SEPTEMBER/OCTOBER 1989 $3.20

CB Action

Win A CONNEX 40 UHF HANDHELD!

AUSTRALIA'S ONLY CB MAGAZINE

WHAT'S A CYCLE 22 ANYWAY..?

TVI - HOW DO YOU GET IT?

Reviews

Connex 40 UHF Handheld!

Sawtron KG109 UHF

Yaesu FRG-8800 Rx

Plus

UHF/HF/Scanner and Shortwave columns

27 MHz DX Forecast getting better all the time!

RIs BLITZ DXers...!

THE NEW ICOM IC32AT, OVER. WITH ITS DUPLEX FACILITY, OVER. MEANS YOU WON'T HAVE TO TALK LIKE THIS, OVER AND OUT.

The IC32AT is the newest dual band handheld transceiver by Icom.

It has been designed with the most advanced VHF technology the electronics industry can offer.

And this little 2 metres and 70cm compact handheld offers full duplex facility.

Which means instead of a broken conversation, you can now simultaneously transmit on one band and receive on the other. Just like a telephone conversation.

No longer do you have to wait for a long "Over". It's full "Break in".

And with its high output power, you can be sure your words are heard. The IC32AT uses a custom designed power module as the final amplifier. Which means this transceiver puts out 5.5W on 2 metres and 5W on 70cm.

So you will never be at a loss to make that repeater.

What's even more incredible, each of the twenty memory channels can store two frequencies: operating frequency and offset frequency are just a couple of examples.

The Programmed Scan function scans all the frequencies between two programmable scan edge frequencies, while the Memory Scan function scans all memory channels in succession, except, of course, those you lock out. In short, you can scan 2 metres, 70cm or all channels.

Thanks to the handy little pocket beep, you'll never miss a call. By installing the UT-40 Tone Squelch Unit (sold separately) the transceiver functions as a pager.

You can use the built-in DTMF keyboard to access a repeater and to make a phone patch. The key numbers and letters are printed large for quick and easy reading.

As for monitoring the input frequency when you work a repeater, that's as simple as pushing the Monitor switch on the side panel to open the squelch and check the frequency.

Every five seconds, Priority Watch monitors the Call Channel, or one or all the memory channels in succession.

And that's while you operate!

When you want to change the frequency or the memory channel fast, the Dial Select changes the 1MHz, 100kHz digit or the memory channel directly. One push of the button does it.

All these functions not only make the Icom IC32AT the most advanced dual band handheld transceiver available, but also very easy to use.

Call (008) 338 915 for your nearest Icom stockist today.

The telephone conversation in itself will be a very good demonstration of the IC32AT's duplex facility.

Over and out.

ICOM

The Ball Partnership ICO 0024

CB Action

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POWER BAND COMMUNICATIONS

1289 NEPEAN HWY, CHELTENHAM VIC. PHONE (03) 584 7631 FAX 583 0846

UNIDEN BEARCAT 200XLT

200 ch. Intelligent memory 12 bands with 10 priority ch. ch. lockout scan delay.
Clip-on batt pack.

$435

See review CBA Mar/Apr.

SAWTRON 999

UNCOMPROMISED QUALITY AND PERFORMANCE

PROGRAMMABLE UHF CB EXCELLENCE **$770**

UNIDEN PRO-540e

THE ULTIMATE AM ONLY RIG

FEATURES . . . RF gain, SWR, Hi-cut filter, NB, ANL, Mic gain, huge 7 watts audio output, PA, Ton etc . . .

$189

PRO 640e $345

ROTATORS LIGHT DUTY

Suit ATV, UHF antenna arrays. 50kg load. **$142**
200kg/cm min torque. Stationary braking torque 1000kg/cm min.

THE ELECTROPHONE LINE-UP

TX-820
Ch 8 priority
Compact 40ch AM only. Electronic ch change. ANL etc. **$109**

TX-830
Deluxe AM only rig.
Front mounted speaker. Ch 8 priority. RF gain. **$129**

TX-472s
40Ch UHF with programmable scan sequences.
Front mounted speaker. Programmable priority chans. **$395**

UNIDEN UH-001 UHF

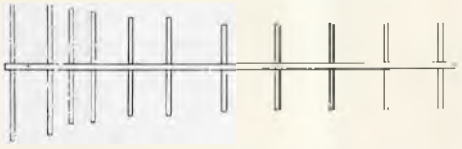
RELIABLE . . . AFFORDABLE **$339**
SELCAL available

BASE STATION SCANNER ANTENNA

1.5 metre mast mount vertical style complete with 3 metre of cable and plug. **$52.50**

PB-11E BEAM KIT $75

High gain directional array for UHF CB 17dBi gain. Kit of parts and instructions.



UHF CRS PORTABLES . . .

UNIDEN UH-005

40ch rotary switch. Dial light. Repeaters. Hi/Lo power. Belt clip. Heavy duty battery pack standard. Can operate direct off 13.8vdc — no adaptors required.

$489

ICOM IC—40

Thumbwheel ch selection, Hi/Lo power, wide range of battery packs and SELCAL available. Repeaters. Other accessories. Belt clip. Rugged, reliable performer.

$610

ELECTROPHONE TX-475s

Pocket size high performance UHF. Thumbwheel ch selection Hi/Lo power, Belt clip, SELCAL available. Repeaters. 2 watts out standard. Comes with carry case etc . . .

$625

UHF Coaxial Switch and Relays. Switch up to 1000MHz. Relay up to 2500MHz. Professional grade equipment at the right price.

Switch

$99.00

Relay

$135.00

MOBILE ONE SC-27 "SKIPCHASER" $179

MAIL ORDER SPECIALISTS

MAIL ORDER FORMS AVAILABLE ON REQUEST
MOST CREDIT CARDS ACCEPTED
ALLOW **$10** FOR MOST DELIVERIES THROUGHOUT AUSTRALIA
FINANCE AVAILABLE T.A.P.

UNIDEN GRANT

Luxury AM/SSB Transceiver **$345**

ON CHANNEL

LET'S BAN SCANNERS.....!

As briefly mentioned in our last issue, the subject of scanners has once again come under notice by the authorities — on this occasion by a meeting of police State Ministers — at which meeting it was resolved that a ban would be sought on the importation of such units.

The reason is of course that worn out old perennial that scanners help the criminal element keep one step ahead of the police.

We have all heard this claim on numerous prior occasions and now, as then, we can only say that, yes, this can and undoubtedly does happen, but, banning the importation and/or use of scanners is certainly not going to solve the problem — which incidentally we believe is blown way out of proportion anyway.

If a criminal intends to listen to police frequencies he is going to do it with or without a legally purchased scanner. As we reported in a recent issue, many (in fact most) UHF transceivers can be modified to receive police frequencies and they can also be made to transmit on them — now that's a fact of life and while it is totally illegal to transmit it could be done if a criminal really wanted to stir up the law forces.

So are they also going to ban CB UHF rigs — hardly likely...!

As ever, the authorities are trying to do it the hard way. Instead of trying to ban scanners, which is bloody near impossible given the huge number that are already scattered throughout Australia, why on earth don't the police, and any other authority which requires secure communications to be effective, introduce scrambler or encryption codes to their transmissions ? Now this would make sense to everyone, however, the police are actively campaigning against the introduction of scrambler devices by Telecom because they say that this will help the criminals beat telephone bugs and wire-tapping.

So while they do not want encryption or scramblers made available through a public authority because it might assist criminals to beat 'phone bugs they also don't want scanners to remain legal because criminals can listen to police communications.

It really does make you wonder doesn't it....

Why on earth doesn't someone do it right just for a change .!

Banning scanners is simply not going to solve what is obviously a serious problem in the minds of the police force, but, scrambling their communications will defeat all but the 'full on' criminal who will find a way to hear such communications one way or the other. Do our State police force Ministers really believe that the CIA, MI6 and other sundry agencies that rely on secure communication for their effectiveness do not use scramblers or do they believe that all the scanner owners listen in to such communications as a matter of course. Come on people, let's be sensible.

Next silly proposal please....

OUR APOLOGIES

Please accept our apologies — we had expected to have a number of 27 MHz rigs and a couple of scanners for review in this issue. They were unavailable, but, we do have an AM rig from Hatadi, a Sony scanner plus a Sawtron and Connex handheld UHF rig — hopefully, the ones missed in this issue will be available for the next one.

MOBILE ONE COMMUNICATIONS SYSTEMS

MOBILE COLINEAR UHF 6 db GAIN WHIP

BECAUSE OF VARIOUS MOUNTING APPLICATIONS, ALL ANTENNAS SHOULD BE CHECKED FOR CORRECT VSWR

477 MHz

M476

MEGA BLASTER™ BY MOBILE ONE

FEATURES

This unique multiple stacked phased co-linear whip represents the **"State Of The Art"** in mobile whip technology, providing a low angle pattern with a massive 6db of gain **unmatched by any other similar mobile product.**

The M476 is constructed for broadband coverage and is **ideal for Wideband Scanning.**

The radiator has been coated with a rugged polyolefin heatshrink tubing to provide a strong, flexible and totally weather-resistant protective sheath.

SPECIFICATIONS

TYPE	3.5 Wave Phased Co-Linear Whip
ORDERCODE	M476
LENGTH	48" (1.2mtr)
WEIGHT	250 Grams
TUNING	Pretuned
FREQUENCY	450 ~ 500 MHz
IMPEDANCE	50 OHMS
MAX.POWER	50 WATTS
TERMINATION	5/16" x 26 TPI - FEMALE
PATTERN	OMNI DIRECTIONAL VERTICAL
APPLICATION	MOBILE
VSWR	≤ 1.5:1 over 20MHz

MOBILE ONE

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All Enquiries to:
P.O.Box 166 Picton N.S.W. 2571
or
FAX (02) 820 1515

DISTRIBUTED BY ALL QUALITY RETAILERS

MOBILE ONE BOOT MOUNTS

POLISHED STAINLESS STEEL OR BLACK

FEATURES

The Mobile One Stainless Steel Boot Mount is an Australian made antenna mounting system, designed as a substitute for front or rear guard mounting and will fit the bonnet or boot of most vehicles.
The unique feature of the Mount is that it can be installed without drilling any holes.

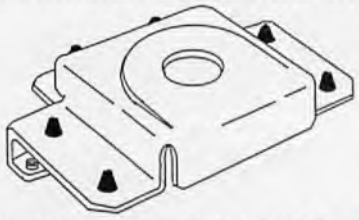
The following Base and Lead Assemblies can be used with the Boot Mount:

A12C	•Light Duty Roof Mount Base, 12 Foot of RG58 Coaxial Cable & PL259
A3.6	•Light Duty Roof Mount Base and 3.6 mtrs RG58c/u (Mil Spec)
UL3.6	•UHF Coax Roof Mount Base and 3.6 mtrs RG58c/u (Mil Spec)
DM12CK	•Encapsulated Dipole Mount, 3.6 mtrs RG58c/u Coax & Mounting Kit.
SOC	•SO239 Coaxial Mount. For Whips with a PL259 Termination.

INSTALLATION

1. INSTALL APPROPRIATE BASE ASSEMBLY ON TO MOUNT
2. OPEN THE BOOT OR BONNET AND LOCATE DESIRED POSITION.
3. SLIDE THE BOOT MOUNT OVER THE LIP OF THE BOOT OR BONNET.
4. SECURE THE STAINLESS STEEL SCREWS WITH THE ALLEN KEY PROVIDED.
5. RUN COAXIAL CABLE INSIDE TO THE TRANSMITTER AND VSWR ANTENNA.

AVAILABLE IN POLISHED STAINLESS STEEL OR BLACK POWDER COAT.



PATENT PENDING No. 77770/87 REG. DESIGN No.99152

MOBILE ONE PORTABLE ANTENNA 27 MHz CITIZENS BAND

BECAUSE OF VARIOUS MOUNTING APPLICATIONS, ALL ANTENNAS SHOULD BE CHECKED FOR CORRECT VSWR

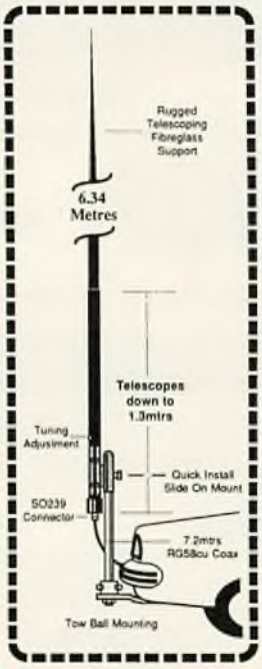
The best mobile DX signals can be yours!

SC27

SKIPCHASER II

PORTABLE BASE ANTENNA

PATENT PENDING 1987 • PI • 5580



This is a fully portable telescopic antenna, easy to transport, erect and operate.

The antenna support is constructed from a tapered telescopic fibreglass pole.

Overall length, when fully extended is 6.3 metres and, when collapsed in portable form is 1.3 metres.

The fully extended telescopic pole supports a tuned 1/2 wavelength of P.V.C. coated wire.

Matching is provided by a totally weather-proof encapsulated L/C Network.

VSWR can be adjusted in situ when the antenna is fully extended.

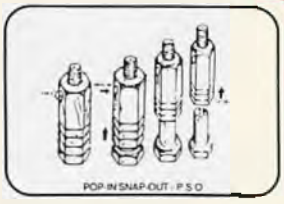
FEATURES

TYPE	1/2 WAVE GROUND INDEPENDENT
ORDERCODE	SC27
LENGTH	6.34 MTRS
WEIGHT	2 KILOS
TUNING	FIELD ADJUSTABLE
FREQUENCY	25.5 - 28.5 MHz
IMPEDANCE	50 OHMS
MAX.POWER	100 WATTS
GAIN	2.14dbi
TERMINATION	UHF SO239 FEMALE
PATTERN	OMNI DIRECTIONAL

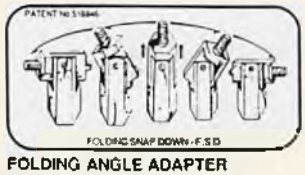
MOBILE ONE ANTENNA ACCESSORIES

POP-IN SNAP-OUT

The Pop-in Snap Out quick release system has been developed for the fast and easy removal of mobile whips from their base mounts. Once the P.S.O. has been attached to the base and antenna, there is no need to engage in any more tedious unscrewing to remove it. Just Pop in the button aand the antenna will "Snap" from its uniquely designed locking apparatus.



POP-IN SNAP-OUT - P.S.O.



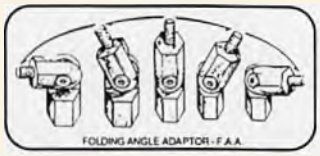
FOLDING SNAP-DOWN - F.S.D.

FOLDING SNAP-DOWN

This heavy duty Folding Snap-Down adapter has been designed to allow the antenna to remain vertical at high speeds, yet when confronted with overhead obstructions, the F.S.D. allows the antenna to be folded down

FOLDING ANGLE ADAPTER

The Folding Angle Adaptor's ability to fold 180° means that while mobile bases can be mounted at any angle, the antenna can assume the required angle for optimum performance. The F.A.A. enhances the performance as well as the appearance of the mobile antenna. Suitable for heavy whips.



FOLDING ANGLE ADAPTOR - F.A.A.

SPRING ASSEMBLY (SMALL) - S.A.S.

SPRING ASSEMBLY (Small)

The Spring Assembly reduces the incidence of impact shock to the vehicle panelling directly beneath the base mount by allowing the antenna to deflect from overhead obstructions.

SLOPE ADJUSTER

The Slope Adjuster's ability to swivel enables the antenna to be adjusted vertically for better performance and appearance from a base mount angle of up to30°. Suitable for light whips.

SLOPE ADJUSTER - S.A.

MOBILE ONE MAGNETIC MOUNT

MAG12C Mobile Magnetic Mount

The Mag12c Magnetic Mount Assembly has been manufactured in Australia to meet the varying needs of the Mobile User, who requires an easily removable antenna mount for portable applications.

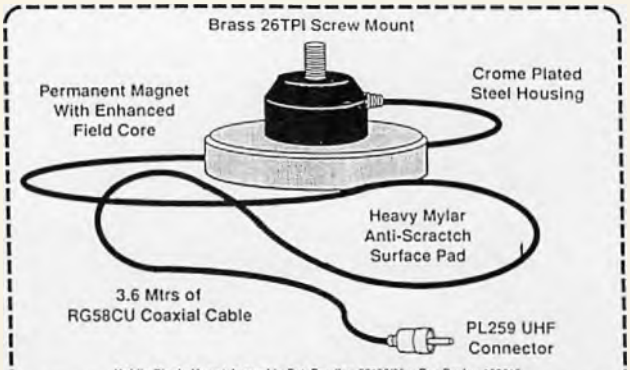
For some time, it has been noted that a need exisedt for a good Magnetic Base Mount that grips the car at up to speeds of 100 kph+ with a 60" (1.5mtr) whip.

Most Australian standard 5/16" X 26 TPI female screw thread whips (to a maximum of 200 grams) can be used with the MAG12C

All terminations are encapsulated in the Glass Impregnated Nylon moulding of the 'Mobile Dipole Mount' base assembly, (Patent Pending), giving maximum mechanical strength and total weather protection for all electrical connections.

Another feature of this unique mount is the anti-scratch protection pad, made from mylar fibres. It is tough and long lasting, yet will not scratch or damage the paintwork of your vehicle.

THE MAG 12C MAGNETIC ANTENNA MOUNT



Mobile Dipole Mount Assembly Pat. Pending 62198/86 - Reg.Design 100815

NEWCOMERS START HERE

Welcome to CB Action magazine — the only regular CB publication in Australia and also the oldest, having been first published in 1977.

CB is a form of radio communication which is popular around the world, however, unlike amateur radio, it is not necesary to pass an examination to go on air.

All that is needed is a licence and the equipment.

CB Action, though, is a little more than just CB. While CB is the backbone of the magazine, it also has reports and reviews on scanners, antennas, shortwave radios and other areas of general interest to radio communicators and listeners.

In the course of reading the magazine (and on air) it is probable that newcomers will encounter words which mean nothing to them.

This short introduction is to help these readers understand CB terminology and its application.

It should be stated right now that ***there is no special CB language.***

Many newcomers believe that they require a lecture on the basics of CB language before they can operate on air.

This is simply incorrect.

While some stations use esoteric CB jargon, all Australian CBers understand English and this is all you need to go on air.

A half hour spent listening before going on air for the first time will be time well spent as you will hear how to initiate a contact and how pass the conversation back to the other station and, really, that's about all there is to it.

Even so, while it is not essential that you know and understand some of the various abbreviations used and/or the amateur 'Q' code, it can be helpful to you.

That is what this introduction is all about.

One of the first things you will hear is a ***QSO.***

A QSO is simply a contact with another station.

It derives from the amateur radio operator's 'Q' code — a form of abbreviation used by amateurs when sending ***CW*** *(continuous wave transmission) which is simply another way of saying morse code.*

Morse code is not used in CB, however, a number of 'Q' code abbreviations are . . .

A ***QSL*** *is a card sent from one station to another confirming that these stations have been in radio contact. It is not sent after every contact, but, is uaully exchanged after a* ***DX*** *contact.*

DX means long distance, usually overseas but often just interstate. If the station to which you are talking asks whether you QSL the operator is asking whether you will send him a QSL card to confirm the contact.

A ***QTH*** *is the 'Q' code for location so, if you're asked "what's your QTH?", the station is asking where your station is located. It's just as easy to ask in plain English, but, it adds a bit of glamour if you say QTH instead.*

You'll hear many stations talking about ***SWR*** *(usually pronounces swer — which is incorrect — it is SWR spoken as letters) and this stands for* ***S****tanding* ***W****ave* ***R****atio. This is essentially a measure of the antenna's effectiveness and is read off an* ***SWR meter.*** *You will learn what SWR is from this magazine or from a CB store.*

When you hear a station calling ***CQ CQ*** *it means that he is looking for a contact with another station. CQ means 'seek you' while* ***CQDX CQDX*** *is different (seek you long distance) in that the station only wants a long distance contact — not a local one.*

AM *stands for amplitude modulation while* ***SSB*** *stands for single sideband. If you have an AM only rig it's nice for everyone if you stay on the lower channels and, conversely, if you are using SSB you should restrict your activity to the upper channels.*

QSB *means that the signal has a tendency to fade — that is, it goes from strong to weak and back to strong again, sometimes over a period of seconds and other times over a period of minutes.*

It is not a fault of the station, but, of atmospheric conditions. If a station says there is QSB on your signal it means that your signal is fading and when this occurs it is best to keep your ***OVER*** *short or you are likely to lose the other station while you're talking.*

SKIP *is essentially the same as DX — if the skip 'is running' it means that there are interstate and/or overseas stations being heard.*

BEAM, YAGI and ARRAY *all mean much the same. They mean that the station is using an antenna system which effectively (and legally) increases the restricted power output of the CB rig and can be pointed at the other station for improved communication.*

A ***ROTATOR*** *is used to turn a beam, Yagi or array. Incidentally, YAGI is spelt with a capital Y as Yagi is the name of the inventor of the beam.*

LINEAR, BOOTS, AFTER-BURNER, LITTLE HELPER, etc *mean that the station is using illegal equipment to increase the power output and will eventually receive a call from* ***DoTaC.***

DoTaC is used in this magazine as an abbreviation for the Department of Transport and Communications — the authority charged with the regulations of CB radio.

A ***POWER MIKE*** *is an after-market accessory which can also improve your station's 'talk power'. Whether or not they are legal is open to question, but, they probably aren't.*

QRM *is when another station is making it difficult to hear due to being too close to your own station, having a rig in poor condition, running illegal power, etc.*

QRN, *however, is noise made by atmospheric conditions or, more likely, static caused by poorly installed electrical power lines out in the street.*

A ***SWL*** *is a* ***S****hort* ***W****ave* ***L****istener but an* ***XYL*** *is usually the wife — an ex-young lady.* ***YL*** *is of course young lady and a* ***DOUBLE BUBBLE*** *is a police vehicle.*

GOOD BUDDY *is a somewhat derogatory term applied to operators who still use American style CB jargon such as, "what's your 10-20?" or "that's a big 10-4".*

This 10 code originated in America, but, is now rarely used as it indicates that the operator has what can be best termed a 'juvenile brain'.

A ***BREAKER*** *is an operator who wants to get into an existing conversation and there's nothing wrong with* ***BREAKING*** *providing that you only call in the pause between overs.*

If you break between overs one of the stations will probably say ***ACKNOWLEDGE THE BREAKER*** *which means that you have been heard and will be invited to join in when the stations are ready — in other words standby and don't keep shouting.*

An ***ALLIGATOR*** *is another derogatory name which is applied to an operator who talks too much but doesn't listen — in short, all mouth and no ears.*

SANDBAGGING *means to listen to a conversation but not join in yourself.*

A ***DUMMY LOAD*** *is a device which should be used when testing or tuning your rig. It can be purchased from any CB store and should be a must in your list of station equipment.*

UHF *stands for* ***U****ltra* ***H****igh* ***F****requency and is the 477 MHz CB service.*

LONGPATH *means that you are pointing away from a station you are speaking with rather than* ***SHORTPATH*** *which of course means the opposite.*

Different atmospheric conditions mean that at certain times you can communicate with (usually overseas) stations by sending your signal right around the world rather than by the most direct path.

An operator who works out of the legal channel frequencies or runs illegal equipment is referred to as a ***PIRATE.***

An ***ATU*** *stands for an* ***A****ntenna* ***T****uning* ***U****nit which is used to tune your antenna to a good match with your rig if the SWR is a little too high.*

It won't cure any major SWR problems, but, it can adjust a slightly high SWR reading to a 1:1 match with the transceiver.

If you receive a visit from the ***RIs*** *you're probably in trouble for causing* ***TVI*** *—* ***T****ele-****V****ision* ***I****nterference — or —* ***BCI*** *—* ***B****road-****C****ast* ***I****nterference. RIs stand for* ***R****adio* ***I****nspector — the gentlemen from DoTaC who call around if there are any complaints about your station.*

RIs are also often called ***RED INDIANS.***

COAX *stands for coaxial cable, the link between your rig and the antenna while a* ***WHIP*** *is not something wielded by a leather-clad lady but is rather a generic term for mobile antennae.*

A ***REPEATER*** *relays a UHF CB signal from one point to another so giving much greater range of communication and a repeater list is published in every second issue of this magazine.*

After all of the above we reiterate — it is not necessary to learn CB jargon to go on air. Sure it helps, but, it will all come in time — for now though just use commonsense English and if you don't understand something don't be afraid to ask — remember everyone you hear also had a first time on air.

We hope you enjoy CB and CB Action.

OUT OF BAND DXers SHOULD TAKE THE HINT

DoTaC ON THE WARPATH

In our last issue we made mention of the fact that the DoTaC folk were making something of a nuisance (an expensive nuisance at that) of themselves and making life very difficult for both out-of-band DXers and the brain-dead brigade.

Now, we've got no sympathy whatsoever for the 'brain-dead', but, we do have plenty of sympathy for serious DXers — particularly those who work within the allotted 40 channels and even for those who find themselves maybe just a few channels higher than they should be...

It was disappointing then to discover that the DoTaC folk appear to have been given a ruling that they should be particularly active against the Alpha Tango Group, the Italian-based DX club which is probably just as illegal in Italy as it is in Australia.

Illegal it might be, but, from what we hear on air the AT members are good operators using good techniques as against some of the 'rubbish' stations heard both in and out of legal frequencies.

IN THIS CASE — IT'S WISE NOT TO ADVERTISE

Unfortunately though, the fact remains that if you choose to advertise yourself as a DXer (and if you're using an AT callsign it's for sure that you are) then you must take the risk of being **'busted'** with consequent loss of equipment and a hefty fine to go with it.

Let's face it, if you're up on channel 65 with a signal that is 50db over 9 in each and every direction and using an AT callsign there is more than a reasonable chance that any listening RI will say to himself, '' now, there's a serious overseas DXer running an amateur rig and linear amp way out of his legal territory — maybe I should drop around and see him''....and you could hardly blame him for having such thoughts.

The errant operator is really pushing his luck and literally advertising that he's so illegal it just doesn't matter — in fact it really becomes a matter of principle to the RI that he 'busts' the unfortunate in a big way.

Now I personally, and thousands of CBers all around the world, do not believe there's anything wrong with working overseas DX, but, the authorities don't go along with this and the regulations clearly state,**''CB stations are only authorised to communicate with one another within Australia using voice communications''....** that's how it reads and that's all that matters so far as the DoTaC is concerned.

Realistically, however, it is extremely unlikely that the DoTaC folk will get nasty if you just happen to hear an overseas station booming in on any channel below 40 and decide to speak to it, but, if you're sitting up on channel 75 and ''CQDXing'' for hours on end with an enormous signal then you're really pushing your luck and the old adage, ''if you've done the crime you should be prepared to do the time'', definitely prevails.

Apart from any other reason, operating well out of band on 27MHz really **does** cause many problems to other services — not the least being the marine operators and there is no way that CBA condones totally senseless operation.

The recent crackdown on AT members is in my opinion an unfortunate one, but, it does give all patently illegal operators fair warning that the DoTaC is going to draw the line somewhere and in this instance it looks to be against the Alpha Tango Group initially with others to follow.

Whatever else you might think about DoTaC they're not stupid — slow maybe, but not stupid.

Like everyone else, they are aware that DX opportunities are increasing with every passing week due to Cycle 22 and it would seem that they are choosing now to bust obvious pirates in the hope that **everyone else gets the message loud and clear.**

Ten years back, when the last sunspot cycle peaked, there was wall-to-wall DX right across 27MHz and it was often easier to speak to American CBers than it was to speak with someone in another Australian State.

Then, as appears to be happening now, the authorities suddenly launched an attack against out-of-band operators — particularly those with callsigns such as the KT group (which was the equivalent of today's AT group) which, like the AT members, were serious DXers who usually operated well above the legal channels.

Having put the 'heavies' on, there was a large number of overnight QRT happenings in and around both Melbourne and Sydney and those who were lucky enough to escape unscathed most certainly got the message with the result that KT callsigns were rarely heard and, if they were, they were operating on legal channels.

Along with this assault went one against the brain-dead and foul-mouths and the results were, to say the least, very impressive.

...AND THE NODDIES ALL WENT AWAY

In a matter of a few weeks, 11 metres was almost totally free of the noddy brigade, there was hardly a squeak of Australian activity on illegal frequencies and everyone was being remarkably polite.

However, DX was being worked on the legal channels and DoTaC displayed no interest whatsoever — methinks this is their aim today. They obviously cannot bust dozens of stations working on legal channels for working DX, but, they can and are taking action against the obvious targets.

The message they are sending out is apparently that **out-of-band operation is not on** and while it has been largely tolerated during the past few years due to a lack of good propagation, the upcoming Cycle and improving DX conditions are not going to be allowed to bring large numbers of operators up to the illegal channels.

A WINK'S AS GOOD AS A NOD

So be warned — nice as it is to use DX callsigns such as AT, or to run amateur rigs and linear amps and/or work out of band — you are taking the risk of losing your equipment and copping a fine as well. If you're prepared to take this chance then we hope you work plenty of DX — and also receive the QSL cards — but, **don't grizzle if you're busted....!**

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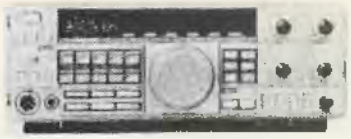

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ALL MAJOR CREDIT CARDS ACCEPTED

"SCRATCH-AND-WIN" FEVER HITS THE CBRS

Well, Furious Fewster said that it 'would come to this' a couple of years back and, sure enough, it has - is this man never wrong . . .!

Back in 1987 or so I announced in Queensland Scene that DOC was seriously considering the introduction of 'instant tickets' (along the lines of the traffic tickets we all know and love) to the CBRS and other services.

At the time all the self-proclaimed CB 'experts' rubbished this as either a bit of tongue-in-cheek Fewster humor or another chapter in a long line of put-ons, and one well-known Brisbane loudmouthed know-all was heard to say repeatedly on-air that, 'it's just another one of Fewster's ratbag hoaxes because one of my mates is an RI and he told me he'd never even heard of on- the-spot tickets for CBers.

'As usual, the 'experts' and 'gurus' were dead wrong !! By the time you read this .... as of 1 August in fact .... 'scratch-and-win' tickets will be part of life on the Magic Electric Wireless.

The infringement notices (Form DOC53) are a four-copy affair which can be issued on-the-spot by Radio Inspectors or, more probably, mailed to offenders at a later date.

Offenders receive Parts A and B, while Parts C and D are DoTaC's own copies. You mail in Part A and Part B with your payment, and Part A will be officially stamped and returned to you so you can frame it and hang it on your shack wall along with your AOCP and your QSL cards or whatever.

The form is reminiscent of a Lotto entry.

Fill in your name and address and a few other details, cross out a few squares, and 'BINGO !!'.... you're a winner.

DOC53 is aimed at eliminating the need for RIs to appear in court to give evidence in cases involving lesser offences such as possession of unlicensed transmitters, operating unlicensed transmitters, minor licence breaches, etc.

DOC53 will **NOT** take the place of prosecution in more serious cases . persistent disruption of radio communications, hoax 'Mayday' calls, etc... and neither it should.

The option remains open for DoTaC to go-for-broke with the real bad-ass-offenders, but, the introduction of 'scratch-and-win' tickets for minor breaches will free RIs from non-productive paperwork and court appearances and allow them to spend more time chasing serious offenders.

IGNORE IT AND YOU'RE IN COURT

When you're issued with a Traffic Infringement Notice you have the option of paying the prescribed penalty within 14 days (21 days in some states) or ignoring it and being subsequently summonsed to appear in court, where you can have your say.

If you pay up you're tacitly admitting that you committed the offence.

The same applies if you're presented with a DOC53.

Ignore it and you'll be summonsed to appear in court in due course unless DoTaC withdraws the notice.

Pay up within 14 days and they'll automatically hit you with the 'Guilty' stamp.

There may be a 'consolation prize' for persistent Bad Buddies as, unlike a traffic ticket, DOC53 doesn't require the 'defendant' to sign the form.

In the absence of a signature it may be possible to prevent antecedents based on DOC53s from being presented in court, so instead of ten years you'll only get five.

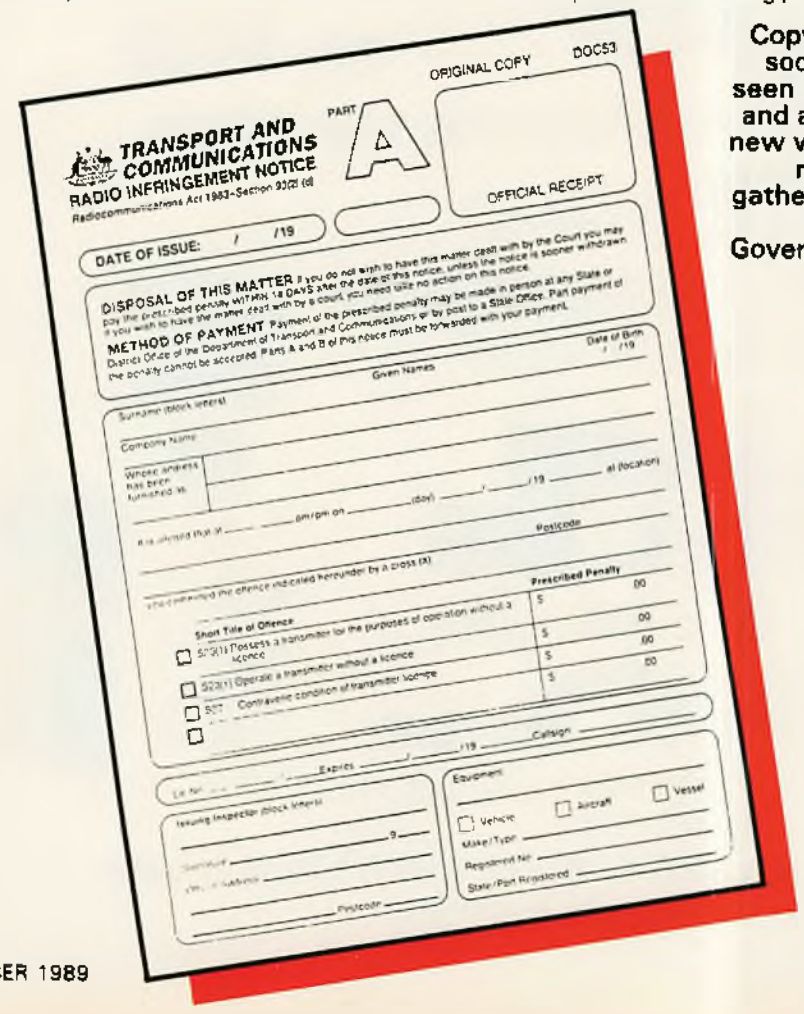
DOC53 forms are 'accountable'.

In Government-speak this means that the whereabouts of every single page must be known.

The blank bit alongside the 'date' section will be imprinted with a four-digit serial number preceded by a state identifier .

'N' for New South Wales, 'Q' for Queensland, 'V' for Victoria, etc, and even cancelled forms must be kept and lodged with the Department of Void Forms and Used Typewriter Ribbons for registration.

RIs aren't allowed to use them as scribble pads or for making paper aero-


ORIGINAL COPY DOC53

TRANSPORT AND COMMUNICATIONS
RADIO INFRINGEMENT NOTICE
Radiocommunications Act 1983–Section 92(2) (a)

PART A

OFFICIAL RECEIPT

DATE OF ISSUE: / /19

DISPOSAL OF THIS MATTER If you do not wish to have this matter dealt with by the Court you may pay the prescribed penalty WITHIN 14 DAYS after the date of this notice, unless the notice is sooner withdrawn. If you wish to have the matter dealt with by a court, you need take no action on this notice.

METHOD OF PAYMENT Payment of the prescribed penalty may be made in person at any State or District Office of the Department of Transport and Communications or by post to a State Office. Part payment of the penalty cannot be accepted. Parts A and B of this notice must be forwarded with your payment.

Surname (block letters) Given Names Date of Birth / /19

Company Name

Where offence has been furnished to

It is alleged that at ____ am/pm on ____(day) ____/____/19 ____ at (location)

Postcode

that I committed the offence indicated hereunder by a cross (x)

Short Title of Offence	Prescribed Penalty
☐ 92(1) Possess a transmitter for the purposes of operation without a licence	$ 00
☐ 92(1) Operate a transmitter without a licence	$ 00
☐ 527 Contravene condition of transmitter licence	$ 00
☐	$ 00

Licence No. ____ Expires ____/____/19 ____ Callsign ____

Issuing Inspector (block letters) ____

Equipment

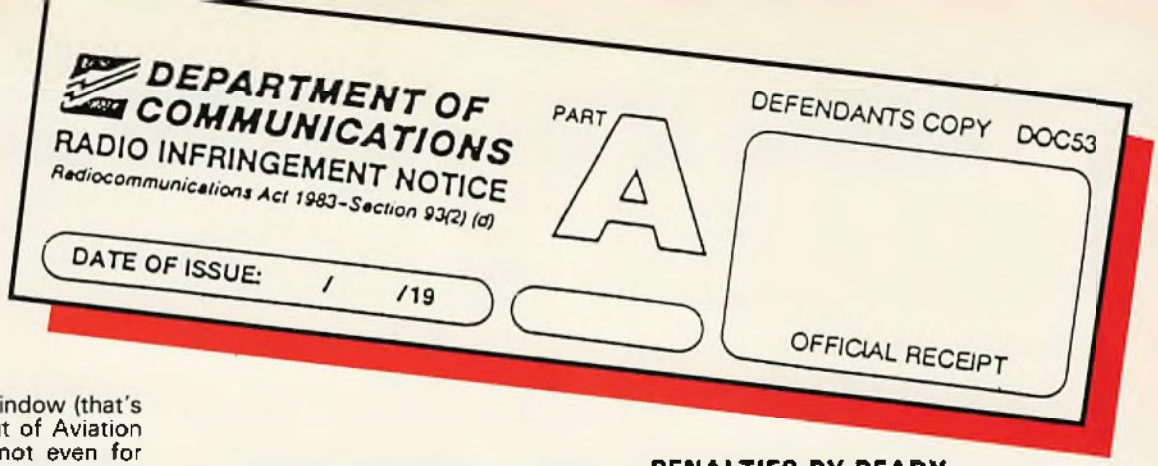
☐ Vehicle ☐ Aircraft ☐ Vessel

Make/Type

Registration No.

State/Port Registered

Copy of the soon to be seen DOC53 and a whole new world of revenue gathering for the Government.


DEPARTMENT OF COMMUNICATIONS
RADIO INFRINGEMENT NOTICE
Radiocommunications Act 1983–Section 93(2) (d)
PART A
DEFENDANTS COPY DOC53
DATE OF ISSUE: / /19
OFFICIAL RECEIPT

Yes, Rod did have a copy of the earlier DOC53 proposed by the then Department of Communications.

planes to chuck out the window (that's why they were moved out of Aviation House in Brisbane) and not even for 'other purposes' in a dire emergency like when someone's pinched the Sorbent.

Consequently they'll be hard to get (unless you're an offender) even after 1 August.

As I write this (late June) they are **IMPOSSIBLE** to get because they haven't even been issued yet.

Without a 'demo' DOC53 to back up this story the Fewster-knockers would be out in force saying that it's just another hoax.

No doubt the loudmouthed Brisbane CB 'guru' will instantly hit the airwaves claiming that the accompanying reproduction is a computer-generated fake I knocked up on my Cray-2 because, 'my mate at DoTaC told me that not even the RIs will be issued with DOC53s before August so how could that bloody Fewster get one to print in CB Action', or some such codswallop . . . but it IS the real thing, and this fact will be painfully apparent to a few readers by the time they read this article.

Facsimile of some of the penalties — interesting stuff to say the least.

SECTION 93(2A)(a) OFFENCES

	Short title of Offence	Prescribed Penalty Person	Corporation
15(1)	False compliance statement	$200	$1000
15(2)	Submit unrepresentative device	$200	$1000
26(8)	Authority to be retained for 1 year	$ 50	$ 200
30	Failure to notify holder	$100	$ 500
* 65(g)	Harassment	$100	$ 500
65(17)	Retention of records of sales	$200	$1000
68	Failure to return ID card	$ 50	N/A

Plus offences against the regulations other than offences against the regulations to which 93(2A)(b) refers.
Calculation: 1/5 of maximum penalty but not less than $50.

SECTION 93(2A)(b) OFFENCES

10(8) Contravene condition of test permit
27 Contravene condition of transmitter licence
35(8) Contravene condition of temporary permit
38(8) Contravene condition of receiver licence

Offences against the regulations that relate to test permits, transmitter licences, temporary permits or receiver licences are a breach of the applicable licence or permit conditions.

Calculation: An amount equal to whichever is the lesser of:
i) 1/5 the maximum penalty; or
ii) twice the applicable permit or licence tax, but in any circumstances are not less than $50.
(Where the maximum penalty is $1000 for a natural person, or $5000 for a corporation).

SECTION 93(2A)(c) OFFENCES

23 Operate or possess an unlicensed transmitter
37 Operate or possess and unlicensed receiver

Calculation: An amount equal to whichever is the lesser of:
i) 1/5 the maximum penalty; or
ii) twice the applicable temporary permit or licence tax, but in any circumstances are not less than $50.

(Where the penalty is $2000 for a natural person, or $10,000 for a corporation).

NB: S.83 applies and has been taken into account in the above text.

PENALTIES BY READY RECKONER

Also included is a facsimile of the back of DoTaC's own copy of DOC53 .... a 'ready reckoner' to help RIs work out how hard to hit you in the pocket for offences other than the three most common ones listed on the front of the form....(other offences are entered by hand next to the blank square).

I did punch this out on a computer as the original wasn't suitable for reproduction in the magazine, but, it's 100% accurate, even to the misprint marked with my asterisk which should read '65(a)'.

Much of this refers to services other than the CBRS.

Basically the penalties of interest to CBers are $50 for possessing an unlicensed rig (Section 27), $50 for operating out-of-band (also Section 27 but with the and/or possibility of a stiff penalty for using a 'sub-standard' device), and $100 for harassing/jamming under Section 65(a) although offenders could conceivably be hit with Section 27 as well.

Penalties apply to 'natural' persons....does this mean that poofters can do whatever they like on-air ?

Also, just to prove that DoTaC has been preparing to introduce on-the-spot instant ticketing for a quite some time (and as a bit of a shot at the wankers who reckoned I was talking through the top of my head when I first mentioned it years ago) I've included a reproduction of the header of a never-released DOC53 which I dug out from my files .... something you won't see anywhere else because they were never introduced and are now redundant ... dating back to the days when DoTaC was still known as DOC.

The rest of the form is identical with the current DOC53 apart from some minor changes to the wording of the 'Short Title of Offence' section.

In those days Part A, now branded 'Original Copy' was ominously named the 'Defendant's Copy'.

Maybe DoTaC is trying to project a friendlier image, and so they should in my opinion.

After all, apart from the problems caused by a few dedicated troublemakers, the 'war' between the RIs and CB pirates is really only a game of electronic hide-and-seek.

HERE'S A DO-IT-YOURSELF

ROOF-TOP INVERTED V

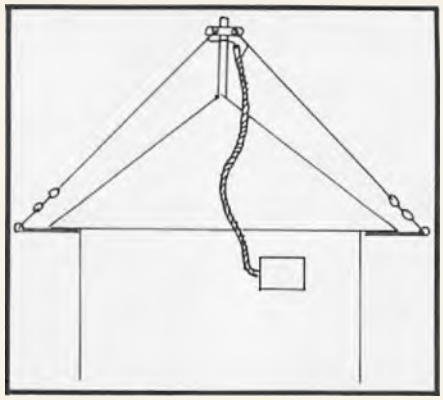
If you are a short wave listener who enjoys playing around with antennas then an Inverted Vee format will give you plenty of opportunity to test various length Vees and their effectiveness on specific SW bands.

Although it is called an Inverted Vee, it is simply a dipole antenna which, instead of running horizontal, is bent in the centre to form a Vee. An advantage of the Vee over a dipole is that it can be located to take up considerably less space than a dipole and so is good value to listeners with a limited area in which to erect an antenna.

An Inverted Vee (dipole) antenna consists of two equal halves and is cut to specific dimensions to function at its maximum on a particular band. Each half of the antenna is one quarter wavelength and overall the antenna is half a wavelength.

The antenna shown can be mounted on any roof top, **providing the roof is not metal.** As illustrated, the antenna is suspended from a short mast placed above the roof peak — this mast can be any height or it can even be non-existent, although it's performance will be marginally better if in fact a mast is used.

If no mast is used the antenna wire should of course be plastic covered,



the gauge of wire is not important other than it must be strong enough to withstand the weather.

IT'S NOT TECHNICALLY CRITICAL

Likewise, for this type of antenna there is no hard and fast rule about the angle formed by the Vee, providing that it is somewhere between 90 and 135 degrees it will operate perfectly well.

Egg type insulators must be fitted to each end of the antenna and also to the centre sections where it joins up to the mast or other support. 50 ohm coaxial cable is used as the feeder with the centre core connected to one side of the Vee and the braided shield going to the other half (refer to diagram).

At the receiver end, the centre core goes to centre post of the plug and the braided shield to the outer (or earth) section of the plug. The feeder cable should fall away from the antenna, not run parallel with it.

If the overall antenna length is greater than the available area, you can place the centre of the Vee at the front peak of the roof and run the two legs to the bottom back corners of the area so giving you a diagonal dimension.

The actual placing of the antenna legs will have some effect on its receiving ability and placing them at different angles and/or directions will increase signal reception from one direction and decrease in another.

The formula for arriving at the correct lengths for the two legs is; one half wavelength (overall length) in feet equals 468 divided by Frequency (MHz). An example is, for the 11 Metre Band, centred on 27.200MHz — 468 divided by 27.2MHz equals 17 feet 3 inches which gives a leg length (quarter wave) of 8 feet 7.5 inches.

RUSSELL BRYANT'S

SCANNING ACTION

THE WHERE, WHY AND WHAT ABOUT SCANNERS

It's time to clear the mail bag again and answer a few letters.

Steven from Hobart (TAS) writes that he recently purchased a scanner that doesn't have a search function, making it necessary to know specific frequencies to program the scanner.

Steven, the fact that your scanner is without a search mode should not be a problem. A method of finding new frequencies is to pick 10 or so in sequence, program them into the memories and one by one eliminate the active ones. Be sure to keep a note of the frequency and the user.

Our next letter is from Joe in Epping (NSW). He states he has two scanners, an AOR 2001 and Icom R 7000. The latter is used as a base unit and is programmed with frequencies from the VHF satellite band. Joe says little is printed about "birds" and he would like to see more. For those with their ears in the clouds, the Russians have a number of spacecraft orbiting the earth at present. they can be monitored on a variety of frequencies. Some of those frequencies are:

143.625 (WFM) IR space complex low priority traffic.
121.700 (WFM) Soyuz-manned spacecraft.
166.000 (DATA) Soyuz.
247.500 (BEACON) Kavant Lab.
142.417 (WFM) Salyut 7.

The downlink frequencies (spacecraft-to-earth) for the new Oscar Amateur satellites are:

145.825-145.975 MHz Oscar 10
435.800-435.900 MHz Oscar 12
145.825 MHz UoSat 9
435.025 MHz UoSat 9
2401.00 MHz UoSat 9
145.825 MHz UoSat 11
435.025 MHz UoSat 11
2401.50 MHz UoSat 11

Any of the scanners that have user-selectable receiving modes are suitable for chasing satellites, along with a good discone antenna.

Alex from Bondi (NSW) included in his letter a list of security companies he has logged. He says that most of his listening is at night when these organisations are on the air.

Some of the companies are:

462.925 Sydney University Security
463.700 Checkmate Security
465.400 Bondi Junction Security
472.975 I.B.M. Security
492.150 TNT Security
494.150 MSS Security

Alex also states that he was happily listening to Darling Harbour security on 494.450MHz, when suddenly it disappeared. Does anyone happen to know its whereabouts? If so, drop me a line and I will pass it on to Alex.

Robert from South West Rocks (NSW) writes that he recently discovered a number of frequences used by airline companies that are outside the normal AM aircraft band and he was wondering what they are used for.

Robert, of the two example frequencies you mentioned, 164.650MHz is used by QANTAS Transport to manage its fleet of motor vehicles. Ansett uses 463.675MHz at Kingsford Smith Airport to co-ordinate passenger movements, to follow lost baggage and to check on any ticket problems that may arise. Most international and domestic air carriers use VHF and UHF frequencies in their day-to-day operations. A few more to keep an ear on are:

166.660 QANTAS engineering Sydney, Melbourne, Brisbane and Perth
461.200 QANTAS ramp Sydney
461.200 EAST WEST Sydney
463.075 AIR QLD Cairns
464.950 QANTAS Brisbane, Melbourne, Adelaide
461.100 QANTAS Melbourne
462.975 OLYMPIC & K.L.M. Melbourne
463.600 ANSETT Melbourne

For those readers who like to monitor aircraft, pick up a copy of Australian Aviation magazine. A column called "On The Airbands" by Bob Bell lists current and future changes in air frequencies and keeps you up to date with what's happening skywards.

Robert would also like to know if the frequencies between 520-820MHz and 910-300MHz are used for anything.

Television UHF carriers take up most of the space from 520 to 820MHz and low power links and wireless microphones occupy 910-300MHz.

Geoff from Alstonvile (NSW) has potpourri of questions concerning the users of a number of frequencies in his area.

Geoff, 76.790MHz is allocated to the NSW Ambulance Service and those "beeps" are the product of its data transmission and selcall setup. On 84.480MHz you are monitoring the Volunteer Rescue Association. The State Emergency Service has 168.820, 168.850, 468.600, 468.625, 468.650 and 467.250MHz allocated to it for use statewide. The Ballina Shire Council operates on 167.185 and the Bushfire Helicopter Brigade on 168.880MHz. As for the Rescue Helicopter Service try listening on 487.000MHz around Yamba, 488.650MHz on the North Coast and 489.225MHz in Byron Bay. Finally, Geoff would like to know if his 10-channel PRO 38 lends itself to memory expansion. Unfortunately Geoff the PRO 38 is like most of us — it has to live with what nature gave it.

For the mariners among us, Bob of Sydney sends along some information on new VHF marine services. OTC has a seaphone channel up and running in the Hawkesbury River area, north of Sydney. The frequencies are 156.250MHz for the ship and 160.850MHz for the shore station. Rob also mentions that OTC will shortly (the end of 1989) have near blanket coverage for

seaphone along the eastern coastline of Australia, extending 80kms to sea.

Adrian from Melbourne writes that he has heard the Military Police on 79.000MHz in and around Melbourne. H also states that MP patrol cars are equipped with State police radios, so keep an ear on your favorite VK for military law enforcers.

Gerald in Werribee (VIC) sent a list of frequencies he monitors. He writes that MacDonalds Restaurants use 35.020MHz in their drive-thru facilities (this is an Australia-wide allocation). If you are within range of these headset transmitters (output is about half a watt) you may hear conversations between staff that are anything but polite. Gerald also mentions that the Port of Melbourne Authority gives regular weather reports on 156.375MHz, as well as sailing conditions on Port Phillip Bay. Another interesting frequency is 490.725MHz. It is used by the Victorian Education Department Security Service during its patrols of all government eduction establishments.

A letter from Ian in Kingsford (NSW) requests help in trying to locate the channel used by the ambulance in the Eastern Suburbs of Sydney. Ian, the ambulance uses 76.730MHz for the area mentioned. It designates it as channel 4, City and East.

A letter from Carol in North Lake (WA) contained dozens of frequencies from both government and non-government services including the Fremantle Port Authority on 167.020MHz. Carol also provided the channels used by St John's Ambulance. They are:

CH. 1 80.010MHz; CH. 2 80.025MHz; CH. 3 80.040MHz; CH. 4 80.055MHz; CH. 5 80.085MHz; CH.6 79.625MHz.

Thanks for your list. It will feature in future columns.

From one reader who calls him or herself "The Secret Republican" comes a host of information on the NSW State Transit Authority buses. Our unknown contributor lists the following frequencies and how the STA (callsign VL2UA) uses them:

CH. 1 486.225 North Sydney, Brookvale, Mona Vale and Willoughby depots.
CH. 2 484.900 Waverley, Randwick and Botany depots.
CH. 3 485.600 Burwood, Leichhardt, Kingsgrove, Tempe, Enfield and Ryde depots.
CH. 5 486.500 Bus Inspectors channel, also used to provide clearway reports.

The Sydney Harbour ferries, which are a part of the STA, can be monitored on 157.480MHz.

Moving to the Apple Isle, Nigel from Hobart provides a list of frequencies for the Urban and Country Fire Services of Tasmania and their areas of operation.

For the Urban Brigades 77.210MHz is the main operations channel for the South, North, Northwest and Northeast. In Launceston 77.735MHz is the main operations frequency in the Northeast region. In Hobart the main incident back-up channel is 77.915MHz. The brigades in the country areas to the Northeast of Launceston can be monitored on 77.645MHz. Areas Southwest of Hobart 77.435MHz. Other country channels are 77.585MHz for the Central region, 77.975MHz in the Southeast, Northeast and Northwest of the State, with the main channel for the Southeast being 78.055MHz. Thanks for your very detailed letter Nigel, it proved most helpful.

Soon to appear at your favorite Tandy retailer is the PRO2002 desktop scanner. The PRO 2002 will feature the usual bands plus the 80 MHz cellular trunking frequencies. The 200 channel memory of the PRO 2021 has been retained along with the price of $549.95. Due for release around about now is another new Realistic model, the PRO 57, a basic 10 channel desktop scanner which will cover the scan 68-88 MHz, 138-174 MHz and 380-512 MHz.

A company by the name of PROSCAN has sent me three conversion kits for the PRO 2004. The kit comprises the parts and instructions to expand the memory to 400 channels, upgrade the muting circuit, increase the scan speed to 20 channels per second and, finally, to activate 30 kHz spacing on the cellular band. I installed the kit in a PRO 2004 and it works like a dream.

The cost is only $9.95 including postage from PROSCAN, P.O. Box Q365, Queen Victoria Building, Sydney 2000.

The two best letters to this column will win one of these kits.

Now it's your turn, how about a note advising the frequencies/service being used in your area or a frequency you have not been able to identify ? I would also like to hear from readers in Papua New Guinea, New Zealand, Great Britain - or where-ever...

If, however, you require a personal reply please include a stamped and addressed envelope. From now on, if one is not included your letter will only appear in the magazine when/if there is sufficient space available.

The address is - Scanning Action, P.O. Box R16, Roselands 2196, NSW

ODDS & SODS

— NEWS AROUND THE TRADE —

WE'RE A HIT !

Don't forget that CBA is available by subscription — so you can have the very latest in feature articles, news and of course rig reviews delivered to your door.

In fact our subs also shows copies winging their way to New Zealand and other pacific neighbours, Europe, the UK, Canada and South America and of course even America. But why should the country which invented CB be interested in a mag from 'down—under' ?

It seems that Russ 'Tackleberry' Bryant's review of the latest scanners in the pages of CBA appear long before similar write-ups in America's monthly 'Popular Communications' magazine !

LIB CALLS FOR LICENCE CHANGES

Liberal frontbencher Wilson Tuckey has called for the introduction of multi—rig licensing following the increase of CB licence fees to $15 per radio.

Arguing that the many farmers who use UHF CB extensively would be financially burdened by the higher fee, Tuckey has asked Telecommunications Minister Ros Kelly to allow a single licence to cover up to 10 sets.

Farmers regard CB radio as a necessity and the new fee would be an additional burden on the rural sector, where incomes are already depleted as a result of high interest rates, according to Mr Tuckey.

WHERE DO YA GET IT ?

If you're a new hand to CB, or want some propaganda for a likely convert, where do you go ?

We receive a lot of enquiries about this from readers. And in a distinct and welcome turn-around from recent years, there is now a good variety of books and available information on CB, covering from the basics of 27 MHz and UHF to antennas, repeaters, and even sections on scanners. The more expensive texts are most comprehensive, while those costing just a few dollars or even free of charge give the essential ground rules of using and enjoying CB radio.

The following are all recommended: The Australian CB Communications Guide ($10); What Is CB Radio ? ($3); and Pearce-Simpson's 1989 Sound Advisor, which has a four-page information section and is free.

RADAR BLITZ DOWNS REPEATERS

First the truckies discovered AM CB, and so struck one of the first blows in the speed wars.

Then they found UHF CB, which exceeded AM in range and signal clarity. It also exceeded AM in price, but just avoiding a few extra tickets made the rig pay for itself.

And then the truckies discovered repeaters, the ultimate long—range early warning system. But sneaky tricks from DoTaC and the boys in blue led to a repeater—less weekend during a series of speeding blitzes conducted along the Hume Highway in Victoria recently.

Aware that repeaters were being used by truckies to broadcast far—reaching radar reports, police had DoTaC officers, including District Radio Inspectors in some areas, approach sponsors and request that repeaters be turned off from Friday to Sunday evening. All licencees agreed, according to reports given to CBA, and so the highway patrol made another record catch !

Is it a VHF scanner? Is it a HF communications receiver? Scanning Action columnist RUSSELL BRYANT reviews a handful of radio in the SONY ICF PRO 80 . . .

NOT CHEAP BUT GOOD

When I started to review the Sony PRO 80 some months ago, I was unsure of what to make of the latest receiver from the famous Japanese manufacturer.

My doubts were based on the few shortfalls of design relating to the mechanics of the radio. Those doubts shaded the many attributes that put the Sony above and beyond its competition. After all, it is the product of one of the world's leaders in digital radio technology.

The Sony ICF PRO 80 is a handheld (as opposed to a portable) HF scanner, there is no other way of describing it. To compare the 80 to a fully fledged communications receiver, is to do an injustice to the former. I was making that comparison.

The PRO 80 is available in various models, with different bands and frequencies corresponding to the area of the world from which you purchase it, and the regulations of that country. In Australia the frequency range extends from 150kHz in the long wave broadcasting band to the threshold of the VHF aeronautical band at 108MHz to 223MHz. The gap between 108-115MHz contains a portion of the aeronavigation band. Its deletion does not detract from the receiver.

Converter attached, it is possible to tune long wave signals, medium wave broadcast stations, all services on shortwave including marine, amateur, aeronautical, citizens' band, VHF low, mid and high bands, VHF aero band and the FM broadcast band. I considered the inclusion of frequencies above 30MHz to be of a secondary nature when reviewing the PRO 80. With that in mind I will mention them only in passing. The availability of VHF is directly related to the FM broadcast band and its increased popularity. In other words, it costs a little or no more to incorporate a VHF on a PLL chip.

I should at this point clarify my comments — the VHF aero band is a must in a receiver the calibre of the PRO 80 and my remarks don't relate to that band.

The Sony has a lot to offer both the novice and experienced HFer. Receiving modes available to the user are SSB, AM, AM wide, FM and FM wide for the aforementioned broadcast stations. A 40-channel programmable memory and either automatic squelch (the radio sets the limit of muting) or the normal variable type are some of the features of the PRO 80.

Muting is not confined to just FM, it can be applied to any receiving mode, even SSB. To use squelch on sideband however, may result in missing a weak signal.

The Sony PRO 80 boasts eight tuning methods; the first is by simply entering the desired frequency and mode via the keyboard. Memory Tuning is the second system and allows single button activation of a stored station. Manual Tuning searches for frequencies at a predetermined step rate, with Scan Tuning searching the entire frequency range of the radio. A Limited Scan Tuning searches between two given frequencies checking for activity. The PRO 80 will scan up to 10 stored memories via Memory Scan Tuning. The program Memory Scan Tuning is an expanded version of the above and allows up to 40 channels to be searched. Finally Priority Tuning, as the name suggests, samples the priority channels every three seconds for activity.

The ICF PRO 80 is ergonomically designed, and although large in size (compared to a conventional handheld scanner) it fits or should I say fills the hand nicely. Fully loaded (with batteries that is) the Sony weighs just under a kilogram. As it measures 90mm wide, 182mm high and 50mm deep, the Sony could not be called a pocket radio. Aimed fair and square at the travelling SWL of DXer, the PRO 80 would not take up much room in a brief case or travel bag.

The LCD multi-functional display allows instant confirmation of fequency, mode and search or scan tuning. The number keys perform dual roles when used in conjunction with the Function key — scan, receive mode, fine tune, and limit are some of the facilities available. A recessed keyboard lock button ensures that unwanted frequencies and functions are not programmed over required ones. As with all Sony receivers the key for entering data into the memory bank is labelled Execute. Other features of the keyboard are Priority, Direct Frequency Entry, Memory Scan and Scan Limits.

Atop the radio is the recessed ON/OFF switch which prevents the ra-

Sony unit is impressive from any angle, but, at a list price of around $900 so it should be . . .

dio being turned off accidentally, TNC antenna connector, volume and tone control, variable or automatic squelch, BFO (beat frequency oscillator for resolving SSB) and memory bank (Sony calls it memory page) selector. All rotary controls have multiple functions, for example if you depress the squelch control you engage the auto mute, depress the volume and you lower the tone rating and so on.

Referring back to the RF connector, the TNC is popular on UHF portables and many cellular phones are widely available in radio shops throughout the country. However, should you encounter problems in obtaining adequate supplies, Sony has included at no extra charge a TNC to BNC converter, making the connection of an external antenna simplicity itself.

The antenna Sony supplies with the PRO 80 has to be the ugliest looking thing known to man. A vivid canary yellow greets you when you open the box. A big turn-off in my opinion, when a gun-metal grey (the color of the unit itself) or black would certainly be more aesthetically pleasing. Apart from the color the on-board telescoping whip does its job very well considering the extreme compromise in physical and electrical length at HF frequencies.

Included with the PRO 80 is a carry case, the frequency converter mentioned earlier, the bloody awful yellow antenna, TNC/BNC adaptor, shoulder strap, earphone and enough printed matter to provide hours of interesting reading. A part of that reading material is the "Operating Instructions". Supplied in three languages — English, Italian and Spanish — it is simple, easy to read with step-by-step diagrams to assist in programming and operation. However, it suffers from a mild case of fractured English. A minor annoyance. To further complete the picture of being a handy travel companion, Sony includes its excellent "Wave Book" — a handy country-by-country listing of long, medium and shortwave broadcasters, with domestic FM stations featuring in a section at the rear of the booklet.

Performance was excellent. I am unable to fault the sensitivity, selectivity and adjacent channel reject at all. The small (physically) speaker delivers 400mW of AF power to the atmosphere, which is sufficient for most listening environments, even the car. The LCD display has a back-light, so in low-light situations there is no need to reach for the humble torch or other form of external lighting to view the screen.

One of the disappointing things with the Sony is the 5kHz spacing of the SW band. Enter 8867kHz and the microprocessor rounds the frequency after an extended play I became used to the idiosyncracy and coped with it.

I think a company like Sony with the technology available to it could provide at least 1kHz spacing of the PRO 80.

Apart from the color of the antenna and frequency spacing, I quite liked the radio. The idea of a handheld HF scanner appeals to me.

The inclusion of the FM band and VHF bands is a bonus adding to the versatility of the unit and directly increasing its appeal to people who wouldn't normally use an SSB receiver.

The PRO 80 is not cheap, retailing for around $1000. I am told that Sony does discount it to $800, making it slightly more affordable. I don't normally rate the radios I review but in the case of the Sony, given its limitations, I'd say it was a definite eight-and-a-half out of 10.

Thanks to Sony for the loan of the PRO 80 used in this review.

Control panel is on top of unit and all rotary controls have multiple functions.

THEY'RE EVEN BETTER THAN THE PREVIOUS MODELS . . .

WULF BEAMS ARE BACK

As mentioned in our last issue Werner Wulf is back in business with his well known Yagi and vertical antennas, however, the Yagi beams are in fact quite different to the 'cam-lock' version pioneered by Werner.

Whereas the original Wulf line of Yagis had the elements secured to the boom by a camshaft lobe arrangement, the new antennas use a pair of machined 'clamps' through which the element is fixed with this in turn being located onto the beam with a U-clamp.

If this all sounds somewhat confusing, don't worry. It does in fact make for much easier assembly and and extremely strong antenna.

Werner's biggest standard 10/11m beam is a five element unit, but, because I'm a great believer in bigger is better I asked him to produce a seven element unit which he duly did and which I decided to stack above a five element 15m Yagi atop a tilt-over Nally tower.

NOT ALL THAT EASY..!

Now while this is easy to say it really isn't quite that easy to accomplish.

The Nally tower, while of the tilting variety, can of course only come down as far as the antenna will allow it and with a three section 15m boom measuring just on 30 ft in overall length this means that, after removing one section of boom and attached elements, the tower mast is still at a height above the ground of around nine feet.

The boom of this particular Wulf Yagi measures 27 ft and it also is in three sections, however, unlike the 15m beam which is held together with bolts through the sections, the Wulf boom sections join together on a tapered solid section of aluminium. The joint is dead strong and the boom sections cannot be easily separated once they are joined together.

Now this is fine if the boom only measures 12 or 15 ft as it can be easily handled, however, when you have a boom measuring 27 ft. you also have some handling problems with not the least being that the centre of the assembled boom is 13.5 ft. above the ground.

This of course means that the boom attachment to the mast is at 13.5 ft. and this is the height at which you will be working for all but the first time installation. With the initial installation, you can first attach the central section of the boom to the mast, then the elements, then the next boom section and elements, winch it all upright, rotate the antenna, lower and fit the final section.

Next time, however, that you want to either work on the antenna and/or remove it from the mast, you will face the problem of trying to deal with a 27 foot long boom which cannot easily be separated into sections.

Now this I'm sure is going to present some interesting problems and I am not looking forward to the time I need to remove it from the tower.

Even without assembly instructions (Werner had not at that time got around to printing new instruction sheets) there is little problem in putting everything together.

IMPRESSIVE ENGINEERING

You cannot help but be impressed with the superb engineering and while I have always found the quality of Werner's antennas to be at least the equal (and usually better than) any other beam manufactured here or overseas, I feel that the new method of attaching the elements to the boom is far superior to the 'cam-lock' used previously, also, the element sections are now joined together by a 'knock-on' tapered ring of aluminium and here again I think this is an improvement over the previous method.

So having assembled the antenna and attached it to the mast which in turn is winched upright, how did it look.

Well, first off, not all that good.

For openers I had fitted it to the mast at an angle, somewhere between vertical and horizontal although I had obviously tried to line it up horizontally and, for seconds, I had not thought to guy the antenna to the mast as Werner had advised.

Seven elements of Werner Wulf 10m antenna above five elements of Hi-Gain on 15m is a lot of metal to have in the air . . . we'll keep you posted if/when it all hits the ground.

ATTACK OF THE DROOPS

The result was an antenna which drooped at either end in a somewhat drunken fashion and gave every appearance of being likely to convert itself to an inverted Vee format with the first gust of wind and/or well fed magpie which might choose to roost on it.

So down in all came for the necessary adjustments.

Getting it properly horizontal was not all that much of a problem although handling a 27 foot long boom complete with seven close to 18 feet long attached elements does lend itself to some drama as you try to turn it on the mast while at the same time prevent it from crashing to the ground taking you with it...

A right angle section of aluminium was attached to the boom with a u-clamp and a tensioned wire guy was run from each end of the boom to eliminate the droop and it was again hoisted skyward.

This time around it looked one helluva lot better although it was still not totally horizontal — maybe about 85, rather than 90 degrees, but, it didn't look too bad at all.

So came the moment of truth....

GOOD SWR FIGURE

Instead of testing the antenna on both 10 and 11 metres as we normally do, this time I elected to space it out for 10m only because it's obvious that if it performs well on 10m then it is also going to do the same on 11m.

Firing it up on 28.500MHz produced a SWR reading of 1.2:1 and this decreased to 1.1:1 at 28.600 and 1.4:1 at 28.250.

Candidly, this was good enough for the day and there is no doubt that it would prove equally effective on 27MHz.

It would in fact be somewhat better as the spread from 28.250 to 28.600 is larger than that from channel 1 to 40 so the SWR would be roughly in the region of 1.1:1 across about 70% of the channels.

The side rejection ratio proved to be about four S points as also did the front to back ratio, however, after a few hours of operation it became evident that stacking it above the 15m Yagi had produced what appeared to be a split forward radiation lobe. In other words, incoming signals were slightly better when the beam was pointed a little higher or lower on compass headings than when pointed directly at the DX station.

This did not come as any major surprise as the separation between the two antennas was only about nine feet whereas for optimum operation they should be separated by at least one quarter wave, however, despite a slightly degraded radiation pattern due to this effect the performance remained excellent.

GOOD FORWARD GAIN

Tests indicate that the forward gain is in the region of 10 dbd (10 decibels over a dipole antenna) and this gives a multiplier of 10 times the rig output — and, unlike a linear amplifier, it's a legal gain.

At some time in the not too distant future I intend to take down the 15m beam and see what effect this has on the Wulf Yagi's radiation pattern and signal rejection ratios — I have no doubt that all will improve once the 10/11m beam has no other antenna to interact with....but, even as it is at the time of writing, I'm quite happy with its performance.

Whether or not it is sufficiently strong enough to withstand a howling storm is something I'm going to find out.

I'm halfway sure that I've gone a bit overboard and, while five elements on a 1.5 inch boom should be fine, maybe seven elements is asking a little too much. There is no argument that a 2 inch boom diameter would be stronger, but, it's also heavier and more expensive.

Time will tell.....

EVERYTHING YOU NEED TO KNOW ABOUT

SUNSPOT CYCLE 22

PART ONE

Although we have published several articles on propagation and working DX we are still receiving many enquiries about these topics — what causes DX to be good one year or month and hopeless the next, what effect the sun has on DX, is the 'skip' better if there's a strong north wind or heavy cloud cover, and sundry other questions — some sensible, others indicating that the caller knows absolutely nothing about propagation.

Anyone with a halfway reasonable antenna and rig who is listening on the (usually but not always) upper channels cannot help but hear the way overseas' DX has been rolling in during the past six months.... and it's getting better all the time..

Conditions are already so good on the 11 metre band that Asian stations using hand-held transceivers (running just a couple of watts in many instances) are producing a huge amount of QRM (station interference) right across the band.

Sunspot Cycle 22 is not a new type of pushbike, it's the 22nd sunspot cycle and it is this which is causing the tremendous improvement in DX opportunity — not that you would be talking to these overseas' stations because the DoTaC might get upset, but, it's difficult to make DX go away so that you can talk to John on the other side of town.

The Ionospheric Prediction Service ,the group which produce the DX forecast charts and have a daily recorded forecast message on (02) 414 8300, are currently predicting that Cycle 22 will peak in December of this year with a T-Indice of 180.

In July of 1988 the Indice was 104.2 while it had increased to 140.6 in January of this year and was 169.7 in July. In short, it is building quickly and although the peak is predicted in December it will still take some time before a marked downturn in DX becomes obvious.

While the Indice gained 65.5 from July '88 to July '89 it is predicted that it will still be higher in July '90 (at 170) than in July of this year. What that means is that the DX will still be wall-to-wall even though the Cycle is starting to decline.

In December '90 it is predicted to be 163.5 and this means that the DX will be still be strong — but not as strong as its peak 12 months earlier.

These predictions are of course always subject to revision by IPS, however, serious DXers need to make the most of the coming months when skip conditions are going to reach their peak — after all, it will be another 11 years or so before they again reach the peak in Cycle 23.

The following is part one of a comprehensive report on just what causes DX.....we think it will answer any questions you might have and it will certainly provide you with a clear understanding of propagation and sunspot cycles.

In 1895 a young man in Italy closed a switch operating a spark coil at one end of a room. At the other end a telegraph sounder clacked. He opened and closed the switch several times. Each time the sounder moved in concert — closing when the electric current flowed through the graphite shavings in the jar. The transmitter was a crude spark coil and the receiver a "coherer" invented by Branly, a Frenchman. The young man was Guglielmo Marconi, the Italian inventor, and he was putting into practice the theory of radio waves first predicted by James Maxwell, Scottish mathematical physicist, and proved in the laboratory by the young German physicist, Heinrich Hertz.

Thus, only 30 years after the prediction that radio waves existed, they were used to transmit intelligence across a few yards of space. This experiment was to touch off a mad scramble of inventions, claims, counterclaims, law suits, patent infringements, chicanery and outright fraud, marking the development of radio over the next two decades. It was a wild time and makes fascinating reading, but our concern here is with the development and understanding of long range communication — the distances that involve the use of "skip" propagation and its relationship to the activity on the centre of our solar system — the sun.

The first transmission and reception of a few yards was rapidly followed by successful completion over a link of a full mile. Within five years this was increased to 200 kilometres and, on 12 December, 1901, Marconi, on his first attempt, transmitted across the Atlantic Ocean — from Poldhu in Cornwall, England to St John's in Newfoundland, a distance of some 2000 kilometres.

There had been great increases in power from the early spark transmitters and the coherer detector had been replaced by the much more sensitive crystal detector. Brief experiments with higher frequencies had been unsuccessful, so all of the early transmissions were on the lower frequencies, around 500 metres and lower.

The success of the first transatlantic communication had fired the imagination of men's minds, but it had also raised questions. Maxwell and Hertz had proved that light had definite wave lengths — just like radio waves — and everyone knew that light travelled in a straight line. It was one thing to visualise these invisible radio waves travelling through what was then popularly described as the "ether" in a straight line — like a light wave — but everybody knew too that the earth was round and that anything travelling in a straight line would soon be sent off into space. How could these "radio" signals be received 200 kilometres away — much less 2000 kilometres?

In 1902, shortly after Marconi's major feat of crossing the Atlantic with a radio signal, two scientists simultaneously postulated that there must be some kind of a reflecting layer high above the earth to account for the distances covered.

These men were Dr Arthur Kennelly in the United States and Dr Oliver Heaviside, in Great Britain. The region now known as the "ionosphere" was named the "Kennelly-Heaviside layer" in recognition of their contribution to the science of propagation. For some reason use of their names has fallen out of radio literature in the last few decades. Both men proved their hypothesis by sending radio signals skyward and timing the return — laying the groundwork for modern radar in the process.

The higher frequency areas, particularly below 300 metres remained ignored by the commercial interests because of earlier failures to obtain consistent communication using them.

It was radio amateurs, "hams" from many different countries who pioneered these frequencies and first proved their effectiveness for really long distance communication. For those of you who are interested in this vital period of development I recommend reading Bernard De Voto's '200 Metres And Down', a fascinating account of the early exploration of the "short waves" by amateur operators.

CUT AND TRY WAS THE WAY TO GO

These early years of radio were characterised by a great deal of "cut and try" for the whole area was a brand new realm of discovery and every week saw some new break-through or claim. Among the least understood of the phenomena being explored was "propagation" or the method by which the radio signals actually travelled from the point of origin to the point of reception. For a long time the concentration was on increasing the power of the transmitter and constructing elaborate antenna systems. This required some massive physical projects, for the waves postulated by Maxwell and discovered by Hertz had the physical property of a specific wave length, measured in metres (about 39 inches). A wave length is the distance a wave of a particular frequency will travel while going through one complete cycle — an increase from zero to a maximum in one direction — back to zero and an increase to maximum in the opposite direction and back to zero — the familiar alternating current that powers all of our appliances.

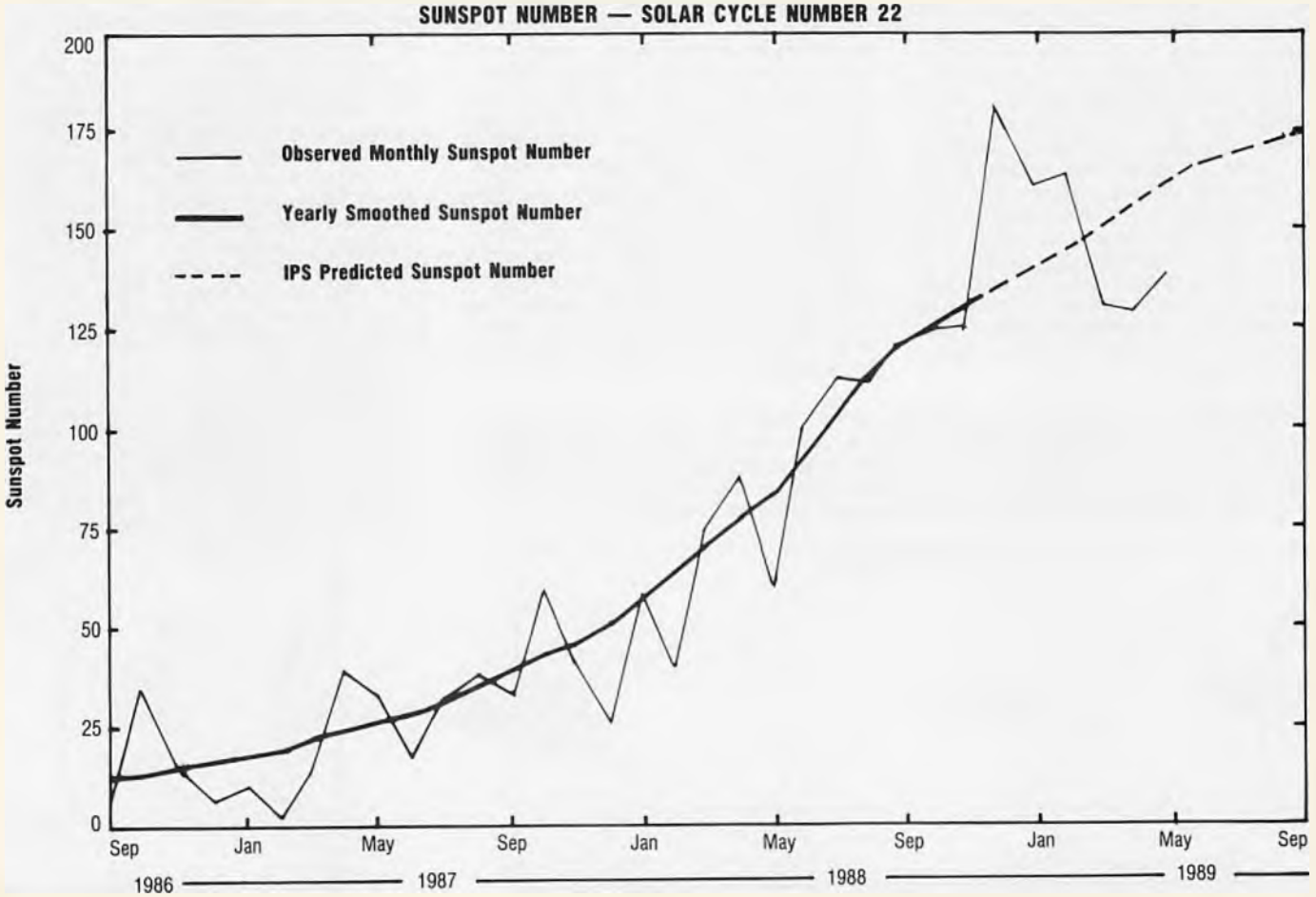
But these radio waves travel at the same speed as light waves, 186,000 miles a second — which is also 300,000 kilometres. To find the full wave length of any frequency it is only necessary to divide the frequency into 300,000. For example, a frequency of 100 kilohertz (100,000 cycles per second) divided into 300,000 gives a length of 3,000 metres. Converting that into feet (3.28 feet) means that a full wave on 100 kHz is almost 915 feet long! Hertz had shown that a "half wave" antenna was a good radiator and Marconi had developed the "quarter wave" antenna, in which ground provides the other half needed — just as for your ground plane CB antenna. Even with a quarter wave antenna, the length required is almost 230 feet and the half wave about 460 feet. You can see why some of those early radio towers were so monstrous in size. Compare that with a quarter wave antenna for your radio, viz. 300 divided by 27 (we converted both to megahertz) equals 11 metres. A quarter wave antenna is only nine feet long for that frequency!

So much needed to be learned about the relationship between wavelength and propagation in those days. There was no prior experience to draw on — everything was new — was an experiment. As in so many new sciences, people speculated, postulated, guessed — then experimented, tried and tried again. Each time the knowledge was eagerly passed around the ranks of the experimenters. Efforts to keep secrets, to capitalise on the new phenomena being observed, were largely useless. There were just too many — both professional and amateur — trying out new ideas every day.

Gradually, the sum total of all observations based on actual communication results indicated that there was indeed something up there in the sky that was bouncing the radio signals back to earth. More than that, the reflection seemed to be different for different radio frequencies, for different times of the day, for different times of the year. How could any sense be made out of all of these variables?

(Continued over)

As can be seen from this IPS Graph, the Cycle is building quickly and is expected to peak in December at around 180. After the peak, it will steadily decline during 1990, however, DX will remain good to excellent for some time to come.



SUNSPOT CYCLE 22

(Continued)

There was only one method — the tried and true approach of measuring and recording, measuring and recording, compiling endless reams of statistics until some kind of a pattern would emerge that would give a key to what was happening.

IT IS INDEED A COMPLEX SUBJECT

And so the science of radio propagation was born out of a need to know what was happening, to be able to predict what would happen when a radio signal of a certain frequency was broadcast at a specific time of day.

Gradually came the realisation that it was even more complex than a matter of just frequency and time and season. There seemed to be some other force at work in determining how far the radio waves could be sent, something that was affecting that layer up in the sky — the Kennelly-Heaviside layer.

For hundreds of years, man had been observing the skies — making note of the position of stars — developing the ancient art of astronomy. One of the things that it was possible to observe even before the invention of the telescope was the appearance of strange dark spots on the sun. They varied in number and seemed to move across the surface of the sun and then disappear. Also visible with crude apparatus were enormous explosions that sent streams of fire out from the sun for vast distances. Notes of these happenings on the sun were jotted down and kept in archives for hundreds of years. These records would prove invaluable in understanding something of the cyclical nature of sunspot activity when men first began to realize that there was a definite relationship between those spots on the sun and radio propagation on the earth — as well as between those tremendous explosions and short-term effects on radio communication.

In the meanwhile, events on earth waited for no such scientific confirmation. Experimenters simply pushed their way higher and higher in frequency and noted the results. The higher they went the further the signals seemed to go. They pushed on below 200 metres, below 100 metres, below 50 metres. With each thrust, communication over a long distance seemed to improve. Where would it end? In 1923 radio amateurs were able to establish two-way communication across the Atlantic on 110 metres. Long distance contacts were still limited to night-time activity on the frequencies being used, for, during the day static and poor conditions made long distance (DX) contacts impossible. At 100 metres many hams were working across the Atlantic, so commercial companies quickly followed and there threatened to be chaos until an International Radio Conference established certain frequencies for specific services to use.

The amateurs and experimenters (really the same group) plunged on to higher and higher frequencies. By 1924 they were making contacts across the country in broad daylight — working some 3000 kilometres at noon hour! Contacts had been made with other amateurs all over the world. The 'Golden Age' of radio had begun.

Still, little specific knowledge of just how this was possible was then available. You went higher in frequency — to the short waves and your signal went further, much further. However, it began to exhibit some strange behavior. It was no longer possible to hear stations fairly close by when you were on these short waves. Your signal seemed to "skip" right over the nearby station and land hundreds or even thousands of kilometres away. Once the other station was out of the range of your "ground wave" he couldn't hear you any more. And it was noted that the "ground wave" seemed to travel for much less distance on these short waves than it had on the lower frequencies.

With many different frequencies to choose from it was possible to pick one that would give the best propagation for a particular time of day. The lower frequencies were used at night, when "skip" made contacts unreliable or impossible, and the higher frequencies during the day when noise and fading made the low frequencies impossible. Most commercial "long haul" services used several frequencies during the course of a single day to keep in contact with other shore stations or with ships at sea.

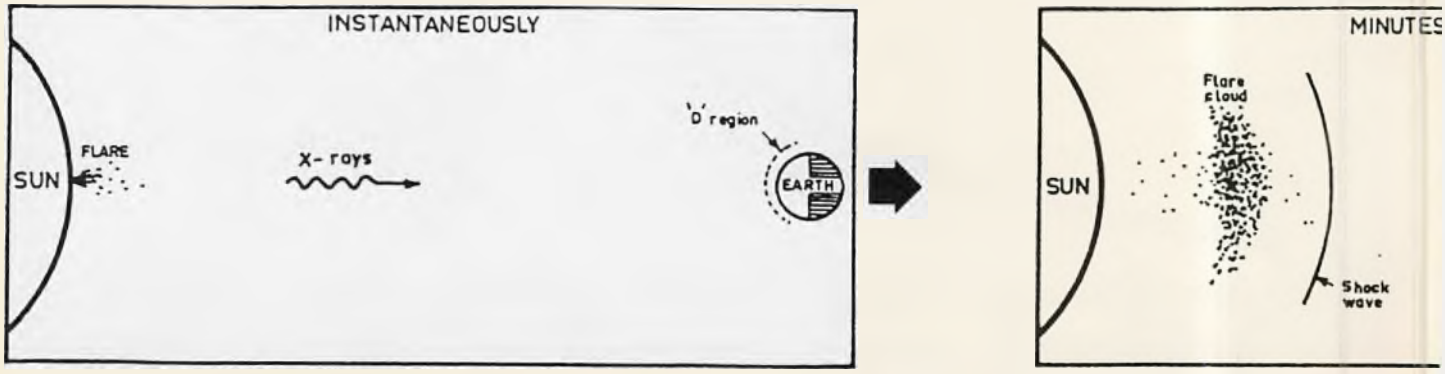
CONDITIONS SEEMED TO CHANGE . . .

Gradually, however, propagation conditions seemed to change. Distant stations weren't heard as often and fewer long range stations came through with strong signals. Something seemed to be happening to the reflecting layer that was changing everything that the operators had come to rely on. It was easy to speculate that the Kennelly-Heaviside layer wasn't doing the same job of reflecting radio signals back to earth — but why? What was happening to the phenomena of radio propagation. Some observers had noticed a significant change that seemed to occur both before and after World War I. Was there some other factor besides time of day and year that affected radio signals — some cylical event that controlled the operation of the reflecting layer?

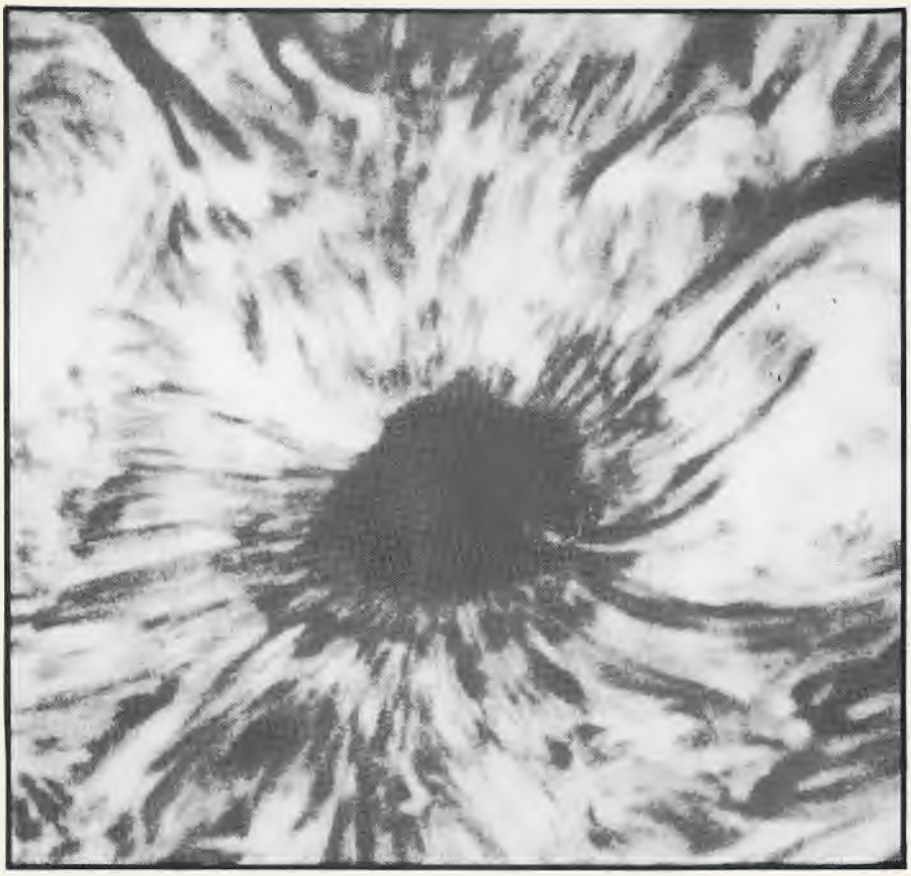
Almost as soon as Marconi successfully transmitted over a distance of 200 miles, speculation was rife concerning the exact route that the mysterious radio waves had taken through the "ether" to move from the transmitting to the receiving point. It was obvious to even the layman that the waves could not have moved in a straight line between the two points because of the curvature of the earth. Something, some force as yet discovered, must have "bent" the waves to allow them to make the trip.

Drs.Kennelly in the United States and Heaviside in England simultaneously published their theory that there was a "layer" of some kind up in the sky at a sufficient altitude to "reflect" the radio signals back to earth. They proved their theory by bouncing signals off of

Large solar flares have two major effects on HF communication (see diagrams below). Initially, they release high-density X-ray radiation which heavily ionises the lower 'D' region of the ionosphere and thus increases absorption significantly. Shortwave 'fade' is the result. A large 'flare' cloud arrives up to three days later with effects including a sharp rise in Maximum Useable Frequency.



Right: It may be difficult to believe that the sun is the primary cause of DX, but, the greater the number of sunspots the better the skip.



the layer and measuring the time required to make the round trip — thus laying the groundwork for the future development of radar.

Once the existence of the Kennelly-Heaviside layer was accepted by the many people then involved in experimentation with the new science of radio it seemed to meet the need for an explanation of long distance communication. A great deal of research was in progress all over the world involving numerous observations and the constant exchange of information.

Gradually, as a result of thousands of tests, it became obvious that there was more than one layer and that none of the layers seemed to remain in one place for very long periods of time. Careful noting of signal strengths, fading and distortion, directions and time, evolved theories which have stood the test of time. Closely allied with the study of radio wave propagation over many distances was the development of antennas designed to take advantage of the characteristics being observed. It was a time of rapid scientific progress and new discoveries were made almost monthly.

TWO MAJOR COMPONENTS . . .

At that point it was known that there were two major components to the propagation of a radio wave — the "sky wave", which was transmitted upward at various angles, depending upon the frequency and type of antenna, and the "ground wave", which followed the contours of the earth for a distance that also depended upon the frequency and type of antenna.

It was further discovered that the waves really consisted of two types of energy — "electrostatic" and electromagnetic" — which were transmitted at right angles to each other and to the direction of travel. In addition, it was found that the waves could either be vertically "polarized" or horizontally "polarized", depending upon the construction of the transmitting antenna. All of this information was used in the construction of systems for specific uses.

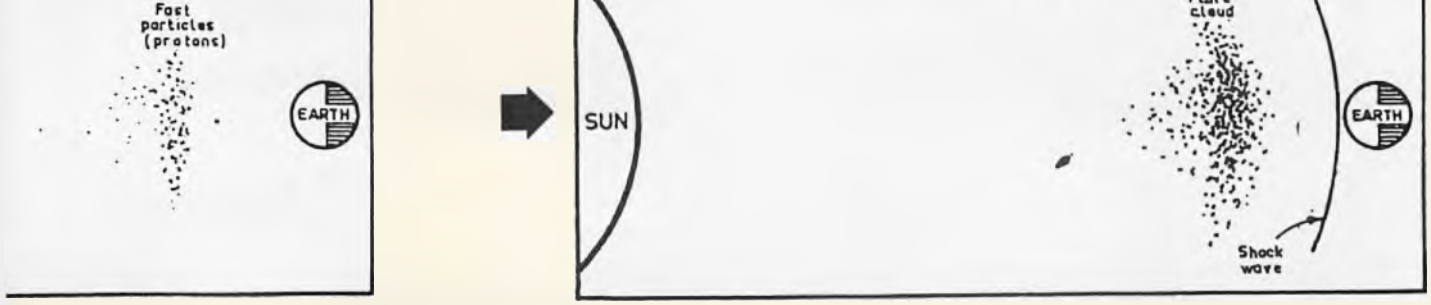
For example, it was discovered that there was a rapid absorption of wave energy by the ground if a horizontally polarized wave was used, where a vertically polarized wave travelled much further before signals became too weak to be useful. Then it was found that signals taking two paths, one along the ground, and one up to the reflecting layer and back, might arrive at different times and out of phase with each other, resulting in a cancellation and weakening of the signal — a deep fading.

It was further discovered that the reflecting layers were very sensitive to frequency, to the point of changing the reflection characteristics within a few hundred cycles.

Before going futher into the technical aspects of long range propagation, let's examine a phenomena that you are all familiar with — and show how it relates to what we have been discussing.

It is a July afternoon and you are driving home from work. You want to catch the six o'clock news, so you turn on your radio and find that your teenager has it on a rock station. You turn the dial and hear the familiar voice of a network newscaster. You settle back and listen to the evening news. At one point the signal seems to become much louder and there is a funny distortion to the voice for a brief time, then it is clear again. It is only when the station breaks for identification that you hear strange call letters and the announcement that the station is 400 kilometres away.

Part two of this article will appear in the next (November/December) issue.



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DAVID FLYNN WITH THE

477 Report

UHF NEWS AND HAPPENING:

It comes as a shock to most 477 meggers to realise that our UHF CBRS is soon to enter its 12th year, 'year dot' being the release of the first rig in 1978. Imagine ! Has it really been more than a decade since it all began, and in the case of 27 MHz since it all became legal ?

477 MHz has gone from strength to strength, and this issue's column typifies the amazing character of the band today. There are new additions to our ever—growing repeater network, and news from repeater associations that bring together hobbyists, commercial and rural users with a common goal; an item on just one of the many roles of UHF in country towns; and the latest on those enthusiasts enjoying rigs which double as police band receivers.

So read on, and don't forget to let me know of what's happening in your own UHF neighbourhood.

REPEATER UPDATE

Last issue's repeater list was a compilation of many different sources, from DoTaC information to club and private lists. Unfortunately the final merging of it all let a number of duplications slip through. We had such a great response from readers pointing out these obvious errors you'd think we goofed on purpose ! Not only were these corrected but new services added and missing details provided.

At the time of writing new WA services were soon to commence at Mt Solus (4/34) and of course Perth UHFers eagerly await their city's third repeater, 8/38, sponsored by the UHF Association of WA. Association President Eddy Panizza (WAS—830) says they want the very best service for local UHF users and hopes they in return will give their fullest support to PER—08. Enquiries and donations to the UHFAWA at PO Box 176 Hillarys WA 6025.

Briefly onto other states, and four new listings for NSW with 6/36 Barrabara (north of Tanmworth), 7/37 Gundagai, an 8/38 near Leeton and an emergency service on 5/35 at Deepwater (north of Glen Innes). In Tasmania, Devonport now has a single service on 1/31 (DEV—01) replacing the former ch 1 and 3 repeaters ... north—east Tassie 7/37 is now operational ... repeaters are planned for Table Mountain (Oatlands) and St Pauls Dome (Rossarden), while proposed 8/38 Huon has not eventuated.

Thanks to all those who wrote with repeater details, especially the Omega Radio Club, UHFAWA, and expatriate Tassie Rodger Willows for their reports.

DISCOUNT LICENCES

Most repeater associations are always looking for ways to bring in some money to offset their bills, either in initial equipment purchase or the even more vital areas of on—going maintainence and repair.

One avenue being examined by many groups is that of discount licensing.

It's not widely known that the DoTaC offers a 15% discount on CBRS licences to members of recognised radio clubs and associations. I'm told the program was first picked up by the Omega Radio Club, which wouldn't surprise me in the least — this Melbourne—based UHF club is always a few steps ahead.

With the current annual CBRS licence fee at $15 the saving is $2.25 per set. Not a fortune in itself to any single operator. So some repeater associations are considering adopting this scheme and asking participants to donate their $2.25 to the repeater fund. The result is a handy annual fund—raiser for the association without the users experiencing any real parting of cash.

Consider a repeater in a regional area. Farmers and business users have at very least two rigs a piece (hopefully licenced), and the same with many hobbyists. If only a hundred radios are licensed through the scheme, which may be no more than fifty users, this represents some $225 per year for the repeater fund.

An excellent scheme which CB clubs in general and repeater associations in particular should be making full use of. The Omega Radio Club will provide details to any group writing to them at PO Box 50, Chadstone Centre 3141.

CBers RUN RIOT ON 468 MHz !

... at least that's the image which Melbourne's police radio VKC tried to conjure up following a recent CBA article.

You may recall this report examined a trend to modify your IC—40 or Sawtron (amongst others) to operate as a normal CB which at the flick of a switch can receive the police band. Technically illegal but little different to having a scanner — except that running one radio is cheaper and neater than two.

Not everyone agreed with CBA running this report, and things certainly hotted up. UHFers around Australia sussed out local and interstate CB shops to see if they could get in on the act, while the DoTaC made heavy noises about the fate of technicians who carried out the mod. I spoke to one police radio operator who was quite explicit about what he'd do to the so—and—so who wrote the story.

To this already volatile mixture, add one press release from the Head of Victoria Police Communications sounding dire warnings that pirate operators would make 'busy police channels into playgrounds' and tie up the force's man power and resources by 'putting in hoax calls'!

The release also gave the impression that the CBA article actually told which wires to cut to get your old faithful FM320 firing away on 468 !

Like all good such releases it skirted the facts — that the mods discussed were receive—only, and the technicians actually go to great lengths to circumvent easy reworking for transmission.

But did CBA worry ?

Not in the least — the release went out through AAP, was picked up and run in a number of daily newspapers and when readers thought CBA had printed the aforementioned 468 MHz transmit conversion plans our sales of that issue went through the roof !

Next edition — how to tune your old 23 channel rig down to the AM broadcast band and get into real talkback radio .....!

RURAL WATCH ON UHF

It is no secret that UHF CB can be almost anything you want.....this uniquely Australian band is used by hobbyists, small businesses, farmers, emergency services, pilots, boats — the list goes on and on. It's almost a shame that 477 MHz is labelled as 'CB', thus suffering from a ten—year old image problem which began before UHF CB itself was even thought of.

In fact the role of 477 MHz is less a Citizens Band Radio Service than a Community Radio Service, foremost in regional and country towns.

The latest proof of this is the increasing adoption of UHF CB by Rural Watch, a country version of the sucessful city Neighbourhood Watch program. With vast distances and sparse populations, petty crime is increasing in rural areas — the thefts ranging from videos and tools to firearms and livestock.

Most country towns are already extraordinarily active on UHF CB, and this has been used to advantage to create a Rural Watch 'radio network'.

In Denniliquin, to the south of NSW, local councils have greatly supported the Rural Watch scheme, including the donation of 477 MHz radios to police stations and stock squad vehicles. Citizens can directly call to report suspicious activities, or if out of range of the police base they can relay their report to a nearby homestead to be telephoned in.

Another region following this path is Tamworth, Australia's country music capital, where local retailer Independent Communications has helped establish and co—ordinate Rural Watch UHF networks in a number of townships.

I'd welcome letters from any readers who are a part of a UHF—based Rural Watch, with their own observations and notes on this.

FREEBIES - FOR YOU !

Marktronics has kindly supplied the prize for this issue's column, being one of their excellent handheld carry cases reviewed elsewhere in these pages. So, if you're writing a note to me with UHF news, opinions or queries, let me know what sort of handheld you have and you could be a winner.

And if you don't have a UHF handheld, turn to our Wordmaze this issue and try your luck at picking up a Connex 40 — never let it be said that CBA doesn't look after our readers !.

The address for this column is PO Box E160,St James, Sydney, NSW 2000
Drop me a line !

KEN REYNOLDS REVIEWS THE ECONOMY PRICED

27 MHz SUPER LYNX Mk3

Ken Reynolds tests the latest from Hatadi and finds it to be a good economy unit which compares well with other makes of similar cost and performance.

The SUPER LYNX MK III from the HATADI ELECTRONICS stable is like most basic AM CB rigs in that it has its good points and also its limitations.

It is a compact 40 channel AM only transceiver with pressbutton rocker switch channel selection instead of the traditional rotary switch.

It seems just about everyone has gone in for the pressbutton operation lately — probably for the economy of the exercise along with operator satisfaction.

It has the on/off switch combined with the volume control — as usual — and a separate rotary control for the squelch.

A button offers priority selection of the emergency channel number 9. The power cable is integral with the back panel, which also carries the antenna jack and an extension speaker socket.

The channel display uses LEDs with four extra LEDs set up as a bar graph to indicate output power and received signal strenth.

On our test unit only one LED illuminated for transmit power indication, which, according to the handbook, should indicate output power level.

We prefer the single light arrangement because when the rig is modulated the other LEDs light up in sympathy thus indicating that something is happening. This also makes a good check that your microphone is OK.

The supplied microphone is quite good as economy rigs go and the transmitted modulation is clear and has plenty of mid-range content which is ideal for CB communications.

The output power was 3.8 watts which, after a full five minute transmission, had fallen by only 0.2 watts to 3.6 watts. Frequency accuracy was good and it too was only marginally changed after the five minutes.

Modulation percentage was around the 90 percent mark with occasional excursions over 100 percent before the automatic level control could operate fully — quite a good ALC action.

For an economy CB rig we found the transmitter section good with no apparent vices.

The receiver, on the other hand, was a bit on the deaf side compared with many other little rigs available. The manufacturer doesn't make any outrageous claims about the receiver performance and, as stated in the handbook, the sensitivity is around the 1.0 microvolt level for the normal measurement technique.

The signal strength graph indicated one LED for 0.8uVolt, two lights for 1.5uVolt, three for 2uVolts and all four LEDs for 16uVolts. This shows the scale to be compressed at the low signal level range, however, the display is of some use.

The squelch range and action is satisfactory with the threshold operation at about 0.8uVolts up to 900uVolts required to open the audio gate with the control turned fully clockwise.

Although there is no Noise Limiter switch, a limiting circuit is permanently connected internally which possibly explains the lower-than-expected receiver sensitivity. The noise limiter functions OK.

The handbook is adequate and a circuit block diagram and schematic diagram are supplied for service information — so, don't lose your handbook!

Like many of the AM only compact transceivers, the Lynx is manufactured in Korea presumably with the intent of keeping the local selling price down.

The quality of such sets is definitely on the improve and the Lynx is no exception with improved construction in the metalwork department and greater care taken when 'loading' the circuit board with components.

The layout of the board is good and most components are seated neatly. Board soldering has also improved out of sight from older Korean offerings and we could find no indication of the usual 'dry joints' that have plagued many Korean rigs for years — these comments relating to component lead preparation, board preparation and solder temperature, etc. for the automatic soldering processes used in the industry.

However, the hand soldering of discrete wires that bond the whole together still has room for improvement.

SUMMARY

The SUPER LYNX MK III has plenty in its favor. While it leaves a little to be desired it certainly compares well in a very competitive marketplace and would be a good choice against any of the other economy rigs.

The only point we particularly disliked about the Lynx was the lack of brilliance of the channel display LEDs which makes it difficult to read the channel number in little more than shaded light.

But who's perfect? All the competition seems to have the same problem.

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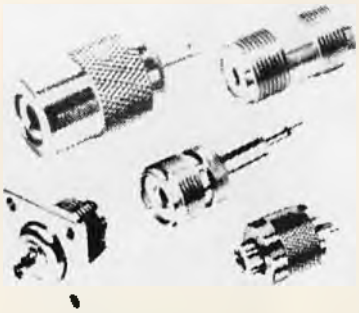

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04-411	3.5mm Plug Plastic Blk/Red	0.71
04-412	3.5mm Plug Metal	2.09
04-413	3.5mm Skt Inline Plastic	1.37
04-414	3.5mm Sckt Inline Mtl/Bdy	1.92
04-415	3.5mm Socket Panel Mount	1.10
04-416	3.5mm Socket PCB Mount	1.65
04-417	3.5mm Change Over Socket	1.10
04-419	3.5mm Plug To RCA Skt	3.85
04-421	3.5mm Stereo Plg Plstc Blk/Red	2.20
04-422	3.5mm Stereo Plug Metal	2.20
04-423	3.5mm Stereo Socket Inline	1.98
04-424	3.5mm Stereo Skt Metal	4.50
04-425	3.5mm Stereo Sckt PNL Mount	2.09
04-426	3.5mm Plug to 6.5mm Jack	2.80

6.5mm AUDIO CONNECTORS

04-427	6.5mm Plug to 3.5mm Jack	2.91
04-431	6.5Mm Plug Plstc Blk/Red	2.09
04-432	6.5mm Metal Mono Plug	3.02
04-433	6.5mm Cable Jack Plastic Black	1.92
04-434	6.5mm Metal Inline Socket	2.75
04-435	6.5mm Socket Panel Mount	1.10
04-436	6.5mm Socket Panel W/- Cutout	2.75
04-441	6.5mm Stereo Plug Plstc Black	2.20
04-443	6.5mm Stereo Cable Jack Plstc	2.20
04-444	6.5mm Stereo Cable Jack Metal	3.75
04-445	6.5mm Stereo Socket Panel Mnt	3.50
04-446	6.5mm Stereo Panel Sckt W/-CO	5.85
04-447	6.5mm Stereo Jack Mount	0.00

RCA and DIN CONNECTORS

04-451	RCA Plug Black & Red	1.10
04-453BK	RCA Socket Inline Plastic Blk	2.20
04-807	TNC Female Inline Socket	12.65
04-808	C47-28 TNC Inline Socket	12.65
04-809	TNC Male/BNC Female Adaptor	10.45
04-810	TNC Male/UHF Female Adaptor	11.55
04-811	TNC Female/BNC Male Adaptor	0.00

MICROPHONE LOCK RING/CB TYPE

04 512	4 Pin Mic Panel Socket	3.19
04-513	5 Pin Mic Plug	5.39
04-514	5 Pin Mic L-Type	7.59
04-515	5 Pin Mic Inline Socket	9.78
04-516	5 Pin Mic Panel Panel Socket	3.85
04-517	6 Pin Mic Plug	5.39
04-518	6 Pin Mic Plug L-Type	7.70
04-519	6 Pin Inline Socket	6.40
04-520	6 Pin Mic Panel Socket	4.34
04-521	7 Pin Mic Plug	7.59
04-522	7 Pin Mic Plug L-Type	12.04
04-523	7 Pin Mic Panel Socket	6.05
04-524	7 Pin Mic Inline Socket	8.80
04-525	8 Pin Mic Plug	8.25
04-525	9 Pin Mic Plug L-Type	9.90
04 526	8 Pin Inline Socket	9.35
04-527	8 Pin Panel Socket	5.95

MORE DIN & CANNON TYPE

04-540	Din Mic Plug 5 Pin	4.95
04-541	Din Mic Plug 5 Pin 180 Degree	7.95
04-543	Din Mic Socket 5 Pin Panel Mnt	3.57
04-561	3 Pin Mic Plug Inline	7.15
04-562	3 Pin Mic Plug Panel Mount	6.60
04-5621	3 Pin C-Type PNL Mount Black	20.90
04-563	3 Pin Mic Socket Inline	9.44
04-564	3 Pin Mic Socket Panel Mount	9.25
04-601	2 Pin Rectangular Power Plug	1.65

POWER CONNECTORS

04-6010	PC2F Female Con & Housing	1.76
04-6011	PC3M Male Con & Housing	1.76
04-602	Banana Plug Screw Type Black	0.93
04-611	Binding Post 4mm Red/Black	1.65
04-602	Binding Post Large Black	1.37
04-620	Alligator Clip	1.10
04-628	Auto Cigarette Lighter Plug	2.20
04-629	Auto Cig Lighter Plug Fuse	2.14
04-640	DC Power Plug 1mm P411	1.65
04-641	Dc Power Plug 1.3mm P413	1.65
04-642	DC Power Plug 1.6mm DC16	2.14
04-643	DC Power Plug 2.1mm	1.65
04-644	DC Power Socket Panel 2.1mm	2.09
04-646	DC Power Plug 2.5mm	1.65
04 647	DC Power Socket Panl Mnt 2.5mm	1.65
04-648	DC Power Socket 2.5mm Plastic	1.10
04-649	DC Power Plug 3.1Mm P431	1.92
04-680	Battery Snap I-Type	0.99
04-681	Battery Snap T-Type	1.65
04-682	Battery Pack 2 x AA	2.75
04-683	Battery Pack 4 x AA	2.20
04-684	Battery Pack 6 x AA	1.50
04-685	Battery Pack Pack 8 x AA	2.20

TV CONNECTORS

04-701	Pal Plug Plastic	1.10
04-702	TV Pal Plug Metal	2.47
04-704	TV Pal Inline Socket Metal	2.75
04-705	TV Pal Double Male Connector	2.20
04-706	TV Pal Double Female Connector	1.65
04-707	TV Pal PNL Socket S/Face Mount	.137
04-708	TV Pal Plug W/75/300HM TF	2.75
04-709	TV Pal 1M 2F 2 Way Spliter	4.95

AUTO RADIO CONNECTORS

04-741	Auto Antenna Plug Screw Type	3.30
04-743	Auto Antenna Socket-Screw Type	3.30
04-744	Auto Antenna Panel Socket	1.65
04-747	Auto Socket Inline	2.75

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04-801	TNC Supa Crimp Plug	4.95
04-802	C57-01 TNC For RG58 MILSP	9.80
04-803	C57-15 TNC For RG58 MILSP	11.99
04 804	TCN-26 Plug RG58 Crimp	6.49
04-806	TNC Panel Socket Single Hole	5.50
04-901	SMA RT/L Crimp Plug RG58	64.90
04-902	SMA Plug RG58/U Crimp	15.00

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04-950	36 Way Male IDC	14.00
04-951	26 Way Male Solder	7.20
04-952	25 Way Cover Black Plastic	2.00
04-953	25 Way Cover Jack Screw	5.00
04-954	25 Way Male Solder	2.20
04-955	25 Way Male IDC Bleu	14.50
04-956	25 Way Female Solder	2.40
04-957	25 Way Female IDC Blue	15.60
04-958	9 Way Cover Black Plastic	2/00
04-959	9 Way Male Solder	1.60
04-960	9 Way Female Solder	1.60
04-961	Female Screw Lock	1.20 pair
04-962	16 Way Transistor Socket	4.40
04-963	20 Way Edge Connector IDC	3.50
04-964	20 Way Transistor Socket	4.00
04-965	26 Way Edge Connector IDC	8.00
04-966	26 Way Transistor Socket	5.40
04-967	34 Way Edge Connector IDC	3.60
04-968	34 Way Transistor Socket	4.20
04-969	40 Way Edge Connector IDC	14.80
04-970	40 Way Transistor Socket	8.00
04-971	50 Way Edge Connector IDC	17.20
04-972	50 Way Transistor Socket	9.20

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You can look up the registers **By Name** to find a name and see the frequencies used, the call sign(s) and the location of transmitters.

Q. Will the Captains's Registers give me all that information for all bands?

A. Not for every single band. The Registers cover the main VHF, UHF and HF bands.

Q. That sounds good, but what's the range of frequencies?

A. There are VHF/UHF Registers for all States and Territories. They cover from around 35 to 867MHz. There's also an HF Register covering 2009kHz to 26965kHz - for the whole of Australia!

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PRODUCT REVIEW

CARRY CASES CAN SAVE DOLLARS

David Flynn presents the case for 477 MHz handhelds.

'Oh no !' — the sound you make when you drop your UHF handheld.
'THUNK' — the sound your handheld makes when it hits the concrete.
'Click, whirrrr' — the sound your autobank makes as it spits out the cash to repair or replace the handheld.

There is no better argument for a handheld carry case than these three sounds.

And I have yet to be convinced that a carry case is only an 'option' for any handheld radio. By its very nature such a radio is designed to be portable, to go where no radio has gone before. Sliding with ease between the very different worlds of car and tractor, potentially at work and play in the harshest of environments (aren't we getting a bit carried away David — Ed).

A UHF handheld doesn't stay safely bolted under your dashboard or sitting in your home. They have to be prepared for the worst. And they cost twice as much as a mobile. A good quality carry case is not a luxury when it can save you hundreds of dollars.

The Marktronics carry cases are among the best there is. Standard-issue soft vinyl jobs have their place in keeping a handheld free from scratches and adding limited protection against dust and moisture, but for radios which lead the tough life a Marktronics case is hard to beat.

Queenslander Mark Ogilvie has been producing these cases for some years now — not just for CB rigs but for commercial and marine handhelds, cordless and cellular phones and more. There are over 30 models in his Marktronics range at present, and Mark also offers one-off custom designs.

Each case is fully designed and manufactured in Australia, and more than 90% of materials are also Australian — which is nice to know if you're patriotic or concerned about helping redress our BOP figures.

Each case is constructed from 'Cordura', an incredibly tough and durable material from Dupont, and also uses moulded high-impact plastic fittings. Yet even with the thick padding for extra comfort and protection, they weigh less than equivalent leather cases.

A legacy of the local design is that each case is engineered to withstand the demanding extremes of our climate. All materials are UV stabilised, which means they won't weaken under prolonged exposure to the ultraviolet light rays which are such a large component of our skies.

The cases almost fully enclose the radio, and are water resistant — yet can be washed when dirty, because there are no metal fittings waiting to rust. And unlike leather Cordura doesn't absorb salts, which can corrode and crack the case material.

To fully evaluate the quality of these cases Mark Ogilvie sent me a complete set for the various 477 MHz handhelds on the market. My constant companion is a highly modified Icom IC-4E, still going strong after some six years. The 4E is close enough in size to fit the IC-40 case, while the other cases were farmed out to friends with handhelds from Uniden, Electrophone and Commex. The only instruction — give them a good workout.

A month later we re-grouped and compared notes. In this time our handhelds had travelled as far north as Cairns and down to the snow country, and were subjected to a fair swing in temperatures and treatment. But the verdict was a unanimous thumbs up from all concerned.

Each case has velcro fasteners on the side and allow it to be opened up flat and then close tightly around the handheld — so it's very simple to fit, but equally secure. Two small plastic triangle fittings allow for connection of the optional shoulder strap and the standard case color is black, although other colours can be made available on special request (great for the fashion conscious UHFer).

EVEN SHOULDER HARNESSES!

Another Marktronics options is the LCH (light chest harness), designed to hold the radio up near the shoulder. It looks rather like something out of a Dirty Harry movie — all you need is a .357 Magnum ! In fact the LCH has proven popular with many emergency users and especially the rural market, which uses it for mustering on motorbikes. All new carry cases are also being fitted with the QD (quick detatch) system, combining a hand/belt loop with a snap-lock detach fitting.

At an average price of $70 the Marktronics carry case may seem expensive, but of course you only get what you pay for — in this instance, a rugged carry case which is part insurance and all performance. The complete range is available from Captain Communications in Sydney and Brisbane.

BAND SPREAD

FROM DC TO DAYLIGHT

WITH GREG TOWELLS

Welcome to Bandspread, the column that covers areas of interest anywhere in the spectrum, from club news to new repeaters, from the latest on 27MHz to what's new on 2 metres. Whatever your interest, this part of your magazine will cover it. Remember, that to read about it, I have to know about it, so write to me, Greg Towells, at P.O. Box 514, Toukley, NSW. 2263.

GREMLINS, TYPOS AND CROSSED WIRES

Back to it for another month.

Some info that appeared in the last issue that requires corrections (gremlins, typos, crossed wires or whatever) is for readers who attempted to access the Lima Alpha Bulletin Board without success during the last two months.

'Sydney Scene' reported the number incorrectly, the LA BBS number should have read (02) 750-0072, and it is operational during the hours of 7.30pm to 6.00am Monday to Friday.

Also some information for those computer buffs who missed out first time round. The LA BBS service is available to all individuals, clubs and groups, and is provided free of charge (unlike some BBSs in this fair city). There is a large range of info., message areas, and downloads available, and everyone on the board has an interest in some facet of radio as a hobby. Just think, all you who inhabit channel 35 LSB, the BBS is somewhere to communicate where others can't play 'Greensleeves' or similar annoying tunes over the top of your communication !

The LA BBS operates at 300 baud full duplex in standard ASCII, and has a large selection of Commodore compatible downloads, many of which are radio related.

WIA BROADCASTS

Seems that the regular WIA broadcasts are attracting the full complement of wombats and other assorted 'brain dead' back to the bands, mostly on 2 metres straight after the transmission.

Some of the recent callback sessions on the Dural (Sydney) repeater had more callbacks, sound effects and comments from the squeaky voiced flock than real amateur callsigns. Even sounds like the 'mouth from the mountains' is back to its former glory. It does not leave a good impression on newcomers and casual listeners to hear this sort of garbage happening immediately after a WIA broadcast, or for that matter, any other time.

The amateur service is supposed to be self-policing, so maybe some of you out there should start recognising some voices and reporting them, for the good of the service.

SYDNEY RADIO FIELD DAY

The Sydney Radio Field Day was held over the weekend of the 2nd of July, at St. Ives oval. There were displays from the WIA, the Sydney Radio Club (good effort from the radio operators, Kris and Toby, but where did you find so many things to yak about?) and amateurs in the form of Packet radio and ATV displays.

Just to complete the day, the SES and the AUSSAT bus set up shop outside the hall. Some unusual Sydney weather made its presence felt (a whole sunny weekend for a change) and some bargains were had by a lucky few. The 'Musicman' was collared and introduced to the crowd, however, he managed to evade his dozens of fans yet again.

Just two complaints.....there were not enough retailers supporting the CBers who support them, the ones who made the effort and therefore deserve support from users, were Dick Smith Electronics, Tandy and the Sydney Radio Centre. Maybe the rest are only interested in the dollar and are not really CBers.

Secondly, maybe the next Sydney Radio Field Day will be held in a more central location, like possibly Parramatta..... poor old Wayne got himself dreadfully lost trying to get there this year.

FLYNN IN THE MIRE

I might drop David Flynn in it about here.

Since our column shuffle an issue ago, naturally most of my letters received have related to my old column — UHF News. By all means, if you have any information about UHF happenings, then let me know about it, however, if you prefer that your news only be read by UHFers, then drop DF a line, he will be most interested. But.....anything else, including UHF or HF whispers, rumors and other newsy bits should whiz into the Toukley mailbox.

As you can see, I'm trying to cover the full range of electronic communications, including computer bulletin boards, so put your imagination to work, and let me know about it.

HOW ABOUT SOME MAIL..!

While I'm at it, there must be more to Australia than just NSW and SA (just received a SA letter), so if you want to read about it, tell me. Also, if there are any other radio related computer bulletin boards around, please drop me a line with the details.

SHORTWAVE POSSUMS BBS

Another BBS in Sydney that is into radio type activities is the Shortwave Possums BBS. This board operates 24 hours a day, seven days a week (except for networking and hard disk crashes...)

Operating at 300, 1200, and 1200/75 baud, it is worth a poke around for all you radioaholics. There is an emphasis on shortwave activities at the moment, but, this is slowly changing as more people check it out. So...if you have any info. for this column and you don't like writing just leave a message for me on either the Shortwave Possums or the LA BBS.

THE RIGHT WAY TO USE A REPEATER

While we are on the subject of UHF operation, how about a few pointers for users of UHF repeaters, and indeed on any band. Identification of your station, with at least the three numerals of your callsign, saves everyone guessing who you are and can aid in other stations calling you into the conversation.

The number of stations just hopping on the repeaters with no callsigns whatsoever, make things very difficult, especially if there are a number of stations using the repeater at the time. Confusion can then lead to people becoming impatient and resorting to undisciplined behavior which is in the interests of absolutely no-one. Secondly, on all channels and especially repeaters, call 'breaker' and wait until called in — leave a break between overs so breakers can make their presence known. There are few things worse than when trying to call 'breaker' and the stations using the channel leave a microsecond or less break between overs.

A quick answer to a breaker saves the breaker becoming impatient and disrupting the channel. Also, if the repeater you are using has a long tail, let it reset before starting your over or you could find yourself talking to nothing when the repeater dropped out halfway through your over.

Lastly, an important point many operators seem to forget.

If you are within simplex range of your contact, **pick a clear channel and move off the repeater.** This way you leave the repeater clear for other stations which need the repeater to make their contact.

There is no reason to use a repeater if you are within simplex range....especially if you think of the advantages of operating simplex. No worries about timing out or lots of breakers and other stations wanting to use the channel....just a nice, quiet conversation.

MORE FROM THE LIMA ALPHA CLUB

This club's regular Sunday evening 'On Air' get together is really taking off. On average there are around 25 stations taking part in the 'round the table' discussion and an interesting evening is assured for all.

The LA's meet on 16 LSB at 8.30pm, and QSY to a channel close to 33 LSB, with a UHF 'call in' starting from channel 11 at the same time. Everyone is welcome to join in, HFers and UHFers alike. More LA news (because they let me know, thanks Wayne and everyone else), is the location of the new meeting place. Fortnightly social nights are held at St Andrews Hall, Quigg Street, Lakemba, Sydney, starting at 7.30pm on the second and fourth Wednesday of the month.

Future events coming up include the Fox Hunt on the 16th September and the Fairmont Shield Tenpin Bowl at Liverpool on the 29th October 1989. Give the LA's a call on air or phone the club president, Wayne LA-192 on (02) 7500072 before 7.30pm weeknights for further information. **Remember, get your info. to me within at most two weeks after this issue of the magazine hits the news—stands...not too much club news though as there is simply not the space to run it — the address to which you should send it is at the start of the column.**

NO, IT DOESN'T COOK THE TOAST BUT IT'S GOOD COMPANY

YAESU FRG-8800 RECEIVER

ROB WILLIAMS, CBA's HF editor looks at Yaesu's current receiver. It has just about everything you could ever want in a radio...but does it cook the toast in the morning? Read on to find the answer....

Japan's Yaesu Musen Co. has satisfied SW listeners and DXers for many years with a range of communications receivers built to reflect the latest in electronic technology.

The company's first shortwave receiver was the well known FRG-7, built around the Wadley Loop principle, a technique used to provide rock solid frequency stability and still used in many DX shacks around the world.

Next came the FRG-7000, their first attempt at building a receiver with a digital display, however the radio still had the same layout as the FRG-7 and still used the Wadley Loop system. Following this came the FRG-7700, offering several new facilities which put the listener in the semi-professional field.

THIS RIG BRIDGES THE GAP

Then a few years ago Yaesu released the FRG-8800 communications receiver which finally bridged the gap between a pure shortwave receiver and a professional monitor. This radio enables the user to not only listen to their favorite station, but, through an ingenious optional data cable and software the 8800 can be programmed and controlled via a personal computer. Through the kind resources of Chris Ayres at Dick Smith Electronics and their Campbelltown store I was able to put the receiver through a two week road test to check out all the pros and cons.

The first thing I did after unpacking the receiver was to sit down and read a well illustrated instruction manual. This receiver is far more complicated than earlier digital models on the market, and uses a microcomputer to control functions — so unless you read the handbook you won't be able to reap the rewards of owning an 8800.

The instruction manual is 32 pages thick and details not only how to set up and operate the 8800 but how to interface the many accessories available. Yaesu has put a lot of thought into writing this booklet so there is very little chance of problems developing.

CAT FACILITY

Common problems that affect shortwave reception are explained to the user, together with easy remedies. This becomes important when the CAT (Computer Aided Transceiver) facility is used in conjunction with a PC, as noise generated by the computer can ruin shortwave reception.

The manual also gives a brief explanation on setting up a good antenna and the effect propagation has on reception. The use of the exalted carrier technique, to extract intelligent signals from interfered stations, is also explained.

The FRG-8800 is laid out in a similar way to the FRG-7700, in terms of the front-panel, except for some changes to frequency selection and memory storage areas.

Weighing in at 6.1kg and measuring 334 x 118 x 225mm (WxHxD) it is designed as a bench-mounted receiver, which if required, can be operated portable through an optional 12-volt adapter.

Portable users will welcome the handle on the receiver's side panel which makes it very easy to carry.

Frequency selection is either via avariable tuning knob located in the centre of the front panel or by direct entry into a keypad to the left of the tuning knob.

Yaesu has taken an interesting approach to try and reduce noise (something we all must live with) when listening on HF. On the back of the receiver is a slide switch labeled narrow/wide, which selects two noise blankers to try and reduce two common types of noise. In the narrow position spike generated noise (commonly caused bycars) is addressed, while the wide position is for OTHR (over the horizon Radar) 'Woodpecker'-type noise — something that is becoming more common — has been looked at. Unfortunately I found the circuitry had very little effect on noise of any kind, but, then I have yet to see any receiver that can handle noise suppression as well as we would like.

Using a combination of buttons located next to the frequency-select keypad you can operate the receiver in three different scan modes on the HF bands. The facilities are very similar to common functions found on all scanners.

SCANNING MODE

In memory scanning mode you can scan all the frequencies stored in the memory bank.

You can also have what is called 'selective memory scanning' which scans any number of the 12 memory channels, this works like the 'lock-out' button on a scanner.

In 'programmable band scanning' you can scan between any two set frequencies which are stored in the memory — this is similar to a scanner's 'search' mode.

You can vary the scan rate by using the fast and slow tuning buttons located next to the main tuning dial. There are also two scan 'halt' modes, manual and automatic. In auto mode scanning stops when the signal level breaks the squelch setting and in manual the scan can be stopped with the pause button. To select the scan halt mode you have to operate a small switch located inside the receiver which is set to auto by the factory.

Performance: Overall I found the FRG-8800 surprisingly good, after using it for a day or two I became used to the frequency keypad, but, sometimes made mistakes in choosing a frequency due to the unusual approach in using the keypad, which you employ to

The latest in the long ine of FRG models, the FRG-8800 is clean and funcational in appearance and performs as expected — extremely well.

enter the frequency in two steps, separated by the use of the MHz key.

The receiver itself is very stable and once a frequency is selected there is no noticeable drift. The switchable automatic gain control(AGC) improved signals when there was a lot of fluctuation in the ionosphere.

Performance was good on the mediumwave band and can be enhanced by using a loop antenna.

I found the receiver worked very well on longwave. The aeronautical navigational beacons in Australia make use of this band and even on my normal shortwave antenna I was able to hear many beacons, some for the first time.

Precautions should be taken when using any receiver on an external antenna during an electrical storm as the radio can be damaged — not only from a direct lightning strike but also from high static currents which can build up on the aerial. This has become more common with modern radios such as the 8800 which use sensitive electronic circuits which are more suspectible to static discharges from lightning.

Even though the Frog (nickname for the unit and also prior FRG models) is designed around a computer I was surprised to find no noticeable noise on the HF bands from the internal circuitry, which is to me crucial when trying to log those weak stations.

While not expecting the user to have any electronic knowledge of receivers, there was no circuit diagram provided with the 8800, even though one came with the active antenna. To me this seems strange as Yaesu intended the user to at least have a circuit for the active antenna (in case something goes wrong) yet not for the receiver.

Rear panel has all the necessary features to allow the operator to maximise the receiver's features — including a CAT input.

The FRG-8800 continues the excellent workmanship Yaesu has used in earlier shortwave receivers.

Dick Smith sells the receiver in two models. The FRG-8800HF covers from 150 kHz to 30 MHz continuous and sells for $1395 while the FRG-8800SW, which covers 2-30 MHz frequency range, sells for $100 less.

CONCLUSION: If you are after a good shortwave communications receiver you must consider the FRG-8800. It is well equipped with numerous facilities which will give you years of satisfactory performance — and finally, no it doesn't cook the toast, but, it will keep you good company on cold winter nights.

ACCESSORIES:

According to the manual there are six accessories available overseas — some are good while others are not really needed. Dick Smith stores only sell four of these — the VHF frequency converter, antenna coupler, active antenna and DC power kit — some of these were developed for the FRG-7700, but will also operate on the 8800.

The FRV-8800 is a plug-in internal VHF converter covering 118 to 173.999 MHz and is also available as the external converter FRV-7700. The FRT-7700 is an antenna tuner which allows you to match the antenna system to the receiver.

The FRA-7700 is an active antenna to help those DXers who don't have an external antenna system.

Another accessory is the YH-77, a lightweight set of headphones, however, any pair of low-impedance stereo headphones will work just as well.

There is also the FF-5, a low pass filter.

For the 'CAT' control, the FIF-232C has been designed for use with a computer. This interface converts standard RS-232 signals at 4800 bits/second to allow you to control the radio. The unit contains an analog-to-digital converter to allow the computer to measure signal levels.

FRT-7700 ANTENNA TUNER: The function of an antenna tuner is to improve the signal transfer from the antenna to the receiver and it is designed to be used with long wire antennas which vary their impedance at different frequencies. A tuner shouldn't interfere with or reduce the signal and it should operate over the entire HF band.

The unit did not come with any instructions and I had to refer to the instruction manual for details on how to connect it to the radio. Yaesu has been very ingenious in using three controls to allow maximum matching between the aerial and the receiver.

The band switch, matching switch and tuning controls allow very sharp tuning of your antenna.

FRA-7700 ACTIVE ANTENNA: This unit comes with a three-page instruction manual which shows how to connect the receiver to the active antenna, although these instructions are intended for the FRG-7700 and so more precise details are included in the FRG-8800 instruction manual.

The FRA-7700 uses a four-stage amplifier to boost signal strength with power provided via a cable which plugs into the accessory DIN socket on the back of the radio.

Some DXers and SWLs with space limitations will find the active antenna a good substitute and it would also be handy if you are on the move and can't set up an external aerial.

The FRA-7700 works very well, although along with signal increase is also a noise level increase.

The receiver comes with a 12-month warranty, but there were no warranty details for the accessories.

'BACK TO YOU...'

Letters from readers are welcomed. They should be type-written and present an interesting viewpoint.

OPTIMUM ANTENNA

Dear Sir,

I would be grateful if you would include this comment in your 'Back To You' column for next issue.

There has been a lot said about 'optimum' mobile antennas. As I do not have room for a nine-foot stainless (centre-roof mounted antenna) on my vehicle, I have thought that the next best antenna would have the following qualities:

1. Be say, 1.8 metres in length (i.e. six feet);
2. Be top-loaded;
3. Have adjustable tuning (for movement from vehicle to vehicle).

I have phoned many antenna suppliers and have not been able to come up with a 'skystick' to satisfy all of the above. Do you or your readers know of such an antenna and where it may be purchased?

While you have had many excellent articles on antennas in your magazine, why not run a side-by-side 'challenge'?

David Young
Hawthorne, QLD

No, I can't say that we know of an antenna which meets your requirements. In regard to the suggested antenna 'challenge', candidly such an exercise is largely a waste of time these days as there are simply no 'bad' antennas on the market. Sure, some may be a 'millipoof' better than another, but, even this can usually be put down to a minute variation in one batch of antennas as compared to another.

*— **Editor***

RESTRUCTURING AUSTRALIAN CB HF BANDS

Dear Sir,

I feel that these ideas might be interesting as discussion topics and I would like to see the Australian HF CB bands eventually re-organised thus:

1. AM stations limited to Channels 1 to 20, with current power of four watts.
2. SSB stations limited to Channels 21 to 40 on UPPER side band only.
3. 19 new USB channels created between Channel 20 to 40 with the channel spacing altered to 5kHz.
4. SSB stations allowed to run a maximum of 27 to 32 watts PEP.

John G.E. Robinson
Lindfield, NSW

Your suggested restructuring is a lovely idea, however, it is unfortunately also in the realms of 'Fantasyland'. There are a whole heap of reasons why your proposals could not be implemented — or even given serious consideration by the authorities — far too many to go into here. Far easier and considerably more practical is that AM stations operate only on channels 1 to 20 and SSB 21 to 40. This worked like a charm for many years and everyone had a fair go, but, the system broke down into today's chaos. We would be interested to hear what readers think . . . should AM be restricted to the lower 20 channels and SSB to the upper 20 . . . ?

*— **Editor***

DX FORECAST . . . ?

Dear Sir,

I am writing this letter for three reasons; to complain, request and commend you on your magazine.

My sole criticism concerns your 'DX Forecast' feature which appears regularly in your magazine. I feel it is a very good feature and undoubtedly useful to many operators.

Not so with those of us who live in Melbourne.

If possible, maybe you could find another source for atmospheric predictions, add them to the usual predictions and thus incorporate some extra paths for the DXers in Melbourne.

Secondly, I would like to request that you publish a list of operating frequencies, power outputs and modes of transmitting on citizens band radio from a few different countries.

I know this was done a few years ago, but how about an updated version?

With conditions getting better and better, I am sure a lot of people will find it invaluable.

Thirdly, I would like to commend you on a great magazine and despite my sole complaint, I think you provide everyone with interesting, informative articles and features at a very reasonable price.

Andrew McGee
Sunbury, VIC

The lack of specific DX forecasts from Melbourne is really not a problem as these forecasts apply equally to all locations along the east coast. Sure, there might be minor variations, but, on the whole the projected conditions in Sydney will apply equally as well to Brisbane and Melbourne.

*— **Editor***

MORE FOULMOUTHS

Dear Sir,

I had the occasion to write to the Department of Transport and Communications, about a CB operator who was continually using offensive and profane language to me. I gave them his call sign and address and, in due course, I received acknowledgement from them saying they would look into the matter.

After waiting for results, I received a letter and have enclosed a copy for your perusal.

I was amazed by the letter and the fact that the Department will allow this sort of thing to happen — without taking action against the offender.

It makes me wonder what it takes for the Department to take action and what we pay our license fee for. I have been on radio for 8 years. I am 65 years old and I have never heard such disgusting language coming over the airways until quite recently.

No wonder there are pirates on the airways with extra frequencies and extra power, they need this to get away from these so-called operators.

It seems to me that the Department is only interested in the license fees.

J English,
Warooka, SA

DOTAC REPLIES

Dear Sir,

Thank you for your letter of 19 March, 1989, about the problems you have been experiencing from antisocial behavior occurring on the CB radio service.

Under the Radio communications Act of 1983, the use of profane language is, by itself, not an offence. Such behavior must cause other operators to be seriously alarmed, affronted, or take the form of harassment, before action can be taken.

Unfortunately in most cases, it is very difficult to gather proof of the identity and location of irresponsible operators. This is especially so where the transmissions are of an intermittent nature, or from a vehicle.

It is also often necessary that the complainant be prepared to take part in any subsequent court proceedings, if enough evidence has been gathered to establish a case.

In conclusion, I would like to say that the Department does attempt to reduce the incidence of this type of activity, but with the resources currently

available, it is impossible to eradicate it completely.

R. Worden
OIC Regulatory
Department Of Transport And Communications
SA/NT Region

What is stated in the DoTaC reply is essentially correct, but, it surely makes a farce of this Department's operation and/or the Radio communications Act — more the latter than the former. Surprisingly to most people, you can get in a hell of a lot of trouble for operating 'out of band', but, you can tell someone to get f....d on air with a number of variations on the theme and, amazingly, get no flak from DoTaC — what do readers think about the situation . . . ?
— Editor

WORDMAZE QUERY

Dear Sir,

Several times I have included a note with my CB Action competition entry, asking for an answer to be published to the question I had asked. My query has been: Is it acceptable to photocopy the competition page and enter this copy? I ask this because removing a page is vandalism if one wishes to keep their copy complete for further reference.

So far nothing has ever been printed to answer this question, so this time I address this note to the editor.

Could you please advise readers on this query.

D. Walters
Hervey Bay, QLD

There's not much point putting a letter in with your Wordmaze entry as we only open the entries until such time as we come up with the one containing the correct answers. Your point about tearing out the page is, however, a valid one and as from this issue we will accept photostat copies of the page — BUT — only one entry per reader. If we find a reader sending in more than one all that reader's entries will be dumped.
— Editor

GOING BUSH

Dear Sir,

I would very much appreciate your knowledge and whatever advice you can offer relating to having a radio communication system installed in my vehicle.

Probably at the end of September or early October '89 when I finally retire from the workforce, I will endeavour to travel with a caravan in my Toyota HiLux 4x4 vehicle around Australia.

As my travels will take me miles into the outback and having had some previous experience of the long open roads, I have learnt there is a real necessity to have means of radio communication with other people. Not only for my own personal need in case of mechanical breakdown, but also in case of accidents.

I would feel more at ease travelling the outback highways, knowing I can call upon someone miles from my position to render assistance. It provides a great sense of confidence knowing someone will be close at hand.

I would greatly appreciate your knowledge, experience and suggestions in this matter and doubly appreciate if you would respond to my letter as soon as it's most convenient for you to do so. It is only a matter of weeks before I put my intended tour into operation.

If you are unable to assist me with the details in question through the publication of your magazine CB Action, can you refer my letter to some notable identity who can put me on the right course to procure the correct radio communication equipment to do the proper task when travelling vast distances.

B.F.H.Hawker
Sunshine Beach, QLD

The answer to the above largely depends on how much cash you want/can spend. A 27MHz AM/SSB rig is probably your best bet, however, this gives no guarantee that you will be able to raise someone precisely when you may need assistance.

The only surefire way to ensure that you can summon assistance is by using a RFDS (Royal Flying Doctor Service) type transceiver. These are very expensive, but, they provide immediate access to emergency services throughout Australia.
— Editor

AND HERE IS ANOTHER NEW UHF HANDHELD

CONNEX 40 UHF REVIEW

Furious Fewster rarely admits to being impressed with anything so it comes as a pleasant surprise to receive two rig reviews which are actually halfway enthusiastic — he was pretty happy with the Commex UHF mobile rig in our last issue and he's just as happy with their handheld.

The Connex-40 handheld is another assault on the Australian UHF-CB market by Brisbane's Commex Communications Corporation...no, the proof-reader hasn't made a boo-boo.

It seems that at the last minute Ranger found themselves unable to register the company name 'Connex' (one of their Taiwanese brand names) in Australia and had to switch to 'Commex', but the transceivers still bear the parent brand.

Not really confusing .... provided you're dyslexic.

I've said it before and I'll say it again .....I haven't much faith in manufacturer's specifications.

Some of the best-spec'd (on paper) rigs are absolute dogs on-air and on-air performance is what counts.

As with the Bushranger mobile I tested recently ,however, the Connex-40 exceeded most of the manufacturer's specifications and its on-air performance left nothing to be desired.

The people at Ranger seem to understate their specs, but who's complaining.... ?

All controls are located on the top of the rig, thumb-wheel switches are used to change channels, a la Icom and other controls are rotary ON/OFF/VOLUME and SQUELCH knobs and SIMPLEX/DUPLEX and HI/LO POWER pushbuttons.

A red LED indicates whether or not you're transmitting (if it doesn't light when you key the PTT then it's time to recharge the battery pack).

Sockets are provided for an external mike, an earphone or extension speaker, or a speaker/mike combination — plugging in an earphone, speaker, or speaker/mike disconnects the internal speaker.

There's also provision for DC power .... from your car's cigarette lighter socket for instance, unfortunately for the bucket-mouth brigade the current drain is greater than the charge rate, so you can't charge a flat ni-cad pack from your car battery without shutting your mouth for a while.

Commex Australia decided to include a longer-life more powerful ni-cad battery pack as standard equipment rather than sell the Connex-40 with the usual wimp-pack as standard and flog the bigger pack as an expensive (but neccessary to get the best performance) optional add-on, which accounts for the substantial difference (over 1W) between Ranger's rated output and the rig's actual output.

Good move !

The rig comes complete with the expected antenna, wrist strap, belt hanger and plug-in battery charger, and a soft protective case.

SUPPLIED ANTENNA IS ADEQUATE

The antenna connects via a BNC and the supplied antenna is what I'd call 'adequate' .....identical with the one supplied as standard equipment with most other brands, which is a shame.

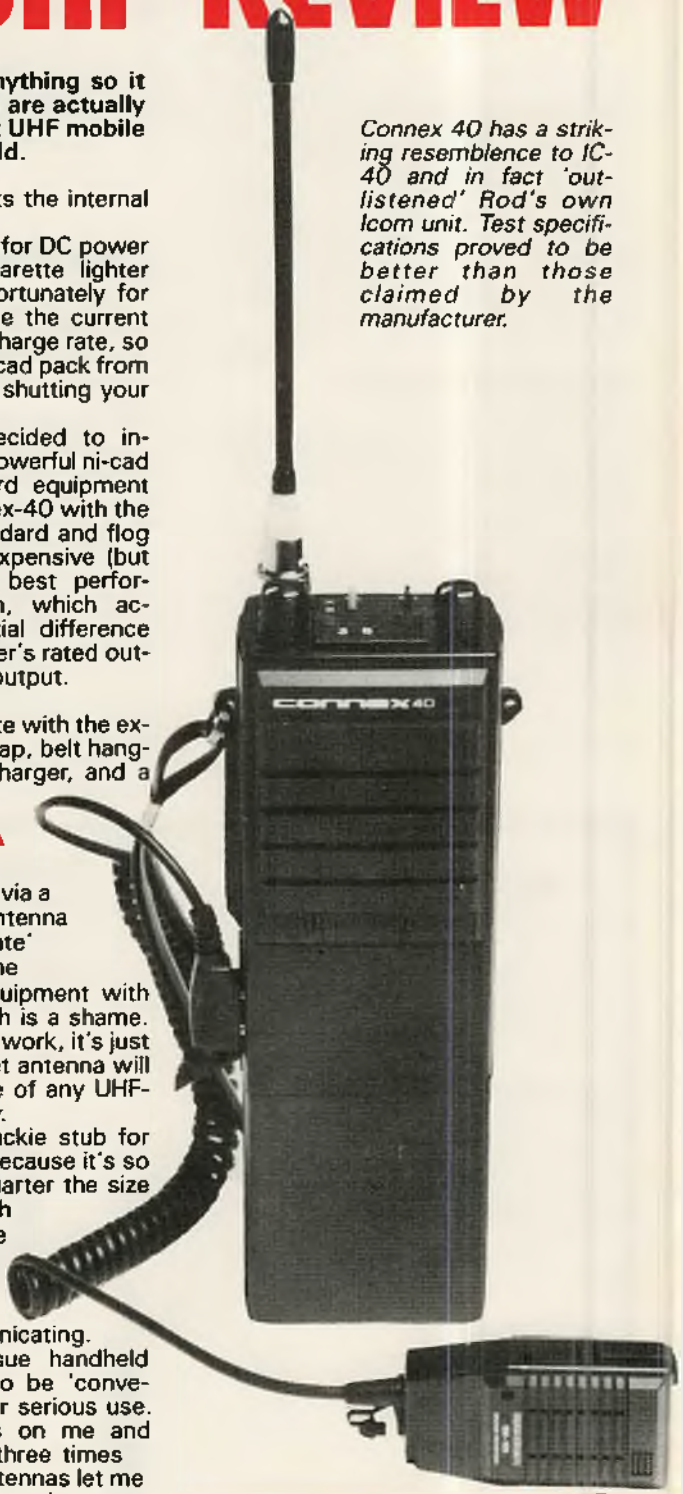
It's not that they don't work, it's just that a decent after-market antenna will improve the performance of any UHF-CB handheld dramatically.

I use a Larsen Kul Duckie stub for general bashing around because it's so convenient.... about a quarter the size of standard antennas with comparable performance ....but I carry a full-sized Larsen whip with me in case I want to do some serious communicating.

I reckon standard-issue handheld antennas are too long to be 'convenient' and too feeble for serious use.

Before anyone jumps on me and says that Larsens are three times the price of standard antennas let me point out that you only get what you pay for.

All controls are located on top of unit and are easily used - even if you've got big hands . . .



Connex 40 has a striking resemblence to IC-40 and in fact 'outlistened' Rod's own Icom unit. Test specifications proved to be better than those claimed by the manufacturer.

ADD A LARSEN — ADD A REPEATER

Adding the big Larsen to the Connex (or to my Icom) adds another repeater from my home QTH, and that alone makes it worth the money.

Plugging in a vehicle-mounted hi-gain mobile antenna opened up a whole new ballgame.

Although not as potent performance-wise as a 5W mobile rig the Connex-40 came through with flying colors in all but extreme fringe repeater access, carrier power increased to just under 3W (Welz power meter) when I connected the Connex to the car battery.

Although this increase theoretically boosts performance slightly I was unable to detect any improvement on-air.

I could hear repeater conversations quite clearly way past the rig's access cut-off point .... a legacy of the handheld's exceptional receiver sensitivity and lower power output.

Called stations rated simplex and duplex transmitted audio as perfect, and some seemed surprised when told that I was using a handheld transceiver — "It doesn't have that walkie-talkie sound", one guy told me.

Must have better hearing than I have, my ears can't pick the difference between a base, a mobile, and a handheld.

Adding a speaker/mike made no noticeable difference to transmitted audio quality and the unit's internal speaker produced good received audio as did an after-market (Yaesu) speaker/mike.

The receiver itself was extremely sensitive and the test rig actually outlistened my trusty old Icom IC-40 ... a rig to which the Connex-40 bears more than a passing resemblance.

In fact the two designs are so similar one could almost call the Connex-40 an IC-40 clone.

Conclusion .... an excellent piece of equipment at a price which should appeal to potential handheld buyers who've been previously deterred by the mediocre performance of low-end models and the high price of 'performance' models.

Recommended retail price is $575, but check around for bargain prices before you spend your money.

For the technically-minded, here are abridged manufacturer's specifications together with actual bench test figures produced with an IFR 1200S monitor.

The test unit, Serial Number 900017, was selected at random from the stock shelves and bench tests were performed on channel 24 (477.000 MHz) after a 10-minute (50% keydown) warmup period.

TRANSMITTER SECTION

	MANUFACTURER	ACTUAL
Frequency Tolerance	+/- 1.0kHz	-0.17kHz
Carrier Power (HI)	1.5 Watts	2.57 Watts †
Carrier Power (LO)	0.15 Watts	0.39 Watts †
Modulation Frequency Response (1 kHz 0 dB reference at 500 Hz Deviation)		
Lower at 500 Hz	-6 dB	-6.1 dB
Upper at 2.5 kHz	+8 dB	+8.2 dB
Microphone Sensitivity for 3 kHz Deviation	5.0 mV	4.7 mV
Maximum Deviation at 1 kHz	+/- 4.75 kHz	+/0 4.7 kHz
Maximum Deviation at 6 kHz	+/- 1.5 kHz	+/- 1.5 kHz

RECEIVER

Sensitivity for 12 dB SINAD	0.5 uV	0.21 uV
Overall Audio Fidelity (1 kHz 0 dB reference)		
Lower at 0.5 kHz	+3 dB	+2.9 dB
Upper at 2.5 kHz	-8 dB	-7.95 dB
Adjacent Channel Selectivity (+/- 25 kHz)	55 dB	59.8 dB
Maximum Audio Output Power	0.5 Watts	0.52 Watts
Audio Output Power at 10% THD	0.25 Watts	0.29 Watts
Hum and Noise Ratio at 1 mV Input	40 dB	43.1 dB
Squelch Sensitivity at Threshold	0.25 uV	0.1 uV
Squelch Sensitivity at Tight	1.0 uV	0.4 uV
Image Rejection Ratio	50 dB	55.1 dB
IF Rejection Ratio	60 dB	61.7 dB

† Using the Australian standard nicad battery pack

HF LINK

WITH ROB WILLIAMS

Welcome back to HF Link.

I'm glad that you are revisiting the realm of HF radio and this month I have news on Radio Australia's birthday celebrations and details of improvements at Radio New Zealand. Remember all times are in UTC (same as GMT) and all frequencies are in kHz. International broadcast stations are in AM and utility stations are in SSB unless stated otherwise.

RAAF ON HF

The RAAF makes use of HF communications to maintain contact with aircraft flying within Australia, but, which are operating outside the range of normal VHF/UHF communications.

Like most HF communications users, the RAAF has two sets of frequencies, one for the day and another for the night.

The three daytime frequencies are 11235, 8975 and 13205. During the night they use 3032, 5688 and 8975. Changeover between frequencies occurs at 2300 and 0900 daily. At various times you can hear communications coming from Darwin, Perth, Townsville and Sydney.

I have also heard the callsign 'Airforce Sydney' using 5718 for search and rescue operations off the coast of Australia. When an aircraft wishes to make a phone patch the controlling ground station will request to the aircraft that it move to the appropriate frequency.

Frequencies vary, but, I have heard communications on the following — 5700, 8967, 8972, 8989, 8998, 9018, 9032, 11198, 11209 , 11235, 11249, 11267, 13244, 15063, 18027.

DX NEWS VIA YOUR COMPUTER

Electronic Bulletin boards are used by computer enthusiasts to exchange computer programs and comments on just about everything. They have been around now for many years and there are a few overseas which cater for shortwave listeners. Well, Australia now has its own Bulletin board called Shortwave Possum which specialises in shortwave listening and DXing information — although anything to do with radio communications can be discussed.

As well as exchanging notes and comments on the hobby, there are some excellent programs to download. The system operator (sysop) is Patrick McDonald who is happy for you to access the board which is available 24 hours a day for one and all.

Shortwave Possum provides user friendly menus for moving around the various areas, together with excellent electronic mail facilities.

There are too many details to list here, but, some subjects included are FM and TV DXing, HF fax stations, latest shortwave DX tips and easy to hear shortwave stations in English.

To contact Possum dial (02)651 3055. Access is via 300, 1200 or 2400 baud using 8 bits, 1 stop bit and no parity.

Electronic bulletin boards are a great way of bringing together people with common interests and their success depends on users contributing as well as downloading programs and information.

NEWS FROM RADIO NEW ZEALAND

The tentative S-89 transmission schedule for RNZ effective from 3/9 till 28/10 has the Australian and PNG service operating as follows: 2345-0145 and 0330-0730 on 15150; 0900-1205 on 11780 and 9850; 0145-0330 on 15150 only on Saturday and Sunday.

The Pacific service is 1830-2105 on 17705 and 15150; 2345-0145 on 17705; 0330-0730 and 0145-0330 on 17705.

According to a report on Media Network, RNZ has been given approval for a new 100 kW transmitter at a new site at Taupo in the centre of the North Island to serve the Pacific area. The transmitter is due to commence mid January 1990, in time for the Commonwealth games, to be held in Auckland. Tenders for the project are to be released soon and plans are under way to start with up to eight Pacific Island languages with access to RNZ domestic programs if needed. It is anticipated the service will commence with between five and eight hours of general information programs involving news and current affairs.

VOA GIVES US MORE TRANSMISSIONS

VOA has added two extra transmissions for listeners in Oceania and East Asia. The first is at 1900 to 2000 and then from 2100 to 2200. On Saturdays at 2110 there is an extra airing of Communications World, very handy for those people who miss the program the night before. When I last checked the transmission 17735 kHz provided a good signal into the eastern part of Australia.

Also in use are 15180 and 11870 but they appear to be blocked by other stations on the same frequency.

RADIO AUSTRALIA TO CELEBRATE ITS 50TH BIRTHDAY

This year marks the 50th Anniversary of Radio Australia. The service commenced on 20 December 1939, signing on as 'Australia Calling', later changing its name to Radio Australia.

There will be a five-part documentary series tracing the history of RA, one decade per episode, however, no announcement as to when it will be broadcast has yet been given.

December will be their jubilee month, with an 'Open Day' at their studios at Burwood, Victoria on 17 December and this will offer listeners the best opportunity to see behind the scenes and learn how an international shortwave station works. It is from here that all programs are relayed via satellite to their transmitter sites around Australia.

On 20 December RA guests and staff will be celebrating this historic occasion and RA will be broadcasting happenings throughout the day.

Stamp collecting SWLs should take note that Australia Post will be releasing a special stamp issue in November, along with a first day cover, to celebrate this birthday. A series of three RA stamps is also planned for release from Norfolk Island.

UTILITY STATION TIPS

Here is a selection of utility loggings I have heard over the last few months, give them ago and see how many you can hear.

Commsta Portsmouth VA, USA, callsign NMN on 4428, heard at 1015 with a weather forecast using electronic voice. Santa Maria, Azores, with air traffic on 5598, heard at 0645. Honolulu coastguard, callsign NMO, with weather forecast heard at 1156. Stockholm Radio LDOC (Long Distance Operation Control) talking to Nth West Airlines on 8930 at 0551. British Airways control talking to 'Speedbird' 286 (British Airways aircraft) on 10072 at 0623. Lufthansa Control talking to Lufthansa 403 on 10078 and 13327 at 0620. Houston LDOC talking to Japan 62 on 10075 at 0720. Qantas Control, Sydney, talking to Qantas aircraft on 10078 at 0545. Pancontinential Petroleum Ltd (VH2GUL) on 10183 at 2254. Darwin Control heard talking to RAN ship on 12435.9 at 0653. This is known as their Alpha 5 channel.

RADIO CANADA INTERNATIONAL

Radio Canada International has the following English language broadcasts to South East Asia via the transmitter facilities of Radio Japan at Yamata effective till 23/9. 1300-1329 on 17810 and 15270 in English and 2200-2229 on 15440 and 11705.

For those who wish to hear their French transmissions, these are aired at 2230-2259, once again from Yamata on 11705.

FEN LEAVES SHORTWAVE

A report carried in 'Sweden Calling DXers' states that the Far Eastern Network, the Japanese affiliate of AFRTS (American Forces Radio and TV Network) has ceased using shortwave. FEN, Tokyo still operates on mediumwave on 810 kHz. This leaves Antarctica as the last AFRTS station on shortwave.

CONGRATULATIONS

Congratulations to William Nixon from Brisbane who won our DoTaC book giveaway in the March/April edition. To the best letters received this month I have a selection of stickers from AM radio stations around Australia — a great way to start your MW DX collection.

That's all for this issue and, as always, I welcome letters, HF listening news and any questions you may have. I also have some questions for you - what do you want to see in HF Link ? Do you want to read more about shortwave broadcast stations, utilities, mediumwave DXing, hints or tips.....?

So please drop me a letter (enclose an SASE for reply) to PO Box C-111, Clarence St, Sydney NSW 2000 (or if you have a computer and modem, leave a note for me on the Shortwave Possum BBS !).

QUEENSLAND SCENE

— FURIOUS FEWSTER TELLS IT AS IT IS —

COME IN THE WOOD DUCKS

My comments in the last couple of issues on the 5/35 UHF-CB 'emergency repeater' syndrome really dragged in the wood-ducks. Few previous Queensland Scene items attracted as many calls and letters. Most of the 'against' faction seemed fairly rational, but, judging by the way some ofthe 'monitors' carried on, the continuation of 5/35 as an 'emergency repeater' must be far more important to the world than prevention of the Green-house Effect.

I'm sick of late-night whining phone calls from snivelling wimps who sound like they'd commit suicide if they didn't have their beloved 'monitoring' to live for. As far as I'm concerned the subject is now closed. Anyone phoning me with further comments about 'emergency repeaters',either for or against, **will be politely told to piss off !!(It's difficult to say piss off politely Rod — Ed).**

LET'S BAN SCANNERS — AGAIN !

Moves are afoot to ban scanners .... **again !!**

Periodically police in various States put forward proposals that scanners be outlawed. The argument usually goes along the lines that villains can use scanners to evade capture and that the aver-age citizen has neither right nor reason to listen to police radio transmissions in any case. One frequently suggested option is to scramble police transmissions. This is all well and good in theory, but, a determined crook would simply steal a police radio com-plete with scrambler.

If he was into free enterprise he'd do a production run of decoders and flog them to his fellow crooks. Let's be realistic. (No pun intended, Mr Tandy.)

There are laws against owning pistols and machine guns, but, that doesn't stop determined hold-up artists from obtaining and using them.

Prohibiting ownership of scanners would only keep them out of the hands of thousands of honest law-abiding hobbyists who simply use them for enjoyment, not for nefarious purposes. Vil-lains would still be able to get scanners on the black market and would have no qualms about using them to monitor police activity.

Anyway, most crooks also drive cars and wear clothes, but I don't recall anyone proposing that the rest of the population be made naked pedestrians.

Police in the eastern States are also once again getting heavily into the old 'radar trap warning' kick, knocking drivers off for flashing their headlights to warn oncoming traffic of the presence of police radar. It's known as 'interfering with police' or some such claptrap.

Queensland police are notorious for this activity, but, few driv-ers are aware that they can be fined for broadcasting radar trap locations over CB radio. Police claim that radar traps save lives. I'd be surprised if the use of police radar has saved one life on Australian roads since it became widespread in the 1960s.

I personally feel that radar traps, given the way they're general-ly used, **are nothing more than a revenue-spinner,** but, that's beside the point.

Let's assume for a moment that radar traps really **DO** save lives by catching the odd speeding driver. Wouldn't it be reason-able to assume that flashing headlights or transmitting the loca-tion of radar traps over the CB would actually help to save more lives by prompting **OTHER** speedsters, the 'ones that got away', to slow down ?

If warning another person that a device is in place to detect them if they commit a crime is 'interfering with police, etc' then why aren't banks charged over the 'hold-up camera' signs they display ?

Why aren't stores charged over their signs warning shoppers that anti-theft tags are fitted to expensive items and video cam-eras are in use to detect shoplifters ?

Why aren't car owners charged for displaying window stickers warning that the vehicle is equipped with an alarm system ?

Is the police attitude towards radar traps such that apprehen-sion and prosecution of offenders is preferable to prevention of the offence in the first place ?

Are police interested in reducing the carnage on our roads, or simply in collecting fines ?

IT'S A GREAT RUMOR

There's a rumor doing the rounds up here, supposedly backed up by a 'leaked' future press release resulting from the recent regulatory conference in Canberra, to the effect that on 1 Septem-ber DoTaC will announce that (a) all 27 MHz AM transmissions will be prohibited from 1 January next year, (b) that all AM-only CB rigs will have to be handed in during the three-month amnesty period, (c) that all SSB/AM rigs will either have to be modified to FM/SSB or have the AM mode disabled by then and (d) that an on-the-spot fine of $1000 will be applied to anyone found with a transceiver with 'illegal' AM capabilities.

Not a bad rumor really, but, the timeframe is all wrong.

For starters it's FOUR months from 1 September to the end of the year (even Paul Keating's economic policies stop short of inflating a three-month amnesty period by 30 per cent) and sec-ondly, three months isn't long enough for DoTaC to pull off a changeover of this magnitude even if they were inclined to go along with such a technological wank.

A bit more thought would have made the rumor more believable.

If the hoaxer had made the cutoff date 1 January 1990 I might have fallen for it myself. (Never....Ed)

MAKING A QUID FROM THE KIWIS

I listened to one enterprising young Brisbane CBer setting up a few export deals witha group of Kiwi 27-meggers recently. As fast as he clinched one sale another Kiwibroke in with an offer (millions of them on 27 MHz these days, aren't there ?). The kid was demonstrating a multiple-sound-generating key-ring called a 'Zap Attack' which featured sirens, wah-wahs, machine-gun fire, various Star Trek-type noises, the sounds of a ringing telephone and a couple of simple beeps.

It sounded bloody awful to me but the Kiwis just loved it.

The 'Zap Attack' sells for $5.95 around the town but our young tycoon was flogging them off to Kiwis for ten bucks apiece including postage so he'd be making a few bob profit out of each one as well as helping our trade balance figures.

One cynical Brisbane CBer reckons that the kid is being paid a bounty by DoTaC for each one of these monstrosities he sends to New Zealand, thereby keeping the bloody things out of the hands of the locals and passing the headache on to NZP&T.

NO COMMON SERVICE

A recent prang between a semi and an ambulance which re-sulted in a doctor and a nurse being injured highlights the need for better radio communications between ambulances and their police escorts (fortunately no lives were lost).

Perhaps **'SOME** radiocommunications' would be more appropriate.

The ambulance 'lost' its police escort after changing to an alternate route. The driver was unable to advise the escort of the change because, incredibly, Brisbane police and ambulance ser-vices have **NO COMMON CHANNEL** to talk to one another. Messages from ambulances must be relayed by the QATB base to VKR to the escorts and vice versa....a ridiculous situation in this age of modern (and CHEAP) radio communications technology.

This communication gap extends to the Fire Brigade, which are also unable to talk directly with either police or ambulance vehi-cles or base operators. Confusion reigns when all three services are required at the same scene. Police vehicles escorting rigs carrying long or wide loads on Queensland roads are almost always provided with a CB radio by either the driver of the rig or the driver of the accompanying pilot vehicle....a sensible ap-proach to road safety and smooth traffic flow.

There's a world of difference between a high-speed siren-screaming medical emergency dash through suburban streets and the leisurely crawl of a house removal along a country road and I'd be the last to suggest that ambulances and their police escorts be fitted with CB radios, but, at least CB radios would be better than the NOTHING they have now !!

The allocation and installation of a common channel so that the three emergency services can link up with one another if neces-sary must be given top priority !!

Like I said earlier, no lives were lost....this time — but what about next time ?

TASSIE TAKES THE AWARD

It looks like the Banana Benders are in danger of losing the coveted Bad Buddies International Stirring Award to the Apple Munchers. Latest entrant in the stirring stakes is a character calling himself 'Merv' who is referred to variously as 'Merv The Perv', 'The Tasmanian Turd' or 'That Bloody Dickhead From Tassie', depending on who's on channel 35 LSB at the time.

Personally I've found the guy to be quite humorous the few times I've listened to his prattle. His offer to install a '008' number at DoTaC in Canberra so that Good Buddies could phone in and complain about him for the cost of a local call after one Brisbane stirrer accused him of being a revenue-generating urger for Telecom was a real gem which showed quick thinking.

I loved it !!

I'm not going to get into the old '35's not a call channel' argument again ....the marine ornithological specimens can make call channels out of all bloody 40 for all I care....but, in my interpretation of the regs 'Merv' wouldn't be committing any breach by performing on 35 unless he was disrupting a serious conversation, and 'serious conversation' and 'channel 35' are a contradiction in terms.

If 'Merv' was doing his thing on the LEGAL call channel (16 LSB) then perhaps DoTaC would have the jump on him, but 35 is NOT the legal call channel and I haven't heard anyone accuse 'Merv' of causing disruption to any serious conversation on this channelor on any other channel for that matter.

I always thought CB radio was supposed to be a FUN hobby.

The Good Buddies who gang up to abuse 'Merv' are the REAL pains in the bum on 35 !!

ONE WITH A DIFFERENCE

Bit of an unusual twist to a recent court case involving a Dalby UHFer charged with jamming the local repeater. Seems the guy was a COMMERCIAL operator, jamming a hobbyist.

HERE WE GO AGAIN...

Rumblings from one major CB importer about price increases in the near future due to our dollar dropping from around US89cents to around US75cents.

As I recall, current prices were set back when the Oz/US dollar exchange rate was down in the low 60s and I don't remember anyone dropping their prices when it shot up around the 90-cent mark.

You can fool some of the people some of the time ....

SORRY — STILL NO COMMEX SSB/AM REVIEW

Sorry about the test of the prototype Commex SSB/AM rig proposed for this issue. I'm still waiting to get my hot little hands on it.

Maybe next issue....or the one after that....or the one after that !

★ ★ ★ ★

MILLIONTH LICENCE

A Queensland fisherman, Mr Terry Hansen, is the holder of Australia's one millionth communications licence.

Hansen's marine base station is used to keep in contact with his family fleet of trawlers, and he was presented with his licence and a special commemorative certificate by Telecommunications Minister Ros Kelly at his Bundaberg home.

Ms Kelly said that the issue of our millionth licence proved the continuing strong growth of radio communications in Australia, which is increasing at a rate of 15% per year.

★ ★ ★ ★

ANOTHER HAPPY ENDING

From the Adelaide Advertiser came the sort of CB story which is too often neglected by the press. A South Australian woman injured when her car rolled near the WA—SA border was rescued after a mayday CB call.

The call was picked up in NSW by a holidaying policewoman, who notified a nearby station and had the SA police alerted. The woman was quickly located and taken to Kalgoorlie Hospital with neck and chest injuries.

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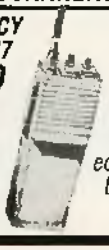

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IT'S UP THERE WITH THE BEST

SAWTRON'S UHF HANDHELD

What do you give the UHFer who has everything including a Sawtron ? Another Sawtron, of course. Sawtron's first UHF CB handheld gives you quality at a price, reports DAVID FLYNN....

The new KG109 has the top-shelf UHF CB handheld market firmly in its sights, and owners of any Sawtron rig from the spartan 880 to the reigning champion 999 will need no persuasion that this is the portable they've been waiting for.

As with many other 477 MHz handhelds it is based upon a commercial unit adaptable to any number of channels and individual business requirements.

So while aggressively marketing the Kyodo KG109 series of commercial handhelds Imark have also ordered a UHF CB version and rebadged it with the established and respected Sawtron name. At a starting price of nearly $1200 the Sawtron KG109 won't make Imark a fortune, nor does it seriously threaten the IC-40 and friends. But it is, as they say, 'a nice little earner' which adds some spice to the game.

The word which keeps cropping up as you become familiar with the KG109 is 'heavy'. Heavy in weight, heavy-duty and a heavy performer.

In size the KG109 is not much larger than an IC-40, a rig with which most UHFers are familiar. But the 109 just looks bigger, more solid, in every way possible. This is no illusion in terms of weight though, the 109 tipping scales at almost 700 grams — nearly 200 more than the IC-40. Accounting for most of this is the KG109 battery pack and solid diecast aluminium casing.

'... lives up to the Sawtron name with one of the hottest receivers around'

The 109 has a very functional appearance and on the whole is well laid out, although working the controls tends to be a cramped and would be even more so if you've large hands.

There are two miniature toggle switches (for power output and scan) with different colored plastic caps; taller knobs for volume and squelch; and a small rotary dial channel selector. The LCD window (on the top deck) is easy to read and clearly illuminated by the light switch on the side panel, above the push to talk key. It displays channel number and has indicators for tx, busy, scan mode and low battery level.

Instead of the usual BNC antenna connector the KG109 uses a TNC, which is commonly seen on portable cellular phones. TNCs combine the screw-on shroud of a PL259 with high-quality BNC connection, and is in keeping with the overall high-tech design of the 109 series. The aerial itself is a 'Tuff Duck' from the US company Centurion and is a tough little whip indeed.

PROVISION FOR EXTERNAL SPEAKER-MIKE

There is provision for an external speaker-mike, which uses an eight-pin plug unique to this radio and is located on the side panel above the light switch. The supplied plastic cover not only protects the socket from ingress of moisture or dust but also has two jumpers which feed audio through the inbuilt speaker when the mike isn't connected. Remove the panel and you lose audio.

PERFORMANCE PLUS

On air the KG109 lives up to the Sawtron name, with one of the hottest receivers around making the difference between copy and no-copy on numerous occasions. Imark rated receive sensitivity at less than 0.25uV (12 dB SINAD) and I wasn't surprised to see it come in at an ever better 0.21uV on the bench — compare this to at least 0.35uV for your average 477 MHz mobile !

There is ample volume waiting to blast out through the 500mW speaker, and even at full bore it gives no hint of distortion. The inbuilt mike is quite sensitive and can easily be read at arm's length. On both transmit and receive the audio leaves nothing to be desired.

The KG109 is equipped with a special noise filter circuit which, like those fitted to the Sawtron 990 and 999 mobiles, 'eliminates the squelch tail nuisance'. Fine for commercial repeaters, but on UHF CB it can prove difficult to know when the repeater tail has dropped off — and anyway, what true UHF nut would be without that sweet 'chhk' at the end of each over ?

As with most handhelds, output power of the Sawtron can be switched between high and low levels, but, in this case both settings are internally adjustable from 0.5-5 watts. The KG109 runs 5W on full and 1W low (both on spec for our review model) which is claimed to give up to eight hours life on a duty cycle of 10:10:80 (10% tx, 10% rx and 80% on standby) using the NC1000 (1000 mAH) battery pack.

The lower capacity NC600 (600 mAH) pack is fitted to all KG109s off the shelf, however Imark supplied our sample with the longer-life NC1000 and tell us that these can be specified instead of an NC600 for an extra $15 — which sounds like the bargain of the year. Both packs attach to the radio with a very positive twist-on locking arrangement.

Channeling arrangements on the KG109 take some getting used to. Channels 1 through 40 are all simplex, 41 to 48 are duplex (for repeaters on 1/31-8/38) while 51-58 tune to the respective repeater input. This means a lot more running around the band than with the traditional arrangement of separate duplex and reverse switches, but it does reduce the number of controls needed.

THE MANUAL COULD BE BETTER

Unfortunately the KG109 is only supplied with the handbook for the commercial models, which makes no mention of this arrangement (which is peculiar to the UHF CBers). A very detailed and otherwise handbook none the less, but Imark should be including at the very least a sheet which details those functions of the 477 MHz version not covered by the manual.

While on the topic of commercial versions, readers may wonder what the LCD window on the front panel is used for. In other models a keypad is fitted to the L-shaped recess on the front panel and in conjunction with this second LCD readout is used to operate various selcall and CTCSS functions. The LCD display is actually removed from the CB model and replaced with a thin strip of grey plastic.

The scan function isn't as useful as most other radios, as there is no facility to skip channels (even manually) unless you switch off the scan, advance the channel selector by hand and then activate scan again. When a busy channel is found the KG109 holds for two seconds after each over, and only then will it move on.

SURFACE MOUNTING AND MODULAR CONSTRUCTION

Sawtron has always had a reputation for excellent quality equipment and once again the KG109 earns its stripes. As mentioned earlier, the rig is housed in a diecast chassis, sealed with O-ring rubber gaskets to make the rig dustproof and splashproof. Build quality is superb and makes wide use of tiny but reliable surface mount components and modular construction, which reduces the need for internal wiring and simplifies repairs. There is also plenty of room for internally mounted options such as five-tone dial-up selcall and CTCSS. In all, Kyodo's handiwork begs to be admired.

In fact Kyodo probably admire the handiwork of competitor Motorola to the point of imitation — the best form of flattery, they say. I felt a strong sense of deja vu about the KG109 from the first glance, as it looks strikingly similar to Motorola's MX300 handheld series. Opening up the KG109 confirms such suspicion — under the covers they are almost identical in design, layout and construction.

Top control panel is well laid out, but, is a bit tight for fumbling fingers.

Not that this in any way detracts from the Sawtron, in truth it improves the pedigree.

A final observation on the radio itself is that being a commercial unit with a 10 MHz bandspread the KG109 will prove most attractive to anyone who has a private frequency between 470-480 MHz which they use in addition to the 477 MHz band.

SEVERAL OPTIONS AVAILABLE

As expected, there are a number of options for the 109 series, most of which are applicable to CB users.

Neat KD455 speaker/microphone is a worthwhile accessory, even at its price of $110.

The KD455 speaker microphone is most effective and avoids the arm strain from holding the KG109 at mouth level for extended periods. It feels very comfortable in the hand and definitely improves both sides of the conversation. Another Sawtron touch is that like the rig itself the mike is water-resistant, and won't come to grief if a forgetful farmer leaves it on the tractor overnight. At $110 per mike you wouldn't want it any other way!

There are two carry cases, in vinyl and imitation leather (about $60 each), plus an impressive no-nonsense belt 'holster' (also $60) as rugged as the KG109 itself.

And a choice of three charger units — the conventional trickle-charger and two drop-in 240 V models. These fast-charge the 109 in just two hours and then cut back to trickle charge, and come with either one or six charge slots. It might be thought a bit cheeky to call these 'options' when the the KG109 doesn't include a charger, putting you on the spot for at least $50 for the base model.

However, Imark believe that many customers for the KG109 will be commercial users who'll buy a number of radios and can then purchase a multiple-slot charger without having a handful of individual chargers sitting idle.

The standard-issue KG109 retails at $1170. Request an NC1000, add a carry case and holster, speaker-mike and trickle-charger and you'll get little change from $1500.

SUMMARY: There can be no doubt that Sawtron now holds the same position in the 477 MHz handheld market as they have always done with their mobiles. That the KG109 is way out of most people's reach doesn't enter into it — the UHFer who must have the best of everything now has something new to buy !

AT GREAT EXPENSE WE GIVE YOU THE

CSIRO CB REPORT

Welcome to the wild world of CB radio.
It's a jungle out there . . . but this report by the CSIRO (Costly Study Into Radio Operators) will help you stay alive.

THE LITTLE KIDDIE
(Bratus Immaturus)

The Bratus Immaturus population exploded some 10 years ago when CB radio became popular amongst the masses. Early fossils indicate a link to the 'walkie-talkie boys' of the pirate era. The species soon became known for its possession of cheap and nasty CB radios, connected to a cheap mobile whip clipped onto the raingutter outside their bedroom windows.

When speaking on air, the Bratus' voice will suddenly change pitch mid-sentence, and this was first thought to be a special call which allowed other Bratus to recognise them. It was later realised to be their voice 'breaking', an action which many local CBers often wanted to apply to the Bratus' limbs and necks.

For all their eagerness to communicate, the Bratus act strangely once on air; they drop 'carriers', play music and then go seeking a mate with the ritual call of 'Any spunky YLs on channel'?

A research team once tracked down and captured a Bratus and provided him with a member of the 'spunky YL' species, only to find that the Bratus had no idea of what to do with the YL.

This could be the main reason for the rapid decline in the Bratus population over the years. Many others fell prey to 'high SWR' ('Swarus Infinitum'), due to lack of tuning aforementioned mobile antenna before getting on air.

DX FANATIC
(Dee-ex Non-Sanus)

A very interesting species. The DX fanatic will neglect its mate and offspring for long periods of time, which seems to be linked to natural phenomena including the presence of sunspots. They are a largely nocturnal group who set up a very private territory called a 'shack', often separate from their main dwelling, into which only fellow members of the species are permitted.

Shacks, abandoned by these creatures, tell us much about them. The shack itself is often surrounded by large growths of metal called 'quads', and the Japanese species of 'Yagi' Walls of the shack are lined with folliage of the 'Que-ess-ell' genus, suggesting a link to the almost extinct 'Que-es-ell Collecti Non-Sanus' (most of which belonged to the Swagman tribe).

The DX Fanatic appears also to hibernate for extended periods, only to rapidly breed every 11 years. They are readily identified by the bend in their spine caused by sitting hunched over a rig for hours, and their distinctive cry of 'CQ DX'.

EGO GIGANTICUS

THE SUPER CBER
(Ego Giganticus)

This family is easily identified by their large heads. And they are easily located, only leaving the solitude of their 'shacks' for the company of other species at a ritual gathering of 'the CB club'.

They have a peculiar language structure, starting every sentence with the word 'I' . . . 'I know everything about CB', 'I was talking to the local RI the other day', 'I told that jerk from CB Action' and so on.

Sociologially the most interesting of the order, they have a marked superiority complex over others, and often are convinced of their own importance and positions of leadership. It was once believed that the Super CBer had great knowledge, and that this explained the size of their heads, but in fact, under examination, the species is incredibly stupid.

THE CB TRACKER
(Vigilantus Ego-Giganticus)

Part of the family of the Super CBer, the tracker is essentially a herd animal which is rarely seen without the company of a half-dozen others. They are mostly nocturnal, with all using ex-army jackets as a uniform to identify their group.

They are nomadic, frequently travelling in mobiles easily identified by a circular growth of metal tubing ('dee-eff Loop' genus). Even given this amazing aid to locating their prey, most trackers have a lousy sense of direction, and easily become lost while hunting the Ratbag-foulmouth-stirrer. The trackers' use of foul language and threats of physical violence strongly suggests a close link between the ratbag and the tracker, although they strongly deny this.

Their size varies, but they are never as large as they think they are.

RATBAG—FOULMOUTH—STIRRER
(Vandal Operatus)

The ratbag is a species rejected by all others, and so it seeks company at the local pub or the CES work exchange.

Ratbags are very territorial, and so are known by different names in different areas. In Melbourne they are mostly found in the southern suburbs and the Peninsula; in Sydney they are 'westies', and so on. Brisbane exiled many of its ratbags to the Gold Coast, where they become property developers who wear white shoes.

Study has shown that they have difficulty communicating with others, and so resort to aggressive behavior. Their language is a uniquely-primitive one, made up of grunts, burps and crudities limited to two syllables.

Predation by the Tracker species proves ineffective, and confrontations between the groups often see the trackers worse for wear. But predation by the Ahreye, although infrequent, is fatal. The lifespan of the Vandal Operatus is short if ignored.

SUPER MONITOR
('Monitus Ego-Giganticus')

This creature is the result of cross-breeding between the Super CBer and the CB Tracker. They show traits of both parents — love of uniforms (often in bright orange, so they can be seen by everyone), large heads and the desire to be recognised as leaders amongst local members of the CB class.

Their uniforms and vehicles are covered in markings which proclaim membership of their tribes such as CRUST, RETCH and A-CRIM. Use of numbers in tribe callsigns indicates an advanced social hierarchy, the sole aim of which is to become 'number one'.

Constant study has in fact shown that this species is an unfortunate product of in-breeding. By far the larger part of the group is the simple 'monitus', which is quiet, does not seek attention and simply waits for a chance to help other species when in need. But these may be a dying breed.

SCANNER FREAKS
(Scannus Extremus)

A very specialised off-shoot of the order, the scanner freak spends all his time listening to others. It was theorised that they would eventually lose the ability to speak, but this is not so. Perhaps the very isolation of listening starves them of company, because when they track down a fellow scanner freak, they really let fly. The strange thing is they talk mostly in numbers — like 'four sixty eight, four two five' and so on.

The accepted explanation for this is that many years ago, scanner freaks had no access to the written information vital to their existence — the frequencies on which others could be heard. So these were passed down by word of mouth, from one generation to the next, and in so doing the scanner freak developed an amazing memory for figures.

After a time the sacred verse of scanner freaks was written down and in some instances sold to the uninitiated for profit. But many members of the tribe still possess their marvellous memorising abilities, and, to this day, can recite the 64 UHF police channels backwards while drinking a glass of water.

RADIO INSPECTOR
(Ahreye)

Although rarely seen, we know from field studies that the Ahreye is nomadic, and travels in small vans or station wagons. The species has a memory which would put an elephant to shame, and never forgets a name or a voice. Has lately developed a technique for hunting in packs and swooping on an area with little warning. The largest reported Ahreye was some 6'6", which frequented the Melbourne area many years ago and was known as 'The Man'.

THE CB WRITER
(Illiterus CB)

Once again we have a mostly nocturnal creature, but while other night-creatures talk on their radios, the CB writer will be seen tapping away on their word processors into the early morning, in a ritual called 'meeting the deadline'.

As far as science can determine, a 'deadline' basically means that if you don't write enough lines, you're ahead.

It occurs every few months, and is chosen by a vicious creature known as 'the Editor' (or Predator), who rules the pack. These animals are easily aggravated as the deadline approaches, and are best avoided at this time — the Editor in particular.

Some of the better-known members of the species include Queensland's Illiterus Fewster (Funny Bastardus), and the NSW pack of Illiterus Bryant (Scannus Extremus), Illiterus Flynn (UHF yuppie-us), and the amazing Illiterus Towells, which lives on exclusive diet of McDonalds and 'munchies'.

The reigning Predator is Illiterus Shaw ('The Boss', or 'God' on a bad day).

STEPHEN NEWLYN INTRODUCES

DEUTSCHE WELLE RADIO

As you tune across the bands on your shortwave radio, a lot of the stations you hear are broadcasting in foreign languages and to various geographical areas. The Australian/NZ region is not well served by international broadcasters, due in part to its small population and the easy access most people in this region have to other sources of news and entertainment.

However, there are some notable exceptions. DEUTSCHE WELLE is one of them. Broadcasting from its studios in the city of Cologne in the Federal Republic of Germany, DEUTSCHE WELLE has a total of 100 minutes a day divided into two 50-minute programs beamed to the Asia/Pacific region.

DW began its official broadcasting in 1953, initially with German-only broadcasts with a transmitter of only 20 kilowatts. In 1956 DW really started to become a voice on SW with the Juelich transmitter site being commissioned, which now has nine 100kw transmitters and one 100kw standby transmitter. With the increase in language hours and the overcrowding of the SW broadcasting band, DW commissioned its Wertachtal transmitter site in 1972 with nine 500kw transmitters and a standby transmitter of 500kw.

The antennas on this site number 74 (including 63 curtain antennas which can be beamed in different directions). Apart from its two FRG sites, DW has a number of relay stations located in strategic areas of the world, enabling effective coverage of almost every part of the globe.

Kigali in Rwanda has two 250kw transmitters, Cyclops in Malta has three 250kw and a 600kw MW transmitter, a 50kw SW transmitter is located at Montserrat which is an island located off the north-east coast of Venezuela. DW's most recent addition to its relay sites is located at Trincomalee in Sri Lanka where three 250kw transmitters and one MW transmitter of 400kw are used.

DW also has sharing agreements with a number of broadcasters at the following relay sites: Sines in Portugal has two 250kw transmitters and rents out air time to interested broadcasters: Antigua in the Carribean with two 250kw transmitters shares with the BBC; transmitter rental agreements are in operation with Radio Canada International and Radio Bras in Brazil; and other transmitter exchange agreements are being negotiated with HF broadcasting stations with transmitter time available.

NOT A GOVERNMENT STATION

A law issued by the FRG government in November, 1960, stipulated that DW must be entirely free of bias towards a political party, religion or profession and free from any government interference.

DW's initial programs, back in 1953, were primarily concerned with "easing the situation" as the then President of the FRG, Theodor Heuss, put it in his inaugural broadcast from the DW studio on 3 May.

Since then although DW has expanded a lot and has added 34 languages, that 1960 law still is valid and provides the foundation stone for broadcasts.

TARGET AREAS

DW's main target audience is in the Third World areas, due in part to the fact that previous FRG foreign policies have placed great emphasis on friendship and partnership with Third World countries.

SW radio also is used extensively in these areas by most of the domestic broadcasters. However, in September, 1988, DW decided to improve its English services. The three regional services in English to the Asia/Pacific, African and North American regions were dropped in favor of a combined English service with common programs to all regions.

Regionality has still been retained with the popular listener-contact program being the most favored. DW intends to increase its coverage of news and current affairs with emphasis on interviews, more topicality in programs and more on-the-spot reports.

Despite this increase in news coverage, other programs will have enough air time to cover topics of interest such as science, environmental issues and the arts. A program which was recently introduced and is of particular interest to listeners in the Pacific area called 'Asia Pacific Report' gave DW an opportunity to regionalize its broadcast to our region. This (Mon to Fri) program is

DW studios are up to date and employ 'state of the art' electronic equipment.

Above is the main control room for Deutsche Welle Radio.

a 15-minute report of events in the Asia/Pacific region looked at through German eyes. This region also has programs on Saturday and Sunday which deal with German newspaper reporting about Asia and a mailbag program (refer to the frequency and program guide).

NOT ONLY A BROADCASTER

Although DW is, and always will be, a SW broadcaster it has for many years had a transcription service in which programs are pre-recorded in Germany and then sent to the station requesting the service.

This is provided free as long as the stations don't use the tape for commercial purposes. Over 900 radio stations all over the world use this service.

Transcription programs are currently produced in 12 languages including English and German and a catalogue of these programs is available from DW if you write to it on your station letterhed.

TRAINING CENTRE

As part of its development aid policy, the FRG attaches great importance to furthering mass media in the Third World.

Apart from the construction of studios and transmitter sites, help and training is given at DW's training centre. Since 1965, 1600 people from 80 developing countries have received training in all aspects of broadcasting.

One of the main aims of the training centre is to make full use of radio as an instrument of development. In other words finding out how radio can help a country where 80 to 90 per cent of the people live in rural areas. The courses offered by DW are well regarded by many Third World broadcasters and many who have completed this course now occupy leading positions in radio stations all over the world. More information on this can be obtained from DW — free!

VARIED PROGRAMS

Since the reorganization of DW's English service, changes have been made in some programs directed to the Asia/Pacific area.

Firstly, it should be explained that there are two daily transmissions directed to the Asia/Pacific area, one for evening listening and one for morning listening.

Both contain different material however, it is safe to say that the evening programs are more current affairs orientated whereas the morning transmissions have a varied format.

The evening transmission to our area has the following programs, Monday to Friday: 'World News' of 10 minutes duration; 'Newsline Cologne' which gives background info on the news and is of 25 minutes duration: and finally a program called 'Asia/Pacific Report' of 15 minutes duration.

On Saturdays the format changes with 'Panorama', a review of the past week's newsworthy events: a program called 'Development Forum' which highlights progress made on projects in the Third World; and 'Religion And Society' which features news from the world's major religions.

On Sunday 'Arts On The Air' looks at culture in Germany and its cultural relations with other countries while 'German By Radio' gives instruction on how to learn and speak German with a free text book available.

Members of staff from the DW English Service meet daily to discuss and schedule the station's news services.

MORNING TRANSMISSION

The morning transmission from DW has a format which changes every day. Monday to Friday the program starts with a 'World News' bulletin, then follows a program called 'Morning Magazine' which features current affairs.

From then on every program is different. On Mondays we have 'Economic Notebook' which is a look at economic events around the world; on Tuesday we have 'Insight' which features items of political interest; on Wednesdays there is 'Living In Germany' which is a look at life in the FRG; on Thursdays we have 'Spotlight On Sport' which is not a results program but looks at the background to sports events; and on Fridays there is 'International Talking Point' where senior journalists conduct a round-table discussion on important news of the past week. Also on Fridays there is 'Man And Environment' which is a weekly look at environmental issues.

Saturday sees 'Asia In The German Press' go to air and the most popular program 'Mailbag Asia' which answers listeners' questions and plays musical requests.

To finish off the week, Sunday offers 'Morning Magazine' followed by 'Science And Technology' which is a look at developments in those fields.

LISTENER CONTACT

DW is pleased to receive letters and requests for information. DW has a free 12-page bi-monthly magazine called 'Tune-In'. It contains program and frequency details plus many items of interest. Helpful hints are given on how to best receive DW plus news of special event programs.

Please clearly print your name and address and postcode and send your request to the following address, which can also be used to receive a 'German By Radio' textbook and also info on radio training: Listeners Mail Dept, DEUTSCHE WELLE, PO Box 10 44 44, D—5000 KOLN 1, FEDERAL REPUBLIC OF GERMANY.

It is hoped that this article will increase your interest in SW listening and perhaps encourage you to write to these radio stations to find out more about why they are on the air and whether they have programs of particular interest to you.

The accompanying chart lists DW's frequency details to help you tune in at the right time for your listening pleasure.

Europe, Australia/ New Zealand	0600–0800 0700–0800	6075 17845 21640	9545* 21560	9690 21600*	9735	11795	11810	15105
Europe, Australia/ New Zealand	0800–1000	6075 17845	9545 21560	9690* 21640*	9735*	11795*	15105*	15275*
Europe, Japan/ East Asia, South East Asia	1000–1200 1100–1200	1548 15245	6075 25740	9545	17845	21560	21640	21680

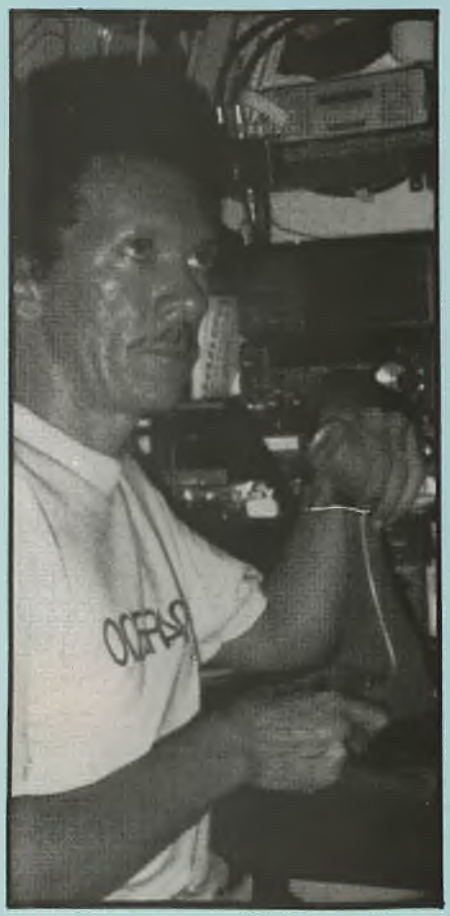
DX INTERNATIONAL

WHAT'S BEING HEARD ON THE DX CHANNELS — JACK-67-W-07

Pathetic! That would be the best description for the current band conditions, although by the time you read this the band may have picked up considerably. Over the past few weeks the band has given us the odd good opening but nothing much to brag about and at times it has been as dead as the proverbial door nail. Sunspot Cycle 22 is not what everyone thought it would be so far. I have heard many prominent DXers passing comment on similar lines and some have gone so far as to blame the greenhouse effect and atomic testing at Mururoa Atoll in French Polynesia.

Even though conditions have been poor it hasn't stopped our Asian and Pacific neighbors coming in on a regular basis, some with quite strong signals. Our old favorites Indonesia, Philippines, Hong Kong, Japan, New Caledonia, New Zealand and French Polynesia are still there nearly every day but as we know, most avid DXers are tired of hearing the same old noise and are on the prowl for something new.

Alain, signing as 'BS-381', operates from Reunion Island in the Indian Ocean and is one of the much sought after DXers — surprisingly, this country is also in great demand with amateur stations.



AFRICAN & INDIAN OCEAN REGIONS

The southern parts of the Indian Ocean have been coming in quite well from mid-afternoon onwards but signals from the northern parts such as the Maldive Islands and Yemen are still scarce. A good signal from the seldom heard island of Mayotte was logged by way of Luc, who signs as 189-AT-108. He was heard at 0831z with a good five by six report which held quite well for about 20 minutes before fading off.

As usual there have been some good signals from Reunion Island and 173-AT-104, operated by Jean, was no exception. Jean was a good five by nine at 0428z and later that day I heard Daniel, who signs as 173-AT-107, with a good five by six at 0744z. I thought that the odd signal from Madagascar may have come in with the Reunion signals but nothing was heard during the period the band was open.

The UNIT-295-B, operated by Kel in the Seychelles Islands, was heard at 0855z with a very weak four by zero report. Kel was heard talking to a station in Turkey which gave him a five by nine plus 10 report.

Zimbabwe was noted on the band by way of Andy, who signs as ZCF-01, and at 0643z he was a good five by seven report with quite a lot of fade with his signal. Not long after hearing Andy I heard a few of the regulars out of South Africa with Debbie, who signs as 44-AT-109, leading the way with a good five by five peaking at seven report at 0656z.

A rather solid signal from Cape Town, South Africa, came by way of Pedro, who was aboard the Greek merchant ship 'Maria-S'. Pedro was using a dipole antenna with a Superstar radio and was a good five by seven at 0445z. Pedro's callsign is the DG-RADIO-03, and from Cape Town he was bound for Mombassa.

MIDDLE EAST

Some excellent signals from Lebanon and Kuwait have been heard along with the sad news that Mohammed, who signed as 112-AT-113, was recently killed in a car bomb explosion in Beirut. My condolences go to Mohammed's family and other Alfa Tango members in Lebanon who are no doubt distressed over this loss of a good DXer and a good family man.

Tolly, who signs as Delta-Station from Israel, has been about the band and at 0742z was a good five by nine with very little fade noticed.

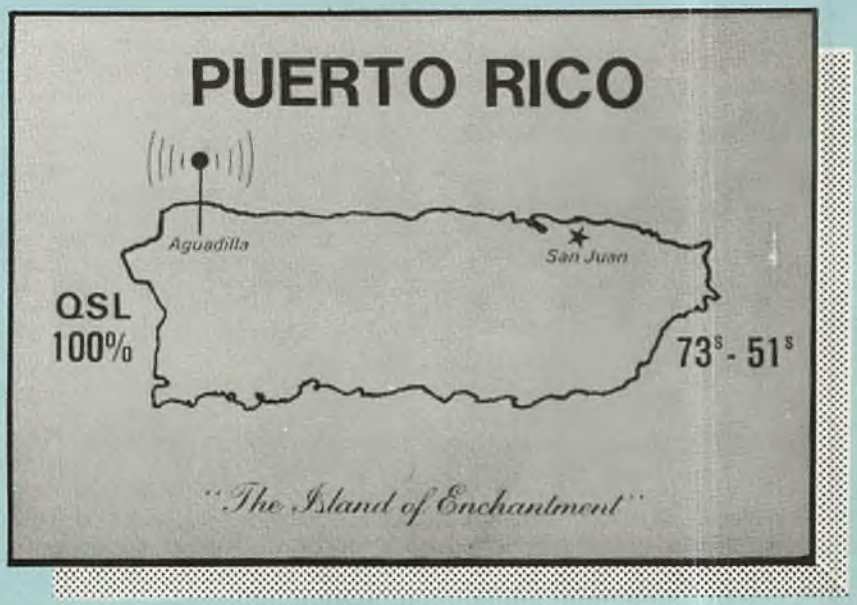
A number of the Kuwait-based Kilo-Alfa members were heard from 0500z through to the close of the band. Signals varied but were quite readable.

EUROPE

Varied signals have been reported from this region and, although the band conditions have been reasonably poor, at times there has been some choice DX about both on the long and the shortpaths.

Northern Yugoslavia has been represented on the band by way of Peter, who signs as CP-1A-532. Peter was a good five by nine at 1105z and was taking some time to catch up with his DXing while home on leave from the merchant navy.

QSL card from Eddie, the 'Unit-95', who operates out of Puerto Rico using a Ranger AR-3500 CB rig into a five element Yagi.



Peter normally transmits maritime mobile aboard a Belgian-registered container ship and has visited Australia on a number of voyages.

Speaking of maritime mobiles, a surprise signal was logged at 0902z by Vladimir who signs as Bravo Bravo. Vladimir was maritime mobile aboard a merchant ship in the Baltic Sea near Saaremaa Island and was a steady five by two report at the time. No doubt he had no shortage of contacts.

There have been quite a few good signals from Greece with Xenofos, who signs as 18-AT-104, showing the way with a rather solid five by nine at 0445z. Xenofos lives in Tripolis and was noted along with numerous other Greek stations at the same time although their signals were not as strong.

Corsica has been represented on the band by Francois, who was signing as 104-AT-102. At 0940z he was a good steady five by six and was very keen to chase stations in Asia and the Pacific regions.

The appearance of Tolis, the 59-AT-101 from Rhodes, created quite a hive of activity on the band despite his low signal of five by three being noted at 0530z. It seems quite a few DXers still need this one.

Quite a few signals from the UK have been logged both on the long and shortpaths with Wales, Guernsey, Scotland and Northern Ireland being heard.

Portugal and Spain have been logged much better on the longpath than on the shortpaths, but this did not stop Jose, who signs as 31-AT-103 from Lisbon in Portugal, from getting through. Jose was logged at 0720z with a rather poor four by one.

CENTRAL SOUTH AMERICA & THE CARIBBEAN

This region is still offering some quite good DX openings. Despite the poor conditions signals still seem to hold quite well with the band opening from 0830z onwards until late afternoon.

There have been strong signals coming from Colombia in South America with CC-07, operated by Manuel, taking charge. Manuel lives in Cali and was a good 10/DB over nine at 0325z. He uses a five-element homebrew beam and a President Washington base radio delivering around 12 watts of power.

Puerto Rico has been dominant on the band with numerous stations being heard, many using novel callsigns. Jose, who signs as 11-AT-101, was logged at 0338z with a steady five by six report which held quite well for about 45 minutes before fading off.

A reasonable signal was heard from Darren, who lives in Nassau in the Bahamas. Darren was signing as CE-7075 and at 0553z was a good five by six and peaked at the five by nine mark. He seemed to be having a field day working numerous New Zealand stations at the time.

The odd signal from Argentina has been appearing on the band and this time it was by way of 4-AT-120, operated by Bill. He was a poor four by zero at 0233z and at various times faded out completely only to reappear later on.

A station identifying himself as Parrot was heard at 0230z. Although his English was poor I understood that he was in Brazil near the city of Brasilia. His signal was a good five by six but his modulation was very poor owing to an echo device he was using. This made him hard to understand only adding to his poor command of English.

The Alpha Tango group carried out a recent DXpedition to Jersey Island and QSL cards are now being received by the lucky stations which caught up with the operations.

A terrific signal came by way of John, who signs as 5-CB-001, from the city of Maracaibo in Venezuela. He was a good 10/DB over nine at 2105z which is quite early for signals to be that strong. It goes to show that you should never underestimate the band's expected performance.

The odd good signal from Suriname has been coming through and this time by way of Robbie, who signs as 73-AT-108. Robbie was heard at 2210z with a good five by seven report and was closely followed by a novelty call, Star Radio, at 2220z, transmitting from Paramaribo the capital of Suriname. Star Radio was a good five by five but was only using the Dutch language.

Panama City was making a good impression on the band with a solid 30/DB over nine signal coming from Rogezio, who signs as 24-AT-104. Rogezio was logged at 0148z and was still going strong at 0315z.

The island of St Kitts has been present by way of Carl, who was signing as 8-KP-283. Carl was heard at 2358z with a barely readable four by zero although New Zealand and Tasmania were giving him better report. There are many DXers who still need this one so Carl should have no shortage of takers for his calls.

Rafael, who signs as 7-PW-010 from Curacao in the Netherlands Antilles, has been seeking Pacific region contacts and was noted at 2233z with a reasonable five by four signal report.

An interesting card from *well known Swedish DXer* George who signs as 21-AT-127 — George's main hobby (apart from CB) is collecting coffee mugs.

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DX INTERNATIONAL

NORTH AMERICA

The usual run-of-the-mill activity has been heard from this area with the ever present and consistent Mexicans still dominant. Mexico has one of the worst QSL reputations in this region with many operators complaining about cards never arriving.

A good signal logged at 0150z came from Roy in Central Florida who signs as the 261. Roy was five by nine and the signal held quite well for an hour.

Earlier in the day I noted another good signal from the Gulf of Mexico south of Florida by way of Jim, the 2-AT-249. Jim was using a Cobra 142 radio into a six-element yagi from his home in St Petersburg and at 2032z was a good five by nine plus 10 DB at times.

Signals from Canada and Alaska have been very sporadic and not too reliable but they can be heard around the same times that the US is about. The stronger the signals from the US the better your chances of hearing some from Canada and Alaska.

ASIA & THE PACIFIC REGION

Conditions to this part of the world have remained consistent and the signals are still exceptionally good during the day and into the early evening. Dick, who signs as 217-AT-177 from Christmas Island, has been active giving many DXers this hard-to-get country. Dick was noted at 0244z with a four by one report while beaming to the US.

Okinawa Island is still there for the taking and Hack, who signs as JCB-6, has been very active. He was logged at 0600z with a massive 20/DB over nine signal.

Alan from Thailand signs as HS-009 and has been quite active but is mainly interested in working Europe. Alan was heard at 0832z with a five by two signal report.

Taiwan has been about the band by way of Rainer, who now signs as 155-AT-101, and at 0756z Rainer was a good steady five by seven report. Those who have been waiting for his QSL card should now have it as some printing delays prevented its immediate despatch.

The illustrious 114-AT-108 has been heard yet again, but this time the signal was only a four by one at 0832z. Still no news on this one yet. He could be in Pakistan, then again he may not. It's a case of a dollar each way at the moment.

Western Asian station 116-AT-115, operated by Tunca in Turkey, was heard on the band at 0520z with a poor four by one signal. He was kept quite busy working a horde of Italian and French stations who were giving him 10/DB over nine reports.

One of the best signals out of Indonesia is from Yossy, who signs as PI-2-YDR. Yossy lives in Surabaya and uses a seven-element beam. At 0434z he was a massive 50/DB over the nine and holding quite well.

Some big signals still coming from New Zealand and New Caledonia are on such a regular basis they are now being treated as locals, so to speak.

LONGPATH NOTES

Again, longpath has often proved more reliable than shortpath openings, especially as far as certain parts of Europe are concerned. Some of the countries I have heard on the longpath are Portugal, Spain, West Germany, Italy, Holland, Gibraltar, England, Scotland, Wales, France, Liechtenstein, Canary Islands and the Azores.

The best times to look for longpath openings are anytime from daylight onwards, usually to the mid or sometimes late afternoons, and some of the signals have been very good but tend to fade sporadically.

DXPEDITION NEWS

Those who were lucky enough to secure the DXpeditions to San Marino and Jersey Island should have their cards by now. If you haven't then a follow-up card wouldn't hurt with a couple of IRCs enclosed.

The following countries are targetted for DXpeditions in coming weeks: Tunisia, Iran, Liechtenstein, Mozambique, Sovereign Base Cyprus, Vatican City and Market Reef.

Due to space restrictions in our last issue, the DXpedition notes were left out. My apologies.

Well, that wraps it up for another issue. Notes are a little down owing to poor conditions and work commitments. As usual, my thanks to those who took the trouble to keep me informed.

READ PAGE 10!
If you have skipped over the first few pages in this issue I suggest that you now go back and read page 10 - DoTaC is making no secret about 'knocking off' DXers, particularly Alpha Tango Group members.

CB ACTION/COMMEX WORDMAZE

The answers to the questions in our last issue were: 1 — Aruba, 2 — Farley, 3 — Wulf, 4 — ZCG, 5 — Corstorphan, 6 — Regency, 7 — Mobile, 8 — Galactic, 9 — Peter, 10 — Dick and, having waded through something in excess of 1,500 entries, we have the following winners.

The main prize of the Dick Smith Electronics HCA-804 27 MHz transceiver goes to Mr J. Wirth of Broome W.A. who also receives a Superspring Skipwhip courtesy of Mobile One, and a Spectrum wall chart from RF Industries. Congratulations Mr Wirth . . .

The winners from other States who each receive a Mobile One Skywhip and wall chart are;

Victoria — H. Price, Balwyn.
Queensland — Mr C.F. Day, Scarborough.
South Aust. — Mr H.L. Ress, Warradale.
Tasmania — Mr K. Brown.
NSW — Mr C. Smith, Jenolan Caves.

We did not receive a correct answer from the NT so we are giving the last prize to an ACT reader — Mr T. Dack of Kambah.

Congratulations to all the above.

The prize for this issue is pretty exciting — a 40 channel handheld UHF from Commex — a new name on the market. The rig, marketed as the Connex (no, not a mistake) 40 is reviewed in this issue and to go with it is a carry-case provided by Marktronics. Not a bad prize . . !

It will go to the first correct entry opened — so go for it.

1. What company manufactures the FRG-8800?
2. What city does 'Nigel' come from — you'll need to do a bit of serious reading for this one?
3. Who signs as the 18-AT-104?
4. Shortwave (name?) provides "user friendly menus for moving around the various areas"?
5. Who (first name) De Voto wrote "200 Metres and Down"?
6. What is the first name of the Italian DX Group mentioned in this issue?
7. What company (first word only) supplied the Wordmaze prize for this issue?
8. What is the surname of the holder of Australia's one millionth communications licence?
9. Who (surname) is mentioned in this issue as being "in the mire"?
10. What is the surname of the gentleman 'going bush'?

ANSWERS:

1.....	6.....
2.....	7.....
3.....	8.....
4.....	9.....
5.....	10.....

I	I	O	J	O	F	L	Y	N	N	W	C	C	O
Z	H	A	W	K	E	R	L	P	X	D	Y	M	T
C	E	V	O	I	H	X	F	U	R	O	M	K	L
H	H	O	B	A	R	T	G	A	G	Y	Y	C	M
T	Q	U	H	C	L	B	N	Y	W	A	M	O	N
A	I	I	D	B	S	R	F	O	O	E	Z	M	E
M	U	I	I	H	E	O	A	Q	A	S	E	M	S
M	U	I	E	B	E	I	F	H	V	U	I	E	N
A	Q	S	I	E	I	I	P	O	O	U	M	X	A
Q	J	E	S	I	O	L	K	U	N	J	O	M	H
O	O	U	L	O	A	Y	H	Y	E	E	I	D	A
E	I	A	A	I	P	S	Y	V	X	H	X	E	N
I	O	Q	X	O	I	U	A	W	E	A	M	A	E
L	J	E	H	B	C	G	U	I	L	P	F	E	O

Yes, there are a few difficult ones in there, but, for a great prize like a Connex 40 Channel UHF handheld we figure you need to work up a bit of a sweat. All the answers are in this issue.

NOTE: The correct answers MUST be circled in the wordmaze — photostat copies are acceptable. HOWEVER only one per reader — if we find a reader sending in more than one all that reader's entries will be disregarded.

The closing date is September 20 and the winner will be the first correct entry opened. The draw will be conducted in the offices of CB Action and the results and answers will be published in the next issue.

NOTE: Skip conditions are virtually the same from Sydney as they are for all other East Coast areas — likewise Perth predictions can be taken as similar to those for other West Coast areas.

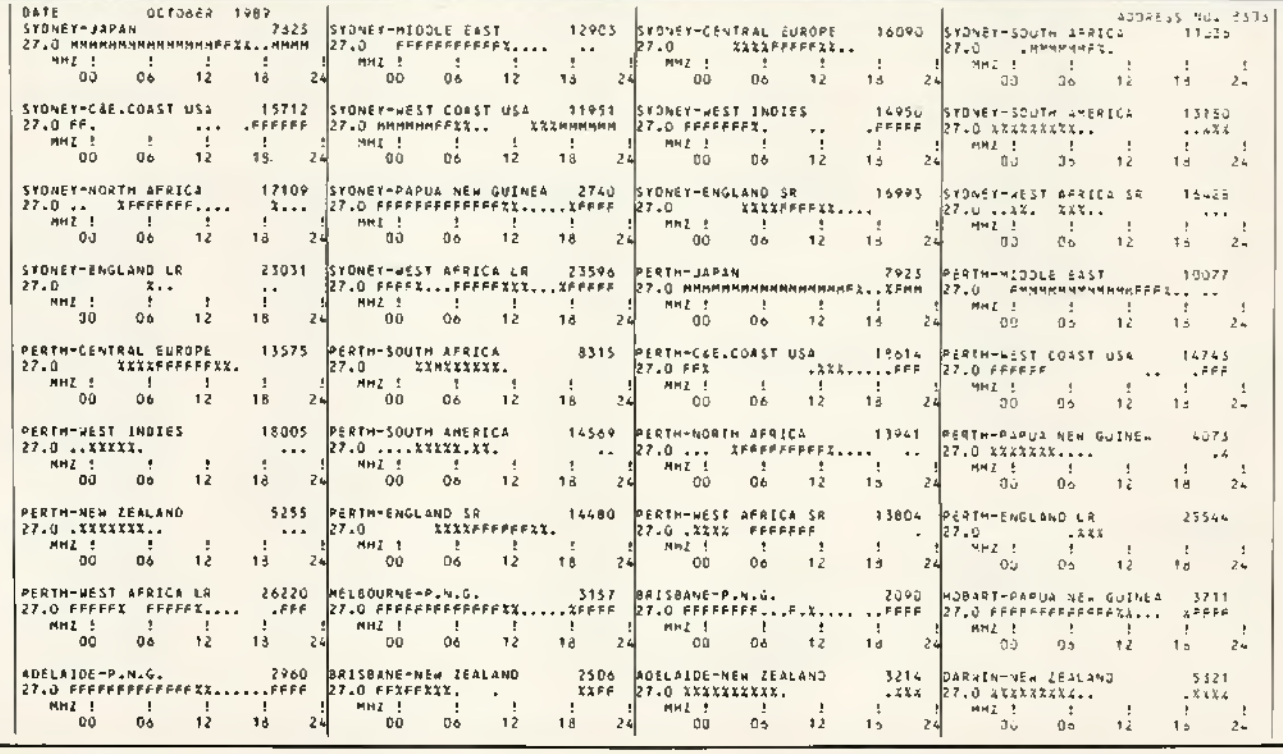
These GRAFEX style predictions present in pictorial form the expected HF propagation conditions between Australia and a number of important DX areas. For each circuit, the "East" terminal refers to the eastern half of Australia. The horizontal axis of each graph represents the hours of the day in Greenwich Mean Time from 0000 hours to 2300, reading left to right. The vertical axis represents increasing frequency.

A GRAFEX symbol represents the predicted propagation conditions for a particular frequency at a particular time. The meaning of each symbol used is given in the key on the next page. The letter "F" designates the best conditions for HF communications.

Grafex prediction charts supplied courtesy of the Ionospheric Prediction Service, 162-166 Goulburn Street, Darlinghurst, NSW. IPS offers pre-recorded telephone information. To access the service, please phone (02) 269 8614.

LEGEND TO GRAFEX SYMBOLS

- `.` Propagation is possible but probably on less than 50% of the days of the month.
- `%` Propagation is possible on between 50% and 90% of the days of the month.
- `F` Propagation is possible by the First F modes on at least 90% of the days of the month.
- `E` Propagation is possible by the E modes on at least 90% of the days of the month.
- `M` Propagation is possible by both the First and Second F modes on 90% of the days of the month.
- `S` Propagation is possible by the Second F mode on 90% of the days of the month.
- `A` High absorption — above the ALF but probably too close to it for good HF communication.
- `X` Complex mixture of modes including the Second E mode.



AUSTRALIAN UHF REPEATER LIST

AREA	CHANNEL	LOCATION	SPONSOR
ACT			
Canberra	2/32	Isaacs Ridge	Philips — TMC
Canberra	8/38	Isaacs Ridge	Philips — TMC
New South Wales			
Adjungabilli	6/36	—	—
Albury	4/34	Lavington	Albury Communications
Armidale	4/34	Armidale	New E'land Mobile Comms
Barraba	6/36	—	—
Bathurst	8/38	Mt Panorama	Serv-U Appliance Centre
Bega	6/36	Mumbulla Mtn	A. McCoy Two-Way Radio
Belbora	1/31	—	—
Bombala	1/31	—	—
Booral	7/37	—	—
Bowral/Mittagong	6/36	—	—
Brewarrina	1/31	—	—
Bondabella R'ge	8/38	Mt Girilni	Outward Bound Australia
Broken Hill	4/34	—	B. Hill UHF Club
Broken Hill	7/37	—	B. Hill UHF Club
Bulahdelah	7/37	Cabbage Tree Mtn	Great Lakes UHF R'ter Grp
Capoompeta	5/35	—	—
Casino	6/36	Malanganee Range	Nathan Ross Electronics
Coffs Harbour	1/31	—	—
Coffs Harbour	6/36	Coffs Harbour	Countrywide Communications
Cooma	4/34	—	Blamac Communications
Corowa	1/31	Corowa	Corowa Electrics
Corowa	5/35	—	—
Cowra	7/37	Bellview Hill	Harvey Electronic Services
Deepwater	5/35	—	—
Deniliquin	1/31	—	—
Deniliquin	3/33	Deniliquin	Deniliquin Machinery
Ebor	1/31	Nr Armidale	—
Eden	2/32	—	—
Glen Innes	7/37	Mt Rumbee	Glen Innes ARC
Goulburn	4/34	Mt Gray	Double Diamond
Grafton	8/38	—	—
Grenfell	1/31	—	—
Harden	1/31	Mt Bobbara	—
Hay	4/34	—	Phil Shields Electronics
Inverell	2/32	Inverell	—
Jindabyne	1/31	Corinya A'pine C.	Marist Brothers
Lismore	2/32	Raus	—
Malananee	6/36	—	—
Mooree	6/36	—	D. Groth Radio-Electronics
Murrurundi	3/33	Liverpool Range	—
Muswellbrook	4/34	Mt Arthur	General Communications
Narrabri	2/32	Castletop Mountain	L. Hannaford Electrical
Narromine	5/35	—	—
Narromine	6/36	—	—
Newcastle	1/31	Charlestown	—
Newcastle	6/36	New Lambton	General Communications
Oban	1/31	—	—
Oban	5/35	—	—
Parkes	2/32	Parkes	Bionics Australia
Port Macquarie	4/34	—	—
Syd Outer West	4/34	Kurmond	Riverlands Repeater Group
Sydney South	1/31	Hurstville	Practronics
Sydney Blue Mtns	2/32	—	Argent Comms
Sydney North	7/37	Chatswood	Philips Communications
Sydney West	3/33	Prospect	Philips Communications
Tamworth	1/31	Windworth	Landlink Communications
Taree	3/33	—	—
Tenterfield	3/33	Mt McKenzie	Nathan Ross Electronics
Tumbarumba	3/33	Mt Ikes	—
Tweed Heads	4/34	—	—
Tumut	6/36	—	—
Wagga	1/31	—Rivenna Communications	
Wagga	5/35	—	—
Wagga	7/37	Wagga	Riverina Communications
Walbundrie	2/32	Walbundrie	Corowa Electronics
Walcha	8/38	Walcha	WalGraz
Wilcannia	1/31	Murtee Station	—
Wingham	1/31	Wingham	—
Wollongong	8/38	—	Phil Day
Queensland			
Atherton	8/38	—	—
Atherton-Mareeba	1/31	Rocky Creek	Marteens Electronics
Bajool	4/34	Mt Hopeful	Mt H. UHF Rpt Assoc
Barcaldine	1/31	—	—
Balhurst Heads	1/31	—	—
Biloela	7/37	Mt Bertha	Biloela Repeater Assoc
Blackdown	6/36	—	Blackdown UHF Rpt Assoc
Brisbane	1/31	Mt Cotton	Philips Communications
Brisbane	5/35	Mt Glorious	ACRM (Q'land)
Brisbane	7/37	Toohey Mnt	Olbis Industries
Bundaberg	1/31	Mt Perry	Bundaberg Hi-Fi Stereo
Bundaberg	4/34	Sloping Hummock	B'berg Hi-Fi Stereo
Burnett Ranges	6/36	Munduberra	Custom Scientific Elects
Cairns	3/33	Mt Yarrabah	GcG Communications
Caloundra	6/36	Bald Knob	Ralph Hill Electrical
Chinchilla	3/33	—	—
Clermont	1/31	Clermont	—
Clermont	7/37	—	Clermont SES
Dalby	4/34	Mt Mowbullan	GT Communications
Dimbulah	6/36	—	—
Emerald	7/37	—	—
Emerald	8/38	Emerald	Emerald Dist Rpt Association
Gladstone	6/36	Mt Larcom	Nixon Controls
Gold Coast	4/34	Coolangatta	Philips Communications
Goondiwindi	4/34	Goondiwindi	Border TV & Radio
Gunalda	2/32	Mt Kanigan	Ralph Hill Electrical
Gympie	7/37	—	—
Ingham	2/32	Mt Cudmore	R.E. Pugh
Innisfail	1/31	—	—
Ipswich	4/34	—	Ipswich Rpt Assoc
Jericho	4/34	—	—
Kilcoy	3/33	—	—
Leichhardt	1/31	Mt Hope	Driscoll Pastoral
Longreach	3/33	—	—
Mackay	3/33	Fairleigh	McKay C'zens Rpt Grp
Mackay	6/36	—	—
Marlborough	2/32	Broadsound Rnge	M'Borough UHF Rpt Assoc
Maryborough	6/36	—	—
Middlemount	1/31	—	Middlemount SES
Millaa Millaa	8/38	Millaa Millaa	Bill Jones Communications
Millaa Millaa	7/37	—	—
Miriamvale	2/32	—	—
Monto	3/33	Pine Mountain	Monto UHF Rpt Assoc
Mt Alexandra	8/38	Mt Alexandra	Bill Jones Communications
Mt Aunt	4/34	—	—
Mt Inkerman	3/33	—	—
Mt Isa	1/31	Lake Julius	Q'Land Education Dept
Mt Janet	2/32	—	—
Mt Stewart	1/31	Mt Stewart	Olbis Industries
Mt Wolvie	5/35	—	—
Mundubbera	6/36	—	—
Murgon	7/37	Mt England	Murgon Repeater Assoc
Ocean View	8/38	—	—
Palm Island	6/36	Palm Island	Palm Island Council
Pialba	8/38	Ghost Hill	M'borough Sugar Factory
Police Mountain	6/36	—	—
Port Douglas	6/36	—	—
Quilpie	2/32	Trinidad Station	DEA Pegler & Co
Rockhampton	1/31	Mt Archer	Capricornia UHF Rpt Assoc
Roma	1/31	—	Roma Teleradio
Springsure	3/33	Rodda Lookout	Bauhinia SES
Stanthorpe	8/38	Amiens	Mt Peanga Rpt Assoc
Tambo	6/36	—	—
Taroom	2/32	Mt Kinnoul	Taroom Repeater Assoc
Thargomindah	6/36	—	—
Tin Can Bay	3/33	Double Is Point	Tin Can Bay Lions
Toowoomba	2/32	Picnic Point	Custom Scientific Elects
Townsville	1/31	—	—
Wilkes Knob	6/36	—	—
Yaraka	7/37	Mt Slowcombe	Yaraka Repeater Assoc
South Australia/Northern Territory			
Adelaide	1/31	Summerton	Philips Communications
Adelaide	5/35	Upper Sturt	ACR (SA) Inc
Adelaide	3/33	Trott Park	Philips Communications
Blinman	3/33	Patawarta Hill	Gum Creek Station
Burra	8/38	Mt Bryant	Mt Bryant Repeater Assoc
Ceduna	1/31	Coppuduiba Hill	Ma Ross Electrical
Clare	7/37	Quarry Hill	Midnorth Repeater Assoc
Cleve	2/32	Mt Nield	Cleve Repeater Station Inc
Darwin	1/31	Darwin	Saascan Communications
Coonalpyn	6/36	Coonalpyn Hill	Upper SE Repeater Assoc
Hawker	7/37	Mt Aleck	Wilpenna F. Fighting Assoc
Manimum	8/38	Mt Beevor	SA Antenna Services
Mt Gambier	5/35	Mt McIntyre	Crest SA Mt Gamber
Mt Gambier	7/37	The Bluff	SE Repeater Assoc
Myponga	2/32	Nr Myponga	Aust Volunteer Coastguard
Naracoorte	4/34	Lucindale	Naracoorte Repeater Assoc
Oodnadatta	1/31	Mt Jane North	Todmordon Cattle Co
Orroroo	2/32	Black Rock Peak	Toops Electrical Services
Pardana	4/34	Nr Parndana	Ki Repeater Assoc
Port Lincoln	8/38	Pillawarta Hill	K.M. Electronics
Port Pirie	4/34	The Bluff	Dist Council of Mt Remarkable
Price Hill	1/31	—	Dist Council of Carrieton
Renmark	6/36	—	Riverland Repeater Group
Snowtown	6/36	Barunga Ranges	Largies Electrical
Tarcoola	6/36	Nr Tarcoola	A.J.& P.A. McBryde
Truro	4/34	Nr Truro	Barossa Repeater Assoc
Waroona	7/37	Mt Gore	Power Communications Service
Wilkatana	8/38	Mt Arden	Mt Arden Repeater Assoc

Tasmania

Burnie	8/38	Round Hill	N-West Coast Rpt Assoc
C.Highlands	7/37	Barren Tier	C-H'lands Assoc
Devonport	1/31	Sunnyside	Rick Rickard TAS-000
East Coast	6/36	Moaners Tier	East Coast Rpt Assoc
Hobart	1/31	Grass Tree Hill	Sth Tas Rpt Assoc
Hobart	5/35	Mt Faulkner	CREST (Tas)
Launceston	2/32	Mt Arthur	Launceston Rpt Assoc
Midlands Area	4/34	Millers Bluff	Midlands Rpt Group
N-E Coast	3/33	Tower Hill	N-E Repeater Group
West Coast	6/36	St Valentines Pk	N-W Coast Rpt Assoc

Victoria

Anakie	4/34	—	—
Ararat	6/36	Mt William	Mt William UHF Rpt Grp
Bairnsdale	1/31	—	G'land Repeater Assoc
Bairnsdale	7/37	—	—
Ballarat	2/32	Mt Buninyong	C'ral Highlands R. Assoc
Ballarat	5/35	Mr Warrenheip	B'rat Rural E'gency M'tors
Ballarat	7/37	—	Ballarat Communications
Balmoral	1/31	—	—
Bendigo	4/34	Specimen Hill	Central Vic R. Assoc
Bendigo	8/38	Mt Alexander	—
Carrajung	4/34	Carrajung	Carrajung UHF R. Assoc
Eildon	1/31	—	—
Eildon	8/38	—	—
Euroa	3/33	—	—
Foster	6/36	Mt Fatique	G'land Repeater Assoc
Geelong	4/34	—	G'Long Amateur R. Club
Gippsland	7/37	Mt Taylor	G'land Repeater Assoc
Hamilton	1/31	—	—
Hamilton	5/35	Mt Bainbridge	Hamilton Electronics
Hamilton	8/38	—	—
Hawkesdale	4/34	Hawkesdale	—
Kerang	2/32	Mt Kerang	—
Lorne	3/33	Weeaproinah	—
Mansfield	2/32	The Paps	—
Melbourne North	1/31	—	Omega Radio Club
Melbourne Metro	3/33	Lysterfield	Philips Communications
Melbourne Metro	5/35	Olinda	Paravic Sports Assoc
Melbourne South	7/37	Frankston	Powerband Communications
Mildura	3/33	—	Ferguson Sec & Sound
Moe	2/32	Moe	G'land Repeater Assoc
Mt Cann	8/38	—	—
Myrtleford	8/38	—	Alpine Repeater Group
Newtown	4/34	—	—
Omeo	1/31	—	—
Penshurst	1/31	Mt Rouse	Hamilton UHF Users Grp
Shepparton	7/37	Shepparton	Angus Communications
Tallangatta	7/37	—	—
Wangaratta	6/36	Warby Ranges	Corowa Electronics
Yea	6/36	—	—

West Australia

Albany	3/33	Mt Melville	—
Augusta	7/37	—	—
Bencubin	2/32	Bencubin	—
Boyup Brook	4/34	Dinninup	Boyup Brook Comms Grp
Bunbury	2/32	Shenton Ridge	B'bry & Dist UHF R.G.
Carnamah	2/32	—	—
Coolgardie	7/37	Mt Burgess	—
Denmark	1/31	Denmark	—
Esperance	4/34	Esperance	—
Kambalda	1/31	Kambalda	Goldfields Repeater Assoc
Kamboola	1/31	—	—
Katanning	1/31	—	—
Kulin	4/34	Kulin	—
Lancelin	4/34	Lake Karakin	Gingin Shire Council
Mandurah	7/37	—	—
Manjimup	8/38	—	Manjimup Comms Radio
Margaret River	6/36	Ellen Brook	Margaret R. UHF Rpt Grp
Meekatharra	1/31	Hill View Station	—
Mia Mia	1/31	—	—
Mt Barker	7/37	Mt Barker	Plantagenet Rpt Group
Mt Barrow	7/37	—	—
Mt Marypeaks	6/36	Mt Marypeaks	—
Perth	1/31	Wanneroo	Philips Communications
Perth	3/33	Roleystone	Philips Communications
Perth-Metro	5/35	Maddington	CREST (WA)
Perth-East	8/38	—	—
Ravensthorpe	8/38	—	—
The Knob	2/32	—	—
Wickham	1/31	Wickham	Wickham Radio Club
Wongan Hills	8/38	—	—
Wyalkatchem	6/36	Wyalkatchem	D & G Pearce
York	7/37	Mt Bakewell	York Repeater Group

NOTE: This information is provided by various sources and relies upon reader input for the correct information. If you are aware of any non-listed or no longer operating repeaters, please advise to: REPEATER LISTING, P.O. Box E160, St James, Sydney 2000.

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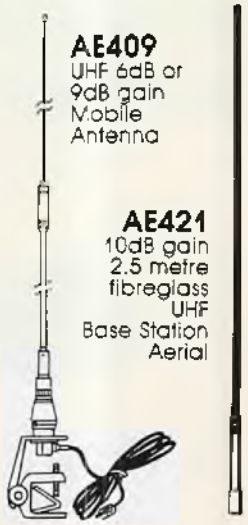

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