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20
CB

RADIO

CB CARE CONVOY
PROOF THAT CB'ers CARE

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A PIRATE BROADCASTER'S VIEW

RIG TEST
THE MIDLAND BASE STATION



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CB RADIO

INTERFERENCE

A serious problem?.....36

THE SPEAKING RIG

Midland Channel Announcer.....17



FM FEEDBACK

New series by E. A. Rule.....30

HO PRESS RELEASE

Home Office speaks out.....48



RIG TEST

Maxcom 4E.....34



CONTENTS

Introduction - Implications.....	2
The CB Care Convoy	4
Readers Write	8
News Review	12
Rufnek	14
The Speaking Rig	17
Electricity Made Easy	19
Rig Test - Midland 76-900	22
Radio Direction Finding on 27MHz.....	24
Free Radio	28
FM Feedback	30
Rig Test - Maxcom 4E.....	34
Interference	36
Parliamentary Review.....	40
Over The Counter.....	42
Round Up	44
Club Spot	46
Home Office News Release.....	48
DX QSL International Club Spot....	52
Classified Advertisements	56

ADVERTISERS INDEX

Albrecht Electronic GmbH	55
AM Telecommunications	11
Automatiff.....	18
Brooks Electronics Ltd.....	54
CB Centre	16
CIBTA	39
Freeman and Pardo Ltd.....	56
Hammersmith CB Centre	18
K40	Inside front and inside rear covers
Korow Audio and Sound.....	15
LCL Imports Ltd.....	10
Lucky Numbers	15
Margiplan Ltd.....	38
Master T.....	18
OCT.....	Rear cover
Plectronics Ltd.....	3
Roger Squire's.....	33
Simply CB	54
Skipmaster.....	54
Telecomms.....	37
Velor	51
Western Electronics (UK) Ltd.....	55
Whitehorse Communications	27
Windsor Safari Park	41
Yorkshire and Lancashire Exhibitions.....	15
ZL Communications	18



THE CB CARE CONVOY

CB'ers show how much they care.....4

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Implications

A lesson from a traffic accident

A death directly attributable to CB, a new CB frequency and information on British-made CB products all happened while I was away on my holidays and all three items are quite major in terms of their implications. That will teach me to have time off.

In June's CB Radio Magazine, we reproduced an article from the Birmingham Evening Mail which related the tragic tale of Michael Bailey, aged 21. Michael apparently lost control of his vehicle whilst keying the microphone of his rig which resulted in a horrific accident. Michael died a few hours later in hospital. Unfortunately, this news came as no surprise to me.

In the course of a year, I drive quite a few thousand miles but it is only during the last few months that the 'motorway wobbler' has become so apparent. Obviously there were bad drivers before CB and CB'ers are not all bad drivers but there does appear to be a distinct section of the breaking community who find it impossible to key the microphone *and* drive in a straight line. I shudder to think how these people negotiate roundabouts, turn corners, make emergency stops or avoid the inevitable double-decker bus that pulls out without indicating.

With a little forethought and a lot of practice, I'm convinced that many of these problems can be solved. For instance, before mounting the newly-purchased rig in the automobile find out which hand you want to use as a microphone hand and place the rig either on your left-hand side or right-hand side, depending on ease of use. Simple things like ensuring that the microphone cable cannot become entangled with the gearstick or the steering wheel can also solve a lot of hassle *and* potentially-lethal situations. Finally, if you can't drive happily with one hand, it is quite reasonable to assume that trying to modulate at the same time (including changing channels) may be a hazard to your or somebody else's life.

It won't take many deaths before our Government legislates against driving and CB'ing at the same time and we may end up with a situation similar to Sweden where it's illegal to smoke whilst driving for the very same reason; some people just can't cope!

A new system by default

An item to keep the Home Office on their toes was recently introduced by CTVR in the form of some rather naughty 46MHz FM transceivers. In last month's *Over The Counter*, we showed a photograph of the new equipment which utilises the old 405-line television channels.

Obviously, as a magazine, we can-

not be seen to encourage the use of 'illegal-to-operate' equipment but I get the feeling that this system might just be what some people are looking for and its popularity could well grow by default.

Many people are looking for an unpopulated CB system which has a fair range. Small businesses, farmers, even boating enthusiasts, all need a means of communication which doesn't suffer from bucket mouths, music players or skip. Nine hundred and thirty-four megahertz, which is legal, would appear to have been just the right system for these users but here we are, nine months after legalisation, with no positive sign of any equipment designed to meet MPT 1321 (934MHz). The manufacturers of 27MHz FM equipment seem to have ignored 934 altogether and at the time of writing nobody has got a 934MHz set for sale.

This apparent lack of interest in 934 could well leave the door wide open for the 46MHz equipment which is now available. Regardless of the threat of prosecution, I'm sure that many people will be tempted to purchase this new system. Not only will this create a second illegal system in this country but effectively every sale of a 46MHz set could be a lost sale for 934MHz. This is a shame because potentially 934MHz could be the best CB system in terms of distance and clarity. If some 934 sets don't appear soon, they may never ever materialise. (PS Should we start campaigning for

the introduction of a legal 46MHz system?)

British rigs and the economy

One of the Government's better reasons for choosing 27MHz FM for a British CB system was to give British industry a chance to actually manufacture the rigs. The months prior to and since legalisation have been populated with attempts by various companies to turn this dream into reality. Unfortunately, however, we are still, nine months after legalisation, suffering a severe draught of home-produced sets. Both Tenvox and Reftec have shown prototypes but they have both been pipped to the post by Mega Electronics (see *Over The Counter*) who have produced a mobile and home base set as well as a home base converter.

After having read the manufacturer's specifications for these sets and having knowledge of some of their design characteristics, I'm fairly certain that whilst being a bit more expensive than the average set, the Mega range is still good value for money. Watch CB Radio Magazine for tests on both sets before too long.

Congratulations to Mega for seizing this opportunity and I'm sure we'd all like to see more British manufacturers following suit which can only help Britain's economic and employment problems.

PCC

Two delightful 'Mega breakers' in front of the Mega stand at the 1982 CB Show.



Come in number one

They're here! Midland mobile rigs . . . America's finest and now Britain's too. The Midland "Precision Series" sets a new standard for C.B. Few competitors will be able to take up the challenge, because few have a background that goes back 20 years. Few are prepared to regard C.B. as a force that's here to stay. Too many are in for the quick killing, so they don't offer the kind of after-sales service that you need when you're buying sophisticated communications equipment.

Midland became the Big Name in the States by being synonymous with quality - in product and service.

You can appreciate something of that quality just by handling a Midland rig. Ask your C.B. specialist to show you the Midland "Precision Series", or send the coupon to us and we'll get more literature to you.

Pictured is the Midland 4001.

Features include: C.B./P.A. switch, numbered channel selector as well as green digital display, Squelch control, On/Off volume control, TX L.E.D., R.F. Gain, Low Pass/Filter switch, Mike Gain, LO/DX switch, Channel Normal/DIM switch, A.W.I. indicator, S/R.F. meter, mounting bracket and microphone included.



Drive America's top rig
MIDLAND

MIDLAND
 precision series

To Dept. _____, Plustronics Limited, Newcastle,
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A member of the Photopio International Group of
 Companies which ensures a fast and efficient after sales service. 

Please send me details of the Midland "Precision Series".

Name _____

Address _____

The CB Care Convoy



CB'ers from all over the country join together to help kids in care

In the past (pre-legal days), CB'ers were always very conscious of their 'anti-social and law-breaking' image and, consequently, went to great efforts to improve this view. Many local charities benefitted from all sorts of sponsored events, fund-raising activities and the donation of CB equipment. In a fairly short time, CB'ers have gained a strong reputation for charitable help and contributions. So, therefore, when one of the organisers of the National Foster Care Association asked me if I was surprised at the level of commitment from CB'ers to the campaign, I could honestly reply "No" because I am well aware of the degree and depth of support that breakers can give.

The National Foster Care Association has a fund-raising campaign each year in an attempt to boost their finances. Although the Association has been established for eight years, they were conscious of the need to have a large campaign that would bring them to the public's attention, raise a substantial amount of money and focus the need for foster parents.

Since the organisation of this sort of campaign takes many months, Special Appeals Organiser Tom Dykes started thinking about 1982's campaign last autumn. At that time, CB was very big news with forthcoming legalisation and all the media attention that went with it. Tom's active imagination linked CB and the NFCA and started planning an event that would be beneficial to both parties. Tom later added country music to the campaign and started sorting out his 'troops'. The UBA (United Breakers' Association) were approached and enthusiastically offered their support, both as drivers and as host clubs and manpower for the event.

Tom went to Ford for the use of cars for the convoy and was pleased to be met with active interest. Ford asked their local dealers to participate in the scheme as they encourage dealers to involve themselves in the local community. They felt encouragement of the 'convoy' was an extension of this policy and initially supplied six cars.

(In fact, with the increasing interest in the convoy, a total of 12 cars were involved). Ford Fiestas were supplied.

As the project gained momentum, country music clubs became involved in providing concerts, meetings and support for the convoy. An exciting

development was country music star Carey Duncan offering her support.

Carey Duncan is one of Britain's leading female country singers and she is rapidly gaining an international recognition. As one of a large family, Carey is well aware of the importance

Carey Duncan. Live and on record.





of a family to a child. Carey and her band have followed the convoy cars across the country, fitting in a series of benefit concerts with her already-busy schedule. Carey and the band have also recorded a single, 'Nobody's Child' and all the proceeds of the record will go to the NFCA fund.

Anyone familiar with the UBA will be aware of the energy Disco One and Duchess (President and Vice-President) put into their Association and their enthusiasm spreads to other clubs. A series of meetings throughout the country were organised to greet the cars as they arrived and civic receptions with local dignitaries were arranged. Added to this were the efforts of local foster care associations and country music clubs, resulting in a national collection of concerts, receptions, disco's and any other sort of meeting you care to mention.

Back in London, at the NFCA, the administrative work was becoming mountainous. The Association was amazed to find breakers calling in to help with packaging and organisation, often driving long distances to collect publicity material and offer their help. The final schedule took the cars all over the country and involved 12 cars and drivers. The drivers, all breakers, have forfeited their own businesses and holiday times to do the driving – purely because they thought the convoy was more important. Many of them family men and appreciating the aims of the NFCA, they wholeheartedly gave their time (and sanity) to the cause. The chart will show the demanding schedule the drivers had to meet.

Many other companies deserve a mention. Curry's, the electrical chain retailers, have supplied all the rigs for the cars (Fidelity 2000's) for drivers to keep in touch and make contact with local breakers in the areas they are visiting. Companies such as Radiomobile and ICL (the computer company) have contributed and other companies have sponsored the production of publicity material. Ham International have donated CB equipment to be presented to a Manchester boy (who is in care) who had asked to visit the convoy car in his area.



The National Foster Care Association

The NFCA was founded in 1974 out of concern for the plight of children in care; particularly those in foster care. The Association brings together foster parents and social workers to create greater understanding and awareness for both the child and the need for foster homes. In many instances, foster parents are the only real and constant advocates for these children and they form a large part of the membership of the Association. However, there are individuals from other professions, including social work as well as local authority social services departments, in membership.

The Association's objectives include:

To ensure that the quality of care available to children already in foster care is of a high standard.

To constantly encourage the recruitment of more foster parents and the placement of more children from institutional establishments to foster homes.

The Association offers support and guidance to many of the 200 local foster care associations and provides publications on various aspects of foster care, as well as a quarterly magazine. They also assist in the placement of children by providing a valuable means of advertising 'need' in their magazine 'Foster Care' and also by linking waiting foster parents with local authorities who have children to place.

One of the most important areas of work for the NFCA is the Education and Training project. In the past, 'parenting' was considered a natural skill and didn't allow for the particular problems that both foster parents and children could experience. For the first time in this country, training programmes for foster parents are being formally introduced as part of the foster care service of many authorities. The Association is also used by local authorities for advice and opinion in various areas of their foster care work.

The NFCA is funded by the central Government which provides 40% of its income and subscription membership which includes some local authorities. Funds are also raised by local foster care associations; events like raffles and jumble sales and the National Foster Care Week. As all charitable organisations, the NFCA is always short of money and inflation means it never quite has enough.

The Association's task is a formidable one as there are over 100,000 children in care and only 36,000 of these are in foster homes. If the CB Care Convoy is a financial success then many more of these children can be helped. Individual donations can be sent to the NFCA, Francis House, Francis Street, London SW1P 1DC. Enquiries about fostering can also be made to them at the above address.

The NFCA employs 11 staff and it is necessary to raise significant additional finance to maintain current services and meet ever-rising needs.

What will the money be spent on?

Always in the interests of improving the quality of care for children already, or who ought to be, in foster care.

★ There is a need for thousands of more foster parents – this means informing and educating the public about the need and the task.

★ A more radical approach to this is necessary and the Association has plans – given the financial resources.

★ To continue the improvement of standards of publications of all kinds plays a very important role. These need to be available at realistic prices in order to reach the people who need them.

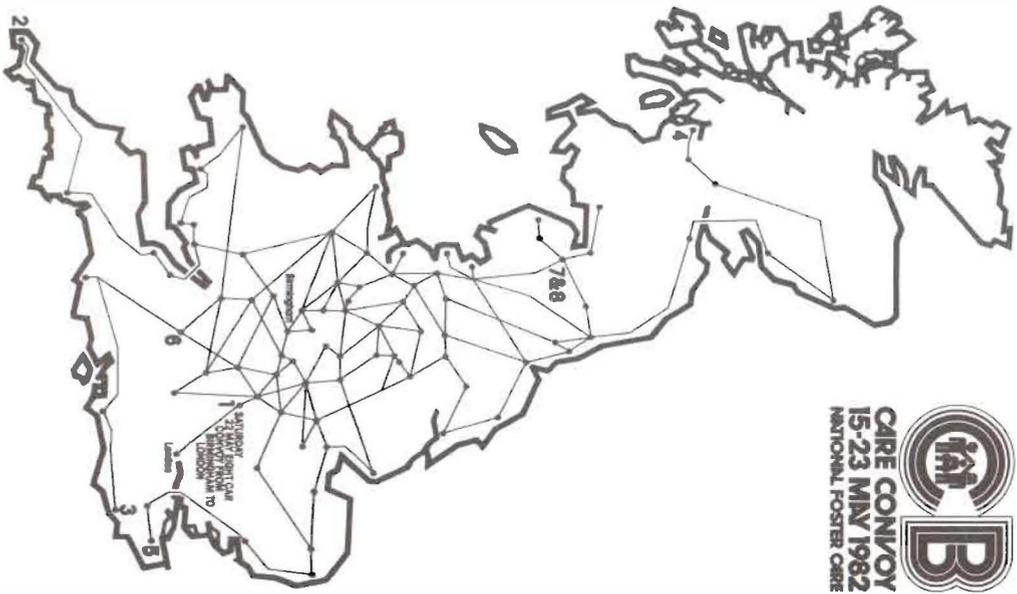
★ The Training Project needs to continue its work with the preparation and publication of its educational projects for foster parents and social workers.

★ Work for children from ethnic minorities who are in care needs a great deal of attention.

★ Only so much can be done from a central office and there is need for establishing regional offices across the country.

	DAY 1 15 May Saturday	DAY 2 16 May Sunday	DAY 3 17 May Monday	DAY 4 18 May Tuesday	DAY 5 19 May Wednesday	DAY 6 20 May Thursday	DAY 7 21 May Friday	DAY 8 22 May Saturday
CAR 1 DISCO ONE	L Milton Keynes E Telford	L Carlisle E Blackpool	L Morecambe E Middlesbrough	L Bradford E Oswestry	L Newport E Bristol	L Caerphilly E Barry	L Hereford E Birmingham	L London E London
CAR 2 BOOZE BUGGIE	L Penzance E Torquay	L Weston-s-Mare E Swansea	L Cardigan E Oxford	L Worcester E Oswestry	L Manchester E Grimsby	L Rotherham E Nottingham	L Northampton E Birmingham	L London E London
CAR 3 CB FREE	L Hastings E Bognor	L Portsmouth E Rugby	L Chester E Liverpool	L Colwyn Bay E Oswestry	L Stockport E Stalybridge	L Peterborough E Leeds	L Bolton E Birmingham	L London E London
CAR 4 DEFENDER	L East Kilbride E Glasgow	L Stirling E Edinburgh	L Dundee E Ayr	L Newcastle-on-Tyne E Oswestry	L Derby E Skegness	L Kings Lynn E Norwich	L Cambridge E Birmingham	L London E London
CAR 5 SKIPPER	L Canterbury E Tunbridge Wells	L Ipswich E Gt. Yarmouth	L Spalding E Sheffield	L Stafford E Oswestry	L Lichfield E Kidderminster	L Banbury E Stamford	L Coventry E Birmingham	L London E London
CAR 6 HEAVY CHEVY	L Swindon E Gloucester	L Nuneaton E Reading	L Newcastle-u-Lyme E Huddersfield	L Warrington E Oswestry	L Wolverhampton E Manchester	L Chesterfield E Leicester	L Kettering E Birmingham	L London E London
CAR 7 PHANTOM FLASHER	L Carlisle E Carlisle	L Carlisle E Carlisle	L Cokermonth E Workington	L Hexham E Newcastle-on-Tyne	L Scarborough E Sunderland	L York E Preston	L Stoke E Birmingham	L London E London
CAR 8 CARBON BLACK	L Carlisle E Carlisle	L Carlisle E Carlisle	L Cokermonth E Workington	L Chester-le-Street E Durham	L Kendal E Barrow	L Burnley E Preston	L Crewe E Birmingham	L London E London
CAR 9 CAR 10	Greater Manchester Area						E Birmingham	E London
CAR 11 OLD MAN CAR 12 ROCKING HORSE	L Hornchurch E Hornchurch	L Brands Hatch E Brands Hatch	L Hawley E Wimbledon	L Chessington E Guildford	L Borehamwood E Luton	L Edmonton E Willesden	L Battersea E Camden	L London E London

L = Lunch stop
E = Evening stop



Above.
The Convo map, showing the route of the original eight cars. As you can see by the schedule, the number of cars increased to 12 and the drivers had an exhausting timetable.
Below.
A letter of support from Elizabeth Taylor, appearing in Little Foxes in London.

ELIZABETH TAYLOR

18 April, 1982

Mr. Thomas H. Dixon
Special Appeals Project
Foster Care Association,
Francis Street
London SW1P 1DF

Dear Mr. Dixon,

I am pleased to offer my endorsement to the National Foster Care Association's appeal for the National Convo, to be conducted during the project, the CB Cars week, May 15 - 23, 1982. I am sure that the thousands of foster parents and other people who would also be able to offer their services to the country would be glad to offer their services in order to provide special care for the children of a good family environment is of vital importance. I am sure that the improvement of care for the many thousands of children who are in need.

Yours sincerely,
Elizabeth Taylor

ET/1h

Convoy puts care on air

By CHARLES MILLER
A CONVOY of CB radio enthusiasts is to broadcast details of three children in the care of Northumberland County Council in a bid to find them foster parents.

And the council has taken the unique step of allowing one of the children—a 10-year-old handicapped girl—to be photographed capped by The Journal.

These appeals for foster parents will take place next week which is National Foster Care Week.

The CB "Care Convoy" will pass through Helwath, Haslemere, Haslemere and Prudhoe on Monday as part of a foster care drive.

Have a heart, buddies...

A novel fostering drive using Citizens Band Radio arrives at Chester next week.

The National Foster Care Association campaign features a convoy of six cars driven by CB enthusiasts who will broadcast details of children in need of fostering to other "good buddies."

Cheshire's child care adviser Mr John Dickinson said: "The county has over 1,500 children in care, more than half in residential homes."

"Many of these children would benefit from living with foster parents in normal family surroundings. There is a particular need for homes for handicapped children, older children, and brothers and sisters."

Buddies aid big drive for

Convoy drive

to help kids

The Lord Mayor, Coun Mrs Enid Hattersley, of London, and Les Johnson, of Canterbury, field. The two men are taking part in the 13-car in aid of the National Foster Care Association's care week.

There are plenty of reports of events and fund-raising efforts already coming in. The Tunbridge Wells area has already raised over £1,000, Glasgow Second City Breakers have done a 54-hour Ratchet Jaw and the Long Dog Family Breakers' Club had a sponsored beard shaving. On the whole, response has been very good and the NFCA has already received offers for help next year. Some clubs have been disappointed that they weren't able to be directly involved and have gone off to organise their own fund-raising events. Press and TV coverage has also been good.

One of the benefits of the convoy, apart from the major one of helping the NFCA, has been in uniting many different elements of the community; local car dealers, CB'ers, foster families and country music fans. Many CB clubs are reporting the establishing of ties with other CB clubs in the area and are hoping to work together for other charities. Unfortunately, the drivers have got very tired as they were covering around 300 miles a day and one driver had to be relieved.

The cars arrived in London on Saturday, 22 May after a week's exhausting travelling. The cars met up at Tooting services on the M1 to travel in convoy down to London for a final celebratory concert at the Rainbow Room in Kensington. Everyone concerned can congratulate themselves on a tremendous effort and, hopefully, a great success.

Above: The Convoy has had a good reception from the press up and down the country. Below: Last ward from the people who really made it possible by giving up their time to drive the cars.



Readers Write

Dear Sir,

I was recently flicking through your magazine, when I came across an advertisement for 'The first . . . legal base station antenna that meets Home Office . . . specification'.

I'm a licenced radio amateur but recently I bought myself a CB FM rig for relaxed chat purposes and a purpose-built base station antenna is something I've been on the lookout for.

I was surprised to find two errors in the specification:

Firstly, the gain of $\pm 4\text{dB}$. Plus or minus 4dB? And over what? A bunch of daffodils? Even an attenuation of -4dB compared against a $\frac{1}{4}$ -wave ground plane for such a heavily-compressed antenna would be optimistic.

Secondly, its weight of $\pm 1.5\text{kg}$. A weight of +1.5kg would be about normal but -1.5kg could solve a lot of problems! As half of these antennas are apparently lighter than air, all I would need to do is order a -1.5kg type and use the feeder to haul it up and down, like a barrage balloon!

Seriously, though, how about straightening this ad out a bit? It could be misleading to the uninitiated.

G8 UTY (J. R. Wardle) (Walrus)
Bracknell

Perhaps the $\pm 1.5\text{kg}$ should read approx! The rest of the ad has been revamped but your comments have been passed on.

Dear Sirs,

I am now a legal CB user after two years of looking round every time I used my AM equipment.

I was a UBA member and a staunch campaigner for legalisation. We got a legal system on 2 November, 1981 and I now wonder, 'Was it all worth it?'

I bought a £10 licence which appears to be worthless in real terms. The GPO say that they are not interested in any kind of interference (AM, SSB, whatever) preventing the use of a CB radio. Quote: 'CB radio is a non-essential service'. So on many occasions I cannot use my rig, either home base or mobile, due to just such interference. I have noted that the familiar Busby vans adorned with antennas and black windows have not been seen since 2 November. Are they now in moth balls? I have over £200 worth of CB equipment of limited use due to these problems. What will they spend over £1,000,000 in licence revenue on which they have received so far? The authorities appear to be just as 'relaxed over licence conditions enforcements. There are still many giant-sized aerials going on chimney stacks each week here and they are being used by people on legal rigs causing massive bleed-over. But, does anyone care? What about people using illegal rigs capable of getting the legal channels but pushing out up to 10 watts?

Does anyone care? Finally, legal rigs 'superior to all the illicit, poor-quality AM rigs dumped here' according to the HO. My 27-FM, £100-rig was fitted directly into my car in place of the AM set. It is a set from a well-known, reputable firm but - what a noise! My engine is heavily suppressed and AM was superb but FM requires over 50% squelch after reaching 2,000 rpm. This is rubbish compared to AM. My home base is a properly-converted AM President and is of superb quality with superior results than any new rig I've heard, which includes transmission. So can someone tell me what we have got with legal CB except freedom from Busby harassment?

J. R. Prince
Whiston, Merseyside

Dear Sirs,

I also rarely write to magazines but the two letters in your March issue really demand an answer.

1. When CB became legal in the UK, I bought my licence then my FM rig, in that order and, as far as I'm concerned, it's great! And I speak to new people every day who feel the same way.

2. I don't 'owe' anybody for the right to use CB - it was inevitable anyway.

3. There is no point in cribbing about design restrictions when those restrictions are quite clearly intended to prevent unreasonable disruption of other people's privacy or activities.

4. No one person or group has a 'right' to airwave space when the rest of the population through a freely-elected Government say No! And if you don't believe me then try organising a petition signed by a clear majority of the population or - better still - stand for Parliament.

5. The argument that you can disregard any law that inconveniences you is utterly fallacious and can equally apply to any other anti-social activity and the use of illegal or unlicensed equipment is just that - anti-social!

It's about time these illegal users stopped whining and thought for once about the effect of their actions on others.

And it's about time CB Radio said so, too!

Yours faithfully,

Mallard (Cyril J. Harris)
Selsdon, Surrey

PS. It's also fair to say that I like the magazine and would not miss my copy.

Dear Sir,

I hope you'll publish this letter because I think the reaction will prove an idea I've had for some time, that the UK CB press pays far too little attention to the needs of the serious SSB operator. Sure, most magazines run a QSL column but what I'd be looking

for is a record of readers' recent contacts (with some sort of prize for the best confirmed by QSL?), propagation forecasts, the working frequencies of various UK and overseas stations, etc.

Also the vast majority of technical articles these days seem to rehash the same old topics, principles of modulation, antennas, etc., but if you're already running pirate radio, there's no additional penalty for modifying the one you've got - tuning up, crystal changing, PLL modes, etc. - all things a lot of operators would like to know more about.

Anyway, I'll say thanks for what is still the best CB magazine on the market, with the best DX QSL column. All the best numbers, stay loose, stay lucky.

G. F. Wilson (E1 909)
Aberdeen

Dear Sir,

I am writing to your magazine in the hope that you can help me establish a contact I had at around 9.00-9.30 on Wednesday, 5 May. I was receiving a lot of English stations very loud and very clear, so thought I would try a QSK and, lo and behold, I got through to the Country Rebel but he would not believe me and only kept saying "You'll be lucky". I told him I was from North Ireland but he would not believe me until at the last. As the signal began to fade, I think he realised it was genuine and by then it was too late. So could you, through your fine magazine, see if Country Rebel remembers and would like to contact me at the address below. It would be really good as one of the breakers I was hearing gave his 20 as Kingsworthy and on the map that is outside Winchester and that is some copy from NE coast of North Ireland and on legal FM.

I really would be obliged.

Red Adair (T. W. Walsh)
3 Main Street
Cushendun
Ballymena
Co. Antrim
N. Ireland

PS. Country Rebel was talking to a mobile!

Dear CB Radio,

On 4-5 May, local copies in this area were almost impossible due to Scottish breakers being on 90% of the legal FM channels (the remaining 10% were from Ireland, Channel Islands, Wales and the Isle of Man). Like a lot of other breakers in Cornwall, we were able to make contact with breakers from the Shetland Isles (Mr. and Mrs. Herridge of Hillswick), Dunfermline (Morse Monkey and Captain Regleg), Thurso (Highland Dancer) and Kinloss (Captain Disaster). These last two breakers phoned us during the day to

Readers Write

check if our copy was genuine (Who says the Scots don't like parting with money?).

As the days progressed, we also copied breakers from Holland (Bravo Victor Holland), Germany (Not sure of his station number) and East Yorks (Sierra Mike).

Addresses and phone numbers were exchanged so we are eagerly awaiting the post.

We realise these copies were probably due to freak weather conditions but all the same, using a Mustang 2000 with a Wot Pole, that's pretty good going. A neighbour of mine (Magnum, alias Gulf Tango Whiskey 26) also managed to copy many breakers, particular Bravo Victor Holland (whilst mobile).

Through your magazine, my wife, myself and, I'm sure, all Cornish breakers, would like to thank all those distant breakers we managed to copy and also assure them these were 100% genuine copies.

Any explanation for this would be appreciated, as I am sure breakers who didn't experience this will find it hard to believe.

Many thanks,

Funnyman/Delta Bravo 31
and Funnygirl
(Dennis and Rosalind Butler)
Helston, Cornwall

Dear Sir,

As one of the 'untrained amateurs' that Mr. Faraday so roundly condemns in his letter (CB Radio Magazine, May 1982), I would like to set his mind at rest on a number of counts.

Firstly, members of THAMES Paramedico do hold professional qualifications; medical degrees, SRN and SEN, St. John Ambulance and Red Cross First Aid Certificates, membership of the police and ambulance services and, last but by no means least, of his own fire brigade. (I assume Fireman refers to his job not his handle). To ensure a high standard of personnel, every applicant is carefully selected.

Secondly, the trend in his letter seems to imply that THAMES Paramedico spend their time racing the rescue services to the scene. Not so. In most instances requests for assistance are made by the emergency services themselves and we boast a good relationship with the London Ambulance Service and the Kent police force.

Finally, the formation of Paramedico has not altered THAMES Monitors at all. We simply work under the same name.

For the unfortunate individual involved in an accident, little will change. He will still be attended by our excellent emergency services. However, should he require medical attention on site,

he might be grateful for the knowledge of our existence and rapid availability, especially as transferring doctors and nurses from the local hospital may well take too long.

Yours faithfully,

Dr. Mark Bancroft-Livingston
National Director of Training
THAMES Paramedico

Dear Sir,

I feel compelled to write this letter to your magazine as it possibly affects independent sideband operators and sideband DX clubs up and down the country.

I appreciate that DX clubs monitor certain frequencies but I feel that these clubs don't 'own' a frequency.

The reason behind this is that myself and many club and independent operators have had arguments with a local DX group.

This club being The Jolly Roger DX Group. This club monitors 47LSB and a few weeks ago I had a 'run in' with a Jolly Roger member.

When I had finished calling DX on 47LSB, this JR member transmitted as soon as I let go of the mike, effectively cutting off my incoming stations. This happened two or three times. When I questioned him on 'following' me so close, his reply was that this is the Jolly Roger club frequency and told me to QSY to another frequency. I told him that while I recognise his club monitors this frequency and uses it, they don't own it and pointed out that if many other DX groups followed suit, they would use up all the frequencies between AM channel 40 and FM channel 1.

His reply was that this was an international calling frequency for the JR DX club.

To this, I said that obviously any station on any frequency had priority when in actual QSO and mistakes do happen when you can't hear a distant station but another UK station can and you put a call for DX. The station that 'comes across' the QSO, when told, can politely apologise and QRX. But when a frequency is vacant it is free for all stations to use.

By this time, this Jolly Roger member, who knows who he is, was losing his temper and said if I didn't QSX and clear his frequency he'd pass my DX number to a few of his friends so when they heard me on any frequency they would mess me about. This has actually happened to some stations that have crossed the Jolly Rogers.

I ask myself, is this the way an international DX group conducts itself, 'owning' its own frequency that no other sidebander can use?

If this had happened to just myself, I would have shrugged it off, thinking that that club has got a few idiots in it

but it has happened to quite a few operators, independent and club members. So, I had to bring this to notice and get this thing in the open.

We have several DX groups in our area, i.e., 777 monitoring 49LSB, Crusader DX Group monitoring 41LSB, Cavalier Sidebander monitoring 42LSB, Woodpecker DX Club monitoring 55LSB, to name but a few. These clubs do not mind you using their monitoring frequency for DX and I have had many interesting QSO with the members of these groups.

I dread to think of our reputation as these petty arguments are obviously heard abroad.

We should be pooling our ideas, resources and information in the struggle ahead when so many SSB stations are closing down.

Yours faithfully,

WB103 (Phil)
Worcester

Dear Sir,

I would like to reply to the letter in your magazine from Mr. Faraday (Fireman) and his comments about THAMES Paramedico.

As the National Secretary to this PROFESSIONAL organisation, I was disgusted with Fireman's comments. We are *not*, I quote, 'untrained amateurs' but highly-skilled professionals in our respective fields. If you could print the qualifications of our National Committee alone, it would show that we are qualified as doctors/nurses/ambulance and professional firemen who use CB for emergency communications.

Our greatest service is to members of the public who may have an accident and if it is a heart attack and breathing has ceased there is merely four minutes in which to act before irreparable damage can occur.

If in the vicinity one of our units hears the call for an ambulance, they could attend and give emergency treatment until the ambulance arrives. It could take up to 12 minutes for the ambulance to arrive on scene.

Doctors have started to use CB to pass emergency messages back to their surgeries. Also immediate care teams, which are called out by the emergency services, use CB to arrive at incidents to give vital medical treatment.

I suggest Mr. Faraday obtains more information about THAMES Paramedico before he makes any more comments.

A. Medcraft
National Secretary
THAMES Paramedico

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NEWS REVIEW

Retrieved from the waste paper basket!

Press coverage given to subjects not relating to the Falklands Crisis during the past months has been minimal. Therefore, CB events and incidents which would usually have been given coverage have been filed, along with other non-CB-related 'soft news' stories, in the waste paper basket. This does not mean that coverage has been completely stopped, just substantially reduced.

Articles that have managed to force their way through the blockade relate to the following topics: CB sex beasts, the increase in crime due to CB, aggro caused by interference and the new crime wave created by CB.

East Anglian Daily Times CB 'craze' is creating new wave of crime claims CID

"The CB radio 'craze' has brought with it a new wave of crime," said Det. Chief Inspector John Elsey. "There is a growing problem of CB equipment being stolen from cars and sold on the black market," he continued.

Mr. Elsey told the Ipswich Crime Prevention Panel that in the first three

months of this year 383 cases of theft from vehicles were reported to Ipswich CID compared with 198 last year. He told the Panel that these figures represented the greater part of a very sharp increase in reported crimes since the introduction of CB. The problem, he said, was that CB equipment is so easily spotted in a car, the large antenna often being a giveaway. He also said that there was a large market for cheap CB equipment because most people will not ask too many questions when buying cheap equipment. They should realise that the next time their own equipment could be stolen.

The Times CB radio licences top 250,000

Licences issued for CB radio since it became legal last November have topped 250,000 and new ones are being issued at a rate of 6,000 a week.

At the same time the Government has issued a warning to the users of illegal AM sets. They say that they remain committed to strengthening enforcement powers and legislation



banning the sale of illicit equipment will be introduced as soon as Parliamentary time permits. A framework for control of the service has been worked out and regulations will go before Parliament concerning the requirements on interference.

Financial Times Radio bores

Citizens' band radio has not taken Britain by storm since it was made legal last year. Some companies have warehouses full of sets they cannot sell, say the Financial Times.

Yet it has been given a warm welcome by a breed which I confess mystifies me, people who organise others. They have taken to CB as an impressive new weapon to add to their armoury. It is rare to see, these days, a self-respecting organiser without a two-way walkie-talkie in his or her hand. They hiss, crackle and chatter at horse shows, flower shows, sporting events, art exhibitions, museums and even at village fetes where George is usually within good, old-fashioned, shouting distance.

Most sets have a sinister control knob marked squelch. Who or what suffers when it is turned, I dread to think.

Western Morning News Car leap crash

A CB radio fan escaped unhurt when he crashed at 90mph trying to break the world car jumping record.

Andy Aish, 28, of Bathpool, Taunton, was trying to drive a car 230ft. over 34 cars at the end of a CB and custom car show at Cricket St. Thomas Wildlife Park in Somerset.

As his Ford Capri hurtled up a specially-built ramp at 90mph, the structure collapsed. The car disappeared into a cloud of dust and wood fragments as several thousands looked on.

East Anglian Daily News Disabled girl's new link with the outside world

A disabled Suffolk girl was recently given a new link with the outside

CB SEX BEAST TRAPS GIRL, 14

A SEX fiend used his CB radio to lure a 14-year-old schoolgirl into a trap. The girl made contact with him over the air and arranged to meet.

But when the "Good Buddy" turned up at Burnham-on-Sea, Somerset, he dragged her into his car and attacked her.

Police yesterday appealed to CB fans who may have heard the fiend

By SUN REPORTER

talking to the girl, who lives in Taunton.

"We want to know this man's call-sign," a spokesman said.

A youth was helping police last night.

world. Wheelchair-bound Gail Vanstone, 12, now has a CB in her bedroom, thanks to villagers from Nodding Tye and nearby Bildeston. After the rig was set up at Gail's home in Nodding Tye, the airwaves around the village became alive with local breakers waiting to speak to Bluebell. The cash for the rig was raised by a joint effort from Bildeston Baptist Church and Bildeston Breakers Club. The fund's originator, Sunday School teacher Mrs. Sue Harvey, said, "A disabled person likes to feel normal and with the CB set Gail can communicate with so many more people." This quote confused me a little until I realised that it should have read 'normal' not 'norman'. I was beginning to wonder who Norman was. I thought he may be the local faith healer.

Seriously, though, Gail is a pupil at the Thomas Wolsey School, Ipswich and has spina bifida. Her mother said the CB will be particularly useful to her on school holidays as some of her school friends have sets and she will be able to keep in touch.

Manchester Evening News

Airgun fury of CB bad buddy

Interference from a CB radio caused two neighbours to become bad buddies, Altrincham magistrates heard.

Rodney Yarwood became so distraught at having two television sets damaged that he shot four windows at his neighbour's house with an air rifle, the court was told. Yarwood pleaded guilty to damaging the windows, causing £40 damage.

Yarwood claimed that three of his own windows had been damaged and that the CB radio belonging to his neighbour interfered with his television. Also, he claimed that his own children had been assaulted and birds in his garden shot.

He was fined £50 with £50 costs and compensation.

Western Morning News

Widow bars CB radio search

Widow Mavis Angove was upset when two men demanded to be allowed to search her home. They produced a document which they claimed was a search warrant but the mother of two refused to let them in.

It was only after the two British Telecom officials fetched a policeman that she allowed them into the hall.

When they asked to be allowed to search the downstairs rooms, Mrs. Angove refused. Bodmin magistrates were told. She did, however, agree to let them search the upstairs rooms. When they attempted to enter the lounge, the widow's boxer dog bared his teeth and growled at them.

Eventually an illegal AM radio was produced from the lounge.

Mrs. Angove, of Bodmin, admitted two offences of refusing to allow her home to be searched and of installing an illegal transmitter. She was fined £80 with £25 costs.



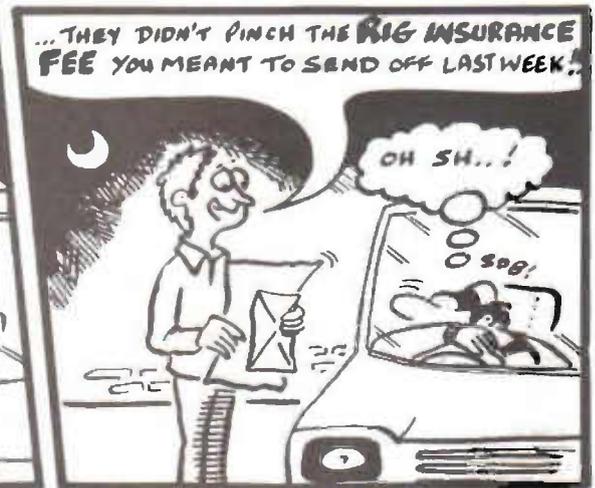
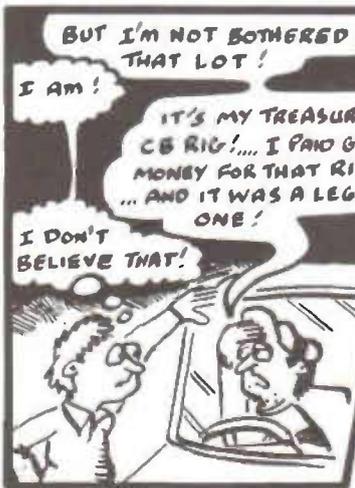
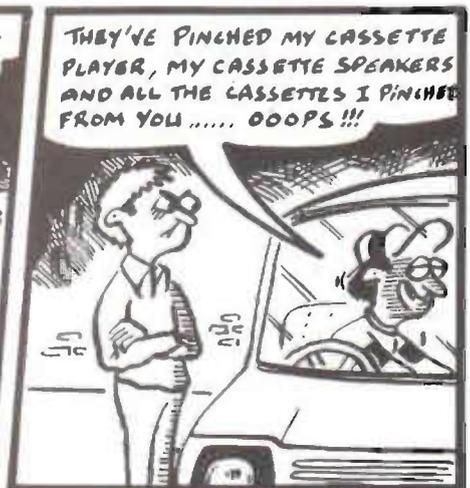
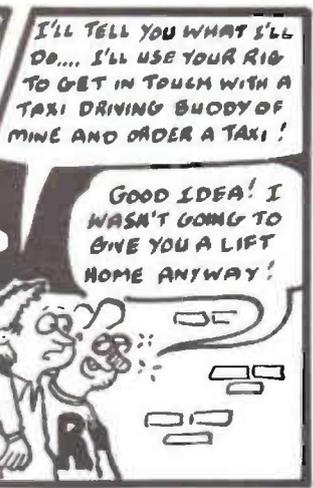
Go get 'em Malcolm

CB 'Sheriff' Malcolm Heppell is shooting holes in delays on his council hot line — with his latest little buddy. He's had a CB radio installed in his car so his ward can call him up on the air waves, when he's away from his telephone.

And voters are already

getting the message that York's development services committee chairman is always available for council business.

Malcolm puts his ears on whenever he rides into town in his car. In fact, breakers just can't shut up the Sheriff.





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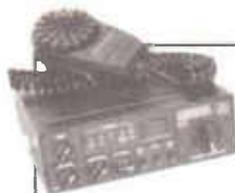
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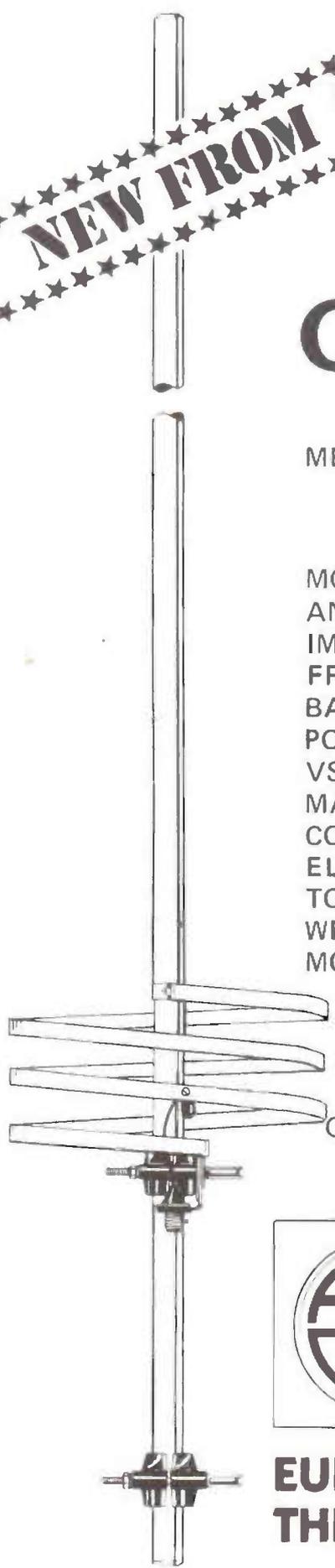
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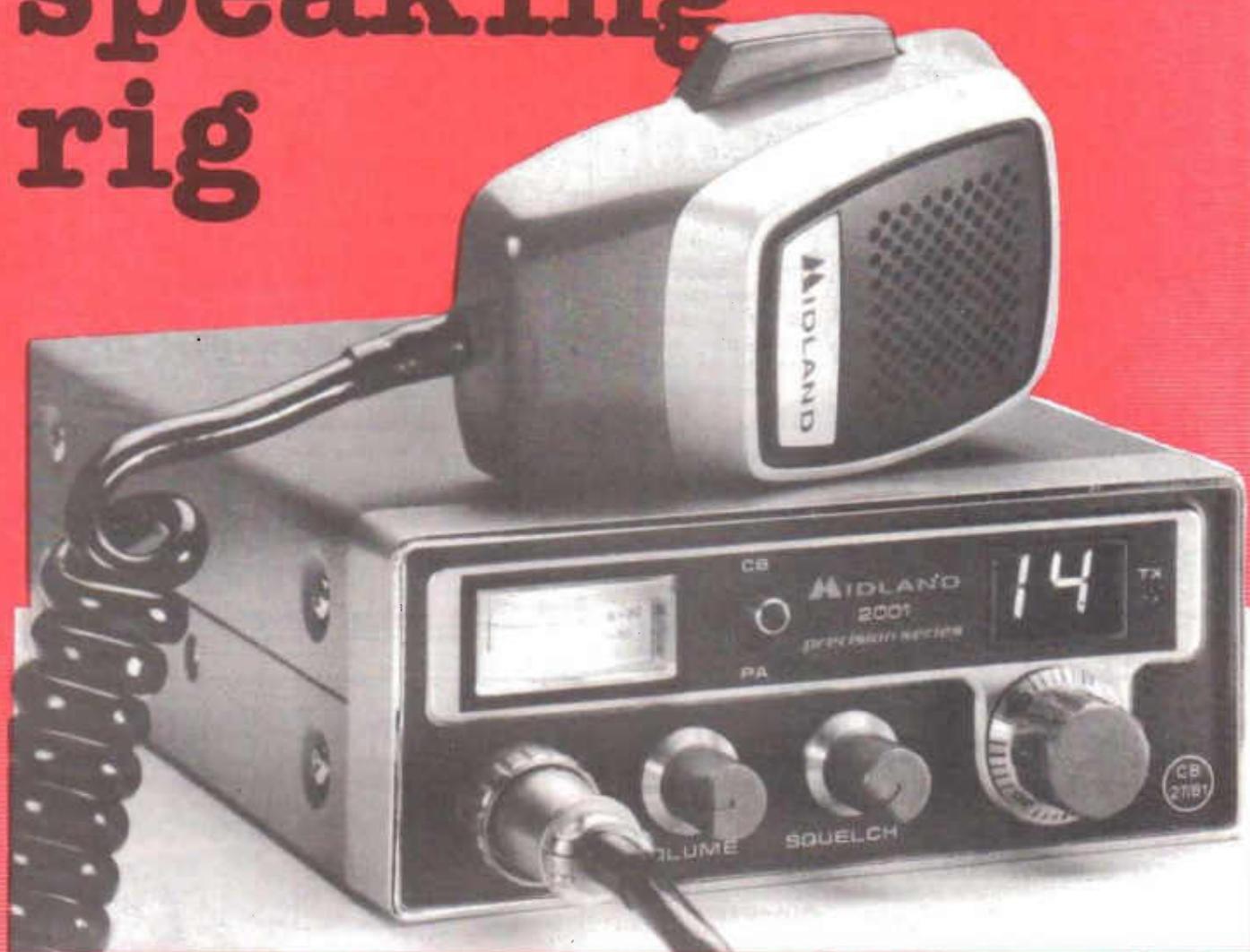


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The speaking rig



Plustronics release the Midland 2001T

Following our article last month showing various ways of adapting a rig for use by blind or disabled breakers, we now bring you news of a major development which will benefit both disabled and able-bodied breakers alike. Plustronics have introduced a sophisticated speech synthesis integrated circuit into their Midland 2001 transceiver and have aptly named it the Midland 2001T. When the channel change knob of the rig is moved in any direction the transceiver will give an audible indication of the channel selected.

A major contribution to road safety!

The talking rig was specifically designed

with road safety in mind. The audible indication allows the delicate operation of changing channel to be performed mobile without the driver taking his/her eyes off the road. This is especially important if the rig is tucked away under the dash board. There is no doubt that news of this development will result in a sigh of relief from the police and safety authorities who have recently expressed grave concern at the use of mobile CB equipment.

The first of its kind

Chief Executive and Managing Director of Plustronics Ltd, Rupert Carbridge, announced the new development at a press reception at the Dorchester Hotel in Park Lane in his

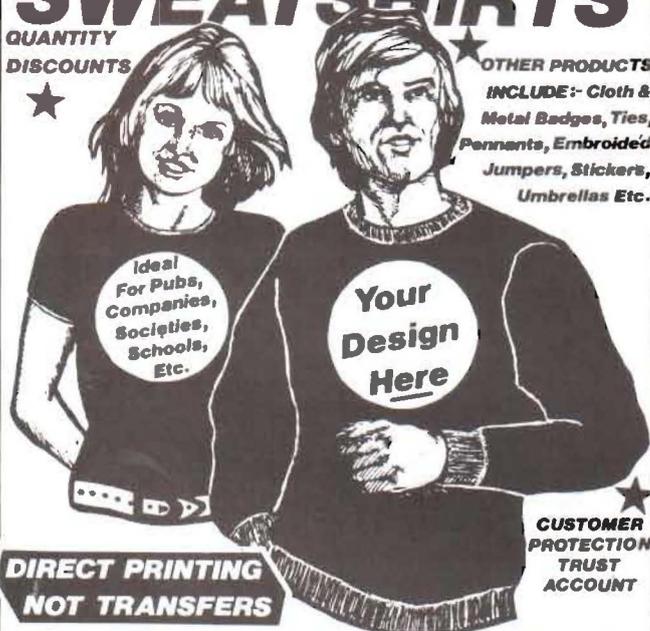
speech, he outlined the advantages of the speech synthesis circuit, which is made in Britain by the way, albeit with an American IC. These advantages include the use of CB equipment by blind and disabled breakers who would have otherwise had to rely on counting the click stops, an operation which is not only tedious but inaccurate. The circuit has a built-in delay to allow the channel switch to be turned through more than one channel without being confused. Therefore, the rig will only announce the channel that has been selected and not those that have been skipped over.

The Midland 2001T is now available from CB and other retail outlets at a recommended retail price of £99.95 inc. VAT.

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Will readers of CB Radio Magazine kindly note that ZL Communications of Cantley, Norfolk are no longer selling their previously advertised range of books on electronics and CB radio, etc., or the antennas known as the Big Jim 27, the Ferroline 27 or the Whiplash.

PLEASE DO NOT SEND ORDERS FOR ANY OF THESE ITEMS AS ALL STOCKS HAVE BEEN SOLD. Readers who wish to purchase the antennas named above may be able to obtain them from local CB dealers or direct from the manufacturers, Wrenpro Systems, 2 Station Road, Reedham, nr. Great Yarmouth, Norfolk (Tel: (0493) 700245) who will supply prices and other details on request. Please note this applies to antennas only.



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AC/DC – a transforming experience by Spotty Dog

Here is a simple experiment to try when there's nothing better to do.

Cut a piece of cooking foil about 2in. square and a piece of cloth slightly smaller. Soak the cloth in vinegar and put it on the foil. Place a penny on top of the cloth. The result is a crude battery, giving an electrical pressure of about 1 volt. You can measure this by connecting a meter from the penny to the foil.

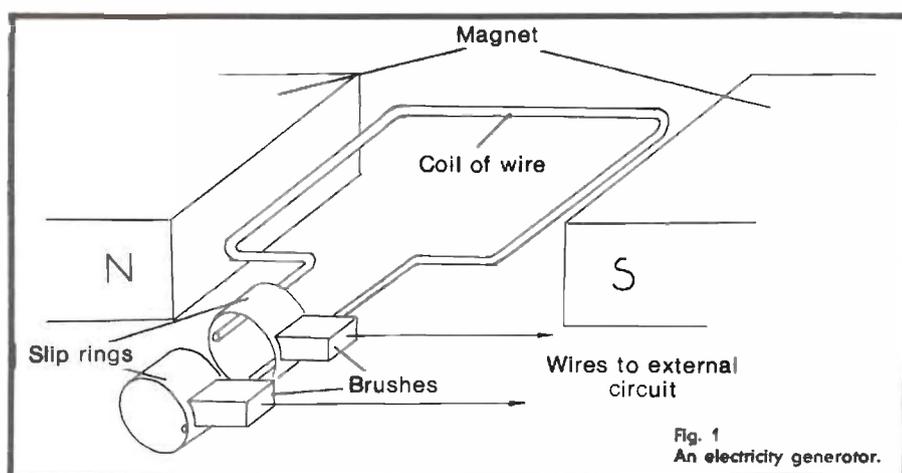
This sort of battery is not very good for generating electricity because it 'poisons' itself very quickly and the electricity soon stops flowing. In the early days of electricity, better kinds of battery were quickly developed that gave a steady current for a long time. We still use these improved versions in most battery-driven products. The only thing is that batteries run down eventually and have to be replaced. At one time it was thought that the only answer was to have batteries delivered to each house every morning, like milk.

Power to the people

All that was before the invention of electrical generators, of course. We now have a national system of wires called The Grid supplying electricity from many power stations to almost every house and factory in the country.

Generators depend on the discovery that a coil of wire spinning between the poles of a magnet gets an electrical voltage 'induced' at its ends. This voltage can then force an electric current through a circuit. Connections to the coil are made by slip rings that spin with the coil, rubbing against brushes. The brushes are connected to the external circuit. In Fig. 1 the whole arrangement is shown diagrammatically.

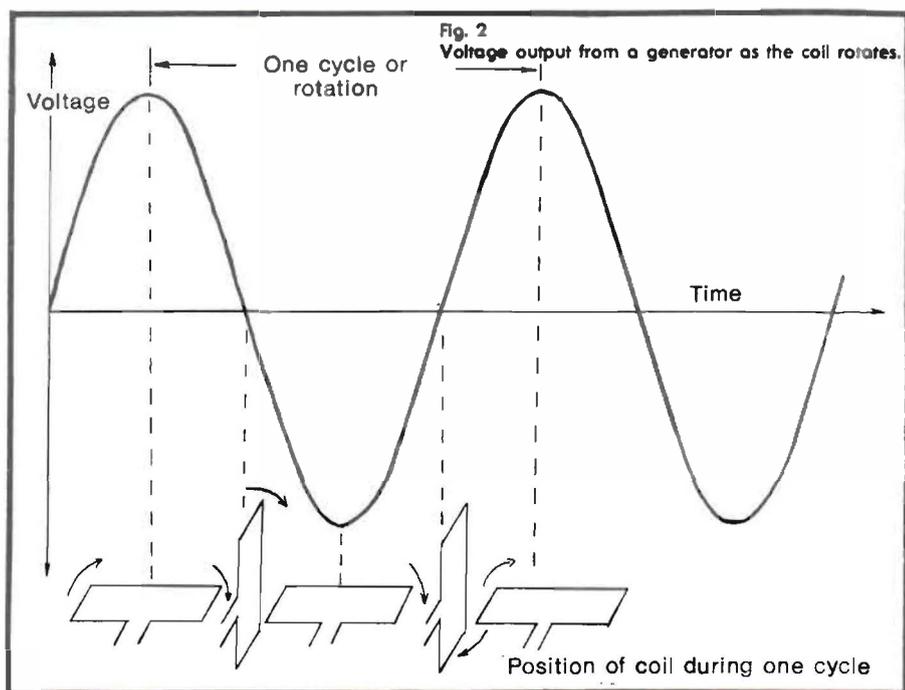
As the coil turns, each side goes down through the magnetic field and then upwards again. This reversing of direction makes the voltage change polarity at the ends of the coil as it turns. In other words the electricity is first pushed one way round the external circuit then sucked back the other way, giving an alternating current (AC).



Sine of the times

If you make a plot of voltage against time on a graph so that the line marking the time goes across the page and voltage is shown as distance above the line, you get the curve

shown on Fig. 2. This shape is called a sine curve. (Sine is the Latin word for curved, so it's a curved curve! – brilliant!) As you can see, as times goes on, the voltage rises then drops to nothing, swings the other way and rises again, over and over again. Each



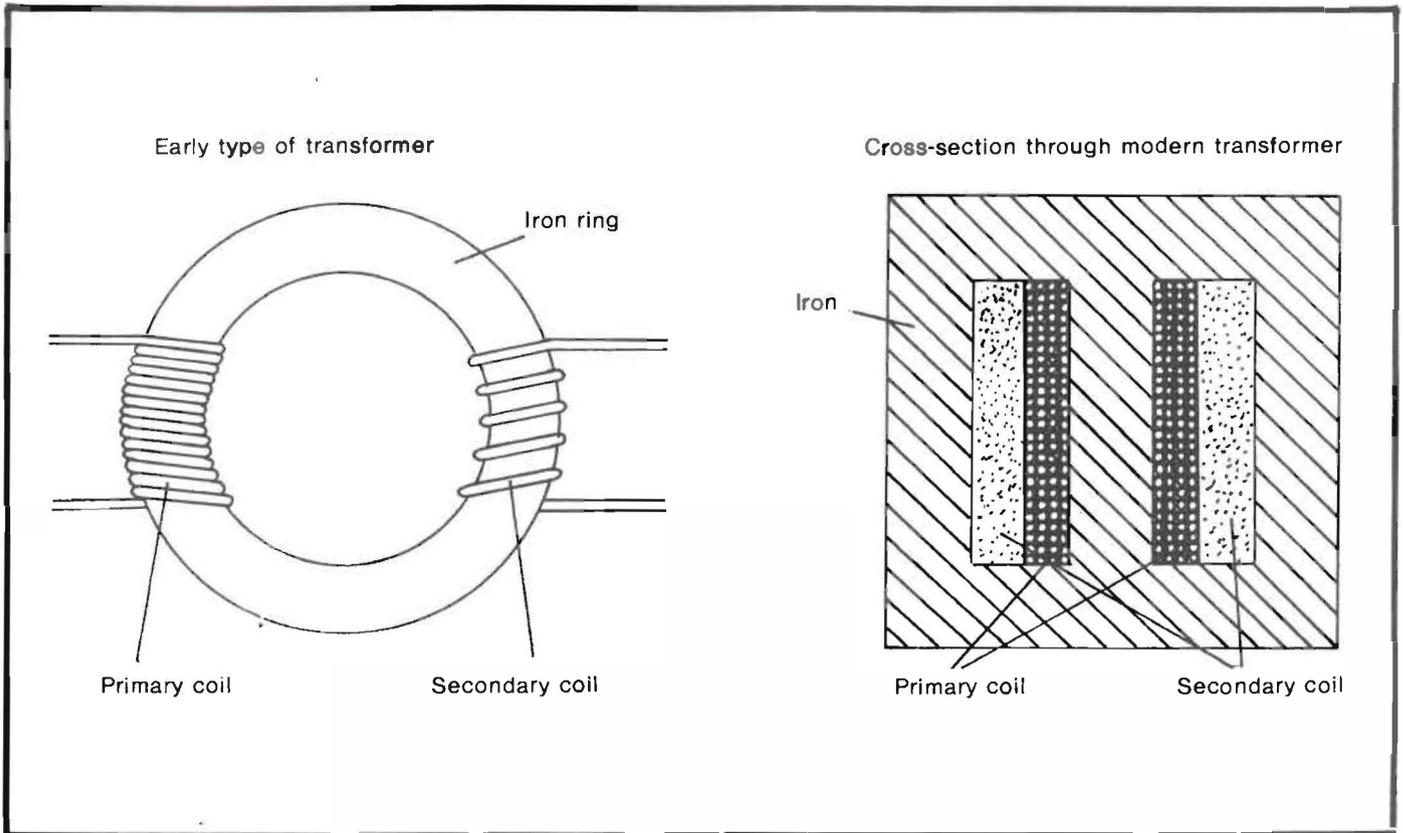


Fig. 3
The transformer.

time the coil turns the voltage goes through a cycle and starts again.

This is exactly the curve you see when you look sideways at a spring, which is not surprising because a spring also goes round as you move along it, if you get my meaning. It helps to see this curve if you stretch the spring out a bit.

Phase

Meanwhile, back at the power station. Each generator used nowadays in the National Grid has three separate coils instead of just one. Each coil is wound on the armature at a different angle so that the three pairs of wires each give an AC voltage which varies out of step or 'phase' with the others.

One of the wires from each pair goes out of the station as three 'live' wires and the other three are joined together to go out as the 'neutral' line. In houses, only one live wire is used along with the neutral to supply electricity but in factories all three live wires are used, giving 'three-phase electricity'.

It might seem crazy to use such a complicated system of three different phases but there is a good reason. Using three coils instead of just one evens out the load on the generator as it turns. The electric motors in the factory run smoother, too, in the same way as a six-cylinder car engine is smoother than a single-cylinder motor bike.

Transformation

It is possible to make DC generators

(dynamos) by having a rotating switch arrangement on the coils instead of slip rings but there is a big advantage to using AC electricity instead of DC. alternating current can be fed through a transformer to change the voltage without losing any power. This is impossible with DC. The only way to change a DC voltage is by using resis-

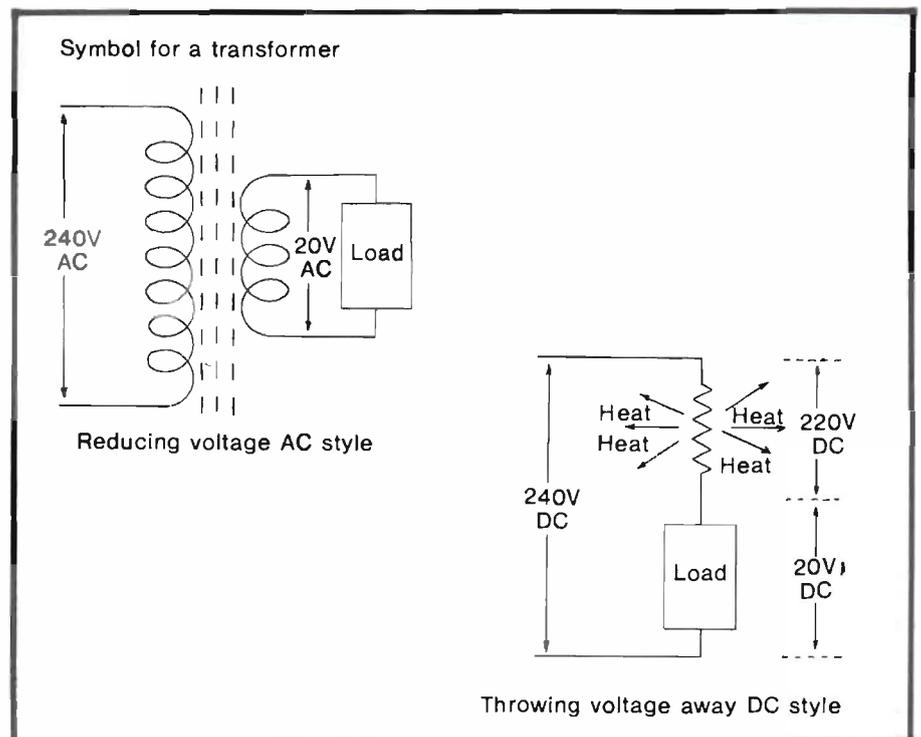
tors. Using resistors always loses power in the form of heat.

A transformer depends on the twin facts that:

- a) A coil of wire makes a magnetic field when electricity goes through it;
- b) A changing magnetic field can generate a voltage in a coil of wire.

So, if a coil of wire is fed with an AC

Fig. 4
Getting a reduced voltage from the mains supply.



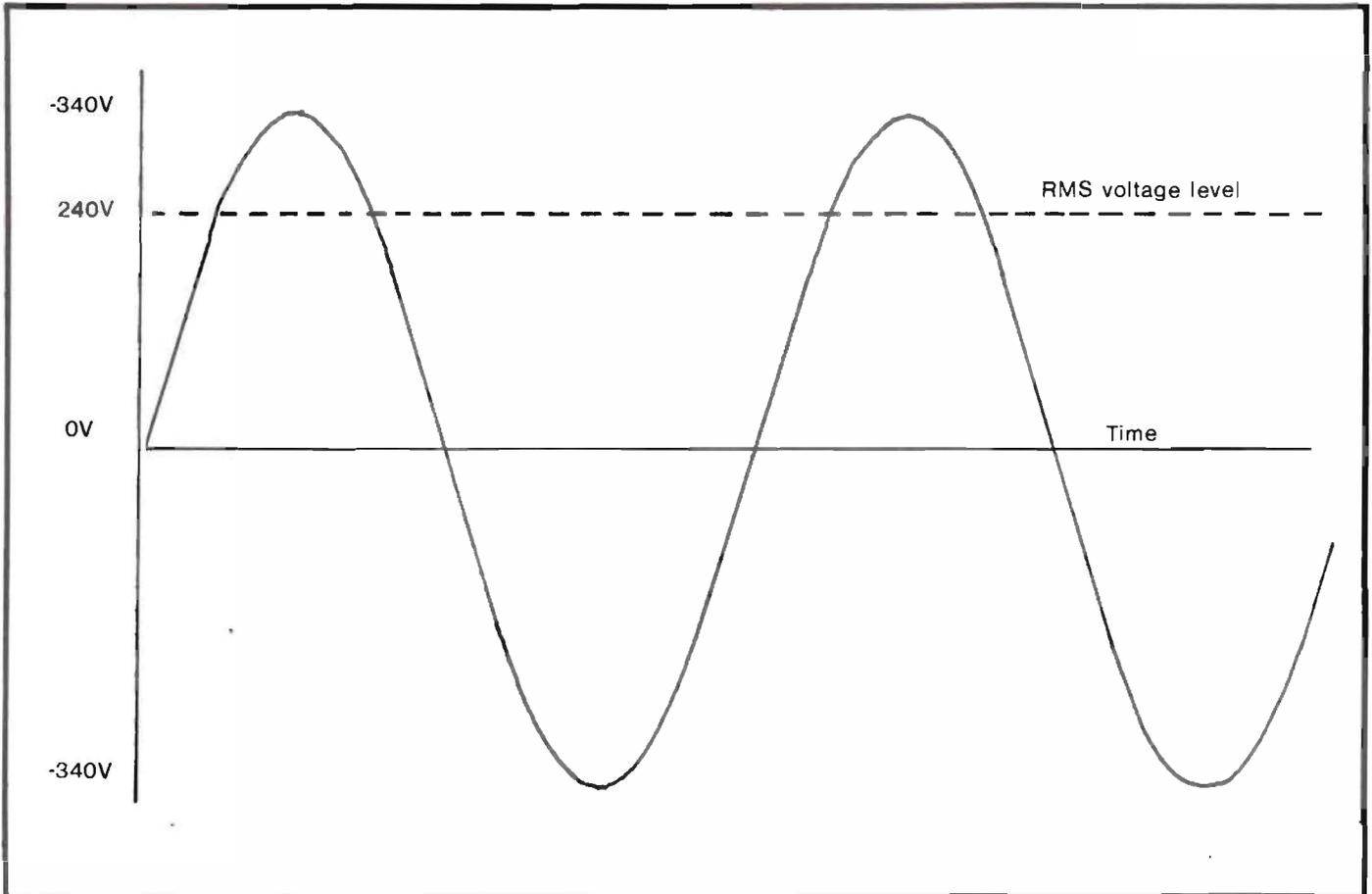


Fig. 5
The real voltage from the AC mains, compared to the RMS voltage

electric current, that makes a changing magnetic field. This field then can make a voltage appear in another coil nearby. The effect is strengthened by winding both coils on an iron ring. Fig. 3 shows the construction of a transformer. Altering the number of turns in the coils will change the output voltage for a given input voltage.

Now for the complicated part. When the first coil makes a magnetic field, the field also induces a reverse current, going *back through the coil*. This current drives a transformer backwards, feeding a voltage back into the mains. The end result is that a transformer only takes just enough power to drive the equipment it supplies and shoves the rest back into the mains!

Let's take an example to see what this means in practice.

No loss

Suppose the transformer in a rig power supply gives 20 volts output for 240 volts input. (These figures will be stamped on the transformer casing). If the rig takes, say, 1 amp of current at 20 volts, then it wants

1 amp X 20 volts = 20 watts of power.

Since this is all that is wanted, this is all the transformer takes out of the mains - 20 watts. How much current is taken from the socket then? The mains voltage is 240 volts so,

How many amps X 240 volts =
20 watts?

That is 20 divided by 240 which gives 1/12 of an amp. So to get 1 amp of current for the rig we only have to take 1/12 of an amp from the mains. This is a considerable saving of electricity.

If we had to use DC, we would still have to get 1 amp for the rig but use resistors to throw away the 220 volts that aren't needed.

1 amp X 220 volts = 220 watts.

So 220 watts of power have to be wasted as heat in the resistor, enough to light a large living room *and* run the TV!

Fig. 4 shows how these two different methods of power supply are wired up, notice the electrical symbol for a transformer.

Average

Probably you've noticed something odd by now. If the AC voltage is always changing, swinging up and down first

one way then the other, now come we can talk about 240 volt AC mains and 20 volt transformers and do calculations with power and current without worrying about this wild swinging?

Well, obviously the figures being used are average voltages and currents. The ordinary average of a voltage that swings equally each side of zero is nothing so that doesn't make sense. A special kind of average is used in these situations. It is called the Root Mean Square average or RMS. This gives a value for the average of 0.707 times the maximum voltage reached. Fig. 5 shows how the RMS voltage compares with the real voltage swings in the mains supply.

Working out averages like this isn't as daft as it looks because it gives results for the electrical power calculations that agree with measuring the heat or mechanical power produced when the electricity is used.

This month we've looked at the way power is generated at the power station and supplied to a rig. AC electricity is no good in transistor circuits, though, they need a steady DC supply. So the next logical step is to see how AC can be changed to DC but that will have to wait till next time.

This article is intended as an easy-to-follow introduction to electrical theory. Whilst the experiments Spotty Dog suggests are quite safe, do not experiment with mains electricity or anything you do not properly understand.

Rig Test

MIDLAND INTERNATIONAL

Midland 76-900 FM base station

The Midland name really needs no introduction to a lot of breakers, particularly those who have been involved in CB since pre-legal days. Midland are justifiably respected for a good product at a good price. The Midland base station is a beautiful-looking piece of equipment and would look impressive on anyone's sideboard. However, it has a price tag to match as it costs around £300.

The set comes with a fairly comprehensive handbook and the component identification (mentioned later) should make repairs (if ever necessary) easier.

GUARANTEE

to readers and manufacturers

Any information printed as a review bearing this guarantee will have been carefully obtained and based on facts.

The equipment tested will have been inspected to ensure it has not been tampered with or modified to improve its performance in any way. Any faults and/or modifications will be noted and depending on the severity reported on, equipment for testing that was found to be seriously faulty will not be reported on and the manufacturer will be advised to supply a second item for testing.

No equipment sold will be liable to second thoughts or doubts, however, in a magazine such as this, the following does not have an update and the original information

Microphone

The microphone is of the well-known 'coffin' style, as supplied with quite a few mobile sets. It connects to the set via a four-pin screw ring-type plug. Many users prefer this type of connection as it cannot be 'snatched' loose. The manual illustrates wiring, so adding a base mike shouldn't be too difficult.

Construction

The internal construction of the set consists of a Cybernet chassis with mains power supply, regulator assembly and the VSWR board. Soldering and construction are of a very high standard.

All printed circuit boards in the set have got component identification making it very easy to fault find in the event of any problems.

The cabinet consists of the main chassis and front panel (a flat bottom) and a black-flecked stove enamelled C-shaped cover.

The front panel is a very attractive, professional-looking black plastic moulding with chrome trim and white silk screening. The control knobs are of knurled, machined aluminium. There are three meters for RF power, signal strength and SWR. These are VU-type meters, 1in. x 2in. and very easy to

read. The channel selector knob is quite large and easy to use. The channel display is green and the digits are over 1/2in. high. There are six indicator lamps, an on-air lamp which lights when you transmit, a modulation lamp which lights when you are on receive, a PA lamp which lights to show that you have selected the PA facility and, lastly, three lamps which show whether you are running high power or have switched to the 10dB attenuator.

Another facility not found on most rigs is a high-frequency filter to eliminate high-frequency distortion from the speaker.

Other facilities include a speaker mod which allows you to use internal or external speaker only or both, a delta tune knob (KC shift) for receive only, separate microphone and PA gain controls and a headphone socket - not forgetting the built-in SWR meter facility which is very useful.

Transmitter test

As usual, the standard equipment used for the transmitter test was:

Racal 9081 and 9082 signal generators

Marconi TF 42F distortion meter

Marconi TF 340 audio power meter

Racal 9916 frequency meter

Racal 9101 and Bird 43 power meters

Racal 9009 modulation meter

Levell TG 150D audio generator

Solartron AS 1412 power supply.

Power output

With base station rigs, the only check we do is the high power measurement and check the 10dB attenuator.

Power Output and Attenuation

Atten.	940v
High	3.3W
Low	0.01W
(-10dB)	

The high power reading was .7 watt low. The low power reading was exceptionally low. It seemed a pity that a set of this calibre could not be set more accurately as the low power was found to be almost unusable. This is not an uncommon fault and is found on many rigs. However, theoretically speaking, a base station is most likely to use the attenuator and it is disappointing to see such a low result.

Frequency

We do this test at two different temperatures to see how stable the rig is over changes in operating temperature, i.e., cold mornings and average room temperature.

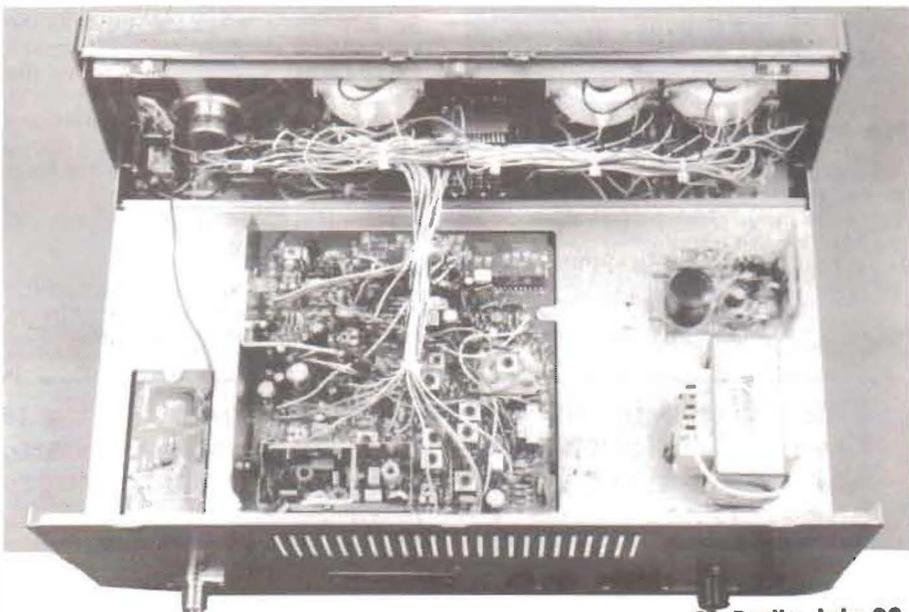
Temperature stability

Temp.	Q11	Q44
48°F	27.80233	27.89235
68°F	27.80113	27.89115

The result of this test seems to vary very little between rigs (possibly because the Cybernet chassis is used in about 60% of rigs).

Modulation

The results of this test are quite





important as this is one of the points which can make or break a rig – as it is what you hear over the air that makes a lot of breakers decide which rig to buy. When we air-tested this rig, we got quite a lot of breakers saying how good the modulation sounded but added that it was a “Bit in the back of the box” compared to other breakers on channel. The results of this test show that the modulation is low compared to a majority of other rigs as you are allowed a maximum of 2.5Kcs. deviation.

Modulation			
Input Level	300KHz	Input Frequency	2500KHz
0.5mV	0.14KHz	0.28KHz	0.21KHz
1.0mV	0.24KHz	0.63KHz	0.32KHz
2.0mV	0.48KHz	1.31KHz	0.48KHz
50mV	1.30KHz	1.41KHz	0.82KHz
200mV	1.40KHz	1.49KHz	0.95KHz

Receiver test

Audio output

The worse the distortion is in the audio output of the rig, the more difficult it makes understanding the station. If you have to turn the volume up to overcome local environment noise, i.e., noisy car, distortion will increase the more you have to turn the volume control on the rig up.

Measured Distortion	
1.5 watts	3.2% distortion
2.4 watts	10% distortion
3.6 watts (max)	25% distortion

Most sets we have tested seem to have similar sorts of results whether they use the Cybernet chassis or any other chassis. The main difference between rigs is the maximum output level. This set's results were very good.

Squelch level

The squelch was found to have quite a wide range (threshold 13 microvolts to fully muted 11 microvolts) and at no time during air testing was any difficulty experienced in squelching out unwanted noise.

Receiver sensitivity

Sensitivity	
10dB quieting	0.14uV
20dB quieting	0.39uV
30dB quieting	1.30uV

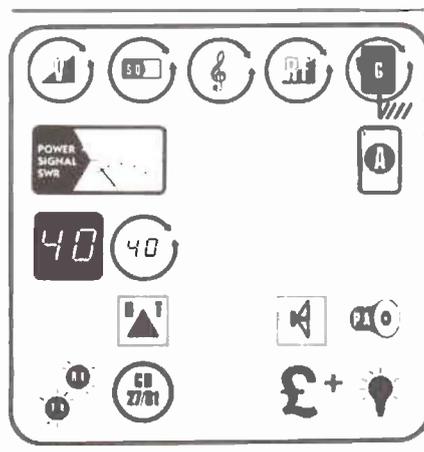
The receiver of this set when tested was found to be very sensitive. A good rig for the breaker who likes to get involved in networks and work DX when most other breakers have gone to bed and the channels are quiet. These facts are enhanced by having a headphone jack which puts a stop to bleed-over from the wife when she's just been woken up!

AM rejection

The figures on AM rejection were measured at 36dB. This is above average for the sets we have tested so far. The better these figures are the better the set is at rejecting electrical interference, most of which will always be amplitude modulated, whether it is interference from a passing car, light dimmer system or fridge, etc.

Adjacent channel rejection

To do this test we simulate two radio transmitters, one channel apart, i.e., one on channel 20 and one on channel 21. We assume you are listening to the transmitter on channel 20 and another breaker across the road starts transmitting on channel 21. The object of this test is to check how good your receiver is at rejecting the bleed-over from channel 21. From this we can see that the higher the resultant figure is the less bleed-over your set will suffer from. This set was found to be one of the better sets with an adjacent channel rejection figure of 280 microvolts for 3dB degradation.



SPECIFICATIONS	
General	
Channels	40 digital PLL synthesised
Frequency range	See page 11
Operating temperature range	-3 degree C to +45 degree C
Power output	AC - 210V - 50 Hz DC - 12.2V negative ground
Power consumption	15W
Dimensions	
width	260 mm
height	140 mm
depth	250 mm
Transmitter	
Modulation	AM, FM, SSB
RF power output	4W 100 mA
Frequency tolerance	± 1.5 kHz
RF power attenuator	10 dB switchable
Frequency response	400 to 2500 Hz ± 1 dB
Frequency deviation	> 1.5 kHz 1250 Hz 20 mA audio adjacent channel power < 10 microwatts
Spurious emission	
11 - 20 MHz	within the following frequency bands
80 - 85 MHz	
87.5 - 118 MHz	
135 - 138 MHz	
173 - 180 MHz	
170 - 862 MHz	
12x	0.25 microwatt at any other frequency
Receiver	
Conversion system	
Dual superheterodyne	
IF	10.7 MHz 455 kHz
Channel display	
Digital 7 segment LED	
Audio output power	
1.5W into 8-ohm	
Sensitivity	
1 microvolt for 20 dB S/N	
Adjacent channel rejection	
50 dB	
Spurious emission	
< 20 nW	
Squelch sensitivity	
1 to 10 microvolt	

Conclusion

With most measurements done on this set the results were above average. The large-size channel indicator, which is about twice the size of those found on a mobile set, gives a very clear readout and can be seen right across a room without any problem. The general appearance of the set was most professional and the indicator meters are very eye-catching and easy to read. The only complaint with the set was the fact that the 10dB attenuator was very low and as the set is of a metal-case construction we think it should be fitted with a three-core mains lead for safety reasons. The SWR board did not read correctly because it was wired with straight wire and not 50-ohm co-ax, which caused built-in bad SWR due to discontinuity of impedance.

Radio direction finding on 27 MHz



How DF antennas function
Part 1 by F. C. Judd

Locating a transmitter by radio direction finding not only offers a technically-interesting and extra facet to CB radio but has two or three very practical applications as well. First there is 'fox hunting', the fox being someone operating a transmitter at an otherwise unknown location and which individuals or small teams starting from a given point have to find solely by radio direction finding. Obviously the 'fox' must transmit for given periods at frequent intervals to allow the 'hunters' to get bearings from which the position of the 'fox' is finally obtained.

A given amount of time is allowed to find the 'fox' but if he has not been located when the time has expired then the 'fox' announces his position and the 'hunters' pay for the beer!

This radio 'fox hunting' activity has already been practiced by numerous CB clubs as a summertime event and which can also provide a day out with a good deal of fun for everyone concerned. Small prizes or a certificate can be awarded to the 'hunter' (or team) who locates the 'fox' within the given time limit. The second and perhaps more serious use of direction finding is locating someone using a transmitter irresponsibly, e.g., deliberately jamming channels that others are using, transmitting continuously on a calling or emergency channel and/or modulating the transmission with distorted noise, music or foul language. A third use is locating the source of electrical interference since a direction-finding loop will respond to electrical noise of random frequency. However, the practice of direction finding, usually abbreviated to DF, does require some skill not only in the use of the DF antenna itself but also in how to obtain and use bearings with some degree of accuracy. But more of this later.

How a DF loop operates

Radio direction finding loop antennas with a circumference of half a wavelength or less have a cosine or figure-of-eight radiation pattern as shown in

Fig. 1 but which remains the same when the loop is used for receiving. We will deal with this property in terms of how the loop functions when receiving signals. When either of the loop sides are in line with or pointing to the transmitter then a maximum signal is received as the pattern in Fig. 1A indicates. When the loop is turned through 90° and is facing the transmitter (as in B) then the received signal is mini-

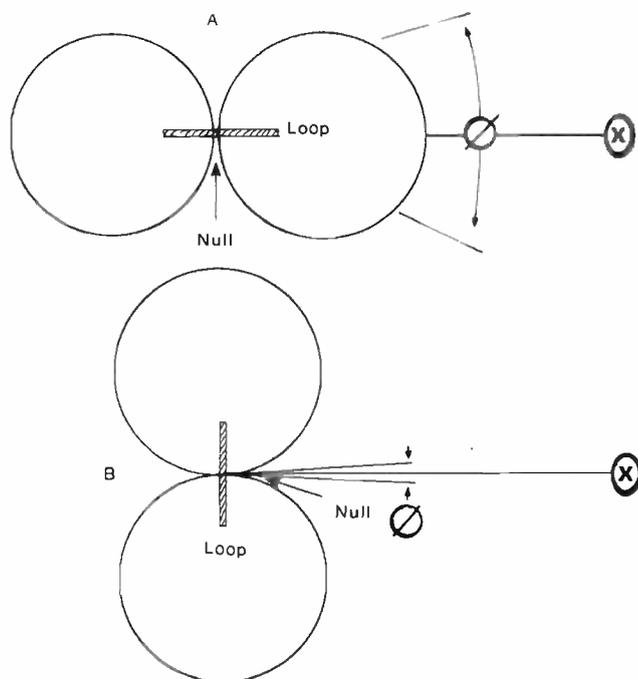


Fig. 1. The circled X indicates the position of a transmitter. The diagram (A) indicates, as explained in the text, that the strongest signals are received when the loop is end on or in line with the transmitter and the bearing of direction is then only very vague. For accurate bearings the null response is used which as shown in (B) has a much narrower arc of response allowing a more accurate bearing to be obtained.

imum because the loop has a minimum response in this position. The exact point of the minimum is usually called a *null*. If the loop is well made, accurately tuned to the frequency and the currents flowing in each half of the loop are in exact phase opposition when the loop is broadside to the transmitter then the nulls will be very defined. The null or minima should be sharp enough to reduce a received signal

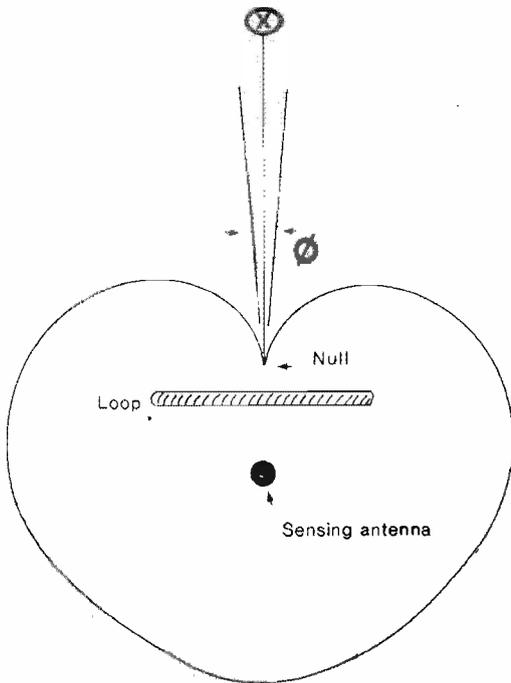


Fig. 2. Certain types of DF loop incorporate a vertical sensing antenna which is connected into the loop circuitry so that its field pattern is changed in such a way as to produce only one null which enables the operator to determine the main direction. Once this has been found the sensing antenna is switched out of circuit and either of the two nulls are used to obtain accurate bearings in conjunction with a magnetic compass attached to the loop antenna.

almost to zero or even completely to zero within a movement of a few degrees as the angle theta indicates. The function of the loop is not to determine the direction from which the strongest signal is received since the arc of movement over which this occurs as indicated by theta in Fig. 1A is too wide to obtain anything except a vague suggestion of direction. Instead, the direction is always determined by rotation of the loop to obtain a minimum or even zero signal in either of the nulls the angle over which this occurs being very narrow as in Fig. 1B. It will be appreciated that since all loop antennas have two nulls then two bearings could be obtained, one from either null but with a difference between them of 180°. For example, if the transmitter was actually located at a point due north then either of the nulls would indicate this but equally either null could mean that the bearing was, in fact, due south. With direction finding loops at relatively low frequencies, it is usual to provide a *sensing* antenna which is connected into the loop circuit in such a way as to cancel one of the nulls. This alters the pattern of the loop so that it assumes a shape known as a *cardioid* as in Fig. 2, leaving only a single null which is used to first determine the general direction of the transmitter, etc., whether it is located to the north or east, etc., relative to the position of the loop itself. A DF loop for 27MHz having this facility is not a very practical proposition, the technical reasons being a little too complex to explain here. There is, however, a way of overcoming this problem as will be explained in a later part of this article.

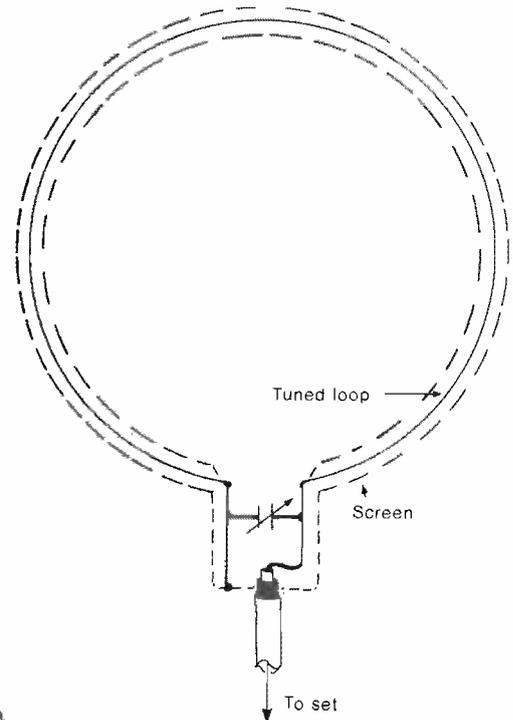


Fig. 3. The screened loop has a very accurate response and does not suffer from antenna effect as explained in the text. Such loops are, however, very difficult to construct and the matching and tuning circuitry is much more complex than the basic arrangement shown.

Radio direction finding antennas

Direction finding loop antennas can be made in the form of a circle, triangle, rectangle or square with little variation in functional property. One of the most common forms is a square loop consisting of a number of turns of wire and a variable capacitor so that the system can be tuned to the frequency of operation. Loops of this nature are, however, not suitable for use in the higher frequency part of the radio spectrum, e.g., around 27MHz. At this fre-

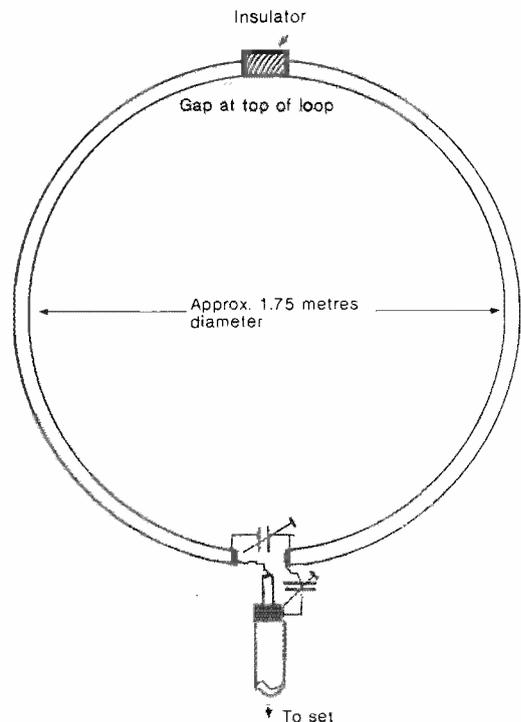


Fig. 4. Although very accurate, a loop with a circumference of a half-wavelength is far too large for operation on 27MHz when this has to be carried out quickly from different positions, perhaps as much as three or four miles apart, i.e., the size makes it too cumbersome for portable operation.

Radio Direction Finding on 27MHz

quency it is more usual to employ single turn loops of relatively small diameter and one of the most accurate is the shielded circular system shown in Fig. 3. The shield is used to prevent what is known as *antenna effect*, i.e., to stop the loop behaving like an ordinary antenna and thus providing a poor directional response. NOTE: The diagram shows only the basic arrangement. There is much more involved in the construction and matching circuitry of a loop of this nature.

The radiation resistance of a loop antenna that is small by comparison with the wavelength at which it is used is extremely low. If such a loop were used for

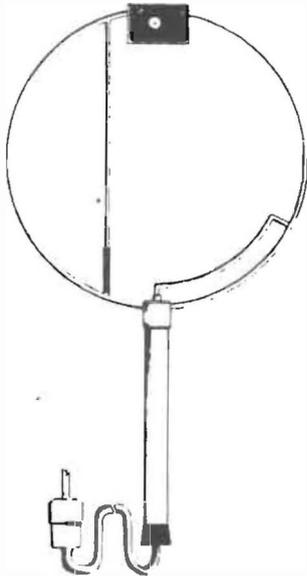


Fig. 5. A commercially-available small diameter portable direction finding loop antenna made by PAN International. Size 30cm. diameter. See text.

transmitting, as it could be, then much of the RF power supplied to the loop would be wasted because of the low radiation resistance. However, when such a loop is used for receiving, the losses incurred are due largely to the small size which permits only a relatively small amount of RF signal to be picked up from a passing wave front. A self-resonant split loop large enough to overcome these losses is

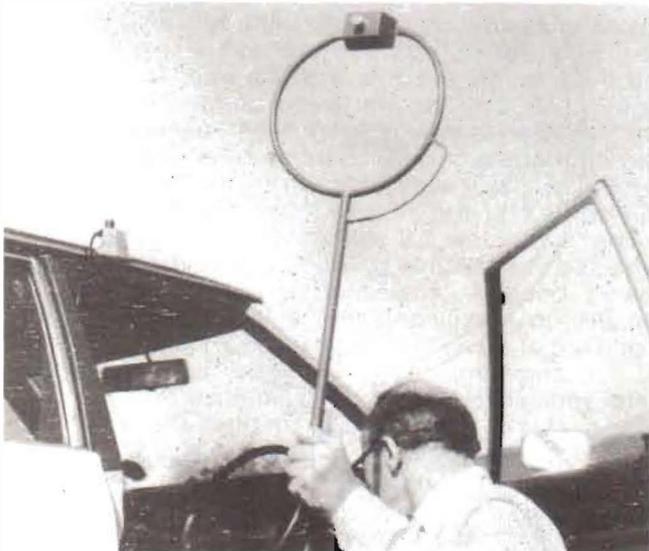


Fig. 6. The UFO CB radio direction finding loop antenna by Whitehorse Communications. This employs a gamma matching system and is fully tunable for the 27MHz band. It is only 10in. (approx. 26cm.) in diameter and is supplied with co-axial connecting cable and plug.

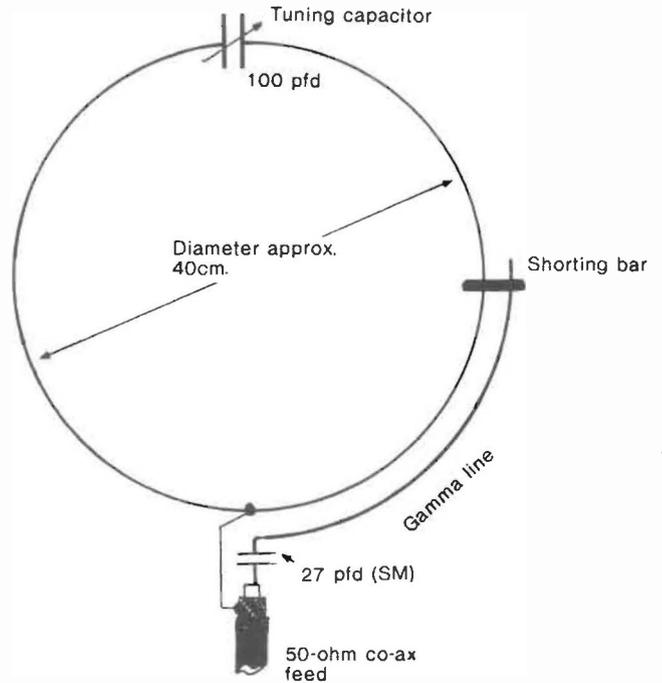


Fig. 7. The basic circuit arrangement for a home-constructed DF loop. Full details for construction will be included in Part 2 of this article next month.

illustrated in Fig. 4. At a frequency around 27MHz it would need to be a half-wavelength in circumference, the diameter of this at 27MHz being about

$$\frac{5.5}{\text{Pi}}$$

which is 1.75 metres or about 5.75 feet. Not very suitable for portable outdoor use.

However, for the more practical application of CB radio direction finding, the small diameter loop will suffice and is capable of picking up enough signal to be of use for determining direction when the transmitter is located at a distance of around three miles, although the actual working range may also depend on the strength of the signals from the transmitter. Such loops do, however, have the disadvantage of 'antenna effect' when being used very close to a transmitter. It is important to remember that small loops, i.e., less than a half wavelength in circumference, will only respond accurately to radio waves that are vertically polarized, i.e., being transmitted from a vertical antenna.

There are at least two commercially-made loop antennas of this nature available, one being the PAN Snoopy illustrated in Fig. 5 and which, according to the makers, has some form of sensing system incorporated. Although a request was made for further information about this, none has been supplied. The other is the UFO DF loop antenna made by Whitehorse Communications, shown in Fig. 6 and which will be featured later in these articles. These loops are relatively small in diameter and are tunable to cover the whole of the 27MHz CB band.

Some readers may, however, like to try making a DF loop antenna and full details will be published next month on the construction of one based on the arrangement shown in Fig. 7. This has a diameter of 39cm. (just over 15in.) and will tune from about 26-30MHz so fully covering the whole 27MHz CB band it employs a gamma matching system and when tuned accurately to the frequency at which it is being operated can be used for transmitting over short distances.



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OR YOUR LOCAL CB SHOP

MAJOR (UK) LTD.

Readers may be aware that there have been some problems with the above-named company for the past few months and that we (and other CB magazines) have not carried advertising from them recently.

We have been investigating Major (UK) Ltd. on behalf of some of our readers who have written to us after dealing with the company. Major (UK) Ltd. is a registered British limited company and the principal director is Alan Sporn, an American citizen. As far as we can ascertain, there is no connection with any other CB company elsewhere in the world trading as or owning the name Major.

As a British limited company, they are required by law to inform all creditors if they have ceased trading or the company has gone into liquidation. To date there has been no such notification. As a mail order advertiser, Major (UK) Ltd., in failing to comply with the mail order advertising regulations, have committed an offence and are liable to investigation by the police for fraud. We further understand that Mr. Sporn has withdrawn all the funds from the company's bank and has now returned to America. Investigations are now under way by Cambridgeshire police and they require details and information from any member of the public who has paid monies and not received goods.

For more information contact:

**Detective Inspector Christian
Cambridgeshire Constabulary
Cambridgeshire Divisional Police Station
Parkside, Cambridge
CB1 4JG
Tel: Cambridge (0223) 358966 Ext. 3253**

RADIO ZODIAC

"Why do I do it?"

Over the past several months, I have taken a fairly broad look at the free radio scene – both past and present. Although I have learned a lot along the way and had several very helpful 'advisors', the articles have been written from an outsider's point of view. So this month Magic Sam, of Radio Zodiac, gives his side of the story.

SS

When I was young and dinosaurs roamed the earth, most of my mates at school wanted big motor bikes, cars or to be in Led Zeppelin. I wanted a ship and a 50kW transmitter – years later I could still be tempted!

The walls of my mate's bedroom had posters galore, Hondas, Kawasakis, Norton Commandoes and lovely ladies. Mine had colour posters of Radio Caroline, Radio London and a photo of Radio 390 plus stickers from a variety of back-bedroom land-pirates.

When I came home from school, I listened to Caroline North, London or 390, in the bath, in the toilet, even under the blankets at night! (Naughty stuff, huh?). I was, in fact, a 'spotty Herbert pirate radio freak'.

Why? I don't know! I listened to anything and everything, especially if it was illegal. I spouted pirate radio until friends were driven away. I sang with joy when RNI came on the air and when Caroline returned. A nutter by any other name.

There must be thousands of people like this now. They don't remember the 60's pirates but the 70's land-based variety – a different breed again.

From collecting for my scrapbook, I became interested in starting a station locally in North Shropshire. I did and ran one for six months, virtually on my own. I was still 'playing pirates'. Not once did I realise I could actually 'say' something with this wonderful, God-given (Marconi, actually) gift!

Did I have a lot to learn? Yes, I did.

One of the things I questioned years ago was what makes your average BBC or IBA station a personal non starter? Answer: I never heard much in the way of music that I liked.

It appeared they paid more attention to their own voices or the trite jingles they used but what could I do about it?

I became sorely displeased with hearing the Top 40 again and again and again. The phrase 'lowest common denominator' programming came my way and found its way into my vocabulary but what could

I do about it?

Eventually, I moved to London, the Mecca of free radio in Britain. It is still a sad fact that there is more activity here than anywhere else in the UK (Apart from Ireland, of course).

Something that struck me immediately was how little activity there was on medium wave but how much emphasis had been placed on specialist FM programming.

Here was the answer I had been looking for. Here was my personal way of making a stand and playing music that I believed in to people that would, undoubtedly, be receptive.

It was time to start another station but asking for help from many pirates met with hostility or indifference – it appeared that most people seemed to value a 'monopoly in pirate broadcasting'.

Quite understandable when you do consider the



number of idiots hiding away in the corners of seemingly quite respectable stations.

Eventually I joined Radio Zodiac and presented an R&B show for one hour a week and very soon (at the time of writing) will be starting up UKGM. This is why I do it; the key phrase is 'diversity in broadcasting' and this my way of making a stand, to buck the system of BBC and IBA monopoly.

I know, from complaints to the Government and Home Office, that the BBC and IBA can't take the competition – they want us off the air. A Government Minister has promised this for the end of '82!

In readiness for a long, hard battle, a campaign called Free The Airwaves has been formed, with sev-

SUNDAYS 94.4 FM

eral of London's FM stations forming an alliance. The aim is to encourage the starting of local community radio stations up and down the country and to draw free radio away from the back-bedroom image.

Despite what the Home Office tell you, there are very few pirates who cause interference to essential services and also, despite what they tell you, there are more, many more frequencies available for radio stations within the UK.

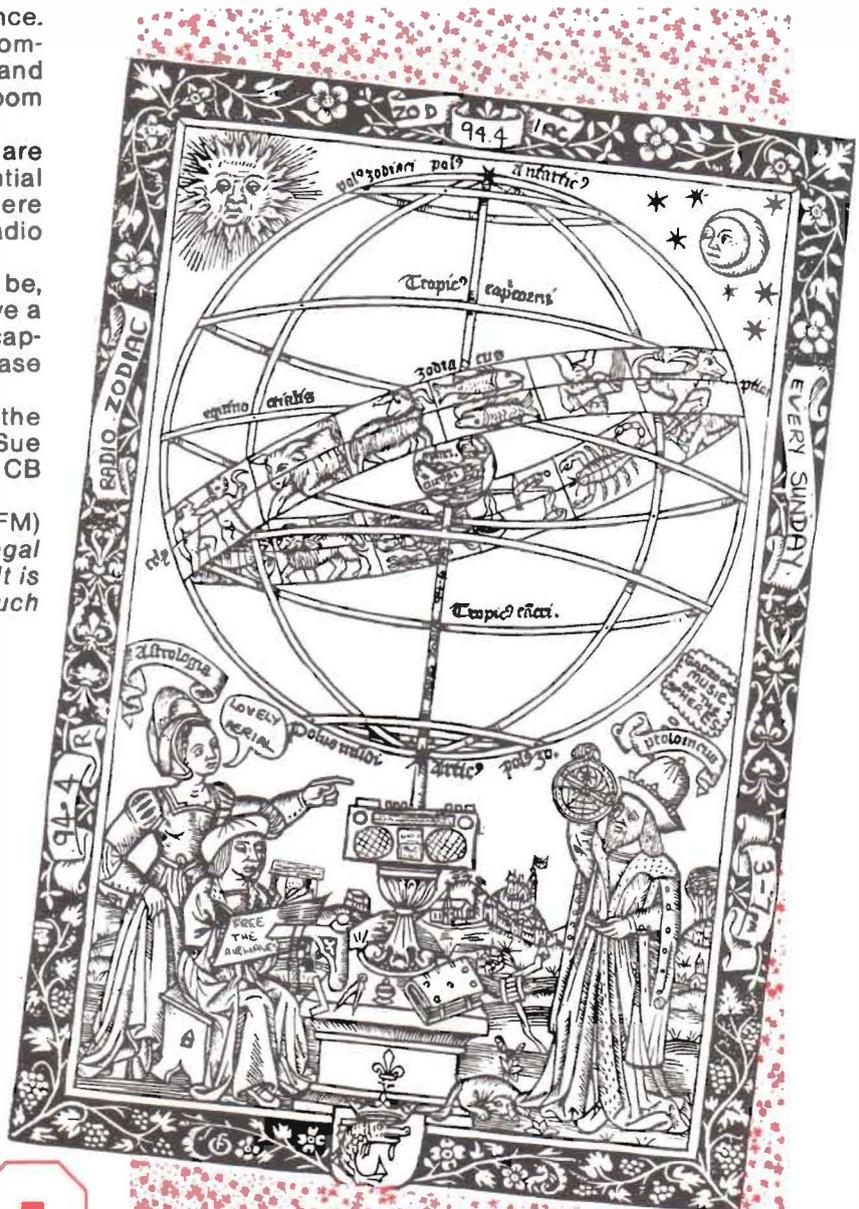
If we can encourage you, wherever you may be, whether it be England, Scotland or Wales, to have a go (We believe in Joe Public being more than capable of doing a responsible programme) then please write in and we'll do our best to help you.

I hope this article explains what motivated the likes of myself to get into pirate radio. Thanks to Sue and everybody who made our stand at the 1982 CB Show possible.

Magic Sam (Radio Zodiac 94.4 FM)

CB Radio Magazine must point out that it is illegal to operate a radio transmitter without a licence. It is not the intention of the magazine to encourage such practises.

FREE
RADIO
FREE
RADIO



FM FEEDBACK

FM FEEDBACK

First in a new series by E. A. Rule

This month we are taking a look at power supplies and in particular that often forgotten and neglected black box under your vehicle bonnet, the lead/acid battery. This small, black, plastic box sits under the bonnet amongst all the heat, cold, filth, water, oil, etc., thrown at it day after day and when, after a few years of service, often without any attention, it decides to go on strike, the normal thing is a loud protest about 'flat' batteries! Is it any wonder it gives up, when most of the people using batteries don't know anything about them and yet they are THE SOLE power source for the vehicle and without it even your most expensive car is completely useless and, just as important, it also powers your CB rig.

The battery (or accumulator, to give it its correct name), is what is known as a 'secondary' battery. In other words, it must be 'charged' before any power can be taken from it and when it is completely 'discharged' it can be re-charged. Lead/acid batteries do not store electricity, they store energy. When it is charged, the electrical energy imparted to it is converted into chemical energy which is stored in the cell or cells making up the battery. Then, when the cell is discharged by connecting a suitable load across its terminals, the stored chemical energy is re-converted back into electrical energy.

The basic construction of a cell consists of two plates, Fig. 1, which are known as the anode (positive) and cathode (negative). These plates (which are mainly of lead) are immersed in a dilute sulphuric acid. The actual chemical changes which take place during the charging and discharging process are very complicated and only a very basic outline will be given here. Neat (full strength) sulphuric acid has a 'specific gravity' of about 1.84 (in other words its weight is 1.84 times as heavy as water). This acid is diluted with distilled water (tap water MUST NEVER be used as it contains impurities which will reduce the life of the battery considerably). When a cell is fully charged the diluted acid will have a specific gravity of 1.22 or

when fully discharged 1.17. The voltage of a fully charged cell is 2.2 volts and when this has dropped to 1.85 volts the cell is considered fully discharged. Lead/acid cells must never be left in a discharged state as irreversible damage will result. The standard car battery consists of six cells wired in series so that a fully-charged battery will have a terminal voltage (off load) of 13.2 volts (or 11.1 volts when discharged). This, then, is a very basic look at the power source most of us take for granted. Lucky for us, most of the time the system works very well but there are things which can go wrong and it is possible in extreme cases to damage your CB rig.

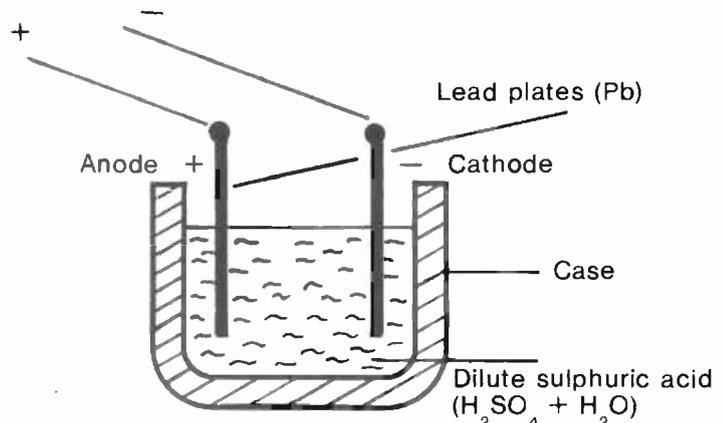


Fig. 1. Basic cell construction.

Fig. 2 shows the basic electrical circuit used on most vehicles and consists of a generator (driven by the engine) to provide the charging current, a regulator, battery and the various loads consisting of lighting, signal lamps, etc. Note that the battery is the COMMON item in the circuit. Everything, without exception, connects to it. The regulator controls the current fed into the battery so that it is not over charged on the one hand or over discharged on the other. When the engine is running the power for the ignition system will come from the battery and the load may be quite light (say mid-day in summer) but sometimes it can be very heavy, heater and wipers going, all main lights on, CB rig in use, etc. When the load is more than the battery can supply, the regulator will adjust the extra current direct from the generator but, and this is important, the battery is still connected across the supply. Under normal well-maintained conditions this system works well enough but it does have potential dangers. Consider the situation where the battery is getting past its prime. All batteries have what is known as an 'internal resistance'. This is not a 'real' resistance but due to various losses, etc., in the cell. So in order to

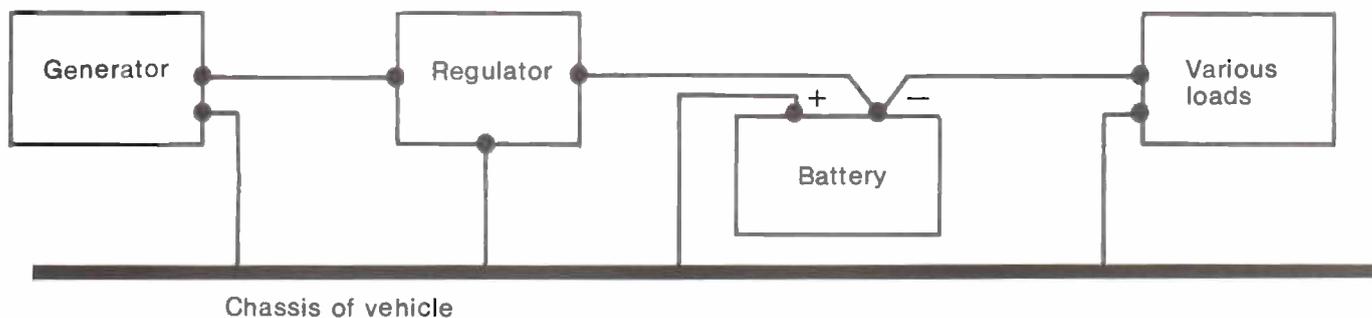
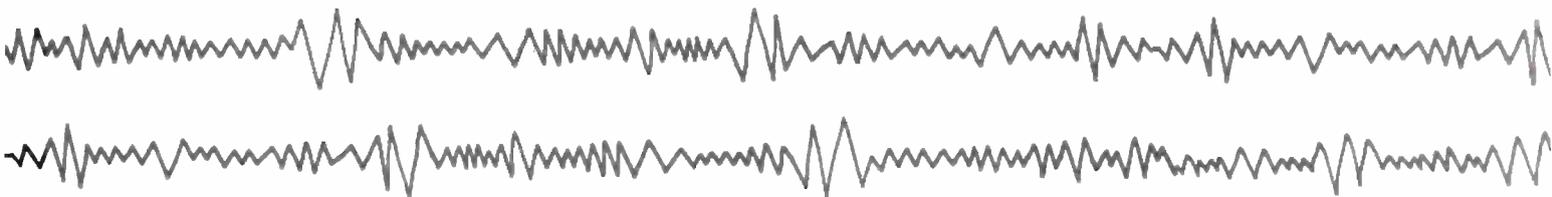


Fig. 2 Showing the basic wiring of a vehicle.

make things easier to understand it is assumed that the actual cell is 'perfect' and that it has a resistance in series with its terminal, Fig. 3.

Now, if we consider this arrangement substituted in Fig. 2, we can begin to understand how things can go wrong and Fig. 4 shows a simplified circuit. While the internal resistance is of low value, the voltage across the actual cell will largely determine the voltage on the supply line to the other circuits but if the internal resistance is high (old or neglected cell) the actual voltage present on the supply lines will depend more on the voltage direct from the generator than the battery. (A rough and ready check for this is to rev up the engine and see if the lights, etc., become brighter. If the effect is very marked you may have a battery in poor condition). With a battery in very poor condition, this voltage can become very high indeed, certainly well above the maximum ratings for the transistors in your CB rig and when you consider the cost of repairs to CB rigs, a new battery is a sound investment. Another thing that can cause exactly the same trouble is when the battery terminals and lead connectors have been allowed to become dirty. These should be completely removed and both the battery terminals and insides of the connectors cleaned to a bright metal finish. The two surfaces making contact *must* be clean and free from grease, etc. They *must* be in firm contact and any fixing screws, etc., tightened. After this, the final assembly should be given a coating of grease to prevent corrosion. Checks should also be made on any other connections at the same time, particularly the braided wire earth connection between the actual engine and vehicle chassis or body. If possible, connect a reliable voltmeter across the battery and check the variation in voltage as the engine is revved up, the vehicle handbook should give what figures to expect if all is correct.

Quite apart from the CB considerations, the vehicle itself will benefit from all this attention; the

headlights will be brighter, better starting, etc. With a basic 12-volt supply system and the high currents found on vehicles it only takes a fraction of an ohm resistance somewhere to cause real trouble. Other

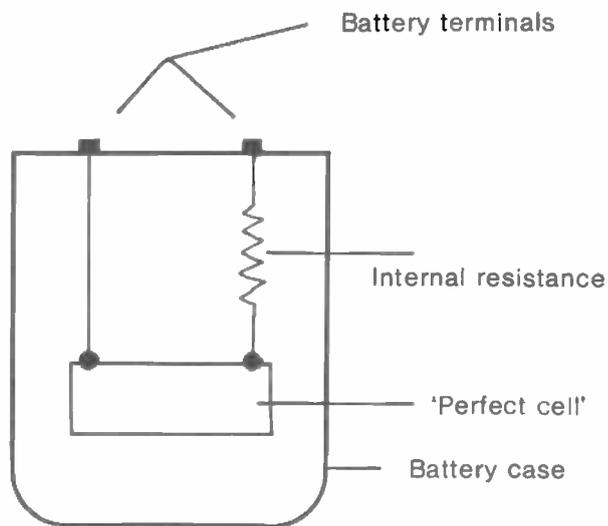


Fig. 3. Although not a 'real' resistance, the internal resistance of a cell can be treated as a separate item wired in series with a 'perfect cell'.

things that can cause a high internal resistance are letting the acid level drop below the top of the plates (so always keep your battery correctly topped up) or using a battery too small for the job, i.e., low ampere/hours rating (*always use the largest battery you can fit PROVIDING IT IS OF THE CORRECT VOLTAGE*).

Fig. 5 shows the basic circuit of a power supply which operates from the mains supply and is cap-

FM FEEDBACK

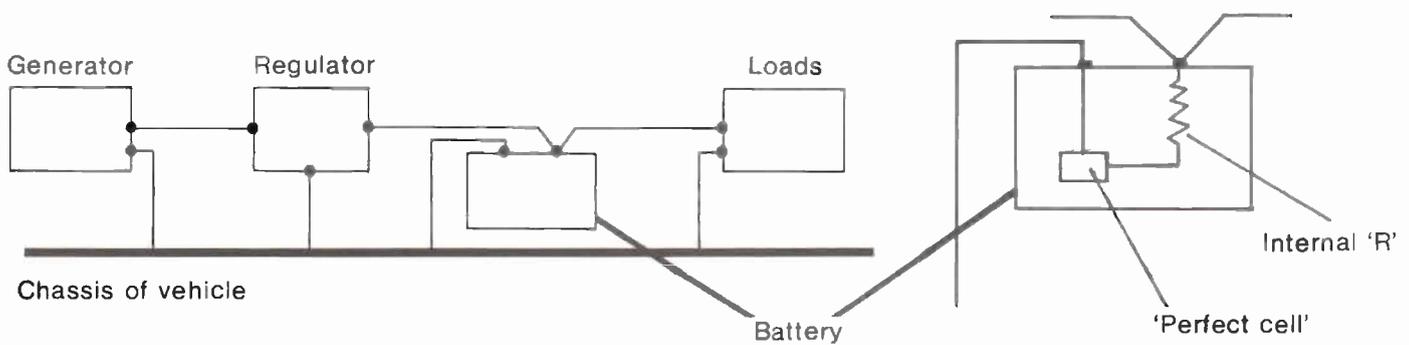


Fig. 4. Showing how the internal resistance of a cell comes *between* the actual battery and the external circuits. In an extreme case ('R' open circuit) the battery would not have any influence in controlling the final voltage. A good battery would have a very low internal 'R' and would stabilise the voltage. Dirty terminals, etc., can have the same effect as a high internal 'R'.

able of supplying the lower DC voltage required by the rig. A typical system might be a transformer to reduce the AC mains from 240 volts down to around 15/20 volts. This is then rectified by the diodes 'D' to provide a DC voltage. The voltage coming from these rectifiers would be 'unsmoothed' and the capacitor 'C' provides smoothing before the voltage is applied to the regulator 'R'. The regulator will stabilise the voltage to around 13.8 volts DC. This then is the basic system but in practice there are many ways of doing the job and it's one area where you get what you pay for. It is possible to buy two power supplies both rated at 13.8 volts at 3 amps, one will cost around £16 and the other £45, yet both are good value for money. So why the big difference in price?

The cheaper power supply may consist of little more than the basic circuit shown in Fig. 5 and its components would most likely be running at their maximum ratings. Indeed the writer knows of one power supply rated at 3 amps which has a regulator rated at 2.5 amps, the manufacturers relying on the fact that most rigs don't use the full 3 amps! These cheaper power supplies may run hot when in use due to using the smallest transformer which will just do the job and this may also apply to the regulators and/or heat sinks. In practice these cheaper power supplies will perform satisfactorily because the rig is used mostly in the 'receive' mode where the current demand is low and the short time it is used for actual transmitting is not long enough for the supply to overheat or show distress. However, there are other problems. A cheap power supply rated at 3 amps may not deliver its full voltage when 3 amps is demanded and, indeed, some do drop to around 11 volts or so. This means, of course, that your transmitter power is reduced, e.g., if your rig provides 4 watts at 13.8 volts it may only deliver 3.2 watts at 11 volts, also the frequency stabilising circuits may be upset causing unstable transmissions. A good power supply would deliver its full rated voltage over its full current range, i.e., from no load at all up to the maximum its output voltage would be the same.

The more expensive power supplies may also have 'over voltage protection'. If a simple power supply develops a fault in its regulator circuit it is possible for the output voltage to rise up to the maximum unsmoothed value, around 15/20 volts. This excess voltage will damage your rig and could result in costly repair bills. Power supplies fitted with 'over voltage protection' have a circuit which constantly checks the output voltage and if a fault develops which causes it to rise above, say, 14.2 a

cutout operates which shuts the power supply off thus protecting your rig. They may also be fitted with a current limiting circuit which will turn the supply off if you try to make more current than it was designed for. This will, of course, protect the supply itself from misuse. Another device sometimes fitted is a thermal cutout: This device will shut the power supply off if it overheats for any reason and could prevent a fire. These protection devices cost money and that is why they are only normally found in the more expensive power supplies.

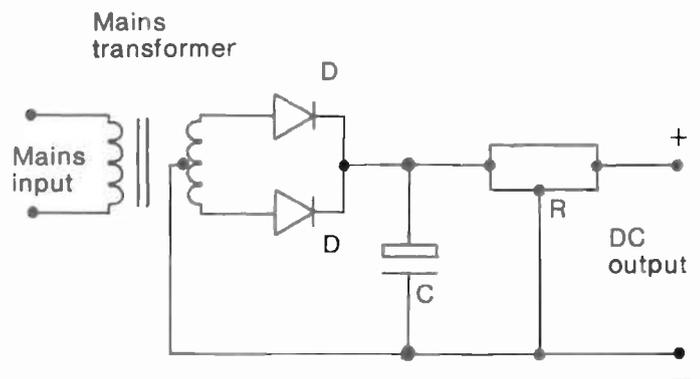


Fig. 5. Basic circuit of regulated power supply (see text).

Another factor which effects the price depends on if the power supply has been designed to comply with the British Safety Standards. There's a catch to this one! There are some power supplies on the market which state 'Designed to comply with BS ???'. Be careful, it means exactly what it says, 'Designed to comply'. It does NOT say that it does comply! If a British product does comply with the relevant safety standard it WILL have a BS label attached saying that it has been tested by the British Standards Institute and that it does meet the required standard. Most power supplies are safe but there are exceptions. A reputable dealer will advise you on this because the last thing he wants is a court action for damages for selling unsafe equipment but if you buy off the back of a lorry . . .

Next month we hope to test a few commercial power supplies and include a comparison of the results.

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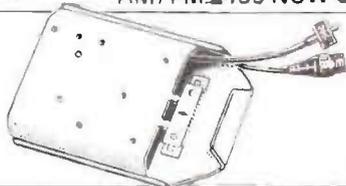
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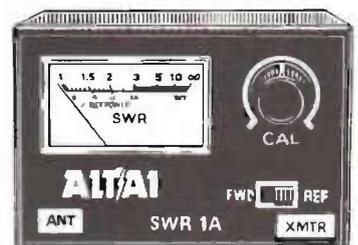


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As an independent club we do not take on direct responsibility or errors. However, if a magazine does over state its, the following does not hold any liability over the author's information.

Maxcom 4E

The Maxcom range is made by the Maxon factory in Korea and is 'own brand' of the factory. The factory manufactures for several big names in CB including Midland and Cobra. Maxon are now committing themselves to a range of CB and communications equipment and have several new developments in the pipeline. The sets are very competitively priced and seem to offer very good value for money.

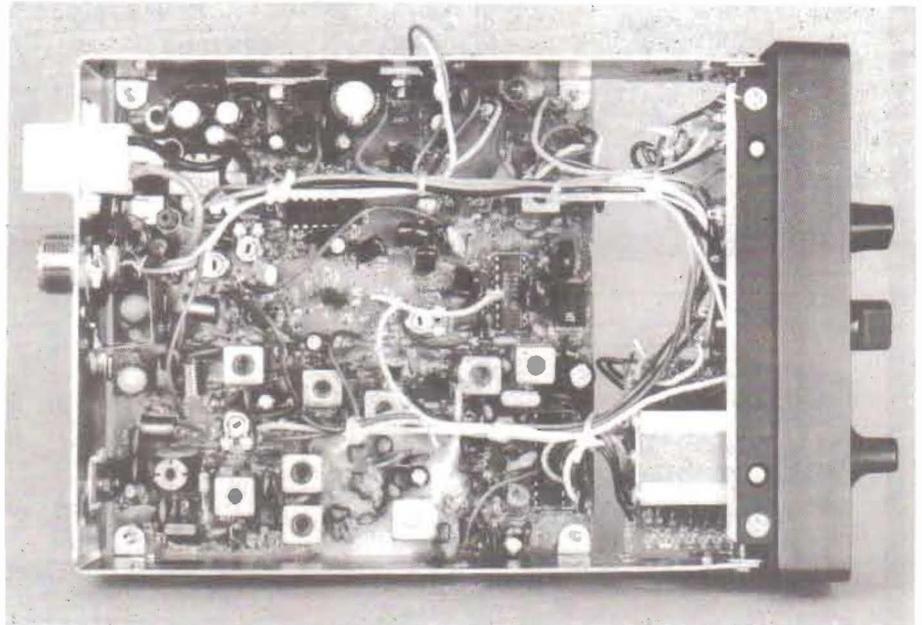
Microphone

The microphone was found to be very easy to hold whilst driving as it is not as large as most microphones. The only problem found with the microphone was that it was fitted with a five-pin din plug which a lot of people tend to avoid as it can pull free of the rig if pulled about a lot. However, Maxcom plan to rectify this slight disadvantage in their next series of sets which will feature screw connections.

Construction

The construction is a standard two-piece (top and bottom) cover plus chassis design. Like most rigs, it is finished with black stove-enamelled paint which has a high degree of resistance to scratching and scuffing. The front panel is made of moulded black plastic with silver highlighting and lettering. The controls are made of black moulded plastic and very easy to find or use without taking your attention from driving. Also on the front panel is the 10dB attenuator switch which makes it far easier to use than one mounted on the back panel like most sets. A large, illuminated signal and power meter is mounted in the left-hand corner of the front panel and is very easy to read. Other facilities of this set are extension and public address speaker sockets on the back panel. Unfortunately, the public address facility has a drawback in that when a PA speaker is fitted and the set is being used for CB, the audio on receive is fed to the public address speaker. (Ideal for turning on your local pedestrian to what CB sounds like but I am sure any passing Smokeys would not appreciate it).

The rig comes with a very comprehensive handbook which was found to be good enough to be used as a workshop manual for repair work.



Transmitter tests

As usual, the standard equipment used for the transmitter test was:

- Racal 9081 and 9082 signal generators
- Marconi TF 42F distortion meter
- Marconi TF 340 audio power meter
- Racal 9916 frequency meter
- Racal 9101 and Bird 43 power meters
- Racal 9009 modulation meter
- Levell TG 150D audio generator
- Solartron AS 1412 power supply.

Power output

This test is to check that the power output of the set conforms to Home Office specifications MPT 1320 and also gives the user of the set sufficient power output for normal use over a reasonable power supply voltage range in both the high and low power settings.

Power Output and Attenuation			
Atten.	10.0v	13.0v	14.5v
High	2.1W	3.3W	4.0W
Low	Very low	0.12W	0.39W
	unmeasurable		

These figures compare to most of this make of chassis which is produced by the Maxon company and the results were nearly identical to those

of the Cobra 21X FM.

Frequency

This test is to check that the rig stays on the correct frequency for reasonable change in environmental temperature 48°F to 68°F.

Temp.	Temperature stability	
	CH1	CH40
48°F	27.601210	27.99123
68°F	27.60115	27.99117

The results are quite comparable to most sets and the drift is quite acceptable. If the drift is too much, a serious amount of distortion would be heard on transmit and receive.

Modulation

These checks are done to test the ability of the set's modulation circuit to give good modulation over a range of different input conditions and frequencies.

Input	Modulation		
	Input Frequency		
	300Hz	1125Hz	2500Hz
Level			
0.5mV	0.75KHz	1.25KHz	1.20KHz
1.0mV	1.30KHz	1.80KHz	1.20KHz
2.0mV	1.80KHz	1.70KHz	1.80KHz
50mV	2.10KHz	2.10KHz	1.80KHz
200mV	2.60KHz	2.20KHz	1.90KHz

The results are quite good but seem very biased toward the bass frequen-

cies and would probably benefit from fitting a power microphone with fitted tone control, i.e., K40 at the 500Hz 200MV setting. The set went out of specification but this could be misalignment at the factory or due to excessive handling.

Receiver test

Audio output

To do this test the loudspeaker is replaced by a Marconi TF 340 audio power meter with a Marconi 42F audio distortion meter.

Measured Distortion	
1.5 watts	3% distortion
2.3 watts	10% distortion
3.3 watts (max)	19% distortion

The figures in the table seem to reflect about every rig we have tested so far. It is a shame that a rig could not be produced to give better figures, say as low as 1% or 2% for 2.5 watts out, when the average car radio is about .1-.5% and better.

Squelch level

The usable range of the squelch was measured at .13 microvolts threshold (the most sensitive setting) and 600 microvolts fully muted (turned full on). Some people might say that 600 microvolts for full squelch is far too high but we have found that people are coming to the workshop and asking for their squelch controls to be set as high as possible. This is to squelch out the high level of noise on the channels in areas where there is a high number of CB'sers.

Receiver sensitivity

This test is done to check the ability of the set to receive weak signals.

Sensitivity	
10dB quieting	0.18uV
20dB quieting	0.60uV
30dB quieting	1.90uV

This set has got good sensitivity, especially for a rig costing less than £45.00. The results are as good as sets in the more expensive price range.

AM rejection

The AM rejection for this set was measured at 30dB. This reading is fractionally below average but you would not be able to tell any difference without using test equipment.

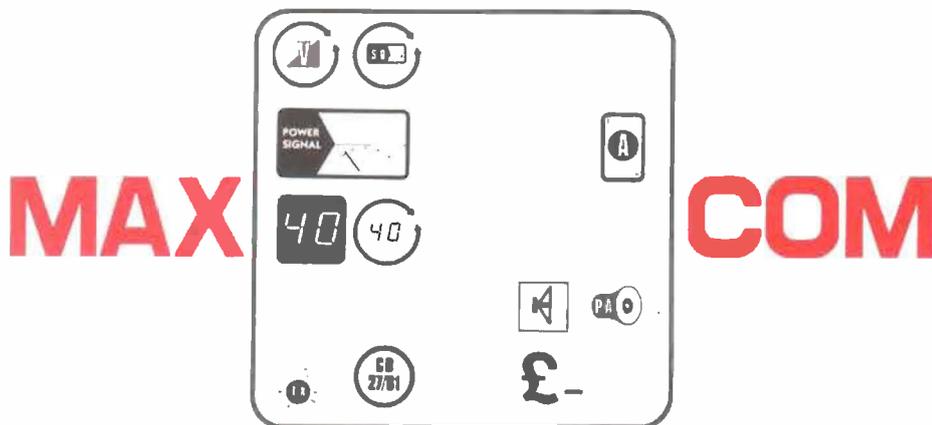
Adjacent channel rejection

This checks the set's ability to reject interference from strong stations either one channel higher or lower than the set is tuned to. The result was 147 microvolts for 3dB degradation which is the average result of rigs tested so far.

Summary

The Maxcom range of low-priced sets is very good value for money. They seem to sell from £35.00 to about £45.00 and seem to be in great demand for mobile use since the increase of cars being broken into. We

TRANSMITTER SECTION	
POWER OUTPUT	4 Watt Max (10dB Hi-Lo Power Switch Provided)
EMISSION	Frequency modulation
SPURIOUS RESPONSE LIMIT	0.25µW MAX
MODULATION	FM; Deviation 2KHz MAX
RECEIVER SECTION	
CIRCUIT TYPE	Crystal controlled PLL
FREQUENCY	40 channels — 27.60125MHz Thru 27.99125MHz; 10KHz spacing
SENSITIVITY	Less than 1µV for 20dB (S+N)/N.
SQUELCH RANGE	0-1mV
SELECTIVITY	60dB down at ± 10KHz
IF FREQUENCY	1st IF: 10.695MHz 2nd IF: 455KHz
IMAGE REJECTION	60dB typical
AUDIO OUTPUT	3.5W maximum at 8 ohm load
CURRENT DRAIN	250mA on stand by [no signal]
CURRENT DRAIN (MAXIMUM)	Less than 1.5A
ANTENNA	Nominal 50 ohms impedance
POWER SOURCE	Operates from nominal 13.2 volts DC, negative ground system
DIMENSIONS [OVERALL]	5-3/16(W) x 7-1/2(D) x 2-1/8(H) inches
WEIGHT	3 lbs.



costed the parts used to build the set and it came to approximately £60.00 at retail value. We don't know how they do it but keep it up! It is about time that more sets had the attenuator switch on the front panel which makes it far more easy to use.

The only two complaints with the set are the moulded din plug which has to be cut off when a fault occurs and the fact that the public address facility cannot be left permanently connected as most breakers that use this facility prefer to do.

INTERFERENCE

The biggest stumbling block for the legalisation of AM CB was the Government's conviction that it would (and did) cause widespread interference to other authorized users of radio equipment. There was an element of truth in this as all radio equipment is liable to cause interference in the right circumstances and it must be said that amplitude modulation is more likely to do so than frequency modulation.

This issue was the corner-stone of the Government's policy and subse-

ferred to the increasingly-serious problem of interference to police and emergency frequencies from FM transmissions, particularly from stations using linear amplifiers. From various sources it would appear that the police are suffering badly - especially in the London area, although certain frequencies are common to forces countrywide, so the problem could be even bigger.

The main problem is that of harmonics (frequencies which are mul-

operators to control interference, may well be trying to prevent this happening at source. The proliferation of beam aerials and other illegal antennas has also added to the difficulties.

How serious is the situation? The police use frequencies between 80-400MHz (as do most of the other emergency services like fire, ambulance and coastguards) and in the London area transmit mobile with 10W into a repeater station. A CB'er with a 150W linear amplifier can be putting out 60W into the same repeater - the policeman doesn't stand much chance of competing with that signal strength. With the size of the CB fraternity, it doesn't take much imagination to see that all the London repeater stations could be blocked for a large proportion of the time.

Whilst most of us knock the police when we get booked for speeding, we wouldn't willingly prevent the police from dealing with emergencies and accidents. It's fair to assume that many of the offenders are in ignorance of the difficulties they are causing. Not entirely satisfied with the performance of the legal system they have added a burner, secure in the knowledge that 'FM doesn't cause interference'. For this attitude the Government is partly to blame since they were keen to point out that FM caused less interference and people without any technical background have accepted this at face value. Of course, there is also the AM operator who wants more DX power or just wants to be louder than everyone else. The whole thing is then exaggerated by the very poor quality of many of the linears available.

Both the Engineers Department and the Press Department at Scotland Yard have declined to comment when I contacted them. I would guess that they are concerned that by publicising the problem the 'wally' element will deliberately set out to block the police communication system and that's a risk we are taking by publishing this article, although I'd like to think that our readership is more sensible than that. There is no way of eliminating this interference without eliminating linear amplifiers and administering MPT 1320 to the letter - something the authorities would no doubt like to do. The Home Office figures for outstanding reports of interference from CB yet to be investigated is 50,000.

How many of these are caused by linear amps is not known but it could be a majority. Another solution is, if people are going to continue using linear amps to use a rig that doesn't radiate harmonics (information not generally made available) and to buy expensive, well-made amps which filter the harmonics out. The only other solution is to introduce a CB system that meets people's need for distance but I suspect that whatever the system there will still be a minority who want more. (Besides the Government would say that this need is really catered for by amateur radio.)

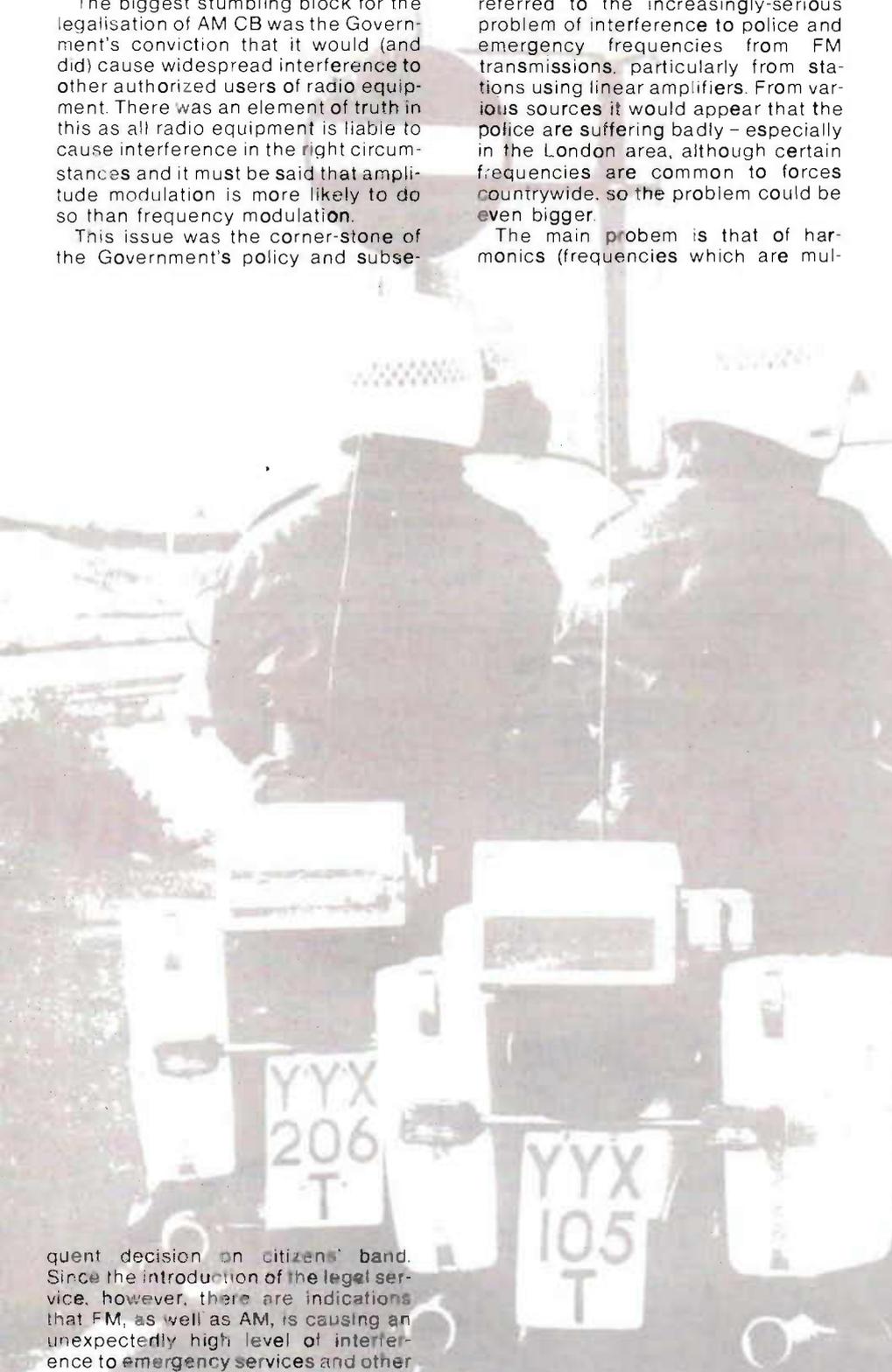
Final word from our local friendly policeman. "It's beyond a game or joke any more - we try and call but just can't get in. Sooner or later people are going to be dying out there."

quent decision on citizens' band. Since the introduction of the legal service, however, there are indications that FM, as well as AM, is causing an unexpectedly high level of interference to emergency services and other users. This was certainly not anticipated by the Government, who even in May were saying in their press release that

"Legal CB has not given rise to widespread interference... but problems have arisen within the legal service when operators have added ancillary equipment, usually aimed at improving reception. For instance, some makes of pre-amplifier (which boost the incoming signal) have caused serious interference, particularly to the police and fire services in London."

Although the Home Office has drawn attention to the pre-amplifier/reception interference, they have not

titles of the radiated desired frequency, i.e., 27MHz is the required frequency, 54MHz is the first harmonic, etc.). If the transmitter is radiating harmonics then the linear amplifier will also amplify that and some linears are of such bad construction that they self oscillate - generate the harmonic themselves. The problem is aggravated by the fact that some CB sets, although nominally meeting MPT 1320, are generating harmonics because of insufficient filtering or poor construction. The Government, in introducing legislation to put the onus on manufacturers as well as



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Grandstand Hawk.....	£75.00
Grandstand Bluebird.....	£83.50
Grandstand Gemini.....	£120.00
Rotel 230.....	£79.00
Rotel 240.....	£89.95
HOME BASE UNITS	
Harvard Base Station.....	£125.00
Sirtel 999 Base Station.....	£123.00

Grandstand Base Station (The Ultimate).....	£229.95
DNT B 40.....	£100.00
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Harvard 2 chnl (14-30).....	£19.50
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DNT HF 13/40 chnl.....	£86.50
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CARRIAGE CHARGES: Small accessories £1.00; Mobile rigs & twigs £2.00; Home base twigs £3.00; Home base rigs £5.00; (next day Securicor £9.50) Orders over £350 carriage free.

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Parliamentary Review



Dangerous equipment – the House acts

Over the past couple of months, the media have been drawing people's attention to the sale of potentially dangerous CB power supplies. The units in question are manufactured in Taiwan and do not comply to British safety standards. Although, in some cases, their performance is adequate for CB use, if they are not treated with the utmost caution they can become lethal. These units have been on sale in Britain for over a year and it is only now that moves are being taken to prevent them appearing on the shop shelves. The prosecution of one or two suppliers is likely to be a very effective deterrent.

Other subjects that have managed to raise their heads above the barrage of discussion on the Falklands Crisis are those of the allocation of frequencies for mobile use and the prosecution of illegal CB operators.

Lethal power supplies!

Mr. John Fraser asked the Minister for Trade if he will use his powers under the Consumer Safety Act to prohibit the sale of potentially lethal power supply units for citizens' band radio which are made in Taiwan and marketed under Shira, Eurosonic, Power Plus, Supreme, Miranda, Ord, Kaybee, Altai, Nentone and Diza trade names.

Dr. Vaughan: The consumer services department of the Greater Manchester Council has told us that citizens' band radio power supply units of all but two of the brands referred to are likely to infringe the requirements of the Electrical Equipment (Safety) Regulations 1975 as amended by the Electrical Equipment (Safety) (Amendment) Regulations 1976. It is proposing to prosecute suppliers. We are making inquiries about the other two brands.

CB prosecutions

Mrs. Dunwoody asked the Secretary of State for the Home Department how many summonses have been taken out against the users of allegedly illegal citizens' band radios in the Stoke-on-Trent and Crewe area; and what was the average time between the inspection of the equipment and the issuing of the summons.

Mr. Raison: Since the legalisation of citizens' band radios on 2 November 1981, 11 summonses have been issued in the Stoke-on-Trent and Crewe area; the time taken from the interview of the person concerned and inspection of equipment to the issuing of the summonses averaged one month.

Mrs. Dunwoody asked the Secretary of State for the Home Department how many complaints about interference from illegal citizens' band radios have been received in the Stoke-on-Trent and Crewe area



since the legalisation on citizens' band radios came into force.

Mr. Raison: Since the legal citizens' band service was introduced on 2 November 1981, 486 complaints about interference from illegal citizens' band radio have been received in the Stoke-on-Trent and Crewe area. No statistical record is kept of complaints of interference to the licensed CB radio service.

Allocation of radio frequencies

Mr. Strang asked the Secretary of State for the Home Department how many additional staff will be employed to deal with the increased workload arising from the commitment to change radio frequencies at the world administrative radio conference 1979.

Mr. Raison: Authorised staffing levels in the Home Office already make some provision for work arising out of international radio conferences. The requirement resulting from the WARC 1979 to change the mobile radio services used by police forces and fire brigades to new frequency bands is an additional task but whether extra staff will need to be employed will depend on the extent of other commitments at the time.

Mr. Strang asked the Secretary of State for the Home Department if he will make a statement on the progress made and time scale involved in changing radio frequencies and equipment arising from the commitment made at the world administrative radio conference 1979.

Mr. Raison: Many of the changes to the international allocations of radio frequency bands arising out of the WARC 1979 came into effect on 1 January 1982 but in some cases – for example, the extension of the upper limit of the international VHF sound broadcasting band from 100-108MHz – detailed changes of frequency use will come into effect only after further international radio conferences. The extension of the VHF sound broadcasting band will necessitate moving land mobile radio systems of the United Kingdom's police and fire services to new bands by the end of 1989 and some other land mobile services used mainly by public authorities by the end of 1995. Action is being taken to effect these changes by the dates required.

C.B. Safari Weekend

24th and 25th July 1982

This is sure to be one of the CB events of the year!

Drive through seven Game Reserves — Dolphinarium and Killer Whale Show — extensive Picnic Areas — Parrot Show (subject to availability) — Children's Farmyard and Play Area — Amusements, Restaurants and Licensed Bars — and all at a special all-inclusive 'CB Safari' price of only £1.30 per head (adult or child).

Please note, the special rate of £1.30 per head only applies to pre-booked admissions.

In addition, there will be trade stalls and exhibitions and — if you complete and return the attached booking form **before** the 20th July — you could win a superb new rig in our prize draw.

Our Saturday Night Discos are always fully booked, so apply early to avoid disappointment★ **Planned in conjunction with CB RADIO.**



To make your booking please complete this form and send it with full remittance to: **The Party Booking Office, Windsor Safari Park, Winkfield Road, Windsor, Berkshire SL4 4AY. Telephone: Windsor 69841**

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OVER THE COUNTER

More newly-released goodies

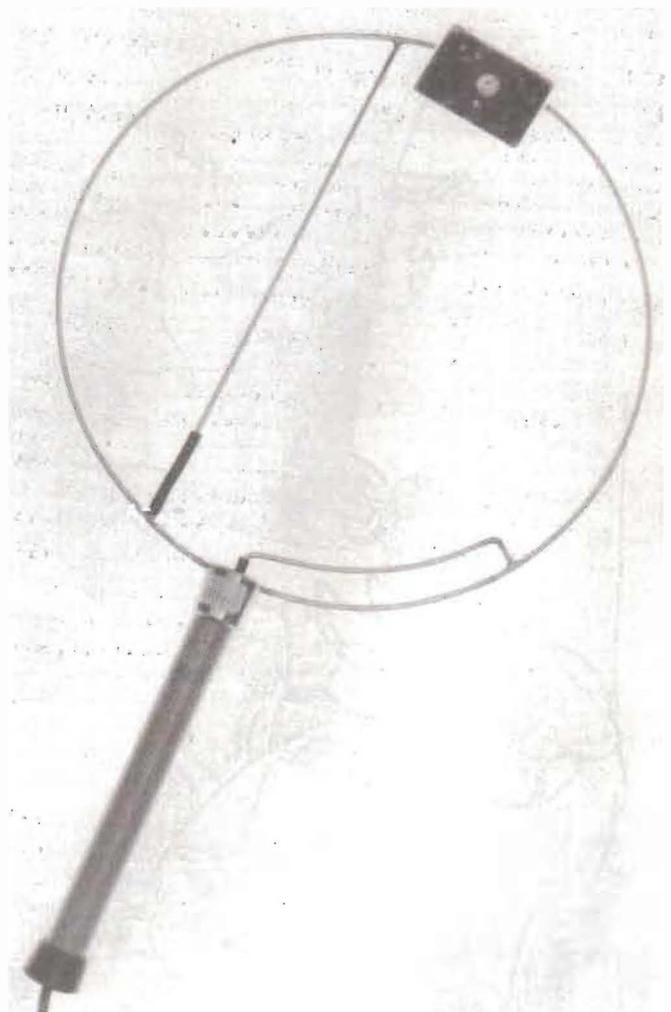


DF loops

The Pan International range of CB covers everything from the everyday to the esoteric, including walkie-talkies, CB transceivers, marine radio, amateur radio transceivers, cordless telephones and telephone answering machines.

The two particular items, however, that we thought would be of interest to you are the two DF loop antennas. If used in place of your normal receive antenna they will allow you to deter-

mine the direction of an incoming signal. The two antennas differ mainly in their construction and price, although a slight increase in accuracy may be noticed. The cheaper of the two loops is constructed from a pcb with a copper track around its circumference. This retails at £24.15 inc. VAT. The other is constructed from stainless steel with a tuning circuit attached to the top of the loop. This one retails at £28.46 inc. VAT.



The UK CB Handbook

Newnes Technical Books have published a book called 'The UK CB Handbook', which is designed to cover all aspects of CB radio in precise detail. Installation of rigs and antennas, setting up home base, dealing with interference problems and fitting accessories are some of the topics covered. The book was written in the UK by Alan C. Ainslie, specifically for UK readers and can be obtained from your local CB retailer or bookshop.



British made rigs

You may be surprised to read that there actually is a genuine British manufacturer of CB products. Mega Electronics, of Saffron Walden, Essex manufacture the following items:

- CB 1100 Mega tracker. A fairly conventional 40-channel mobile with a British designed and manufactured circuit board based on the Motorola

PLL synthesizer.

- HB15 home base converter. A solid box finished in black rexine and teak that will accept the CB 1100 mobile transceiver. The unit has a built-in 3-amp power supply using quality British components. The HB 26 will accept any rig up to a maximum width of 185mm.

- BS 100 base station. An attractively finished unit with all the knobs and switches necessary for home base use plus a few more. The same quality and high performance pcb as the CB 1100 has been used.

All of these Mega products mentioned will be available at your usual retailer very shortly.

Self-Amalgamating Tape

If you are having trouble trying to seal the connections between cables and plugs/sockets on home base antenna installations then this product is for you.



Atlantic Supplies Radio and Electronic Division, proudly present Self-Amalgamating Tape. Unlike most pvc sticky insulation tape, it does not sof-

ten or come undone in bad weather conditions, therefore giving greater protection against corrosion damage.

The tape itself is not sticky on the roll or in use and is designed to be stretched to three times its own length as it is applied and overlapped by half its width. After one hour the bond is complete and the tape cannot come undone. It will continue to cure and will cure into a solid rubber moulding.

The tape will easily conform to irregular shapes and will waterproof any type of join or permanently protect any metal surface from the weather. The tape can withstand a temperature of 100°C and can, therefore, be used to repair burst pipes; so it is a useful addition to your tool box. The retail price is £1.50 for a 3-metre (25mm. wide) roll. It should be remembered that a 3-metre roll provides 27ft. of working length.



Touch control CB

A device specifically designed to facilitate the use of CB radio by blind and disabled persons has been launched by Hammersmith CB and Touch CB (Registered Charity). The development was based on the Audio-line 340 transceiver as this was found

to be the most reliable unit available.

The main problem for disabled persons using CB radio is that of changing channel. This problem is solved by the 'Channel Seeker' by the use of six switches linked to a programmed chip which allows the user to change to any channel quickly. Volume and squelch controls have been moved to the side of the control box and the rotary controls have been

changed to sliders for ease of operation. The switches have cradled finger grips and are colour coded. The development was undertaken by Graham Bowes, of Hammersmith CB Centre, in conjunction with research from Touch CB. The units are designed and built by Hammersmith CB Centre and marketing will be undertaken by both Hammersmith CB Centre and Touch CB.

Round Up

Can you help?

Can any breaker, club or trader help out Gerald Kinsella, of the Greenbank project for the disabled? Gerald will be undertaking a sponsored wheelchair push from Lands End to John O'Groats (a total of 912 miles) to raise funds for the Greenbank project. He hopes to do the journey in 16 days.

Gerald needs

a) a mobile CB rig for the support vehicle which will accompany him and
b) a walkie-talkie (I think full power and channels) to enable him to keep in touch with the support car and chat to local breakers en route.

The Greenbank project is a group that provides facilities for the disabled in an integrated programme of accommodation, re-education, training and employment. Any one wishing to help should contact Gerald directly at 49 Vandyke Street, Liverpool 8, tel: (051 734) 2854.



DNT range expands

More of the DNT range of equipment is becoming available in this country. Long established in West Germany and Europe, they are consolidating their position in Britain by bringing out a larger range of equipment; the 9181, a single-channel unit hand held, the 5081, three-channel

plus squelch hand held and the 40-channel 6081, four mobiles and two base stations.

DNT maintain its own manufacturing units in the Far East and they have close control over manufacture and specification.

Shown in the photo is the Meteor with a good range of facilities including sel call.

Update on Angel

In February's edition of CB Radio Magazine, Round Up included a feature on Project Angel. This was organised by the Dragnet Club of Hayes, Middlesex to bring over Angel from the USA to visit Britain.

Angel is 34-year-old Sandy, from Springfield, Ohio who suffers from multiple sclerosis and is blind. She has copied many British breakers as she spends a lot of time on her rig - it passes the hours she has to spend on her own.

The good news is the fund has raised over £1,000 and Angel arrived at Heathrow Airport on 28 May, with her fare being paid by the Dragnet Club and the Lakeside Club of Cumbria. Angel is spending 10 weeks in this country; five weeks touring Cumbria, Ireland and Wales and five weeks in the South East. This sounds like a busy programme but Sandy is used to coping with her disabilities and she has an electronic device which stimulates her nerves and muscles to combat the multiple sclerosis. She braved the long journey on her own, although TWA undoubtedly took good care of

her and she was met by Dragnet and Lakeside members.



ECHO

Notification of another monitoring scheme has arrived. The Eastbourne Communications and Help Organisation (ECHO) is operating in the Eastbourne area, liaising with the Hastings and Seaford monitoring services (THAMES and SECON).

The group operates on FM and provides cover from 6.00am to 1.00am. and offers a service for 999-type calls and holds information on late night chemists, AA, RAC, vet's, etc. This information is regularly updated and added to.

They make an interesting point at the end of their letter: monitors do not police the channels and any deviation from licence conditions should be reported to British Telecommunications. Other organisations and individuals could do with remembering this.



Confessions of a CB enthusiast

Part 5 from Videostar
(Raymond E. Orr)

Last month, after finally completing the worthy installation of the York 863 to the Volvo, it was time to get back into the world of CB radio with a bang!

How many of you out there have sat in the car at night, chatting away to all and sundry, only to discover that the condensation on the windscreen was starting to turn to ice (on the inside!) and that you are freezing to death? You as well! There comes a time when you become a bit hoarse with non-essential chatter and it makes a nice change to monitor the peace and quiet of channel 9, to see if you can help out a fellow breaker. With the cold weather of the past few months, not forgetting the gales in March, I wasn't going to spend yet another night in uncomfortable surroundings. My 'flexible friend' was given a bashing and a Fidelity 2000 rig, a stabilised power supply, an 'approved' Silver Rod later, Videostar's home base was starting to take shape!

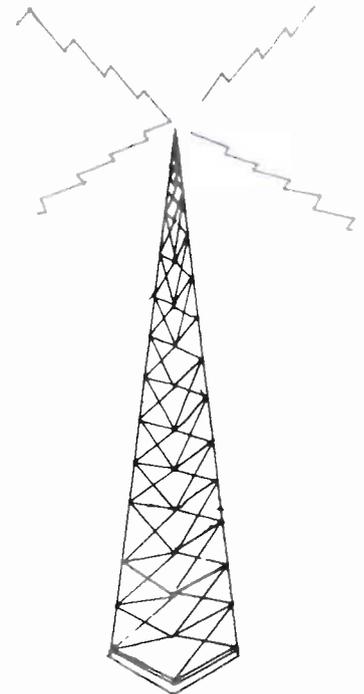
Don't be caught out like I was, when you buy your base twig for £20 odd, as it doesn't end there! Having got the twig, you have to attach it to something and I was short of a 1in. dia. mast. The instructions with the twig said that this pole should be at least 8ft. in length. Fine, I thought, and set off to get one. Plenty of 6ft. masts around but nothing that even approached the suggested length. Shops were even prepared to sell me two mast poles and a special clamp-on collar. I wasn't too keen on the idea and finally, two days later, found at a professional aerial erector's the very thing - but it was 16ft. long, excellent! I was then told the price and that brought me down to earth with a bump. You remember the twig cost £20? The pole to mount it on came to £18.75! If I knew I had to spend nearly £40 to put up an antenna system, it would have been cheaper to buy a set of thermal underwear!

I wasn't too bothered about which of the main monitoring organisations I should join. My decision to plump for REACT (UK) was because there was already a wide network of monitoring

teams in my area, so I was shown a film and taught what one should and, more importantly, shouldn't do on channel 9. It didn't take too long to discover that this certainly isn't a perfect world. Wallies were abounding on my first evening monitoring. There were some people who genuinely forgot but there were others who on finding a monitor tried to get in a bit of 'monitor-baiting' by declaring that as they've bought a 40-channel rig, they're not going to put up with only using 39 of them. Then there's the shyer type, not willing to get involved in an 'on-air' argument but none the less playing their selection of music, usually the wallies' latest music-cassette. Fortunately, these idiots are in the minority but why, oh why, must they do it? There WILL be a time they'll need help and they won't be heard because Altered Images are just entering their third refrain of the evening. Another interesting point in this neighbourhood is that someone, somewhere, is playing 'suggestive' audio tapes on the breaking channel. Funny thing is, though, not one person complained, channel 14 was quiet, save for the tape - and when it ended channel 14 sprang back to life as if nothing had happened! Is there a moral in there somewhere? By the way, if you know where to get these tapes, let know via CB Radio Magazine (plain brown envelopes only, please!).

Back at the home base, I read in the local paper that the County Council had made a ruling requiring all aerials (except TV) to be cleared through the local Planning Department. This was my second big mistake, as I innocently sent them a letter informing them that I had a 16ft. Silver Rod and was that OK with them? I received a curt note in reply, saying that all such structures for 'amateur radio use' required Planning Permission and this would be £20.00 per aerial - and to save paperwork, they classed CB along with amateur radio! Along with the letter came a booklet outlining the Town and Country Planning Acts and a set of forms to be filled in triplicate. Even after filling all those in and supplying them with large-scale maps of the installation and area, there is NO guarantee that they will permit you to stick a twig on your very own chimney. I'm just looking forward to when everyone starts putting satellite receiving dishes on their roof - the Planning Departments will never be able to cope! I refuse to be beaten on this one, as my twig and associated bits, with planning permission, is now costing £60.00. This is more than I paid for my first rig! I'll keep you posted, as they say . . . !

10-10.



THE ELECTRICITY COUNCIL

Overhead lines

We have received a press release from the Electricity Council about the danger of overhead wires. It's so important that we are reproducing it exactly as it arrived.

"CB and amateur radio enthusiasts are warned not to endanger their own lives and the lives of others by putting up aerials too near overhead lines.

Tall whip aerials present a special hazard but extreme care should be taken with all aerials. Safety clearances from electrical equipment, especially overhead lines, vary considerably and depend on such factors as the voltage of the equipment, ground contours, aerial height, wind strength and air temperature. An aerial does not even have to touch a power line to conduct electricity, as it can, through a spark, jump gaps.

"If an aerial is to be erected within a distance of three times the overall aerial height from overhead electrical equipment, there is potential danger, so contact the Electricity Board for their free advice if there is any doubt. Also remember that any permanently-sited aerial of more than 3 metres will require planning permission from the local authority."



CLUB SPOT

South London Associated Breakers 27MHz AM

We would like to take this opportunity of introducing to you our CB club which meets every Thursday evening at 8.00pm in the Banqueting Suite, Marlowe Rooms, Marlowe House, Sidcup (near Sidcup Station). Our membership is open to all CB users although as a club we are very much pro-FCC frequencies in all modes.

We are an active club supporting all demos in favour of AM with SSB and are members of NATCOLCIBAR.

Some of our members are avid DX'ers and we have our own section called the Outbanders or the Oscar Bravo Club. We also support THAMES and have set up several base stations for the purpose of monitoring channel 9 out of club funds.

The club has a regular attendance of approximately 500 and new members, AM or FM, are always welcome to come and see us.

C. J. Stephen (Hon. Secretary)

Strangeways

We are called Strangeways and our club is held every Thursday night at 8.00pm at the Fiesta Halls, Church Elm P.H., Heathway, Dagenham, Essex.

We would like, if possible, to arrange small convoys from our club to any other club within an hour's drive to have an eyeball and would like to have other clubs come and visit us, everyone will be made very welcome. We have a limit of 250 members.

So, to all at your magazine and to all CB'ers, all the 73's and 88's to one and all from all of us at the Strangeways. Break - break.

Karate Girl (Secretary)

Coronation Breakers' Club

Our breakers' club opened up on Monday, 4 January 1982 with a Grand Opening Dance, with a great response. On our first night, we gathered over 100 applications for membership.

We have a very strong committee of nine breakers who are as follows: Suzzbat, Chairman; Bishop, Vice-Chairman; Sunlight, Treasurer; Mystery Man, PRO; Duchess, Club Secretary; Carbon Rod, Lumberjack, Falcon and Book Keeper, Organising Committee. We would like to say a very big thanks to all the local breakers for their support in this new club, also the Manor Park Community Centre for all their help.

We will be holding a club meeting every Monday night at 7.30pm at the Community Centre, Manor Park.

Anyway, I think that is enough to be going on with, so 73's and 88's. This is

the CBC signing off.

We're down, we're gone.

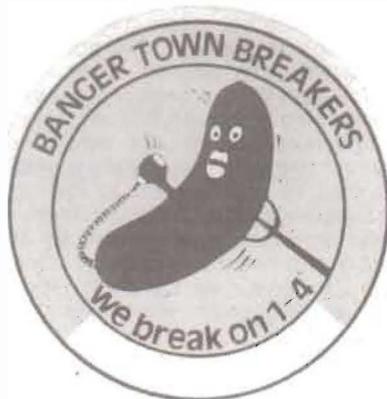
Mystery Man (PRO)

Gainsborough Breakers' Association (Lincolnshire)

Our club has now been in existence for 18 months and has raised and given £1,000 to local charities. This type of fund raising will be continued throughout the year.

On club nights, which are the first Sunday in each month, disco's, quizzes, silly games and bingo are organised and the committee are open to suggestions from members for other activities.

A news bulletin is put out every Wednesday evening 7.00pm and 10.30pm by the Secretary. Further information is available from Gainsborough Breakers' Association, c/o Marshalls Sports and Social Club, Middlefield Lane, Gainsborough, Lincs.



Banger Town Breakers' Club

The Banger Town Breakers' Club was formed early in 1981 when a few local breakers met at a pub a few miles out of the Banger Town. As time went by we quickly outgrew the pub and moved to 'Fawley Towers'. We soon outgrew this venue as our membership grew and we moved on to the 'Blue Rosette', which was a popular venue but as we were unable to admit junior members there we moved finally to our present location which is 'Max Boyce Mansions' or commonly known as the Rugby Club. We now have well over 400 members registered and at our eyeballs on Wednesday nights we usually pack the place out. We have a disco and a raffle as regular features at the eyeball and once a month we have a games night. Also once a month we nominate a Breaker of the Month, who receives a shield to keep for a month.

Our fund raising for charity has been quite successful. We raised £250 for LAMPH by a sponsored walk. We raised enough money to buy a 'stack' stereo system for the Ida

Davison Hospital Children's Ward by having a sponsored modulation for 72 hours. This was done by Pirate and The Hawk and we believe it was the longest continuous illegal broadcast ever. During the 72-hour modulation, Pirate and Hawk held a radio auction to sell various items donated by members and other benefactors. We raised enough money to buy a young man who is paralysed from the waist down a base station rig and aerial. We gave him his handle Iron Sides which other disabled breakers in other areas have used but as he is home based it shouldn't cause any confusion. New members and guests from other clubs are welcome at the Eyeball, whether they favour AM or FM.

Regards.

The Mile Eater (Committee)

Kitts Green Breakers

Just a few lines to let you know about our local club. Called the KGB, Kitts Green Breakers. Formed nearly 12 months ago for social nights, now the CB bug is biting the membership is 400+. We meet every Thursday, 7.30pm at the Alcan Plate Sports and Social Club. Nearly all money raised is for charity or the sick, who need all the help they can get. Also full marks to you, CB Radio Magazine, the best and informative magazine on the market.

Good numbers to you and your readers.

Buzby Bear (Pres./Chairman)

Kent and Essex Breakers

Some info on our club down here in the south. Named as above or KEBA for short, we formed the club in the early part of 1980 and now have a lot of members increasing rapidly. Our meet 20 is Orsett Hall, just off the A13, near Tilbury Docks, where we eyeball every Tuesday evening for formal and social gatherings.

Although we try to do a lot for our members, we also do a great deal for charity, e.g., sponsored cracker eats, boiled egg competitions, bed push and many other things. The latest of our tasks is to raise £1,000 for a little local boy who needs a bionic hand. This total has almost been reached with the help of another local club called CASBA.

We welcome all breakers from any area to come and have an eyeball with us and join in some fun.

Stay lucky and keep smiling. Breaker break.

Taxi Driver (Press and Pub. Officer)

Location One Legal Breakers' Club

Just a few lines to tell you about the

CLUB SPOT

Location One Legal Breakers' Club. Meetings are held in the Marine Hotel, Seaton Carew, Hartlepool every Sunday, 7.30-11.00pm, disco and raffle every week. Our main aims are to raise money for charity, also get all FM breakers in the surrounding area together for a good eyeball.

Marksman (Press & Pub. Officer)

BCBC

I am writing to inform you of the Benfleet CB Club. We have been going for several months and have over 120 members. Meetings are held every Sunday between 8.00-10.30pm.

We encourage all forms of CB amongst all age groups.

Admission is 50p for members and 75p for visitors. Membership is £2.50 per annum for adults, £1.50 for under 18's.

Any club in the area wanting a football, rugby, darts, etc., match, we're game for a laugh.

We are registered collectors for the National Children Homes.

Any enquiries, write to Psycho, 41 Arundel Road, Benfleet, Essex.

Pyscho (Public Relations)

3R's Radio Club

We are a breakers' club in Stafford. Membership is increasing dramatically at every fortnightly meeting.

The club was not formed solely for CB'ers but for people interested in all types of radio communications - hams, SWL's.

We meet fortnightly at the Railway Sports and Social Club and we extend a warm welcome to breakers passing through Stafford (County town).

Just give a shout any time on 14 for a 3R's breaker.

10-10 till we do it again from the Committee: Red Leader, Cosey Lady, Man In Black, Sovereign Lady, Boilerman, Broody Hen.

Skypilot (Secretary)

The Sundowners CB Club

We are a CB club based in Morpeth, 14 miles north of Newcastle. We call ourselves the Sundowners CB Club and meet every Monday night at the Sun Inn (hence our name) at 6.30pm.

We hold raffles and quizzes, hope to have a convoy shortly and show video films once a month. We would also like to hear from other clubs in the area who would like us to visit them or vice versa. We are just starting a junior breakers' section and aim to spend time raising money for charity.

We break on channel 14 around here, so if anyone is in the area, give us a shout. We are always pleased to ratchet with and eyeball anyone passing through.

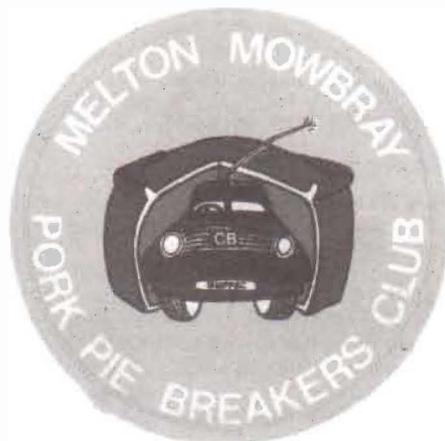
Paramedic (Secretary)

South London Breakers' Club

The club is a disco club and we have things such as a buffet bar where the members can have a bite to eat or have a chat with a good buddy. We have a jackpot fruit machine, a video game and other items that may interest a member while taking a break.

We also have silly games, competitions and treasure hunts. If you are ever down our way, do pop in and see us, we meet every Wednesday at 8.00pm and go on till 1.00am at The Tennessee Club, 267 The Broadway, London SW19.

Whisky One (Chairman)



Melton Mowbray Pork Pie Breakers' Club

Our Melton Mowbray Pork Pie Breakers' Club was started on 2 February 1981 with eyeballs held at the Reflections, Kirby Bellers, once a fortnight and entertainments once a month. Membership at its height reached just over 600. Our entertainments include country and western and pop groups, disco's, magicians and once a snake charmer. Outside entertainments are convoys to various places, football matches where the men dress as women and vice versa, we have a fox and hounds where mobile skates search out a square-wheeled fox, we have boozy nights at beer kellers, treasure hunts and tramp suppers, etc. To raise money, other activities have been a fancy dress sponsored walk, which bought two beds and two special mattresses for the War Memorial Hospital, a small collection helped out the Army Benevolent Fund and charity disco raised £150 towards a baby unit for St. Mary's Hospital.

Club members have adopted Brookfield House Children's Home and so far have raised money for much-needed camping equipment. An FM rig given the first year's licence is being given to them this month and all the

children have free membership so they can attend the eyeballs.

We have just started a 'Good Buddy' award. This is given to a breaker who is an extra special good buddy.

Team spirit shows itself at our yearly gala when everyone participates, helping with stalls, tug-of-war and games, etc.

Our club badge came from a design in a competition where the breakers displayed their artistic talents.

We hope to make this year even better than last and so leaving you with all the high numbers. Take care, cos we care.

10-10, breaker break.

Dreamer (Secretary)

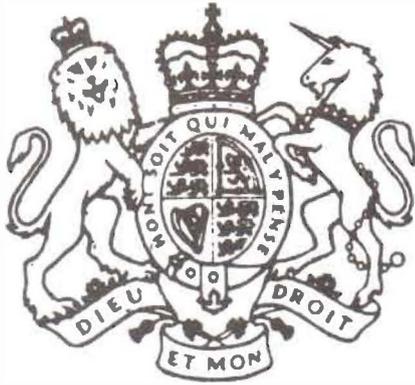
Quaker Town Breakers' Club

This is Saffron Walden's new CB club. It was formed at a meeting on Tuesday, 2 March, when a Committee was elected and a constitution adopted. The club's objectives include the provision of better facilities in the UK CB system (more channels, better twigs and so on), the promotion of sensible and responsible CB usage (while still having a whole bundle of fun) and the promotion of social activities to give us that bundle of fun while helping the community.

Most members have or use a rig but membership is not restricted to them alone. All you need to qualify is an interest in citizens' band radio, a desire to meet other similarly interested and the price of the annual subscription - speaking of which, this is £3.00 for adult single members, £5.00 for family membership (which covers youngsters up to 16 years old) and £1.00 for those under 16 who are on the airwaves on their own or for Senior Citizen breakers. We meet at the club house of Saffron Walden Town Football Club, membership of which is included in our annual subscription. At the moment, a regular meeting date has yet to be settled but our first eyeball on Tuesday, 16 March was a great success. Over 60 members and guests attended and the 100th member was signed up during the evening.

The Hon. Secretary is Blademan at 70 Long Horse Croft, Saffron Walden. If you drop him a line, be a mate and include a sae please - postage rates are something chronic these days! - otherwise give him or any Committee member a shout on the 1-4. The others are: Chairman, Gasman; Vice-Chairman, Magic Apple (very appropriate office, that!); Hon. Treasurer, Mongrel and members Fluff, Toolmaker and Night Nurse. If you can't get any of them, try Tom Cat or me, Cockrobin - we handle publicity and advertising - or you can ask any Quaker Town breaker if they know whether any of us are on channel and where.

Cockrobin (Dennis Powell)



NEWS RELEASE

Explanations and excuses

One of the main complaints associated with the introduction of legal CB has been the lack of information forthcoming from the Home Office. We do get the occasional press release but they are often so general they leave out more than they include. But recently we received a press release and a selection of seven Citizens' Band Radio Information Sheets, designed to answer questions and clear up any hazy points. Rather than reproduce the lot, here's a selection of some of the more important items. Anyone who would like to read the full text can apply to the Radio Regulatory Department, Waterloo Bridge House, Waterloo Bridge Road, London for the information sheets.

The press release

"The legal citizens' band radio service, introduced last November, has made a good start with about a quarter of a million licences now issued, the Home Office said today.

"A general framework of control for the service has now been completed. The Home Secretary has today laid regulations before Parliament under Section 10 of the Wireless Telegraphy Act 1949: **these place on manufacturers and importers the same requirements concerning interference as those already imposed on users by their licence.** The Home Secretary has also made a further Order under the Wireless Telegraphy Act 1967 to control manufacture and importation.

"Legal CB has not given rise to widespread interference. Where cases have occurred, the general reason has been that operators have added other equipment to their stations without realising that this could present problems.

"But illicit AM transmissions are still causing widespread interference and, despite their claim that the legal frequency band was unsuitable, some illegal operators are now using it with equipment which is illegal in every country in the world. This is causing interference to law abiding and licensed operators, as well as to the emergency services and broadcasting reception.

"The Government remains com-

mitted to strengthening the enforcement powers it has under the Wireless Telegraphy legislation and in particular to **banning the sale of illicit equipment, as soon as Parliamentary time permits.**"

Excerpts from the information sheets

Sheet No. 1

Are free licences granted to pensioners, the disabled or volunteer emergency channel monitors?

No concessionary licences are granted for CB. This keeps the licensing system simple. If such licences were to be made available a change in the law would be required and also the licence fees would have to be increased to cover both the shortfall in licence revenue arising from the concession and the increased administrative cost of running a more complicated system.

Can a CB licence be revoked?

The Secretary of State can revoke a licence if the holder is found to be operating outside the terms of licence. Read the licence conditions and schedule carefully.

What is the £10 licence fee used for?

Under the terms of the Wireless Telegraphy Act 1949, a licence is required for the installation and use of radio and a fee is charged to cover the costs of administering the licensing system. All radio licence fees ensure, in line with Government charging policy, that the full costs of administering a service are met by the beneficiaries and not by other users of radio or the taxpayer. In the case of the citizens' band radio service the costs involved in administering the service are those payments made to the Post Office for their costs both in issuing licences over the counter and in establishing and maintaining a central record of licences (which will in due course be responsible for the issue of renewal reminders) and those incurred in the Radio Regulatory Department in setting up the service. Once the costs of the licensing system are met, the remaining revenue is used to offset the increased costs of the radio interference service in

investigating interference to other authorised radio services and unlicensed CB use.

No age limit

The new legal system is relatively simple and is intended for use by people who are not necessarily technically skilled. Therefore it was not considered necessary to impose an age limit on those who are able to apply for a licence.

Sheet No. 2

Don't the 27MHz CB frequencies conflict with world or European standards?

There is no world, European or Community standard for CB radio. There is a recommendation for CB in Europe (Conference of European Posts and Telecommunications Administrations) though this is not binding. It is our intention in the longer term to adopt the CEPT recommended service and we have made it clear that once the CB service is off the ground we shall be consulting those concerned in order to reach agreement on the relocation of existing services in the area of spectrum involved and on the protection of other services which would be affected. The CEPT recommendation currently allows for 22 channels between 26.96MHz and 27.23MHz with half-watt transmitter power. Many European countries use the 22 channels recommended by CEPT but there continue to be wide variations in other aspects such as transmitter output power and interference protection. These will have to be standardised before commonality with the countries involved will exist.

Sheet No. 3

Will the allocation of frequencies for CB be increased?

There are no present plans to do so. It should be remembered that no country in the world, including the USA, provides more than 40 channels in the 27MHz band and many provide less. Equipment is available which provide 80 or even 120 channels but these are illegal in every country in the world.

Sheet No. 4

Isn't the harm done by AM overstated?

Home Office

In 1981, 45,000 cases of interference from CB radio were caused by the use of illicit AM equipment. The interference was to TV and radio reception, police, fire brigade and ambulance communications, hospital paging systems and other radio services. This figure demonstrates that the use of the illegal 27MHz AM is not the harmless activity many people allege. Some problems of interference will occur with the use of the authorised system but by the restriction to FM on carefully chosen frequencies with equipment which meets the UK specification, these will be far fewer than those currently being caused by the use of illegal AM CB.

Will AM become legal for CB radio?

AM will not be legalised because of the high level of interference it is cap-

able of causing to other services.

Sheet No. 5

(This sheet specifically deals with the antenna restrictions and defines more closely the associated regulations. It's too long to reproduce in full but some paragraphs are included where they clear up existing confusion).

The antenna element

This must consist of a single rod or wire with a maximum length of 1.5 metres including a small adjustment for tuning to minimum SWR. The restriction on length applies only to the element and does not include the loading coil. Capacitance 'hats' are not permitted as they take the antenna beyond the licence specification 'single element'.

The loading coil

The loading coil ideally should not radiate as there is no radiation from an ideal inductor. Effects from resistance loss, spurious capacitance, etc., are minimised by a suitable coil design. An efficient loading coil for a CB antenna should have a good low loss design. The Home Office would not expect such a coil to have a length exceeding about 10cm, or a diameter exceeding about 5cm. Allowing for a protective casing and metallic connections, the overall length of a loading coil assembly is not likely to exceed, say, 15cm.

Attenuation at antenna heights over 7 metres

If the base of the antenna (i.e., the bottom of the base mounted loading coil) is to be more than 7 metres above ground level, a 10dB attenuator must be brought into use. An antenna becomes increasingly effective as it is raised above ground level. As it becomes more effective the potential for causing interference is increased. The limitations on antennas are, therefore, not designed to be restrictive but rather to give the CB user a good service without imposing penalties on others.

The positioning of antennas in relation to television aerials.

To reduce the likelihood of interference to television reception, CB antennas should be positioned as far as possible or practicable from TV aerials and their downleads. Where close proximity to a TV aerial cannot be avoided the best position for a CB antenna will be in a place behind the TV aerial so that the TV aerial is pointing away from the CB antenna.

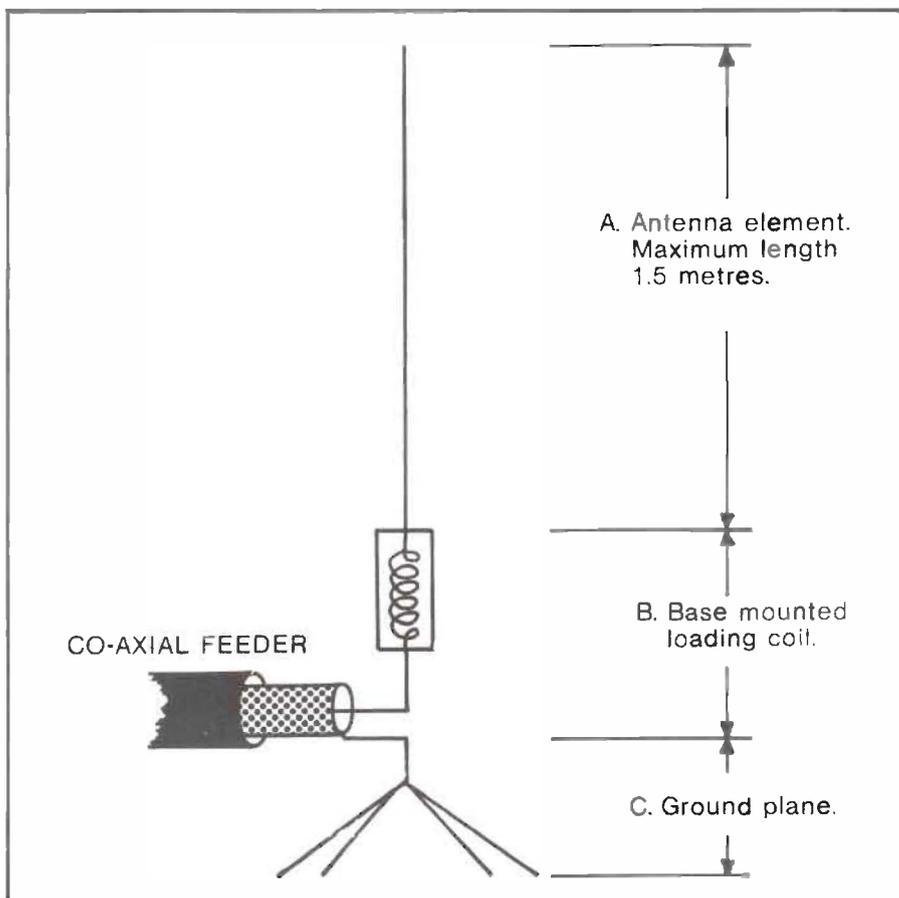
Sheet No. 6

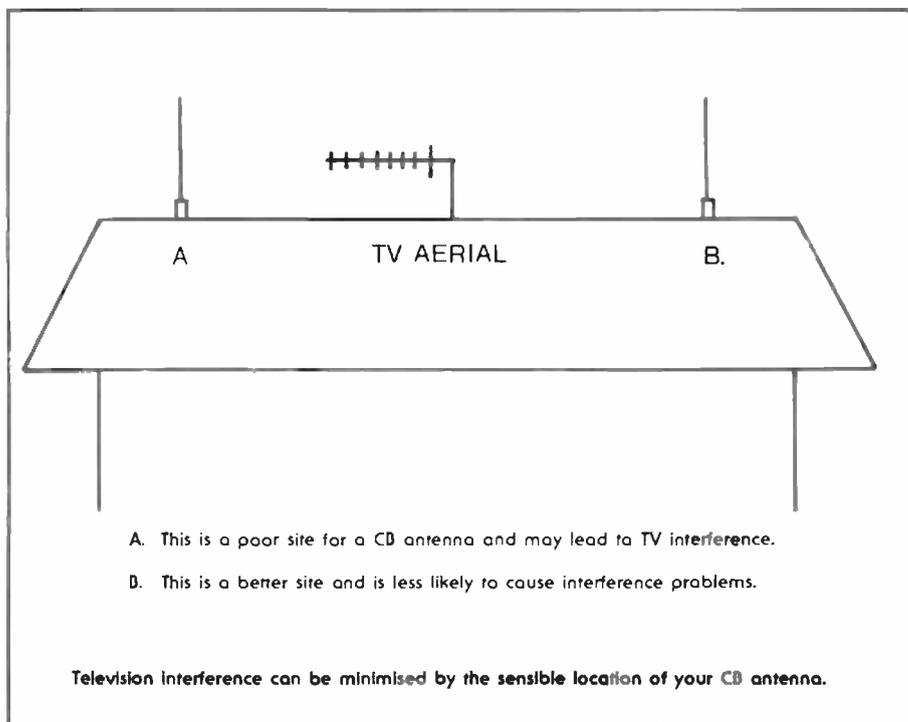
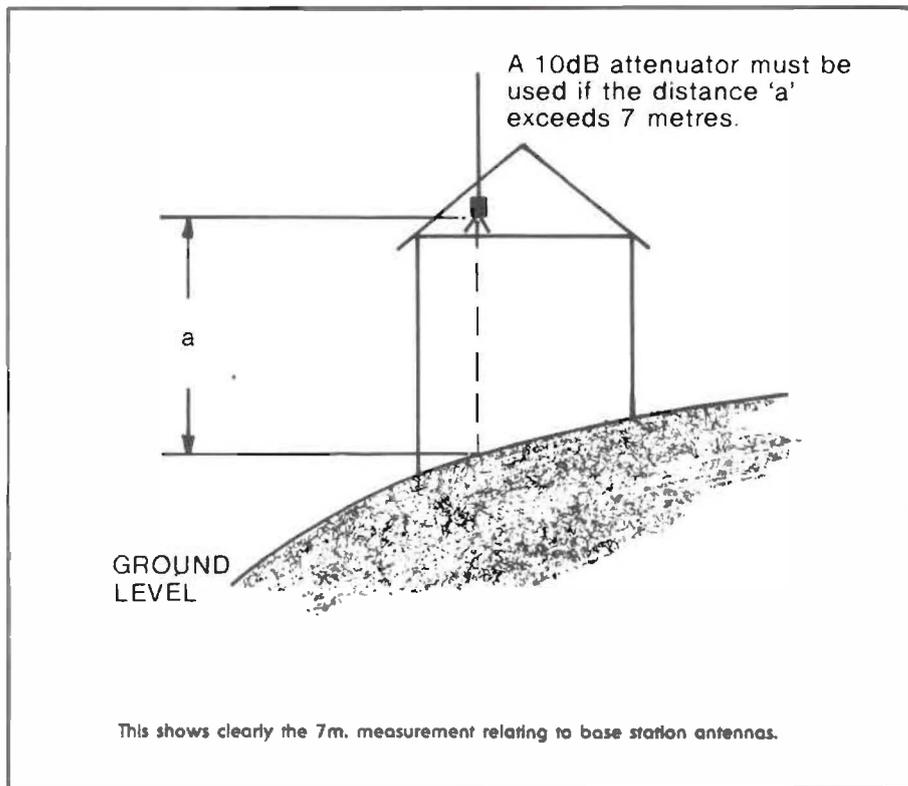
Is there an amnesty for AM sets?

No. There can be no question of an amnesty for illicit CB operators because of the large measure of harm they are causing.

Are sets which have facilities for both FM and AM transmissions legal?

No. The performance specification states that the set shall use only angle modulation (FM or AM) and must not have facilities for any other form of





modulation. So even if the AM part is disconnected the set remains illegal because the facility is still present, even though it is not in use.

Sheet No. 7

Interference from CB radio

To TV and radio. Advice on reducing or eliminating interference is con-

tained in the leaflet 'Good Radio and Television Reception' which is available from Post Offices. If, when the advice has been followed, the interference persists, the form included in the leaflet should be completed and sent to the General Manager of the local telephone area. The case will then be investigated by British Telecom radio investigation officers working on behalf of the Home Office.

To other CB equipment. The citizens' band radio service could only be accommodated in the already crowded radio spectrum on the basis that it would not be a protected service - that is, while CB equipment must be maintained and used so that it does not cause any undue interference to other services, users cannot be protected from interference from other radio services. The radio amateur is in the same position. British Telecom, acting on behalf of the Home Office, are doing all they can though to deal with operators of illicit equipment whose activities are causing much of the interference to the legal CB service.

What can be done about bad language and channel blocking on CB?

In addition to following up complaints of interference to radio services which are protected, British Telecom also have the task of monitoring radio frequencies on behalf of the Home Office to check for any abuse of licences but the volume of interference complaints they have to deal with means that in practice they can devote very little of their efforts to general monitoring.

What can be done about interference to CB from foreign stations?

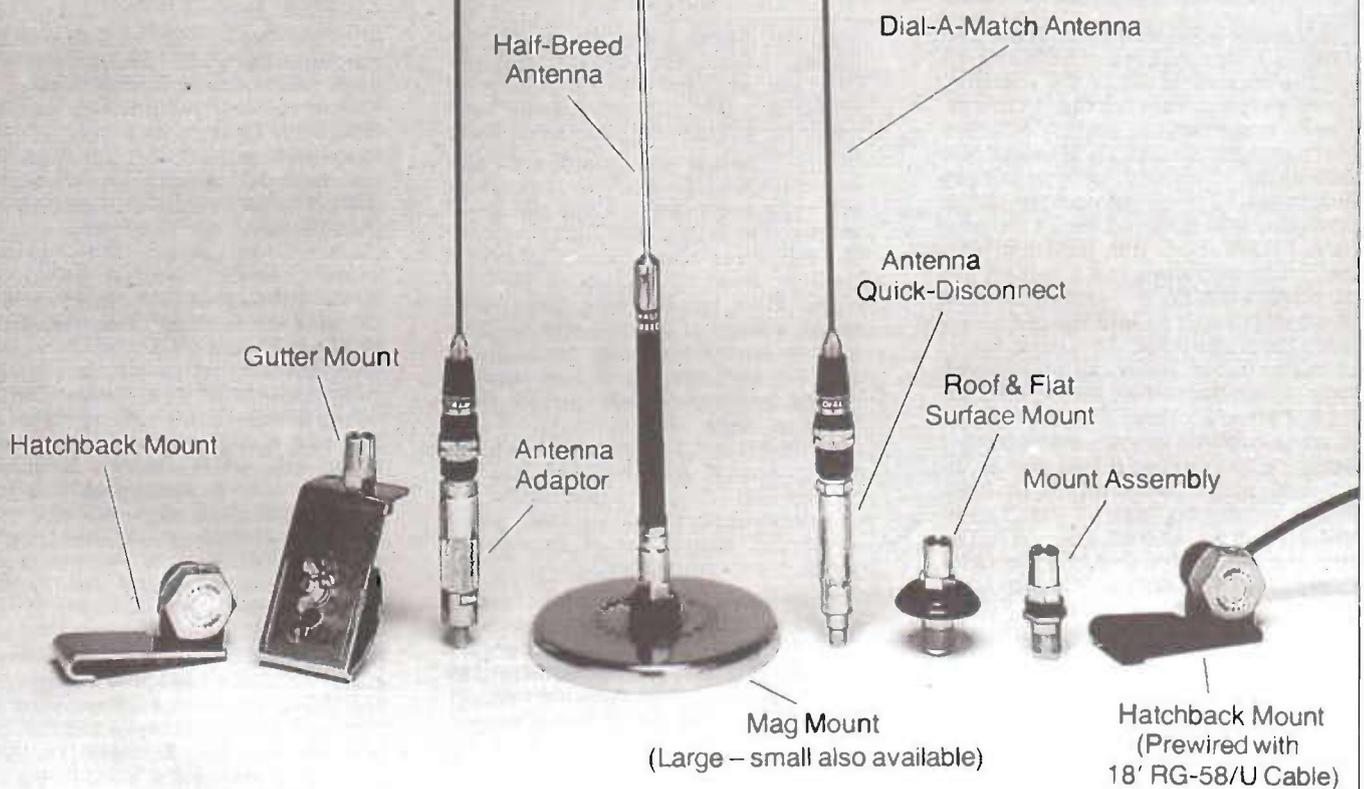
Interference from foreign, particularly Italian, stations is not limited to the CB service though it is a particular problem at 27MHz at this stage of the sunspot cycle. CB is not a protected service, however, and this interference must be tolerated in the knowledge that it should diminish as the 11-year cycle progresses. This is simply one of the features of the 27MHz band.

Finally

I'm not really going to comment or draw any conclusions from the information featured. It's not difficult, though, to see what the Home Office attitude to CB is and what they intend to do about any of its teething problems. It seems to me that we have to make CB work, whatever system we personally choose, because no one else is!

SS

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DX QSL

INTERNATIONAL

CLUB SPOT

Off the air temporarily for Charlie Hotel

Got some good news and some bad news. Seeing as I feel optimistic, I'll get the bad news out of the way first. Yours truly has vacated the DX bands. (That's bad news? In certain quarters that's looked upon as good news!) Not voluntarily, I may add. I'm sorry to say that I have become yet another statistic in the ever-growing list of unfortunate CB'ers (both AM, SSB and FM) who have had their radio nicked. On 12 April, I put my old faithful Sharps sideband in part ex and bought a very tasty Colonel FR360 off a good friend of mine. It had been rather thoughtfully expanded from 26.645MHz to 28.805MHz, so I was looking forward to some exciting airwave adventures. I temporarily installed it into my van on 18 April and it vanished on 20 April. Pretty gruesome, innit? I didn't even get to have a single workout on it. The real sad part is that due to other commitments, it'll be donkey's before I can save up to buy another radio. So, for the time being, I'm grounded. If, by any chance, any of you in the Sunderland area are offered a Colonel FR360 minus its original mic, give me a nod, I'll be eternally grateful to you.

Now for the good news. Last month, I opened my big mouth and wondered why Barong Bali seemed to have taken a wobbler and vanished. Well, they haven't. Club President and Founder, Made Rihayana, had been sick for about three months and had been ordered to take a rest. As a result, a huge backlog of mail built up, which Made is just beginning to get his teeth into. I received my club package 6 April along with a smashing letter from Made and felt extremely embarrassed and about two inches tall! No doubt about it, Barong Bali is a very good club and I feel sure that it is bound to be recognized within the next 6-12 months as one of the best from the South Pacific area. If you do come across a Barong Bali application form and are thinking it over, DON'T THINK - JOIN! I guarantee that you won't be disappointed. Look out for a Barong Bali Club review in the near future.

April was a good month for meeting people. I caught up with Jim (Big Ben) Glavin and the lovely Marian on the Big Ben stand at the 'CB Radio'

Wembley Show. Later on during the Show, I also met Andy 'Edbanger' Cookson and his equally charming young lady (My apologies, Andy but I never did get to know her name). Andy is the President and Founder of Papa Bravo DX QSL Club of Preston. Later on in the same week, I had the great pleasure of being introduced to Knut Mittelstadt, President and Founder of Berliner Bear QSL Club of W. Germany. Only trouble was, Knut can't speak a word of English and my German is extremely rusty these days. Just as well that Knut was accompanied by his bi-lingual Berliner Bear UK Rep, Inge Milson, of 17 Cherry Avenue, Malton, N. Yorks. Inge may be better known by some of you as Flower Girl. Knut brought along his QSL collection which contains some wonderful examples of four-parter cards. Most impressive.

Have you ever noticed how 'radioese' and reporting terms alter from time to time? When I first began working 11 metres it was sufficient to give a quality of transmission report via the RST code, i.e., R - Readability; S - Signal Strength; T - Tone.

One day, about 12-15 months ago, the tone part of the report seemed to drop out of fashion and R and S were converted to Radio and Santiago. I'm a bit old fashioned, so I just kept plugging away with my RST reports. It wasn't too bad, I understood the station I was in QSO with and they understood me. This happy compromise didn't last long, though. All of a sudden, Radio and Santiago became unfashionable to use; they were replaced by the slick-sounding Q1, 2, 3, 4 or 5. Real cool, man! I was a bit stumped until I suddenly realised that fashion had turned full circle. What, in fact, was happening was that I was getting a good old-fashioned readability report. Q obviously being derived from QRK (Readability of signal).

But wherever there is a fashion, there has to be trend setters and in the case of 11-metre DX'ers it just has to be the Italian stations who gave out the following reports to UK Station George Lima November 06. A few weeks ago, George acquired a PDL II

antenna and commenced station operations as soon as he got the thing fixed up. Almost immediately an Italian station (What else!) got into QSO with George and gave him the following signal report: Santiago 10 - Q5. Next day, another Italian station gave George a report of Santiago 20 - Super Super 5. Third day out, an Italian station came up with the magnificent report: Santiago 30 over 9. Radio stereophonic. Absolutely wonderful. I don't know exactly what it means but loosely translated, I reckon George was doing the business. I have visions of this Italian station being blasted out of his radio shack, the roof lifting off, the walls coming apart, etc., while George is coming through with a stereophonic signal. Great stuff! If by any chance any of you ever receive a smashing signal report on these lines, drop me a line. I'm sure we would all like to hear about it.

An urgent message from Steve Rhodes (GBC 76) of Bristol. Steve used to live in Hartcliffe, Bristol. He had 500 cards done up showing his AD. Just recently, Steve moved to a new AD but, unfortunately, the initial 500 cards are now in circulation with the wrong AD. Steve requested the GPO to redirect any mail to his new AD but, regrettably, it doesn't appear to be working out. What is worse, a rumour is going around that he is a bad QSL'er. Not so! I know Steve of old and can guarantee that he is 100% 1-4-1. Anybody who receives one of Steve's old cards, please ignore the Hartcliffe AD. Steve's new Witherwood AD is shown in the Genuine QSL list.

Regular readers of this column will have realised by now that I have many friends Stateside. Indeed, anything to do with Stateside radio is always of interest to me. I've always thought of Stateside radio groups as extremely courteous, helpful and thoughtful towards their members. So, I thought I'd tell you a little bit about how radio in general is run in the States and how one outfit in particular, International Radio Control, Mass. Unit, run their affairs. Because of its huge size in comparison to most other countries, radio clubs in the States are run on

slightly different lines. Unlike most countries which have country-wide radio clubs of all types, the US has mostly State-wide clubs. Nearly every State has its own clubs, although sometimes they may be group affiliated. This is a direct result of the huge size of USA. Many individual States are a tremendous size, sometimes larger than actual countries and often having a dense population. Many States boast thousands upon thousands of radio operators. As you can appreciate, plenty of room for many different clubs. Some of the Stateside clubs vary from QSL clubs, DX clubs, SWL clubs and especially SSB clubs (Not many breakers' clubs!). Most serious Stateside operators have fine equipment and operate exclusively on sideband, hence the predominance of SSB clubs.

Most of the operators use club numbers which are assigned to them when they join various clubs. The home State of the station can usually be determined by the number that is given before the club name and number. These numbers are given in the order that each State became a State, e.g., 1 is Delaware and 50 is Hawaii. Should you hear the call, 6 International 54, you would know that the operator is in Massachusetts, the sixth State. A fellow International Radio Control member could check his roster and see that Unit 54 is Joe and also get his full QTH via the roster.

The International Radio Control, Mass. Unit is a Mass. club that has been continually active since its establishment way back in 1973. To date it has around 300 members and is still expanding. It is a free, non-profit, no obligation group whose main purpose is the betterment of 11 metre sidebanding. It also works to promote goodwill and understanding via two-way radio communications. The group is autonomous and run by a co-ordinator supported by a committee. Present Co-ordinator is George White. The group has been chartered by the National Sideband Service Bureau and is group affiliated with the national SSB network. Membership is open to all proper and respectful operators in Mass., who may apply or be sponsored. Some members prefer strictly local QSO's, while others work DX. Many have made rare contacts around the world and being on the eastern coast of USA, bordering on the Atlantic Ocean, nearly all members have had fine QSO's with many English stations. There are also several who are into QSL collecting and swapping and have real fine collections. Club Co-ordinator George has been into radio nearly all his life in one way or another, having started as a SWL enthusiast in the 1930's. George would like to extend, on behalf of the International Radio Group Operators, the very best wishes to all UK radio operators and passes out the fol-

lowing invitation. Should any UK operator like to contact International Radio Control for any reason whatsoever, please feel free to write and George will respond immediately. I also know that George is keen to form USA/UK affiliations with UK SSB/DX groups.

Perhaps if any UK DX/SSB outfits would like to affiliate with International Radio Group, they might like to get in touch with George. Full AD of George is as follows: George White, 289 School Street, Stoughton, Mass. 02072, USA.

OK, folks, that's me lot this month. My huge apologies to those of you who had to wait a wee while for replies to your letters but I was absolutely snowed under and KNACKERED. However, I can see daylight again, so if you feel like it, let's have your news, views, comments and QSL swap requests once more.

My best regards to you all, take care.

Charlie Hotel, Echo India 25: Clear. Remember: Sideband reaches the parts that other modes can't touch!

Correspondence to: Charlie Hotel, c/o 3 West Street, Sunderland, Tyne and Wear SR3 1EU.

Charlie Hotel Echo India 25

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Marian Glavin (The Duchess) PO Box 14 Godalming Surrey (Vice-President Big Ben Club: Marian complains that Jim gets all the mail and it's about time she got some!)	Liz PO Box 52 6886 2G Heerlaum Hollands President Snow White QSL Club)
Jedith Stepaon (Seawitch) 61 Meadows Lane Northalerton North Yorks DL6 1QX	Howard Sutton (Balfeship) 804 E. Spruce Yakima Washington 98901 USA (Dirty Doodler card. Howard is very keen for Scottish and Welsh cards and would really appreciate some English coins)
Derek Badburn (Pawes) 24 Rock Close Carnation Oxon OX8 3BP	Klaus Germann (Beaceler) Hartelassenweg 9 8815 Fuchstal, Leeder W. Germany
Steve Rhodes (GBC 76) 8 Moleworth Drive Witleywood Bristol BS13 9BN (Please note Steve's new AD and pass around)	Mike & Ann Smith PO Box 16262 Christchurch N. Zealand
Gerard Laird (Goff Lima) 20 Loughness Gardens Cossinstown Co. Tyrone N. Ireland	Eddie Johnson PO Box 10 Brooklyn New York 11234 0010 USA
Steve Field (PB 209) (The Jazzman) 54 Tomline Road Fellinghoe Suffolk	Richard M. Oliver PO Box 322 Lancaster CA 93534/0322 USA

From the US, Canada, West Germany, Belgium, Holland and Australia or if you'd just like a memento let me know. Also, if you would like to join my club, the Sandcastle QSL Club, send me \$20 and a photo of yourself, if possible, along with 10 of your QSL cards and you will get a package back containing a colour certificate, ID card number, roster, patch, rubber stamp, State permit and photos of some members copied on Xerox sheets. Do any of your radio operators in Liverpool happen to know Steve, the 25 Goff Charlie Station? A good friend of mine here in Wash. State made contact with Steve on the air but couldn't copy his address. My friend's name is Sandy Meachants and his address is listed below. Until next month, good luck with the DX'ing and QSL'ing. Please remember the International Reply Coupons when writing to me, Ian Strathairn, PO Box 167, Pacific Beach, Washington 98671, USA.

Sandy Meachants PO Box 782 Alberdeen Wash. 98520 USA	Robert Box 978 B Vera Cruz 91940 Mexico
Timothy (Sandcastle 38) 925 Maple Street Hazzard Washington 98620 USA	Chris Sykes PO Box 42812 - A100 Houston Texas 77042 USA
Morgan Hickman PO Box 652 STN A Scarborough Ont. Canada	Ken Jansine PO Box 819 Francisown Solomon Africa
Eric Romans Box 84 Fort Simpson NWT XOE GHO Canada	Tick Gede Box 101 Dempster Bali Island Indonesia
Gary Rogers 30 Ventura Street Manurewa New Zealand	Jacky PO Box 219 5400 Osterod Belgium
Bruno Valguellesse 120 Rue A. Briand 90300 Orlémond France	M. S. Reyes (Blue Street) PO Box 219 Belize City Belize Central America

Worldwide SWLers

I want to thank all of you that have written to me recently, been swamped with mail lately but keep the mail coming. Received a phone call from my UK Representative Clem Ben and also a phone call from John Downall in Liverpool telling me he's moving to British Columbia. One other phone call from Jorge Hanson in Venezuela. He's the President of the Tucan QSL Club. I also want to thank Paul Ellis, in Devon, for the letter and hope to catch more of you on the air. Conditions have been great starting from 5 March all the way till the end of the month. I've made about 70 contacts over there all over England, Wales, Scotland, Ireland, Northern Ireland, Isle of Man, Germany, Holland and West Germany. Then in the evenings we've got Australia, Japan, Indonesia and the Philippines coming in fairly well. I made two contacts with David the Sandcastle 604 in Nottingham which was really great. All of you that have been swapping cards with the names listed in this column, let me know if you're getting many returns. All of you that would like a few cards for your collection, send me three International Reply Coupons and you will get some extra I have along with my own. I have many extra

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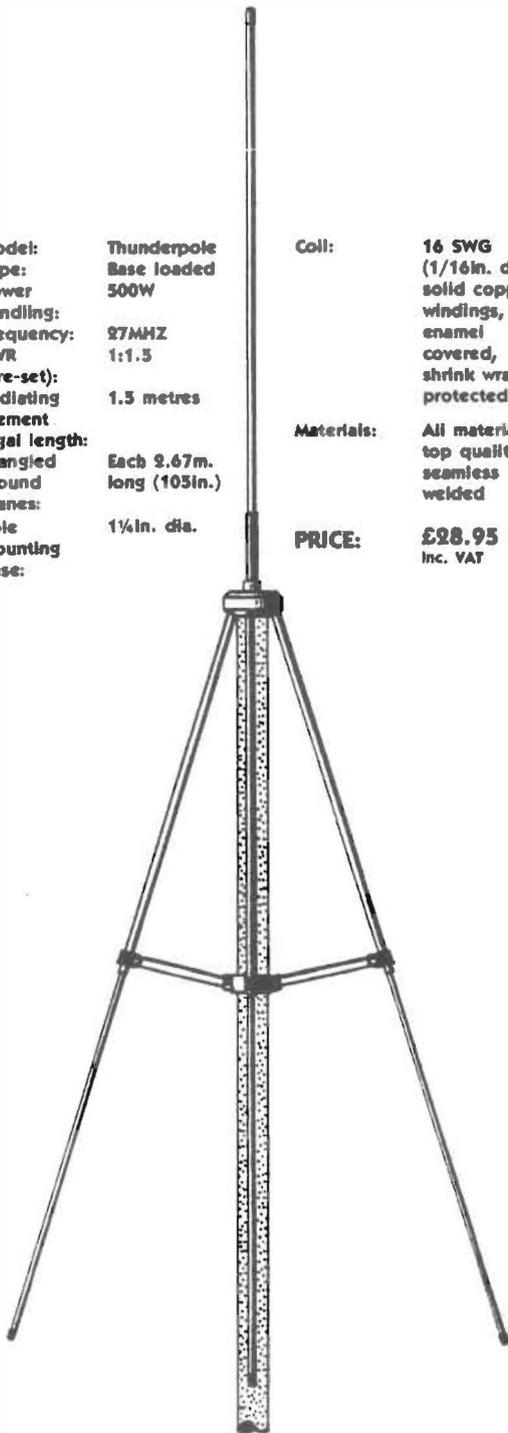
Pre-tuned UK Base Station Antenna

Model: Thunderpole
 Type: Base loaded
 Power handling: 500W
 Frequency: 27MHZ
 SWR: 1:1.3
 (Pre-set):
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 legal length: 1.5 metres
 3 angled ground
 planes: Each 2.67m.
 long (103in.)
 Pole mounting
 base: 1 1/4 in. dia.

Coil: 16 SWG
 (1/16in. dia.)
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 enamel
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 shrink wrap
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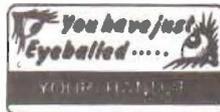
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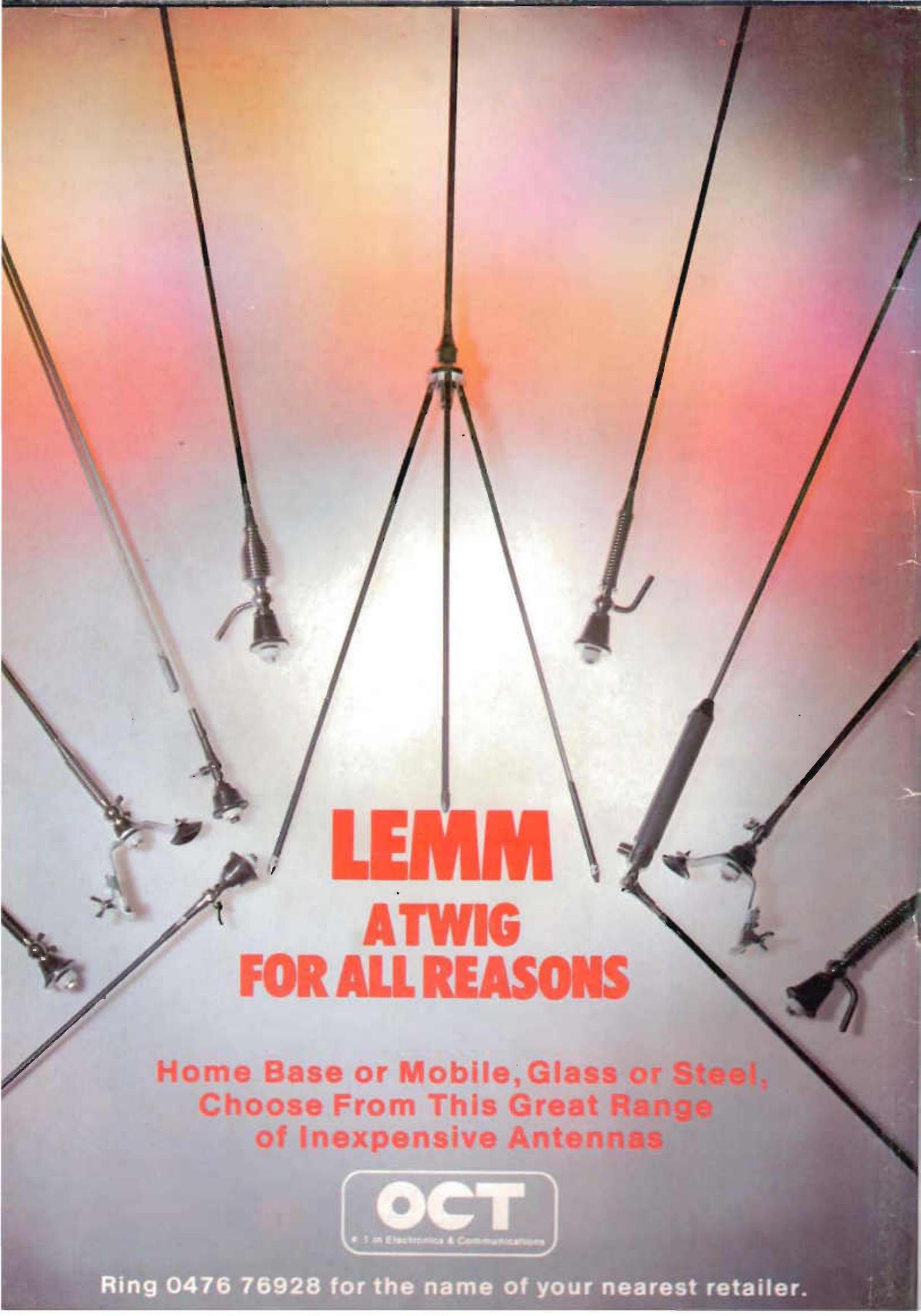
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