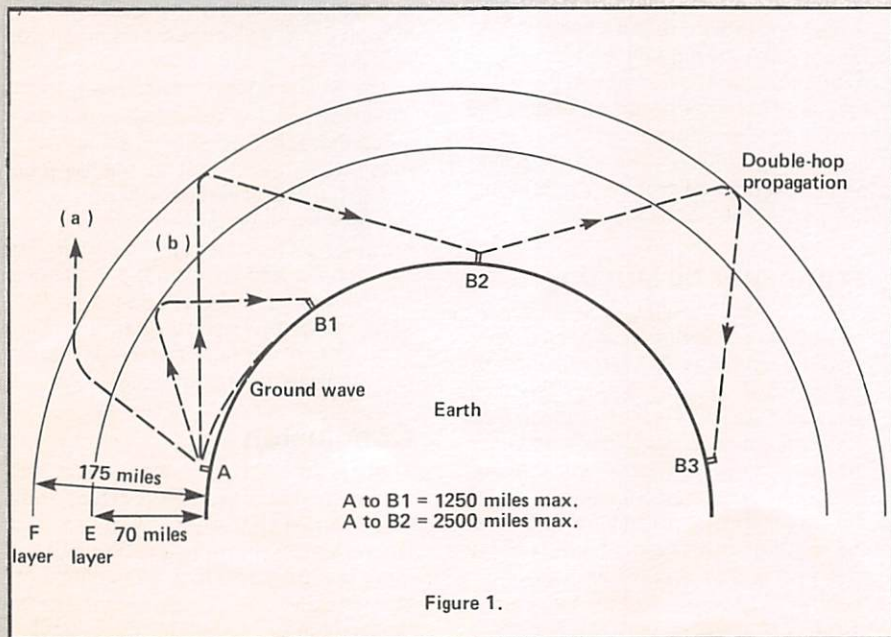
The result of all these factors is that we have a certain frequency at any specified time where long distance signals are strongest and of the best quality. Above this frequency there is insufficient refraction and signals are lost into space. Below this frequency absorption makes signals weaker.

Skip Zones and Distances

The way in which ionisation effects refraction in the atmosphere means that the lower the angle of radiation from our antenna, the less refraction is needed to bring it back down to earth. Figure 1 shows how this might affect signals. At A we have a transmitter, and at B₁, B₂, and B₃ we have receiving sites. Radiation at too high an angle is not refracted enough to be brought back to earth and goes off into space (a). Slightly lower angle radio energy (b) may be refracted by the F layer(s) to return hundreds of miles distant. Assuming that in our diagram the receiving site B₁ is the closest point at which energy shot into space can be returned by defraction (ie. waves radiated from the antenna at a higher angle are not refracted enough to return), then the distance between here and the point at which the ground wave fades into oblivion is called the skip zone. The distance from the transmitter to B₁ is the skip distance. These distances depend on the ionisation density, the frequency in use, and the angle of radiation from the antenna. Maximum skip distance for the F layer is around 2500 miles, and for the E layer about half that amount.

If the maximum "hop" for the F layer is 2500 miles, you may well ask how we sometimes send signals halfway round the world. The answer is by multiple-hop propagation. This is quite simply where a skywave returning from the ionosphere can be reflected upwards again by the earth, thus starting another "hop". This process can be repeated three or more times, although each time the signal becomes weaker and more distorted. Evidence also suggests that ducting occurs, a process where a signal becomes "trapped" in the atmosphere before returning to earth hundreds of thousands of miles away.

No talk about propagation would be complete without mentioning the well known, but greatly misunderstood sporadic-E propagation. Seasonally, the E layer can develop scattered patches of relatively dense ionisation. This occurs most often in late/early summer, and to a lesser extent in early winter, and gives





rise to sudden bursts of long-distance communication, sometimes lasting a matter of seconds, before the ionisation passes and the spectrum becomes quiet once again.

Scatter

We have been talking about refraction as if each wave entering the atmosphere had just one wave returned. In practice of course, things could never be so simple! Most objects placed in the path of a wave cause it to be split and scattered, and the atmosphere consists of many millions of tiny particles. So in addition to our main, strong, refracted signal we also get many weaker scattered signals at varying angles. So in the skip zone we talked about earlier for example, the chances are that a receiver could pick-up the signal, although the strength will be much, much less than if received from ground-wave or the main refracted skywave. This subject is even more complicated than regular (if there is such a thing) refraction, but there are such niceties as back-scatter, where a signal may arrive only a few miles from the transmitter (in its skip zone) after travelling thousands of miles through an ionospheric path and back again! Such signals are usually extremely weak.

Fading

One obvious cause of fading is the change in ionisation of one of the

atmospheric layers. There are many other causes too. Even the exhaust from rocket engines can cause a change in the density of ionisation! One common cause of fading is the cancellation of two signals arriving at the same point. With all those direct refracted and scattered waves around, we have the same signal arriving at the same point but by varying routes and methods. Radio waves, being sinewaves, may therefore arrive in phase, (ie. with the peaks and pulls in the two waves coinciding) or out-phase. In the former case the signals tend to strengthen each other, and in the latter they tend to cancel each other out. The changing atmosphere can lead to signals sometimes arriving in-phase, then over a period of seconds or minutes changing to out-phase, then back again.

Tropospheric Ducting

Just when you thought it was all over, we've now come crashing back down from the ionosphere, nearer to earth to the troposphere. This is only a few miles above the earth's surface, and the air is therefore fairly dense. We are now outside the realm of ionisation, the troposphere being too low to get much in the way of the sun's radiation, and into the weatherman's field. Sudden changes in temperature not only affect the weather. Those boundaries between different masses of air give a sudden change in the refraction that the

atmosphere provides, and can cause signals that would normally pass straight through to the ionosphere to be returned to earth from the troposphere. Ducting may occur when a signal becomes "trapped" in the atmosphere, and may travel many hundreds, sometimes thousands of miles before "escaping" back downward. The principle of a waveguide is at work here, with the abrupt changes in air temperature acting as "walls" to the signal. Tropospheric ducting is not very likely to occur at 27MHz, but may sometimes give rise to unusually long-distance communication on the British 934MHz band.

CB Implications

So far we have generalised a great deal, explaining the main principles of propagation. So how does this all influence the world of CB in particular? Taking 27MHz first of all, we find that situated at the top end of the HF section of the spectrum it is excellent for long-distance work during the peak solar-cycle years (the next peak is expected around 1991), mostly during daylight hours however. Even though the ionisation in the F layer takes a long while to disperse at night, it drops sufficiently low for communication to cease via this mode at such a high frequency. Lower frequencies continue to be usable throughout the night. During intermediate years, the time for which the band is "open" to Dx is considerably shorter, and over the minimum period of the solar cycle, activity is infrequent, and largely limited to north-south paths. The summer months often bring sporadic-E propagation, which can make an otherwise silent receiver suddenly burst into life with Dx from hundreds or thousands of miles away. Such activity though usually disappears as quickly as it arrived.

The British 934MHz band really has little to do with our discussions of the ionosphere. At frequencies as high as these we simply do not get the refraction due to ionisation that occurs with lower frequencies. Tropospheric ducting however, as was mentioned earlier, can often show itself on this band, particularly when there have been sudden temperature inversions. Apart from such phenomena, this UHF band relies largely on line of sight communication only.

Conclusion

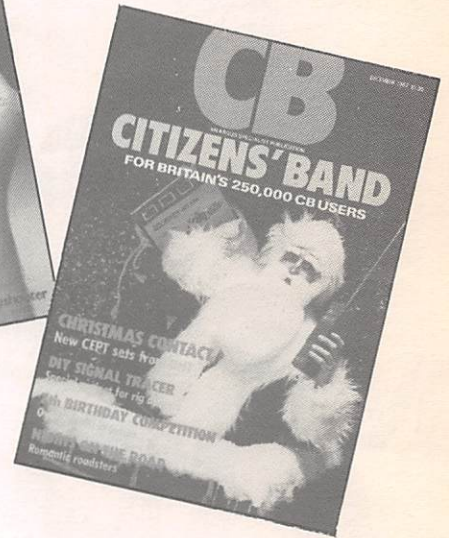
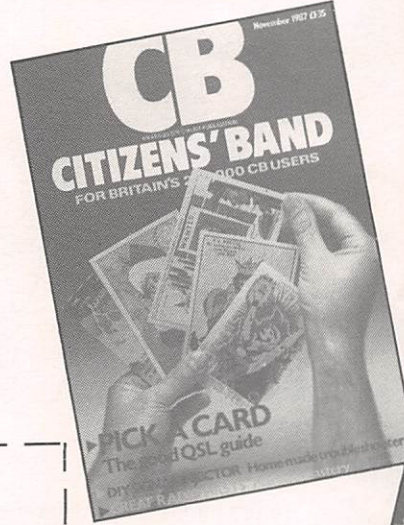
There is so much more that can be said on the subject of propagation that it can fill a complete book (and often has). Our limited space prevents anything but a mere glance at this fascinating subject, but should you wish to investigate further, there are many excellent publications available.

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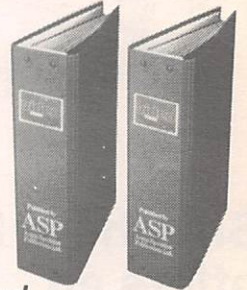
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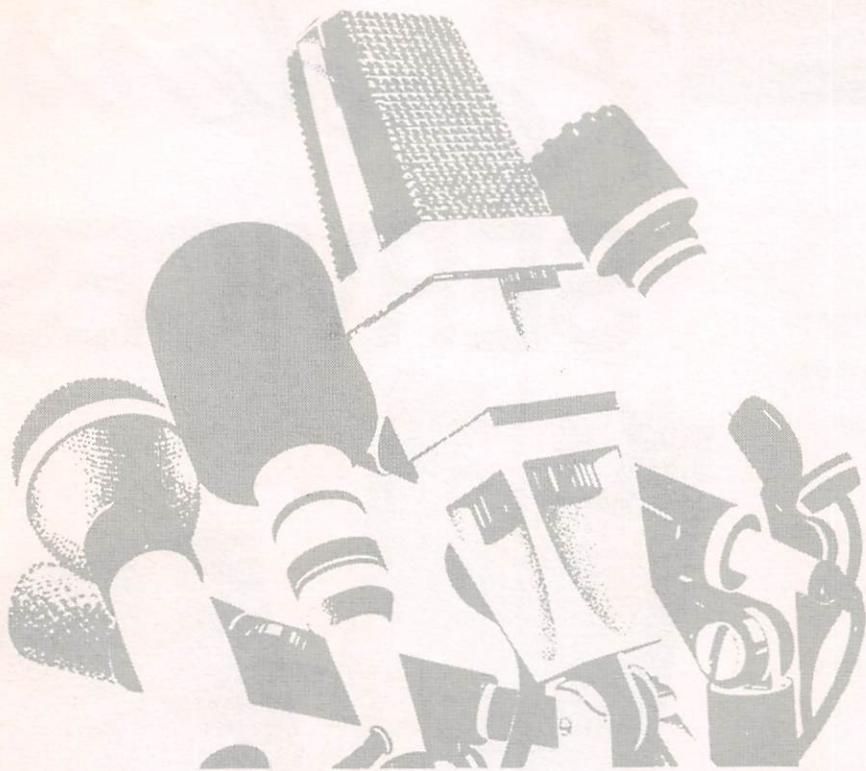
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OVER THE AIR

Shepherd Man offers an overview of CB radio in his part of the world

I have finally succumbed to the QSL card craze after dodging the need to 'get some printed' for the last eight years. As these are my very first lot I wanted to make sure that they carried the correct details — not such an easy task as many may think. I looked through hundreds of designs and word combinations before sending off for what I hope will suit my needs. Now all I can do is wait for them to turn up (and pray). The first one has been promised to my good friend *Marathon Man* of the Sierra Lima DX Group in

return for the many different ones that he has sent to me in the past. All being well my Currie Cards should arrive any day now!

A number of people have asked if I would consider doing the odd report on certain equipment that is new to the CB market. These reports to be mainly aimed at being from the user's view rather than the 'technical' report. So, I will do my best to offer you my own views in an unbiased manner and I hope that it will help some CBers when they come around to deciding what to buy. The first of these is the 'DNT Contact 40FM'. The first thing to notice about this approved CEPT frequency set is the size.

For those who use this set in a mobile, you will be pleased to know that you can easily take it with you in your pocket or handbag when you leave the car and because of its size, you can fit this set in the smallest of spaces. These now come with a 'scan mike' for those who don't like to stretch across the vehicle whilst on the move. Although, from the ones that I have tried, I found that a power mike instead of the standard one(s) made a great difference to the modulation and helped to overcome the need to shout out loud to be heard. The 'up' and 'down' scan on the rig works well with the overall size and was easy to see whilst driving, but the green LED channel indicator is next to useless when the sun catches it. Perhaps they should think about changing it to red, the same colour as the TX and S/RF indicator.

Because of its size, don't expect to enjoy listening to the in-built speaker with the squelch set down low and the volume

high. When you first switch the set on, it automatically goes to channel 9 - and that I didn't like. A set built to be used as a mobile should, I feel, go to the UK recognised channel — 19. It is important that we continue to use the 09 for 'emergencies only'. After all this set does already have a channel 9 priority switch — so why have the set automatically tuned in to channel 9 every time you turn it on?

As many old DNT owners will know, some of the UK FM sets suffered with bleedover problems; well, not this one. It receives very well and at no time did I have to change frequencies to get away from my nearest user. The volume slide control is very, very fierce — and it only takes the smallest of nudges to take the incoming signal from 'soft' to 'over-the-top'. I checked out the output wattage on a number of sets and found that they varied between 2 to just under 3 watts (I have been told by others that their DNT's are pushing 4 watts — but the majority are less). It is well worth carrying out a simple check on a good quality power/SWR meter. Remember that the regulations covering CEPT with the UK (MPT 1333) only require the manufacturer to not exceed a total of 4 watts output. It says nothing about a minimum required output.

Well, overall I think that the DNT Contact 40FM is pretty good value for money and it only remains for you to decide if you want to add the extras to it, like a power mike and extension speaker, or if you are happy to use a basic 'no-nonsense' set.

About a week ago I received my CB Licence Renewal form. On it, I noticed the mention of a 'Licence Conditions Booklet'. Can anyone tell me what they look like? The envelope didn't contain the said booklet and after talking to others on channel, it seems that many others haven't seen one either. So, if the DTI are reading this column — perhaps it would be an idea to get some sent out with the Renewal Licence forms.

On the subject of licences I know of a number of CBers who are confused over the word 'general' in section 6(b) of the Licence Conditions Booklet. The part in question refers (I am told) to "Operators of Station(s) "and reads as follows: "A CB Station shall only be used by:- any person where such person's use is under the general supervision of the Licensee". So, I decided to telephone the RD at the DTI where I spoke to Mr. Richard Griffin. He informed me that they are very much aware of the problems people are having in understanding this regulation and they have, on a number of occasions, been asked by CBers for a definition of the word 'general'.

However, it is impossible for them to categorise in a way that would apply to every CBER's needs. They are also aware of the good works that some CB groups and organisations do for OAP's, blind, disabled and handicapped users. These

are special in their own way — and they (the DTI) would welcome a letter from these groups and organisations with full details including how they help others. Or from any CBers who require further clarification. The address to write to is: Radio Communications Division, Room 613, Waterloo Bridge House, Waterloo Road, London SE1 8UA. He has assured me that they are prepared to help CBers in many ways and are very sympathetic towards needy groups etc.

Please remember that if you don't ask you won't get and if they (the DTI) don't know about the many problems we face, then they can't be expected to help us.

An extract from the *Western Daily Press* March 8th (sent to me via Earwig), states that two CB radio users were blasted by a shotgun in a service station forecourt after a row with a man over 'swearing on the air'. It happened near Wrexham.

I was pleased to hear that, Tony Jaconelli (*Rock-a-Jock*) has been voted in once again as Chairman of the Scottish Association of CB Clubs. Tony works very hard in Scotland to aid CBers and shows great concern at the 'way things are heading' — well done Tony.

The DTI are looking into new ways to collect the licence revenue, to which they are asking CBers for their ideas. Anyone who would like to put pen to paper please write to the RD.

A friend of mine telephoned me the

other day concerning the use of a PO Box with regards to a charity sponsored copy. Let me explain ... a monitoring organisation were carrying out a charity sponsored copy in conjunction with another charity event recently held. One of his friends (a lady breaker), who was assisting with the copy, had said that they could use her CB club PO Box provided that the mail was addressed to them c/o her. She was a fully paid up member of the other club. She even cleared it with 'the other' club, so as to eliminate any problems — and they agreed to its use.

However, two days into the charity sponsored copy, a club representative informed the monitoring organisation that 'they' were going to withhold any mail sent in for the charity sponsored copy which was addressed to them via the lady breaker and that they would have to stop using the club's PO Box. This they did, but they lost a number of copies, until one of the charities they were helping to raise money for heard about it and informed them that they could continue using their PO Box No.

Needless to say, that this has caused bad feelings between all concerned and after the lady breaker had a word with the club they have decided to release the mail. It just goes to show how pathetic and petty some clubs can be towards their own members and their fellow CBers — as well as towards others who give their time to help aid charity.

From the south of the UK comes three reports. The first is that Breaker-Way CB Club in Merton Park, South West London, made a presentation of £1,100+ to the Children's Ward at Atkinson Morley Hospital. The cheque was presented at their annual dance, with special guest Tony Meo. Well done to all concerned. Second is the start of a new CB Club called the Southern Eagles and they are based in Lyme Regis, Dorset. For more details contact the Chairman c/o 2 Marshalsea Estate, Marsh Wood, Bridport, Dorset. Finally, another new CB Club has been started in Kingston-upon-Thames, Surrey. They will be known as the Kilo Tango Radio Club and they meet every other Thursday evening at Norbiton Sports and Social Club, Elm Road, K.O.T. (PO Box details to follow very soon).

As I promised I would do, I am going to mention the *Rolling Stone* from the Surbiton, Surrey QTH. Ron to his friends (of which I won't be one after this), has got to have the most 'over the top' eyeball card I have ever had the misfortune to have seen. In fact they are so OTT and full of glitter etc., that they are fast-becoming collectors' pieces. Still, if you can get hold of enough of them you could always use them instead of sandpaper in the budgie's cage or to rub down the paintwork. There you are Ron, I told you that I would mention them. Never mind mate, you can have one of mine when I get them!

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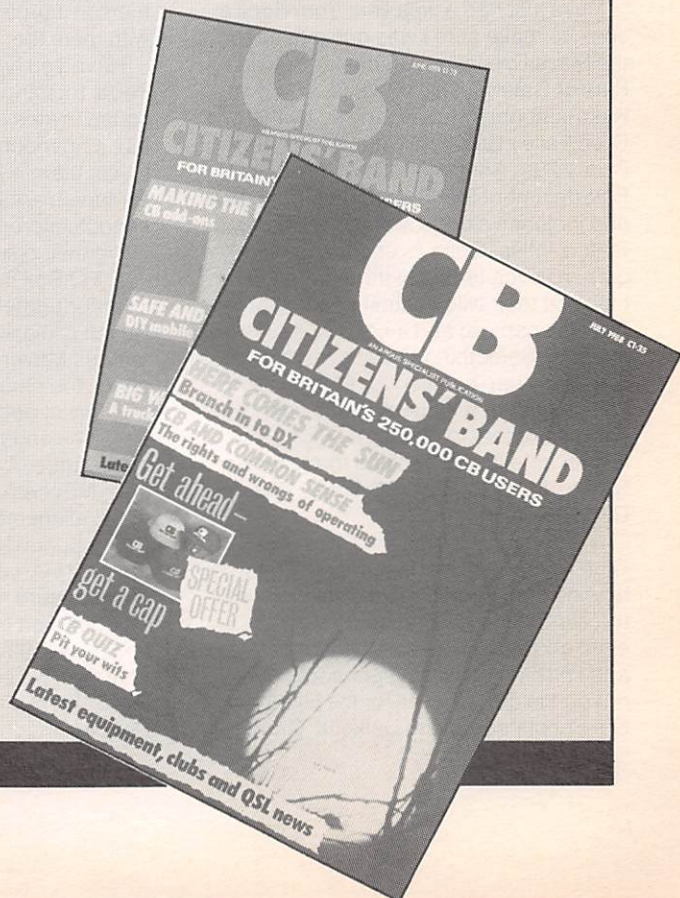
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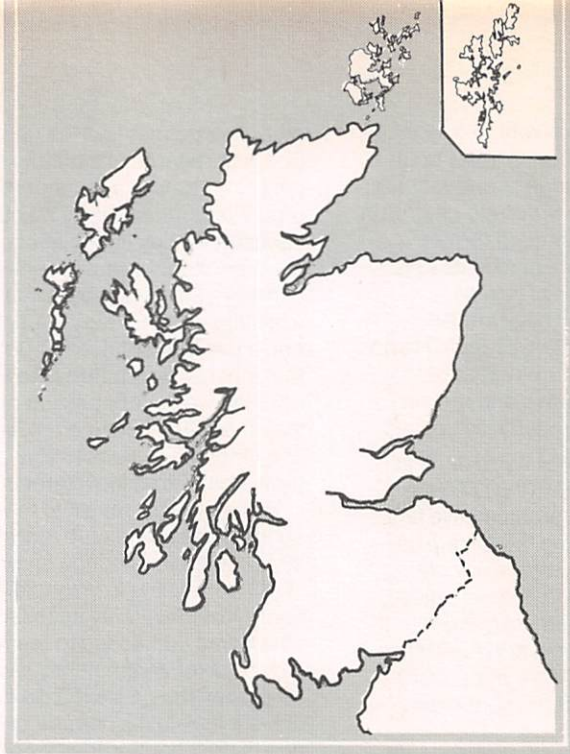
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The Scots Connection

Introducing a new column, especially of interest to our Scottish readers, please welcome . . . Bunny!

Hi, I'm Bunny, I'll be writing about all aspects of CB radio in Scotland and the outer isles. Just drop me a line with your club news, past and future events and also some photos if possible. I'm looking for comments, ideas and even moans and groans from the individual CBer. Send your letters to: Bunny, PO Box 337, Neilston, Glasgow G78 3JP.

Have just had a lima lima from Rock a Jock, to make sure I was going to attend the Mass Eyeball at Auchenlarie Holiday Park at Gatehouse of Fleet in Kirkcudbrightshire. Organised by the Cree Valley Breakers Club, it runs from Friday 29th April to Sunday 1st May. Entertainment is laid on for the three days and includes a darts and dominoes match, 'Miss Junior Eyeball', a CB club quiz, in which teams of three from CB clubs pit their wits against each other, a Scottish cabaret and a country & western evening. Something to suit everyone! Caravans can be hired for £13 per night for a six berth, or you can bring your own caravan or tent for £3.50 per night. For further details and booking form, send a SAE to: Mass Eyeball, PO Box 1, Wigton, DH8 9HA, Scotland.

A letter arrived from the Esk Valley CB Club who inform me that they will be holding their sponsored modulation on the 7th-8th May, a sponsored walk of eight and a half miles on the 22nd May, and finishing off with a sponsored cycle run on the 5th June, all for the Highbank Old People's Home in Dalkeith. Good

luck everyone. If you wish to take part please send a SAE to the Secretary, Esk Valley CB Club, PO Box 5, Bonnyrigg, Edinburgh EH19 3HQ.

The last weekend in May sees the forty eight hour sponsored modulation of the Busy Bee CB Team, in the Dundrennan area of Kirkcudbrightshire. Proceeds will be donated to the Ayrshire Blind Men's Social Club in Kilmarnock. Coffee Pot and myself had a lovely afternoon with them in January and enjoyed a cuppa with them too.

Have you heard about the Armadale Pedal Pushing Squadron? Well, this squad invites any decent breaker, who has a rig mounted on his/her pushbike, to join them if you live in the Falkirk/Armadale area. They also advise the schoolchildren on road safety when using their bikes. Details from: Brian Dick Jnr., PO Box 8, Falkirk, Lanarkshire.

Unfortunately, the *Citizen's Band Crazy Bunch* is closing down. Run by the famous Maverick Queen for the past five years, the club will now close, due to the majority of good breakers going off the airwaves and therefore depleting the club attendance. A special message comes from Maverick Queen: "I would like to thank all members and friends of the Crazy Bunch for their attendance during the past five years. It has been a delight and pleasure to meet and be with over four hundred members, with their help and generous donations to all the charities, we succeeded in 1987 to give three Nebulisers to Ayr Hospital, two Refrolux machines to doctors' surgeries

in Ayr, and three sackfuls of new Christmas toys, plus new clothes for two children of the Battered Wives Assosiation.

"I, myself, have sold my set up, due to the fact that decent CBers like me have no protection from the DTI to safeguard us against bucketmouths, hasslers and threats that we receive. Even the disabled CBers are subjected to these morons and nothing is done to stop it. Three to four years ago, it was such fun to be on CB; one had so many friends to talk to, but now, sadly, there are so few of us left. To them I say 'good Luck', you have a courage that I lack. Many of you have my address, and I would love to keep in contact. The PO Box remains open till the end of May '88 and any mail received will be delivered.

May I send good wishes to all my friends south of the border and also in Wales and Northern Ireland. I send you all 73's and 51's. God Bless, Maverick Queen".

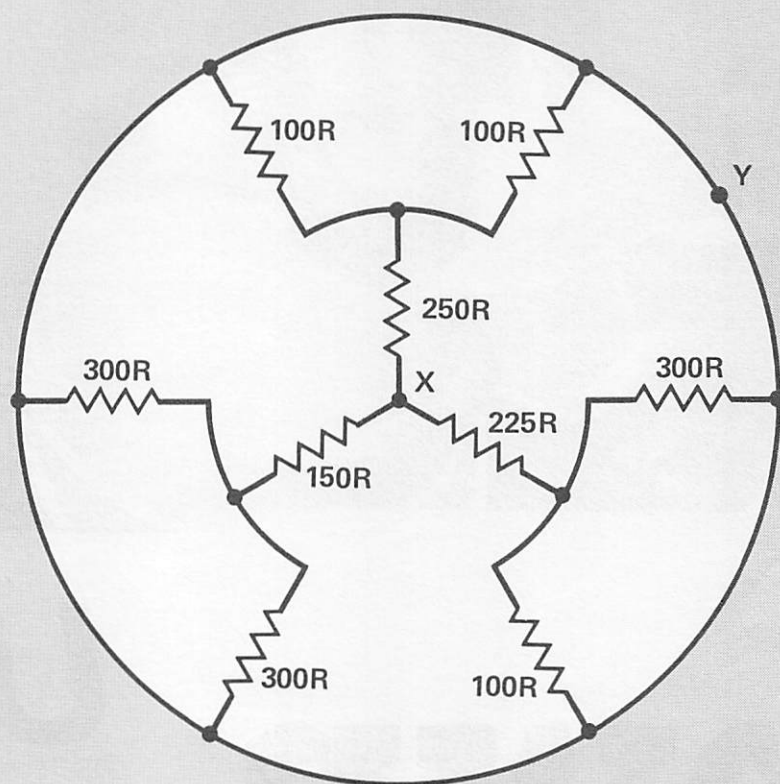
To round off this issue, an offer of assistance from Big Bomber and Hammerhead, two disabled breakers who live within Glasgow. They will erect your aerals free of charge. Contact: George Graham, 96 Ledaig St, Dennistoun, Glasgow.

The final word from Baker Man (George), who is blind: "Thanks to *CB for the Blind* for opening up a whole new life for me, by giving me a rig and twig".

That's what CB is all about, isn't it?

Bunny.

CB PUZZLE



Try your hand at this little technical teaser. The circuit shown is drawn in a slightly unconventional way, but can you calculate the value of resistance between X and Y?

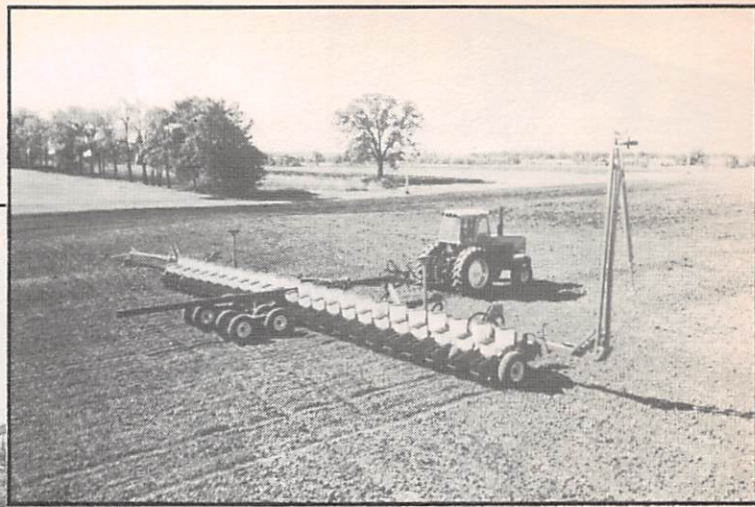
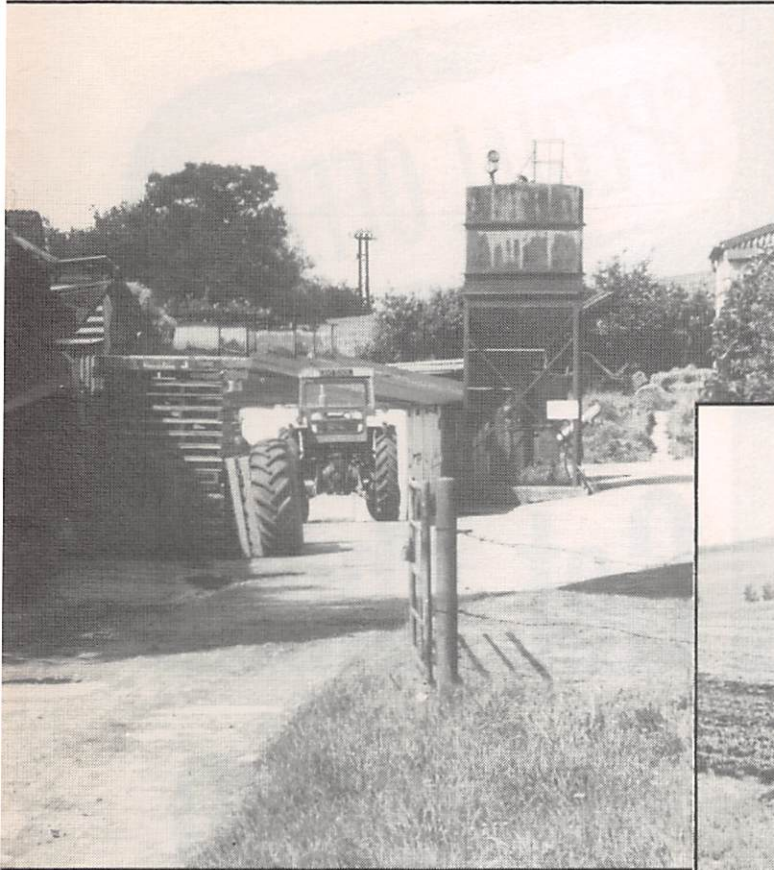


Down On The Farm

**Coca Cola looks at the advantages of
CB radio in the farming community**

Unlike our American cousins the British public has been reluctant to use our CB radio service as a part replacement of the original PRS facility that is used by such people as taxi, domestic rental services and public authorities, such as the Water Boards. In the United States of America today, as in fact has been, the case for a number of years, CB is used in all walks of life, not only by the hobbyist as is mainly the case in the United Kingdom, but by small and large business users and even by Government departments.

The European Community recently devised a new guideline for CB radio for use within Common Market countries. Frequencies referred to in the guideline are in fact identical to the original forty allocated by the American FCC for use in the United States and used by most other countries adopting CB radio since. However, back in November 1981 the British Government, in their wisdom, allocated an entirely new forty channel CB radio service for use in the United Kingdom. You may have read elsewhere of the coming sunspot period, when



conditions allow radio signals to bounce off our outer atmosphere and back to earth again, arriving in a different location from that of their origin. This period, which could overall prevail for over seven years, is when our own set of frequencies will prove invaluable for local communication. A communications revolution is about to explode, not only in the use of our own CB radio service, but throughout the whole spectrum. But more of that when the time grows near.

Within the quiet countryside of Norfolk and Suffolk, the use of our CB network is by no means restricted to the hobbyist, but used as a general means of economic and reliable communication.

Of the many varied and mostly worthwhile users, one of the most interesting groups using the service, work on the land, farm worker and owner alike have found that CB radio has not only lightened their workload but has a profound effect on their social lives too. *The Hairy Haggis*, a farm operator of many years standing, has explained that owing to changing farm practice, mainly as improvements, the farmer may now have to travel many miles in order to maintain pockets of farmland and cater

for livestock. This situation has developed over the years, where farm owners have disposed of adjoining land. The use of radio communication has undoubtedly made life a little easier for the farmer, especially when there is mechanical breakdown. Even a simple flat tyre can be a problem, you cannot carry a spare as the tractor itself will have at least two sized wheels, which could weigh over a tonne. There was a time when a long walk back to the farm would have been inevitable, but now all that is required is a quick call on the CB and help can be on the way.

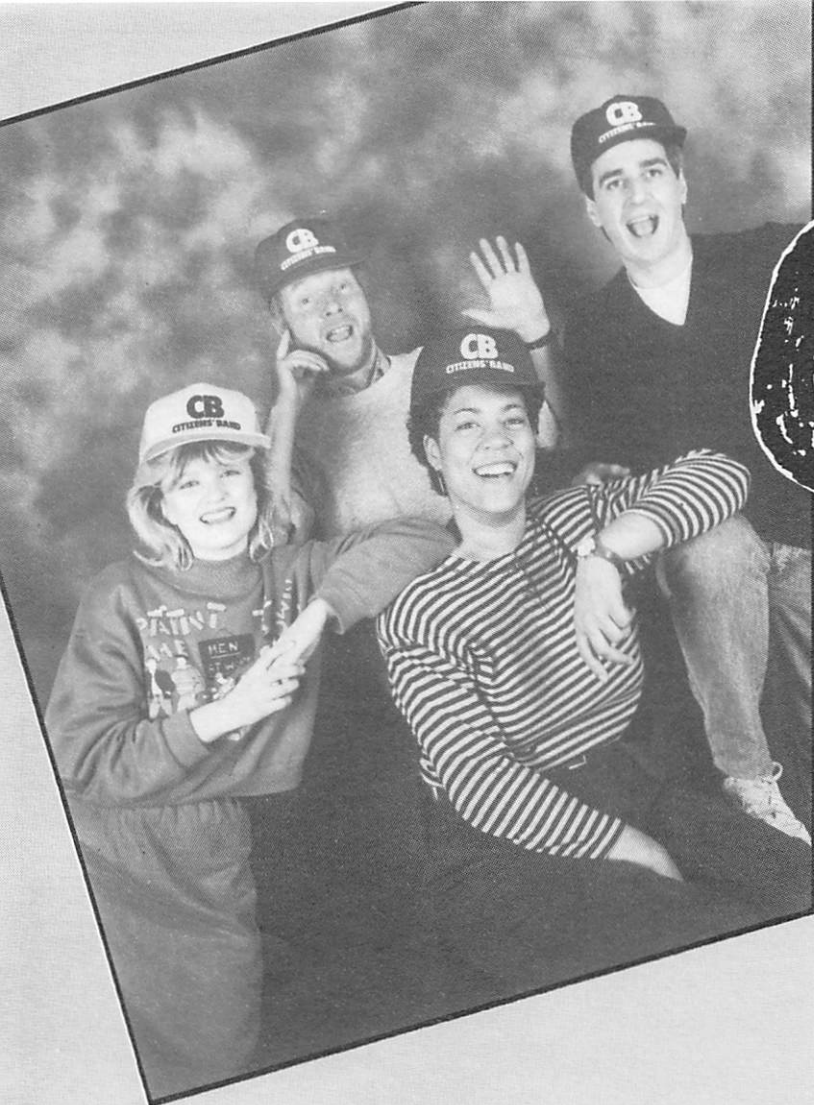
Midway, a farmer from the Hemsby area in Norfolk, explains that most farmers who have used CB radio not only for the obvious social benefits that arise, but as an additional tool in their industry, could not imagine returning to the days when it could prove difficult, if not impossible, for a working person to obtain or use a radio telephone service of any kind.

It would seem apparent from my discussions with many other users in Norfolk and Suffolk, that the advantages in the use of CB radio far outweigh the possible disadvantages of channel abuse

etc. One of the few problems that all could foresee in the near future, besides the obvious one of uncontrolled abuse was in respect to the possible use of the CEPT frequencies. It is believed by most local users that if present conditions are an example of what could be experienced in the future, then it would be impossible to rely on this form of radio communication. It must therefore be repeatedly said, that it be considered essential that the original set of frequencies, allocated in 1981 be allowed to remain in use indefinitely.

Turning back to Suffolk now, I once again find *Hairy Haggis* on air. Apart from the advantage in his work, *The Hairy Haggis* has found many new friends through his use of CB, and has had copies in excess of twenty miles, using a Uniden 100 and Modulator antenna. He has also been instrumental in the organising of a local charity group called 'CB Helping Hands'.

Farming is one industry where the advent of modern technology has benefited the workforce and farmowner alike. The world of modern mechanical innovation and communication systems are by no means lost...down on the farm.



Get ahead— get a cap

As the Eyeball season is in full strength, with badges, stickers and all manner of CB paraphernalia on display, why not take advantage of our great offer and be the first on your block with your very own *Citizens' Band* baseball cap?

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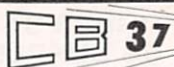
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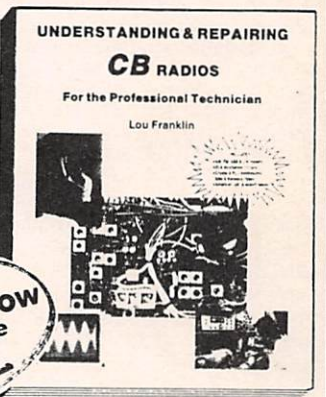


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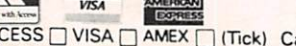
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