

# CB world

For Citizens Band and  
two-way radio enthusiasts  
**SEPTEMBER 1981**  
60p

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# CB World ME ON!

THE SUPPLY of c.b. accessories is big business. When legal, sales of c.b. sets will be even bigger business and available from a thousand and one different shops.

This means that when you are looking for an item of c.b. equipment you will probably find that it is available from the general type of High Street shop as well as from the specialised two-way radio shop.

The general shop may well sell everything from sweets, make-up, paint and gardening sundries with a little electronics such as a light bulb or cheap tranny radio thrown in for good measure.

However, the specialist shopkeeper will concentrate his stock on certain types of equipment such as antennas, SWR meters, connectors and cable, transceivers, monitors, microphones, headphones and a host of other accessories.

There are several c.b. equipment manufacturers and importers who will be selling direct to the specialist rather than through the services of the mass merchandiser. Although the mass merchandiser may move more quantities in the short term, the specialist is the one who will keep the equipment functioning in the long term.

He will provide a complete selection from several ranges of products rather than just one that the mass merchandiser's buyer happens to get a good deal on.

The specialist will have the technical back-up should the equipment fail whilst in use. He will also have stocks of spare parts and accessories. If you're buying a scanner, the specialist shop will have all the crystals you'll ever need. If it's c.b. radio he'll have antennas, mounting brackets and accessories. If it's a shortwave monitor he'll have long wire antennas.

At the end of the day your local specialist will probably be able to match any 'deal' that the discount store down the street might offer. If he cannot match the deal in money, I'm sure he'll match it in service as well as time spent assisting you to make your best buy.

Support your local c.b. and two-way radio specialist. He will remain in business and look after your equipment and needs for a long time to come.

*Brian L. Chalmers-Hunt*

**Next Month.** In *C.B. World* next month we will be telling you where to fit base loaded mobile antennas for optimum performance. With British manufacturers busy developing c.b. equipment *C.B. World* will be looking to see what progress is being made and how the results of their activities perform.

The c.b. accessory market is big business. Richard Town has been in the laboratory checking equipment performance against manufacturers claims . . . . with some interesting results.

Also included will be Bring it Back, Club Corner, This and That, Let there be Music, Femme Scene and more of your Handles.

Number 7 September 1981

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It is an offence to operate, import or install an unlicensed transmitter in the UK. CB WORLD realises this and points out that it is not our deliberate intention to encourage the illegal use of c.b. equipment.

The transceivers shown below are typical of the wide range which we shall be offering as soon as the Home Office specification is issued. Whatever your interest and however much you want to spend, Lowe Electronics will have the right rig.



#### BELCOM LS102

For those of you who have a hankering for ham radio, the LS102 gives you full coverage of the 10 metre amateur band (home market) or 11 metre band 26-28 MHz (export market).

All mode facilities AM/SSB/FM with continuous no gap tuning and digital frequency readout in 100 hz steps with 1 KHz steps instantly available for fast tuning. Fitted with an advanced noise blanker for removing ignition pulse interference, R.I.T. for spot on tuning, and every possible design feature, the LS102 is an outstanding transceiver. It's not for the beginner but for the advanced operator who appreciates real performance and flexibility in operating.

LS102 now in stock £240 inc. VAT.



#### SKY ARROW

A really top quality FM 27 MHz transceiver with simple to use controls and rugged reliability. Includes PA facility and is already European type approved for FM CB use. Large, easy to read channel readout and supplied with all accessories, including hand mic., power cord and mobile mounting bracket.

Covered, of course, by the Lowe Electronics' guarantee and backed by our world famous service facilities.

About £85 inc. VAT.



#### TX22

A smashing 22 channel FM 27 MHz transceiver which has already received European type approval in Holland and France. Full coverage of the FM activity channels with power output to meet specifications and a high sensitivity receiver. Features RF gain control and the all important Delta Tune for spot on tuning of the receiver.

Easy to use, easy to install, and a price to beat them all.

About £65 including VAT.

# LOWE ELECTRONICS

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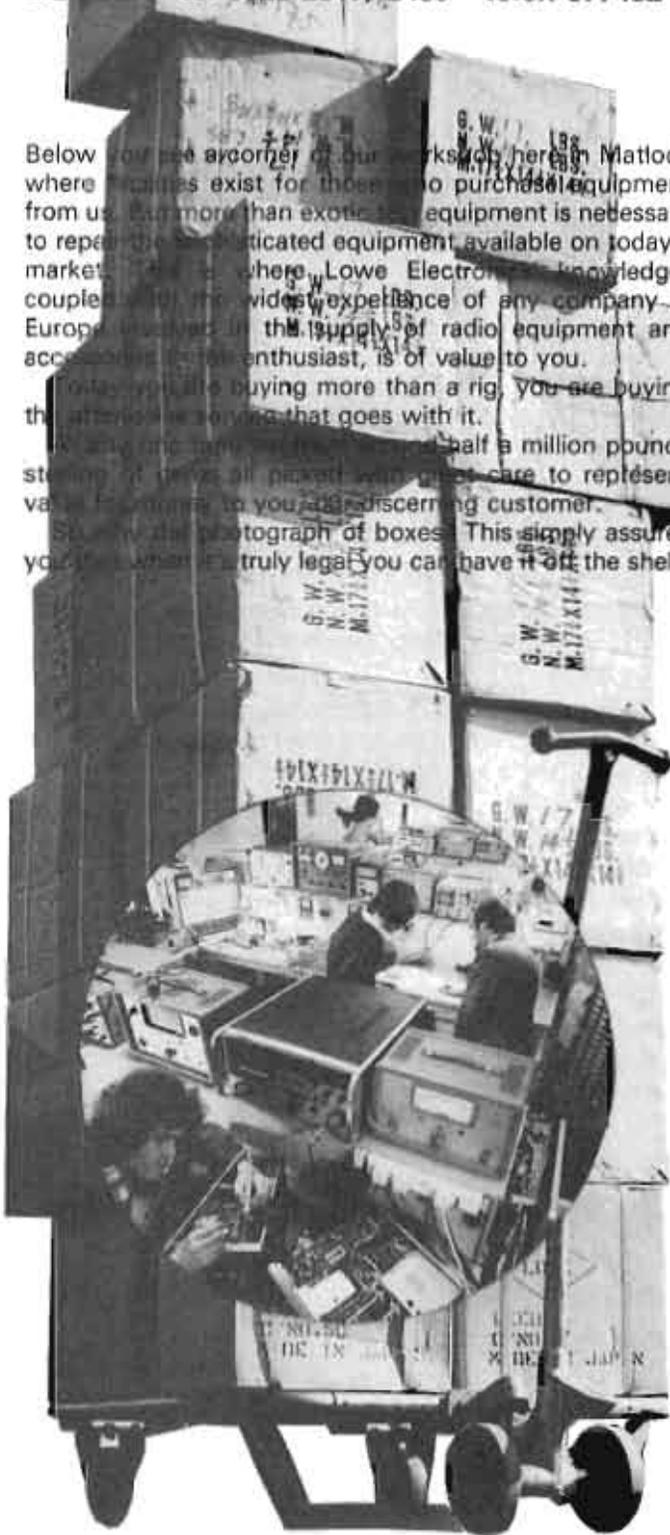
DE4 5LF tel 0629 2817, 2430 telex 377482

Below you can see a corner of our works, which here in Matlock where facilities exist for those who purchase equipment from us. For more than exotic equipment is necessary to repair the sophisticated equipment available on today's market. It is here where Lowe Electronics' knowledge, coupled with the widest experience of any company in Europe, is put to the supply of radio equipment and accessories. For the enthusiast, it is of value to you.

When you are buying more than a rig, you are buying the attention and care that goes with it.

Each rig costs more than half a million pounds sterling in parts, all packed with great care to represent value for money to your discerning customer.

See the photograph of boxes. This simply assures you that what is truly legal you can have it off the shelf!



# LOWE ELECTRONICS

TRADE PRICE LIST AVAILABLE

According to an **RAF STRIKE COMMAND** spokesman c.b. can interfere with Instrument Landing Systems frequencies. *CB World* investigates this claim and discusses its findings with the Ministry of Defence, Home Office and Civil Aviation Authority. p6

**WITH LEGISLATION IMMINENT** — legal specification f.m. sets will be at a premium. Many sets will be stolen and resold on the black market. There are several precautions that a c.b.'er can take to remain in possession of his set. p12

Loose connectors, dirty joints and wrong specification co-axial cable can all effect the **PERFORMANCE OF A C.B. TRANSCEIVER**. We explain steps that can be taken to obtain good electrical contact between the various components in the antenna system. p16

The first monitor to be tested in the *CB World* laboratory was the **LOWE SRX30D**. No set is perfect but this is one that the Editor would like to have in his own radio shack. p18

The majority of c.b. equipment and accessories are currently imported and therefore could be unsuitable for use in the UK. This is particularly relevant when considering **FILTERS** so we obtained some, took off the lids and were surprised with the results. p19

Mention hospitals, emergency situations and health. Everyone will have respect for those involved in this vital service. Again mention **C.B. AND HOSPITALS** and a different response will be obtained. *CB World* starts investigations to see if paging systems and other electronic equipment are being affected by c.b.'ers. p23

The **ROYAL FLYING DOCTOR SERVICE** operates 27 aircraft from 12 bases in Australia and covers an area of over two million square miles. In two minutes a call for help automatically switches on a radio receiver. Two hours later a doctor can be with his patient. p26



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**COVER: Harrier type GR1 banking away after vertical take off exercises in West Germany. Reproduced by kind permission of Barry Ellson.**

During the past month our postbag was full to overflowing. Once again we have published a selection of the more interesting letters in **BRING IT BACK**. Any ideas on how c.b. could be used on holiday? — next month we will publish your replies. p35

Sent your **HANDLE** to us in the last two months? If so look to see if it is included in our latest list. If not try again next month. p38

Who said c.b. clubs will die? From this month's contributions in **CLUB CORNER** you will see there are many that are alive and kicking. p44

**EVER BEEN CAUGHT SPEEDING** and contributed to the local Court's funds? An original approach to the theory, operation and precautions that can be taken by motorists will set you thinking. p49

Once again our Lady Breaker (to be) has put pen to paper and divulges more problems experienced when involved with the **FEMME SCENE**. p56

The first of the new **FROM BREAKER TO HAM** series reviews a selection of suitable books and starts the reader on the road to success. p58

**LET THERE BE MUSIC**, the regular in car entertainment series introduces more new equipment that has been released on the market during the last few months. p62

# STRIKE COMMAND



At least this Harrier will be well away from c.b. interference.

An RAF Strike Command signal message has gone out to all units in the UK.

The message claims that various Strike Command airfields had suffered interference as a result of illegal c.b. transmissions. Richard Town investigates.

The signal message draws the attention of station personnel that this type of interference should be reported to British Telecom and the Police stressing the flight safety hazard.

The message reminds RAF personnel of the illegality of c.b. transmissions and that they might be liable to prosecution.

A spokesman for RAF Strike Command claims that interference is being caused to ILS (instrument landing systems) frequencies in the band 108 to 112 MHz. Additionally, they claim that interference is also

being caused to VHF communications channels of 118 to 135.975 MHz.

The effect of this strike command message is reflected in the daily orders of RAF stations. A copy of one such order has been leaked to *CB World* by a station breakers' club.

On investigation, however, the reason for this emotive order becomes less clear.

*CB World* spoke to Strike Command whose expert said, "In normal circumstances, as far as we can ascertain, normal c.b. transmissions should not affect our instrument landing systems."

The Ministry of Defence appeared to be more forthcoming. A spokesman commented that it was possible to cause interference to ILS ... "if the signal was boosted in some way. It appears to happen if these c.b.'ers couple up their kit in some way to provide a longer throw." His advice was, "Stay clear of airfields".

So much for the signal message, its blind repetition throughout airfields and the vagueness of the "experts" and Ministry "spokesmen".

Broadly, Strike Command claim that c.b. interfering with their aircraft would mean all FCC/CEPT channels from channel 4 upwards could be received on the flight deck of a Vulcan bomber via their Instrument Landing System (ILS) receiver and that all CEPT/FCC channels from channel 19 down could be heard both in aircraft and by flight ground control.

Strike Commands' fear is related to the fourth and fifth harmonics of a rigs transmitter. Thus the FCC/CEPT channel 14 radiating on a frequency of 27.125 MHz could, they claim, also be heard on 108.5 MHz and 135.6 MHz.

Spurious emissions are controlled by the specification of the equipment. These specifications are set by the government author-

# CONDEMNS CB



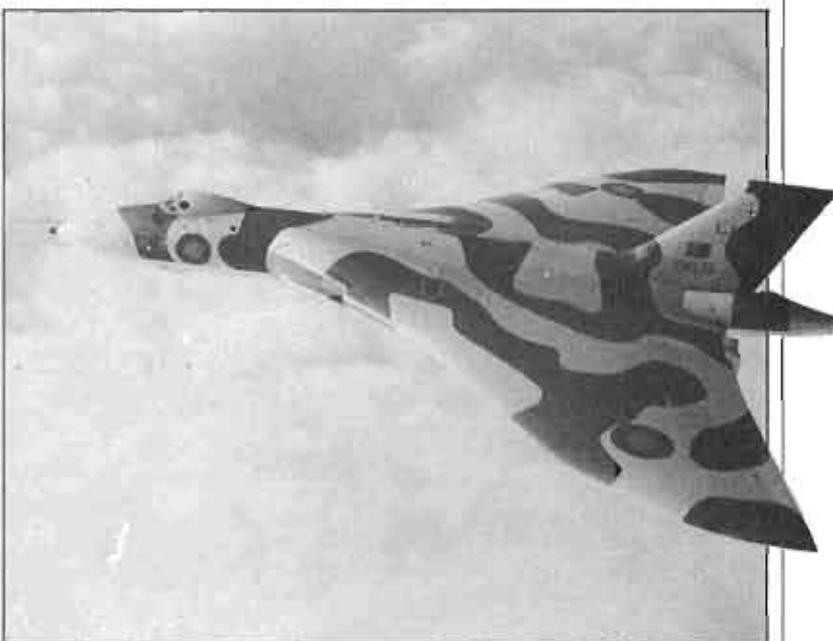
to cold weather clothing, but jackets and standard blue uniform or to be worn off

b. When travelling to work on foot or coats are acceptable as top cover. Motorcycle own protective clothing.

## ORDER NO 7. CITIZEN BAND RADIO

8. Instances have been reported within Strike Command of 27 MHz transmissions from illegal Citizen Band radio transmitters interfering with airfield Instrument Landing Systems. Potentially hazardous Flight Safety situations may be caused in this way.

9. All personnel are reminded that it is illegal to transmit from a CB radio - anyone doing so is liable to prosecution. Any person who is aware of a CB radio transmitter being used in the vicinity of R.F. [redacted] should report the circumstances to OC EEF, without delay.



The Vulcan bomber is another aircraft claimed to be affected by c.b. enthusiasts.

using the c.b. service. A comparison is given in the following table.

### MAXIMUM PERMITTED SPURIOUS RADIATION

Band (MHz.)	UK	USA (FCC)	Europe (CEPT)
104-118	50nW	4uW	0.25uW
118-135	0.25uW	4uW	0.25uW
135-136	50nW	4uW	0.25uW

So, unless a c.b. transceiver has been "got at" internally or an afterburner is being used, the maximum possible radiated power is four millionths of a watt on the aircraft bands. This is, with equipment using F.C.C. (American) standards. Equipment to either the proposed U.K. or European (CEPT) standards would radiate even less.

The chance then for a c.b. transmission to be received is pretty remote. But to try and

make it more remote, I understand that the Civil Aviation Authority attempted to make the spurious radiation section of the proposed UK c.b. services' specification even tighter.

A CAA spokesman told me, "In negotiations with the Home Office, we wanted to see the level of permitted spurious radiation reduced to 2.5 nW in the bands 108 to 136 MHz. We would however have been prepared to accept 4nW in line with some other European countries."

If the CAA had won that particular argument its certain that our equipment for the new c.b. service would have been more

expensive since it becomes more difficult to design a transmitter with a reasonable output power, ensuring very small spurious radiation level, and retailing at a reasonable price.

We must remember that the power level of radiation at these aero frequencies is incredibly low - for the USA equipment with FCC specification rigs it's four millionths of a watt, for the UK it's 0.05 of a millionth of a watt (except the band 118-135 MHz). In Europe (CEPT) the maximum power which could get onto the aero bands is a quarter of a millionth of a watt.

One wonders whether the Home Office

### FREQUENCY BAND CLAIMED AFFECTED (MHz)

108 to 112  
112 to 118  
118 to 136

### STRIKE COMMAND USE

40 channels I.L.S. and V.O.R.  
120 channels I.L.S. and V.O.R.  
720 channels voice communication



and the Civil Aviation Authority are getting just a little paranoid.

But imagine, just for a moment that these power levels were capable of reaching a landing 'V' bomber. Would they be able to interfere to the extent of causing a "flight safety hazard"?

A serious technical treatment of the possibilities starts to become somewhat absurd, but practical considerations in other countries give a clearer outlook.

When attending the International REACT

convention in Atlanta, USA last year, many members of the local team were seen to be wearing transceivers which they used to keep in contact with their cars parked at the airport. Although these rigs were on the 462 MHz c.b. band, the airport lounge was some one hundred yards away from the aircraft taxi ways. At Atlanta airport there are no signs forbidding the use of c.b. in the airport confines.

The FCC's Citizen's Band Radio Service Rules (part 95 sub-part D) has this to say about the sighting of c.b. antennae:

CB Rule 18(b) "If your c.b. station is located near an airport, and if your antenna structure is more than 6.1 metres (20 ft) high, you may have to obey additional restrictions. The highest point of your antenna must not exceed one meter above the airport elevation for every hundred meters of distance from the nearest point of the nearest runway." Nothing about "flight safety hazard" there.

Checking in the "Citizen Radio Service — Conditions of Operation" issued by the New

Zealand Post Office Headquarters (pamphlet RT3) one reads in para 43: "No restriction is placed on the height of antennas but this must not be construed to authorise the erection of any antenna which does not conform with local body and governmental requirements." No "flight safety hazard" there. (New Zealand has an eleven channel two watt amplitude modulation (a.m.) service).

HMS 'Ark Royal' is capable of carrying thirty aircraft and six helicopters. It also has a powerful ships' radio station similar to that *CB World* featured in the February/March issue. When being tuned up, the main transmitter no doubt caused some spurious signals to be transmitted. Apparently no "flight safety hazard" there either.

The last word perhaps should go to the Civil Aviation Authority spokesman who, when asked for details of a reported instance of this interference, said "We have not had any reported instances of aircraft ILS or VHF communications being interfered with in this way" ●

Note the high power radio and radar antenna on HMS Ark Royal. Do these interfere with instrument landing systems?



# "THE BANDIT" MICROTRON TUNED ANTENNA

**27 AM!  
AND  
27 FM!**

FRANCHISES  
AVAILABLE

*Take it from me - you can't  
**STEAL** a better signal*



It is the birth of the VMT (variable mutual transductance coil) that makes it possible for us to bring to you, with many new technology advances, the first entirely new C.B. Antenna that doesn't depend on the outmoded shunt-feed system for its electrical requirements.

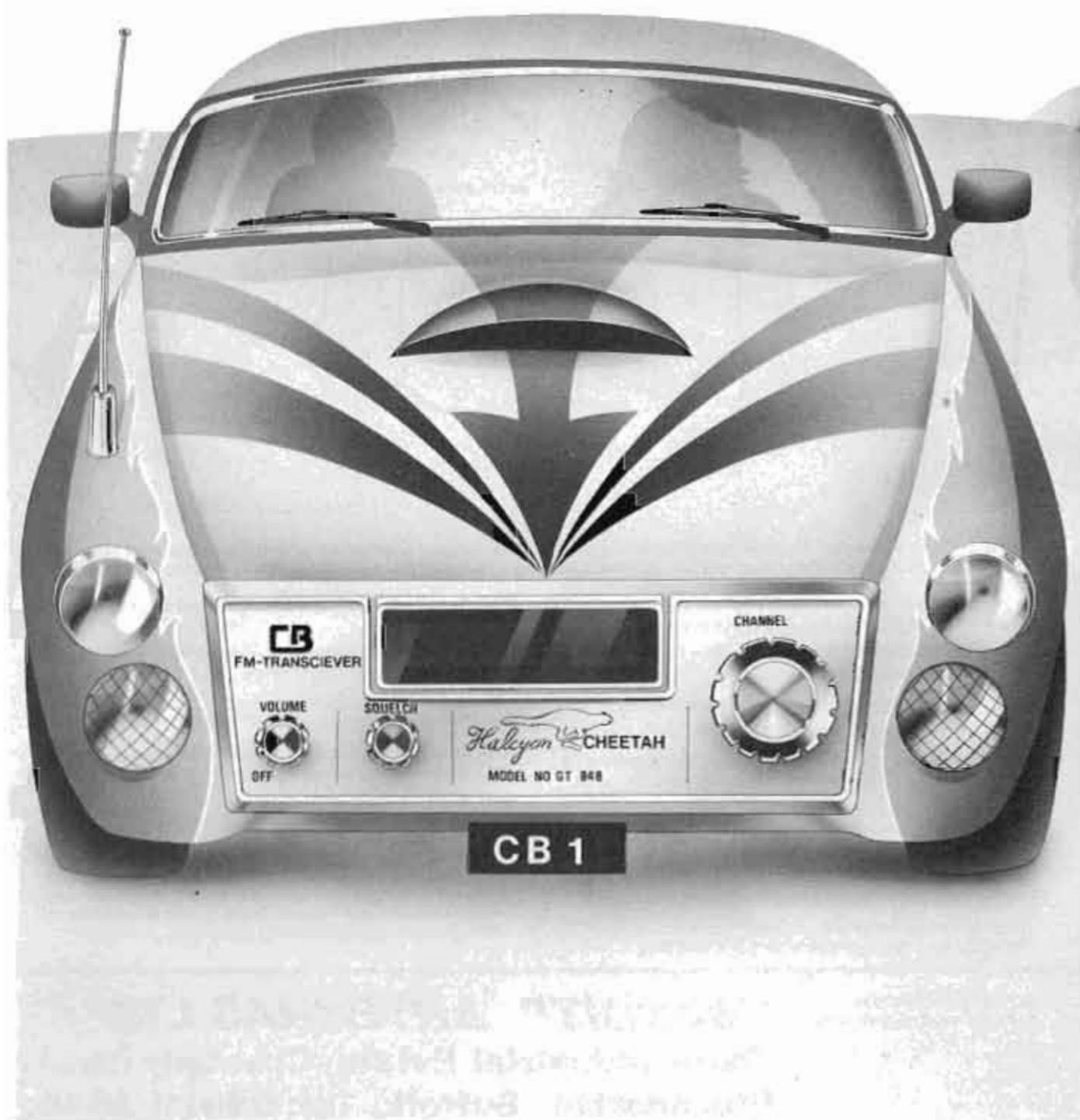
The 'Bandit' antenna is designed for use by the average C.B.er. It will also satisfy the most critical C.B. user. Anyone can tune this antenna, even those that don't have any electronic knowledge whatsoever.

- (1) BANDIT ANTENNA - Triple coil design - PAT. PENDING, some already approved.
- (2) Coax may be cut to any length for a neat installation.
- (3) No need to cut the whip to obtain a good V.S.W.R. match.
- (4) Ease of Tuning - Tuning Rings change only the magnetic field around coil; not the physical length of the antenna.
- (5) Impedance can be controlled at 50 OHMS - shunt feed coils are always lower than the 50 OHM optimum. (C.B. sets are 50 OHMS + or -).
- (6) Straight resistive load - actually allows C.B. sets to perform better - increases wattage output of most sets.
- (7) Wide Tuning Range with a narrow bandwidth - BANDIT'S Tuning Range is approximately 26.500 to 28.000 MHz.
- (8) Lower V.S.W.R. is obtainable - 1.5-1 or less, in most applications a flat match of 1.1-1 is obtained.
- (9) 3rd. coil (bottom coil) is used for a D.C. ground - less interference from static electricity - BANDIT HEARS MORE.
- (10) BANDIT coil is completely sealed to the weather - no way for the elements to get into the coil to cause problems.
- (11) When the Home Office approves a frequency band as suggested of about 27.625 to 27.925 (in accordance with their recent documents), the BANDIT with its VARIABLE MUTUAL TRANSDUCTANCE COIL is the only antenna on the market that will get all 80 channels without any modifications. Manufacturers of SHUNT FEED coil antennas will either have to make 2 antennas to cover all 80 channels or else make the one they have so broadbanded that it will lose a good portion of its power.

For more details on the  
'BANDIT' telephone or write:-

**"BANDIT" ANTENNAS LTD**  
**Tomo Industrial Estate, Creeting Road,**  
**Stowmarket, Suffolk. Tel: 04492 2545.**

# THERE ARE GOING TO BE A LOT OF CHEETAHS ON THE ROAD THIS YEAR



The Halcyon Cheetah is the most advanced mobile FM station on the market.

It will operate with unfailing precision on any of the 40 channels allocated for CB use.

To ensure this kind of performance Halcyon engineers have gone to great lengths to develop a soundly designed, reasonably priced system that can be easily installed even by a first timer.

What makes the Cheetah unique—and what will also make it very popular—is that it comes as a complete package including a slide mount, microphone holder and a specially designed Halcyon Searcher antenna that conforms to Home Office requirements.

At the heart of the package is our elegantly styled, ultra-sensitive trans-receiver and a power mike that will give years of reliable performance either as a mobile rig or as a home base station.

We also include a step by step guide for first time CB'ers as well as a cassette that tells how to put it all together, and a manual with all the technical details.

And to back up our claims we're offering a full, no-quibble guarantee.

So is it any wonder that we think the roads will soon be full of Cheetahs? And if you're smart, a lot of them will be seen leaving your shop.

The Halcyon Cheetah.

**We Believe Our Citizens  
Deserve the Best.**

**DEALERSHIPS  
NOW AVAILABLE**



*Halcyon*  **CHEETAH**

Halcyon CB, 395-397 Albany Road, London S.E.5.

NO MATTER what precautions are taken, if a thief wants your c.b. set then he will get it. The name of the game in safeguarding your property is to make life as difficult as possible particularly for the opportunist thief. It is hoped that he either becomes fed up because removal is not as simple as it first seemed or he is disturbed.

Many amateur radio and c.b. enthusiasts own equipment which is not only portable but worth well over £1,000. Sometimes this equipment is in a shack (garden shed) well away from the house but possibly in view of passers by. Obviously this type of amateur station can attract attention of the more undesirable elements in our community so some elementary precautions should always be taken.

Make a note of the model number, serial number and any distinguishing features of each item of equipment and keep this somewhere safely in the house and not in the shack where it is likely to be seen by an intruder.

Also make sure the shack is secure by fitting or checking existing locks on windows and doors. It is also worthwhile fitting a burglar alarm. This need not be expensive, can be easy to fit and makes a change from wiring up microphones and antennas.

Should there be any doubts on security of your legally owned and operated equipment then seek the advice of the crime prevention officer at the local police station.

When going on holiday let the police know.

For c.b.'ers, equipment left in cars is at particular risk. Never leave hand portable transceivers lying around on the seats of cars. Keep them with you or if this is not convenient lock them up in the boot.

Several companies produce thiefproof devices for radios and complete cars which fitment, in the main, is within the capabilities of any practically minded reader.

Possibly the simplest of all is a security lock system kit for the transceiver (or conventional car radio or stereo unit) mounting bracket. This kit is produced by J.N. Blair Ltd., Riverside, Market Harborough, Leics. LE16 7PT (tel 0858 64853). Alternatively the kit can be used to secure the transceiver to the mounting bracket. The only comment to make about this security system is that there is another key to be lost or for the already overloaded key ring.

Acorn Trading (C.B.) Ltd. of Unit 43, Coleshill Industrial Estate, Station Road, Coleshill B46 1JT (tel 0675 64136) produce a self contained transistorised alarm system that works from the 12 volt vehicle battery and fully protects the set against theft. A 24 to 12 volt dropper (inverter) will be required for a commercial vehicle but this should not present any problems. There are not many 24 volt sets around at the moment, so a voltage inverter will be needed anyway for the set.

One of the many special features of this alarm system is that once installed it can be forgotten. There will be no more trying to remember to use an extra key or switch to turn on the alarm system.

When the thief tries to remove the set or cut the leads the built in siren is set off, surprising the thief. Unlike other alarms

replacing the set or leads will not silence the alarm once it has been triggered off.

This system can be fitted to vehicles with sets mounted on a slide tray or those with equipment permanently fitted. Installation is simple and will only take a matter of minutes provided there is good access to the rear of the set. Otherwise it will be necessary to withdraw the set.

SELMAR automotive and security products are produced by Stellar Components (Sales) Ltd., The Causeway, Malden, Essex (tel 0621 56011) and well known for their vehicle protection systems. They have just introduced an Electronic Voltage Sensitive Car Alarm system which works on a voltage measuring system.

As soon as any electrical power is called on from the battery, for instance by opening the door and operating the courtesy lights, ignition, radio, cigar lighter etc, the sensor will register the power drain setting off the alarm and flashing the headlights giving a visual and audible warning that the vehicle has been tampered with.

The timer which controls the duration of the horn blast and flashing lights is easily adjustable to individual requirements and will immediately reset after being activated and remain on guard against further tampering.

When the key switch is turned to the active position the vehicle is not only protected by the voltage sensor, but is automatically immobilised. Until the key switch is turned off, the engine cannot be started.

This alarm system is easy for the motorist to install. Fully detailed installation and operating instructions are in the pack together with a comprehensive fitting kit including extra switches so that the boot, bonnet and actual set can be linked into the alarm system if desired.

The Davco Group is another organisation involved with vehicle security devices and systems. They are now at Unit 61/B/2 Faraday Way, Westminster Industrial Estate, Woolwich, London SE18 5TR (tel 01-316 1100).

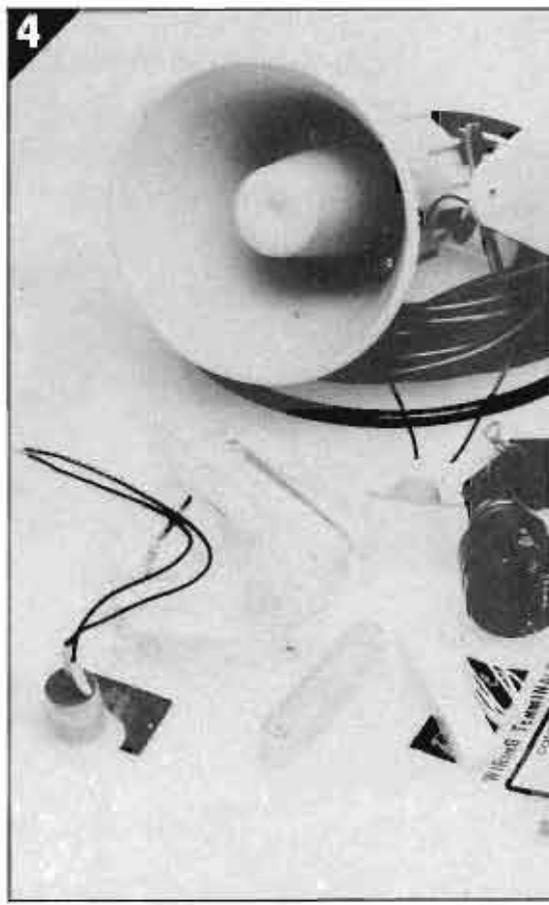
This company is able to supply from a comprehensive range of systems which can be fitted to vehicles from a mini to a 32 ton goods vehicle. Although the company can supply for fitment by the customer they do prefer to fit the system themselves particularly when total vehicle protection is required.

They are also able to supply security devices for premises so it is worth chatting to them about security of home based equipment.

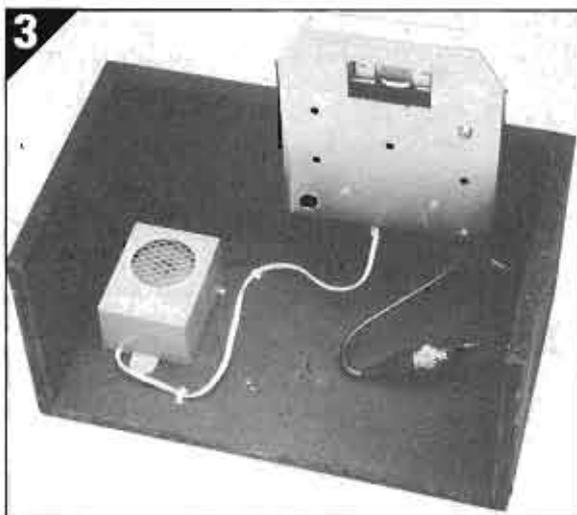
We have not attempted to tell you exactly how to thiefproof your particular equipment or vehicle, otherwise everyone else will know how you have done it and how to beat the system.

Decide on your particular protection system and then fit it. Do not broadcast to the nation by putting sticky labels on the windows that your car or premises have been thiefproofed using \*\*\*\*\* products — this is an open invitation for the thief to say to himself "Oh yes I know the system well, now if I do this and that I can override the so and so relay and ..."

# THIEF -



# — PROOFING SETS



1. The next time this driver reaches for the mike he assumes the transceiver will still be attached to it and not for sale on the black market.

2. The simplest of them all, J.N. Blair Ltd. produce a simple lock system for locking the set to the mounting bracket or the mounting bracket to the vehicle.

3. Acorn Trading's self contained transistorised alarm system connected to a slide mount.

4. Davco produce a vast range of systems suitable for cars and commercial vehicles. This particular kit is for a medium sized saloon car.

5. The latest Selmar Electronic sensor car alarm system components. We'll let the manufacturer tell you how to fit it — otherwise over 200,000 readers would know all about it!



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# CO-AXIAL — THE R

EVERY C.B. SET is fitted with an SO-239 type female connector and it is to this that the antenna system is attached. However the plug which matches the connector is less than ideal. It is known as the PL-259 plug and its solderless and slip-on equivalents are the most widely used for connecting the antenna transmission co-axial cable to the c.b. transceiver.

To keep S.W.R. to a minimum the impedance of the antenna transmission cable should be uniform, but the PL-259 plug at the antenna or in the co-axial cable run where extension cables are used will introduce an impedance "hump" of around 35 ohms instead of a uniform 50 ohm impedance for the radio signal.

Unfortunately replacement of the SO-239 antenna connector at the rear of a c.b. set will not be allowed, except by the manufacturer, because any modification could cause the transceiver to operate in a manner that would alter its performance or design characteristics from that demonstrated when it is granted type approval and certification.

It is not usually the SO-239 and PL-259 plug at the c.b. set end of the co-axial cable which causes the most problems. Although the connectors combined impedance is not 50 ohms, at the c.b. set end of the co-axial cable this is not too important.

Any impedance variation at this part might cause the signal reflected back from the antenna to be reflected towards the antenna again when the reflected signal returned from the antenna system reaches the PL-259 plug and the antenna jack.

This reflected energy will add to the energy fed outwards toward the antenna, but unfortunately it is not necessarily in phase.

The smaller BNC co-axial cable plug and jack are superior to the PL-259 and SO-239. They can be used for frequencies from 27 MHz up to 900 MHz but there is one problem — they can only be used with RG-58 co-axial cable because of their small diameter and overall size.

The type 'N' connectors are also superior to the PL-259 range. They are widely used in professional communication systems, being used at both ends of the antenna transmission cable. These connectors can be used with RG-8 and larger diameter cables.

Two co-axial cables must only be joined through co-axial connectors. Do not solder the inner core, insulate, wrap in cigarette packet silver paper and bind with tape. Use a

PL-259 plug at each cable end to be joined, and a PL-258 straight adaptor to connect the two PL-259 plugs together.

An even better way to join two RG-58 cables is to fit a BNC plug at the end of one cable and a BNC jack at the end of the other cable. This way no straight adaptor will be required and S.W.R. will be reduced because of the more uniform impedance encountered by the signal.

Connector manufacturer Amphenol have introduced a mini series of co-axial cable connectors which have low S.W.R. and can be used for joining cable. Another manufacturer, E.F. Johnson and Company, have introduced their 375 series of co-axial connectors for RG-58 cable, including male and female connectors for use at the end of a cable.

Again it is possible to use an Amphenol 81 series mini UHF plug at the end of one RG-58 cable and a matching mini UHF jack at the end of the other cable. This way no straight adaptor will be required.

A c.b. base antenna is often equipped with a female connector at the antenna base or at the end of the co-axial cable to which a PL-259 plug can be connected.

Many professional base station antenna have an 'N' connector at the end of the cable to which an 'N' connector at the end of the transmission line is connected.

It is usually feasible to replace the PL-259 type connector at the end of a c.b. antenna cable with an 'N' connector when RG-58 or RG-8 co-ax is used, or with a BNC jack when RG-58 cable is used.

At the c.b. set end of an RG-8 cable, an 'N' connector can be used along with a BNC or PL-259 adaptor to enable connection of a short co-axial patch that has a PL-259 plug at one end for insertion into the c.b. set antenna jack. Alternatively when RG-58 cable is used a PL-259 plug can be used at the c.b. set end of the cable.

When using Helix or other low loss cable, special connectors are usually required. These are available in types that will mate with an 'N' connector or PL-259 plug.

## Scanner antenna systems

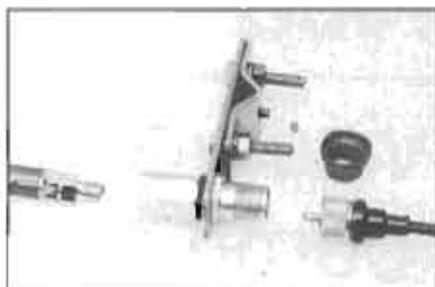
The typical scanner receiver has one or two Motorola type car radio antenna jacks for connecting the antenna(s) to the receiver. Adaptors are available which plug into the receiver and which accept a PL-259 plug. Use of such an adaptor is mandatory when



Selection of connectors commonly used for c.b. co-axial cable joints.



These connectors are less than ideal for connecting the antenna co-axial cable to the c.b. transceiver but still commonly used.



The more joints there are the greater the risk of dirty, loose or short circuit conditions.



Replacement of the SO-239 antenna connector at the rear of the set will not be allowed, except by the manufacturer.

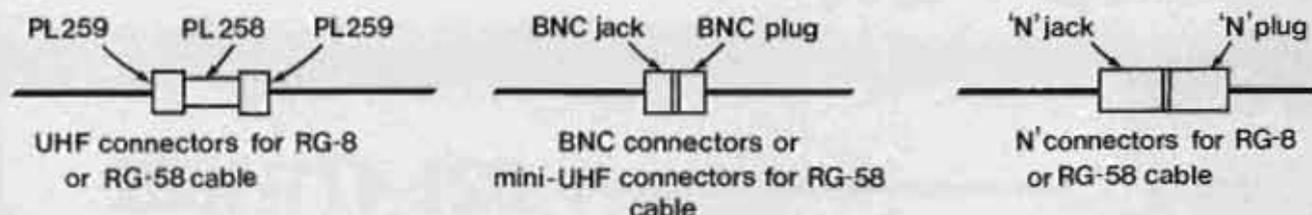


Fig. 1 Typical co-axial jointing techniques

# TIGHT CONNECTION

## Fitting antenna connectors

Before starting work choose a clean working area and lay out the components in an orderly manner.



Tin the end of the connector body and braid solder holes to ensure a good electrical joint.

using RG-8 cable as the antenna download.

Alternatively use a co-axial patch cord with a PL-259 plug or an 'N' connector at the far end of the patch cord and a car radio antenna plug at the scanner end, or a PL-259 plug and an adaptor.

If the scanner antenna has a cable, a set of 'N' connectors can be used to interface the antenna and the download when RG-8 cable is used, or a BNC plug and BNC jack when RG-58 cable is used.

### Testing S.W.R.

The S.W.R. introduced by inline co-axial cable connectors can be measured with an S.W.R. meter, as shown (Fig 2). The antenna is disconnected and replaced temporarily with a pair of 100 ohm, 2 watt carbon composition, five per cent resistors which present a 50 ohm impedance.

When a pair of PL-259 plugs and a PL-258 adaptor are used to join two sections of co-axial cable, the S.W.R. will be somewhat higher than when BNC, 'N' or other low S.W.R. connectors are used.

Although the loss caused by S.W.R. introduced by PL-259 connectors is small, there is nevertheless some loss that could be avoided.

If the impedance of a PL-259 type joint



Slide coupling ring over the connector. Strip back the PVC and screw the connector body onto the cable.



Solder the inner cable to the outer end of the connector. Follow this by soldering the braid to the body of the connector working through the solder holes.



Remove surplus solder from the outer end otherwise it will not slide correctly into the matching connector.

## CO-AXIAL ADAPTORS

Connector	Type	Connectors to:
PL-258	double female	two PL-259 plugs
M-358	T-connector	two PL-258 and one SO-239
UG-491A	straight adapt- double male	two BNC jacks
UG-914	double female	two BNC plugs
UG-29A	double male	two N jacks
UG-27B	double female	two N plugs
UG-107A	T-connector	two N plugs and one N jack
3284	T-connector	three BNC plugs
3285	T-connector	two BNC plugs and one BNC jack
3283	double female	two BNC plugs
3533	double male	two BNC jacks
3286	adaptor	BNC plug and SO-239
3287	adaptor	BNC jack and PL-259 plug
3288	adaptor	BNC plug and N jack
3535	adaptor	BNC jack and N plug
AVA 1021-20 SP	adaptor	mini phone jack and PL-259
AVA 1051-34 SP	adaptor	mini phone jack and BNC jack

## CO-AXIAL CONNECTORS

Connector	Cable Type	Type
UG-88	RG-58	BNC plug
UG-89	RG-58	BNC jack
UG-21	RG-8	N plug
UG-23	RG-8	N jack
UG-536	RG-58	N plug
35000	RG-58	N jack
PL-259	RG-8	UHF plug
83-58 FCP	RG-58	UHF plug
AVA M20	RG-58	Auto radio antenna jack

assembly is 35 ohms and the cable impedance is 50 ohms, the S.W.R. of the connectors will be approximately 1.48:1.

When the co-axial cable impedance is 52 ohms, the S.W.R. will be 1.48:1 and when cable impedance is 53.05 ohms, the S.W.R. will be 1.53:1.

Additionally there is a further loss due to antenna S.W.R. This is not the same for all channels, but the S.W.R. of the connectors should theoretically remain the same at all c.b. channels.

Although the loss introduced by S.W.R. is small, being less than 2:1, it does detract a little from the effective radiated power and received signal strength.

With proposed antenna design and length restrictions every step must be taken to preserve one's rig performance. ●

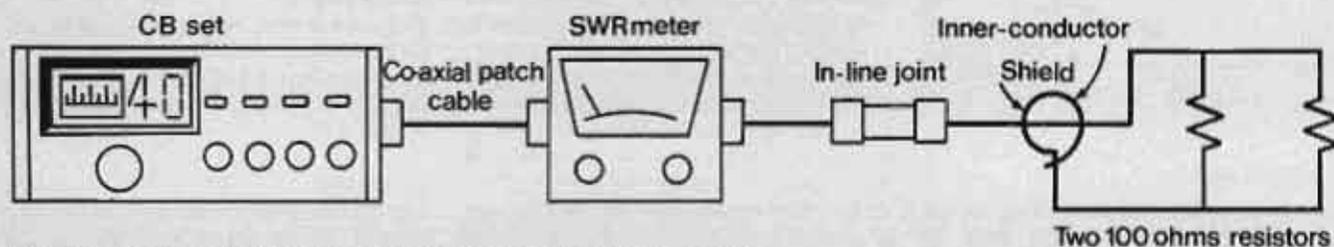


Fig. 2 Circuit for measuring SWR of an in line joint connector assembly

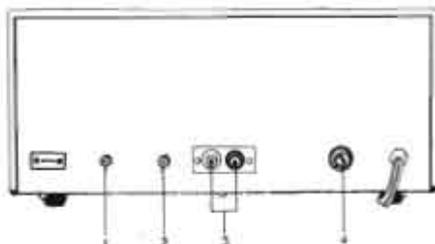
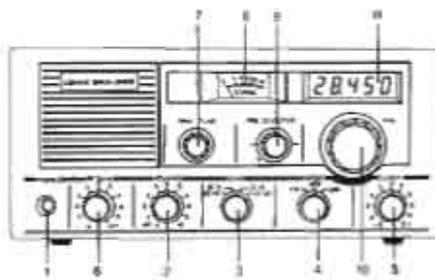
## September 1981 MONITOR — 1

SUPPLIER: LOWE ELECTRONICS LTD. MODEL: SRX 30D



### Purpose:

To provide reception facilities for amplitude modulation (AM) single sideband (upper or lower) and morse (CW) over the frequency range 500kHz to 30MHz. Designed to provide at least 10db signal to noise ratio with 0.3uV input (SSB) or 1uV (AM) Mains operated for either 110V, 117V, 220-250V, 50 or 60Hz. Protected by 1 amp mains fuse.



### Operation:

The receiver is switched on by means of the volume control (2). Reception mode is selected by (4). Standard short and medium wave broadcasts are on AM whilst most

'ham' and long distance c.b. transmissions are on either USB or LSB. To select the desired frequency, turn clarifier (5) to 'O', select required band (3), select number of MHz required, (7) select number of kHz required after decimal point. (10) The exact frequency is displayed on the readout. (11) Finally, adjust the pre-selector (9) for maximum signal strength on the 'S' meter (8). Reducing the rf gain control (6) may help to reduce interference from strong adjacent signals. Once done, a comfortable listening level should be adjusted by means of the volume control (2). If receiving a single side band transmission, the clarifier (5) may be adjusted either side of 'O' to resolve the speech. If unable to resolve within the range of the clarifier, change mode switch (4) from either USB to LSB and swing clarifier again. Low impedance headphones may be plugged into the 'phone jack (1). Partial insertion will leave the internal speaker connected whilst fully inserting will disconnect the internal speaker. If the received signal is suspected of being slightly off frequency, a minor adjustment to the tuning control whilst watching for maximum deflection of the signal meter (8) will assist.

Audio output for a tape recorder is provided at rear via a jack socket. The output is approximately 60mV rms at 5kohms (rear 1). Muting is provided by a similar jack with a shorting link (rear 2). When the supplied shorted out plug is removed, the receiver is desensitised, thus connection can be made to an associated transmitter or the back contacts of a morse key so as radiated energy does not damage the receiver.

The antenna terminal is for connecting a

50 to 75 ohm unbalanced input. (rear 3). A long wire between 20 and 50 foot long should be adequate. The black terminal provides an additional ground connection.

The fuse holder is of the turn loaded type (rear 4) one amp glass cartridge fitted as standard.

### CB World Opinion:

The specification for the SRX 30 D listed in the operating handbook supplied with the set is:

"At least 10db S+N/N under following conditions:

Mode	Input Level
SSB	0.3uV
AM	1.0uV

(AM: 1,000 Hz at 30% modulation)"

We found the db figures to be as follows:

### Sensitivity

Test conditions were with the rf gain fully clockwise, clarifier set at 'O', preselector tuned for maximum on signal meter.

Channel designation	Frequency (MHz)	Sensitivity ratio (db)
Mid proposed UK c.b. ch.20	27.79125	8.5
CEPT — FCC ch.14	27.125	7.0
Mid ham 10m band	28.850	9.0
Mid ham 15m band	21.225	10.0
Mid ham 20m band	14.175	10.0
Mid ham 40m band	7.050	9.0
Mid ham 80m band	3.650	greater than 10.0
Mid ham 160m band	1.900	10.0
Marine r/t distress (LF)	2.182	10.0
Marine CW distress (LF)	.500	8.0

As can be seen from the table, as the receiver reached the limits of its coverage, sensitivity varied. Broadly the same effect was noticed on AM.

At 27.8MHz S-9 on the meter required an input of 32uV

### Audio output

The audio output is designated as capable of 200mW output on SSB at 2MHz with an input signal of 0.5uV and 2 watts output with 5uV input. We found that our set bettered this.

### Selectivity

The selectivity on this set gave us cause for concern. On our set we found that the SSB filter was wider than the specified 4kHz at the -6 db points. Indeed ours was 5kHz. To

# LAB REPORT

## September 1981 FILTER — 1

receive SSB an optimum 3kHz passband is usually aimed for. Certainly 5kHz is inadequate for CW where 1.5kHz is usual. Adjacent signals which are up to 2.5kHz either side away from the centre of the wanted signal will be received as well.

### Rejection

We found that the intermediate frequencies were rejected. Such rejection was certainly better than 50 db. The image rejection was also adequate although on occasions image frequencies could be faintly heard.

### Spurious signals

As a result of the system of partial frequency synthesis used in this receiver, we noted small spurious signals at the megahertz points. Although these serve as useful calibration checks, their presence could be annoying if trying to receive a weak signal at the band edges. During our soak and stability test we wanted to use the international time and frequency standards transmitted on 5, 10, 15, 20 or 25MHz. We couldn't. Various other spurious signals were noted throughout the tuning of the receiver, at a very low level.

### General

We did not like the need for 'peaking' the sensitivity of the receiver by using the 'MHz tune' control in addition to the 'pre-selector'. Incidentally, we thought the use of the words 'pre-selector' highly misleading, when what is meant is 'antenna tune'.

The rear connection terminals for the antenna give the impression that they are for a balanced input, especially with the letters 'ANT' stamped on the rear panel between the red and black terminals.

Overall, the SRX 30 D receiver is useful for 'Ham' and short wave listening use. As it does not have an fm discriminator, the receiver would be useless for the proposed new UK cb service. Of course its fine for long distance (dx) cb listening on the FCC or the CEPT channels, so long as you know the carrier frequency for each channel.

*Lowe Electronics Ltd., Bentley Bridge, Chesterfield Road, Matlock, Derbyshire DE4 5LE. £195.00 inclusive of VAT and packing. Securicor delivery £4.50.*

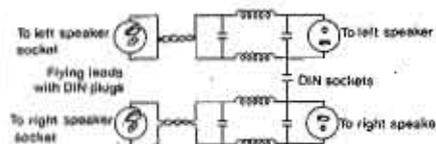
### MAKER: PACKER COMMUNICATIONS MODEL: HF — DIN



### Purpose:

Attenuates cb radio frequency energy picked up on hi-fi stereo speaker leads; thus stopping these signals from being fed back to the hi-fi amplifier, being detected and causing speech breakthrough on the music system. Maker rates unit maximum of 100 watts per channel.

### Circuit:



### Lab Test:

We connected the filter to a signal generator producing 27MHz channel 14 and fed this at a level of 100mV to each filter in turn measuring the output by millivoltmeter. We found the attenuation to be approximately 27db per filter.

### Construction:

Plastic case with front plate held in place by four cheese head screws. At one side two DIN speaker sockets for connecting left hand and right hand speaker leads terminated with DIN plugs. At opposite side two three inch lengths of twin flex terminated by DIN speaker plugs for connection to speaker output sockets of hi-fi or music centre. Internally, all joints are properly soldered and not just crimped. Capacitors are rated at 750v, whilst chokes are rated at 3 amps each.

### CB World Opinion:

A useful unit which reduces the effect of cb signal pick up on hi-fi or music centre speaker leads.

Before purchasing this unit check that your hi-fi or music centre does actually use DIN type plugs and sockets for the speakers.

If after fitting the unit interference from cb is still being heard; re siting of the speaker leads or even the actual equipments themselves should be attempted. If the filter does not reduce the breakthrough then the interference is more probably carried through the mains and house wiring. Read our next report 'Filter — 2' (Sept. '81 issue) for curing that.

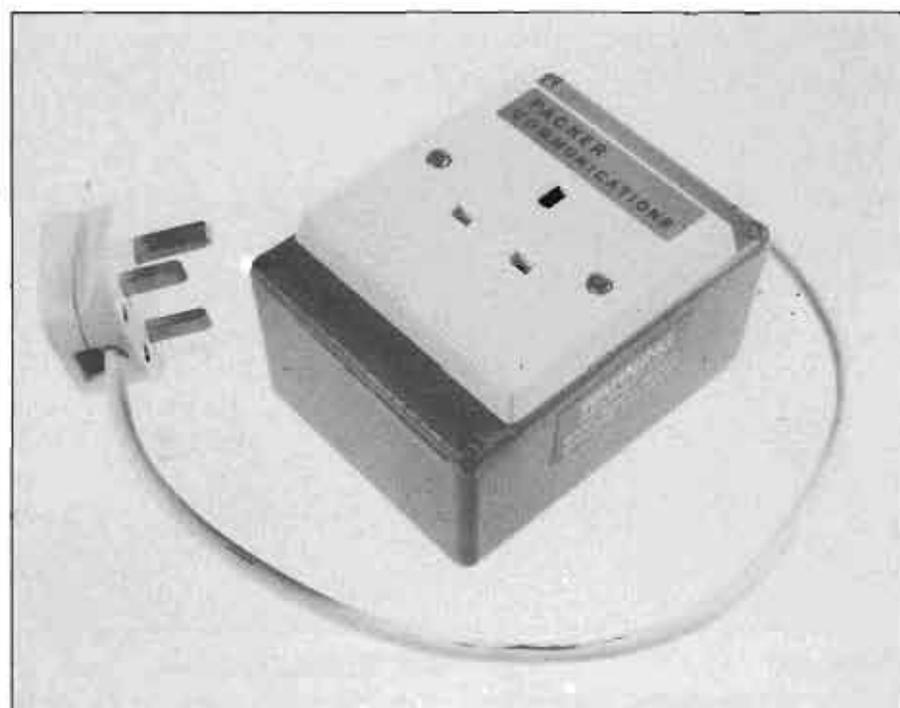
To test, reduce the volume for the left hand channel to zero, and unplug the left hand speaker. Listen for the interference on the remaining right hand speaker noting whether its less. If so, then interference is via speaker leads. Repeat test operation — replugging the left hand speaker, turning up its volume to normal, turning down right hand channel volume to zero, unplugging right hand speaker and listening for the breakthrough, on the left hand speaker.

We wanted to try the filter on a 'cheepie' music centre but unfortunately the speaker sockets were 15in apart. The maximum spread between the two flying plugs on the filter is only 6½in.

*Packer Communications, Coniston, Cumbria LA21 8HQ. £7.55 inclusive packing, VAT and postage.*

## September 1981 FILTER — 2

MAKER: PACKER COMMUNICATIONS MODEL: MF-10



kept proud of the metal case by the insulation of the mains cable wrapped around it and then glued to the case.

### CB World opinion:

This unit reduces the effect of c.b. signals being picked up by the mains and entering hi-fi or other systems, being detected and subsequently causing interference. Again before purchasing this unit check that the interference actually being experienced is mains bourne. With a hi-fi or music centre refer to our report 'Filter — 1'. (Sept. '81 issue) for test procedure.

The unit was given a month long soak test in conjunction with a monitor receiver. The location was a high floor of a new block fed with a complex system of blowers and air conditioning. There shouldn't be (but there is) electric motor noise on the mains which was virtually completely attenuated by the filter. This effect is almost entirely due to the capacitors and not, however, the ferrite ring.

The ring removes the 27MHz by providing an opposing and cancelling path for the radio frequency carried by the mains cable before the mains voltage enters the hi-fi or other unit being interfered with.

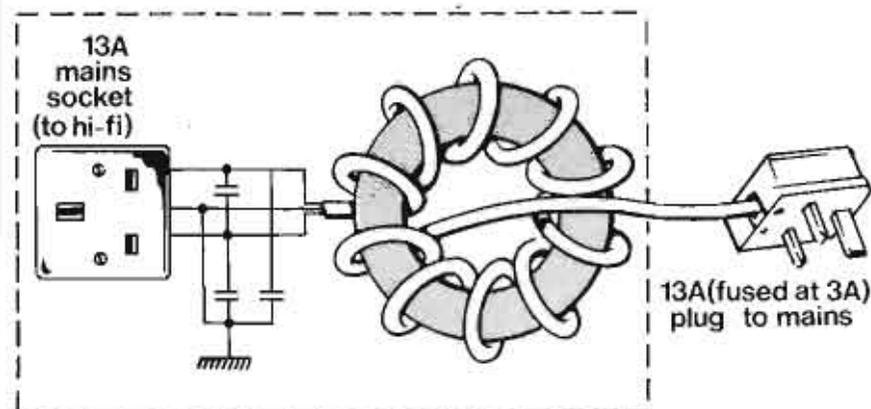
We noted that the mains cable was not strain clipped to the unit case. Incidentally, we must have had the economy model since according to the Packer price list, the MF-10 has 1 metre of cable. Ours had 15in (see picture).

*Packer Communications, Coniston, Cumbria LA21 8HQ £14.85 includes packing, VAT and postage.*

### Purpose:

Attenuates c.b. radio frequency energy picked up by a ring mains circuit of a house, stopping it from passing into the music centre or hi-fi. Maker fuses unit at 3 amps.

### Circuit:



### Lab Test:

The filter was connected to a signal generator producing 27MHz channel 14 and fed this at a level of 100mV to the mains plug. A millivoltmeter was then connected to the mains socket and found that the output had decreased by some 20db.

### Construction:

Die cast metal box with front cover held in

place with four cheeze head screws. The top plate has a British Standard 13 amp socket fitted flush.

Mains three core cable connects the socket wound ten times through a ferrite ring to a British standard 13 amp mains plug fitted with a 3 amp fuse. The mains socket also has connected to it three 0.01uF capacitors rated at 750 volts, one connected between live and neutral and one each connected between earth and live and neutral. The ferrite ring is



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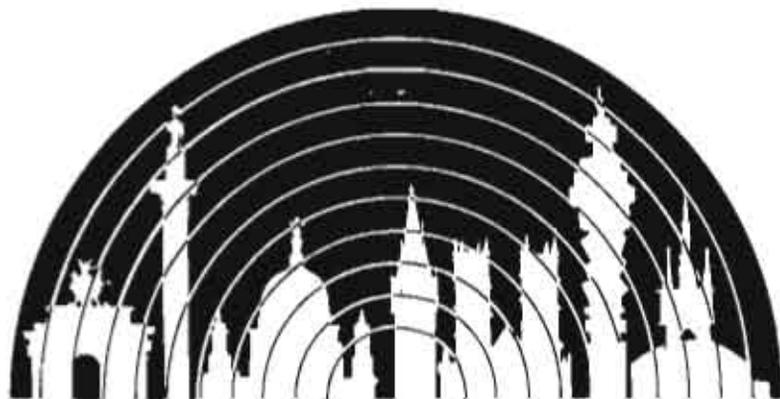
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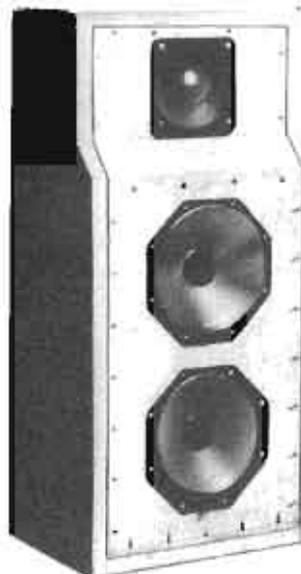
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# MEDICS NEED THEIR EARS ON



Why didn't the UK get the same c.b. channels as the rest of the world? "Other, existing authorised services are already there," we're told. One such service is the hospital paging system but this soon will be moved to 31.5MHz. RICHARD TOWN reports and suggests how European channels could be provided virtually immediately.

THE Federal Communications Commission (F.C.C.) forty channel system is used in the USA, Canada, and in all those countries where either there is no c.b. legislation or it specifically banned.

Western European countries still specifically banning a c.b. service are the United Kingdom and Peoples' Republic of Albania.

The first 22 of the F.C.C. forty channels are used by the Conference Européenne des Administrations des Postes et Télécommunications (C.E.P.T.) for their recommended specification which representatives of the UK Home Office signed on the 15th October, 1973. More details of C.E.P.T. and the possibilities of the Euro spec appeared on p.14 of your August issue of *CB World*.

As c.b. day one slowly creeps nearer, the main question being asked by breakers is why FM on 27.60125 to 27.99125MHz instead of AM on the F.C.C. channels? Finally obtaining the blessing of the government means either getting an existing rig converted at £30 to £50 or purchasing a new rig at between £70 to £90. Was the campaign worth all the effort?

The hospital channels are in the internationally designated ISM (International Scientific & Medical) band. They correspond exactly with c.b. channels in use in some 60 countries throughout the world.

Hospital paging equipment comprises a receiver selective calling console; a group

The 'bleeper' receiver. Black push button converts bleeping tone to 'on channel' speech reception (AM) (note bleeper identity number on side).

alert selective caller, a paging receiver battery charging panel; transmitter having an output which is variable from half to two watts and finally the antenna, mounted on the roof of the hospital complex.

The pocket receiver has its own integral ferrite antenna, and a push button switch which converts the receiver from sounding an audible bleep to receiving speech transmitted from the main control via the same channel.

The Home Office license for each installation only permits the signal to be received within the hospital grounds, thus powers from the paging transmitter may be set as low as 500mW.

Key members of staff carry the receivers and the 'bleep' will call them to the telephone.

When the group alert mode is used, a speech facility directs the team to the location of the emergency.

It's emotively claimed that the use of a hospital paging channel by cb'ers could stop a cardiac team from being directed to the location of an emergency.

## The F.C.C. FORTY — C.E.P.T. uses first twenty-two

26.965	1
26.975	2
26.985	3
27.005	4
27.015	5
27.025	6
27.035	7
27.055	8
27.065	9
27.075	10
27.085	11
27.105	12
27.115	13
27.125	14
27.135	15
27.155	16
27.165	17
27.175	18
27.185	19
27.205	20
27.215	21
27.225	22
27.255	23
27.235	24
27.245	25
27.265	26
27.275	27
27.285	28
27.295	29
27.305	30
27.315	31
27.325	32
27.335	33
27.345	34
27.355	35
27.365	36
27.375	37
27.385	38
27.395	39
27.405	40

### Can that really happen?

In Eastbourne, with the help of some local c.b. enthusiasts, a series of tests were carried out with paging receivers from three local hospitals.

The transmission frequencies for each

## MEDICS NEED THEIR EARS ON

system were known and the tests conducted on the matching c.b. channels, using both AM and FM. Results were as follows:

**Bleep tone:** no interference to the tone was experienced as this uses special gating frequencies.

**Speech from AM c.b. transmissions:** On the c.b. channel closest to the bleep receiver frequency and on the channel either side of that, the c.b. transmissions came in loud and clear. Although the first tests were made at 10 feet, further tests were made from mobiles three-quarters of a mile away. Reception was still loud and clear. The receivers have subsequently picked up messages from two miles away.

**Speech from FM c.b. transmissions:** identical checks were carried out on FM and even at close range there was no breakthrough of speech on to the receivers. The AM tests indicate that it is possible to jam emergency speech information. **There's no doubt that this is a potential hazard resulting in a life or death situation.**

Since carrying out those original tests, Eastbourne received a letter from the President of the system manufacturers suggesting that these tests were incomplete and that FM could still affect hospital paging by blocking the calls completely.

This is potentially more hazardous than losing the speech content of an emergency call because the existence of a call may never be known at all.

On the 12th June, tests were carried out at the Eastbourne District General. As stated by the manufacturers, 'FM on the relevant channel (i.e. the same frequency) will stop the complete system operating, but only when the c.b. equipment is in the hospital grounds, near the main building.'

The tests were repeated with the c.b. equipment in the car park of a nearby public house. From here the system was not jammed when FM was used. Voice breakthrough on AM was experienced as expected.

In all of these tests the c.b. transmitters had an output of 4 watts to their aerials. The District General had two watts to its antenna whilst St Mary's only had half a watt.

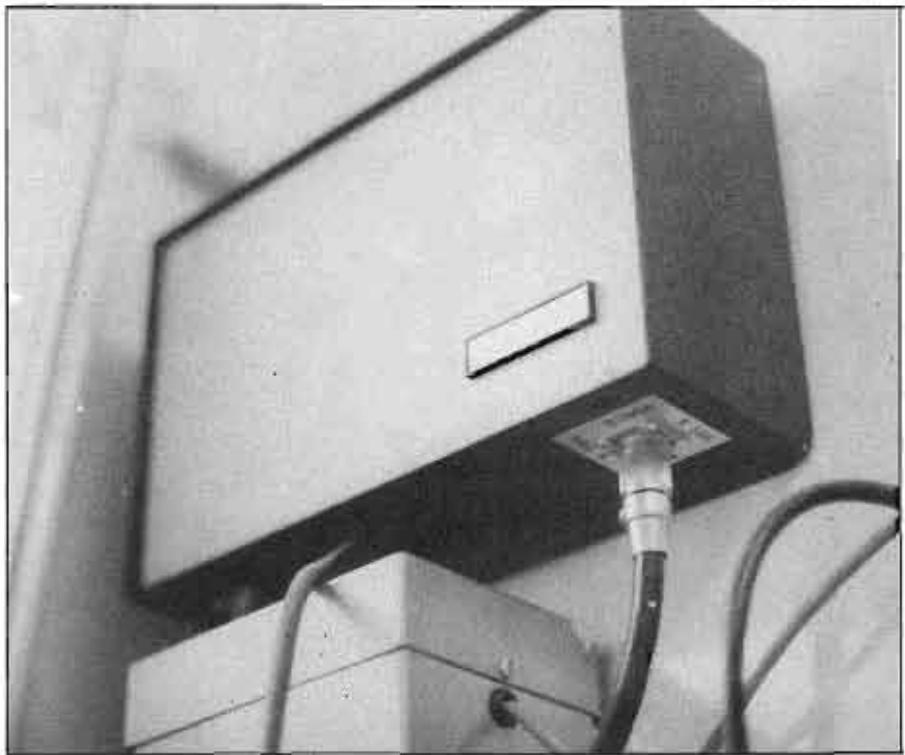
### The Interference Diary

An interference diary is now being kept and random entries are as follows:

12th, 20th and 28th May -- a few beepers were triggered into chirping and the users contacted the switchboard thinking they had received a call. A few minutes later, all beeps were triggered into a continuous warbling tone which the holders of the cardiac team beepers thought was an emergency call. All contacted the switchboard.

28th May -- Princess Alice Hospital -- One incident involving speech breakthrough to several beepers, the main complaint was the foul language being used.

23rd June -- District General -- Two cardiac team beepers were triggered in the Intensive Therapy Unit. The wearers thought this to be an emergency call, pressed the speech button whereupon another voice broke in, requesting the user to move up two channels, as this was a hospital channel.



The transmitter (note the 50 ohm output and use of thick low loss type coax).

In the current issue of Eastbourne Breakers Citizens' Band Radio Club Newsletter (no. 4) the following warning appears on the front page:

Hospital Channels: PLEASE KEEP OFF CHANNELS 2 12 24

This local club admirably continues to monitor the hospital channels and requests users to move, if and when heard.

In Stockport, the local c.b. club, Boxtown Breakers is providing a hospital paging system for Stepping Hill Hospital, reports the *Stockport Area Messenger*. This paper has a refreshingly different order of priorities when it reported that the hospital paging system bought with part of £1,000 raised by the breakers causes quote "interference on certain c.b. channels" unquote.

Meantime the *Eastbourne Gazette's* coverage caused some little aggravation in the 'Big E' c.b. club area by claiming that the manufacturers of the beepers have warned that the legal FM channels may cut out beepers altogether.

CB WORLD has made representations on this glaring piece of technical inaccuracy and at the time of going to press we understand an amendment to the official DHSS report is to be circulated. In addition, we understand that no emergency calls have actually been "jammed" as the *Eastbourne Gazette* puts it. It could however be just a matter of time.

### What's to be done?

You could be considerate and keep off the relevant hospital channels for your area. This would be at least three per hospital. In Eastbourne it is 1, 2, 3, 11, 12, 13, 23, 24 and 25. Do you know all of the channels in use at your local hospitals?

You could refrain from using AM within, say, a couple of miles of any hospital. This would be fairly safe. For this to work, the whole of the U.K. c.b. movement would

have to know the location of all hospitals still using 27MHz beepers (some 400 according to the DHSS).

The bleep frequencies could be changed and indeed there is a programme to re-allocate these systems to 31.5MHz once the life of the existing beepers is exhausted.

Changing the crystals or tweaking a couple of coils on existing equipment is not feasible since 31.5MHz is just too far away from 27MHz for this to be practicable. Therefore every receiver and transmitter would have to be changed.

Transmitters cost £1,000 plus each, and beepers, £150 plus each.

Eastbourne Health District has five transmitters and 300 beepers... so multiply that bill by the number of system users in the whole of the U.K. ... Are you prepared to pay your slice of that bill in the space of a couple of months?

There are two more options. The first is from the Autumn, stay legal on the Home Office channels and use FM. It'll only cost you the replacement of your existing rig but then the pressure won't be on to get at least the Euro (CEPT) 22 channels or the rest of the world's (FCC) forty channels in addition to your own.

The second option is in the hands of the Department of Health & Social Security. It's their choice whether to put up with the insignificant risk of say 1/2 watt FM (the CEPT standard) to 2 watts FM or suffer the potentially more damaging 4 watts of AM on their channels. **The decision is theirs and so is the responsibility.**

*If the c.b. movement is not offered a service better than that which is currently illegally available, an emergency bleep call might get jammed, to the shame of us all in c.b. and the civil servants, whom we pay to sort out problems like this.*



Antenna mounted on top of hospital complex (vertical dipole, centre fed).



Hospital paging control. Lower unit selects individual bleeper by keying in required identity number. Upper unit sends all numbers for beepers in cardiac arrest team. (Note tulp mike for transmitting location and type of emergency.) Spare beepers for off duty staff are stored above being trickle charged.

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# AND LOTS MORE!

# THE ROYAL FLYING DOCTOR SERVICE



The Cessna 421C is one of seven types of aircraft used by the Royal Flying Doctor Service.

THIS ORGANISATION provides a network of medical care facilities for people living in the vast and isolated regions of Australia's inland. The doctors operate by aircraft from a number of centralised bases and keep in touch with their patients by radio.

Two hours and two minutes exactly after being summoned, night and day, any day of the week, a doctor of the Royal Flying Doctor Service can be attending a patient anywhere in the most remote parts of Australia. This quick response to a call for help from the sick and the injured is provided in an area of 5,000,000 km<sup>2</sup> (2,000,000 square miles), two-thirds of the Australian continent.

The Royal Flying Doctor Service says its aircraft, based at 12 inland airports, can reach in two hours or less any of the 4500 outposts scattered through the north and west of Australia which have radio equipment to call up the flying doctor. In two minutes a call for help, even in the middle of the night, automatically switches on a receiver radio and sounds an alarm to wake the duty radio operator or doctor. (The service recognises of course that patients away from the outposts and away from tracks and airstrips may not be reached in two hours).

The service is getting busier year by year. In 1978, for instance, the aircraft made 5820 flights and transported 7629 patients. The service's doctors gave 19,450 radio consultations. Demands on the service increase as the search for minerals and oil and natural gas extends through the outback, and as anthropologists, archaeologists, surveyors,

tourists and others move into the area. The service is attending increasing numbers of motor smashes, for example, as more and faster vehicles use roads that are gradually being improved.

The 27 aircraft of the Royal Flying Doctor Service fly about 4,600,000 kms (2,800,000 miles) a year, criss-crossing the arid inland and the tropical northern and western coastlines with a vast network of mercy that at its most dramatic saves lives and at its most routine provides the same reassuring and preventive medical service as a family general practitioner. This general practitioner's patients, however, consult him by radio while they are hundreds of kilometres apart, and he visits them by aeroplane.

The Royal Flying Doctor Service was established in 1927 by the Very Rev. John Flynn, an energetic and visionary Presbyterian clergyman. John Flynn had lived in outback Australia since 1911, the year he was ordained, when he took charge of a mission station in semi-desert 550 kms (350 miles) north of Adelaide.

He was responsible for the establishment in 1912 of the Australian Inland Mission (AIM) and he was appointed superintendent of the mission, which looked after the welfare of the pastoralists, miners, road workers, railwaymen, and the few other settlers and their families scattered over a vast area of South Australia, the Northern Territory, Western Australia, and Queensland.

Flynn and his missionaries set up hostels and bush hospitals and by going out to the remote areas helped to banish much of the dread associated with the great loneliness of

the inland. But they could not banish much of the dread associated with the greatest fear of all of these isolated people: the fear of becoming sick or hurt far from doctors and hospitals, with no means of summoning aid.

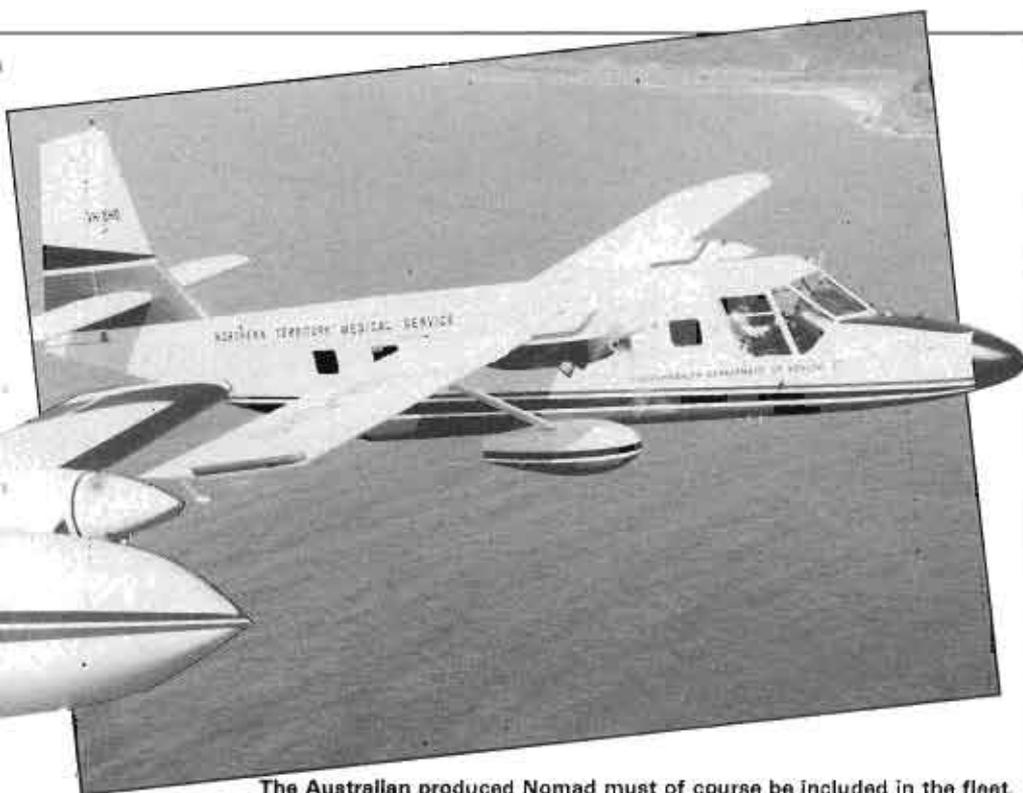
Flynn and his men found many instances on their patrols when lives could have been saved if medical attention had been available and he dreamed of a flying doctor service that would spread a mantle of safety over the outback.

His dream became possible as aviation developed after World War I and radio, then in its infancy, began to develop. Aircraft could cover the vast distances and radio could be used to summon them for there were no telephones in this part of Australia.

Flynn interested Alfred Traeger, a young electrical engineer, in the scheme and asked him to develop a portable radio which could generate its own power. Traeger came forward with a remarkably simple device that used pedals to generate electricity, the pedal-radio that became one of the great contributions to the development of inland Australia.

Cloncurry, in Western Queensland, was chosen as the first base (it has since been abandoned) and in May, 1928, Dr K. St Vincent Welch was selected as the world's first flying doctor. He made his first flights in a small De Havilland DH-50 aircraft. It was flown by Arthur Affleck, who was a pilot with the small bush airline Queensland and Northern Territory Air Services, which later became Australia's overseas airline, Qantas.

In its first year the Aerial Medical Service, as it was called, flew 32,000 kms (20,000



The Australian produced Nomad must of course be included in the fleet.

miles) from the Cloncurry base and treated 259 patients. The service grew quickly, and by 1933 Flynn saw that the vast organisation required was throwing a heavy financial burden on the AIM and he planned a new organisation, the Australian Aerial Medical Service, with sections in each State co-ordin-

ated under a Federal body. It worked smoothly, and in 1941 the name was changed to the Flying Doctor Service of Australia. In 1955 it became the Royal Australian Flying Doctor Service when the Queen granted the use of the Royal prefix. John Flynn, who was twice moderator of the

Presbyterian Church, died in 1951.

Today, the operations of the Service are in the hands of six mainland sections, each of which has one or more radio base control stations. These base stations are located at Cairns, Charleville, and Mt. Isa in Queensland; Broken Hill in New South Wales; Port Augusta, in South Australia, Alice Springs in the Northern Territory, and Kalgoorlie, Carnarvon, Port Hedland, Meekatharra, Derby and Wyndham in Western Australia.

A section centred in Hobart, capital of the island State of Tasmania, operates a restricted service.

Some 2200 outposts are in regular radio contact with the 12 bases and at least as many again maintain equipment ready for use in an emergency. Outposts may be a station (ranch) homestead, prospector's camp, mineral survey party, research station, construction or dam sinker's camp, a mission station, nursing home, or a small hospital.

The base radio networks have uses apart from medical calls, but medical calls have immediate priority. The Flying Doctor Service transistorised transceivers which have almost — but not entirely — replaced the pedal radios, provide a general communications system for the inland. With the completion of a re-equipment program and changeover to single sideband operations from January, 1978, the service now has probably the largest high-frequency radio network in the world, and certainly one of the most modern.

Each year more than 200,000 radiograms



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## THE ROYAL FLYING DOCTOR SERVICE



The small and versatile Pipers are on standby 24 hours a day, seven days a week for emergency callout.

are sent over the network. The Schools of the Air, which are established at Flying Doctor Service bases in all States, are one of the biggest users of the networks. The schools of the air, run by State departments of education, supplement correspondence lessons sent to outback children who live beyond the reach of normal schools.

In off-peak hours the networks are used for exchanging news and gossip, much the same as city dwellers use their telephones. In the inland, however, there is no privacy. Each network has its own frequency and every one on the network can listen to conversations — whether they are with the flying doctor, or between neighbours — but inland people do not resent this lack of privacy.

The Royal Flying Doctor Service operates 27 aircraft from the 12 bases including Beechcraft Barons, Queen Airs and Dukes, Cessna 421s, Piper Chieftans and Navajos, and the Australian aircraft, the Nomad. They are flown by commercially licensed pilots, 40 radio operators, and 14 engineers. Nurses who sometimes accompany the doctor are employed by State government health departments.

Doctors working for the service conduct radio clinics twice daily Monday to Saturday and once on Sunday, when they are on call to outposts and available to discuss ailments. They also conduct regular preventive medical clinics when they fly to homesteads, small communities, missions, even roadside water tanks at an appointed time to make routine examinations, give injections or other treatment against preventable diseases such as poliomyelitis, and diphtheria, and to conduct the same kind of consultations as a city-based general practitioner.

Consultations by radio during the daily clinics are easier than it seems. Each outpost has a standard medical chest arranged by the Flying Doctor Service which contains medical items supplied free by the Australian Government, anatomical charts, and an index of the contents. All medical items are numbered on the container and on the list index tells exactly where each item is. People with no medical knowledge can give expert aid on instructions from the doctor, using the standard medical chest.

The doctors also provide a 24 hour, seven-days-a-week emergency service. Outposts can contact the doctor by operating an auto-

matic signal which switches on the base station equipment and rouses the doctor or duty radio operator. The doctor can speak immediately from his home to give advice to the output.

Royal Flying Doctor Service pilots have a far tougher job than the smartly uniformed airline pilot who flies on a beam and hands over to ground engineers when he lands. Away from the base they must do their own refuelling, handling heavy drums at isolated strips, and sometimes they must carry out emergency repairs.

Most of the airstrips they operate from are poor compared with the strips used by commercial airlines. There are few radio aids, and usually none at all. Landmarks are few in the flat featureless interior, and navigation often depends largely on the pilot's personal knowledge of the country, and instinct.

It is not easy at times for the pilot to locate a tiny pinpoint on some featureless landscape; one tin roof in the centre of a bare and everlasting plain, a ragged line of timber half lost in dust haze, the fine thread of a boundary fence, a water hole among the sand hills, a sun-baked claypan that is the landing strip.

Night flights are made only in emergency because most landings are made with the headlights of motor vehicles lined up along the strip.

For long stretches the weather is ideal in the back country for flying, but now and again the elements can make things tough. There are dust storms that abruptly shut out the pilot's vision; huge and swollen red cloudbanks rising 3500 metres (12,000 feet) and more. A Broken Hill pilot, caught in such a storm, had to find his way to a lonely sheep station by flying three metres (10 feet) above a border fence that he could just see.

In the tropical north, in areas serviced from Cairns, Derby, Port Headland and Wyndham, the monsoon brings other trying conditions; fierce heat and humidity, great rolling thunderheads known as cockeye bobs, torrential rains, cyclones that have flattened the flimsy little towns of the north-west coast and forced pilots to peg down their aircraft wherever they happened to be to stop them being blown away.

The sluggish, mangrove-screened rivers flood many kilometres wide, transforming half the country into one huge swamp. Rank

grasses grow three metres (10 feet) high to conceal tree stumps and snags that would wreck a plane on landing. Even the higher land has to be surveyed cautiously before touchdowns unless the aircraft is to lie bogged for months.

Because of difficult conditions like these the Flying Doctor Service is limited in the type of aircraft it can use. In general terms it is re-equipping with modern, twin-engine aircraft with good one-engine-out performance. Usually they are of six to eight passenger capacity with a cruising speed around 320 kilometres (200 miles) an hour. Financing of the Royal Flying Doctor Service is complex and varies from State to State. In 1978-79 the Australian Government made a grant of \$1 748 000 for operational expenses to the Federal Council of the Service and a contribution of up to \$768 000 on a \$ for \$ basis for approved capital projects. This money, however, covers only a fraction of the annual requirements. Income, which is virtually matched by expenditure, was \$6 588 000 in 1977-78. Of this amount Australian Government grants represented 36.4 per cent, State Governments' contributions 34.2 per cent and the Service's share of 29.4 per cent came mainly from donations, legacies and bequests.

Stories of how the Flying Doctor Service has saved lives or brought relief to suffering in the harsh earlier days of settlement are legend in Australia's outback. There was the pilot who was called to pick up an Aboriginal woman seriously injured in a tribal fight. She had a wooden spear driven through her chest, the shaft protruding several feet back and front. Before he could put her on the aircraft stretcher he had to break off the spear at each end. Another pilot making a lone flight with a delirious man aboard, several times lost control of the aircraft as she struggled with his patient.

These are just a few of the many situations that the Flying Doctor Service must cope with. Without the extensive use of a two way radio system calls for immediate help from anywhere within the two million square mile landmass would be virtually impossible.

We would like to thank the Australian Department of Administrative Service, Canberra for their assistance in producing this feature●

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# THE GBH COLUMN



Lawrence Maghnagi and Philip Overton, two directors of Digitek UK, sole UK distributors for CTE International c.b. accessories in the UK, telling Gordon Henderson, *CB World's* Publishing Director, about their future marketing policy at the recent trade reception.

AS WE WAITED with baited breath for news from the Government of CB day, they broke up for their summer holidays without so much as a c.b. mention. We must however, keep our priorities right as there must have been many more pressing things to deal with. Seat belts and the rioting, not to mention security for the Royal Wedding. All these things are Home Office affairs but it is all too easy to forget them as we all hoped that our own particular cause would be approved.

With the new f.m. market coming on stream we hope the c.b. start-up date is before Christmas. After all, Father Christmas wants to keep in touch with his suppliers to keep his customers happy on Christmas Day.

Isn't it incredible how CB magazines go for one another? It's about time that *CB World* said something on the matter and this is what it has to say: NOTHING . . .

In July, *CB World* held a reception at H.Q. (Sutton), for c.b. traders and suppliers. This went down well as it gave the trade (our advertisers) a chance to meet each other. I believe the trade should form an association, not just to protect themselves, but to protect you, the c.b'er. When c.b. becomes legalised, we should be careful who we deal with. Although c.b. sets are quite reliable, there is bound to be a dud one and we want to take it back from whence it came. The rule is, always ask at point of purchase for the guarantee and ensure that a repair/exchange service exists. If not, go somewhere else.

This leads me on to mention a new market that is springing up and will grow even more when f.m. starts up. The new market I refer to is "thieving c.b. sets". Whilst talking the other day to a well-known insurance company, they made interesting listening. All the while c.b. sets are fitted loosely (slide mounted, outside dash, placed between seats etc.), they will need to be insured separately. Just as cameras, briefcases, fur coats and any other valuables are. If, however, the c.b. set is fixed 'in-dash', just as a car radio is, the normal 'contents' insurance applies. From this it would appear that you would need to declare your c.b. set when taking out 'contents' insurance. I have an ever better idea. Make it difficult for the sets to be nicked and don't add to the market growth. (See our feature on the thiefproofing of sets, page 12.)

In the previous issue of *CB World*, we got some stick from c.b. clubs following our lead story, 'Where have all the c.b. clubs gone?' We were referring to the U.S.A. where, during their c.b. heyday, clubs sprung up all over the place and eventually died. This could happen in the U.K. but there is no reason why it should. I have been to a number of c.b. clubs and after the initial pint I have waited for something to happen and not much has. This is the fault of the committee for not organizing something and also the fault of the club members for not pressing for things and, worst of all, not wanting to take part.

*CB World* has for some time been trying to organise a National CB Club dart competition. We have had around 12 clubs entered so far and the dart season is getting closer. If we get no further entries, we may well give this a miss. One club has actually sent in £2 but this will be returned if we reach a 'no go' situation.

We really do get a fantastic mail bag from our readers. All the letters tell us what a good job we are doing and it's very pleasing indeed. As with clubs in the U.S.A., the same thing happened with magazines. There were eight or nine mags to begin with but now there are two. One of them is *CB Magazine*. *CB World* will be around — we are going to make sure of that. Brian Chalmers-Hunt — our editor — hopes to reply to all letters received but if he doesn't, it is just that he hasn't got ten secretaries to help him. Also if you have sent in your handle for our National Register, we again ask for patience, they will be included, we have so many it takes time to print them. Incidentally, the 'handle register' is *CB World's* copyright. No one can reproduce them without my permission and up to now, I have not given permission to anyone. Budding publishers beware!

Let's hope that by the next edition an announcement is made about legalisation for c.b. in this country, we can then settle down and continue with our hobby. In the meantime, I'll say breaker breaker.

**Gordon B Henderson.**

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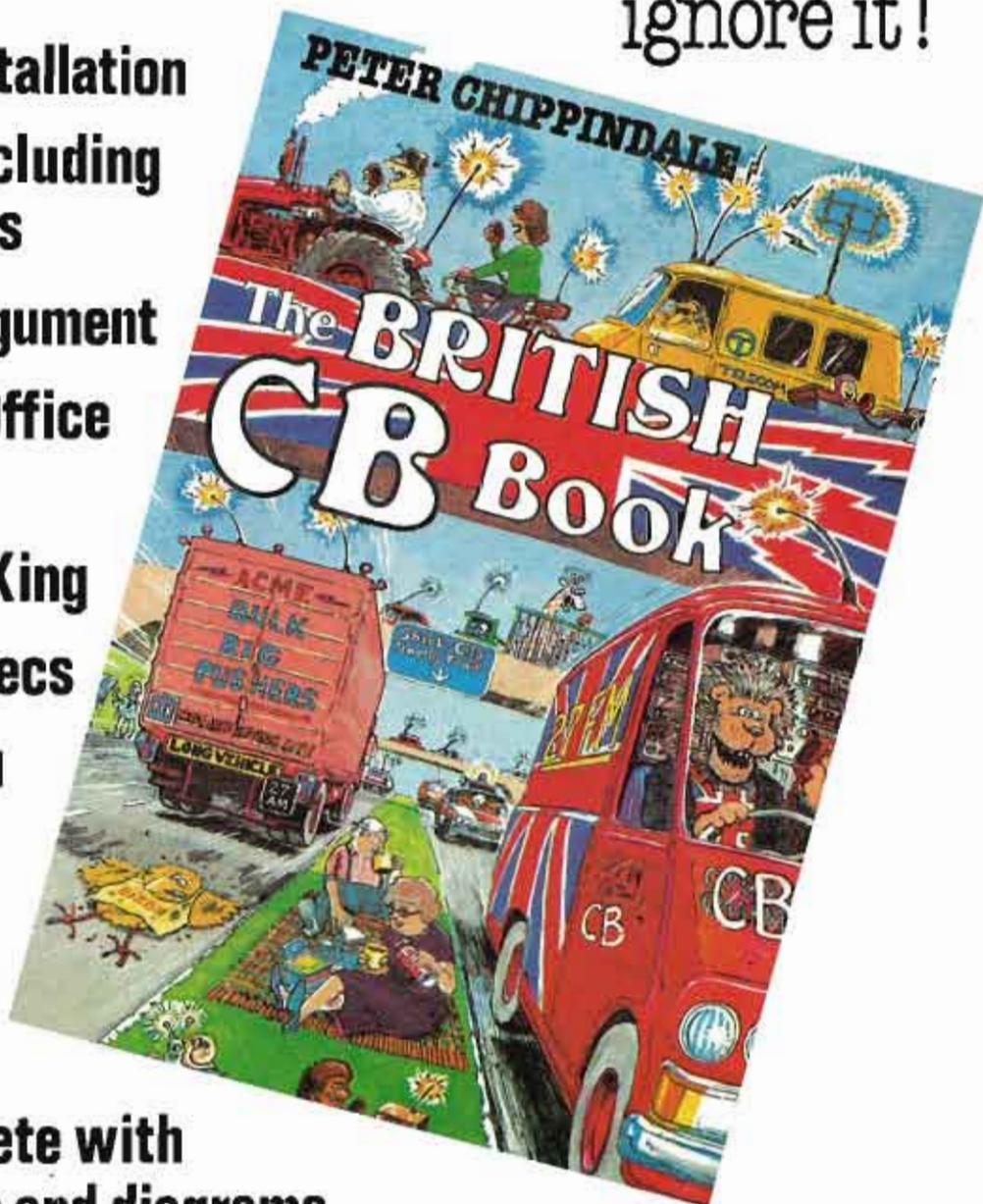
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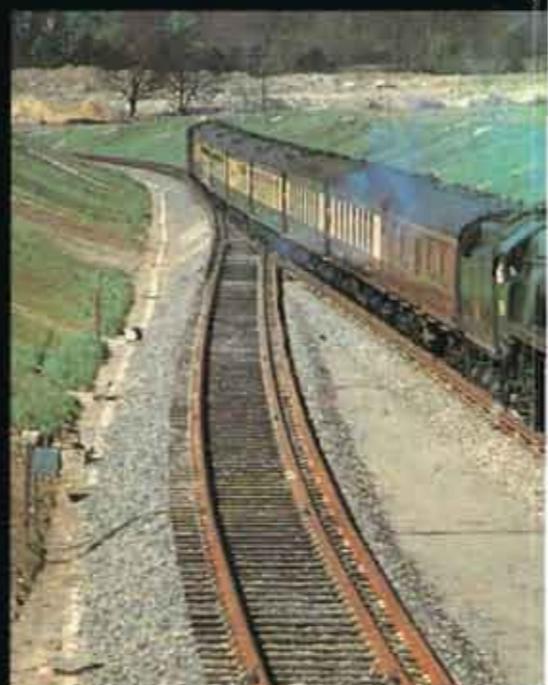
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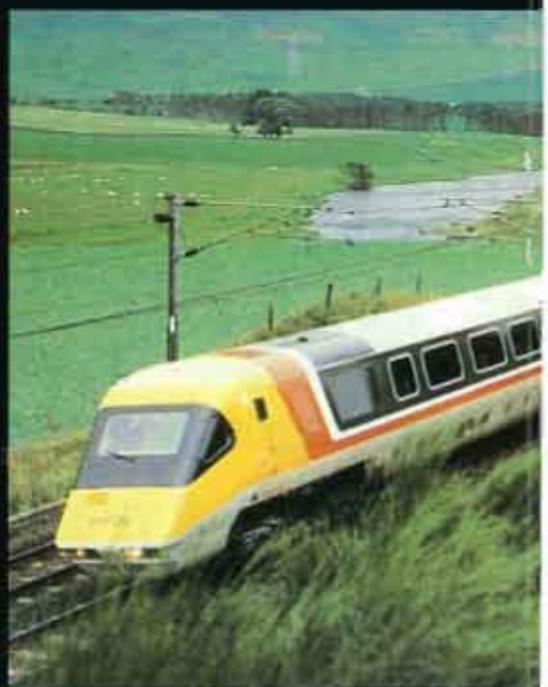
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# PAST, PRESENT AND 2 WAY RADIO TRAIN



The Duchess class of locomotive, the largest 4-6-2-engine in Britain, here seen working a part of a train over Shap Summit. The train was of more than twice this length when it left Euston. The rear nine coaches were detached at Oxenholme and taken to Windermere, whilst the engine took the balance to Penrith where a smaller engine pulled the coaches over the hills to Keswick. Photograph: Eric Cope — Colour Rail.

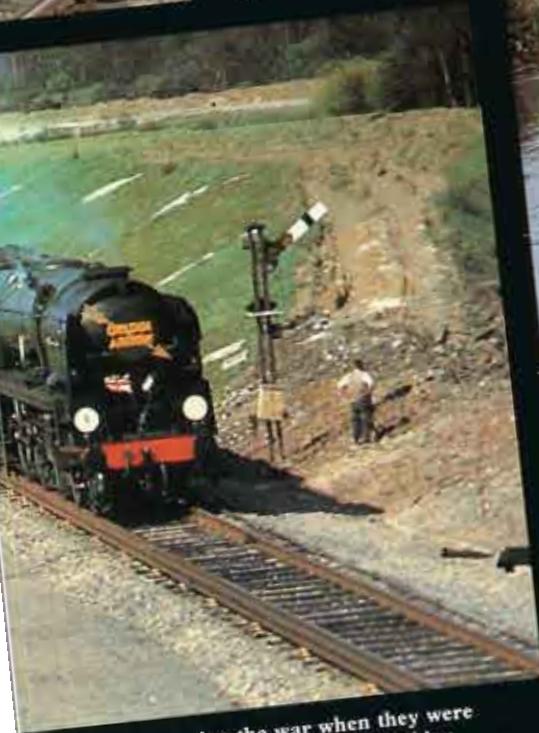
The Merchant Navy class gave the Southern Railway put into service in 1941. This example has been re Arrow boat train — a regular duty for the class.



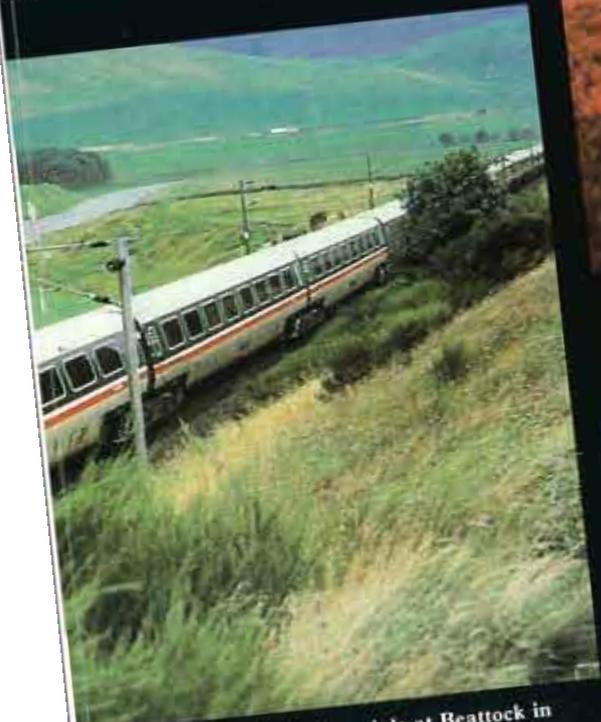
Perhaps the most famous class of steam engines, the streamlined A4 pacifics which ran all the major LNER express trains before and after the war. Designed for high-speed, light trains, (Mallard, preserved at the NRM, York, holds the record speed for steam, 126 m.p.h.). During the war they handled trains of up to 850 tons between Kings Cross and Newcastle. Several examples are preserved in working order, including this one, the Union of South Africa.

A sight for the future — the Advanced Passenger train in Scotland. It is understood that all motive power will be provided by a two way radio communication system for contact with control centres without having to stop.

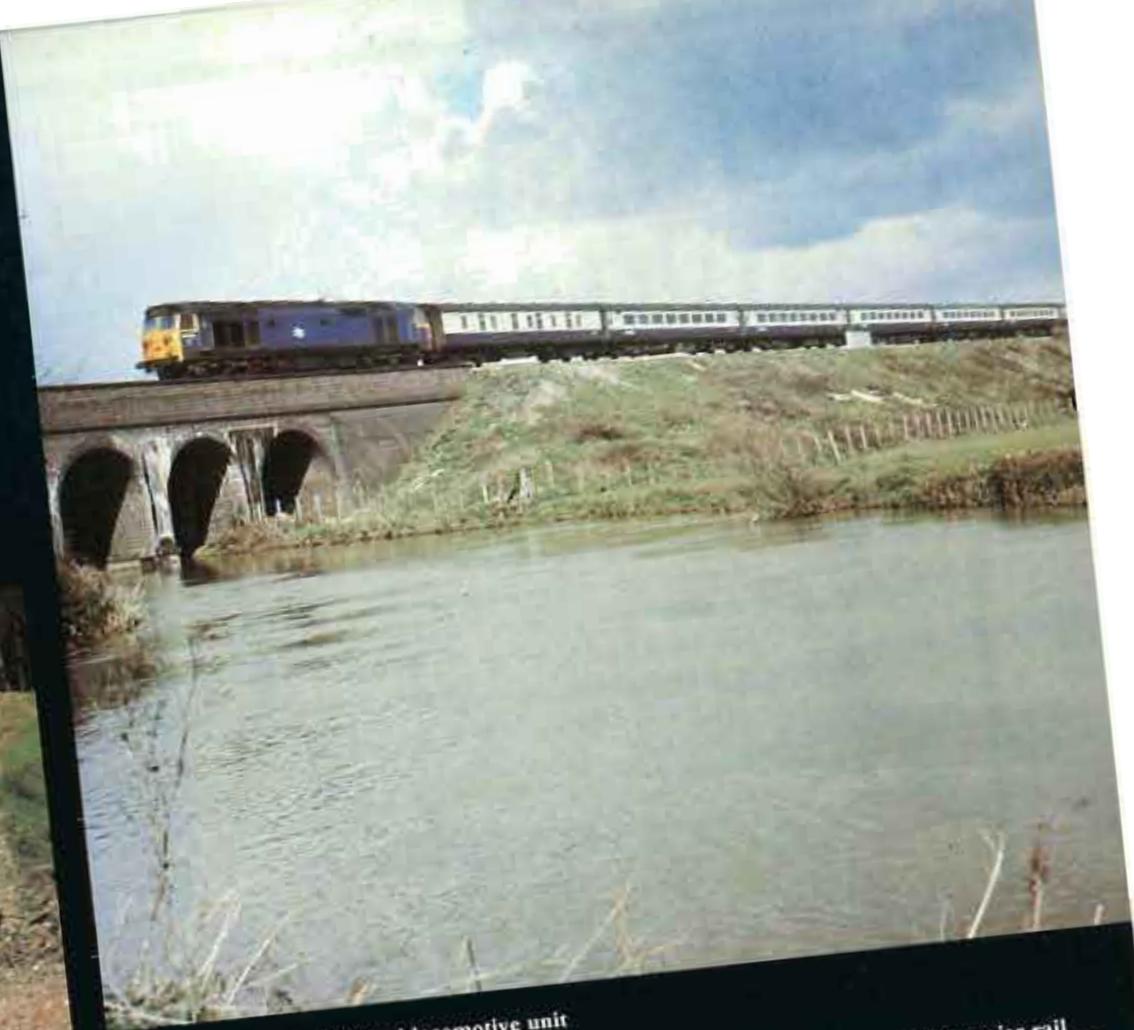
Left: The King class of locomotive was the most powerful on the Great Western Railway, and also the most powerful 4-6-0 type in the world. The first of the class, No. 6000 King George V is preserved in working order, and is often used on steam special trains on British Rail Tracks.  
 Photograph: Derek Cross — Colour Rail.



...ilway a boost during the war when they were rebuilt, and here seen working the Golden ...  
 Photograph: Derek Cross — Colour Rail.

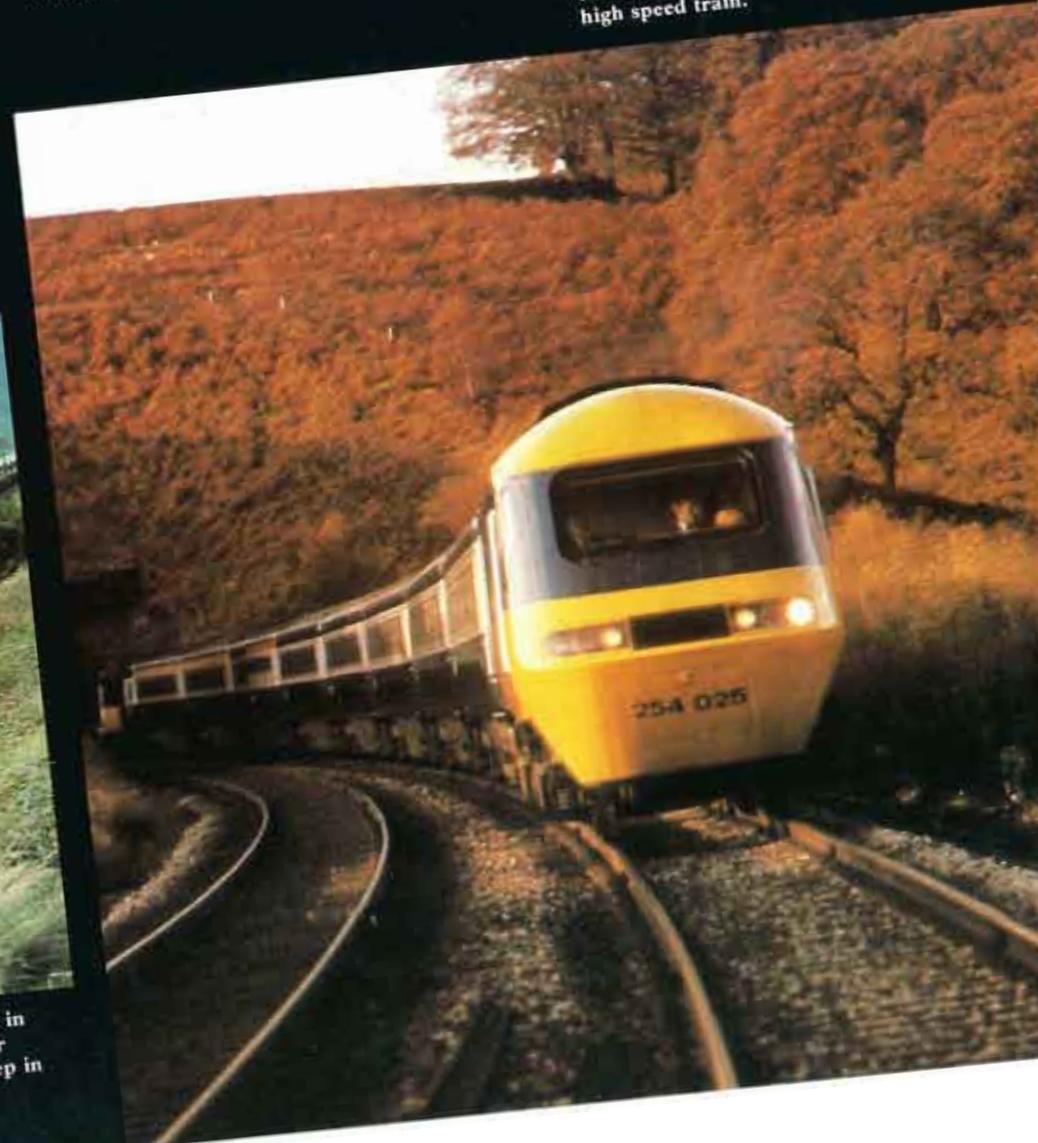


er Train on commissioning trials at Beattock in ... units now being built have the provision for ... em. This will enable driver and guard to keep in ... on and use the trackside telephones.



Above: The class 50 diesel locomotive unit and Inter City Express of the early 1970's.

Now a common sight at the major rail terminals in the U.K. is the Inter City 125 high speed train.



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# BRING IT BACK

## IDENTIFICATION REQUIRED

I have recently seen a Stalker 4 AM/FM rig and on the rear panel there is a socket marked SEL CALL. Please can you let me know what this socket is for?

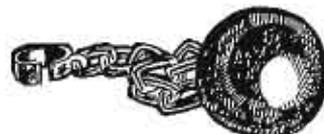
ED. If any readers can identify this please write in and let us know.

## SPLICED



May Car Six Seven wish Black Panther and Sweet Sensation, two breakers from the Moses Gate 20 in Glogg Town, a very happy wedding day on September 5th. May they have many happy years together. Good luck from Car Six Seven.

Breaker on the side, Breaker on the side, come on in with your handle. "Hi you've got Wickedy Witch here, just want to say all the best to those two good buddies on the big day, so 10-10 till we see you again, by by we gone."



## CAUTIOUS FM FAN

Congratulations on bringing out a great magazine. I've read many c.b. magazines, but your's comes out on top. I have been breaking on and off for about 5-6 months and I've never enjoyed myself so much. But the one snag is, I can't make up my mind about these FM rigs that will be on the market supposedly later this year. I've

heard (through earwiggling), that they'll be twice the Green Shields of an AM rig, and also the fact that the range will be limited. Anyway, I'll have to go breaker-break, as the XYL has told me that my "bean water" (coffee) is going cold.

*The Gasbag Bury*

As you know the rules of the c.b. game have not yet been announced, but FM sets shouldn't cost too much. The range may not be any better or worse than AM - we'll see - Ed.

## CAPACITY FOR RESISTANCE

I have recently bought your August issue of *CB World*, in which you ask, "Where are all the c.b. clubs?" We would just like you to know that this one at least is still around, and kicking. We are in the process of writing to all listed c.b. clubs and asking them for their support in resisting the ridiculous Government specs. that are being forced on us.

We, along with the CBA and NATCOLCIBAR, are still campaigning for 27 a.m. and now that we also have the backing of the European CB Federation, we are continuing that fight.

You can see by the following letter that we still mean to stick to our frequency, come what may.

Dear Mr Chairman, As you may know, the Citizens' Band Association and the NATCOLCIBAR organisation are still campaigning on behalf of all users of existing c.b. equipment, those on 27 MHz a.m., and in the light of the latest news from the European c.b. Federation, whereby they have informed the Government that if they implement the proposed specifications they will take the United Kingdom to the Courts at the Hague on the grounds of restriction of trade between Common Market Countries.

In the light of this information, we feel that it is in your interests to carry out the following procedure: firstly to carry on using our present c.b. equipment; secondly, having nothing to do with the so called legal rigs if and when they become available; as you are aware they are a completely one-off specification, of no use anywhere else in the world; they will do nothing for the breakers in the UK, except isolate them from everyone else. We feel that if all the Breakers Clubs in the UK stick together now we shall not only get 27 a.m., but the full support of the rest of the Citizens' Band fraternity.

Therefore please support us in demanding what we believe is the

right of all free citizens in this country, that is to talk to who we like, when we like, on the same equipment as the rest of C.B. World.

**THIS PROTEST COULD DECIDE THE OUTCOME ONCE AND FOR ALL. PLEASE GIVE US YOUR SUPPORT. This**

letter is going out to all listed CB Clubs in the UK.

We remain  
Yours sincerely  
The Andover 27AM Club  
Signed *Keith F Shurety*  
Chairman



## DEAR FRIENDS OF C.B. WORLD

### BELGIUM

I send you some information about our QSL SWAP CLUB. Please, may I ask you to publish something about our club in your nice magazine.

For membership of the ARENBERG QSL SWAP CLUB just fill in your address and send it with 10 or 20 of your own QSL cards plus a U.S. \$15 note (no cheques please) to the President, P.O. Box 33, B-3030, Heverlee, Belgium. In return you will receive:

- 1) an equal number of different full colour QSL's from Belgium and outside countries
- 2) a beautiful multicoloured club certificate
- 3) a wallet size I.D. card
- 4) an official A.Q.S.C. unit no. (XYL or OM receives free unit no. and I.D. card)
- 5) tourist information for international members
- 6) A.Q.S.C. decals
- 7) membership forms from other QSL clubs and items as available

- 8) A.Q.S.C. membership roster (up-to-date) with all members' addresses
- 9) A.Q.S.C. stamp

If you are really interested to be a lifetime members of the ARENBERG QSL SWAP CLUB, please write soon.

Hope to read you very soon.

*TAMANGO*  
(President)

### BELGIUM

In your July edition I saw the feature on "Riding the Airways". My friend and I are interested in balloons and would be grateful for any information on portable v.h.f. transceivers that are available in England. Their operating frequencies should be 118-135 MHz.

We cannot find any information here in Belgium. Greetings.

*H.M.J. Heitzer,*  
Vossenbos 33-2190,  
Eisen, Belgium.

Ed. Come on then the trade readers



**ARENBERG  
QSL SWAP CLUB**

P.O. BOX 33  
3030 HEVERLEE  
BELGIUM



who supply amateur radio equipment. Why not put a few catalogues in the post?

#### WEST GERMANY

The club has been in existence since 1st June 1980 and has approximately 140 members from all five continents. The club is being lead by the initiator and president Knut Mittelstädt. Our goal is world-wide friendship by the club and QSL swap activities.

The club became well known by frequent visitations of QSL swap activities in and out of the country and it is always a great pleasure to be invited to attend again.

Therefore, the quantity of QSL cards, especially from Belgium, Netherlands and West Germany, is extremely high. In order to expand the club, a contest for members within Western Europe has been established as follows: for three sponsored members — 100 club cards. For 10 sponsored members — one photography set or c.b. parts. For 100 sponsored members — one c.b. radio set. Every 25th member will receive a gift.

The membership dues for lifetime are £6.

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  - 4) a rubber club stamp and a club pen
  - 5) a membership roster including changes until end of 1982
  - 6) 20 QSL cards from other members
  - 7) 10 special BERLINER BEAR cards
  - 8) membership forms from other QSL-clubs
  - 9) other items as available (tourist information).
- 1 IRC will be included for reply.  
Only philatelic stamps used on all mail!

QSL-SWAP-CLUB  
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Pres: Knut Mittelstädt  
Postbox 2923, 6750 Kaiserslautern  
West Germany.



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# WESTMINSTER WATCH

## Sounds Reasonable

IN A speech to the Radio Electronic and Television Retailers Association, Timothy Raison MP, Minister of State at the Home Department, has further intimated that the Euro frequencies may be on the way.

Mr Raison had this to say about the Euro dimension:

"Having decided on an f.m. service on 27 MHz, the Government had, in deciding on its present location in the frequency band, to consider the existing pattern of authorised use in that band. The channels used in Europe in the lower part of the 27 MHz band are heavily used in this country, in particular for paging services and model control. These services are suffering a good deal of interference from illicit c.b. use and may have to be moved to new frequencies, but this cannot be achieved overnight. Hospital paging services operating on 27 MHz would in particular take a considerable time to re-locate.

"The over riding priority is to offer a good legal c.b. service quickly in order to discourage harmful a.m. use, and the frequency we have chosen — 27.6 to 28 MHz — is the only one that affords this prospect. Of course, we recognise the argument in favour of commonality with Europe but I must stress that this is not within reach at present."

Later in his speech, the Minister again made reference to the Euro dimension when he reiterated his determination that British c.b. should not be left isolated.

"I do not however doubt that effective harmony within Europe will come and its certainly our objective to achieve commonality with our European partners as soon as agreement can be reached on the re-location of the existing users in this country of the relevant frequency sub-band but this is bound to be some years away."

Tim Raison's speech followed on from the House of Commons written question no 117 of the 24th June wherein Home Secretary William Whitelaw replied to Major Sir Pat Wall MP (Chairman of the Parliamentary Working Party on c.b.) that "It will be our objective in the longer term to adopt the relevant specification recommended by CEPT."

The full text of the question, its answer, together with an analysis of some of the near CEPT European countries legal systems, appeared on pages 14 and 15 of the August edition of *CB World*. In it we predicted the Euro dimension but demanded that the Euro channels should be IN ADDITION to our existing forty.

Reaction came swiftly.

In a tersely worded telex message from the Citizens' Band Association, James Bryant, CBA President and NATCOLCIBAR's Treasurer, condemned the proposals claiming that the legalisation of an unique British set of frequencies on 27 MHz and then later adding more channels for the Euro dimension will "cause complete chaos to user and manufacturer alike."

When in the USA there was a move from 23 channel equipment with a liberal specification to forty channel equipment with a tight specification, many dealers and importers were caught napping with unsold stock. Quite a number went out of business, with liquidators selling bankrupt stock at knock-down prices. Thus it was that USA banks were even giving away 23 channel rigs free with each new account opened, petrol stations used them in promotions and major distributors smashed up thousands, buried or melted down the remains, rather than depress the market even further.

Could this happen here if we got our Euro channels later, and not together with the forthcoming legislation?

The prospect of a free c.b. with each packet of cornflakes sold may enthrall you yet the effect of such a shock to the c.b. market would be to depress demand for 22 channel Euro rigs and 62 channel Euro/British ones to the point where adequate profits are not made. This in turn could frighten off capital investment by those not involved with c.b. — the financial institutions.

If they don't get an adequate return on the loans and capital they advance to make c.b. sets in the first place, they'll stop loaning it and all the bother getting c.b. legalised in the first place could have been wasted.

This situation is expected to occur with sets for 934 MHz since sets for 27 MHz will be on sale for less than a quarter of the price of UHF ones, doing the job better too.

The only safe way to introduce the Euro dimension into British c.b. is by legalising it at the same time.

*CB World* will report on a method by which this could be done.

#### Question Time

Major Sir Pat Wall MP was hard at work before the summer recess fighting the good c.b. fight in the House of Commons.

#### They've Twigg'd Your Rig

Following *CB World's* exclusive exposé he asked Willie Whitelaw,



Another c.b. backer in high places. Clr. David Dell, Chairman A.M.A. Arts & Recreation Committee 1978-81. photo: A.M.A.

Secretary of State for the Home Department: "In view of the fact that following his announcement that UK c.b. radio was to use 27 MHz many importers have brought 27 MHz antennas for sale in the UK which are to be illegal under his proposed regulations, if he will reconsider his proposals for vehicle antennas since interference from high gain antennas does not involve mobile stations." Mr Whitelaw replied that "I have the question of aerials for c.b. equipment under review, and hope to announce my decision shortly."

CB World hopes that his decision will allow breakers to choose the aerial that they want, not what a petty regulation (which will be largely ignored and hence unenforceable) says they should have.

#### British Chips Are Frozen

P. Wall: To ask the Secretary of State for the Home Department, what manufacturers will be able to supply frequency synthesis circuits for the legal 27 MHz Citizens' band service within six months of the legalisation of this service.

W. Whitelaw: We understand that several companies plan to have available in quantity c.b. sets conforming to the legal specification in the autumn.

Note the clear and concise answer to this question. A full report on the why or rather why no British integrated circuits (chips) and hence virtually no British manufactured rigs will appear in a forthcoming edition.

#### The Euro Dimension — again

P. Wall: To ask the Secretary of State for the Home Department, what communications he has received from the European Economic Community or interested parties in the European Economic Community on the subject of citizens' band radio.

W. Whitelaw: The European Commission has received a

complaint alleging that our plans for introducing a legal citizens' band service constitute a barrier to trade under the Treaty of Rome, and have asked us for our comments. We have also been asked to take part in a survey of practices within the member States of the Community carried out by a firm of consultants on behalf of the Commission. At an earlier stage, the European Citizens' Band Federation, whose membership I understand to extend beyond the Community, urged me to adopt a specification which they favoured and which was well outside that recommended by CEPT.

#### AM to FM?

P. Wall: To ask the Secretary of State for the Home Department, if he is satisfied that the 27 MHz a.m. sets in illegal use at present can be easily converted to the new legal f.m. frequency?

W. Whitelaw: My responsibility is only to ensure that proper specifications for equipment are made for the protection of other users of radio.

#### Ministers Committee to Sit — Finally

The Ministers advisory committee under section 9 of the Wireless Telegraphy Act, 1949 is soon to begin its work. As *CB World* goes to press it will have commenced its first meetings. The Chairman was to have been Sir Robert Clayton, Technical Director of GEC. Sir Robert chaired the last two advisory committees held under the WT Act. It is understood that although he had intimated his willingness to serve, the timing of the committee clashed with his other commitments and he reluctantly had to stand down.

Amongst the members of the advisory committee are expected to be Walter Stephenson, Chairman Mobile Radio Users Association; James Bryant, President Citizens' Band Association; Trevor Spero, Society of Motor Manufacturers &

Traders ICE Group; Maj. Sir Pat Wall, Chairman Parliamentary Working Party on CB Radio; Ian Leslie, Chairman NATCOLCIBAR; Charles Surrage, Technical Engineer, Automobile Association; Richard Town, National Council for Civil Defence (etc); plus representatives from the Radio Society of Great Britain, the Association of Metropolitan Authorities and the Greater London Council. A total of some 50 nominations have been put forward by the Institute of Electrical Engineers for the Home Secretary's ratification.

The IEE's responsibility is laid down in the WT Act 1949 sect 9 para (2) which states that the persons nominated shall "possess expert knowledge of the matters falling to be dealt with by the regulations . . . or represent persons whose interests are likely to be affected . . ." The paragraph goes on to say that the President of the Institution of Electrical Engineers shall (together with the Postmaster General, now succeeded by the Secretary of State) "each exercise his powers under this subsection in such manner as to secure that the committee or the panel, as the case may be, is in his opinion sufficiently representative of persons whose interests are likely to be affected as aforesaid." So there.

#### Playing the numbers game

P. Wall: To ask the Secretary of State for the Home Department,

what is his estimate of the number of illegal citizens' band radio sets in use in the UK at present.

W. Whitelaw: I have nothing to add to the answer I gave to a question by my Hon. friend on 28th July.

28th July W. Whitelaw: The information is not sufficient to form a reliable estimate but present indications are that the number of illicit users of 27 MHz a.m. equipment is significantly higher than the figure given in a reply to a question by my Rt. Hon friend by the member for Faversham (Roger Mote) on 7th May.

7th May T. Reason: It's not possible to estimate the number of 27 MHz a.m. c.b. sets in the country but information recently provided by the Post Office Radio Interference Service indicates illicit use has increased significantly. Estimates must necessarily be imprecise but we would now put the number of illicit users at about 160,000.

Using the Bryant formulae which provides a compound growth rate of 16% per month the figure for the end of September 1981 is some 950,000 throughout the UK of illegally imported equipment users.

However, signs are that the growth rate is starting to slow as prospective breakers wait for the new f.m. legal rigs to become available. Also supply has started to dry up as HM Customs & Excise go in for bigger and bigger busts.

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Atom Ant	Nottingham	Bone Shaker	Surbiton	Chopper	Barnsley	Firefly	Stratford-on-Avon
Aunt Sally	Stafford	Bonka Lou	Maltby	Chuck Wagon	Gainsborough	Fire Fox	Medway
Autocat	Blymsham	Boo Boo Bear	Maidenhead	Church Mouse	Huddersfield	Firey Felix	Maltby
Axeman	Tewkesbury	Boogie Man	Truro	Cinderella	Lymm	Fisherman	Epsom
		Boogie Shoes	Gainsborough	Cinders	Barton-on-Humber	Fisherman	Feltham
Bald Eagle	Feltham	Bookworm	Berkhamstead	Clay Pigeon	Ashford, Kent	Fitter One	Barnsley
Ball Boy	Nottingham	Bootlace	Farnham	Clippie	Bedworth	Flat Six	Barnsley
Bam Bam	Alton	Booze Buggy	Clapham	Cobra One	Wetherby	Fleur	Aldridge
Bambi	Surbiton	Bossy Boots	Stafford	Cobra Two	Wetherby	Flintstone	Ipswich
Banana Boat	Bloxwich	Bowler	Aldridge	Confederate	Redcar	Fluffy Legs	Gateshead
Bandit	Tamworth	Bowman	Hemel Hempstead	Cosmic Cat	Tewkesbury	Flyboy	Lymm
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Barmaid	Market Rasen	Breezeblock	Waltham	Crazy Cook	Feltham	Freeway	New Malden
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Beachcaster	Stranraer	Broadside	Barton-on-Humber	Crashbow	Bloxwich	Gaylord	Oxford
Beachcomber	Hemel Hempstead	Bubbles	West Bromwich	Crumb	Grimby	Gemini	Truro
		Buddy Hoily	Market Rasen	Crunchie	Kidderminster	Ghost Dancer	Woodthorpe
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Big Cat	Lymm	Butcher	Kidderminster	Daffodil	Quinton	Gipsy Moth	Kidderminster
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Big K	Goole	Calendar Girl	Paddington	Day Tripper	Chessington	Glow Worm	Warnham
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Black Prince	Longridge	Captain	Redcar	Deputy Duck	Ashford, Kent	Gold Fox	Brookmans Park
Black Hawk	Market Rasen	Captain Convoy	Dulwich	Desert Rat	Brighton	Gold Label	Bristol
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Black Bear	Bromley	Captain Scar	Gainsborough	Dirtwater Fox	Huddersfield	Grease Nipple	Welshpool
Black Baron	Chippenham	Captain Slog	Flackwell Hth	Dixie	Chessington	Greek	Altringham
Black Widow	Gateshead	Captain Vidro	Truro	Doctor Death	Stow, Glos.	Green Dragon	Goole
Black Shark	Altringham	Caravan	Bracknell	Doctor Syn	Maidstone	Green Gremlin	Truro
Black Smith	Thames Ditton	Carrot	Feltham	Dodger	Merstham	Green Parrot	East London
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<b>J.R.</b>	Birmingham	<b>Micro Man</b>	Nottingham	<b>Pinball Wizard</b>	Lymm	<b>Sheepskin</b>	Burton-on-Trent
<b>Jasmine</b>	Ratcliffe	<b>Micro Switch</b>	Leatherhead	<b>Pipe Cleaner</b>	Wallington	<b>Shergar</b>	Cheam
<b>Jazz Man</b>	Blackburn	<b>Midnight Fox</b>	Stafford	<b>Pirate</b>	Ipswich	<b>Shiek</b>	Finchley
<b>Jenny Wren</b>	Kidderminster	<b>Midnight Runner</b>	Molesey	<b>Pixie</b>	Merstham	<b>Sidewinder</b>	Chapel Le Frith
<b>Jenny Wren</b>	Redcar	<b>Mighty Mouse</b>	Barnsley	<b>Plaster Man</b>	Bracknell	<b>Silicon Chip</b>	Grimsbury
<b>Jockey</b>	Walsall	<b>Minder</b>	Camberley	<b>Plastic Penguin</b>	Surbiton	<b>Silver Dollar</b>	Stanghow
<b>Juliet</b>	Barnsley	<b>Mini Mouse</b>	Wetherby	<b>Playboy</b>	Selby	<b>Silver Fox</b>	Medway
<b>Jumping Jack</b>	Ickenham	<b>Minute Man</b>	Redcar	<b>Playboy</b>	Sutton	<b>Silver Top</b>	Midhurst
<b>Keg Buster</b>	Ealing	<b>Minute Man</b>	Guildford	<b>Ploughed Fields</b>	Teeside	<b>Silver Surfer</b>	Rowley Regis
<b>Kinky Dinky</b>	Truro	<b>Miss Muffet</b>	Fareham	<b>Polar Bear</b>	Aldridge	<b>Silver Whale</b>	Stow. Glos.
<b>Kiwi</b>	Thames Ditton	<b>Mister Magic</b>	Cheam	<b>Pop Rivet</b>	Wishbech	<b>Sinbad</b>	Surbiton
<b>Kookie</b>	Feltham	<b>Mister Smooth</b>	Bracknell	<b>Prefect</b>	Bishops Waltham	<b>Sine Wave</b>	Bedfont
<b>Kookie</b>	Hounslow	<b>Mister Shifter</b>	Horsham	<b>Propshaft</b>	Rowley Regis	<b>Sister Sledge</b>	Aldridge
<b>Lady Bear</b>	Chertsey	<b>Mistress of Hearts</b>	Staines	<b>Psycho</b>	Chertsey	<b>Sister Sledge</b>	Camberley
<b>Lady Bird</b>	Ashford	<b>Moby Dick</b>	Woking	<b>Purple Ant</b>	Gateshead	<b>Skinny</b>	Surbiton
<b>Lady Bird</b>	Brighton	<b>Moccasin</b>	Rushden	<b>Pushrod</b>	Redcar	<b>Whiskers</b>	Peterborough
<b>Lady Biker</b>	Preston	<b>Modesty</b>	Redcar	<b>Pussell</b>	Hanwell	<b>Skittles</b>	Reigate
<b>Lady Cuckoo</b>	Hillingdon	<b>Moggie</b>	Blackburn	<b>Pussey Cat</b>	Poole	<b>Skolar</b>	Reigate
<b>Lady Smurf</b>	Bloxwich	<b>Money Pusher</b>	Cheam	<b>Quasimodo</b>	Gainsborough	<b>Sky Diver</b>	Gt Bookham
<b>Lady Tenpin</b>	Barnsley	<b>Monkey</b>	Grimsbury	<b>Queen of the Blues</b>	Feltham	<b>Sky Lark</b>	Whitton
<b>Lady Mal</b>	St. Helens	<b>Monkey</b>	Blackburn	<b>R and B</b>	Truro	<b>Sky Walker</b>	Southwater
<b>Lancelot</b>	Goole	<b>Wrench</b>		<b>Rabbit Two</b>	Addlestone	<b>Sky Flash</b>	Brookmans Park
<b>Landlady</b>	Croydon	<b>Moonlight</b>	Bloxwich	<b>Racketeer</b>	Wakefield	<b>Slip Ring</b>	Barnsley
<b>Landlord</b>	Addiscombe	<b>Moonraker</b>	New Malden	<b>Radar</b>	Milton Keynes	<b>Slime</b>	Sheffield
<b>Laughing Gnome</b>	Walton-on-Thames	<b>Moon Shadow</b>	Milton Keynes	<b>Rag Doll</b>	Nottingham	<b>Small Fry</b>	Tadworth
<b>Lazy Legs</b>	Maltby	<b>Morph</b>	Nottingham	<b>Rainbow</b>	Nottingham	<b>Snoopy</b>	Rainham, Kent
<b>Lemon Peel</b>	Romney Marsh	<b>Mother Goose</b>	Bloxwich	<b>Rainbow</b>	Walton-on-Thames	<b>Snowball</b>	Stow. Glos.
<b>Leo Lady</b>	Peterborough	<b>Mother</b>	Hemel Hempstead	<b>Rainbow</b>	Addlestone	<b>Snow Goose</b>	Southwater
<b>Liffey Lion</b>	Huddersfield	<b>Hubbard</b>	Hempstead	<b>Rainbow</b>	Stafford	<b>Snow Drop</b>	Bloxwich
<b>Lip Reader</b>	Wetherby	<b>Motor Man</b>	Penistone	<b>Rainbow Lady</b>	Cheltenham	<b>Snowman</b>	Whiston
<b>Liquidator</b>	Bromsgrove	<b>Motor Mouse</b>	Ham	<b>Range Finder</b>	Berkhampstead	<b>Space Invader</b>	Grimsbury
<b>Little Box</b>	Bedford	<b>Mud Flap</b>	Bracknell	<b>Rascal</b>	Matlock	<b>Spark Plug</b>	Walton-on-Thames
<b>Little Mo</b>	Aiton	<b>Muscle Bound</b>	Steyning	<b>Reaper</b>	Barry	<b>Sparky</b>	New Romney
<b>Little Owl</b>	Woodthorpe	<b>Musician</b>	Molesey	<b>Rebel</b>	Tamworth	<b>Sparrow</b>	Kilburn
<b>Little S</b>	Huddersfield	<b>Musketeer</b>	Looe	<b>Reckless Rat</b>	Stafford	<b>Spectre</b>	Sale
<b>Little White Dog</b>	Berkhampstead	<b>Musky</b>	Kidderminster	<b>Red Arrow</b>	Lincoln	<b>Special Brew</b>	Isleworth
<b>Little Willie</b>	Truro	<b>Mustang</b>	Chertsey	<b>Red Devil</b>	Malton	<b>Speed Break</b>	Addlestone
<b>Live Wire</b>	Maltby	<b>Nicnac</b>	Ewell	<b>Red Dragon</b>	Shetlands	<b>Spencer Beck</b>	Ormesby
<b>Lively Lady</b>	Purley	<b>Nickle Plate</b>	Hanwell	<b>Red Pepper</b>	Eastbourne	<b>Spiderman</b>	Bow, London
<b>Londoner</b>	Bracknell	<b>Night Nurse</b>	Walsall	<b>Red Rooster</b>	Bognor	<b>Spiderman</b>	Widnes
<b>Lonely Hunter</b>	Nottingham	<b>Night Nurse</b>	Bideford	<b>Red Sparrow</b>	Cobham	<b>Spuggie</b>	Coventry
<b>Loppy Dog</b>	Newcastle	<b>Night Pussy</b>	Bedworth	<b>Red Squirrel</b>	Hemel Hempstead	<b>Squiggly Wiggly</b>	Walsall
<b>Lowlands</b>	Ormesby	<b>Night Rider</b>	Thames Ditton	<b>Redex</b>	Esher	<b>Squirrel</b>	Ashford
<b>Lucky Lady</b>	Ewell	<b>Night Rider</b>	Molesey	<b>Redskin</b>	Maltby	<b>Star Fighter</b>	Rainham, Kent
<b>Lucky Runner</b>	Hanworth	<b>Night Walker</b>	Maltby	<b>Reefer Two</b>	New Romney	<b>Star Gazer</b>	Basingstoke
<b>Lucy Locket</b>	Barnsley	<b>Nomad</b>	Hershaw	<b>Rembrandt</b>	Denton	<b>Star Rider</b>	Willesden
<b>Madam Fi Fi</b>	Bedworth	<b>Norseman</b>	Redcar	<b>Renegade</b>	Shoreham-by-Sea	<b>Star Man</b>	Sutton
<b>Mad Hatter</b>	Guildford	<b>Northern Echo</b>	Wetherby	<b>Ricochet</b>	Blackburn	<b>Starshine</b>	Lymm
<b>Mad Mistress</b>	Addlestone	<b>Nutter</b>	Truro	<b>Riddler</b>	Wetherby	<b>Stranger</b>	Portsmouth
<b>Maggot</b>	Lymm	<b>Odd Job</b>	Blackburn	<b>Rizlaman</b>	Bishops Waltham	<b>Stray Cat</b>	Ramsey, Mereside
<b>Magic Rat</b>	Glasgow	<b>Oil Rag</b>	Market Rasen	<b>Road Runner</b>	Goole	<b>Stray Cat</b>	Barnsley
<b>Magpie</b>	Ashford	<b>Old Nick</b>	Feltham	<b>Rock Hopper</b>	Goole	<b>Streaky Bacon</b>	Truro
<b>Magnetron</b>	Kingsbridge	<b>Omega</b>	Goole	<b>Rocky</b>	Brighton	<b>Streamliner</b>	Hersham
<b>Main Street</b>	Barnsley	<b>Operator</b>	Oxford	<b>Romeo</b>	Barnsley	<b>Stud</b>	Maltby
<b>Man of Steel</b>	Brighton	<b>Orange Peel</b>	Romney Marsh	<b>Rooster</b>	Looe	<b>Stuntman</b>	Dunfermline
<b>Manhattan Mobile</b>	Chertsey	<b>Organ Grinder</b>	Grimsbury	<b>Rough Rider</b>	Molesey	<b>Sub Station</b>	Goole
<b>Manwel</b>	Shrewsbury	<b>Oscar</b>	Brierley Hill	<b>Royalty</b>	Stow. Glos.	<b>Sulcide Jockey</b>	Shrewsbury
<b>Marina</b>	Scunthorpe	<b>Outlaw</b>	Farnham	<b>Rubber Duck</b>	Bloxwich	<b>Super Gloss</b>	Camberley
<b>Martini</b>	Castleford	<b>Outlaw</b>	Orpington	<b>Running Bear</b>	Ridings	<b>Super Jock</b>	Maidstone
<b>Matchbox</b>	Barnsley	<b>Overdrive</b>	Molesey	<b>Saddle Tramp</b>	Wisbech	<b>Super Stud</b>	Isleworth
<b>Matchman</b>	Gillingham, Dorset	<b>Overlord</b>	Bishops Waltham	<b>Salty</b>	Brighton	<b>Super Sport</b>	Leyland
<b>Matron</b>	Killamarsh	<b>Paint Man</b>	Southwater	<b>Samson</b>	Redcar	<b>Supergear</b>	Birmingham
<b>Maverick</b>	Goole	<b>Painted Lady</b>	Rainham, Kent	<b>Saucy Nancy</b>	Stafford	<b>Super Trooper</b>	Kidderminster
<b>Mazda</b>	Woking	<b>Paratrooper</b>	Bedworth	<b>Scamp</b>	Ewell	<b>Super Boy</b>	Leeds
		<b>Paradin</b>	Guildford	<b>School Boy</b>	Molesley	<b>Swaffham</b>	Bedworth
		<b>Palmolive</b>	Lymm	<b>Scooby Diver</b>	Mersey	<b>Gypsy</b>	
		<b>Papadopoulos</b>	Walton-on-Thames	<b>Scotch Mist</b>	Bedworth	<b>Sweeney Todd</b>	Flackwell Heath
		<b>Parrot</b>	Ratcliffe	<b>Scrambler</b>	Oxford	<b>Swin The Skin</b>	Telford
				<b>Scrambler</b>	Whitton		

Continued next month

# THIS & THAT

## Truck Equipment

TRUCKSTAR have recently introduced a range of C.B. equipment designed especially for trucks.

"JAMMER POWER" antennas and accessories are all made in the United States from the finest quality material, and have been proven to our perform similar equipment from other manufacturers.

The range includes the 48in. FULL WAVE Diamond Jammer antenna, which is the most popular choice of American truckers.

TRUCKSTAR are also supplying a wide range of TRUCKING GOODIES to C.B. shops.

Truckstar Ltd. Number Ten, Marshalsea Road, London SE1 1HL.

## Easy Fixing

As soon as the new Fiat Panda appeared in the Showrooms, A1 Kits were ready with their Radio Installation Kit A156. As the Part Number suggests, this is the latest in a comprehensive range of fitting kits from a company that has been specialising in car audio accessories since 1976.



Other products marketed by A1 Kits include "non scratch" metal fascia plates and brackets, the Pennine range of stereo speakers, suppression equipment and more recently C.B. radio accessories such as S.W.R. metres, hi-gain antenna and co-axial connectors of all types.

"Speed in despatching our kits is just as important as rapid introduction of new ones", says Gary Heap, M.D. of A1 Kits, "and our Securicor Service means that our customers receive 99% of their kit requirements within 48 hours of placing an order".

A1 Kits, Briercliffe Mill, Townley Street, Briercliffe, Burnley, Lancs.

## Classic Cars

The finest-ever collection of classic cars seen under one roof in the UK will be gathered at the Brighton Metropole when the 1981 Classic Car Show opens on October 31.

Some of the most famous names in Motoring — Allard, BMW, Bentley, Bugatti, Lamborghini, Land Rover, Maserati, Porsche and Rolls-Royce will be at the show for the first time, along with a host of familiar marques ranging from the homely Morris to the grandiose Daimler. The organisers expect to have over 65 clubs, showing 200 cars as well as a thriving trade stand section in which parts and accessories for the great cars of the past can be bought.

Each year, the Classic Car Show brings armies of enthusiasts together, car clubs exhibiting their favoured and favourite models and thousands of fellow fanatics coming to see the splendid specimens of motoring nostalgia on show. The 1981 Show will be the first to be held in Brighton and, particularly as it coincides with the weekend of the London to Brighton Veteran Car Run, is more exciting than any of the previous shows.

## Suppressed Radio

Problems with radio interference can easily be traced and cured with the assistance of a new publication from Lucas Electrical Ltd.

Priced at 25p and available from Lucas audio dealers, "Radio Interference Suppression" covers subjects such as sources of interference, legal requirements, special procedures for non-standard equipment and tape players.

## Who's for a swap?

Recently seen in a local Sussex newspaper was the report of a c.b. radio fan who could not afford his own equipment.

He drove into an Army Camp and stole an £800 radio from one of their vehicles. "He then wired it up in his car and picked up a broadcast from someone in Maidstone."

*Ed. If this happens too often we will have to start lending the army our c.b. sets!*

## Gremlin — ?

Unlike other magazines backbiting each other masochistic lot that we are at *CB World*, we thought we would back bite ourselves. In 'Explosion in Breakers Wanting to become Hams' the *CB World* gremlin turned a figure 5 into a 3. The maximum d.c. input power should of course read 150W not 130W.

But we can't resist having a chortle over 'The Voice of the Breakers' basic for beginners in the July issue of a c.b. newspaper.

Quote "I. New rigs and antennae must be metered for a SWR of less than 2.4.1. . ."

Oh dear, Oh dear. No wonder the budgie sounds a bit sick of late.

## No fiddle Fidelity

Fidelity Radio Ltd have entered the UK c.b. market with this natty unit, the CB 1000 FM, which has been designed for simplicity, with the minimum of controls.

Fidelity Sales Director Jeff Dickman told *CB World* that this unit should retail for around £60 inclusive of mounting brackets for

both mike and set. The set has a full forty channel capability and, it's claimed, a full four watt output.

In line, fused connecting leads are also supplied.

A received signal meter is provided calibrated in 'S' points to +30 db.

Like Amstrad, Fidelity were original members of NATCOLCIBAR (technical and industrial sub-group) and supported the National Committee financially.

Production models are now in the UK and we will be putting them through their paces in the *CB World* test lab shortly.

These models, we understand, are produced to specification MPT 1320 and that's why the logo CB27/81 appears on the CB1000 FM front panel.

Read the next edition of *CB World* for further information on the Fidelity range of legal specification sets.

## A bind at Binatone

One of the more jolly attempts at public relations comes from Binatone. Not having the nerve to send a



Fidelity Radio's CB 1000 FM shortly to undergo testing in the *CB World* laboratory.

IT HAS BEEN NOTED THAT CB RADIO IS RESPONSIBLE FOR BRINGING SOCIAL OPPOSITES AMICABLY TOGETHER



# THIS & THAT

copy to *CB World* directly, one of IPC's sister electronic journals received the release and they sent it to us for confirmation.

Quote, "... based on official Home Office guidelines, the first legal c.b. rigs from a British company are rolling off the assembly lines ready for the market that will be legally opened up on 16th October this year." Unquote.

Avid readers of c.b. magazines will recall the famous debacle of certain European equipments to MARC (Dutch) standards being promoted as "Exclusive - The First UK c.b. Rigs?" The subsequent slugging off that ensued, one c.b. magazine

against another caused side band splatter right through to the Hi-Hi bands.

Not that we would suggest that Binatone would attempt to mislead the c.b. movement. They themselves are obviously being misguided, however. In the same release as they promote 16th October as legalisation day, comes their announcement of quote "A series of four mobile transceivers, equipped to deliver the maximum four watts output (two watts radiated power) is now in production together with a wide range of antennae, accessories and ancillary items." unquote.

At the time of writing Binatone say that they will have the rigs ready for our lab test in seven to ten days. If you don't see a lab test of their gear elsewhere in the October edition of *CB World*, its obvious Binatone are in a bind again.

All this has happened even before we've tested their rigs. We leave you to draw your own conclusions.

## POETS' CORNER

### Ode to Rigmortis

There was a young man called Rigger,  
Who was a terrible wigger,  
One day in the hearse,  
He recited a curse,  
And now he's decidedly bigger.  
We all went down to the club 20,  
For barley pops in their plenty,  
We met all the folks,  
And told lots of jokes  
And ended up all round the bendy.  
The time got round to 10.30,  
and everyone got a bit shirry,  
We left in the skate,  
Made our next evening date,  
But we all still felt pretty perky.  
We gave the skate some welly,  
It shook us about like jelly,  
On the way back home,  
We all had a moan,  
Because of our empty bellies.  
For Rigger it was to be chicken,  
His fingers he was a lickin,  
Poor Scampi and shotgun,  
Had crisps and a bread bun,  
That mother eyeballed them a nicking.  
Shouting 14 for just Willing,  
His face he seemed to be filling,  
Lady Gem isn't here,  
It must be her year,  
Southern Comfort's got some time to be killing.  
Karting Kid's on the box to a good buddy,  
Wanting her to go out and get muddy,  
In the wind and the snow,  
He wanted to know,  
Where Lady Gem was the fuddy duddy.  
I've really no idea said Scampi Lady,  
They are leaving me a bit in the shady,  
Last thing I heard,

She was out in the hearse,  
And with Southern C the bad lady.  
Scampi Lady are you starting the search,  
She's left us all here in the lurch,  
I said not on your nelly,  
I am watching the telly,  
She really deserves the birch.  
On the side said a female breaker,  
What's the name of the breaker been taken,  
Don't worry Rigger said,  
Scampi Lady has been had,  
Now she's stirred and very much shaken.  
On getting to know the full story,  
Everyone concerned was very sorry,  
I wigger on the side,  
They thought I had died,  
Now everything is all hunky dory.  
All this was little Riggers idea,  
Of that we have no fear,  
The fun has been had,  
The joke turned bad,  
Now Scampi Lady is getting in gear.  
Now Rigger just a word of advice,  
Scampi Lady is a shade more wise,  
No more will she fall,  
For your 14 call,  
I'm there wiggling as quiet as a mouse.

### The biggest wigger in town

When you score with a chick while you're on the air,  
Take her home to become a pair,  
But you find you're only doing for a dare,  
You're the biggest wigger in town.  
You have the c.b. on all night and all day,  
You have a modulation with someone who's gay,  
To end the conversation and keep them at bay,

You're the biggest wigger in town.  
Here you come and there you go,  
Big twig powerful rig and a stereo,  
The s.w.r. is out and the copy also,  
You're the biggest wigger in town.  
When you key your mike and the signal is weak,  
The kid's don't understand a word you speak,  
Rodger dodge 10-10 what's your twenty breaker break,  
You're the biggest wigger in town.

You prefer an all night wig to a rest and coke,  
The copy's too loud and the pots are in soak,  
You can't leave the rig in case it starts to smoke,  
You're the biggest wigger in town.  
Breaker 14 for a 10-33,  
The big yellow skare has crashed into a tree,  
What we could do with a nice mug of tea,  
You're the biggest wigger in town.  
When you have to go shopping for some co-axe and plugs,  
You're causing T.V. eye and your neighbours such a mug,  
So you fetch her in at midnight and sit her there so smug,  
You're the biggest wigger in town.

There you sit with your lips closed tight,  
You tell her just to listen, else it wouldn't be right,  
She catches the bug and she's sitting there all night,  
You're the biggest wigger in town.  
And you look so mean 'cause you won't let her speak,  
You're the biggest wigger in town.  
And you need a 10-100 which means you've sprung a leak,  
You're the biggest wigger in town.

### Arnt Thally are you there?

Break one-nine, Arnt Thally  
Come on, good buddies, rally  
We're going to the bottle shop  
Loobi, Touche, hurry.

Soon we were together  
Don't care about the weather  
We sped along while singing our song  
We hope you'll sing, whoever.

Arnt Thally, you on channel?  
Arnt Thally, where are you?  
A cup of tea and a slice of cake  
And that will see us through.

Put your c.b. head on dear  
And get your BUTT over here  
We're going down to scarecrow farm  
Arnt Thally, you on channel?

Break, Night Tramp, just listen  
Frankenstein is missing  
Johnny The Fox has gone back to look  
And Psyche Chicken's with him.  
Hissing Sid will set on fire  
If his rrv goes any higher

And Spare Rib (here) "I want some beer  
And crisps and a pork-pie - erri!  
If you are in the district  
Before Pubs open, risk it  
Shout Out "Arnt Thally" we will hear  
We might get you a pint of Beer  
(or if a seat cover you may be  
you might end up on a breakers  
knee).

*Dedicated to the Aunt Sally Breakers.*

*(Aunt Sally pronounced in a Worral Gummidge accent)*

### Ten-Three-Three

Ten-three-three  
D'you copy me?  
Someone answer quick  
We've got a smash  
A real hash  
The sight will make you sick.

Ten-three-three  
A home base we need  
Have you got a buzby line  
Just shout it back  
Please send a quack  
The car that's crashed is mine.

Ten-Three-Three  
I've smashed my knee  
My face is cut up bad  
My head is split  
The door won't shift  
Just answer, make me glad.

But no-one answered,  
No-one heard  
The cars were deaf  
No-one came  
To save the shame  
Of Johnny bleeding to death.

The reason why  
Is in front of your eye  
'cos c.b.'s not allowed  
By Buzby, how sick  
Telecomm - I hope you're proud  
10:10.

### Love and a C.B.

Spare Rib's my handle on the air,  
My wrapper don't make people stare,  
A plain blue Henry, nine years old,  
But hidden inside is a crock of gold.

Now, muse, get your ears on this,  
My tale of joy and a lovely miss,  
I copied while I burned the road,  
Through Little H.B. with nowhere to go

The velvet tone, so soft, so pure,  
(The damsel' call was like a lure  
To pike of size and hungry eye  
That watches while the world goes by.)

"OK, one-nine, just crank it back,"  
Her voice made solid legs go slack,  
"Two-three we gone and follow on"

I hurried there for a ratchet long.  
We eyeballed, loved and made a date

To meet again, but how you'll hate  
Me, when I say, and here's the gamble,  
I'm not telling you her handle.

## Support for breakers

Each week we receive in our office various items of c.b. equipment to test. The latest to arrive is a rather attractive leather belt with solid brass buckle.

Incorporated in the design is a blank area on which the breaker's handle may be etched.

Unfortunately we do not have any sophisticated equipment on which to test this, so one of our staff is using it to hoist up his trousers over a rather large paunch. At the moment we are able to report that it is taking the strain extremely well!

The belt is available in black or brown — medium or large — and is 1½" wide. The buckle retails at £3.50 and the belt at £3.00.

Both are available from many c.b. accessory shops throughout the U.K. or direct from Tanside Ltd., Summers Row, North Finchley, London N12 0LD.

## I.O.M. Disco raises £200 × 2

The Isle of Man C.B. Club organised a disco early this year and as a result presented a cheque for £200 to the Rushen Emergency Ambulance Fund and the Red Cross Beauty Care Fund. The dance was held at the Ocean Castle Hotel and the two raffles raised the £400.

## Noise cancelling power mike from John Woolfe Racing

One of the lines that J.W.R. carry in their extensive c.b. accessory range is T.E.I. This Florida based company produce many items including a noise cancelling power mike.



This mike is ideal for trucks or any vehicle where engine or road noise is a problem. It has the added bonus of a built-in pre amp to really punch out the signal. For applications or occasions where outside noise is not a problem, the mike is fitted with a switch for the option of normal variable power mike operation. The approximate retail value is £12.78 + VAT.

The current J.W.R. c.b. accessory price list covers about 450 items and

this is available with the J.W.R. c.b. catalogue for £1.00 including U.K. postage. The new June 1981 price structure means that both retail and trade prices of all c.b. items are even more competitive.

Further details from John Woolfe Racing, Woolfe House, Norse Road, Bedford MK41 0LF. Tel: 0234 41441.

## Clean air

The enclosed confines of the motor car, coupled with excessive modulating, traffic exhaust fumes or cigarette smoke, can have adverse effects on the car's occupants — whether it be headaches, drowsiness, travel sickness or driver fatigue. This is why Hitachi has developed a unique car air purifying system, or 'CAPS', which the company firmly believes will have significant health benefits for both car drivers and passengers alike.

In addition to an extremely efficient dust and odour extraction process, this rear shelf-mounted unit charges the cleaned air with negative ions or 'anions'. These airborne natural vitamins are normally heavily concentrated in rural and coastal areas, and are contributing factors in preventing exhaustion, lowering blood pressure and maintaining a normal level of respiration. For these reasons, they are widely utilised for medically treating asthma and other allergies.

Controlled by a conveniently-positioned switch near the driver, the Hitachi air purifier system has a two-stage dust removal system. A urethane foam filter traps relatively coarse dust/dirt particles, whilst finer particles as tiny as 0.01 microns are electrically charged by an electric ionisation unit. Any fumes, odours or even contaminative virus or bacteria are then removed by an activated charcoal filter. Finally, the clean air is drawn over the negative ion generator and blown clear.

CAPS has a two-speed fan operation to cater for varying conditions of air contamination.

The efficiency of the car's cooling or heating system is improved when used in conjunction with the air purifier. It also acts as a defroster or demister for the rear screen when such conditions are encountered.

Measuring 365mm wide, 180mm deep and 110mm high, the Hitachi CAPS unit is fitted with an easily removed dust collection cassette, for regular cleaning and filter replacement.

## LCL to handle Big Dummy's Guide

LCL Imports Ltd have been appointed exclusive distributor to the c.b. trade for the Big Dummy's Guide to CB Radio. Kona Publications, sole UK agents, will continue

to distribute the book to national newsgroups and book shops.

In the USA this book has already sold over 1,000,000 copies and in the UK 180,000 have been sold already.

Don't be put off by the title, no one likes to be called 'Big Dummy', it really does explain what c.b. is all about from A to Z. In fact *CB World* carried their 'fault finding' section in its very first issue (Dec 80).

With the new I.M. market coming on stream later this year 'Big Dummy' is a must, retailing at £2.95p.

LCL are keen to hear from c.b. trade retailers and wholesalers to sell the publication to the c.b. user and all enquiries should be made to LCL Imports Ltd., 101 Dixons Green, Dudley, West Midlands DY2 7DJ. Telephone: 0384 59185. Telex: 337290.

## CB radio fans hold hands

Over thirty c.b. radio enthusiasts, many members of the Telford CB Radio Club, recently assisted the Shropshire Star Group of newspapers in attempting to form a human ring round the Wreking — a popular Shropshire landmark over 1500 ft in height.

Working in close liaison with the police, army, organisers and first aid teams the central control point, on top of the mini-mountain, co-ordinated strategically placed base stations each of which had its own satellites of hand-held rigs. Working from a concise communication map produced by a local c.b.'er everyone involved with the organisation had constant reference to the situation with the vast crowds.

The objective was simple — to get people to hold hands around a very large hill in a line over 4.5 miles long, at the same time. A helicopter and the c.b. operators liaised to control the flow of people to the correct locations at the appointed time whilst five discos cheered the crowds with pop music. At half past twelve on Bank Holiday, 4th May, confirmation was received from the helicopter that the line was complete and yet another record was on its way to the Guinness Book of Records to be ratified. It took some 17,000 people to complete the vast human chain.

The actual time of linking had to be delayed when a young lad was taken ill high up on the hillside. There was no way that a doctor or ambulance could reach him, and, despite an attempt by an army land-rover, it was prompt action by c.b.'ers on the scene that saved the day. A satellite hand held rig carried by Lazer Beam got through to control with the information as to the exact whereabouts of the sick lad and Silver Fox (control) then organised the helicopter to collect a doctor, fly to the nearest spot to the lad, load him aboard and rush him to the nearest hospital. At the same

time a local c.b. base station who had been monitoring the field operations put in a land line call and informed the hospital to expect a visit. All turned out well. The young lad, who was not named, recovered without ill effect. To follow this dramatic rescue the helicopter was further delayed to pick-up two more young people with suspected broken legs. They were then hurried to hospital by ambulance with a police escort.

The whole day had gone off well, far in excess of expectations, and was a perfect example of c.b. being used, in conjunction with the authorities, to provide a comprehensive communication network.

Although the day was enormous fun for everybody who took part it should not go un-noticed that the organisers, authorities, c.b.'ers and many others were on site at 8.00 a.m. and were still working (to locate lost children) well after the crowds had drifted home late into the afternoon.

The central control point situated on the very top of the hill was manned by Big Ears, Nutmeg and Silver Fox, who really must be congratulated in controlling not only their 30 odd c.b. stations dotted around but, at the same time, keeping track of traffic, first aid helpers, organisers, officials and the helicopter. When, after more than seven hours, the control team eventually came down they were absolutely shattered but overjoyed at the way the day had gone. None of the controllers had ever worked together before and had been 'volunteered' for the job by one of the c.b. clubs.

All the c.b.'ers who took part would like to thank the organisers, and the police, for the opportunity to show that c.b. does work in an organised way for the people's good. The activities, we have since learned, were monitored by interested c.b. fans as far away as Shrewsbury, Wolverhampton, Birmingham and Stafford and no complaints of TVI were reported. The most surprising thing about the whole day was the way in which local breakers up to a radius of 10 miles all stayed off the two control channels all day and thus allowed it to go so well — thanks are due here. Even the Italians did not start to skip in until well after the event had finished — you cannot ask for more than that!

For further information: *Information Officer, Telford CB Radio Club, 'Setson', Lilleshall, Shropshire. Tel: Telford 603474.*

**We are always pleased to receive letters from readers and club members, but we do reserve the right to edit them. Full names and addresses will not be published.**

**Address your correspondence to: The Editor, CB World, Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS**

# CLUB CORNER

## KILO ECHO 150 CLUB (South Cumbria)

A fairly new club in South Cumbria is the Kilo Echo 150 Club, which caters for breakers around the Kent Estuary. Membership is limited to 150, including the junior section, as this will allow members to keep in close touch with each other.

Meetings are held on the first Tuesday of each month at Arnside (Train Set). Several people have visited the club to give talks on c.b., and recently the American REACT film was shown.

Members have taken part in a treasure hunt, which proved extremely popular, and they also held a disco on 20th June, and invited Disco One of the UBA along to give a talk.

A separate section has been set up for members who are interested in DX-ing.

The junior section of the club has been set up so that under 16's can arrange their own meetings and events.

The local breaking channel is 27, and club members would like to have a ratchet with any breakers who are in the area.

As the town is popular with holidaymakers, the Kilo Echo 150 breakers hope to welcome many out of town breakers to their meetings.

Young breakers are also welcome at the eyeballs, and under 16s pay no admission charge, so it is not too expensive for a family night out.

## FINEDON BREAKER CLUB (Northants)

The Finedon Breaker Club was formed approximately three months ago. It has over 80 members, which is quite a figure considering Finedon has a population of only 5,000. Members come from towns and villages within a 20 mile radius.

They have organised a fox hunt and a road rally, and are now thinking of ways to make money for charity.

*ED. Any club secretaries with original ideas for raising money please let me know.*

## CHINA TOWN BREAKERS CLUB (Stoke-on-Trent)

The China Town Breakers Club serves all breakers in the Stoke-on-Trent area.

It has 1,400 fully paid up members

who are dedicated to the legalisation of 27 MHz a.m. Membership fees are £2.00, with £2.00 per year subscription.

The club has a mass eyeball every three weeks and provides the following benefits to members:

- 1) £25 plus a whip round 'bust fund'.
- 2) A solicitor on 24 hours call should any member get busted.
- 3) A regular, well produced newsletter.
- 4) Junior breakers section with a sub-committee organising discos and junior get-togethers etc (Juniors break on 25).
- 5) News at Ten on channel Ten every Sunday night (laid down with plenty of watts)!

The club has carried out a great

deal of work on behalf of the local community. Members recently attended a social eyeball at Jolles night club and collected £200 which was donated to the Staffordshire Body Scanner Appeal.

They have also guaranteed sponsorship — to the tune of £1,000 — of a play bus for the deprived children of the area. The social services have allowed them to decorate the bus with c.b. related murals — including a pair of truck ears!

Another interesting point is that 23 stolen rigs have so far been recovered by the club's 'heavy mob', with the help of a 'mole' employed by the local constabulary.

Any breaker who wishes to join the club should contact the Chairman, David Switzer, on 082 921 465.

## JAN'S TRAVELS

### WHISKY CLUB (New Malden)

Jan Hobbs, the Editor's secretary, has once again put on her *CB World* Tee shirt and this time she travelled to New Malden for an evening's entertainment. Here is her report.

Members of several local clubs met at the Whisky Club's headquarters, The Railway Tavern in New Malden, Surrey, for the start of 'a grand convoy'.

Having supped a couple of drinks and had their pictures taken, the eighty breakers jumped into their cars, and with organisers Cherokee Lady, Miss Ellie, Misty Blue, Prime Porky and Captain Akai in the lead, they set off down the A3 — destination The Hautboy in Dorking.

Breakers chatted happily on channel as they went, until a 10-33 went out — Happy Hippie's wheel had spun off! Fortunately the convoy was only travelling at about

45mph, so Happy Hippie didn't come to any harm. The wheel was soon retrieved from the fast lane where it had landed, and once it had been securely fitted back to the axle, things started moving again.

When the convoy reached the garden of the Hautboy, several other breakers, some in fancy dress, joined the company and the atmosphere became very jolly.

The breakers were reluctant to call an end to the evening when the bell for 'last orders' was rung, so they went on to Ripley Woods.

Here they built a small bonfire (well away from anything it could damage) gathered round it and had a sing-song. A good time was had by all and Cherokee Lady is being nagged into organising another convoy very soon.

[ED. Nice to hear that females can be nagged as well! and it is not just the menfolk!]

My thanks to Cherokee Lady for the invitation to take part in the convoy. Also to Nic-Nac for providing me with a chair in the middle of the High Street on which to stand whilst taking photographs — but could he ask the landlord's permission next time please!

**Pictured below are the convoy organisers, from left to right, Miss Ellie, Captain Akai, Cherokee Lady, Prime Porker, Misty Blue.**



## CLWYD VALLEY BREAKERS ASSOCIATION

Moonlight, secretary of the Clwyd Valley Breakers Association, wrote to *CB World* about his club.

It was formed late last year — membership has now reached 200 and new members are still being accepted.

Eyeballs are held once a fortnight on Sunday at 8.00 p.m. At each of these some form of live entertainment is laid on, such as a group and a comedian or two groups. A raffle is held.

The club is also involved in raising funds for charity. Members recently took part in a sponsored cycle ride from Cardiff to Ruthin, and proceeds were donated to a cancer research society and a local charity.

Anyone wishing to take part in an eyeball should give a shout on channel 14 for the exact 20 of the meet.

## MID NORFOLK BREAKERS CLUB (East Dereham)

Members of the Mid Norfolk Breakers Club asked Electric Frog to write to us.

This club, formed five months ago, has over 300 members and is situated right in the middle of Norfolk.

Regular meetings are held at the Breakers Yard, near Trailer Town (East Dereham) on the first and third Tuesdays of each month, and on other occasions for social events such as discos, barbecues, dances, etc.

The club is fortunate to have its own 'Legal Beagle', who gives talks on "The Law and Us" and such subjects — perhaps this is why their bust fund hasn't had a claim made against it yet!

As well as regular raffles, the club has organised an 'It's a Knockout' competition between clubs in East Anglia.

They are also arranging pool, football and darts competitions — hopefully inter-club also.

Any challengers should drop them a line c/o 18 Darwin Walk, Littlefields, East Dereham, Norfolk. Electric Frog adds that if any good buddies are going to the East Coast for their holidays and find themselves on the 47 near Trailer Town, they should give a shout on 14 — the Mid Norfolk Breakers guarantee to start the holiday with a smile.

*ED. Electric Frog — there must be a history on deciding this far a handle. Any comments?*

## BIG 'C' CLUB 80 (Llandyfaelog)

Unit One tells us that the Big "C" Club 80 was formed in November of

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## CLUB CORNER

last year and that membership stands at 240, although this grows each week.

Meetings are held on the first Tuesday of every month at the Red Lion in Llandysfelog. Social evenings and events are held between meetings, and proceeds go to local charities.

The club recently purchased a portable oxygen inhaler for the local ambulance services.

## DYFED AREA SPEEDWAY 10/4 CLUB (Pembrey)

Java Sparrow tells us that the Dyfed Area Speedway 10/4 Club of Pembrey has been in operation for about twelve weeks and has 180 members.

They have held raffles, treasure hunts, and a most interesting Ladies and Gents Mini Skirt Night, when any breaker not wearing a mini was fined 50p! (Proceeds from this particular night — £70 — have been donated to the Llanelli Branch of Diabetics, five of whom are breakers.)

Members are now organising a 10 mile sponsored roller skate — they hope to make a collection en route — and this is scheduled to take place on 22nd August.

Charities to benefit will be the

club's local branch of Cystic Fibrosis and the Royal Infirmary of Cardiff.

## HODDESDON BREAKERS CLUB (Hertfordshire)

The Tudor Hall at Hoddesdon is the meeting place for over 300 breakers who belong to the Hoddesdon Breakers Club.

Anyone wishing to look in at the club should go along on a Tuesday at 7.30 p.m. — they will be made welcome.

A raffle is held each week, and proceeds are donated to charity — over £100 has recently been presented to the Enfield Body Scanner Appeal.

The club is hoping to enter a float in the Hoddesdon Carnival Parade on 12th September.

*ED: Let's hope it wins a prize! How about sending us a photograph of the float?*

## DOUBLE DIAMOND BREAKERS CLUB (Derby Dale)

Drumsticks thinks the Double Diamond Breakers Club is just about the best run club around.

It meets every Thursday at the

'Pie Hall', Derby Dale, and although it has only been going for a couple of months, membership has already reached the 100 mark. (The organisers had originally decided to restrict membership to 80 — but they feel it is wrong to turn people away).

There is a junior section for the under-fourteens which is run as a separate club by Coffee Mate and Gin Boy. Get-togethers are held on Saturday afternoons.

There was a problem with the juniors messing up the breaking channel (14) so they were given their own (1).

Local hospitals use channels 2, 4 and 6 — nobody else uses those, and with the kids breaking on channel 1, and the adults on 14, everybody is happy.

Drumsticks would like our readers to know of their number one rule that members are not to use burners, as they feel this is the main reason for "busts" and T.V.I. Red Spider supplies T.V.I. filters at cost price to those who need them.

## CAPITAL BREAKERS CLUB (Derby)

The Capital Breakers Club had its first meeting in March with 39 paid up members and more are expected to join.

Meetings are held on Monday

evenings at the O.P.T.A. club in Elton Road, Derby.

## HONEST TOWN BREAKERS CLUB (Midlothian)

The Honest Town Breakers Club started in Scotland just five weeks ago and already has 35 members. Meetings are held in the Auld House, Musselburgh, Midlothian, every Wednesday at eight bells.

An under-eighteen club is soon to be started, as quite a few young breakers are catching the older members on the air and asking to join.

All breakers are welcome at the eyeball so long as they come clean!

## CANARY CITY BREAKERS (Norwich)

The Canary City Breakers club has been going for nearly four months.

This socially biased club holds its main business meeting at Ebenezer's Freehouse, Salhouse Road, Norwich, on the first Tuesday of each month.

Canary City is the handle for Norwich — hence the club's name.

For further information write to M.G. French (Public Relations), c/o John Fuller, 1 Bussey Road, Norwich NR6 6JE.

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## BRIDGETOWN BREAKERS CLUB (Hull)

The Bridgetown Breakers Club was formed in October 1980 as local breakers needed a safe place to eyeball (they'd been hanging around city centre car parks, cafes, etc), with the idea of compiling and circulating "eyeball" sheets and handle lists.

The first meeting was attended by about 30 people. A committee was formed, and a second meeting planned. The second meeting was an absolute fiasco — 150 people turned up and tried to cram into the pub which had been filled to capacity the previous week — with only 30!

It was obvious that a much larger venue was needed, so the meeting was abandoned and a new "eyeball 20" sought. One was found, but after only three meetings the club had outgrown this too, and had to move on once again — members hope the current venue is a permanent one!

The club meets fortnightly at the Phoenix Social Club, Hessele Road, Hull. A formal meeting is held every other meet, alternating with a social evening. There is usually a disco or local group for entertainment. At a recent social a fancy dress contest was held.

In addition to the usual social activities, the members recently helped raise over £500, by sponsored swims and walks, raffles and collections, in aid of the Robert Chadwick Appeal Fund. Robert, a local boy, suffers from a rare brain disease for which special treatment in the U.S.A. is required.

The club is proud of its efforts and it seems that there is every chance of the treatment being successful.

With membership now closed at 350, two further clubs have been set up in Hull — one to the East of the City and one to the West.

As members of the Bridgetown Breakers Club sometimes leave to join one of the others, a number of places do become available, so members say that anyone wishing to join them should go along to one of the socials and register his handle.

Meetings are always on Thursday nights and members of other clubs, as well as those wishing to join the Bridgetown Breakers, are welcome.

An admission fee of 25p is payable at the door.

The Chairman of the club is Driftwood, who is one of the original half dozen c.b.'ers in Hull, with secretary Soul Cruiser. Dancer is the treasurer, while Desperate Dan is PR man and editor of the "Bridgetown News", the club's very own magazine. It is now in its fifth issue. As with all clubs, they've had their fair share of troubles. Several changes have taken place in the committee line up.

Mistakes have been made but the organisers are hoping to learn by them. They do try to run the club along legal lines, and say that anyone coming along to the meets, "Must

come clean and green".

They also say that if anyone finds themselves heading for Bridgetown, a quick call on 14 or 19 will get them all the gen on what's happening in that part of c.b. land.

## ILKESTON BREAKERS CLUB (Derbyshire)

Venus wrote to us on behalf of the 900 members of Ilkeston Breakers Club.

This club is a non-profit making organization and most of the funds raised are donated to charity. It recently bought a 'Lightwood Pulsed Radio Generator' which helps aid the growth of crippled children's limbs.

The club holds the usual raffles, discos and sponsored walks, and recently played an in-drag football match against the Bell Town Breakers. There is also a P.O. box for D-xing, so if any local clubs would like to use it for QSL cards, they should contact Venus at the I.B.C. eyeball.

## STEELTOWN BREAKERWAYS (Scunthorpe)

Anyone wishing to join the 50 members of a relatively new club in Scunthorpe should go along to the King Henry VIII at 8.00 pm any Monday night and meet the Steeltown Breakerways.

In the few weeks this club has been going, members have already enjoyed a camping weekend in Matlock, several convoys to other club meets, a driving competition and a social evening. Various other activities are planned for the future.

## THAMES AREA BREAKERS (London SE18)

Fairly new to the club scene are the Thames Area Breakers, who meet each Monday at 7.30 p.m. in the William Shakespeare, Powis Street, Woolwich, SE18.

Membership is £3.00 per family per year, and entrance to the meetings costs £1.00 for guests; 75p for members. A free buffet is provided at each meeting.

The club operate a rig replacement scheme which costs 25p per week.

New faces are guaranteed a warm welcome.

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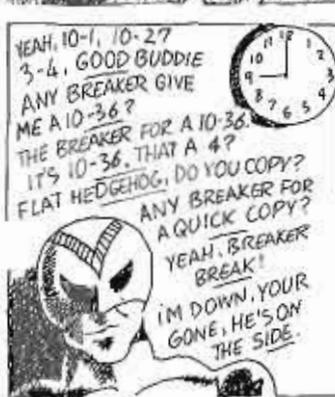
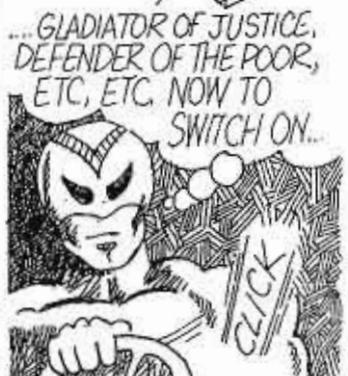
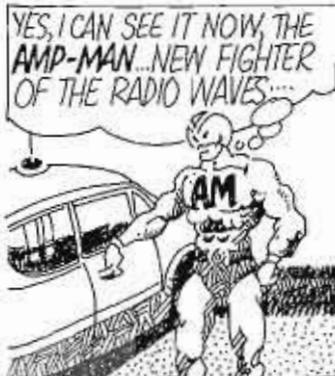
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# Traffic Signals

Nº 6

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TO BE CONTINUED.....

# SPEED AT YOUR PERIL — OR HOW TO BEAT THE SYSTEM



There is doubt as to the accuracy of hand-held devices as demonstrated in the Newport, Gwent, courts.

## Speeding check devices

EVERY ROAD USER is tempted, from time to time, to travel at a speed greater than that permitted by law. Traffic conditions may have been ideal at the time and there might not have been any danger to other road users — if any in the middle of the night — but the hand of the law is raised if caught and with expensive consequences.

Several devices have been used to determine the speed of vehicles by law enforcement officers. Time and time again the words radar and speed traps are used so let's have a look to see what the opposition are using against us.

The word RADAR is a deviation of the words Radio Aid to Detection and Ranging and the Doppler radar system, as used to measure vehicle road speed, loosely qualifies as a Radar system only in that it is a detection device. No ranging is possible.

If the equipment has been correctly developed the Doppler radar system can give a precise velocity measuring facility.

Any Doppler radar system comprises a transmitter and a receiver that operates on approximately the same frequency. The transmitter emits a signal towards a reflective target which is usually metallic but can be other materials. A portion of the energy striking the target is returned towards the transmitter-receiver system and is detected by the receiver.

If the transmitter-receiver equipment and target are in motion relative to each other, a difference in the frequency of the returned signal will occur because of this relative motion.

This is known as a Doppler Shift and is named after the Austrian scientist, Franz Doppler who first noted and reported the phenomena in sound waves.

The shift in frequency is quite small. For radio frequencies it is:  $0.000000000030048\%$  per MPH, or  $3.0048 \times 10^{-11}\%$  per MPH.

Initially these figures seem superfluous in the context of vehicle speed measurement but when working at microwave or millimeter wave frequencies (frequencies in the billions of hertz/second), the Doppler shift is important and quite easy to measure.

Vehicle speed check equipment is available in several forms but overall two frequency bands are in common use. These are 10.525 GHz (about 1,000 times higher than the f.m. broadcast band) and 24.125 GHz (even higher still). Within these two frequency bands available equipment systems include:

### 1. Simple Doppler with lock display

The user of this system locks the speed

display at any moment which can be used to show the road users actual speed. This will be noted on the ticket.

### 2. Triggered radar system

The triggered radar only transmits at the operator's discretion. Usually a sample look at the target vehicle's speed can be obtained in 0.3 of a second.

### 3. Moving radar system

A moving radar system is used in a moving police vehicle to measure both the police vehicle and the target vehicle.

Radar systems are a popular means of obtaining evidence against apparent speed offenders and since all road traffic offences are on a "guilty, until proven otherwise" basis, it often occurs to the average law abiding citizen that he would, if he could afford it or have equipment available to him, take counter measures against traffic control radar.

The triggered radar system presents the most problems because the Doppler radar beam is only transmitted for a short period of time. The target vehicle's driver would have had his speed recorded before any unsophisticated radar detector could give an adequate warning — and certainly before the driver could locate and depress the brake pedal and reduce vehicle momentum to a legal speed.

Higher sensitivity radar detectors provide more protection against "triggered radar systems" as they can detect the bursts at greater ranges and when the police radar is occupied on the vehicles in front.

There are several things that the driver can do to counteract a police (Doppler) radar which is prone to errors as well as being operated by an officer with technical expertise well below that required to correctly interpret the results. Several of these measures could be considered illegal here in the U.K.

The information is included for reference only as it is sometimes nice to know what is done in other countries

1. Drive within the legal limits.
2. Because road traffic radar systems are prone to many types of errors particularly known to those well versed in radio technology it is possible to argue the case in court.
3. Reduce the effective "radar cross section" of the vehicle.
4. Use a sensitive radar detector.
5. Passively deceive the radar system in use.
6. Actively deceive or 'JAM' the police radar system.

All of the above are effective to some degree but the most effective is, of course, driving within the legal limits.

Looking again at the two kings of road

speed radar in use, they use frequencies within the "X" band (10.525GHz) and also the bands around 24,000 MHz which are commonly known as the "K" band.

Of the two, the K band radar is known to be somewhat more "cobwebby" and prone to reading "speeds of a tree" or roadside signs.

Now, the "speed of a tree" when indicated on traffic radar equipment is not really the speed of the tree but a reflection from some other moving object or even worse the combination or closure speed of two moving objects. Similarly a reflection can occur from two vehicles moving in opposite directions and indicates the sum of the speeds of the two vehicles.

This situation can cause a motorist driving within the legal speed limit to receive a ticket for going perhaps his actual speed. It is not then an assurance that you will not receive a ticket if you are driving at the legal speed.

Once the ticket has been issued do not attempt to argue the case in court on pure legal, electronic or engineering grounds unless you have just won the football pools.

A number of precedents and decisions have been made in court. Do not try pulling one of these decisions out and displaying one to a red hot magistrate. Furthermore you will find wherever radar devices are used these precedents and decisions (which were well researched) are usually ignored.

Unless one's driver's licence is in jeopardy it is probably best to remain silent and pay the fine.

If you decide to fight remember that you will have to play to an audience who probably do not know how to change torch batteries, fit a new 13 amp plug let alone understand a Doppler radar system.

Because any radar system depends on a return signal some measures can be taken to reduce the amount of returned signal to the radar equipment.

The "effective radar cross section" of a radar target is a property of the target which is equivalent to a piece of perfectly reflective material which is at right angles (90 degrees) to the radar beam striking it.

It is a property of military aircraft which is carefully studied, for it bears on how good a radar target the aircraft is.

If the transmitted energy from the radar strikes something other than a surface 90 degrees to the beam a certain proportion of the energy is deflected in other directions other than back towards the radar's receiver.

The slope of the vehicle becomes important in determining the range and sensitivity of

the traffic radar.

Drivers of the VW Beetle have, unknown to them, an advantage over slab sided vehicles. It is difficult to find a vertical surface when viewing it from either front or back and as to be expected it is probably the worst radar target on the road.

Contrasted with the Beetle (and similar shapes), the articulated vehicle with a metal sided box body or container is the best



Drivers of the VW Beetle have an advantage over slab-sided vehicles when subjected to traffic radar beams.

shaped target on the road.

Most measures to reduce the radar cross section of a vehicle would not be practical or attractive on a passenger car.

Two things can be done to reduce the effective cross section of the vehicle. These include:

1. Change the shape of the surface of the vehicle exposed to radar. This is not as radical as it sounds. A lattice work can be constructed which resembles a half open venetian blind. It should cover as much of the "radar exposed" area as possible. Radar energy striking the lattice work will be, to a certain extent, deflected away from the radar receiver which reduces the range and sensitivity of the radar, but it will buy you more time when combined with a radar detector or jammer.
2. Paint as many surfaces as possible with matt black paint. The carbon in the black paint is somewhat absorptive to radar energy and will further reduce the radar energy reflected. Incidentally those fuel saving curved 'spoilers' are great — paint them black as well.

Radar detectors are receivers (with varying sensitivities) which detect radar energy and provide an audible alarm in the presence of a traffic radar system in operation.

There are a number of "triggered" radars

around which transmit only when the radar officer "takes a fix" on a target. Speed can be recorded by the officer before you can reach the brake pedal. A cheap insensitive detector will only serve to announce that you will soon see a blue light and receive a ticket.

More sensitive radar detectors, known as the "Superhet" type provide more sensitivity and hence have a greater range. They are effective in warning drivers about radar activity ahead.

In considering a device sensitivity is the keyword and anything greater than 104 db/M is worth considering. Superhet is the up-market design but remember that any radar detector cannot give 100 per cent protection.

It is possible to passively deceive a police radar by interrupting the beam at the front of the vehicle and generating a false return to the radar.

To implement a passive deception system requires more cumbersome equipment than the average person is willing to fit to his vehicle. Operation also requires specialist knowledge which the average driver would not be expected to have.

However active jamming is very effective but horribly illegal.

To jam or deceive a police radar system a transmitter on or near the police radar frequency is required. Furthermore, it should be modulated to simulate a "Doppler beat" for the speed one would like displayed on the police radar equipment.

Whilst the police radar is very sensitive for the mode in which it operates (called 'zero IF'), it has another mode present (which is less sensitive) and can easily be attacked by a jamming system. This is the straight "diode detection" mode. While the jamming device has a power advantage the radar has a selectivity advantage.

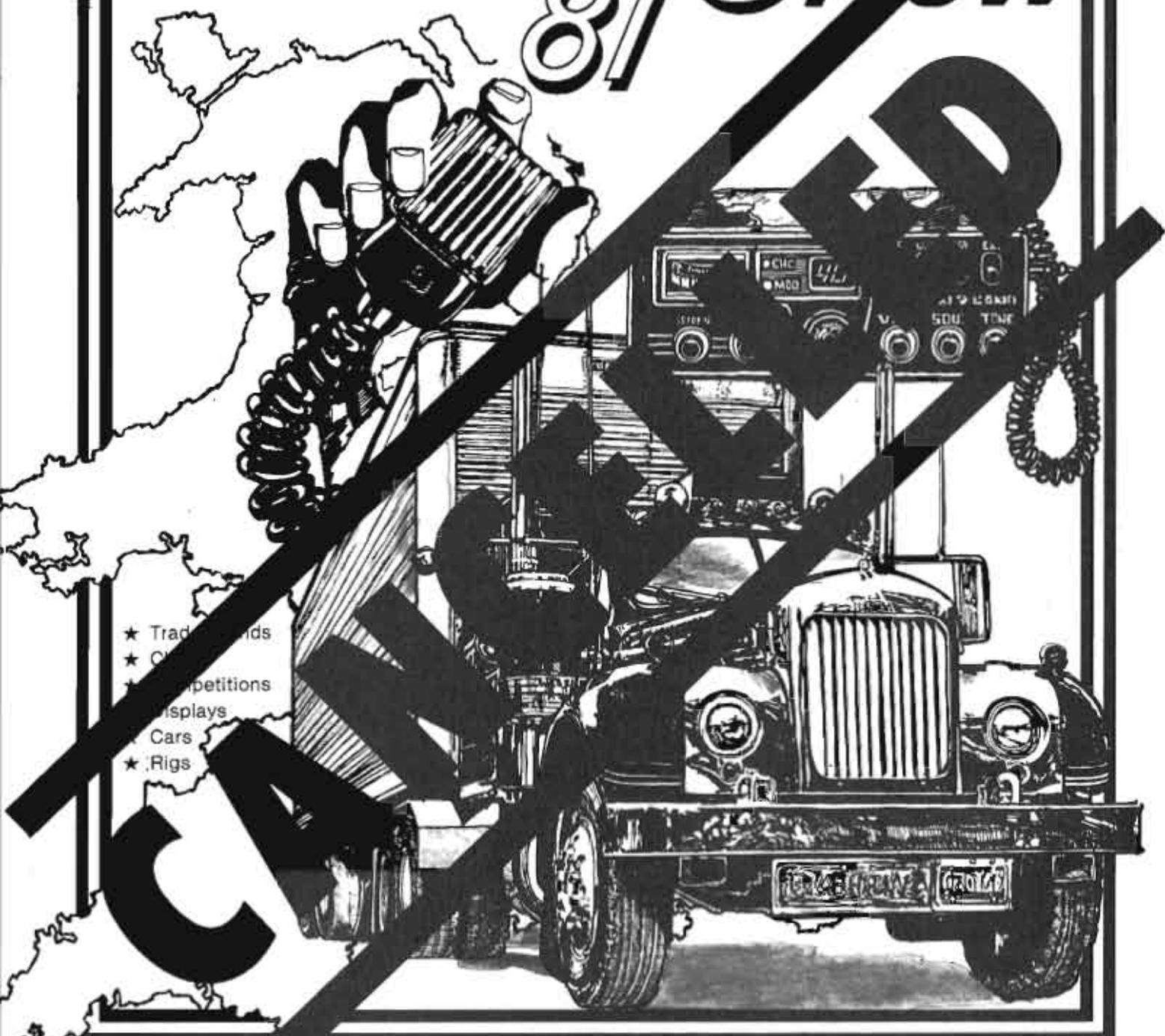
The bottom line for the above is that power is required to jam. About one milliwatt is required at the vehicle to effectively jam a police radar. This incidentally is marginal power with a "fat" radar target such as a large 32 ton truck so a combination of radar cross section reduction and jamming increases ones chances.

However before jamming — which we at CB World cannot encourage — the following should be remembered:

1. Your radar detector will no longer work as it will pick up your jamming signal.
2. On larger vehicle it is best to increase ones chances by reducing the radar cross section of the vehicle or increase radiated power.
3. Both radar bands (X and K) are at issue so

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Slab-sided vehicles are probably the best radar targets on the road.

it will be necessary to have two jamming transmitters.

4. The police won't like you.

### The opposition

Four vehicle speed detection devices have been evaluated by London's Metropolitan Police. Two are one man operated "radar guns" and the others are kerbside units — one using radar and the other cables on the road.

The hand operated "radar guns" resemble hair dryers in appearance and will be used mainly in residential streets. Known as the Muni Quip T3 and the Kustom HR8, when pointed at a vehicle they instantly show its speed on an electronic meter. If a trigger is pressed, the registered speed is locked on and can be shown to the driver for comment.

The two kerbside devices for heavier traffic situations need two or three officers. The Gatso Mini Radar is a compact unit on a tripod which emits a radar beam across the road. If a vehicle passing through the beam exceeds a pre-set speed, an alarm is sounded which is repeated to a second unit up to 100 yards away.

The fourth device, the Trucello Speedmeter uses two cables laid in the road 1.55 metres apart and the time/distance principles give the speed.

All the speed detectors have built-in checks such as calibration push button to check electronic digital read out, calibration tuning fork, and power supply, which are carried out at the beginning and end of every site operation.

### Hand-held devices

Both the hand-held radar speed detectors have a separate battery pack which is carried over the shoulder. The operator stands in front of the vehicle up to 300 yards away (though they have a much greater range). The further out of line the operator is with the car the more the true speed is shown at a lower reading.

The devices can work out of a stationary car window or in cars travelling in front or behind. They can be operated from a car battery via a cigar lighter socket.

### Kerbside devices

**Gatso Mini Radar** is made by James Scott of Glasgow and is used by police in Holland. It is more sophisticated than the current radar equipment used by the Metropolitan Police. The transmitter measures 2ft. by 6ft. by 6in. and a small hand held meter connected by cable records the speed alarm signal.

**Trucello Speedmeter.** Vehicle Speed Calculator Model 4 is made in South Africa and marketed through West Germany. It is contained in a brief case 18in. by 12in. by 6in. Grey co-axial cables are tautly secured by pins in the road. It can be operated from its own built-in rechargeable batteries or powered from a car.

The Automobile Association however with their experience in investigating many of the five million members alleged speeding offences have come to one conclusion — **MODIFY RADAR GUNS.** This means that the A.A. are suggesting that all radar speed meter "guns" in use by the police should be withdrawn from use and modified to eliminate interference from outside radio sources.

The AA's call follows field and laboratory tests on an unmodified Muni Quip T3 — the "gun" in most common use by the police. Another "gun", the MPH K-15, was also found to be subject to interference in its unmodified version.

The detailed testing of the unmodified Muni Quip T3 showed it to be susceptible to radio transmission interference, thus causing false readings to be displayed, even though the source could be some distance away in any direction.

The K-15 was also susceptible to radio interference, causing spurious readings, to an "unacceptable degree". Police operating any unmodified hand-held radar equipment could be completely unaware that it was giving a false reading, especially if they were unfamiliar with correct operating procedures. The devices can over read by either one or two miles per hour or even as much as twenty. A driver stopped on the speed reading displayed could then be prosecuted and convicted quite wrongly.

An A.A. spokesman told *CB World* "There are thousands of radio transmitters, many of them in cars, operating on frequencies which could cause interference — and the situation is likely to become worse when c.b. radio is authorised to begin later this year."

The A.A. said that in its view these advanced and sophisticated devices should not be used to support prosecutions unless modified to reduce interference to a minimum level. They should be approved by the Home Office against a laid down technical standard which should also stipulate procedures for operational use.

Modification is possible to reduce or eliminate such interference. In the A.A. view only manufacturer-modified "guns", clearly stamped as such, should be used by the police for prosecution purposes.

"We are not against the use of hand-held radar as such because they can measure speed accurately when used properly and could be a great help in enforcement", said the A.A. spokesman. "But in the interests of justice and road safety the present situation is not acceptable. As long as unmodified guns are in use errors can result and police enforcement effort will be undermined."

"Our tests confirm that recent defences, based on the possibility of interference by radio transmissions, against speeding prosecutions involving radar gun readings have a firm basis in fact."

As a result of its findings the A.A. has again called on the Home Office to allow only approved radar guns to be used by the police and to lay down specific technical standards which they must meet, a call first made to the Home Office in 1978.

Recently a motorist won a notable victory by challenging the validity of a radar gun. Mr Hughes in Newport, Gwent managed to convince the court that the evidence provided by the gun was not reliable because of interference . . . it just goes to show doesn't it!

We would like to thank Carol Rubin and M.E. Foster of *CB Magazine*, the London Metropolitan Police and the Automobile Association for their assistance in preparing certain parts of this feature ●

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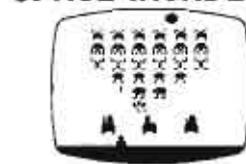
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The machine is easy to install and comes with full instructions. It is easily wired to your junction box with the spade connectors provided or alternatively a jack plug can be provided to plug into a jack socket. Most important, of course, is the fact that it is fully POST OFFICE APPROVED. The price of £135 (inc. VAT) includes the machine, an extra-light remote call-in Bleeper, the microphone message tape, A.C. mains adaptor. The unit is 9 1/2" x 8 1/2" x 7 1/2" and is fully guaranteed for 12 months. The telephone can be placed directly on the unit — no additional desk space is required.

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# ENFIELD BREAKERS SCAN FOR CHARITY



Hard at work in the Enfield and Southgate area of North London are members of the Enfield Breakers club. Richard Town recently visited one of their social evenings at the Royalty Nitespot, and to his astonishment found not only whole families out for a good evening of entertainment, but the Mayor and Mayoress of Enfield as well. Here is his report.

DURING his term of office, the Mayor's charity appeal is dedicated to providing funds for the purchase of a body scanner for the benefit of Borough residents and patients in Enfield area hospitals.

Body scanners work on the medical ultrasound principle. Similar to echo sounding equipment used by ships to locate and plot underwater hazards; waves of sound are projected into the patients body. These are reflected back by the various structures they encounter and a picture of the patients internal anatomy is built up.

This enables the doctor to carry out very detailed investigations of internal organs — without the need for surgery. Together with conventional X-rays and isotope scanning, medical ultra sound has now become one of

the normal diagnostic techniques used in clinical diagnosis. Ultrasound is quick, painless and harmless and, it's claimed, can eliminate, in many cases, the need for investigative surgery.

The Borough of Enfield scanner appeal now has £8,000 in hand toward an eventual target of £80,000 from all charity sources.

This mass eyeball included visitors from as far away as Stevenage in Herts. The greatest 'DX' visitor came from Lauriston, near Christchurch, New Zealand. This NZ breaker told me that c.b. is an essential 'must' for her and other farming families living in outlying districts. Her handle? Kiwi of course.

The presentation of the £150 cheque is the second presentation to the Mayor in a month, the first being handed over on the 29th June.

Proceeds are generated from the 'big raffle' with big prizes. This time prizes included a Turner Road King 76 mike, Topaz Cassette recorder, Rama rf signal pre-amp, EA78/4 SWR meter, and a Bremi stabilised power supply unit.

Enfield area calls on 14, reserves channel 19 for truckers and channel 9 for emergency watch. Thames monitoring has active units

covering the area and when there are no active units, the club takes over that role to provide a full 24 hour watch.

Club members have access to a separately run "bust" fund and seven members have had to avail themselves of its services.

But back to the eyeball. I asked the commercial manager of the ballroom whether c.b. had taught the flagging entertainment industry a trick or two.

In replying he informed me of the mass eyeballs he is arranging on a regular weekly basis. Perhaps he is hoping to cash in on the hard work of Enfield Breakers in building their club to a now closed membership of a thousand in addition to a waiting list of hopefuls.

From 71 year old Merlin, down to little 2 year old Kathy, Enfield Breakers club is proving c.b. successfully bridges not only the generation gap, but with the obvious happy participation of the Mayor and Mayoress the 'authority' gap as well.

*Richard Town will be out and about visiting clubs in your area for CLUB SPOTLIGHT as a regular feature. If your club would like to be featured contact him at CB World.*

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# Femme Scene

by Smiler



"ANY BREAKERS on channel for a copy?"

"Yeah — you've got L-Plate here. Come back with your handle lady breaker".

"This is Smiler — shall we go up a couple and clear this channel for other breakers?"

"See you there".

So began my conversation with L-Plate, at about midnight one Monday. Being a fairly new breaker, and, like most other young ladies I know, not too up on the technicalities of rigs and twigs, I was not sure that anyone had been able to hear me calling for a copy. I was thrilled when L-Plate answered. We chatted whilst I continued my journey — this involved my hitting the kerb once, driving up on the pavement once, and having to stop suddenly when I realised I wasn't going to make the corner with one hand on the wheel and the other keying the mike! (I can almost here all you men sigh and say, "Women drivers...") Well, let me tell you — the first time I rode shotgun with a male breaker, who incidentally has been driving — and breaking — for years, he stalled the car twice, hit the kerb, drove up on the roundabout and completely missed the turning he was looking for. I don't think I did too badly at all!

After ratchet jawing for about half an hour, L-Plate suggested an eyeball — he was getting worried as smokey was patrolling the area. Wow — my first proper, arranged-over-the-air eyeball — I didn't need any excuses about old smokey.

L-Plate decided we should meet in the car park of a local brown bottle shop, so I followed him there. (We had discussed colours of wrappers etc. and before long realised we had our own mini-convo.)

At about 1.00 a.m. we turned into the car park and L-Plate called, "See you round the back."

We drove into the huge, deserted car park, and in a dark corner, furthest from and out of sight of the road, I switched off my engine. There I was, just gone one in the morning; not a soul nearby but L-Plate. "Oh well, he'll look after me should anything happen". L-Plate — the chap who'd persuaded me to drive to this lonely place — I'd never copied him before, never seen him around; I didn't know his real name, where he lived...

I nearly disintegrated as L-Plate leapt out of his car with what I was sure was a "You've had it now young lady — didn't your mother tell you not to talk to strange men in cars, or hang around in disused

parking lots after dark?" look on his face. There was nowhere to go — I could never make it to the road before he grabbed me — nobody would hear my screams. I clutched my mike tightly as L-Plate seized my door handle, yanked open the door, and threw himself into my passenger seat.

"Don't mind if I get in here, do you? Let's have a look at your rig, and then you can have a go with mine and we'll call in some of my good buddies."

It's worth a thought, isn't it? Although L-Plate and I got on well (after I'd recovered) and talked about all the usual things breakers talk about, I feel now that I was very lucky. I could have been copied by one of those maniacs who are impersonating police officers, confiscating rigs, and then threatening breakers with iron bars when asked for receipts. What do they take the rigs for?

Is it so they have means of luring innocent and unsuspecting females like myself to dark, secluded places? I don't know, and I don't intend to find out. Next time an unknown breaker suggests an eyeball in the middle of the night, I shall make sure we meet in the High Street outside a well-lit branch of a famous hamburger chain — and I'll try to take one of my good buddies with me!

On a lighter note, if I could have a new rig for every one of those fellers who:

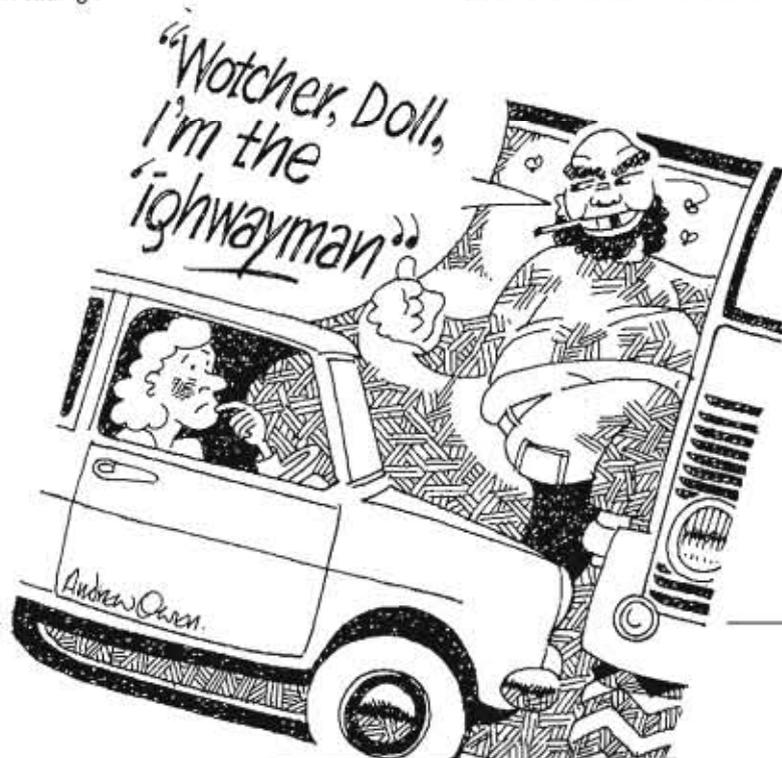
1. Condemned us for watching 'The Wedding'.

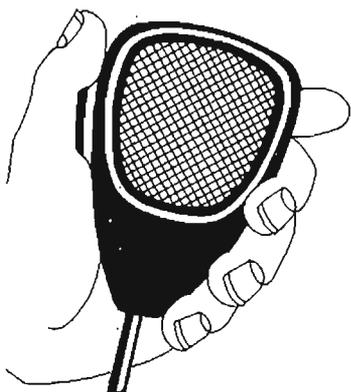
2. Spent the day of 'The Wedding' in the local brown bottle shop running us down for being "soppy females, staying in to watch T.V. when the pubs are open".

3. Went home in the afternoon, flicked the V.C.R. onto 'play' and viewed the action through a haze of alcohol (which was needed to dull the pain of realisation that the lovely Lady Di had picked Charlie rather than them) and

4. Would put Lady Di on the top of "The World's Most Desirable Women" list.

I reckon I could open up the biggest rig shop in the U.K.! I know of four such guys who scorned the wedding and those who watched, who had a secret store of Lady Di pictures under their beds, and then clubbed together to send a telegram to Clarence House on the Wednesday morning saying, "Don't do it Di, come and marry one of us instead". At least we females are honest! ●





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# FROM BREAKER TO HAM

BY READING this first paragraph you must have shown a little interest in the subject of amateur radio.

If you did not read our feature all about becoming a radio ham in the August edition of *CB World* then get a copy and start reading from page 49.

This will answer the question as to what amateur radio and this new series is all about.

Right, down to business. First by remembering your school days — unless, of course, you are still there, during lesson 1 day 1 the teacher would deal with the allocation of textbooks. This course also requires textbooks, although I would rather not call them by this title but more general reading books. They are easily read and the technical content presented in a simple manner.

I have reviewed these books and would suggest that you obtain your own copies.

If you cannot afford them all at once don't worry — take the opportunity of relatives, parents and little brothers not knowing what to get you for your birthday or Christmas. The one book which is a must is the **Radio Amateurs' Examination Manual** — Eighth edition by G. L. Benbow.

The full compliment of the recommended course books is available from the Radio Society of Great Britain, 35 Doughty Street, London WC1 N2AE.

Prices quoted are inclusive of postage and packing. In addition if you join the RSGB you would be entitled to a ten percent discount, so why not get a membership application form? Membership is not expensive — in fact the first subscription would easily be recovered from the book order discount.

## **Radio Communication Handbook, Vols. 1 & 2**

First published in 1938, the **Radio Communication Handbook** is the world's largest and most comprehensive textbook on the theory and practice of amateur radio. The latest edition includes chapters on image and satellite communication, reflecting current interest in these fields.

Volume 1 covers principles, electronic tubes, valves, semiconductors, h.f. receivers, v.h.f. and u.h.f. transmitters, keying and break-in modulation systems and radio teletype.

Volume 2 covers propagation, HF, VHF, and UHF, antenna, mobile and portable equipment noise, power supplies, interference, measurements, operating technique and station layout, amateur satellite

communication and slow scan picture transmission.

*The Radio Communication Handbook. Vol. 1 £10.20; Vol. 2 £9.06.*

Pat Hawker, G3VA is active as author in '**Amateur Radio Techniques**'. This book does not aim at competing with standard handbooks rather at supplementing them. The book brings together a large selection of circuit ideas and devices, information on antennas and related topics, plus many constructional and fault finding hints. In addition, the book contains a special series of quick reference guides to the technology.

*Amateur Radio Techniques (7th ed) £6.16*

Pat Hawker does it again with "**A GUIDE TO AMATEUR RADIO**". It's intended to assist the newcomer to learn more about the hobby, and to help him or her to obtain a transmitting license. It contains how licences are obtained, how equipment is designed and built, how amateurs communicate. The licenses and the syllabus for the multi choice questions are included.

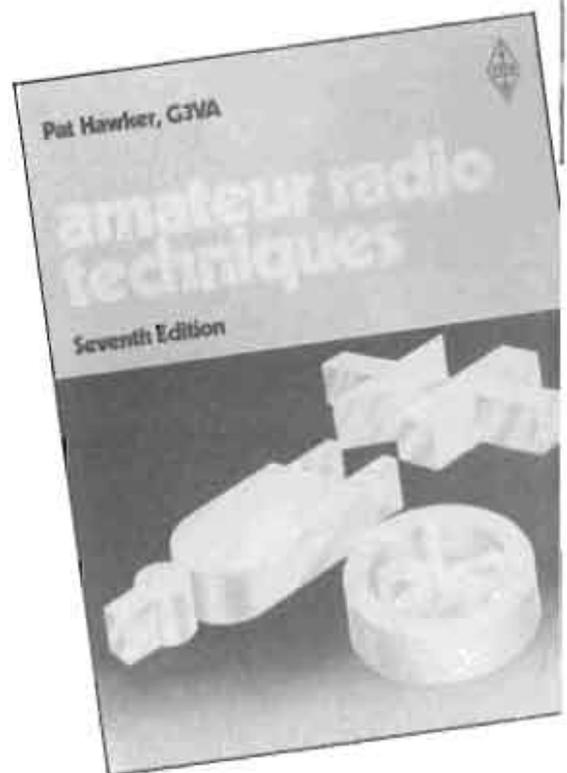
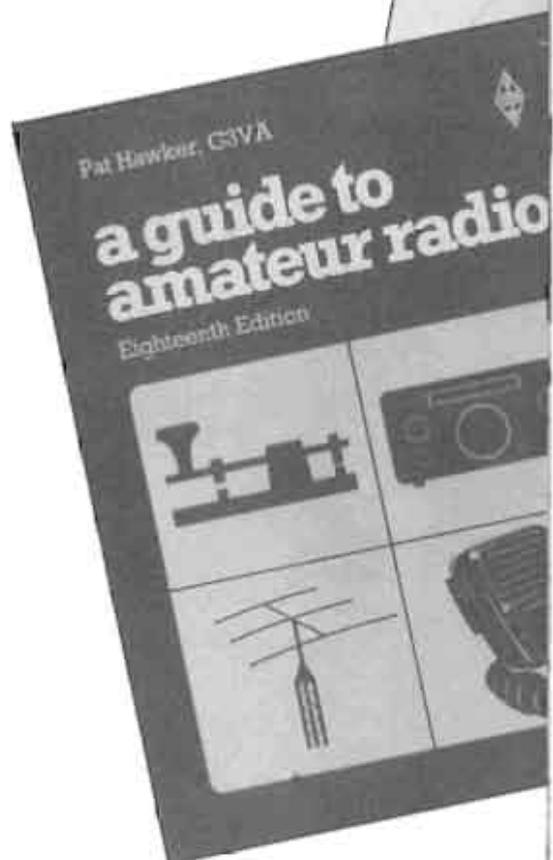
*A Guide to Amateur Radio £3.07*

G. L. Benbow has produced "**The Radio Amateurs Examination Manual**". It's been produced under the aegis of the Education Committee of the RSGB in order to provide sufficient information to enable readers to pass the RAE in its new form. Over 95 specimen RAE questions are contained with answers (relief!).

*Radio Amateurs Examination Manual £2.73*

The Home Office produces free (yes, free) "**How to Become a Radio Amateur**" which tells about the morse test (obligatory if you want to go on frequencies below 144MHz) conditions of operation and license terms. Available with the compliments of the Secretary of State for the Home Department (it says so on the front cover) from The Home Office, Radio Regulatory divn., Licensing Branch (Amateur) Waterloo Bridge House, Waterloo Road, London SE1 8UA.

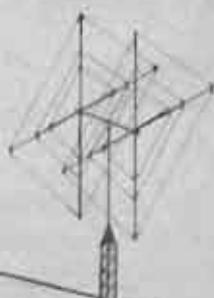
Right, you now have a month to get at least two of these books. The Radio Amateurs' examination manual (cost £2.73) and How To Become A Radio Amateur (free). These surely will not break the bank. Oh yes, don't forget to place a regular order for *CB World* with your newsagent. It would be unfortunate if you missed your copy because on publication day the guy down the road got the counter first.



**How to become  
a radio amateur**

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handbook

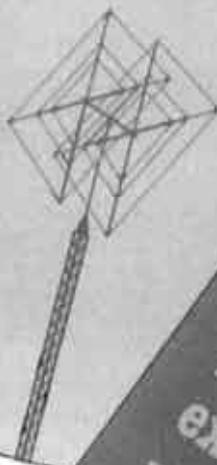
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Look through the pages of these books and you will see some apparently very complicated drawings and phrases. At this stage **DO NOT PANIC**. It is simple — in fact my secretary has been nominated to take the course with you, so if she can do it then . . .

If you are at all concerned about the course or examination then why not contact the RSGB and ask them to put you in touch with a local radio amateur.

Go and have a chat to him, see him operate his equipment and get the atmosphere of world-wide amateur radio communications.

I know it is a little different from copying Liberator from a wrapper fitted with a non sus antenna parked by the local motion lotion shop, but it is the next step up the ladder. Should you wish to monitor the amateur bands then ask him to recommend a reliable set — within your pocket capabilities and why not set up your own monitoring station?

In *CB World* we will be reviewing this type of equipment regularly, how to set up your equipment and log the stations received.

You now have the two most important books so why not start now? Well, alright if you insist. The first publication to look at is "How to become a radio amateur". This tells you how to become a radio amateur, the type of licence and the current fees. It then describes in detail the conditions of the two types of amateur licences and finishes with the examination regulations and, of course, the syllabus.

Although an official government publication, it will be easily understood, so read it through not once but twice or even three times.

Remember, this is your hobby so why not enjoy it. Any paragraph you do not understand why not ask your newly acquired amateur radio friend now? The alternative is to wait until we cover it in the course or write in and ask us. You will find a clip coupon in this and subsequent editions of *CB World*. Send this coupon with your 'From Breaker to Ham' enquiry.

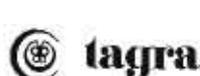
Turning to the radio amateurs' examination manual, read through chapter 12 page 90 and then appendix 3 and 4. This again will give you some idea of what the subject is all about. Don't worry if you think I am taking the easy way out and just going to give you a page after page to read from books. Usually I don't do it but this time I am giving everyone an opportunity of getting to the starting line on time. Next month, fingers in ears, eyeballs switched on and the work begins. *Micro Chip* ●

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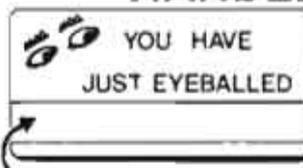
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# Let there be music!

A regular monthly series giving the latest information on what is available in the In Car Entertainment market. All equipment described should be readily available from your local ICE specialist. If in difficulty, contact the manufacturer direct.

## BLAUPUNKT

Blaupunkt's Montreal stereo radio/stereo cassette player incorporates the latest Bosch design thinking with emphasis being placed on providing maximum operational comfort with automatic station search, electronic pre-set station buttons on FM, and the last-station memory facility on MW and LW.

Special attention, says Blaupunkt, has also been paid to providing ease and safety of operation at night, with the main operating controls and tuning scale shown on clearly illuminated display areas. The receiver illumination can be wired into the fascia dimmer control. The cassette slot and the fast wind/rewind controls incorporate the exclusive Blaupunkt illumination system.

In a design breakthrough, the panel fascia is now finished in a new-to-Blaupunkt champagne colour.

Other features in the new Montreal CR, which has a power output of  $2 \times 10$  watt (DIN 45 324/3.2) include: electronic station programming buttons on FM; rocker switch/automatic station self-seek on FM; three wave bands (FM stereo, MW and LW); and advanced quality on cassette replay with a very wide frequency response covering 40-14,000 Hz.

Waveband frequencies — VHF, 87.5/108 MHz; MW, 520/1605 KHz and LW, 150/285 KHz.

The speakers in Blaupunkt's new hi-fi sound system are so slim that a degree of flexibility of in-car mounting can now be achieved which, say, the Company, has so far been unobtainable with any other ICE system.

Up to now, to achieve good quality in-car sound, multi speaker one-unit systems have been necessary but these units are bulky, heavy and difficult to install for maximum performance.

By introducing a tweeter that has an installed depth of only 23mm, and mid range speakers and woofers of 33mm and 45mm depths respectively, Blaupunkt claim to have largely overcome the three major problems 'traditionally' associated with ICE speaker systems — size-weight ratio, installation and positioning, and loss of top note response.

The ultra slimness of the tweeter, in particular, makes it possible for it to be placed in the best position to achieve top note stereo performance — high in the door — producing an overall sound quality comparable to domestic hi-fi systems.

A three-way frequency divider, covering 40-600, 600-4,000 and 4,000-20,000 cycles ( $2 \times 8$  watts sine), ensures that exactly the



A two channel, rear window ledge installation of Blaupunkt's three way speaker system.

right frequencies are fed into the channels to achieve a linear frequency response over a range of 40-20,000 Hz (DIN 45 500).

Each installed channel operates with four speakers (one tweeter, one mid range, two woofers) and a frequency divider network.

**Blaupunkt. Robert Bosch Ltd.**

*P.O. Box 166, Rhodes Way, Watford WD2 4LB.*

## CLARION

Clarion have just announced their PE971 combination radio/cassette player. It uses a tuning synthesiser to 'lock on' to the required radio frequency even when stereo signals are distorted by changing landscape features.

The PE971 has soft touch push buttons, and the  $23W \times 2$  external amplifier can be connected via an output terminal.

Specifications include MW/LW/FM stereo with PLL (phased lock loop) synthesiser, digital display; manual, auto-search or preset tuning by five soft-touch buttons; auto-reverse cassette player with Dolby noise reduction and loudness circuit and a metal/chrome tape equaliser switch. It must be coupled to a Z-80A,  $23W \times 2$  power amplifier or upgraded to four speakers with a Clarion Z-80E equaliser and second Clarion Z-80E amplifier.

Suggested price £215.00 plus VAT plus amplifiers.

**Clarion Shoji (UK) Ltd.**

*Unit B, Dorcan Industrial Estate, Faraday Road, Dorcan, Swindon, Wilts SN3 5HQ. Tel: (0793) 24081.*

## EAGLE INTERNATIONAL

The three latest additions to the comprehensive range of Eagle in-car entertainment units are: combination unit, model MC 7800; cassette player, model MC 6000; and a graphic equaliser booster, model MB 850X.

The radio/cassette player offers MW, LW and VHF (FM) selection with mono/stereo switch and stereo broadcast beacon. Power output is 5 watts per channel, compatible with speakers from 4-8 ohms.

The versatile MC 7800 has fast forward/rewind buttons and automatically reverts to 'play' at either end of the tape, VHF (FM) interstation muting and tape direction LED.

Comprehensive suppression components and in-site antenna trimming ensures clear reception while auto-tape eject on removal of the ignition key is designed to protect the tape transport mechanism. The volume control combines with a push-on/push-off switch for the radio and the unit has a built-in interference reduction circuit.

Supplied complete with mounting brackets, the Eagle MC 6000 cassette player features an automatic tape stop, slider controls and lockable fast forward button. Power output is 4 watts per channel, compatible with 4-8 ohm speakers.

With front-to-rear loudspeaker fader and a seven band graphic equaliser for fine tune adjustment, the high performance MB 850X booster provides 14 watts per channel. Compatible with 4-8 ohm speakers rated at 10 watts or greater, the unit has two banks of five LEDs to show output level and an equaliser bypass switch.

Eagle have also just announced their new MC 7900C auto-reverse radio/cassette player with a built-in powerful 14 watts r.m.s. per channel amplifier.

The unit fits into the standard dashboard radio slot and there are no more connections to be made than a conventional unit. With medium wave, long wave and FM (VHF) bands, the radio section has special noise-killer circuitry and stereo FM reception is confirmed by a beacon. A local/distant (LO/DX) switch allows higher gain for faint signals.

The cassette section has an auto-reverse cog drive mechanism for reliability. There are play direction indicators and lockable fast forward/rewind.

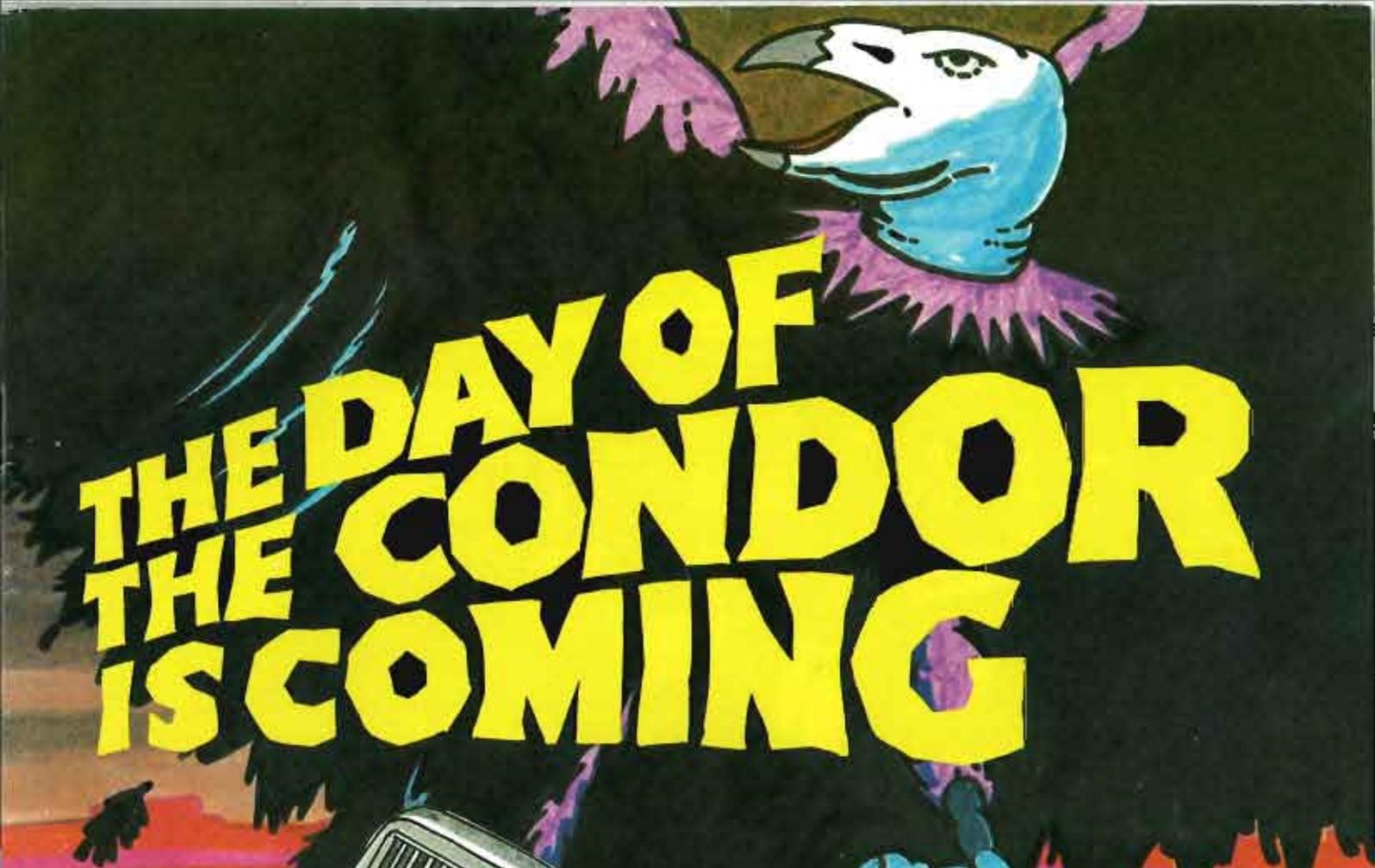
In the field of in-car entertainment accessories, Eagle have launched new loudspeakers, a car aerial booster and a new car aerial.

The new loudspeakers include a compact parcel shelf model with two dual cone air suspension drive units, speakers designed for narrow wheel arch trays such as in hatchbacks, a matched pair of two-way speakers for parcel shelf or panel mounting and extra slim panel mounting speakers with specially contoured base cones to allow installation where the cavity depth is less than 35mm.

The new car aerial booster is fitted between the aerial and the radio to boost weak signals. Power is drawn via a connection to the ignition terminals. An all black manual four-section aerial has been introduced specifically to match cars with black trim as standard. The overall length is 1 metre, 250mm below wing depth and it has a key lock. The MC 7900C is currently under long term test in the *CB World* laboratory and will be the subject of review in a forthcoming edition of *CB World*. All Eagle in-car entertainment equipment is covered by a two year guarantee.

**Eagle International**

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