CB Licences - We have full details! Buyers Guide to Base Station Microphones.

40 Channel portable - New from Tandy

INSIDE THIS ISSUE!
Your Official CB Licence Application Form
Ever been to a warehouse and been wound up?

Wrong stock! No stock! Wrong prices! No returns!

**STOCK THE LOT!**

**THE LEADING CITIZENS BAND WAREHOUSE**

ACORN TRADING (CB) LTD.
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How many times have you called in on your local C.B. Warehouse and found the wrong stock — no stock — wrong prices, in addition to being told that you are unable to return damaged or faulty stock? NOT AT ACORN buddy!

In our superbly appointed 3000sq.ft. showroom we stock the lot including all the popular lines plus some specials and to keep ahead of the field, we are adding more and more products to meet demand.

All ACORN's prices are competitive and special discounts are available on bulk purchases.

Call in today and talk a deal with ACORN.
We would like to thank the Home Office for printing such luvverly licences, Tandy (UK) Ltd for making such pretty rigs and Phil Gerring, our ace lensman for sorting out the focus on his Brownie. Technical buffs may like to know that the cover pic was taken on a Kodak Brownie (circa 1934) F4 at 1/25th second with the twiddly knob business set at 'cloudy'.

The publishers of CITIZENS' BAND would like to point out that it is at present a contravention of the Wireless Telegraphy Act of 1949 and 1968 to use, manufacture, install or import CB transmitting equipment not confirming to Home Office specifications MPT1320 and MPT1321. It is not the intention of Argus Specialist Publications Ltd to incite, encourage or condone the use of such equipment.

The publishers of CITIZENS' BAND normally publish on the third Friday of each month prior to cover date.
If you are already a C.B. wholesale Trader or are thinking of expanding into this field in time to take full advantage of C.B. becoming legal, now’s the time. Make sure that your getting the best service and the best range of quality products at realistic prices.

- Biggest, most comprehensive selection always in stock.
- Normal delivery within 24 hours.
- Free delivery on most wholesale orders.
- Most competitive prices.
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295-297 High Road, Willesden, London NW10
TELEX 005673 MURA UK-G
ShirtS

14 - 14

ALL BREAKERS

Eyeball this page for the finest quality CB Sweatshirts with your handle and breaking channel printed FREE OF CHARGE with superb flock lettering. Never before have Sweatshirts of this quality been sold at anything like this price.

Available in a choice of SEVEN colours: Red, White, Navy, Black, Bottle Green, Sky Blue & Yellow.

To compliment these already unbeatable Sweatshirts, we have put together a range of 4 colour CB transfers which we will print for an additional 60p each.

T-Shirts are also available in the same colour range with printing at £2.75 + 30p p&p.

ONLY
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HOW TO ORDER

Please print your order in Block Capitals stating clearly your Name, address, size (S, M, L, XL), colour choice (2nd choice if possible), Handle and breaking channel also transfer letter. Please make cheques/P.0.'s payable to L & M Shirts including 40p p&p per garment. Send your order to

L & M Shirts, 12 Cornmarsh Way, Lyncroft, Swindon, Wilts.
Four new pieces of equipment from SSE came our way at our recent CB Show. Three new accessories include two TVI filters, one designed to fit into the rig antenna line and one into the TV aerial lead. Both items are the usual very high quality we have come to expect from SSE. The filters are both enclosed in strong metal boxes and sturdy constructed. Again, as usual with SSE products they have the endearing habit of actually working and not costing the earth. Both splitters cost under £5.

Third of the accessories is none other than an S-meter/watt meter. Just in case you’re wondering why on earth you might need an S-meter combined with a watt meter when your rig probably already has one, then consider this: most in-built S-meters are so small, and so vaguely calibrated, that you’ll probably need glasses after half an hour’s squinting at those miniature meters. This meter is large, easy to read and sturdy constructed — great for base station use. The Extension S-Meter can be all yours for £15.

Last but by no means least is a 12 channel hand-held UK FM rig that’s got to be a winner. The rig is designed with portability firmly in mind. A selection of three antennas are available, including a short rubber ducky, centre loaded telescopic and a tape antenna that will withstand an incredible amount of abuse. The transmitter pushes out around 1.5 watts and a selection of half a dozen or so crystals control the channel allocations. The designers have used a cunning double conversion technique to limit the number of crystals required to just eight. A tone button will, in conjunction with the PTT button, send a short tone burst for paging and the PTT itself is lockable. The transceiver is powered by a pack of rechargeable batteries which can be exchanged quickly by just swiveling the battery module. All in all this is a very well designed, sturdy constructed little unit and should retail for around £50. More information on this and the other SSE products can be obtained from: Solid State Electronics (UK) Ltd, 6 The Orchard, Bassett Green Village, Southampton SO2 3NA.
New From Binatone
As reported exclusively in this magazine some months ago Binatone will be offering some very interesting products for UK CB in the next few weeks. Shown here are two new Binatone SWR metres, the 02-5798 also has a power measuring capacity. Also here are the re-styled Route 66 and all new Speedway rigs which are shown for the first time at the First National CB Show. Both rigs conform to the UK FM specs.

Binatone have put together a small booklet on CB designed specifically for first timers and newcomers. This handy little book contains just about everything you need to know to get you on the road. Proceeds from the sale of the booklet will be going to the World Wildlife Fund - good on yer Binatone.

For the complete lowdown on all Binatone products get in touch with them at Binatone House, Beresford Avenue, Wembley, Middlesex.

Mounting Interest
Now here's a thing. The Pivoting CB Swing Mount for CB rigs. This rather unusual device is designed to be mounted under the dashboard of your mobile and attached to the top of your rig. The idea is fairly obvious: the rig can be swung out from under the dashboard ready for use, or, conveniently tucked away, out of sight of Buzby or light fingered people. The bracket which consists of two jointed arms extends up to 9 inches and the arms themselves are made from ribbed steel, finished in satin black enamel.

The Pivoting sells for around E4.50 (inc VAT) and should be available from most good accessory shops. However, in case of difficulty the manufacturers, R & R of Redditch, should be able to help. They can be found at Crescent Works, H'la Mount, Pleasant, Redditch, Worcs B97 4JE.

Totem Poles?
A new name in legal CB antennas will be making itself known in the next few months. The name is actually part of a new image for Valor antennas, which for some, had rather unfortunate associations with room heaters. Two new names you'll be seeing almost immediately will be Cherokee and Half Breed. The Cherokee is the new name for the good old Dial-A-Match, that's the one with the superbly simple SWR adjustment rings on the coil body. The other antenna will be new to many, that's the Half Breed, and we hope to be putting this in our Antenna Review pages in the not too distant future. Both of these twigs will be distributed by a new force in CB which consists of a tie-up between OCT and Breaker One Nine, to form yet another part of the immensely successful OCT Group. Look for both of these new antennas in your local shop soon, and hopefully we'll be reporting on the outcome of the Half Breed test shortly.

Lighting Up The Sky
Young Dave Rogers, gentleman CB dealer of the parish of Enfield, has a rather interesting range of Astatic microphones. The run-of-the-mill stuff, excellent though it is, is completely overshadowed by what must be the most important development in microphone technology this century - it's the Astatic 0740 table lamp. This masterpiece of engineering and design is actually a 0740 mike with a lamp fitting on the top. Initial reports from our test team are most enthusiastic. It appears that the field tests show that the unit functions faultlessly under virtually all operating conditions, spreading high quality illumination over an area of around six square feet. We ask you how many other CB base mikes can do that?

Dave and his amazing collection of Astatic mikes can be found at Skyriders, 557 Hertford Road, Enfield.

Please note that the item in the Update September issue of CB entitled 'Card Sharps' regarding a printing service for Eyeball Cards stated wrongly that the price for 250 cards was £5. The correct price is £5.50 and the address for sending new orders has now been changed to: Rigs and Twigs, 51 Eaton Road, Margate, Kent.
THE FIRST TUNABLE TIP ANTENNA FOR THE BEST OF BOTH WORLDS!

Introducing ‘Diesel-Stik’, the revolutionary antenna concept from the ‘Firestick’ Antenna Co.

‘DIESEL-STIK’

Tunable over the full 27MHZ Range

Operates on existing A.M. and the New British F.M. as well as SSB.

NO TOOLS REQUIRED. Simple hand adjustment.

Power Rating - 1000 Watts.

Only available from Connexions, sole UK Distributors for

Furrow Way, Cannon Lane, Maidenhead, Berks. SL6 3NY.

Trade Enquiries welcome. Tel: 062 882-4338/9.
394 Rigs A Reality

As yet a detail is on the slim side but we hope to have a full review in the next few months. The rig itself will retail for something like £200 and has the full 25 channels allocated to 934 meg.

According to Jeffrey Smith, the Managing Director of Reftec, tests on on-production prototypes achieved ranges of several miles, sufficient for mobile and static communications over quite a large area and well up to the ranges we have to come from 27 MHz equipment. It's possible that 934 megatransceivers could find a lucrative market in business communications where the minimal security afforded by 27 MHz equipment could prove a limitation. For more details on this interesting enterprise contact Reftec at Leyton Aviation Industrial Estate, Mile End, Suffolk or give them a buzz on 0608 715000.

Snippets

Midland CB rigs will be sold in this country by Radiotechnic Ltd. The important Midland name, known to millions of CBers worldwide, will be appearing on these new UK FM models on this autumn. The three new units include hand-held transceiver, the Ready Rescue emergency rig, very like the EEC HLP unit, and a home base unit. Three mobile transceivers previously seen in other CB markets will also be on sale.

Teutonic Threesome

We've got some good news - the reward will be forthcoming to the finder! Unfortunately we've got no prices on these units as yet but Direct Input are happy to say that their whole range will be competively priced, and no prices on these units as yet.

David Allen Insurance Consultants have announced a new CB insurance plan offering better terms and cover than many comparable plans. The basic cost of cover is calculated at 10% of the value of the equipment plus an optional cover for confiscation which works out at £7 for mobile rigs and £5 for home base units. More details of the policy can be obtained from David Allen (Ins Consultants) Ltd, Carlton Chambers, 24 Queen Street, Huddersfield HD1 2SP.

Another insurance scheme has just been announced, this one from Holman General Facilties Ltd. The basic premium for an insurance equipment with a value of up to £300 is just £10, and up to £500 worth of gear can be insured for as little as £15. The cover is for all risks, excluding the first £10 of each claim. For further information contact Holman General Facilties Ltd, John Holman House, The Broadway, Wickford, Essex SS11 7AN.

UKCB22B1

We've got some good news and some bad news for you concerning our Win-A-Rig Competition in the August issue. First the good news - the prizes are still up for grabs.

Now for the bad news. For some unknown reason the entry forms have gone astray somewhere between Chelmsford Cross Road and Wantage in Oxfordshire, where the judge Maureen and Richard Woodward live. We've initiated a search for the parcel and the PD are hoping it'll turn up. Now don't blame us, we're as sick as anyone so keep your fingers crossed and hopefully we'll have some good news next month. If the PD staff are reading this, please keep your eyes open for a large parcel, about 1ft by 2ft containing the entry forms you sent in. They're of no use to us in that form, so please contact us if you come across it with a suitable reward will be forthcoming to the finder!
Deal in America’s No.1 CB radio-Colt*

There’ll be a big choice of CB radios—the difficulty will be selecting the winner. COLT has already proved itself in the tough American market—now it’s to be introduced to the U.K. so we are looking for dealers. The COLT has a great track-record for quality, reliability and back-up service. The price is right, too.

What’s more, we’ll be supporting COLT very strongly with national advertising, window stickers, posters, customer leaflets—the lot.

The profit potential is tremendous. You can join this COLT bandwagon. Simply complete the coupon below and post to:
Keith Johnson, Shellpost Limited, 185 The Rock, Bury, Lancashire. 061-797 7146

SHELLPOST, Ltd—the electronic source.

*COLT is the registered trademark of Colt Communications Inc., Illinois.
More British Power

Early fears that British companies would lose out on UK CB are being proved groundless almost daily. Although it is clear we won't be able to compete with the cheaper Japanese rigs we can make an impression on the mid to upper end of the transceiver market and what is becoming more and more apparent, the accessory market.

Ringing In The Changes

Here we have two wholly British mains power supplies from a company called Fisher Karpark Industries Ltd. The two new units can supply up to 3-5 amps and 6-8 amps respectively. Protection from overload etc is handled by an electronic cut-out circuit that should react faster than the conventional fuse. Both units are guaranteed for 12 months and as you will see, are very reasonably priced.

The 3-5 amp model should retail for around £15.90 and the 6-8 amp supply for £20.45. The Powerpacks should be available from most reputable accessory dealers but in case of difficulty the manufacturers can be contacted at Fisher Karpark Industries Ltd, Gratrix Works, Gratrix Lane, Sowerby Bridge, West Yorkshire.

Search It Out

Medium wave DXers might like to know that a booklet listing hundreds of European stations has been compiled. Not only that but 'Dial Search' contains compass bearings from the South Coast of England have also been included along with a short list of VHF stations on the Continent.

The booklet is priced 80p plus 20p postage and packing, and is available from George Wilcox, 8 Thurrock Close, Eastbourne, East Sussex.

Trouble And Squeak

Two new products, one designed to eliminate interference and one, some might say, to generate it, are shown here.

The first is a new TVI filter, in common with many we've seen in the last few months, actually works. The Kayfilter is in the TV aerial line and consists basically of a UHF bandpass filter with a braid beaker, something that should cut down on RF breakthrough, caused by a CB rig being operated close to a TV receiver. The braid filter cuts out any signals that are not in the UHF band as the filter is around £4.36. The second item is called the Kaybleep and is designed to fit onto the microphone input circuitry on almost any rig.

When the PTT switch on the microphone is released the Kaybleep generated a rapid succession of tones, conforming to Morse 'K', which signifies the end of a transmission. The installation instructions supplied with the Kaybleep should enable anyone capable of wielding a soldering iron and reading a circuit diagram to fit the unit inside the rig case. However, be warned that it does necessitate some tinkering around inside the rig's innards and only the confident should attempt such modifications.

The Kaybleep should be in the shops now for around £14.50. If you have any difficulty in obtaining either the Kaybleep or the Kayfilter then write to the manufacturers at: Citizens' Band Rig Services, 23 Boker Road, North Finchley, London N12 8DZ.
AVOID DISAPPOINTMENT

Major CB radios are simple to install and operate. They come complete with microphone, mounting brackets, cable and instruction manual.

- frequency coverage 27.60125 – 27.99125 MHz FM
- PLL digital logic synthesizer circuitry
- dynamic microphone with push-to-talk switch
- manufactured by Cybernet
- built-in circuit protection
- easy to install and operate
- four models to choose from

Major CB radios meet all the Home Office regulations relating to CB radio. They operate on 27 MHz FM.

Major Model 2000 Transceiver
Features include: volume, squelch, LED read-out, channel selector.
Only £38.00

Major Model 3000 Transceiver
Features include: volume control with ON/OFF switch, squelch control, channel selector, CB/PA control, RF gain control, delta tune etc.
Only £76.00

Major Model 4000 Base Station
Features include: walnut cabinet, volume with ON/OFF switch, squelch control, tone control, delta tune, DX/LOC switch, phone jack, on-the-air light, receive light, S/RF meter, channel selector.
Only £115.00

Major Model 5000 Transceiver
"Up-market product" features include: volume, RF gain, squelch, tone, CB/PA, Channel & priority, ext/int speaker switch, d/tune, channel selector, S/RF meter, Tx and Rx lights.
Only £84.00

That is why we are prepared to reserve you a set now.

Major is already an established name and its radios are probably continental Europe's most popular sets. They are manufactured by Cybernet, which ensures not only very high quality and reliability, but also long term availability of parts and accessories.

Only £115.00

Major CB radios become legal, there will not be enough sets to meet the demand.

It is probable that once CB radios become legal, there will not be enough sets to meet the demand.

CITIZENS' BAND NOVEMBER 1981
A CB weekend is being organised by the Beach Breakers in Tyneside. It's planned for the weekend beginning Friday 30th April 1982 and ending on Monday 3rd May. The weekend promises to be kept going by a number of special events in clouting fun and games. For details of booking etc contact the Beach Breakers at 54 Kingston Avenue, South Shields. Tyneside. 6 Year, enclos- ing an SAE, or telephone South Shields 56752.

The Hayloch Chaps is reported to be the first legal CB receiver ever imported into the UK...it...will be kept going by a number of special events in clouting fun and games. For details of booking etc contact the Beach Breakers at 54 Kingston Avenue, South Shields. Tyneside. 6 Year, enclosing an SAE, or telephone South Shields 56752.

The British CB Book is devoted to British CB. It's the latest in the British CB Book and it comes from the pen of Pete Chippendale. The book itself covers just about every aspect of UK CB including the full specifications for our FM system and some early interesting history on the fight for legalisation.

To get you ready for legalisation Pete has included several comprehensive chapters on the new equipment available including details on what band and DXing CB mean and how to use it plus a couple of good chapters on UK CB stang and city names. As the end of the book there is a very interesting chapter outlining the tests carried out by the Home Office on 900 MHz CB, and the results of the tests come as quite a surprise.

Citizens Band The FM Way is published by 021 Publications and will cost £2.95 - highly recommended for both beginners and old hands alike.

Knight Time

Knight Club Specialists, or the Luton Lookers (some might say) launched their new range of Power Skil enameles at the First National CB Show last month. These rather interesting looking devices are based on the well tried 'chunky fibreglass helmet' principle that we all have come to know and love. The Power Skil is a different, though the designer's claim that this type of antenna puts out and receives even further, and make no secret of the device's con- struction by slotting the rod in transparent plastic sleeving.

First Charles, Lee and Paul at 201 Dunstable Road, Luton, Bedfordshire or ring them on 0582 452722.

Truckstar Ltd have just released details of their new book 'The European Language Dictionary' in a compact, child- enlarged UK version. The book contains over 200 pages of CB slang, codes and town names. The book itself is revised adaption of an American book written by Lane Dennis and at £1.95 is pretty good value for money. The dictionary should be in the shops about now, or can be obtained direct from Luton, I.D. Number Ten, Maysteads Road, London SE11.

OCT CONSUMER NOTICE

OCT are the sole importers of Bremi power supplies imported by OCT, in common with other currently imported makes, were designed for the Continental market and therefore did not take into account the UK 3.5/4 watt and 3000/3600x flex required to meet the Continental specifica- tion that may be available from other importers.

Consumers should beware of Bremi power supplies that are either imported or made to a very high quality.

The technical director of Hayloch, Roy Gralit, also an- nounced a whole raft of British CB transceivers that will be available very soon, we hope to have details of that in the next few months.

OCT CONSUMER NOTICE

OCT have accepted all of the recommendations of the BSI (British Standards Institute) and all Bremi power supplies now on the market are made to this higher specification.

In contrast the imported 'British Market' Bremi power supplies are cheap and nasty.

OCT CONSUMER NOTICE

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WE'VE DONE IT AGAIN!!

NEW GOLO-40 Playback Board
GIVES EXTRA 40 CHANNELS LOW
-26.55 -26.955 MHz

THE ORIGINAL
UFO-40 Playback Board
GIVES EXTRA 40 CHANNELS HIGH
27.45 - 27.855 MHz

Please state make & model of rig when ordering
Full instructions easy to fit. 1/4" Sq. Board
COMBINE BOTH BOARDS FOR AN EXTRA 80 CHANNELS!

-26-515-26-955 MHz PbP

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SIGNATURE

TO: KNIGHT CB SPECIALISTS, 201 DUNSTABLE ROAD, LUTON, BEDS.

TRADE ENQUIRIES WELCOME ON ALL PRODUCTS - ASK ABOUT OUR FULL RANGE ...
Pascal Cruise

**Reflections***

(LP AMX 63726)

At some time or another I've been guilty of purchasing a number of poorly recorded albums, but I don't think I've ever come across one that's as bad as this.

The latest album from the Pascal Cruise has been released by a record company who think they can make a name for themselves by releasing poorquality records. It's a shame, because the band has potential. They have the talent, but the recording is so bad that it's hard to listen to.

The album is a collection of some experimental midtempo arrangements. The ten songs on the album are well-written and arranged, but the recording is so bad that it's hard to appreciate the talent of the band.

There is a notable line-up of renowned session musicians who accompany the band, such as Roy Cooper (percussion), who works with John, is internationally known for his work. However, due to the poor recording quality, the skills of these musicians are not fully realized.

**Other CB**

CITIZENS' BAND NOVEMBER 1981

Each month we hope to bring you reviews of the latest CB tapes, truckin' music, CB in fact, any sounds you can listen to on the tape player. If you have anything to add, why not contact us? We're always looking for new information and interesting CB conversations.

As a memorable affair

Although an American import, it is bound to be a memorable affair, which I could only describe as a triumph. The success has been in North America, but sharpness has all the right presentallon for the BBC airwaves.

In all, it is a great value for money, and would be well worth the price for those who have never taken a guitar lesson. It is well worth the investment for any budding CBer who has listened once or twice and would like to learn more.

The album is a welcome addition to the CBer's collection, and is sure to be a hit with regular CBers. The arrangements of the 10 songs in this album are very effective, and the recording quality is excellent. It is well worth the investment for any CBer who is looking for a good CB tape.

*JOAN ARMSTRONG

**My Lady Under Ladders***

(AMLH 64825, AMHL 64942)

Where do you start to praise the vitul talents of a young lady who has never taken a guitar lesson? Nothing but praise for this young lady. She has a great voice, and the recording quality is excellent.

Joan Armstrong's voice is so powerful that it is hard to believe she has never taken a guitar lesson. She is one of the best young voices that I have ever heard. The album is a welcome addition to the CBer's collection, and is sure to be a hit with regular CBers.

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*KENNY SERATT

**Ridin' the Big B***

(Excellent)

Now I don't usually go for a bunch on one side, but this one is like.

The man himself. - Kenny Seratt - looks like Charles Bronson with some of the cracks Polynarch. Mean (spitting dugs, y'know)

Kenny made his name over the years in California, then throughout Texas, Arkansas and Oklahoma where he was attracting crowds of up to 3,000 fans. On this album he is abed and abed by some very fine musicians. Wayne Randle on piano, Fred Newall on lead guitar, and Jackson on drums to name but none, in my opinion, the man is a top man on acoustic guitar, so I won't. Naturally enough the songs have been well written and recorded, but the saving grace of the album is the man's style. 11 years off with 'Ridin' the Big B' which is a bit of a screen pick with some neat picking by Fred Newall. "Queen of the Road" sells of a lady who spends all of her time "turning in rag". "'I Ain't No Good To Love a Truck Driver Man", which, seems to support the previous song's sentiments. "Dead Kiev" is the one with the red tail, red boots stockin' and chrome-plated pickup fork, which makes you disregard the laws and reg'les. "I'm Truckin' My Way to Glory", is a welcome inclusion. Spiritual Country and Western that swings a little do o.

The CD cover features some of the band's recording sessions, with the USA and the UK, and is a welcome addition to the CBer's collection, and is sure to be a hit with regular CBers. The arrangements of the 10 songs in this album he IS aided and abetted by his band, who stock this disc. For further details contact.

*ALSO*

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OF ALL THE TRIBES, THE CHEROKEE WAS THE MOST FEARED AND RESPECTED BECAUSE HE NEVER GAVE UP... AND SURVIVED EVEN UNDER THE SEVEREST CONDITIONS.

**CHEROKEE**

— A TOUGHER BREED OF ANTENNA.

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Ask your dealer for details of the various kits and mounts he stocks.
On 2nd November 1981 Citizens’ Band radio will be introduced into the UK. For the first time in this country the British public will have the opportunity to indulge in a unique form of free speech breaking the total Post Office monopoly on communications. The introduction of CB follows an intensive three-year campaign. Citizens’ Band magazine has been a part of that campaign, and we are enthusiastic over the new FM system about to be introduced. Now the long months of doubtful rumours, misleading information and uninformed opinion are over. Whether or not this new service will succeed depends upon how well we use the system — we have the chance to make it work, and prove the pessimists wrong, so, let’s give it a try.

First, an apology. Regular readers may have noticed that this issue of Citizens’ Band is a mite late-no guesses as to the reason. Second, as you picked up this copy of your favourite CB mag you may have noticed a small blue form drop to the floor. Pick it up and keep it safe, we’ll come to its purpose in a minute.

Righty-ho, now down to business. All the bally-hoo should have died down by now and you should be aware that on 2nd November 1981 Citizens’ Band radio will be officially sanctioned in the UK. The system will be that already outlined in the two specification documents MPT1320 and MPT1321. You should know the score by now, but in case you’ve been living in a cave for the past year or so, we will have a two-tier service operating on two entirely different frequencies. The main frequency will be on the 27 MHz band, between 27.6 and 28 MHz. The service will use FM (frequency modulation) and have a maximum output power of 4 watts RF (2 watts PEP out of a HO approved antenna). The antenna for use will consist of a single element rod or wire antenna not more than 1.5 metres long with a loading coil on the base. This is NOT the same system as that being used illegally in the UK at the moment. Though some may doubt it, the new UK CB system is actually superior both technically, and in practice. Don’t take our word for it, you’ll have plenty of opportunity to try it out in the coming weeks.

The second system uses a much higher frequency — 934 MHz. In short, the higher frequency system will not appeal to the majority of CB users as the equipment will be fairly expensive. It does, however, have great potential for business communications. We’ll be dealing with 934 MHz in greater depth in the coming months, though at the
moment lack of equipment (we only
know of two or three manufacturers -
see this month's Update) will mean
that it will be of limited interest, for the
time being anyway.

So back to UKCB. The blue docu-
ment mentioned previously is a ge-
uine Home Office Citizens' Band
Radio Licence Application Form. We
have arranged, in co-operation with the
Home Office, to distribute the licence
forms in this way - cunning, eh?

Anyway, the licence forms will also be
available from Post Offices, free of
charge, so don't worry if someone has
nicked yours. Right, what you have to
do is fill in the form and take it to your
local Post Office. You pay them £10 (or
more if you wish to use more than three
rigs - £10 for every additional three),
the counter clerk stamps and initials
your form and you're licenced. It
couldn't be easier.

The next bit is where it gets in-
teresting - getting on the air. This is
where we come in again. This month
we have included a Rig Checklist,
detailing all the rigs that will be on the
market from November 2nd. Well, ac-
tually that's not quite true, at the time
of going to press we know of at least
another two dozen or so rigs but space
was a bit tight and details were a little
scarce, so look out for an even larger
Checklist next month.

Over the next couple of pages you'll
find our or three manufacturers -
Citizens' Band of Practice - read them, there's nothing
in there that you shouldn't know
already and they're designed to help.

Follow the simple rules and UK CB will
work OK.

Now we come to the tricky subject
of yobbos. It's a shame really but there
will be a small but vociferous minority
of wallies that will try to disrupt FM CB.
It's inevitable. These people need help.
If you want CB to work then do
something about any mindless yobs us-
ing foul language, playing music or
mucking about. Find out who they are
- they'll be easy to track down in a
couple of mobiles. When you find them
try and impress upon them that they're
not wanted on CB. No, I'm not ad-
vocating violence, just simple persua-
sion and if these people continue to
abuse CB find out their names and ad-
resses and we'll publish them in a
W8//y

Of The Month column, which
should soon stop 'em.

Now, I could continue to waffle on
about the campaign for legalisation,
the continuing battle for AM CB and
how CB can save lives, make friends,
help the housebound and lonely, save
small businesses money, aid mountain
climbers and hikers and generally make
life a little more pleasant, but I won't.
Instead I'll just say a very personal
thank you to the many people who
have worked so hard over the past few
years to get a legalised CB system. It's
not perfect but it works, AM was, and
is, outdated; we have a unique oppor-
tunity to create a first-class radio ser-
vice. Beginning next month we'll have
features on installation, consumer ad-
vice on what to buy and where to buy
it, plus technical features and what's
about to be legalised it'll be the mag
to read for UK CB. Until next month, enjoy
CB, use it properly and once again,
thanks and well done to all who were
involved in the campaign.

CITIZENS' BAND NOVEMBER 1981


to be the first birthday, so we're
celebrating by giving away hundreds
of pounds worth of rigs in a free-to-enter
competition. As usual, Citizens' Band
will continue to be the country's
leading CB publication and with CB
about to be legalised it'll be the mag to
read for UK CB. Until next month, enjoy
CB, use it properly and once again,
thanks and well done to all who were
involved in the campaign.

CITIZENS' BAND NOVEMBER 1981

CITIZENS' BAND NOVEMBER 1981
CB OPERATING CODES,
PRACTICE
AND PROCEDURES

THE CB CODE OF PRACTICE

READ YOUR LICENCE — It tells you what you can and cannot do. The conditions have deliberately been made simple with few restrictions. It is up to you to develop this service as you wish for the benefit of all. This means having consideration for one another and recognising that no-one has preferential rights at any time or place or on any channel. NATCOLCIBAR, the Parliamentary CB Working Party, and representatives of industry have, in consultation with the Home Office, prepared this simple code of practice. If you work to it you will help the system to help you.

HOW TO OPERATE

1. LISTEN BEFORE YOU TRANSMIT. Listen with the squelch control turned fully down (and Tone Squelch turned off if you have Selective Call facilities) for several seconds, to ensure you will not be transmitting on top of an existing conversation.
2. KEEP CONVERSATIONS SHORT when the channels are busy, so that everyone has a fair share.
3. KEEP EACH TRANSMISSION SHORT and listen often for a reply — or you may find that the station you were talking to has moved out of range or that reception has changed for other reasons.
4. ALWAYS LEAVE A SHORT PAUSE BEFORE REPLYING so that other stations may join the conversation.
5. CB SLANG ISN'T NECESSARY — plain language is just as effective.
6. BE PATIENT WITH NEWCOMERS AND HELP THEM.

EMERGENCIES AND ASSISTANCE

7. AT ALL TIMES AND ON ALL CHANNELS GIVE PRIORITY TO CALLS FOR HELP.
8. LEAVE CHANNEL 9 CLEAR FOR EMERGENCIES. If you have to use it, (for instance to contact a volunteer monitor service) get clear of it as soon as you can.
9. IF THERE IS NO ANSWER ON CHANNEL 9, then call for help on either channel 14 or 19 where you are likely to get an answer.
10. IF YOU HEAR A CALL FOR HELP, WAIT. If no regular volunteer monitor answers, then offer help if you can.
11. THERE IS NO OFFICIAL ORGANISATION FOR MONITORING CB AND NO GUARANTEE THAT YOU WILL ALWAYS BE IN REACH OF A VOLUNTEER MONITOR.

CB IS NOT A SUBSTITUTE FOR THE 999 SERVICE.
Now, that you’ve decided to get on the air, what do you say? We have the ‘official’ suggestions right here with the long-awaited CB Operating Codes Of Practice, produced in co-operation with the Home Office and NATCOLCIBAR. It’s common sense really.

### CHOICE OF CHANNEL

12. RESPECT THE FOLLOWING CONVENTIONS:

- **Channel 9:** Only for emergencies and assistance.
- **Channel 14:** The calling channel. Once you have established a contact, move to another channel to hold your conversation.
- **Channel 19:** For conversations among travellers on main roads. (Remember, if you are travelling in the same direction as the station you are talking to, not to hog this channel for a long conversation). Give priority to the use of this channel by long distance drivers to whom it can be an important part of their way of life.
- **Other:** You may find that particular groups in particular areas also have other preferred channels for particular purposes.

### SAFETY

13. USE COMMONSENSE WHEN USING CB and do not transmit when it could be risky to do so. For example, don’t transmit:

   a. when fuel or any other explosive substance is in the open — e.g. at filling stations, when petrol or gas tankers are loading or unloading, on oil rigs, or at quarries.
   b. when holding a microphone may interfere with your ability to drive safely.
   c. with the antenna less than 6 inches from your face.

### INTERFERENCE

14. INTERFERENCE can be caused by any form of radio transmission. Avoid the risks. Put your antenna as far away as possible from others, and remember that you are not allowed to use power amplifiers. In the unlikely event that your CB causes interference, co-operate in seeking a cure using the suggestions from a good CB handbook. Moving the set or antenna a few feet may cure the problem.
This month we preview three new rigs from Tandy. The TRC 1001 shown here is a development of one of the world's most popular 40 channel hand-held rigs. How will it fare in the UK FM market?

Tandy are big, very big — with something like 8,000 retail outlets throughout the world they are the world's largest electronic retailer. Their formidable manufacturing abilities coupled with their numerous factories will almost certainly make them the force to be reckoned with in UK CB.

Tandy, or to give them their proper name, Radio Shack Corporation, are possibly the world's leading supplier of CB rigs, feeding the vast North American markets. It will therefore come as no surprise to learn that their assault on the UK market will be no less devastating.

We have managed to obtain, through the kind assistance of Tandy HQ, the very first pre-production prototypes of three of the range of new UK FM CB rigs to be sold in Tandy shops. As you can see from the pictures, the two mobile units are good solid, if rather gaudy, rigs that will hardly set the world alight but, if Tandy can maintain their impressive quality control record, will soon earn themselves a reputation for good reliable operation. The rig we're really enthusiastic about is the TRC 1001 hand-held portable, which sharp-eyed readers may recognise as the UK version of the TRC209 FCC rig, in different clothes. This rig is probably one of the most popular portable units ever made, and such is its reputation that we have seen 209s selling for up to three times their US price (about £60).

The TRC 1001 is simply a development of the 209, with re-programmed synthesiser and re-designed antenna (which is a shame) and the appropriate changes from AM to FM.

The 1001 is a fully synthesised, 40 channel, full specification UK FM CB rig with numerous interesting features. First, the 1001 has a full range of input and output sockets, including antenna, mike, power, ex speaker and DC charger. Put another way, the 1001 can be used in literally any situation — from simple hand-held portable to full system mobile to static base operation, just by plugging in the appropriate selection of antennas, mikes, speakers and power connections.
Second, the RF output of the rig is switchable between 3.5 watts RF and (via a 10dB attenuator) 0.3 watts as decreed by the HO specs. Third, the rig can be powered by rechargeable batteries - a must for continual portable use - 10 nicads can be supplied as an optional extra and for the less well off 8 AA alkaline cells will keep it fed. Fourth, the rig has a full set of controls and displays: a two digit LED display shows the channel in use, which automatically cuts out after a few seconds to save power. There is a neat volume and squelch control and the PTT bar features a display illuminate button so you can double check you're on the right channel. The edgewise meter on the top of the rig shows battery condition and relative output power - very neat. Internally the circuitry has been extensively re-designed and provision is now made for the latest ceramic filters, making the selectivity and sensitivity of this rig ideal for hand-held work.

The only gripe with the 1001 is the antenna. The TRC 209 had a superbly long centre-loaded telescopic which unfortunately does not conform to HO spec. It's not Tandy's fault really, it's just a shame to see that the antenna wasn't used on the UK version - the price of legality!

One unique feature of the 1001 is the range boost side panels which couple the user to the rig thus forming a sort of ground plane antenna, with the user as part of the antenna. All in all the 1001 is likely to dominate the multi-channel hand-held market for some time. Internal designs from Sommerkamp and Midland are way off and as yet there is no news of any other manufacturer into the 40 channel portable market. Although how long it will remain this way is anybody's guess.

Mid-range Mobiles

The two mobile rigs in the Tandy range do deserve a mention. The bottom and middle of the market is covered by the TRC 2000. The rig is fairly uninspiring as far as features and design go, which is a definite throwback to some early American designs. However, as previously stated, while the cosmetics may be dated, the undoubted Tandy quality will never go out of style. The 2001 features a full range of controls, including RF and mike gain plus hi/lo switch for a 10 dB attenuator. The rather unusual centre channel selector switch does something of a departure and may find favour among those people who gripe about the usual positioning of these controls. Tandy had better get their mike sockets re-sited too for the UK market.

Citizens' Band November 1981

RIG REVIEW DATA PANEL

<table>
<thead>
<tr>
<th>Model</th>
<th>Realistic TRC 1001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier/Distributor</td>
<td>Tandy Corporation (UK)</td>
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<tr>
<td>Typical Price</td>
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<table>
<thead>
<tr>
<th>Features</th>
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<tbody>
<tr>
<td>PA Facility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>External Speaker Jack</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TX Indicator Light</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RX Indicator Light</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA Indicator Light</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S/RF Meter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hi/Lo Power Switch</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Facilities

Ease Of Controls | Superb |
Built In Speaker | Good |
Microphone Location | Fair |
Cabinet Construction | Poor |
Quality Of Control Switches |    |
Channel Indicator Readability |    |
Mounting Bracket |    |
Hand Book/Instructions |    |

Specifications

Modes Of Operation | FM only |
No. Of Channels | 40 |
Weights |    |
Dimensions | 250 x 80 x 66mm |
Supply Voltage | 12V DC |
RF Output Power | 3.5 watts |
Frequency Stability | 2 watts |
Modulation | 90-100% |
Sensitivity (RX) | 5.5V for 10 dB |
Image Rejection |    |

CB VERDICT

We rate our samples on a scale of one to five. Five stars is the highest rating, three and four stars are good to average and one and two stars mean it's not doing so well.

<table>
<thead>
<tr>
<th>Range</th>
<th>Ease Of Controls</th>
<th>Ease Of Installation</th>
<th>General Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarity of TX</td>
<td>XXXX</td>
<td>XXXX</td>
<td>XXXX</td>
</tr>
<tr>
<td>Clarity of RX</td>
<td>XXXX</td>
<td>XXXX</td>
<td>XXXX</td>
</tr>
</tbody>
</table>

Above right: Tandy 2001 mobile rig

Left: The TRC 1001 is a 40 channel portable CB transmitter. As you can see from the box, Tandy have fitted a 60A power switch and "external antenna, power, speaker and microphone sockets" - a truly versatile rig.
The last rig in the current range is the 2001 mobile. This rig is frontally very small, but is a little on the long side. It is ideal for awkward installations, especially in cars from the Far East and especially in those which have storage space only for a packet of cigarettes, let alone a sizable CB rig. Features on the 2001 are fairly sparse: switchable attenuator and CB/PA switch, it will work on either polarity (ie positive or negative earth) which will be useful for owners of older cars.

The complete Tandy/Realistic range will, for obvious reasons, include many more items than we could hope to show in such a limited space. The Realistic/Archer name will be appearing on numerous accessories and antennas (see this month's Antenna Review) plus of course additional rigs like base station and single and two channel walkie-talkies.

A couple of months ago many CB pundits predicted that the hand-held market would not develop for at least a year after legislation. Tandy, and a number of other companies, have changed all that. The Tandy rigs will cost up to 10% more than similar rigs but you get what you pays for. Tandy have a reputation to live up to, and we think that they won't be disappointing anyone — the TRC 1001 will be our first choice for a good hand-held rig... unless anyone knows of something better!
Now for the next big date in the CB calendar...

MARCH 19-21 1982 - ROYAL HORTICULTURAL HALLS LONDON

Britain's Leading CB Monthly PRESENTS THE
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Name: ........................................................................................................................................
Address: ....................................................................................................................................
Phone: .........................................................................................................................................
Fax: ................................................................................................................................................
Tel: ................................................................................................................................................

Our products are: .........................................................................................................................

CITIZENS' BAND NOVEMBER 1981
This month we look at the long-awaited PLL synthesiser chip that had to be designed for the UK FM CB market. Don't worry too much about the technicalities, take it from us, they work, and what's more they offer a number of new features.

Now the story can be told, the heart of many new multi-channel CB rigs destined for the UK market will be a component called the LC7136. That rather uninspiring title belongs to a semiconductor integrated circuit or chip called a Phase Locked Loop (PLL) synthesiser, a component so important and so unique to our FM system that some pundits predicted it would not appear this side of Christmas.

The LC7136 is manufactured in the Far East by the erstwhile Sanyo Corporation, who are already one of the largest manufacturers of PLL chips for other CB markets. Between Sanyo and Toshiba they make just about all the chips for CB worldwide. For the technically minded we have included some brief specifications.

Sanyo LC7136 40 channel CB transceiver PLL Frequency Synthesiser.

Features:
- High speed programmable divider to enable to divide 16MHz VCO frequency directly.
- Only one crystal required.
- Digital out-of-lock output to inhibit transmission when PLL is unlocked.
- Instantaneous call capability on channel 9 and 19.
- Built in amplifiers for crystal oscillator and active low pass filters.
- BCD input for channel selection.
- 20 pin configuration.

Confused? Well not to worry 'cos unless you’re into CB manufacture most of that needn’t concern you. However, one or two points may have caught your eye. The first is the provision for calling channels 9 and 19 directly. Put another way, a simple three position switch on the rig will enable you to select channels 9 and 19 without having to twiddle the channel selector knob. It’s also conceivable that an auto-scan system may be fitted to some rigs which will monitor channels 9 and 19, looking for transmissions. For instance, the rig could be programmed to listen for emergency calls on channel 9, so if a copy breaks through whilst you’re on channel 14, the rig would automatically switch to channel 9 to receive the call. Sounds like a great idea for emergency monitoring teams.

The second thing worth noting is the provision for single crystal operation, in simple terms this means two things; first, the rigs will require less components, and second, fewer components mean higher reliability — less to go wrong.

Now for the really high-brow stuff. If you’ve ever wondered what goes on inside a PLL synthesiser you’re in the right place, because figure 1. is a block diagram of the LC7136, and figures 2 and 3 show how the chip is connected up to the outside world. There's no way we could ever describe what’s going on inside a PLL without writing a 200-page book on the subject, but we hope this short piece will clear up a little of the mystery surrounding PLLs for the UK market and hopefully demonstrate once and for all that they do actually exist.
Below: Simplified application circuit diagram for the LC7136. This shows a typical circuit in and around the PLL. Technical notes please note that this IC is designed for single crystal operation. Previous PLLs required up to three.

Left: For the technically minded this is the pin-out diagram of the LC7136 PLL synthesizer chip. This chip is manufactured by Sanyo in the Far East and is already used in a number of UK FM rigs.

Just look at these features 40 channel LED display for transmission model CBX 2000 FM circuitry 1Qtransistor IC 23diode1FET1 crystal PLL synthesizer 40 channel LED* PLL modulation limiter) Absolute maximum legal power output PLL synthesizer Dualconvergence super-Heterodyne system with RF stage. CONTROLS - volume circuitry - squelch LED 40 channel selector - RF gain CB/PA switch - Monitor off - Illuminated S-RF meter - TX and RX - Selectors 4 pin mike jack - ext. SPJX - PA speaker jack complete with microphone/hanger installation manual. This will be Britains best selling CB range.

Below: The block diagram of the LC7136 PLL. The really important change in the design of the devices, over existing PLLs is the box marked ROM or Read Only Memory. This is unique to UK CB.

MODEL CBX 2000
FM circuitry 1Qtransistor IC 23diode1FET1 crystal PLL synthesizer 40 channel LED * PLL controlled dual conversion super- Heterodyne system 4 Dynamic 600mW给出 with pulsator. CONTROLS - on/off volume squelch channel selection illuminated S-RF meter.
Following last month’s look at hand-held and cordless microphones, Andy R. Giles has been examining a few of the base station mikes that are currently available.

Last month I posed the question, “Why buy another microphone when your rig was supplied complete with a matching one?” Part of the answer then was that it’s nice to have a microphone that you don’t have to hold when you’re driving and the same applies, although to a lesser extent, when you’re using a base station. If you keep a log book, it’s nice to be able to sink back into your armchair and ramble on without having a tightly stretched cable between you and the rig.

Base station microphones, as their name suggests, are designed to be used with base stations and the reason that they are a totally different shape to fist microphones is because you are not supposed to hold them in your fist. They all have flat bases so that they will stand on your bench and all have lockable PTT mechanisms so that you don’t have to hold on to them while you’re talking. Some achieve this by having a split PTT bat, one half of which stays down only as long as you’re holding it and only releases when it is pressed again. Some have separate levers to lock the PTT and some have bars that can be slid sideways to hold them down but the end result is always the same — handle free operation while you’re speaking.

Another advantage of base station microphones is that they nearly all have built-in preamplifiers. This allows you to speak from further away and that means that instead of crouching over the microphone you can sit back in your chair and, if the gain control has been properly set, you will sound quite normal, even if you are speaking from several feet away. It is important not to wind the gain up too high as this could lead to overmodulation and the resultant splatter would lead to all sorts of nasty things such as bleeding and TVI.

Another disadvantage of winding the wick up too high is that the microphone will pick up all the other sounds in the room and broadcast them.

There are dozens of different microphones available and I’ve looked at what I hope is a representative sample in the £20-£100 price range.

<table>
<thead>
<tr>
<th>MAKE</th>
<th>MODEL</th>
<th>SUPPLIER</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A01</td>
<td>UD-114</td>
<td></td>
<td>£22.50</td>
</tr>
</tbody>
</table>

This unusually shaped desk microphone contains a dynamic microphone capsule with a built-in preamplifier powered by an internal Eveready 216 9 volt battery. The output impedance is switchable (50k ohm or 600 ohm) which makes it suitable for a larger selection of rigs although the 6 foot coiled microphone lead has only 4 cores (3 miners and a screen), which may in some circumstances mean that it can’t be used with some makes of rig. If you buy one of these microphones, check with your supplier to make sure that it will work with your rig. There is another switch underneath that allows it to work with either electronic or relay switching. Not bad value, considering its price.
This is a small desk microphone that has an external slider to control the gain of the internal preamplifier. The label on the front says that it also has Automatic Level Control but we couldn’t find out what they meant as there was not enough time to run it through the lab and the supplier has no literature on this particular model. The label also calls it uni-directional. We found it to be anything but when we tried it, and at about this stage we lost interest. We’ve only included it so that you can see what a not very interesting microphone looks like.

This desk-top microphone is quite small—approximately half the size of the Expander 500—but it weighs almost as much, perhaps because it seems to be made of cast iron. The case is matt black with a hammer-finish surface that is definitely metallic and which is very pleasant to touch. It has a built-in preamp which can be adjusted with the external rotary control and which is powered by an internal Eveready 2 1/2 volt battery. The coiled leads have 6 cores (5 inner and a screen) and so it should be suitable for connection to most makes of rig. It may only cost just over £30, but it still has the Turner quality about it and certainly represents good value for money.

This is one of the best known base station microphones, it’s been used by hams and CBers for quite a while and it has performed consistently well. It’s quite large (5½” x 8¾” x 9½”) and it has a good solid feel to it, perhaps because it weighs 1½ lbs. The front panel contains the volume and tone sliders that control the internal compression preamplifier. It has a frequency response of 200–4000 Hz and is powered by an Eveready 2 1½ volt battery. The meter on the front displays either the audio level or, at the touch of the appropriate button, the condition of the battery. The black and satin chrome case is made of high impact Butadiene Styrene, a plastic that is apparently remarkably resilient.

Although the case is a totally different shape this small desk-top microphone seems to made out of the same material as the Turner +38, it feels like cast iron. In fact, not only does the case not look like the Turner, it doesn’t look like any other microphone that I’ve ever seen. The shape, despite being rather stark, is attractive and it is extremely comfortable to hold. The slider on the front of the stem controls the internal preamplifier which is powered by an Eveready 2 1½ volt battery. The meter on the front of the case indicates the audio level. The coiled 6 core (5 inner and a screen) that comes with it should mean that it is suitable for most rigs. I was very impressed with this little microphone and although it may look a little weird, it seems to be well worth the money.
The unusually shaped stem of this tiny desk microphone contains an electret capsule that feeds into the internal preamplifier. This is powered by a single 1.5 V AA size cell that fits into the base. The lead seems to be far longer than usual because it is straight and not coiled like most of the others. As it has only 4 cores (3 inners and a screen), it may not be suitable for all makes of rig and if it appeals to you, you should check with your supplier before you buy it just to make sure that it will fit your rig.

The die-cast metal case of this microphone contains a compression amplifier that can be adjusted by means of the rotary volume control on the front of the case. The power is supplied by an internal Eveready 2 16 9 volt battery, the frequency response is 200-5,000 Hz and the output impedance is approximately 4.5 ohm. The coiled lead has only 4 cores (3 inners and a screen) and so you should also check with your dealer before you buy this one, just in case it won’t fit your rig.

Compared to some of the bigger base station microphones such as the Turner Expander 500 this one appears quite small, but it works well and it is certainly worth £25.

This is a quite large base station microphone that has a built-in compression amplifier with a frequency response of 300-5,000 Hz. The power comes from an internal Eveready 2 16 9 volt battery or from an external 9 volt DC supply because there is an external power supply socket on the back of the rugged die-cast metal case. On the front of the case two sliders control the tone and volume of the microphone. The meter on the front of the case normally displays the audio level but can be used to show the condition of the battery. The head contains a dynamic microphone capsule and the output impedance is approximately 5kR. The 6 feet of coiled lead contains 6 cores (5 inners and a screen) and so it should be suitable for most rigs.

This is a very wide and bulky microphone but it is well laid out and it has a comfortable feel to it. I found it very easy to use and I have received consistently good audio reports from it.

If you’ve ever bought a new cartridge for a hi-fi record deck or if you’ve ever played with a microphone inside a television or recording studio, you will have heard the name Shure — a name that has been synonymous with quality for many years. Anyone who works with microphones will recognise the name instantly but even they may not know that Shure or if you’ve ever played with a microphone inside a television also make communications microphones for both mobile and base station use. Needless to say, they are the same high quality as their studio mikes and I was impressed by the two that I looked at.

This is a dynamic microphone that has a built-in preamplifier with a tailored frequency response and the expected Shure audio quality. It’s powered by an Eveready 216 9 volt battery and as the current drain is so small, it should last about a year with normal use. The Armo-Dur (plastic) case is claimed to be immune to oil, grease, fumes, salt spray, sun, rust and corrosion and it has a ‘million cycle’ leaf type PTT bar. This microphone can be used to replace ceramic or dynamic, high or low impedance microphones and as it has a 6 core (5 inners and a screen) lead combined with a triple pole double throw switch, it should be possible to connect it to almost any rig with an input impedance of more than 500R. A booklet that lists a selection of the most popular rigs and shows the wiring connections for the microphone is included in the price.

This microphone has been made to a very high standard and performs consistently well.
This is the model that is probably of most interest to the CBer who is interested in chasing the DX. It’s a dual impedance base station microphone with a magnetic cartridge and a built-in preamplifier, and has had its frequency response tailored for maximum speech intelligibility under difficult communications conditions. This doesn’t improve the strength of your signal but it does mean that your voice will be more readily understood even if it’s way down in the noise.

There is also a switch that allows it to be used in the VOX (voice operated) mode when it is connected to a rig that has this facility. In most other respects the 444D’s specifications are almost the same as the 526’s, and they are both very good microphones.

Astatic

Those of you who read last month’s microphone survey will already know that Astatic make exceedingly good microphones, even though they do look a little funny and, as you can see from this month’s photographs, their base station ones look even stranger. Sometimes they are affectionately known as ‘candlesticks’ although their quartz design makes them look like something that Auntie Beeb was using 40 years ago, they contain the latest high quality electronics and they perform superbly.

Until recently the Astatic range has not been marketed very enthusiastically in Britain and as a result they have only been bought by the real enthusiasts. Now a firm in Enfield, Skyriders, have started to import them and they intend to promote them heavily and I think we will soon be seeing a lot more people using Astatic microphones.

Astatic T-UP9-D 1

Shown here are two versions of the best known style of Astatic microphone, the T-UP9-D104. The one with the bright chrome plating and the circular mouthpiece is the well-known ‘Silver Eagle’. It’s a power microphone that has a built-in two stage transistorised amplifier with an output impedance that is suitable for most makes of rig and a tailored frequency response that ensures excellent modulation. It takes an Eveready type 1 6 9 volt battery and as the current consumption is only 1.2 mA, the estimated battery life is approximately six months with normal usage.

The microphone capsule contains a high quality metal sealed type crystal insert and the quick release bracket on the top of the stem allows the complete microphone capsule to be changed very quickly. The gain control is on the back of the head and it has been recessed to prevent it being changed accidentally and perhaps causing over-modulation.

The 6 core (5 inners and a screen) coiled lead allows the DI04 to be wired for just about any rig on the market. The PTT is operated by either squeezing the bar on the side of the stem or pressing down on the bar on the front of the baseplate. To lock it on transmit the small ring on the side of the stem can be slid up to hold the bar in position.

Also shown is the same model microphone but fitted with a matt black base and an SSB head instead of the circular general purpose one. This head is best for SSB working because it has a frequency response that has been tailored for maximum speech penetration under difficult conditions.

This is the odd one out in the Astatic line-up. It’s a normal looking contemporary styled base station microphone that doesn’t look anything like their other models. It contains a two-stage low noise FET amplifier that has external volume and tone controls. There is also an internal master gain control that can only be reached through the battery compartment door. This arrangement prevents the overall gain being accidentally changed with the resultant possibility of over-modulation. The 1104C has a durable moulded plastic case that is available in a variety of colours and although it looks totally different to their other models, it contains a high quality microphone capsule and the same quality electronics that give all the Astatic range such excellent audio.
The Astatic Corporation have obviously realised that not everyone will appreciate the charm of their 'candlesticks' and so they have produced a normal looking microphone that has all the features of the originals plus a couple of extras such as the two external controls. If the quality of the Astatic microphones appeals to you but not the old fashioned look, then this is the microphone for you.

![Image of microphone]

**BASE STATION MIKE SURVEY DATA PANEL**

<table>
<thead>
<tr>
<th>MAKE</th>
<th>MODEL</th>
<th>SUPPLIER</th>
<th>TYPICAL PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AOI</td>
<td>UD-113</td>
<td>2</td>
<td>£25.50</td>
</tr>
<tr>
<td>AOI</td>
<td>UD-114</td>
<td>4</td>
<td>£22.50</td>
</tr>
<tr>
<td>Astatic</td>
<td>C810</td>
<td>4</td>
<td>£28.25</td>
</tr>
<tr>
<td>Astatic</td>
<td>1104C</td>
<td>3/4</td>
<td>£49.95</td>
</tr>
<tr>
<td>Astatic</td>
<td>T U99-D104</td>
<td>4</td>
<td>£92.00</td>
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<td>4</td>
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<tr>
<td>Turner</td>
<td>EX500</td>
<td>2</td>
<td>£49.50</td>
</tr>
</tbody>
</table>

**THE RANGER 27FM CB PORTABLE**

The RANGER CB is designed to fit the new legal Home Office specifications, and starts off as a hand held unit complete with aerial, mic., and rechargeable batteries.

**KITS EX-STOCK INTRODUCTORY OFFER**

£49.95 (£25.50 PP + VAT)

This offer price includes rechargeable batteries, mic., aerial, mains lead and plugs.

**THE RANGER CB PORTABLE**

The unit plugs into the mains, 12V car outlet, or runs on built-in rechargeable batteries (built-in charger). Up to 6 relays in range in town to keep in touch with family and friends.

**SPEC.**

- **Power Output:** 5-1 Watts
- **Modulation:** FM (1kHz), SSB (4kHz)
- **8 Channel span (step):** 6
- **Frequency coverage:** 27MHz ISM band

**COMING SOON...**

**BASE MOBILE ADD-ON UNIT TO GIVE 4 WATTS AND 40 CHANNELS**

**Autumn Products Ltd.**

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THE XCB-71

(CHEQUES & P.O.'s PAYABLE TO CHELMER CB)

PLEASE STATE 2 OR 3 PIN LEADS WHEN ORDERING*

*Feature Sensitive Dual Conversion Circuit with PLL Automatic Noise Limiter (ANL), converts to public address system, SWR Switch and Meter, 4 Watts audio output, filter tuning switch, built-in power supply*

TRADE ENQUIRIES WELCOME

NAME
ADDRESS

I enclose Cheque/P.0. Payable to CHELMER CB for £
I wish to pay by BARCLACARD □ ACCESS □ Card No.

SIGNATURE

PLEASE ALLOW 21 DAYS FOR DELIVERY

CITIZENS' BAND NOVEMBER 1981
Solid State Electronics are the only company in the U.K. with 10 years legal professional experience in CB, manufacturing, design, development, marketing. SSE have a highly sophisticated range of test equipments and are in the unique position of having official type approval for CB Radios to cept standard in Finland, Norway, Denmark, Sweden and W. Germany. SSE will be selling together with Ambit International, high quality state of the art CB Radios.

ACCESSORIES THAT WORK...
Buy your CB Accessories with complete confidence. Get SSE quality plus full manufacturer guarantee. Why waste time and money on Accessories that don't work correctly. SSE have tested many items made in Far East and in U.K. The results of these Electrical and Mechanical Tests have shown many items to be of inferior quality and some are completely useless. SSE make products that work... and the price is right.

CB. REPAIRS - BY THE EXPERTS
Get your FM CB Radio repaired or even modified (inductive coil fitted etc) with 100% confidence, by a professional company with 10 years of CB experience. Comprehensive facilities to the Home Office specifications and also to Solid State Electronics own CB Radio minimum technical requirements as published in Radio and Electronics World Magazine. Quick service with 1 year guarantee.

UNIVERSAL EXTENSION 'S' METER
R.R.P. £6
Very high quality Universal 'S'. Makes the best can be used with most CB sets with built in meters and is great for new home. Full instructions.

SIGNAL SPLITTER 10-2WP
R.R.P. £5.50
The best signal splitter on market. From SSE who designed original HMP filter.

LOW PASS FILTER 10-40CB
R.R.P. £4.90
Minimise harmonics from CB transmitter use with CB unit. (UK manufactured jumper-lead 50cmm 95p)

AUTOMATIC AF SWITCH ESA-15
R.R.P. £14
Audio controlled electronic switch. Activated by the squelch action (on-off) of any CB set.

SIGNAL SPLITTER 10-2NP
R.R.P. £5.50
Sameas 10-2WP no cables, can be used with scanning receivers etc.

TVI-RFI INTERFERENCE FILTERS

HFP 10-B, high pass filter for use with UHF TV only. £5.90
BSF 10-8, stop band filter for use with VHF-UHF TV.

Separate Info Sheets on all products available with data and installation instructions.

TO NEW HOME OFFICE SPEC!
12 channel semi-professional 1.5 watt FM hand-held; supplied with 3 channels, rubber duck antenna, carrying case etc. Can be used with rechargeable batteries or external 12 volt DC supply. The set will be one of the best sets in the UK and will be available in November. Approx Price £60 inclusive 1 year guarantee and full service back-up.

R.R.P. £6.50
The best signal splitter on market. From SSE who designed original HMP filter.

R.R.P. £4.50
Minimise harmonics from CB transmitter use with CB unit. (UK manufactured jumper-lead 50cmm 95p)

SIGNAL SPLITTER 10-2NP
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Sameas 10-2WP no cables, can be used with scanning receivers etc.

TVI-RFI INTERFERENCE FILTERS

HFP 10-B, high pass filter for use with UHF TV only. £5.90
BSF 10-8, stop band filter for use with VHF-UHF TV.

Separate Info Sheets on all products available with data and installation instructions.

CITIZENS' BAND NOVEMBER 1981
Now the right rig for Britain – 27MHzFM from Uniden – the world’s top CB rig makers

Fully legal Rig and Twig – £96.95 (+P&P)

Unia CE 100 – the first CB rig built specially for British breakers by Uniden – the world’s largest CB rig makers and known to experienced CBers for their Cobra and President rigs. It’s fully legal on 40 channels. It uses the new signal-hugging PLL ICs from Toshiba.

It has a separate Hi/Lo power switch on the front panel to regulate output – eliminating the need for an attenuator. It also has a PA/CB switch, auxiliary-external speaker jack and super-accurate signal strength meter. Yet it’s still as compact as ‘cheapie’ mobile rigs (140 x 40 x 205mm).

With the rig comes a quality dynamic-type mike and a Panorama base-loaded, tunable whip antenna, complete with 5 metres of cable and fitted plug, fully corrosion-resistant with magnetic car-mounting base (no drilling – instant dismounting). So for this surprisingly low all-in price, all you need is a licence to break in on legal CB in style. You’ll be producing a ‘armchair copy’ all the way – no ‘hash and trash’, no ‘bleeding’.

And just in case you’re coming in on CB brand new, we’ve thrown in an up to date 2500 item CB Jargon Dictionary free for good measure.

Send for your Uniace 100 now. It’s the perfect rig for Britain.

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Tel: 01-993 5109.

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LEGAL at LAST

We thought it would be appropriate to let Keith Townsend say a few words on the imminent legalisation. Keith has been there from the beginning—how does he feel now that the battle is almost over?

A t long last I'm a breaker. After years of campaigning, thanks to the kind help of Fidelity Radio Ltd, I recently became the proud user of one of the first legal rigs to go into circulation and the envy of many of my friends who, not so long ago, had sworn undying allegiance to the great god, AM. How fleeting a thing is loyalty. For, despite their earlier proclamations, these are the very people who have offered to cross my palm with silver in exchange for the type of rig they once damned to eternity.

Well, they ain't getting it. I'm far too impresssed with it myself to want to exchange it for mere baubles, even in large quantities. Its performance is far superior to any AM rig I have ever seen and the quality of tone just has to be heard to be believed. What's more I didn't have to worry about Buzby knocking on my door. If his little wings will waft him to the step he is welcome to cheep away on this rig for as long as he likes. It has already passed tests for frequency stability, power output and harmonic radiation and I have no doubt at all that it will pass any other test that Buzby can find in his book of spells.

I can say to those who have not yet had the opportunity to try out FM, 'Eat your hearts out. It's fantastic'. I know that a lot of you have got what the manufacturers euphemistically call AM/FM rigs but believe me they are not a patch on the real thing and challenge anybody who has poured scorn on the idea of an FM service to remain unconvinced after they have tried the real thing.

All I can say to those who have not yet had the opportunity to try out FM is, 'Eat your hearts out. It's fantastic'. I know that a lot of you have got what the manufacturers euphemistically call AM/FM rigs but believe me they are not a patch on the real thing and challenge anybody who has poured scorn on the idea of an FM service to remain unconvinced after they have tried the real thing.

Now that we know when CB licences are to be issued I am more than ever certain that the majority of breakers will flock to the new system and do away with the risk of landing themselves with a hefty fine just for the privilege of using a set which, com-
Licences are easy to obtain, easy to understand and totally free from the form of petty restriction which we once feared would surround them, and the interest which legal rigs has created wherever they have been shown suggests that they will sell like ice-cream in a drought. If you are one of those to whom the idea of a CB licence is a dream come true, don't wait too long before making your application. This little three-page document is destined to become a best-seller in record time. Although there are bound to be those who scorn the idea of a licence in the beginning — the same people who, over the years, have repeatedly asked why I wanted to see CB legalised, since it wouldn't be any fun if it were legal — I can only see the number of AM rigs in circulation going one way. Down. After all, what incentive will a new breaker have to buy an AM rig when, for about the same outlay he can go almost anywhere and, buy a rig which offers at least equal, usually better performance without falling foul of the willing band of predators who have had such a wonderful time over the last couple of years trying to make CB a dirty word. Maybe then we can begin to reap the real benefit of instant communication. With the fear of prosecution removed doughnuts can become traffic islands once again, rough 20's can become exact locations and, if we are really lucky some of us might even remember to show their mettle and the instant friendship of the air which exists when I first entered the campaign can be reasserted in those areas which have not had the benefit of the motorways, where the truckers alone seem to have maintained this spirit through whatever came and went. Listen to CB on any motorway if you want to see for yourself just how well it can work. The battles are nearly all won and lost and legal CB is now a reality. Those with previous experience of the airwaves have a great opportunity to help those coming into the mysterious world of breakers, rigs, twigs and wrappers for the first time and considerable patience will be needed when the airwaves are crowded. Let's make it work, if only to prove to the doubters that they were wrong and that we should have been given this freedom years ago. By all means let's have fun but let's not fall into the trap of treating CB as a toy. The minority who hide behind a microphone to impose feeble humour and even foul language upon anyone close enough to hear them but 99% of all breakers are ordinary folk who enjoy their ability to talk to each other. By all means let's have fun but let's not fall into the trap of treating CB as a toy, forgetting its value as a serious medium for communications. There will always be the minority who hide behind a microphone to impose feeble humour and even foul language upon anyone close enough to hear them but 99% of all breakers are ordinary folk who enjoy their ability to talk to each other. By all means let's have fun but let's not fall into the trap of treating CB as a toy, forgetting its value as a serious medium for communications. 

Gone will be the days of looking over your shoulder everytime you see a little yellow van'. Perhaps now we will see an end to all the rumours and wild speculations'. By all means let's have fun but let's not fall into the trap of treating CB as a toy'. "". . . my own short experience of a legal rig is enough to make me think that not all the mistakes have been on the HO's side'.

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PLUS MANY OTHER LEADING BRAND NAMES.
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A simple test for interference can be conducted, bearing in mind that on an AM radio interference shows up as an increase in background noise that can drown weaker signals and, in the case of FM, although not audible, will desensitize and reduce the operating range of the transceiver. With the car engine switched off and the ANL/NL/NB switches in the 'off' position, turn on the set and select a channel with a weak signal. Start the engine and if the signal weakens further or disappears or is obliterated by noise, then suppression is required. Identifying the source is the next step and the chart in Fig. 1 can be used as a guide. It should be noted that worn generator or alternator slip ring brushes and points contacts (distributor) are all causes of interference and should be replaced if their condition is suspect.

### Symptom Cause Core

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
<th>Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Musical noise which increases in pitch with engine revs.</td>
<td>Alternator/Generator</td>
<td>Replace alternator or generator.</td>
</tr>
<tr>
<td>2. Conventional nose whine with engine run</td>
<td>Ignition system</td>
<td>Fit quiet spark plugs and leads or plug suppressor.</td>
</tr>
<tr>
<td>3. Interference stopping or varying</td>
<td>Voltage regulator.</td>
<td>Fit regulator with fuse.</td>
</tr>
<tr>
<td>4. Electric motor noise on functioning</td>
<td>Heater &amp; blower or wiper motors</td>
<td>Fit feedthrough capacitor next with heater, wipers, etc. wiper motors to motor (high amps).</td>
</tr>
<tr>
<td>5. Hissing or crackling sound</td>
<td>Electrical instruments or gauges.</td>
<td>Fit bypass capacitor to gauge wire.</td>
</tr>
<tr>
<td>6. Pop when key turned on followed by irregular popping</td>
<td>Electric fuel pump</td>
<td>Fit suppressor to pump wire.</td>
</tr>
<tr>
<td>7. Slushing sound when vehicle wheels move with engine on.</td>
<td>Wheels or tires.</td>
<td>Use suppressor.</td>
</tr>
</tbody>
</table>
After identifying the possible source of the interference the next step is to fit a suppressor to eliminate it. Alternator and voltage regulator noise can usually be cured by fitting a filter on the voltage regulator (Fig.2). On a typical installation the following steps should be followed:

- Remove any existing suppressors from the alternator and voltage regulator.
- Attach the wire (usually black) from the noise filter on to the ground terminal of the voltage regulator.
- Locate the wire leading from the alternator to the voltage regulator and cut it. Bare the two ends and attach one to each terminal of the noise filter ensuring that all connections are tight and secure.

It is advisable, when replacing the plugs and leads, to remove and replace one lead at a time to prevent connecting them incorrectly. Resistor plugs (Fig.5) and leads (Fig.6) are available for most cars in this country and are manufactured by companies such as NGK and Champion. It is internationally accepted and recognised that suppressor plugs have the letter 'R' in the part number e.g. BPRGES - NGK part no. for Sunbeam Lotus resistor plug.

Voltage Regulator

To Alternator

Alternator - Noise Filter

Figure 2. Fitting a filter on a voltage regulator.

The most popular ways of suppressing ignition noise are by fitting resistors in-line (in series) with the existing spark plug and distributor leads or by replacing the plugs and leads with special resistor types. On no account should in-line suppressors be fitted to these resistor leads as it will tend to be detrimental to the engine performance. Figures 2a and 2b show the 'clip on' type of in-line suppressor and Fig. 4 the screw type which necessitates cutting the leads to plugs and distributor/coil and inserting the suppressor by screwing the contacts into the lead. Always make sure that good contact is made and that the suppressors are securely connected. (This may entail 'crimping' the clip-on types slightly).

On the wiper, heater or screen washer motors (Fig.7), a high current feed-through capacitor should be fitted in-line with the power lead to the device and the mounting bracket of the capacitor must be grounded to the chassis of the vehicle. The power lead has to be cut and bared then fitted to each terminal of the capacitor and mounted as close as possible to the electric motor.

Instrument (Fig.8) and electric fuel pump (Fig.9) interference can be reduced by connecting a bypass capacitor on the feed wire terminal (usually marked '+' of the unit and the grounding bracket should be secured to the chassis.

CITIZENS' BAND NOVEMBER 1981
Wheel and tyre static is not usually encountered in this country as it generally occurs in hot, dry climates but should the problem ever arise it can be remedied by simply pouring water on the wheels to enable the static charge to ground. Static reducing springs, which fit in the grease hubs, are available but not generally stocked by dealers in this country.
Nobody sells for less than Custom Equipe*

We have been supplying CB products and accessories nationwide, for nearly two years — you might say that we were one of the first names to get CB moving in the UK. Now we've something even better to offer to our trade and retail customers.

We have just opened a new retail showroom, offices and warehouse complex on Gardners Crescent in central Edinburgh. You can now see our extensive range of CB equipment displayed to its best advantage in professional setting, you can order and buy in comfort.

We have a separate facility for all you trade clients to enable you to select at leisure... or get quick service if you're in a hurry! All orders are promptly made up in our despatch bay and are speedily delivered. We use overnight transport to most UK towns and have our own fleet of local drops.

As always...Custom Equipe offers you all that's better in CB.........

IN PROFESSIONAL SETTING, YOU CAN ORDER AND BUY IN COMFORT.

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Serving you through over 120 trade customers — 'wall to wall' coverage of the UK.
It’s no secret that Tandy will be going into the UK CB market with a vengeance. We look at one of the extensive range of Tandy antennas this month – the Archer 21-904.

As you will have seen elsewhere in this issue Tandy, or to be precise, Radio Shack (as the parent company is called), are getting into CB in a really big way. Apart from rigs your local Tandy store will also be able to supply you with an impressive range of antennas and accessories under their Archer brand name. Our Antenna Review this month looks at one UK legal CB antenna that has a very unusual method of fitting to your mobile.

The Archer 21-904 Rooftop Mount is basically a 3’ 6” stainless steel whip with a loading coil built into the base, below a hefty steel spring. The antenna is attractively packaged in a bubble pack and comes complete with all the fitting bits and pieces, 16 feet of coax and an Allen key for SWR adjustment.

This antenna is primarily designed for permanent car roof installation so be warned, you have to drill a hole in the roof of your car or van if it’s going to be done properly. This is obviously not a problem if you drive a panel van but things may get a bit awkward if you try to drill through the roof of the wife’s new Cortina, making an ugly hole in the roof lining. You have to be committed to this type of installation and be perfectly prepared for the consequences if it goes wrong. On the other hand this type of antenna, mounted in the centre of the roof, is quite simply the best, even better than a rooftop mount.

Mounting the antenna requires a 3/8” or 9.5 mm hole in the metalwork. The mounting stub is a press fit into the hole: once it’s in place the nut is tightened up and it’s in forever, ‘cos there’s no way of getting it out without resorting to major surgery – see what we mean about committing yourself to this type of antenna?

The cable supplied with the antenna should be fitted to the connector, either by soldering or relying on the press-in fittings supplied. Soldering is the safest bet if the car is likely to be left out in the rain, as water might get into the connecting stub sooner or later.

Once it’s all fitted in the base coil and spring and whip assembled just screw it in. A couple of turns, and it’s on. It comes off just as easily for those weekly sessions at the car wash and when putting the car into the garage. It also stops theft-minded sections of the community who get their kicks from tying knots in car aerials.

Hooked up and ready to go, the 21-904 has a boring name Tandy, can’t you do better than that? It is easily adjusted for SWR. The rod slips in and out of the mounting spring and can be fixed in position by tightening up a small grub screw which can be adjusted by the Allen key provided. Our test samples consistently SWRed in below 1.5:1 and the adjustment was sufficiently coarse to allow a low SWR over 26.9 to 18 MHz without any problems.

In Operation A delight! That’s the only way to sum up the 21-904. It operates extremely well and passed all our mechanical and electrical tests with flying colours. The range of the antenna during our field trials was consistently well above average for a rooftop antenna, and far greater than we had expected. The reason, we felt, was the high mounting position and the direct electrical coupling through the car body to the ground plane.

It would be easy to say that virtually any type of antenna mounted in a similar fashion would perform in the same way but it became clear during the long-term field trials that the problems we normally experience with antennas just weren’t happening. For instance, the metalwork is extremely well protected against corrosion. The SWR stayed exactly where it was during our field trials and even managed a creditable 3:1 while bent almost double when it was carelessly parked one night in a garage.

So far, so good. It’s not all praise, though. The chromium-plated plastic trim supplied is a disaster. It is cheap, nasty and not in keeping with the rest of the antenna, and that disappeared into a ditch pretty quick. The complete lack of instructions on our samples was a little
puzzling. Tandy should ensure that explicit instructions are supplied, especially when the mounting method is so potentially damaging.

In conclusion, a great antenna — a touch pricey but worth it, and a real good worker for those brave enough when it comes to mounting, or those with panel vans.

Right: Radiation pattern of the 21-904.

Above: The 21-904, complete with cable and fixing kit.

**SPECIFICATIONS**

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<th>Model</th>
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**REVIEW VERDICT**

- Performance: XXXX
- SWR Adjustment: XXX
- Construction: XXX
- Installation: XXX
- Value: XXX
- Installation Instructions: XXX

We rate our samples on a scale of one to five. Five stars is the highest rating, three and four stars are average to good and one and two stars mean it's not doing so well.

The Tests

We have used our standard test procedure to assess the efficiency of this antenna. Just to bring new readers up to date this involves two tests, one static and one mobile. Our first sample is fitted to a stationary mobile and a second mobile follows a pre-arranged route that enables the static/mobile test vehicle to be compared, noting how the receiving equipment reacts at measured intervals. This is then repeated with the test antenna on the mobile test vehicle and the signals are sent and received between a stationary vehicle. A standing and airborne test is also used in all tests. With the results obtained we are able to draw up the radiation pattern shown here. This is simplified to make the results more easily understood. The antenna is also inspected to see if it shows any signs of durability, quality of construction, etc and finally we hand it down to a panel of CBers for comment.
We're getting dozens of letters each month concerning CB antennas. Here are a few drawn from the postbag. Don't forget, if you have any CB problems we're only too pleased to help if we can, but we cannot undertake to answer personal enquiries at the moment.

P G Cook from Southampton gets the ball rolling this month.

Q. I intend to buy a new legal mobile FM rig on, or about, 'L-Day'. I need an easily removable antenna (vandals) ideally I want to fit a short approx 2 foot mag base antenna. I would like to know:

1. Is the length different between a 3 foot and 2 foot antenna significant?
2. Is the efficiency of a mag-base antenna as good as a conventionally mounted antenna bolted to a car wing?
3. Do mag mounts blow or slide off when driving along?
4. Do I go for a top, centre or bottom loaded coil?
5. How big a steel plate would I need to act as a ground plane to use the antenna indoors and would this steel plate need to be connected to the earth connection on the antenna lead?

A. The maximum legal length of a mobile antenna is 1.5 metres /4.82 feet). In general terms the efficiency of an antenna is directly proportional to length, so the longer the better. If you're determined to fit a 2 or 3 foot antenna then one of the shorter helically wound DV type antennas might fit the bill. As far as mag mount antennas go they have one important benefit over wing-mounted antennas, and that is height. The farther an antenna is from the ground, the greater the effective range will be. The capacitive coupling between the magnet and car body is not as good as a direct electrical connection, but to all intents and purposes swell antennas mounted in the center of a car roof are just about the best installation possible. To date, we know of no mag base that will slide off when driving along at normal speed on British roads although one or two do seem a bit precarious as far as the strength of the magnets is concerned. Obviously a suitable box for a ground plane is far from ideal but the surprising thing is that it will often work, depending on the type of antenna used. There are no hard and fast rules about ground plane proportions, just as much metal as practically possible and careful setting up with a good SWR meter. The outer connection in the centre box should be electrically connected to the motor ground plate.

From Iford in Essex, Lorne Mason has this to say.

Q. Will the antennas on the market now be suitable for the new UK FM frequencies and will the SWR meters operate just as well? I am thinking of constructing a mains power supply: what is the maximum current drawn by a standard rig? I also wish to have a loft antenna which is the best one to use (fairly cheap), and how much will the range suffer by installing the antenna in the loft as opposed to mounting it on the roof.

A. Value for money, this one. The physical length of antennas designed for UK FM will have to be slightly less than those used for FCC/CEPT equipment. The difference may be as little as 1 or 2 mm on some designs so in practice most antennas currently on the market will operate on UK CB. In most cases the difference in length can be compensated for by readjusting the SWR adjuster, or, in the case of one-piece whips, cutting off a couple of millimetres. Similarly, SWR meters are optimised to operate on FCC/CEPT frequencies but the difference between the old and new frequencies is so small that most SWRs will operate quite happily. Given that most cheap SWR bridges are only about 10%...
Most rigs draw less than 0.5 amps on receive and rarely more than 1.5 amps on transmit. A 2 or 4 amp power supply is more than enough.

Loft antennas are many and varied, we’ve tried quite a few of them and can say quite happily that all have worked very well again. Of course, the biggest one that will fit into your loft. Obviously they are not as good as a roof mounted antenna. In the first case it won’t be as high and in the second place the structure of the house will reduce the signal, though the differences are quite small and unlikely to worry you unless you’re into DXing. Remember, though, that the Government have restricted all antenna to 1.5 metres in length. Make sure you use a good quality coaxial as long runs of cable will attenuate the signal. Look for a loss cable and avoid at all costs 50 ohm which is too cheap to be true, ’cos it’s another problem.

Q. Will channel 9 still be the emergency channel on UK CB? Nigel Thompson, Gravesend.
A. A number of rig manufacturers will use the emergency channel on UK CB and there is no reason why it shouldn’t continue to be so.

Q. Will it be OK to use the cordless Magic Mike you featured last month on UK CB rigs? Mark Delaney, Slough.
A. No. They operate on 49 MHZ which is still illegal.

Q. When will someone produce a rig for 934 MHz CB? Ahmed Parak, Dumbarton.
A. They have already, see this month’s Update.

Q. I’ve just bought a CB radio set and I’m unable to receive any BBC stations on it. Can I fit an adaptor? John Ellis, London.
A. (Before you ask, that was a genuine letter.) The only suggestion we have is to summon immediate medical help with a view to brain surgery to remove the blockage (unkind, ain’t we?) Another awkward question, this time from Larry Miles in Ilford, Essex.

Q. Your mag is the best in the - wait for it — Universe. Okay, glad that’s over for the question.
Why are all my local CB shops putting up notices in their windows, large enough for the Buzbys and Police to see, that say ’Legal 27 MHz AM rigs in stock now, Colt, Jaws, etc.? I haven’t yet seen a CB shop in my area that hasn’t got one of these notices. One shop even has a typed document saying that it is now legal to sell the Colt, etc. etc.
Surely everyone knows it’s going to be 27 FM, not AM. What’s going on? Why doesn’t the law nab them for misleading advertising?!
AFunny thing, the law, especially the WT Act which has so many loopholes you could strain cabbage through it. To be perfectly honest the only applicable loophole we know of is the lack of import controls on 27 mega gear on the Isle Of Man, it seems that you are able to import disassembled rigs into the IOM and reassemble them before shipping to the UK mainland. Obviously we’re not lawyers and if this is so you can be sure it’ll be plugged up pretty soon. At the regament, however, a rig that has been imported in this way, duty and VAT paid, can be sold over the counter. Don’t forget though the minute you connect it up to power it’s an offence — press the mike key, and it’s another offence. We’ll leave the rest up to your conscience and wallet. Of course, and by the way, the word is that HO, PO and GBE are going to have a bit of a crackdown in the next few weeks. You have been warned!

Down to Penzance in Cornwall and David Brown, who has a slightly tricky problem.

Q. I would like to know whether or not there are any rigs on the market that will cover both the old AM frequencies (26.965 to 27.405 MHz) and the new FM frequencies (27.60125 to 27.9125 MHz). If so, could you tell me which model it is?
A. Write out a thousand times, ”I must not ask Citizens’ Band magazine awkward questions”. The answer is yes. A number of rigs have appeared in special versions, notably the Lafayette 2900M, Ham Multimodes, and Cobra 148 GTL. These rigs have a facility that is known as High Channels with 8 kHz shift. In a nutshell they can cover most of the new channels (usually the lower 30). These rigs are quite rare, unless you know the right people, and usually cost the earth (typically £200 plus). They have the dubious claim to be illegal all over the world. We’ll leave the nits up to your conscience and your bank balance.

Antenna Review has been one of our most popular features now for some time. O H Ames has a quality, all the way from Southampton — yet again!

Q. In the polar diagrams used in Antenna review, you have, since July reduced your weakest signal from S3 to S2. Why is that? Also, in the Bandit review (September) you place it second so the K40 when you show the K40 to have a smaller overall circle at S3.
A. You are quite correct, we have changed the style of our Antenna Reviews. The new reviews are now carried out on UK FM frequencies in this country and as such it is difficult to relate them directly to previous reviews carried out on the Conti- nent on the AM frequencies. The com- parisons we draw now are related to previous tests (as yet unpublished) car- ried out on the K40 and Moronraker etc on the new frequencies. The change from S2 to S3 for minimum copy levels was to allow us to keep to the same distance scales. Copies at S2 on UK FM are much further due to the reduced background noise and due to our test site having a much flatter terrain the polar diagrams is, in one or two cases, going beyond the boundaries of our map.

Time for a few quick ones to round off this month.

Q. I live in a block of flats. Will CB interfere with TVs in and around our flat? Tony Reynolds, Liverpool.
A. So much will depend upon the equip- ment used and how close your antenna is to other TV aerials. You’ll find out soon enough if you try to cause TV, sort it out fast before the neighbours complain to the PO or they’ll sort it out for you!

Q. Will channel 9 still be the emerg- ency channel on UK CB? Nigel Thompson, Gravesend.
A. As far as we know, yes. It is the interna- tionally agreed emergency channel and there is no reason why it shouldn’t continue to be so.

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Presenting the first instalment of the exclusive Citizens’ Band British Rig Checklists. Every month we will catalogue all the latest rigs, together with details of facilities etc. In the coming months we will be featuring similar checklists for antennas and accessories.

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<td>Avanti Moonraker 6 Mag</td>
<td>£35.90</td>
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<td>K40 Antenna</td>
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<td>K40 Mic</td>
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<td>Pro-Micro 007 Mic</td>
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<td>C.T.E. Galazy 1KW Linear</td>
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<td>C.T.E. Jumbo 600W Linear</td>
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<td>C.T.E. Speedy 70W Linear</td>
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<td>C.T.E. Jaguar 200W Linear</td>
<td>£107.90</td>
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<tr>
<td>Hirchmann Rotor</td>
<td>£39.90</td>
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Yaesu equipment available, prices on application, Crystal available to convert to 27 Mag.

Full Service Dept, While You Wait Repair Service (subject to parts), Aerial Rigging Service, lots of help and technical information

WHEN YOU’VE FOUND THE BEST — FORGET THE REST.
Mack The Hack muses about legislation, CB Shows and Zulus! — Confused, well read on.....

I jump out of bed each morning and the first thing I do is to cross off another date from the calendar. As I write this it is only a few more days to LDay, and I have waited a long time for this event. I have been a reporter on the Citizens' Band since 1950, and have had my say on channel was about legalisation, and I heard of the early organisations such as the CBA and UKCBC that were pushing for legal CB and both got my support.

For me the battle is over and I feel that I have reached the end of an era. I have waited a long time for legalisation and at times I felt that it might never happen. It is a relief to finally have legal CB, and even had my say in this battle.

I jump out of bed each morning and the first thing I do is to check my mailbox to demonstrate CB, and even had my say on radio. (UK)

To earn a living, I can spend up to eight hours a day behind the steering wheel. Those trips during the rush hour traffic were made easy with the aid of my rig and, of course, the breakers that would ratchet with me. I have at times felt guilty about breaking the law, with more to lose than most, I could well do without the hassle of a prosecution. So that is one reason and maybe even a good reason why I shall go legal. Many of the present breakers say that this could well be true, but isn't AM crowded? And not just with English breakers but with Italians, Americans, Germans, Portuguese and Dutch to name just a few. I have an idea to overcome the problem of overcrowding on F., but it's my secret at the present.

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**LEGAL RIGS**

When the ‘green light’ is given to run FM CB we will have a selection of rigs in stock. Please enquire or call in.

**SWR-POWER-AERIAL MATCH-FS METERS**

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  - 170 0/5/50 MHz: F/S: FS: 1:5-144 MHz £16.95
  - 170 0/10/10 MHz: FS: FS: Modulation 144-39 MHz £16.95
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  - Bands with detachable couplers for remote use £17.95
  - RT1/0/100 SWR: FS Modulation 3-150 MHz Detachable coupler £16.95

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  - **COUNTER**
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      - NEW FEATURES £67.95
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- M60 Base £9.95
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- CB27 £8.95 : 9167 £9.95
- BASE AERIALS £27.95
- 144 MHz £9.95
- Silver Rod £17.95
- Rubber Duck £12.95
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**FULLY BUTTON BADGE!**

when you send for details of our entire range of 27 MHz FM C.B. Rigs, Accessories and Walkie Talkies.
Hamming It Up

Dear CB,
It is entirely understandable why the radio hams have been rather concerned about the appearance of legalised CB.
I have been listening to the illegal AM breakers, and in this area at least they seem to be a rum lot.
Some monopolise a channel with endless meandering chit-chat, while others barge in on transmissions with stupid comments and bad language.
When CB is legalised I hope users will be given an official call sign so that there is not a profusion of Black Foxes and Rubber Ducks in one area.
An operators' code of practice should be given with each licence which might prevent the present constant bickering that occurs now with breakers starting to transmit on a channel without finding out if somebody is already using it.
I don't wish to spoil anybody's fun, but chaos is the alternative.
Michael Burberry
Oxfordshire.

Side Issue

Dear CB,
What will happen to the sidebanders now that HMG's new frequency will move into their domain? With a year or so before the skip dies down, things are looking very black.
- Rumour has it the new 934 MHz UHF band will be used for future DX using satellites to bounce the signals-off, instead of the ionosphere. Maybe Citizens' Band will be publishing something on this in the future? It should be very interesting; 934 MHz may have something to offer after all.
The Jackall
Hartlepool.

Look Alike Rigs

Dear CB,
Are we about to experience the same situation with FM rigs as we have in the past with TVs etc? This is typified by one chassis inside numerous cases bearing numerous names with numerous price tags.
It was highlighted with your review of the Radiomobile 202 (September CB) which looks a lot like the Cybernet Beta 3000 which has been advertised at £85, as opposed to the suggested price for the 202 at £120.
How the extra £35 can be justified is anybody's guess. Breakers beware, all that glitters is not gold!
Andy Sutton
Cambridgeshire.

RIP AM?

Dear CB,
AM is dead! Unfortunately the United Breakers' Association (UBA) don't think so. However, it is an outdated mode: FM is better!
The UBA have fought a great battle against the powers that be but they are living in the past. AM is not for the eighties: FM is!
We want a national organisation for CB users, not a hotch-potch of organisations. Unless such an organisation is set up mayhem will prevail. The behaviour on the bands at the moment is disgusting, swearing is rife and having only one calling channel is stupid.
I propose the following. It must be implemented for CB to last:
0 A sensible set of rules for everyone to adhere to.
0 One organisation controlling CB users.
0 One national channel and three calling channels.
0 40 channels FM and at least 80 channels SSB by 1983.
0 The use of the 28.5 amateur band, in conjunction with the RSGB.
0 A working party to promote ideas, made up from members of the RSGB and the proposed National Association.
Chris Lee
Romford.

FMI (Folk Music Interference)

Dear CB,
I noticed your magazine while browsing in our local newsagent and noted your address so that I could bring something
to your attention.

On three different occasions in the past 40 days folk music concerts that I have been involved with have been badly disturbed by the voices of idiots jabbering in fake American accents, being picked up by the PA systems. In all cases, the venues and PA's have been used many times before without this problem (in fact one is right next to a police station).

Are you aware of the disruption that you CB people cause by your cowboy games? It may well be that rock and disco will sell everybody and anybody the latest toy for whom this will be little more powerful PA systems.

craze.

passages this will be a growing problem disturbed by the voices of idiots jabbering times before. without this problem (in fact serious applications for CB, but you because of the continuous high sound equipment to prevent this happening? Is there nothing that can be done at the radio users end? Ian Anderson Folk Music Services Farnham, Surrey.

Hopefully this kind of interference will not be so prevalent with the new FM system, we shall wait and see. In the meantime, use your common sense and stay away from events such as these that use powerful systems.

Justice?

Dear CB,

Until the really most interesting letter I have read recently is the piece written by Chris Croati of Warrington (Sept '81 Backchat). This guy's got it sussed. I have worked 27 AM for just over 3 years and truly believe we have been given justice with FM, after all we only need it for the interchange of helpful information and not to chat to someone that you have been in the pub with all evening.

When I first started out on CB things got a little hot at times with the PO (as they might Hack might possibly remember) but things are now so slack that something of the 'Muppets' are creating havoc, knowing that the chances of getting caught are slim. Also we've been taking risk of getting busted, until L-Day anyway. This is why should these spoolbrains get away with the old vanishing disappearing, in my view.

G. Clayton Doncaster.

Monitors, The Last Word Dear CB,

Further to your Backchat letters regretting the use of "monitor"/flight multiplex monitors, I have yet another suggestion as to how to improve the situation.

The simplest method was missed by your correspondents - there is no need to purchase Rubber Duck antennas, or solder crocodile clips etc. My cure is to twist the TV aerial lead around the receivers internal two or three times. No physical connections need be made. Now I can listen to breakers both locally and on the skip when the conditions are not so good.

M Solvcr Epomph.

Ferrone 27

Dear CB,

I am writing in answer to your plea for help in last month's issue. On page 17, Update, under the heading 'Anonymous Antenna', you asked for the address of a company called C-Belt. The address is as follows: C-Belt, Unit 3, Webley Commercials Estate, East Lane, Wembley, Middx.

At this point I must make reference to one of your competitors - CB Radio magazine. In their September issue, a Mr. F.C. Judt said that he had been involved in the design/specification of an antenna which would meet the legal requirements for the proposed 27 MHz FM system. This was the Ferrone 27 and I duly sent an SAE to the address given for further details. Shortly after I received those details which gave the specifications, nearest dealer, but no RIP (you quote 

C.B) and on the leaflet three photographs showing the antenna mounted. One of these was shown in your article last month, but one thing puzzles me: according to every summary of the HO specifications right 220 I have seen, but it states that the only permitted antenna system acceptable will be one that is no longer than 1.5 metres, and only base loading is permitted. The photographs of the Ferrone 27 clearly shows a lump halfway up the antenna. Now, is this lump a fan-cy anti-static device or is it a loading coil? If it is the latter, surely this antenna will not comply with MPT13207 This would mean that the K40, Bandit, Moonraker etc will be the K40, Bandit, Moonraker etc and a piece of wire not more than 1.5 metres long.

It would be interesting to hear your views on this at a later date when you have done some tests.

Keep up the good work you are doing for all of us who intend becoming breakers and, I'm sure all those who are breakers already, I will sign off with the handle I intend using after L-Day: so 10-10 from the Cosmic Warrior. 

Raymon, Dorset.

Thanks to Cosmic Warrior and the dozens of other readers who wrote in about C-Brit, I am pleased to announce that this antenna for a future issue. As for quality, at the moment of writing our understanding of the specifications for MPT13207 is that only base loading is loading. The Ferrone does appear to have some kind of loading coil in the whip. However, until we've conducted our tests we cannot say whether or not it does conform to MPT1320, so we'll let you know when we know.

Marine Radio And CB

Dear CB,

I see from your September 1981 issue that you will be shortly running an article on CB at sea. I am sure that as a responsible magazine you are aware that the Marine Band has a built-in distress system, and for their own safety all ships radios should be of a marine type.

By all means, CBers, take your rigs to sea if you must (when in fact becomes legal) for fun but when it comes to distress (hopefully you won't need it) the most important factor in any SAR is to be able to have direct communication with the co-ordinators (in this country HM Coastguard) and the casualty. The moral is if you want a first class rescue fit marine.

I trust it is your intention to make this clear in your article for the well-being of both rescuers and rescued.

D P Gough

Swanage, Dorset.

Under no circumstances would we ever recommend CB as an alternative to marine radio. However, on small inshore craft, river boats and small yachts where a marine radio installation is impractical, or prohibitively expensive, CB offers a form of communication, where previously existed and surely, in an emergency any radio system is better than none at all. Remember that a marine transceiver can cost several hundred pounds, which is a lot of money for a small boat, will cost a fraction of that and a CB rig, whatever type you choose, can afford a marine set-up to have access to the airwaves, and hopefully access to someone who could help in an emergency. CB is widely used on boats in Scandinavian countries for emergency traffic.
Outperforms any similar antenna including K-40 on price and performance.

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★ Super good looking low silhouette design.
★ Hand wound hand tuned coil in the cup, protected against damage and the weather.
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★ Tested at 500 Watts ...... rated at 100 Watts continuous.
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A major advance in antenna technology from the Antenna Pros field tested and field proven by thousands of CBers.

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Dealers required — phone call or write.
Further to our comments a couple of months ago about some kind of unity between CB clubs we are happy to report that we’re hearing of CB associations being formed almost daily. What we need now is some kind of national body to represent the interests of clubs up and down the country — any offers?

Catch a Rig Thief UK (CART)

As a follow-up to the article published in this magazine in July we would like to inform you that the response we have had has been tremendous and that many more branches of our organisation are being opened as a result of this much appreciated publicity. We are hoping that eventually our organisation will cover the whole of the UK and thus offer protection to you all by acting as a deterrent to prospective rig thieves. As explained in our previous article the CART organisation is purely voluntary and is also non-profit making.

The badges of both our supporters and representatives are shown here. These may be obtained from EL Cid on application for membership. The price is 50p for supporters’ badges and £1.50 for representatives’. It should be pointed out that representatives must be over 18 and have no criminal record for theft.

Applicants for membership will each receive a full list of serial numbers up to date, and also information on how to set up CART in your own areas.

The CART organisation is also interested in discovering whether any confiscated rigs have been resold. To do this we would ask that all breakers who have had their rig confiscated give the serial number to their club secretary for forwarding to CART. CART will then compile a complete list so that any resold rig can be traced.

Should you require further information please contact:
Mr P Duggan (EL CID) Chairman CART (UK) 72 Wood Street, Ilkeston, Derbyshire DE7 8GE.

The Garath Payne Appeal

My committee would like to thank all the CB clubs who have donated sums of money ranging from £10 to £500 to our Appeal. We are trying to raise the vast sum of £5,000 to help a two-year-old child, Garath Payne, who lives in Lye, West Midlands, to Denver Colorado, USA for a liver transplant.

To date we have been managed to raise approx £25,500, approx £7,000 being donated by Breakers’ Clubs throughout the country. We know that we have a very hard struggle to reach our target, but with the help of the generous good buddies we will reach our objective. Please keep the good work up and keep the chips rolling in, and may you all earn the freedom of the air, which you so rightly deserve. All donations to The Garath Payne Appeal Fund, The Castle Inn, Bolds Lane, Lye, Stourbridge, West Midlands, Tel Lye 2789.

Herts Citizens’ Band Radio Association

Let us introduce ourselves. We are the Herts CB Radio Association (HCRA). We have formed this association so that we can join together all of the CB clubs in the county of Hertfordshire as an association.

We would like other clubs in the county to become affiliated to our association so that breakers from other clubs can drop in and meet us, or drop in to any of the other clubs that are part of the affiliation.

As so many clubs have been formed in Hertfordshire, we think it would be a good idea for us all to get together and form one big organisation. We do not wish to interfere in any way with the running of affiliated clubs, working on the same lines as the Working Mens’ Clubs, providing valuable assistance not only to the members but also the clubs involved. Just think of it — so many clubs combined together would enable us to organise some very special ‘get-togethers’.

As a service to the affiliated clubs we provide regular newsletters detailing events of club local and national interest and through the exchange of ideas we hope that we can help organise bigger and better social events, charity and fund-raising activities and possibly emergency assistance, in co-operation with the emergency monitoring organisations such as REACT and THAMES.

We hope to develop and administer certain public information projects and publicise, with the aid of local press etc, the potential benefits and proper use of CB radio in industry schools etc.

As affiliated clubs and their members who become part of the association may participate in any other clubs activities, with the agreement of the clubs in question of course.

We only charge our own members a joining fee — clubs pay nothing, we only

CITIZENS’ BAND NOVEMBER 1981
ask that you include HCBRA on your membership cards and paperwork and likewise, we will include your club in all of our handouts, publicity notices etc.

If any clubs would like another form of promotion we were ready for the big effort, blisters, twisted muscles and the mental breakdowns we had started our account rolling with a figure of £629. After about two months' preparation we were ready for the big day, Saturday 6th June, and in the lap of the Gods regarding the weather. We had side stalls, a ducking stool, medieval bowling, a hot dog stall, a junk stall, a bola, skittles, a hot dog stall, a junk stall, a Ducking stool, a hot dog stall, a junk stall, a bola, and skittles. After about two months' preparation we were ready for the big day, Saturday 6th June, and in the lap of the Gods regarding the weather. We had side stalls, a ducking stool, medieval bowling, a hot dog stall, a junk stall, a bola, skittles, a hot dog stall, a junk stall, a bola, and skittles.

We asked our Lady Mayor, Mrs Dobson, to preside at the cheque to the Gateway Club on our members' behalf on 2nd September at the 'Canadian Flag', which is where we hold one of our eyeballs. Two months ago we started a yard-sale competition, which was eventually won by a worn out team from the Lincoln Breakaways club, and a disco. We charge 50p to visitors to cover our costs and all newcomers are made welcome but they must be over 18.

At the end of all this hard work and lots of fun we had finally reached our target of £1,000 for the Gateway Club with £4 extra.

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### ENGLAND

**BUCKINGHAMSHIRE**
- **Milton Keynes City Breakers**
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**CHESHIRE**
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  - PO Box 2, Whaley Bridge, Stockport, Cheshire.
  - Weds 8pm, Redbrook Inn.

**CLEVELAND**
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  - 75 Tawney Road, Eston, Cleveland.

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  - Secretary: Lady Go-Diver.
  - The Becketts, Scopengrove, High Lane, Bromley.
  - Kents Mon 8pm.

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  - For Scott and the above club has now been dissolved as of 7th July 1981.

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  - PRO: W. M. Hurren
  - Bankside, Lower Street, Southwold, Norwicht, Norfolk NR11 8UB.

**Nottinghamshire**
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  - 9 Caulston Gardens, Bullwell, Nottingham.
  - Thurs 7:30. The Old General, Radford Road.
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