

# ON THE SIDE

# ON THE SIDE

# CB

## CLUB MAGAZINE FOR MEMBERS AND ENTHUSIASTS

*Solving the suppression problem*

*What happened to all the pirates?*

*H.F. linear amplifier reviewed*

70p

AUGUST 1983

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# Breaker, breaker

Well, at the time of writing this (about three and a half seconds before the printing!) your completed questionnaires are still pouring in, and we reckon we've had about 600 in all, which, in terms of magazine publishing, means we're selling around half a million copies of *On The Side!*

Only wish we were. Seriously though, the response has been really excellent, and thanks to all our readers etc for getting in touch. There's some useful information, and overall it's a good guide to what you, the CBer, wants in a magazine; plus, we now have enough feedback to come to a conclusion about how the Great British Breaker thinks.

Anyway, thanks again, and keep reading the mag!

In a position such as Editor of a CB magazine, I get all sorts of views through the post, over the telephone, about how they see the future of CB. And it's interesting to record that about 50 per cent of serious breakers think that the Telecommunications Bill will see the end of any chance of our getting AM, SSB or whatever. The other 50 per cent think that it's got to come. Undoubtedly NATCOLCIBAR and the UBA are fighting for AM and SSB in their own ways, and while they consider that the Government are probably going to legalise extra frequencies, certain Government (Home Office) and HO-linked officials tell me that there's NO WAY that we'll get more of the spectrum.

One thing's for sure; the Telecommunications Bill won't be on the list of priorities in the Commons, what with the extra mandate the Tories have now, plus the Falklands, and so on, and on. In the words of one official, it will provide us with a little more time to put our case.

In this issue we review a linear amplifier that was supplied by a certain manufacturer, one with a good reputation in the CB field. We've had many reports of their products from readers, the vast majority of whom say that the equipment works well, and it's up to standard. The linear amp we got our hands on didn't quite come up to the 'perfect' standard, although if you're interested in using CB in near-standard form, then it's good enough for you.

Enough for now, though. CB equipment manufacturers and agents note — if we review anything, we'll do it properly!

Just looking at the future schedule. There are some interesting features coming up next month, and the following months for that matter. So keep taking the tablets.

10-10

Frank V — Editor

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Please make sure that your copy reaches our offices by the 10th of the preceding month.

Editorial contributors ditto.

The publishers of *On the Side* magazine cannot condone the use of illegal CB equipment, and illegal ancillary equipment. Also, we do not accept responsibility for any damage, hardship, or other unfortunate happening which might have taken place as a result of editorial or advertisement material published in this magazine. In other words, if your new rig (which we might have recommended!) blows up, we won't pay.

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Not a CB subject really, but one that we should take note of, if we decide to go into the realms of the ham. Here, a group of Germans went on a DXpedition to a little-known island in the South China Sea. Upon arrival, some were shot and killed . . .

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Check for open circuits, continuity, shorts, switches, fuses etc. with this easy-to-make device. Also, we tell you how to use it.

# COPYING THE MAIL

## LETTERS

## LETTERS

## LETTERS

### ALFA SIERRA DX GROUP

I write to you about the Alfa Sierra DX Group in Wigan Lancs. The group was set up some time ago and has now been running for about two years. Our members have enjoyed some splendid DXing since that time and we hope to carry on getting many more copy's overseas.

The group boasts a very responsible membership and to date we have been most fortunate regarding members being able to carry on doing the thing they like best in CB, and that is getting the contacts overseas.

We do our little bit also, and do use funds to have a delegate represent us within the National Movement, NATCOLCIBAR. At first we believed it to be a big joke this NATCOLCIBAR thing, they always seemed to be falling out amongst themselves, but we gave it a try and our members have been successful in maintaining their equipment when visited because they knew what to say and what not to say.

If any SSB operators in Wigan would like to drop in on us then drop us a line to the P.O. Box and the lads will get in touch.

Keep up the good work, we think the mags great, we always get it.

**2.A.S.5 Stan,  
P.O. Box 122,  
Wigan,  
Lancs.**

73s from 51s

**ALFA SIERRA  
DX GROUP  
U.K.**

P.O. Box 122. Wigan. Lancs.. U.K.

### 934 FREQUENCY

First I wish to say how much I am enjoying your magazine, at last there is one that gives the CBER a good clear view of ways and means to enjoy and use this communication single, short range mode.

I would also like to express my view on the liaison of CB and RSGB. I think we should leave the amateur radio to the ones who want to use it, and keep CB for the others, after all amateurs have been going for years so why combine the two. Let us at least be a separate movement.

I have been very interested in the 934 frequency, but have been waiting for it to settle down as not many sets are about.

I have read that the makers of the 934 have been told to move the frequency downwards  $12\frac{1}{2}$  KHS to come in line with the European bands, please can you enquire as to whether this is correct. I would also like to make a few points for the Code of Conduct to be used on the new frequency.

1. NATCOLCIBAR representative body (as RSGB is for hams).
2. To produce your licence when buying a set, and getting it registered like you do for cars.
3. Getting a call sign to use, by the makers, or using licence number.
4. To keep prices high by using the best parts.
5. Having an age limit.
6. Plus the Code of Conduct which should now be in use.

I hope I have been a help, and felt it was my duty as a hardened CBER to give my points of view.

**Pearly King,  
Clacton-on-Sea.**

## INVA-RAD

Inva-Rad is a CB and Social Club set up over fifteen months ago with the aim to integrate the disabled into the community, and at the same time to provide them with an interest which they can share day and night.

We hope to increase the number of disabled breakers on the air and can offer some of the more housebound disabled an added security by setting them up with CB equipment, but we need **donations and sponsors** to assist us with this aim.

We are holding what is called "**A Ride of a Lifetime**", which is this in a nut shell: we have a breaker who is totally blind, and last July, he and another blind breaker drove cars in a race against the clock around Silverstone race track and did speeds of up to 80mph. The only assistance they had was the instructions from the qualified instructors by their side, and lap times were set at 2 mins. 55 secs. to 3 mins. 26 secs. for the near three mile circuit. This time he is going to drive a double decker bus at the Cranfield Airfield, just outside Newport Pagnall in Bedfordshire, on 21st August, 1983 from 2pm to 8pm and we are **looking for sponsorship** from other clubs, also **donations** from anybody who would like to be a passenger and have a ride to remember, and a signed passenger ticket to prove it. They can also have their photograph taken with the driver.

We are hoping that the money raised will help us to put quite a few disabled people on Channel and with the help of your paper and its readers we look forward to hearing from you all.

Here are a few details of the Inva-Rad Club your readers may like to note:-

Inva-Rad stands for Invalid Radio and what we want to do is to get more disabled breakers into the use of CB as it is a good way to make a lot of new friends. We hold our meetings every Tuesday night at the Working Men's Club at St. Giles Street, New Bradwell, Milton Keynes from 7.30pm to 10.30pm and to raise money we hold disco's and raffles. Also we have a tombola which is made up

of donated prizes and when all the prizes have been won, all the tickets that have been paid for have the names on the back of who bought them, win or lose they then have the chance to win a CB. We have now been registered with the Lotteries Commission which enables us to hold lotteries throughout the year. We also have different sponsorships, similar to the one we are holding in August.

**J. Clarke,  
Chairman,  
83 Kennet Drive,  
Bletchley,  
Milton Keynes.**

## PREPARE YOURSELVES FOR THE QUAKE!

Just a few lines to congratulate you on your magazine. But we must all face reality and we have only a short while before the Telecom Bill and Police and Criminal Evidence Bill will be put through Parliament and then we will all be under pressure from the RTS.

What we must do is sort the clubs out. Most clubs keep going on a dream of what they used to be. OK, now is the time that we must sort the men out from the boys. Committee members from the clubs should be getting the information from the national body, NATCOLCIBAR, and filtering this back to their membership, and it is quite clear what is going to happen.

In my opinion we will be under a pressure never experienced before in this country and if the clubs are not ready for it, then they will fold.

I can see that within six months no one will be transmitting like they are today, the Bills will see to that, so prepare yourselves for the quake.

**ZEPPELIN,  
Alfa-Sierra DX Group  
Pirate 27. AM Club, Wigan.**

# ***The tragedy of Spratly Island***

**It's not very often that *On The Side* magazine covers something of more relevance to the radio amateur, but the following story might encourage some of you to either stay with CB, or at least if you do decide to go over the wall and become a ham, to be careful — especially if you're the adventurous type . . . Frank Voller reports.**

It was some time ago, several weeks, that a group of five German radio hams chartered a yacht (there was also a woman, we understand) and then set sail for Spratly Islands, a group of islands (an archipelago) in the dead centre of the South China Sea.

Now, a more eerie and thriller-filmed sea you've never imagined, and it was here, 200 miles from the nearest mainland (Vietnam and Brunei and Sarawak) that the adventurers set out for.

Why? Well, we understand they wanted to set up a DXpedition, in order that a number of amateurs could clock up a rarely logged part of the world. What the Germans didn't know was that the islands were in some sort of dispute, and they were, it appears, having their own little war.

But, despite strong advice not to make the trip, they arrived off the coastline of the island group early Sunday morning, April 10th. Or rather, they didn't arrive — they were fired upon by one or other of the factions who inhabit the island, and apparently the yacht caught fire. The occupants sent out an SOS, and shortly after, all communications stopped. For a long time, nobody heard a dicky bird from them.

Spratly is an extremely hostile place. It is disputed by Vietnam, the Philippines, and Taiwan. The likes of you and us know little else about them, apart from the fact that they might be rich in oil and other natural resources.

What seems to happen is that small military units from each country live in and around the islands and take pot-shots at each other from time to time, so it isn't exactly a healthy place to approach on a

yacht full of wireless. We gather that, as if this weren't enough to contend with, various pirates and similar malevolent folk inhabit some of the islands and occasionally sally forth to plunder a passing junk or similar.

All in all, then, not exactly the Isle of Wight and it isn't too surprising that although it counts as a separate country as far as DXCC is concerned, there hadn't been any radio-type activity from there for years and years. In fact Spratly Island is in the top five wanted DXCC countries around the world, according to the results of a survey we saw last year, and maybe it isn't surprising that people wanted to go there and activate it — think of the kudos, the glory you'd gain by it.

However, the cold fact is that in pursuit of such distinction it looks as though six people have lost their lives. We all enjoy our hobby, sure, and we'd all be delighted to work something as rare as Spratly, but there's something here about a sense of proportion that's worth looking at. The German group were strongly advised that Spratly wasn't exactly the place to go for a Sunday afternoon picnic, and everything we've heard about the place very strongly backs that up. So why did they go anyway? Maybe there's also a legitimate question here about the DXCC status of such places; does the fact that they're classed as a country as far as DXCC is concerned, act as a stimulus to some people who apparently put the interests of their hobby above things like life and safety?

Well, you'll have seen the last word on the Spratly Island affair — tragic and very sad, and we'd like to think that the least that will be done is the removal of the

place from the DXCC list.

We'll probably never know now who did the shooting, and it's too late to do anything about it — all we can do is offer our condolences to the families of the bereaved and hope to heaven that no one tries to follow in their footsteps.

### How hams followed the Spratly Island saga



### Taken from the RSGB's "DX News" sheets.

1. Spratly Is. Operation by DJ3NG & DJ6SI as 1S3NG & 1S6SI from about March 22nd for 5 days. DJ3NG will concentrate on SSB & DJ6SI on CW. LF dipoles will be taken. QSL 1S6SI via DJ6SI, Baldur Drobnic, Zedernweg 6, D-5010 Bergheim, W. Germany. 1S3NG via DK9KD, PO Box 620260, 5000 Köln 60, W. Germany. In addition to this trip, rumours are still circulating about a DU group (inc. DUICK) making a March visit with the call DXO—/1S.
2. Rumours that the operation by DJ6SI & DJ3NG has been delayed 1 week. A group of Philippine scientists will be going to Freedom Is in the Spratly Archipelago in late March. The group includes some amateurs who have applied to the Philippine government for permission to operate. If this is forthcoming they will be QRV with the call DX1IS.
3. The German DXpedition is now expected to reach Spratly (by hired catamaran) on April 7th or 8th. There will be 4 operators, 3 on SSB 1 on CW. SSB QSLs to DK9KD, CW to DJ6SI.
4. Last contact with the DL group was at 0652 on 10th April, when they gave their location as 8°08'N, 113°12'E (1 mile off Amboyna Cay) and said they had been hit by gunfire and were on fire. Aboard the 51' trimaran were the owner and his wife, together with DJ3NG DJ4EI DJ6SI and DK4FK. Don Search has confirmed that there are no immediate plans to delete Spratly from the countries list, but islands which are being controlled by one of the neighbouring countries will probably not count for Spratly. In view of this incident it might be better if Spratly was deleted as quickly as possible.
5. 1S. The Daily Telegraph reported that a message had been received from the German group stating "two



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dead, four injured, short of water." No confirmation of this. The DU expedition is rumoured to depart April 16th. 1Z9B 21240 1610 53 wkg G2AWP.

6. Spratly Is. The survivors are now in Hong Kong undergoing medical treatment having been picked up by the freighter "Linden" after 10 days in a life-raft. The group had been in the process of leaving the Amboyne Cay area when they were fired upon. DJ4EI was killed immediately, DK3NG died only hours before the

rescue. An extensive air search had taken place but in the wrong area. Spurious reports being put out on the 20m freq, apparently by a stn in Indonesia, did nothing to help the situation. The DU groups are still expected to appear from Spratly, but will probably not count for DXCC. At Visalia the question of Spratly's deletion was discussed. The DXAC had considered its deletion on grounds of changed administration but it was generally agreed that such a course did not make sense.



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**Westward Electronics,  
The Mill House, Tuckenhay,  
Totnes, Devon, TQ9 7EL.**

**Tel. Harbertonford (0804 23) 336/370**

# Shop talk



A round-up of what's available over the counter at the moment spot anything we don't know about, or if you're selling equipment, tell us about it and we'll probably give you some free publicity! Also, if you happen to build yourself something that might interest others, let us know, along with circuit diagrams, components used etc.

The picture shows the **Sadelta HM-20**, a Spanish-made pre-amplified compressor mobile or base microphone, that's said to improve the transmission in all frequencies, AM, FM etc.

We haven't had the opportunity of testing the **HM-20**, but expect to get good results, judging from information received, and comments made by people who have used the equipment. It has four switching circuits (this information, by the way, is taken directly from the undoubtedly Spanish-printed publicity material sent to us) and it is possible to adapt it to electronic and relay switch equipment. We also gather it has a four-wire cable that makes it compatible with all transceivers using three to seven pins.

In particularly bad weather and interference conditions, the **HM-20** comes into its own, in having an output level control ie, a milled-edge wheel (like a thick 5p coin, silly) which is handily protected because it is inset into the ABS internally shielded casing. The advice given says you should use it in positions three, four, or five, and then ask other stations for the readings, in order to fine tune.

Sadelta say that it slots neatly into a support, and can be withdrawn silently, making it less uncomfortable for other stations to suffer undue noise as the equipment rasps against each other.

## Technical specifications:

- **Cartridge** ..... *Dynamic*
- **Acoustic sensitivity** ..... *16dB*  
*Control at maximum*  
*0 dB = 1 V/microbar to 1 KHz*
- **Output level for 1 microbar** ..... *150 mVE RMS*
- **Maximum output level** ..... *400 mVE RMS*
- **Gain** ..... *46 dB*
- **Modulation compressor** ..... *From 3 microbars, 16 dB to 30 microbars; adjustable with potentiometer*
- **Output impedance** ..... *1500 Ohms*
- **Charge impedance** ..... *From 500 Ohms to 100 K Ohms*
- **Switching circuits** ..... *4 Circuits (2 in output cable)*
- **Cord** ..... *Elastic spiral cable of 4 conductors (1 is shielded)*
- **Semiconductors** ..... *1 IC, 1 transistor FET*
- **Batteries** ..... *2 Mercury batteries 5,6 V Type TX-27 (Mallory or similar)*
- **Current drain** ..... *1,5 mA (only during emission)*
- **Case** ..... *ABS, inside shield*
- **Size** ..... *High, wide, thick: 102x58x32 mm*
- **Weight** ..... *100 Grs. (without batteries and cable)*

*Batteries can be bought anywhere.*



## **USEFUL ADDRESSES**

## **ON THE SIDE**

Whether you're buying a new rig, or having the old one repaired or modified, this is where you'll find the name and address of somebody who can provide the goods. If your name and address should be here, let us know.

### **Amtel Ltd., AM House, 9a Old's Approach, Tolpits Lane, Watford, Herts.**

This company markets the Alert Mobile Transceiver, a hand held that can be powered either by batteries, or by a car's electrical system.

### **D. F. Browne Ltd., 418 Portland Road, Hove, Sussex.**

Basically radio and TV engineers, but they will also test your CB and amateur equipment for you in a well equipped workshop. Good turn round in parts and service jobs.

### **CB Radio Distributors, Unit 2, Government Industrial Estate, Union Mills, Isle of Man.**

Stockists of the NATO range of rigs, including AM/SSB versions. Interesting range, well worth a look.

### **Car Radio Fitting Specialists Ltd., 17 and 23 Truro Road, St. Austell, Cornwall.**

This company are one of the largest suppliers of CB equipment in the area and are well respected as CB retailers and repairs, despite the name. In fact, they specialise in CB equipment, and can repair, modify, any CB device you care to give them! Providing, that is, the parts and information are available. If you're in the area, call in and look over the range.

### **Catwhisker's CB Centre, 25 Chatham Street, Reading, Berks.**

Well equipped workshop that can repair and modify CB equipment. They will also sell you their own cat call (selective calling) units. Good stock of parts.

### **Connectors, 11 Western Parade, Barnet, Herts.**

Specialise in budget prices of transceivers and accessories. Everything from AM/SSB/CW rigs to power mikes and burners.

### **East Coast Aerials (Communications Division), 2 Anson Road, South Town, Great Yarmouth.**

As the name implies, they specialise in aerials for anything, but can turn their hands to any electronic and radio equipment, including CB.

### **Equestrian Electronics, 2 Llugwy Road, Kinmel Bay, Rhyl, Clwyd.**

Said to have the best fitted out workshops in North Wales. Specialise in the repair and conversion of CB equipment. They will supply the customer with a computer read-out of his rig's performance once it has been repaired/modified.

### **The Fixers, The Shop, Kingston, Fochabers, Moray.**

Repair and selling of CB equipment. His aim is to provide a fast and reliable service to breakers.

### **Gadgets, 6 Windsor Street, Uxbridge, Middlesex.**

Repair and modifications taken on in this fully equipped workshop. Retailer of CB equipment too.

**KCB Electronics,  
641 Hollins Road, Oldham.**

Full rig repair service and they offer expert advice to customers. Stockists of many well known ranges of CB equipment, and they now also run a video film club.

**Kernow Audio and Sound,  
50-54 Mina Road, St. Werburghs,  
Bristol 2**

Wholesale and retail distributors with their own service and repair workshops. Will also convert your rig.

**Llanelli CB Centre,  
21 Station Road, Llanelli, Dyfed.**

Distributors to many retailers across the country, but also have their own well equipped repair shop. Specialise in a quick turnround of parts and workshop repairs.

**Micro Comms,  
372-374 George Street,  
Aberdeen.**

This company specialises in the repair and service of CB equipment, amateur and computer goods. Man in charge is Alex Allan (same as the amateur radio specialist Amcomm?) and the firm have a large stock of components, and well equipped workshop.

**OCT International Ltd.,  
01 808 5656 or 0476 76928**  
Sole importers of the K40, plus full service and back up. Ring the numbers for your nearest stockists.

**K.P. Parker Electronic  
Services Ltd.,  
Pitts Store, Bishopstone,  
Salisbury, Wilts.**

Keith Parker has been on CB channel since 1963, so he should know something about the subject! They specialise in the sale and service/repair of all radio communications equipment.

**J.A. Perez,  
91 Perowne Way, Sandown, Isle  
of Wight.**

Specialises in electronics, including CB repairs, conversions, and modifications.

**R. W. Pollock & Co. (Radio  
and Television) Ltd.,  
254 Barkerend Road, Bradford,  
West Yorkshire.**

Repair service to amateur radio and CB users. They have a fully equipped workshop and sell CB rigs. Large range of components held in stock.

Mr. Pollock repairs, sells CB equipment, and is involved in providing CB rigs and advice to the disabled. He has a fully equipped workshop, and a large range of components held in stock. Last month we said he didn't sell CB, so we apologise for the error.

**Telecomms,  
189 London Road, North End,  
Portsmouth.**

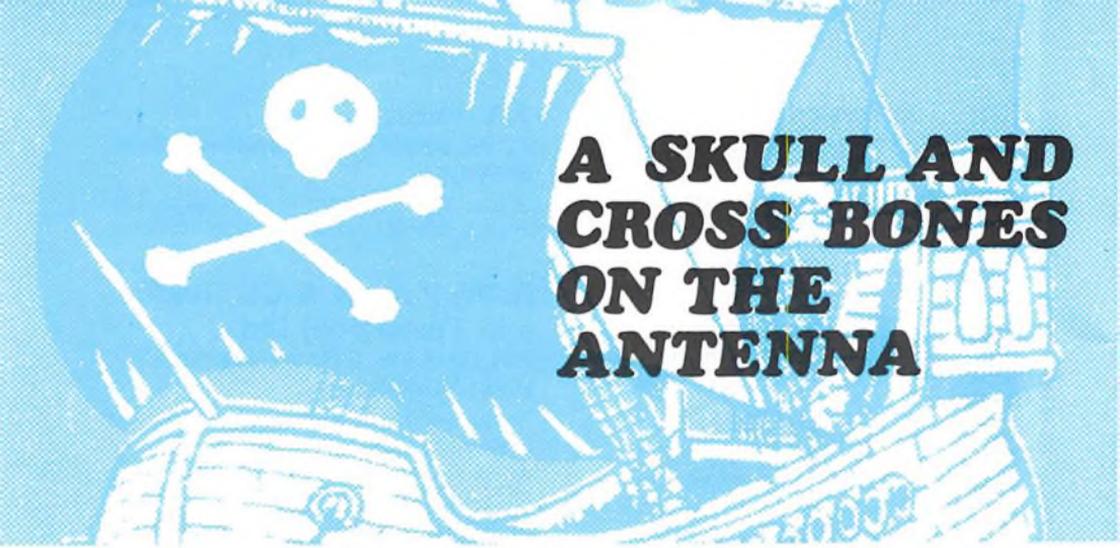
This firm wholesales to hundreds of shops in the South East of England as well as running their retail outlet in Portsmouth. Two workshops well equipped to repair and modify CB and amateur radios.

**G. H. Wilson & Co. (Shilton)  
Ltd.,  
Hosiery Street, Bulkington Road,  
Bedworth, Nuneaton.**

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**Zippy Electronics,  
8 Spring Close, Bradpole,  
Bridport, Dorset.**

Service for all electronic equipment, including CB. Will take on all repairs and service, and will install a rig into your car for you. Good range of parts in stock.



# A SKULL AND CROSS BONES ON THE ANTENNA

**Pirate radio could be a genuine art form; at least that's what history will say about the subject. Here, Lucius Quix researches the early (and present) days of pirate radio, and wonders why they are not still around today.**

It's rumoured that a certain commercial radio station (that's an outfit that plays records for money, more or less) tunes into the pirates in order to find out what's going on in the *real* radio world. As with CB radio generally, pirate radio involves all kinds of characters, from genius down to mere radio mechanic. A few have nothing much else in mind, other than a few well-chosen words plus the playing of pre-recorded cassettes on the air.

Could it be that they have ambitions to work on commercial radio? Maybe. After all, even that is better than YOPS. But let's take a peek at a typical pirate radio enterprise; it's as thrilling as anything you'll see in the Flash Gordon serials — and twice as risky.

Down in the forest something stirs. An elderly car, suddenly devoid of those colourful pirate radio stickers, draws up in a glade. A few lively characters, almost certainly in their twenties, tumble out with some assorted radio gear, some of which looks a little ancient. A dipole antenna, in a T-shape, similarly has a homespun appearance (and certainly wouldn't get past the commissioner at Broadcast House). A modest transmitter, between ten and twenty watts output, is placed under a tree; some DIY electronics run from a couple of car batteries, and a tape cassette player linked to the transmitter.

There is some final check of this instant studio under the elms, a few minutes waiting until the scheduled hour arrives, and finally the equipment is switched on. Theoretically, eager listeners to pirate, alternative or 'free' radio within a few miles radius, perhaps more, are receiving Radio Dandelion — or whatever identity the stations has at that particular moment.

The transmission will last up to two hours, in most cases, the pre-recorded tape offering music, chat (often about other pirate stations) and maybe some personal promotion. Whilst all this is going on, the car will be placed ready for a quick departure. The "engineers" will maybe climb a tree to keep a watchful eye for the looming figure of authority, ie British Telecom Fun-Spoilers.

One or two of the team may check via the CB, or, more likely, by telephone — assuming that a local call box is in working order — that the signal is coming through. Ma, or another member of the family, will have the home receiver tuned to the frequency. In

most cases, the woodland scene is undisturbed by the sound of heavy footsteps and the colloquialisms of Buzby: "Hello, hello, hello. What's all this round 'ere, then?"

Given that this kind of thing goes on all over the country these days, you might think that there is a severe shortage of quiet places in which to run a pirate station. Maybe that's why they're chopping down so many trees . . . Incidentally, you will find ecology-interest stations, a growing aspect of pirate radio. However, the patchwork of stations is very colourful, and it is hard to generalise.

As the practice is certainly illegal, we cannot do more than report what is going on around the country today. This article should not be seen as any encouragement to take up a new hobby, though a walk in the country is always neat. A surprising amount of low-powered transmitters seem to be around, probably imported from Western Europe, as pirate or free stations in those countries up-grade their equipment. In any case, in that electronic haven of Japan, it is possible to buy low-powered FM transmitters for 'apartment block' radio, for as little as £200 a time. And it seems to be a legal transaction. Maybe a liberal attitude to use of the airwaves has something to do with the health of the home domestic electronics industry.

The Japanese FM transmitters operate in the 76–90MHz region, and have a range of about 150 metres. As long as these operate within the maker's limits, ie are not souped up, they are completely legal. In the process, they help sell other electronics equipment to back yard broadcasters — tape decks, turntables and all the rest of the neat studio merchandise.

Incidentally, this business started when an enterprising kit manufacturer in a suburb of Tokyo sold a kit-form transmitter that could be run from a nine-volt battery. He hit, you may say, the jackpot, and, as the power used does not reach the legally-enforceable minimum, there was no problem with the oriental equivalent of Buzby, probably known as 'Madame Flutterby'. It is a pity that we could not have some similar initiatives here in Britain, if possible, with British made (kit-form) equipment.

There is a growing interest in the do-it-yourself aspects of radio, and at a time of sustained unemployment among the market most interested in pirate radio (the under 25s) it would offer some modest compensation for lack of 'a real job'. We all like 'playing radio', and whilst we have no time for those buffoons who use the CB channels for their gruesome versions of Radio One, we do understand why they do it.

The interest in pirate, free or alternative radio is a world-wide phenomenon. Wherever the authorities work on the basis of "they know what is best for the human race" (in radio or anything else), you will get some kind of reaction. In Poland, the Solidarity Movement has been using its own quick-on-the-move radio station. In Western Europe, anti-nuclear and ecology groups have started using their own transmitters to get their point of view across, in the face of what they see as 'establishment media'.

Indeed, the political aspect of alternative radio is one of the more interesting, and certainly thought-provoking aspects of the scene. Extreme propaganda may be broadcast

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on such stations, and stir up local discontent. CB was alleged to have been used in the city riots that hit Britain a year or two ago. Many would have their doubts about this, in terms of FM or AM. At least one CB club in a city hit by the riots reported that members monitored all the channels, including SSB over a 24-hour period, and after that, ran several spot checks. There was not even a single example of CB being used to cause trouble for the authorities (and had there been, the CB monitors were certainly intent on reporting it to the police). Pirate radio could pose different problems, since it is harder to find the frequencies being used at any particular time.

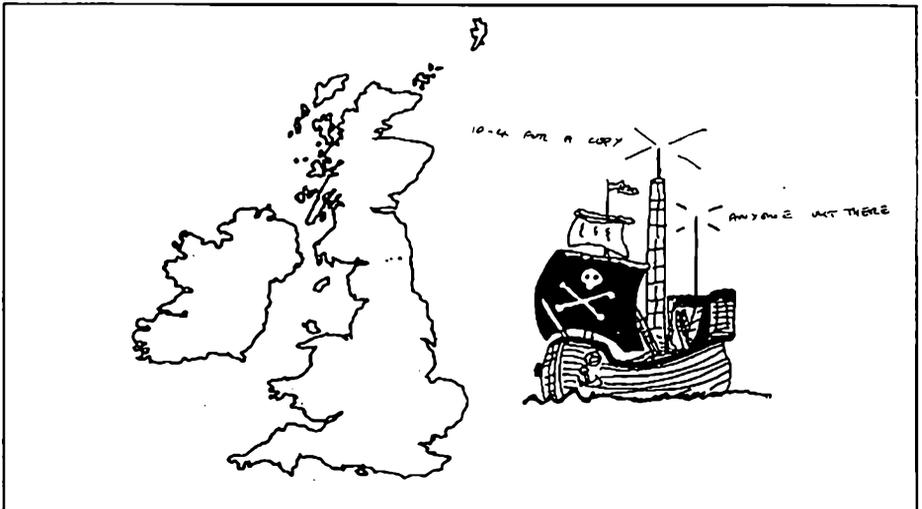
But almost all of the pirate radio scene is not political, or even bad tempered. You might call it 'fun radio' in the sense that it consists of enthusiasts risking life and liberty (not to say hard earned mazzoolah) in the cause of liberated frequencies. The history of the commercial pirate stations has had its moments of drama, Dallas style. Sometimes, Chicago, by comparison, has seemed a quiet place.

One reason why the offshore pirate stations were so popular was that they provided a lot of pop, including latest record releases. The BBC was always slow to pick up the pop prospect, one reason why Radio Luxembourg and the other commercial stations on the continent pinched so large a chunk of the Beeb's audience from the late 1930s (when the commercial stations opened).

You would have thought that the BBC might have learned that lesson, in its post-war programming. There may have been some problems in arranging 'needle time', ie the amount of time that could be allocated to discs, as distinct from live performances by members of the Musicians Union, etc. When the pirate stations arrived on the scene, they offered discs, discs and more discs. Of course, they did not bother much about the laws of copyright. As far as the music industry was concerned, the pirate radio ships were as welcome as a convention of video pirates is to an honest film maker. Young fellows doing their own thing by way of a low powered transmitter similarly overlook the financial needs of the recording companies, song writers and artistes.

But the dee-jays were usually a respectable bunch of characters, many of whom finished up working with the BBC's Radio One (the Corporation's long delayed answer to the joys of commercial broadcasting). In the bad (good?) old days, they had to hold the equipment together, or even in place, during rough weather. It was, you might say, a heck of a way to get a job in radio!

Radio Caroline was probably the most famous of them all, though the past tense may



not be entirely appropriate since there have been reports of its possible re-appearance. Caroline started its very adventurous life on Easter Sunday 1964, from an equally famous craft 'Mi Amigo'. It had been equipped for its new career at Greenore Harbour, Ireland, in 1962, though by that time other pirate stations had already started operation.

'Mi Amigo' is still known among the pirate radio fraternity, and given as much regard as the famous liners that once crossed the Atlantic, carrying the folks who don't normally have to bother with the DHSS. The pirate broadcasters were beyond the boundaries of national territorial waters, and in that sense, were not easily apprehended. In the end, they were struck by a guided missile known as The Marine Broadcasting Offences Act of 1967.

None of the pirates at that time could have proceeded without the income derived from commercial advertising. Remember, this was well before the advent of all those neat and sweet commercial (ILR) stations in Britain. And, as the afore-mentioned Act made it illegal to advertise on, or otherwise supply, a pirate, ie offshore radio station, there was a rapid tightening of the screws. As even dee-jays have to eat (at least once a day, we hear), the Act pulled down the shutters. In short, it was the Exocet of the radio war.

But the law, once again, proved a little inadequate. Take the occasion that the sea-going 'Mi Amigo' got struck by a storm and found itself in British territorial waters. At once, justice was seen to be done, and a dee-jay named 'Jason', formerly spinning the discs on Caroline, was hauled up in court under the Marine Broadcasting Offences Act. The proceedings proved less than satisfying for the officials who wanted the young fellow clobbered. The judge suddenly stopped the hearing, and ordered the jury to find 'Jason' not guilty.

Seems that the legal arguments offered by the prosecution rested on the fact that the dee-jay had been engaged in a *live* broadcast. But it was not clearly shown to the court that the broadcast had been *live* and not *recorded*. When the defence lawyer submitted a request that the dee-jay's costs be met, the judge refused, pointing out: "He is a young man who, with others, decided to cock a snook at society. He said he was going to be a disc jockey on Radio Caroline, and set about doing it. When he set foot on that boat, and went into the studio, he knew he was doing something he should not have been doing." Maybe that's why it was so much fun!

Radio One was started in October 1967, and once it recruited those bright-eyed turntable clutcheders from the pirate stations, it went into top gear. And eventually commercial radio was introduced into Britain, to give the advertisers a nice option for the mazoolah that, in earlier years, might have gone to the chubby tubs on the high seas. Still, there's no denying that *some* ILR stations have not developed the personal 'club' atmosphere that some of the pirates had.

Look at the wealth of home-spun publications on pirate/alternative radio, and you can see that they built up a loyal audience. Even years after many, and maybe most, of the original stations disappeared, there is a good market for their QSL cards, photographs and other ephemera. How many ILR stations can claim that sort of loyal following? The

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continuing interest in pirate radio says something about the need to get more people somehow involved in a creative medium.

We do not want more disc jockeys, but perhaps more real involvement by non-professionals. When professional broadcasters say that standards would not be technically high, or would otherwise not interest a large audience, they are probably right. But, it would be worth experimenting along the lines of that Japanese initiative, apartment-block, street or village-size radio audiences.

In a 1978 issue of *Free Broadcasting*, one of the interesting if homespun publications on the alternative radio scene, one of the 'Radio Jackie' workers reported: "In eight years, Radio Jackie has been fined at least £2,000 and we have had another £2,000 worth of transmitting equipment confiscated. Two of our members have been sent to prison, and three have been given suspended prison sentences, but there is always more money available, and more people to continue the campaign for local community radio . . . We are contravening the 1949 Wireless Telegraphy Act by broadcasting without a licence, but we would certainly never consider ourselves criminals. We are a dedicated group of radio enthusiasts, intent on achieving our aim of a local community radio station in every large town in the UK."

At that time, the transmitters were situated in southwest London, though it was pointed out that the programmes were not pre-recorded at a complete studio in the middle of a field of cows; a reference to the country-loving habits of the pirates.

The *Free Broadcasting* report was a timely reminder of the real conflict going on in the radio world. No one here at Leeds or we imagine any other responsible paper, would advocate a free-for-all in the frequencies. Nor, for that matter, the use of radio to stir up local social discord. But surely we ought to be able to get some kind of settlement for community radio without sending its enthusiasts to prison. It is not the kind of answer that one would expect in a civilised country, even if we might anticipate it in the dictatorships around this troubled globe.

The alternative radio magazines were among the most energetic advocates of a legal CB system here in Britain. You will find, in *Wavelength*, *Free Broadcasting* and other publications of the 1970s, carefully-detailed articles on CB use and possibilities. Let's hope that they are similarly successful with their campaign for a new form of radio that relates to the needs of ethnic groups, really local interests, and a necessary revitalisation of the urban community.

**The arguments are not going to disappear, and, in the context of Britain's continuing social problems, may become far more pointed.**

Elsewhere in Western Europe, the interest in do-it-yourself radio and even television is booming, even greater than that in Britain. The pressures on the authorities in France were so great that President, M. Mitterand promised to liberalise the airwaves. He has been hard to put that promise into effect, since, naturally, the established broadcasters are concerned less a form of anarchy will upset the well-established arrangements.



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Professionals usually like to keep the radio fun to themselves!

It is estimated that at least one thousand 'unofficial' ie pirate stations, have been operating in France. The riot police have been called in to keep the radio peace, but the pressures on the authorities are impressive. It seems that in the Paris area alone, between nine and a dozen transmitters are sold every week. Replaced transmitters possibly find their way here. Standards of the stations are often amateurish (to say the least) but there are some worthwhile efforts, and it would seem logical to find some kind of solution — for example, providing legal facilities for stations with a three-mile transmitting radius (and not carrying advertising).

That is a story that must be continued, for the French pirates are as keen to argue politics, ecology and the way to better things in general, as to merely play singles and greet the record-hungry majority. The success of the 'Green Party' (the anti-nuclear, environment protection party) owes a lot to alternative radio.

London, like Paris, is a centre of activity (though we probably do not match the French in sheer output yet). Stations broadcast on medium wave or VHF/FM usually at weekends, and some exploration with a decent receiver should pick up a few. Those often less-than-popular tower blocks of flats have helped pirate radio, in that you can get a good signal out from the top of them, with relatively modest equipment.

In closing this brief review of the pirate radio scene, one inevitably comes back to the allegation that it is mere radio 'piracy'. Socrates, the great Greek philosopher, was called the gadfly of Greek politics. Just when the politicians of his day were snoozing away, deeply content with what they had achieved, old Socrates would pop up and start asking some awkward questions. As these persistent questions revealed the shallow thinking and muddle of the political hierarchy, they were not too happy with the old boy. In the end, they sentenced him to death.

If he was around today, Socrates would probably be into pirate radio. That's why I suggest that the old phrase 'pirate radio' might be replaced by something more appropriate. How about 'gadfly radio?' Any suggestions from budding PR and marketing persons?

*Note:* A source of tapes and pictures on pirate radio is: Radio Gemini (Ra Gem Enterprises) 10 Apsley Grange, London Road, Apsley, Herts.

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**"I have a Cybernet Beta 3000 installed in my car, with a Thoro-breed twig. I have all sorts of suppressors fitted, including a CB noise filter system NFS 1000. My car is a Mk.III Cortina. My Cybernet has disco lights, and is all right without the engine running. As soon as I start my engine, my disco lights all light up, and go up and down with my engine revs, and I hear a loud shushing noise. Can you please help?"**

*T.W. Fletcher, Newmarket.*

It's obvious from the above, that Mr. Fletcher does indeed have severe interference problems, so I thought a few notes on rig installation might be of interest.

To start off with, glass fibre cars (and yes, I know the Mk.III is not made of glass fibre!), are bad news, so avoid them like the plague. If you are unfortunate enough to have as your runabout something like a Lotus Esprit, then exchange it for something made out of good old Leyland tin like my Mini van, or maybe the editor might part with his Escort as a straight swap — if you twist his arm.

Having got your real steel car, the first thing to do is choose a site for the antenna. Mount the antenna as far as possible away from the engine compartment, and on the opposite side of the car to the distributor, taking great care that the earth connection on your antenna makes good contact with the car body; if in doubt clean the paint off. Many people say the absolute centre of the roof is the ideal location.

When you fit the rig inside your car, keep the battery leads as short as possible, and well away from other cables. Always take your leads direct to the battery. There is far too much electrical noise on the accessory connections provided by the car makers, and if you must have long leads in the engine compartment, use screened wire.

The state of your battery will also make a difference; if it is getting on a bit, it may not be fully taking the charge from the alternator, so any interference from your charging system instead of being absorbed by the battery, is passed on to your rig.

Now to the suppressors themselves. You need one from the SW connection on your ignition coil. The ignition leads on most cars cause a lot of noise, so replace

the lot with a set of Sparkrite's new highly suppressed cable. Next, try fitting a copper wire from the car bonnet to the body. The hinges rattle when you are driving, at least mine do, and it causes an electronic noise, apart from being generally noisy. The exhaust system makes an incredibly good antenna on 27MHz, it is nearly the magic 8' 6" long, and it is nicely insulated on rubber straps, but one end is connected to the engine block where the nasty noisy spark plugs are. To stop your exhaust acting as a transmitting antenna for the engine, fit copper straps across each of the rubber mountings on the exhaust to securely ground it to the car body.

You might like to join other loose bits of your car together as well, any metal rubbing on metal can cause interference, so put a strap across the boot hinges (if necessary) and maybe even weld the doors shut and do a 'general' spray job! If, after all this, you are still getting interference, and you have drilled too many holes in the car to sell it, then try and trace

exactly where the noise is coming from.

For example, borrow the battery out of your neighbour's car, stick it on the passenger seat and connect your rig to it. Has the interference gone? If it has, then it was coming in on your battery leads. Fit a choke in them. You can also get a choke to go in the alternator lead, and spark plugs with built-in suppressors. Or maybe your dynamo/alternator needs a new set of brushes.

If however the noise is just as bad on your 'borrowed' battery, then check the earth connection on your antenna, fit more heavily screened (better quality) cable on your antenna, and buy this from a proper 'ham' shop. And make sure your antenna cable does not pass close to other cables or go through the engine compartment.

Finally, if all the above fails, switch off and take up fishing.

**Interference checklist**

Solving suppression problems with CB is

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similar (if not identical) to the same job with in-car radio. Your car handbook might contain hints and tips on curing interference, or you might find books and motoring magazines will carry the odd articles on radio interference and how to cure it. Anyway, here is a list of symptoms and sources that will help you decide where to put that capacitor or suppressor.

**Symptom:** Whining noise.

**Reason:** Dynamo or alternator.

**Symptom:** Ticking noise that changes in pitch with engine speed.

**Reason:** Noise emanates from distributor, high tension leads, spark plugs, or coil.

**Symptom:** Sizzling at high revs, or spitting noises.

**Reason:** Control box, regulator.

**Symptom:** Buzzing now and again, but mainly at high revs.

**Reason:** Check the instrument voltage stabiliser.

**Symptom:** When electrical accessories are used, crackling or buzzing.

**Reason:** Wiper motor, heater motor, screen washers etc.

**Symptom:** Ticking noise as indicators are used.

**Reason:** Indicator flasher unit.

**Symptom:** On dry roads only, buzzing noise varying with road speed.

**Reason:** Tyre and wheel electrostatic.

**Note:** The capacitor is fitted (normally) by taking the flying lead from the little unit and connecting it to the input (B terminal on an alternator), and mounting the capacitor itself to a suitable earth. In the case of an alternator, an alternator mounting bolt is ideal. On a coil, connect the capacitor's flying lead to the SW terminal (or plus/positive on negative earth cars).

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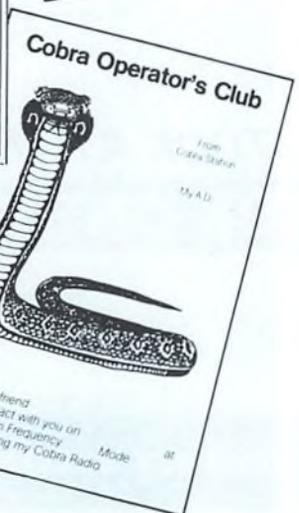
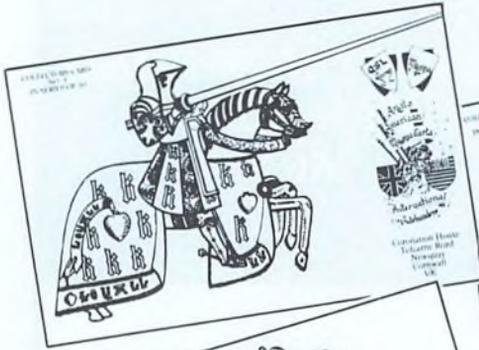
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## ***SL250DX HF Linear Amplifier***

**The editorial staff of *On The Side* puts this equipment through its paces, and finds that it has a probable use by amateurs as well as CBers.**

A natty piece of gear arrived with a dull thud (it weighs about 46 tons, or at least a lot) on the editorial desk the other day — it was the Model SL250DX linear amplifier. This beast has a specified frequency range of 1.9 to 30MHz and reckons to give more than 100 watts of AM out for somewhere between four and 15 watts PEP in. That's a rather odd way of specifying it, by the way, since you'd usually use PEP (standing for Peak Envelope Power) as a rating for an SSB transmitter. Quoting a power output of "more than 100 watts" on AM doesn't tell you anything about the performance on SSB except indirectly, and the spec is definitely a bit on the evasive side. Anyway, we'll come back to that later.

A range of 1.9 to 30MHz is pretty well the entire HF spectrum and the idea of an amplifier such as this is to be able to cover such a wide range without any adjustments being necessary — for example, if you were an amateur operator using the 3.5MHz band and you suddenly decided that you wanted to operate on 28MHz instead, you wouldn't need to re-load or re-tune the amplifier. You'd probably need to do quite a lot to the antenna matching, however, since apart from big log-periodic arrays which cost a zillion pounds and cover about the same amount of acres, there's no known antenna system which presents a nice 50 ohm impedance to the transmitter over such a frequency range.

Anyhow, back to the amplifier. It's in the usual style of a big black heatsink with some switches, a meter, and so on on the front drop. There are a couple of hefty leads with which to poke about 12 or 13 volts into it (the spec says 13.8 but amps like this aren't sensitive to the odd volt or so less as long as you don't exceed 13.8 or so) coming out of the back.

There's no circuit diagram supplied, so we couldn't see *how* the beast was supposed to work. Whipping off the lid revealed a pair of MRF454 transistors; these are a good old standby from Motorola, and a pair of them in this sort of circuit with 12 volts applied ought to be able to produce about 150 watts peak envelope power on SSB and about 40 or 50 on AM. Which is more or less what we found — but we'll come to that. It looked quite well built, with hybrid matching into and out of the devices and what looked suspiciously like a thermistor above one of the devices to keep the bias stable with temperature. It might have been nice to see it in — erm — more intimate contact with the transistor it was looking after instead of floating a few millimetres above it but it wasn't possible to see how and where it was connected so we might be doing 'em an injustice.

There's also a broadband preamp in the amplifier, based on a bipolar transistor used in a totally broadbanded circuit — measuring it suggested that there was still a bit of useful gain at about 80MHz!



So it was time to get the test gear out and take a look at what happened. There's a switch so that you can select between four watts or 10 watts input, and we found that putting four watts in the "4W" position produced just on 145 watts PEP output. In the "10W" position we got about the same. However, at this the amp was somewhat into saturation and the harmonics coming out were a bit over-the-top, taking the drive down to just under three watts brought the output down to about 140 watts PEP and that seemed a realistic output power. Going to FM we saw about 125 watts of useful

power, again to the point where the thing ran into saturation and increasing the drive didn't produce any more power. We'd suggest that three watts and eight watts respectively are reasonable input ratings for FM, and ideally a whiff less on SSB.

At this, the spectrum analyser showed various interesting things. We started testing at 2MHz and went up in increments of 2MHz right the way up to 30MHz. The gain varied somewhat over the frequency range, and so did the harmonic content — the best figure was at about 16MHz, when the 3rd harmonic

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was about 35dB down. The worst, funnily enough, was around 26MHz, when the 3rd harmonic was only 22dB down. This is the sort of performance you'd expect in a broadband amplifier with no filters in the output, and we'd strongly recommend that if you use this you stick in some decent filtering because otherwise you'll upset some other radio users in a big way!

Linearity on SSB wasn't too bad for a solid state amplifier — the classical two-tone test showed third-order products 22dB down on one tone at 130 watts PEP and fifth-order about 30dB down. Here again, this is the sort of performance you expect from a broadband PA with not much in the way of sneaky design. It's very difficult to design high-power amplifiers using transistors which are highly linear, and this one is typical of its breed.

The preamp wouldn't do much for you unless you were mobile and using (a) a naff antenna and (b) a pretty deaf receiver. It was rather prone to various forms of overload in the presence of strong signals and with a decent antenna and a good rig it didn't make any real difference. However, it could make the difference between a copy and no copy under some circumstances on the higher frequencies.

General conclusions: not a bad bit of kit, but we wonder which market it's aimed for. It's technically illegal for CB use, and there aren't many amateur HF rigs with four watts output. Reading

between the lines we guess it's handy for the radio amateur who has an SSB exciter and wants a bit more power to his elbow, but there's no real point in a broadband amplifier like this for CB use.

We'd have liked to know more about who made it, seen a circuit for it and had something more in the way of a specification which meant something, and we must confess to being a bit mystified as to which market it's meant for. However, if you want a broadband HF linear amplifier for some reason this one is as good as any we've seen and looks as though it ought to be handy for mobile use of one sort or another. We liked the facility to switch output power and the choice of whether or not to use the preamp; this is where many linears with built-in preamps fall right down because there *are* times when they do more harm than good and it's nice to be able to remove them from the circuit. Just don't flatten the car battery on top of a hill and then find you can't get home!

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## ***ES-880 Echo Chamber***

This is a delightful little piece of gear. The idea is to add a variable amount of reverberation to your voice, allegedly for better readability. Well, we rather doubt it'd do that, but it's certainly a different effect!

Technically it isn't that easy to do either, and the ES-880 uses some remarkable nifty technology to do it. If you're the BBC you use a room with a mike at one end of it, a speaker, and it's messy; this gizmo does it with what is known as a "bucket brigade" integrated circuit, and does it very well.

You can have up to about a fifth of a second's worth of delay and a variable repeat time — which adds up to anything between a creepy-voice-coming-out-of-the-haunted-crypt effect and a more gentle soft echo such as you'd hear in a very

large room. We can imagine that this might possible enhance the readability of your signal under some conditions, but either way it's a load of fun and you'll certainly stand out in the crowd!

You can use it with any rig you like, provided that you don't mind sorting out the connections into the microphone socket on the rig itself, and all it needs is 12 or 13 volts input. A couple of nifty LEDs on the front tell you whether you're overdoing the input level and getting too much of the cathedral effect at the expense of anyone understanding a word you're saying — there's a pot on the back to tweak the repeat time as well.

Really wild! Very well put together as well, we thought, and guaranteed to freak out your locals.

## **Getting the Push**

Chevin Breakers CB Club are holding their Annual Barrow Push & Rally at Bridge End Cattle Market, Otley, Yorks at 2pm on Saturday 16th July. This is a great chance to push someone else around.

Last years event raised over £1000 for charity and this year they hope to beat this figure.

*Breakers from everywhere are welcome.*

**More details available from the Secretary on Otley 461776**

# CHEVIN BREAKERS C-B-CLUB

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# A WINTER'S BREAK

**For the first time, John Scott takes a good look at CB, gets himself a rig, and goes on the air...**

CB radio has been in the air (pun) for some time now, but it was only after a friend suggested I get myself a rig that I took a real look at what it really meant.

At first I was baffled by all the technical terms that CB users casually let drop, such as 'standing wave ratios' or terms like 'sidebanding'. For quite a while I was a bit worried about having ultra-high frequency, assuming that I would end up either full of radiation or have a high pitched voice.

Don't worry, I was assured. You don't need to know all that stuff, just use the rig as if it were a radio you can talk back to. The pressure grew for me to have a rig, and I started to work on the better-half. You know the sort of thing. Mention CB as often as you can, notice that everyone else seems to have a rig in their car and leave CB mags lying around.

I took the first step by purchasing a secondhand rig and an antenna. I'm the sort of person who 'does it himself' and until proved otherwise, will have a go. Some call it meanness. It was then I realised that I did need to know *something*, or I would be cooking the rig, and if not, myself. I found a couple of books but none of them told me what I really wanted to know; it's always assumed that the reader has a degree in electronics. I am only a simple person!

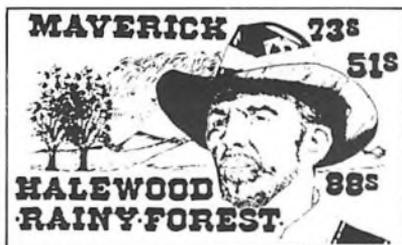
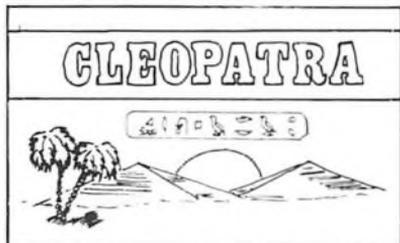
After asking around, I eventually set to and spent a Saturday morning under, over, and inside my estate car. In my innocence I just got on with ripping out the dashboard and somehow, more by luck than judgement, fitted the rig. I had no idea about tuning the antenna to the rig, or that one should not transmit at all until the rig is connected to the

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antenna. I had purchased the proper 50 ohm coaxial cable and the coaxial plugs and a double socket coupler. But I did not have a clue how to actually wire them up.

I have never yet seen a wiring diagram for these items! If in doubt ask a child — *you* see, it's so easy to fix them, now that I know how. The boy next door looked on in pity as I proudly followed his instructions. From then on it all seemed so much easier. I did everything I was told. However, when everything had been installed, he did give me a funny look when he plugged in the SWR meter and found the antenna was reading between 1 and 1.5 (this is supposed to be very good I'm told). Beginner's luck. Yes folks, it actually worked when I turned it on because I could hear someone frying bacon. But does it really have to make all that background noise?

How is it that one's own children always know when you're up to something? Hardly had I relaxed and was about to listen in to other breakers when the entire family appeared and wanted daddy to say "One Four for a Coffee". Well, that's what it sounds like to them. Ah, this is where I really make a fool of myself. After saying 14 for a copy for what seemed ages, I began to wonder if the rig was working? What had I done wrong? But no, a kind, patient understanding breaker of many years' experience answered my call. Break a window? Oh, go to another channel. There are 39 from which to choose. Yes, I am on channel. What's my handle? My what?

My better half, who has said nothing for weeks suddenly said: "Go on Superstar, give him your handle." How comes she knows all this stuff. Now I know why she has been reading the CB mags so avidly for weeks.

That was all six months ago; I don't know how I managed without CB before. Life seems to have become a different experience. A whole new horizon of people has suddenly opened up to me. My wife has her own rig and we are already thinking about getting a home base. What was comforting to discover, was that the breaker I first made contact with had been on the air for only a week.



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# Questions, questions, questions...

As we continue to produce more issues of *On The Side* magazine, we try to make sure we don't lose sight of the fact that there are many hundreds (if not thousands) of newcomers to the hobby each and every month. So, to help our new readers get their grounding, and learn a little more about how their hobby began, we reproduce here a few questions, plus answers, that are often asked by novice breakers.

## **Q: WHAT IS IT?**

**A:** CB is an abbreviation for citizens' band radio and it is just about the simplest form of radio imaginable; it is 'black box' technology come to life. In its basic form its only controls are on/off, volume and channel selector, and a mobile unit is no larger than an ordinary car radio. Yet it allows anybody who owns one of these cheap devices to speak freely and at will (conditions permitting) with anyone similarly equipped within range.

There are virtually no restrictions on its use and anyone with the appropriate licence may use one — even a child. The sole purpose of CB is to provide everybody who wishes to participate, with a cheap and simple means of communicating with anyone in the vicinity. CB is not like a telephone because it is open for general use there is little possibility of having a private conversation. For this reason it tends to be used for generalities and recreational purposes, except where its more practical and beneficial functions pertain.

## **Q: WHERE DID IT COME FROM?**

**A:** CB was the brainchild of Al Gross, known to millions of CBers as the Father of CB. Sufficient to say here that he is the Vice President of our organisation NATCOL-CIBAR, and he started it all in the USA as long ago as 1958, with the call-sign KH 1547. It didn't really catch on with the public over there until the fuel crisis of the early seventies made it a useful piece of equipment for passing on information as to what gas station had supplies and its location, and it really didn't appear in its current form until 1977.

The CB boom which accompanied the oil shortage was the biggest consumer hardware sell-out since the innovation of colour TV, and literally millions of sets were sold in a few months. Today, there are an estimated 40 million households in America using CB in one form or another. The amazing success of the facility led to it being adopted by many other countries. There are now more than 60 nations operating a CB system based on the American original, including one or two behind the Iron Curtain; nearly every other country in Europe is included in that group and that includes ALL of our nearest neighbours.

**Q: WHAT GOOD IS IT?**

**A:** After over twenty years experience with CB, the American government is very pleased with the social benefits it offers, and it is now Federal policy to promote the use of the facility, especially with regards to road safety. Recently a survey conducted in Ohio revealed that the widespread ownership and use of CB may be saving as many as 500 lives each year on the road. The most obvious way it helps is to improve response time by the emergency services to road accidents, since its use eliminates the need to search for a telephone which has survived the local vandals.

Most official emergency services monitor the CB emergency and assistance channel (known worldwide as channel 9) continually, and several volunteer groups maintain a nationwide round-the-clock radio watch to help anyone in distress, even if they are simply lost or have run out of petrol. Away from the roads it is impossible to even hazard a guess how many campers, climbers and hikers would have been saved from dying of exposure had they been able to summon and guide rescue teams. And if you ever witness a mugging you may think twice about going to the rescue, but you wouldn't hesitate to assist if you could simply press a button and call for help.

CB is also used for general and recreational pursuits, and as a benefit to the elderly, the infirm and the housebound it can open the door to a whole new social life, with a world full of friends sharing a common interest in the magic 'black box'. There are no social barriers on CB nor any class distinctions; Bishops may speak with roadsweepers without knowing or caring who or what the other person is.

In an overcrowded society, CB is a way of slipping easily into and out of friendship with as many people as are in earshot; it is the modern equivalent of the old village green or the town square on market day. It is valuable and its benefits are limited only by the people who use it.

## ON THE SIDE

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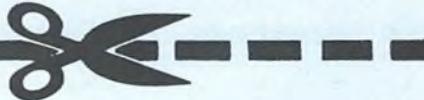
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# SUCCESS — — STORY

Over 2000 units of the 202 Speech processor have been sold. This unit manufactured by East Sussex based Zenith Electronics was developed following extensive research and development work on a wide range of electro/mechanical and electronic equipment in the audio field.

The P-202 is designed for operation in conjunction with radio communications equipment with the sole intention of improving dramatically the intelligibility of a voice signal, whilst at the same time allowing the range to be increased for long distance copy. The P-202 provides an increase in signal output level and reduces the dynamic range of the signal; an essential feature in applications where consistent high level output is required from a signal which varies in amplitude.

The addition of the Processor will extend the performance of most radio transceivers. The added 'talk-power' of the processor will make the difference between a signal which is readable and one which is barely audible and lost in noise. The processor can be easily switched in and out as required by simply turning the function selector on the front facia to 'by-pass' position, which therefore cuts the processor completely out of

circuit and reverts the microphone to transceiver relationship as normal.

The Zenith P202 unit has several important features:- It is supplied with a 4-pin screwlock plug which is attached to a 4-wire and screened cable. The plug will electrically connect into the microphone's socket on your transceiver, provided you follow the wiring connection data provided. The Processor will plug directly into most transceivers' mic. sockets, but a few transceivers are pinned-out in a slightly different format. The P-202 is easily modified to suit any transceiver by a competent person or your radio transceiver dealer. The Processor uses the latest 'micro-chip' technology, which ensures faithful performance and long life of the circuit, together with low power consumption; therefore, makes it ideal for home-based or mobile usage. Full control of output level, microphone gain, overall master gain and limiting operations are neatly positioned on the facia of the Processor. Full visual warning and operation LED's also mounted on facia provide visual status of 'battery condition', 'Power on' and 'Limiter operational'. Variable limiting circuit for time constant and amplitude variations. Low powered circuitry ensures long battery

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life. Power mic-circuitry for microphone power boosting. AM, FM and SSB operation.

The unit is simple to operate and will plug directly into most transceivers but some manufacturers have different wiring arrangements from the one supplied with the processor. This can be changed by following the Zenith instructions.

Specifications are as follows:-

- Microphone gain at nominal 350 Ohms – 56.5 dB;
- Normal usable output gain – +8 dBM;
- Microphone equiv. input noise – 117 dBM;
- Output impedance – 600 Ohms;

Input impedance – 100 K Ohms;  
Speech band gap – 280 Hz–4.0 KHz;  
Band pass filters – 4th order at 24dB/Oct.;

- Power Microphone power band – 10 Hz-16 KHz;
- Power source – 2 x PP3;
- Current consumption Tx – 1.5 mA;
- Limiter – 0-1.22 V-pp;
- T.H.D. – 0.01% at 1KHz;
- Dimensions 147mm (w) x 145mm (d) x 47mm (h) inc. feet;
- Weight – 795 grams.

Zenith Equipment can be obtained from Telecomms, 189 London Road, North End, Portsmouth who are the sole UK Distributors for Zenith Electronics.

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# Moving up to 934 MHz

Bee Ware are launching a new 934 MHz Leisure Communication system which has been designed by Bill Dewhurst.

With 934 MHz Frequency being virtually unused he felt that a quality reliable system would fill a gap between 27 MHz and Amateur Radio, and offer an alternative to the overcrowded CB 27 MHz Band.

The unit is a Grandstand 934 transverter as opposed to transceiver offering a simple conversion up to 734 MHz with superb quality across the full number of channels allowed.

The manufacturers claim that the great advantage of this ultra high frequency is

that it is virtually interference free. It can be used for both mobile and home base, the latter requiring extra accessories but has the advantage of beaming the signal in a chosen direction thus enabling excellent modulation quality and the ability for more than one modulation per channel without interfering with other users.

The Home Office recently announced a slight change to the frequency for the 934 system, and all Grandstand 934 units will, when launched, be "in line" with the new expanded frequency.

The launch of the transverter is scheduled for September and more details will be included in later issues.



## ***Low terms for lorry drivers***

# **ON THE SIDE**

## ***One more time . . .***

Whilst it is not the policy of this magazine to repeat material, many breakers were unable to obtain a copy of our first issue from their local newsagent.

We have repeatedly been asked for details of the list of terms which we included for the benefit of newcomers. So by popular demand but for the last time we offer a list which is by no means comprehensive and we would still welcome your views on the importance or otherwise of these terms for everyday CB use.

**A little help** – extra power.

**Adios** – leaving the air.

**Advertising** – marked police car with lights on.

**Affirmative** – yes.

**All the good numbers** – best wishes.

**Alligator station** – all mouth and no ears.

**Amplifier** – device for increasing signal strength.

**Back door** – last vehicle in a group.

**Back out/off** – stop transmitting.

**Background** – noise or static over channel.

**Backside** – return trip.

**Backstroke** – as above, also use rebound, flip flop.

**Back to you** – answer back.

**Bagging** – Police catching speeders.

**Barefoot** – running without a kicker.

**Base station** – static CB station, fixed location.

**Basement** – channel ONE.

**Barley pop** – beer.

**Bear** – a minion of the law, also use smokey.

**Bear cave** – police station, also use bears den.

**Bear in the air** – police patrolling in helicopter or aeroplane.

**Bear in the bushes** – police hiding.

**Bear's lair** – police station.

**Bear report** – report on police locations.

**Bear trap** – radar.

**Beat-the-bushes** – lead vehicle looking for smokey to relay his "twenty".

**Better half** – wife or husband.

**Between the sheets** – sleeping.

**Big brother** – police.

**Big switch** – CB rig's on/off switch.

**Big ten four** – yes, for sure also use **Roger D, Roger Roger, Roger Dodger.**

**Blinkin-Winkin** – school bus.

**Blood box** – ambulance also use **meat wagon, blood bank, bone box.**

**Blowin' smoke** – coming in loud and clear.

**Blow the doors off** – passing.

**Boots** – linear amplifier also use **shoes, kickers, socks.**

**Bottle popper** – beverage truck.

**Bounce around** – next trip around.

**Bra buster** – bosomy woman.

**Break** – call a station.

**Breaker, break** – what you say to get on a channel also use **breaking break.**

**Breaker** – CBer wanting to come in on a channel.

**Breaking up** – signal cutting on and off, breaking up all over the place.

**Breaking the needle** – powerful transmission.

**Bring it on** – go ahead, it's clear to speak.

**Brown bottles** – beer.

**Brush your teeth and comb your hair** – radar trap ahead, slow down.

**Bubble gum machine** – vehicle with flashing lights.

**Bubble trouble** – tyre problems.

**Bucket mouth** – CBer who won't shut up.

**Bull jockey** – someone giving a load of bull on channel.

**Bulldog** – Mack truck.

**Burner** – RF power amplifier.

**Bust** – getting caught.

**Buzby** – GPO official or investigator.

**Camera** – hand held radar unit, also use kodak.

**CB** – citizens band radio.

**Catch you on the flip flop** – talk to you on the return trip.  
**Channel hog** – someone who won't let anyone else transmit.  
**Check the seat covers** – look at the females.  
**Chicken box** – CB transceiver.  
**Choo-Choo train** – semi hauling two trailers.  
**Clean** – no police sighted in the immediate area.  
**Come back** – say it, or say it again, return call.  
**Come on** – invitation to reply, your turn to talk also use **"Come on back"**.  
**Comic book** – truckers logbook.  
**Coming out the windows** – perfect reception.  
**Convoy** – line of vehicles moving together in CB contact.  
**Copy** – do you understand?  
**Copy the mail** – listening to other conversations on channel.  
**Cotton-Picker** – fellow CBer, or substitute in place of swearing.  
**Crank the handle action** – repeat your handle.  
**Crumb snatchers** – children.  
**Definitely** – emphatically also use **definatory**.  
**Diesel digit** – channel 19.  
**Dog biscuits** – db, decibels.  
**Don't feed the bears** – don't get any speeding tickets.  
**Double "L"** – land line, telephone.  
**Down and gone** – stopped transmitting.  
**Dusting your britches** – walked on, transmitted at the same time.  
**DX** – long range transmitting.  
**Ears** – CB radio or antenna.  
**Earwig** – listening in on transmissions.  
**Eights and other good numbers** – best wishes.  
**Eights, Eighty-eights** – love and kisses.  
**Eye in the sky** – helicopter.  
**Eyeball** – visual contact.  
**Eyeball to eyeball** – get together.  
**Evel Kneivel** – motorcycle policeman.  
**Fairy lights** – traffic signals.  
**Fender bender** – slight vehicle damage.  
**Find a clean one** – move to channel with less conversation or static.  
**Five by five** – very strong signal.  
**Flat side** – sleeping.  
**Flip** – return trip also use **flip-flop**.  
**Fluff stuff** – snow.  
**Fly in the sky** – aircraft.  
**Folding camera** – police vehicle equipped with vascar.

**Foot warmer** – linear amplifier.  
**For sure** – that's right.  
**Four** – yes, OK.  
**Front door** – first vehicle in line of two or more.  
**Funning** – joking.  
**Fuzz buster** – electronic radar detector.  
**Get horizontal** – go to sleep, lying down.  
**Gone, we gone** – end of transmission, signing off.  
**Go, go juice** – fuel.  
**Good buddy** – fellow CBer.  
**Goodies** – CB accessories.  
**Good numbers to you** – (73's & 88's) best regards.  
**Got a copy?** – do you hear me?  
**Got your ears on?** – do you hear me?  
**Green light** – all clear.  
**Green stamps** – money.  
**Ground clouds** – fog.  
**Ham** – amateur radio operator.  
**Hammer** – accelerator.  
**Hammer back in the tool box** – slow down.  
**Handle** – CB nickname.  
**Happy numbers** – S-meter reading, especially above five.  
**Have a good day today and a better day tomorrow** – salutations.  
**Heater** – linear amplifier used to gain extra range.  
**Holding onto your mud flaps** – driving right behind you.  
**Hole in the wall** – tunnel.  
**Home twenty** – location of your home.  
**Honey bear** – female policewoman.  
**Hot pants** – smoke or fire.  
**How about it?** – asking for a response, your turn to talk; say it.  
**In a short short** – real soon.  
**In the bushes** – smokey hiding on the side of the road.  
**It's clear** – no smokies in sight.  
**Jam jar** – red and white police patrol car also use **Jam Butty**.  
**Jaw jacking** – long-winded conversation.  
**Keep the shiny side up and the dirty side down** – have a safe journey.  
**Keep your nose between the ditches and smokey out of your britches** – drive safely and look out for speed traps.  
**Keyboard** – CB rig controls.  
**Knocking on your back door** – vehicle overtaking.  
**Kicker** – linear amplifier.  
**Land line** – telephone.  
**Let off** – reduce speed.  
**Local yokel** – local police.

**Look over your shoulder** – traffic in opposite direction.

**Mail** – overheard conversations.

**Making the trip** – getting the signal out.

**Mayday** – international emergency distress call (10-34).

**Meanies** – anti-CB authorities.

**Motion lotion** – fuel.

**Mobile parking lot** – automobile carrier.

**Modulating** – talking.

**Monitor** – listening to transmissions.

**Negatory** – no, also use negative.

**On the peg** – legal speed limit.

**On the side** – standing by on the channel.

**On channel** – on the air.

**Over the shoulder** – behind you.

**Over** – through transmitting, your turn to talk.

**Pavement princess** – roadside prostitute.

**Pedal to the metal** – accelerate also use **Hammer**.

**Plain wrapper** – unmarked police car.

**Porcupine** – vehicle with lots of antennas.

**Pounds** – S-units, 9s-units on the meter is 9 pounds.

**Pregnant roller skate** – Volkswagen.

**Pressure cooker** – sports car.

**Pull the big switch** – turn off the CB.

**Put my teeth up for the night, go 10-7** – sign off.

**Put your shoes on** – turn power up/on.

**QSL card** – postcard with call letters or handle confirming communication contact.

**Quick trip around the horn** – scanning all CB channels.

**Radio check** – checking the quality of transmission.

**Ratchet-jaw** – non-stop talker.

**Rig** – radio.

**Ringing your bell** – someone's calling you.

**Roller skate** – small car.

**"S" unit** – meter reading of wattage.

**Salt shaker** – salt spreading truck.

**Seat cover** – female passenger.

**Seventy threes and eighty eights** – best regards, love and kisses, respectively.

**Sideband** – CB operating outside channel forty and below channel one.

**Shaking the windows** – loud and clear signal.

**Shotgun** – seat next to driver.

**Skip** – stations heard from a great distance.

**Skip talker** – CBer who talks long distances.

**S-meter** – signal strength indicator.

**Smokey** – Police. Also use **smokey bear**.

**Smokey report** – location of police in the immediate area.

**Smokey on rubber** – police moving.

**Squawk box** – CB transceiver.

**Stepped on** – someone overpowered you with a stronger transmission. Also use **stepped all over you**, **stomped on**.

**Streakin'** – exceeding legal speed limit.

**SWR** – standing wave ratio.

**Superskate** – sports car.

**Sweet thing** – lady breaker on channel.

**Take it down** – move to lower channel.

**Take it up** – move to higher channel.

**Ten pounder** – excellent signal.

**Threes** – best regards.

**Threes and eights** – lots of best wishes.

**Three 3's Seventy three's** – good luck, best wishes.

**Throwing nines** – strong signal on S-meter.

**Tighten up on the rubber band** – accelerate.

**Toilet mouth** – CBer using foul language.

**Tree top tall** – good signal.

**TVI** – television interference.

**Twins** – dual antennas.

**Two wheeler** – motorcycle.

**Up on the roof** – channel forty, also use **penthouse suite**.

**Walked on** – same as stepped on. Also use **walked all over**, **walking all over you**.

**Walking tall** – good signal.

**Walking the dog** – long distance conversation.

**We gone** – stop sending transmission, just listening.

**Wall to wall** – clear, strong signal, very good reception.

**Work twenty** – work location.

**Wrapper** – colour of car.

**X-ray machine** – radar.

**XYL** – ex young lady, usually a wife.

**Yardstick** – mileage marker.

**You got it** – go ahead.

**YL** – young lady.

**Zoo** – police headquarters.

**Z's** – sleep:

# Make a simple in-line circuit tester

**Using this quickly-made piece of equipment, you can check for open and short circuits, circuit continuity (you know, switches, fuses and so on), front to back ratios, and even more important, finding out whether you've made yourself a high resistance soldered joint!**

This device can be made up in just a few minutes, and even a lash-up would suffice to clear up any problems on a temporary basis. It is possible to construct this in circuit tester and for the more professional among our readers, to construct it permanently within an oscilloscope.

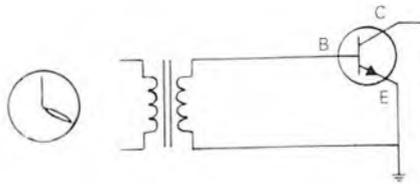
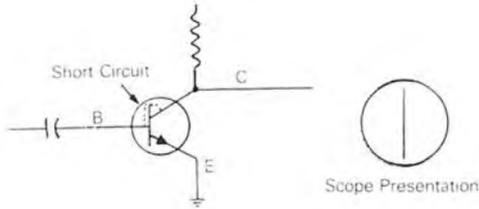
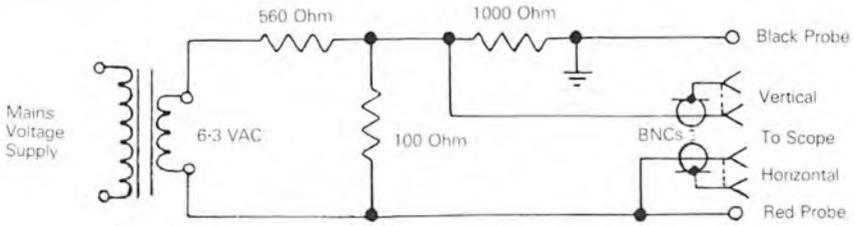
Traditionally, fault finding on de-energised PCB boards has required the desoldering of all but one of the connections to the components under test and then making one or more resistance measurements. This is not only time consuming but also involves application of heat which can cause lifting of PC tracks or perhaps inadvertent destruction of heat-sensitive components before or even after test.

As the component packing density of modern equipment increases, so inadvertent damage can also occur to physically adjacent components. Furthermore, an Ohmmeter cannot detect a short-circuit inductor or an open-circuit capacitor and some generate sufficient power, even on their lowest range, to destroy some semi-conductor junctions.

The circuit described is, when used in conjunction with a standard oscilloscope, capable of testing components for short and open-circuit, checking front-to-back ratios on semi-conductors and, by utilising Lissajous and combination patterns on the oscilloscope display, will check reactive components which defy Ohmmeter analysis. The circuit is also useful for checking circuit continuity, (switches, fuses etc.) and detecting high resistance soldered joints.

As may be seen from the circuit diagram the few components are all common items and since all are non critical they may be replaced by whatever suitable parts are immediately available. The transformer is only called upon to supply 10 mA thus may be as small as convenient. Should a transformer be selected whose secondary winding delivers more than 6 volts RMS, then the 560 Ohm resistor should be replaced by a component of somewhat higher value to ensure that the voltage drop across the 100 Ohm resistor remains at 1 volt.

The tester's circuit diagram



Above: Presentation for a short-circuit junction

Below: The display indicates the junction step associated with a Lissajous due to the inductance of the transformer winding. The d.c. resistance causes the junction step to exceed 90 degrees.

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## Operation

The oscilloscope leads should be connected to a suitable instrument, and with the test leads short circuited the oscilloscope vertical gain should be adjusted until the trace is almost full scale. Separate the leads and adjust the horizontal gain until the trace is almost full scale. The unit is now ready for operation.

As the diagrams indicate, the tester can clearly indicate a number of different circuit elements including: resistance, semi-conductor junctions, capacitive or inductive reactance. It would therefore be wise for the technician to familiarise himself with the various displays by testing a number of known good and faulty components singly and in various combinations.

When testing transistors, check from base to emitter and to collector separately as a collector to emitter test, being through two back-to-back junctions, would not produce a usable display. A single junction will produce a 90° step display whilst a more obtuse angle indicates a reverse DC path across the junction. If the transistor is out of circuit, this indicates a less than perfect junction, but when in circuit would indicate the alternative of a parallel resistance element. The presence of capacitance or inductance across the junction will cause one leg of the step wave form to show a Lissajous loop. Thus, if a diode and a capacitor in parallel were under test, the oscilloscope

would display both a 90° junction step and a Lissajous, indicating that neither a short nor open circuit were present. However, in the case of a transformer in the base-emitter circuit of a transistor, a similar display would appear but with a more obtuse angle junction indicating the presence of the DC resistance of the transformer winding in addition to the reactance of the transformer and the junction step.

Should it seem desirable during in circuit testing to unsolder a component to determine its condition, this may often be avoided by comparison with a known good board.

Two other useful checks can be performed with this tester:

1. In the instance of an unmarked transistor, place the red probe on the base connection and the black probe on either emitter or collector. A step pattern opening downwards indicates that the transistor is NPN. The same test can be used to determine diode direction.
2. A potentiometer may be checked for noise. Connect the test probes between the potentiometer arm and one end. A clean device will cause a diagonal line to be displayed, the angle changing as the position of the arm is varied. If the potentiometer is 'noisy' an additional intermittent vertical line will also be displayed.

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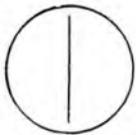
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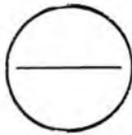
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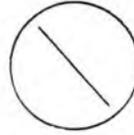
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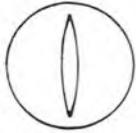
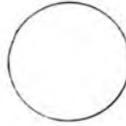
Short



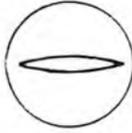
Open



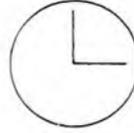
Resistance



Inductance



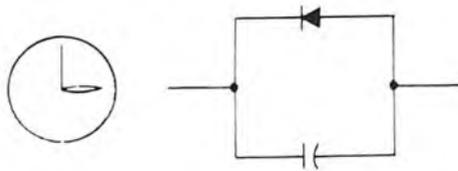
Capacitance



Junction Step



Oscilloscope presentations for various circuit conditions



Display for a diode and capacitor in parallel

Testing a potentiometer



Clean Pot



Shorted Pot



Dirty Pot

Written by Brian Kendal, G3GDU, for the magazine Commonwealth Air Transport Electronics News, from which this article is reprinted.

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**Spotlight on**

**OSCAR**

**ON  
THE  
SIDE**

**This month we feature South Midlands Communications Ltd., a major supplier of CB equipment.**

The company act as distributors for many manufacturers but also retail CB equipment through their own chain of retail stores.

With branches as far apart as Leeds and Jersey, North Wales and South Humberside it is easy to see why they claim to be one of the largest suppliers to the amateur market in Europe.

Large stocks of CB equipment are carried, antennas, cables, power meters, transceivers, linear amplifiers, in fact everything the enthusiast desires.

The main items of interest to *On The Side* readers are sold under the OSCAR brand name. OSCAR ONE is a 27 MHz transceiver, designed to meet M.P.T. specifications with ease and provide the best possible performance but retaining a realistic price tag.

It had to be simple and safe to operate while driving. The Oscar One is not cluttered up with a multitude of controls, the positions of which cannot be memorised or distinguished at a touch (for "eyes on the road" driving). All controls are on the front panel. The main ones, the channel change, concentric volume and squelch, concentric channel nine (for instant use of the emergency channel; and Delta tune (to help pull in off channel stations) all fall easily to hand. The attenuator switch reduces transmit power by ten times to comply with the licence conditions and as a courtesy to other users.

The OSCAR TWO is a lower priced yet full 40 channel 27 MHz, FM CB transceiver which was designed to meet the specifications of MPT 1320. It is a completely solid state, compact, communications module built to withstand the shock and vibrations experienced in the mobile environment for years to come.

The frequency synthesizer incorporated provides excellent frequency stability from the hottest summers' day to sub zero temperatures by the use of a single quartz crystal and a CMOS LS1 (large scale integration) chip — the product of today's technology.

A number of OSCAR BASE and MOBILE ANTENNAS are sold which have been specially designed for the UK CB and comply with MPT 1320. They have a centre frequency of 27.8 MHz.

Technical and price details are available direct from South Midlands Communications Ltd., S.M. House, Osborne Road, Totton, Southampton, SO4 4DN.

The club spokesman stated that by forming a club they were much more able to offer constructive help to both the local community and local charities.

# LAW BREAKERS



In Braintree, *Pure City* Police Station is 'on channel' monitoring channel 9 (24 hours a day, 365 days a year). All the local C.B. Clubs know that 'Smokey 1' is on channel and I am sure that this is a factor in ensuring that '9' is remarkably free of 'wallies' that plague other areas. 'Smokey 1' monitors in conjunction with local volunteer groups, viz Witham R.E.A.C.T. and Halstead Monitors, as well as working with channel 19 Monitors in the area. 'Smokey 1' is operated with the blessing of Essex Police Chief Constable Robert Bunyard, my Boss and in a statistical survey I carried out between June and November, 1982, 58 recorded calls were received. In addition, details of traffic and weather conditions and stolen vehicles are put out. Two examples, perhaps the best, will illustrate the use to which C.B. can be put.

1. A stolen Lotus Esprit, value £14,500, was recovered intact and the thief arrested in it, about 15 miles from Baintree within 35 minutes of the Police being notified of the theft and circulating details on C.B.
2. A running commentary was given over channel 9, to the Police, by a local breaker as he watched a man break into an empty house. The burglar was arrested in the house and is still wondering how the Police knew.

As far as I know, Braintree is the only 'Bear Cage' in Essex that is permanently on channel.

*Lumberjack*

## NEW ARRIVAL

We welcome the formation of yet another new CB club, the Sundowners Breakers Club of Leeds who meet weekly at the Craven Gate Public House, on Craven Gate Industrial Estate, Dewsbury Road.

The club is committed to fund raising for various charities and they raise money in a variety of ways from weekly raffles to members draws. The club also has plans for mystery entertainment to ensure an active social life to keep their members fully involved.

There is a forum for the discussion by members of their interests and everyone is invited to exchange ideas on the developments and use of CB. The club spokesman stated that by forming a club they were much more able to offer constructive help to both the local community and local charities.

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