CB Action

July/August 1994 $3.75

Reviewing the
M-400 Decoder
..read coded digital signals on your computer screen

Latest Stationmaster 27MHz base antenna
..still one of the most popular CB antennas

Reader Survey
..you tell us what you want to read

Hard to find scanner freqs
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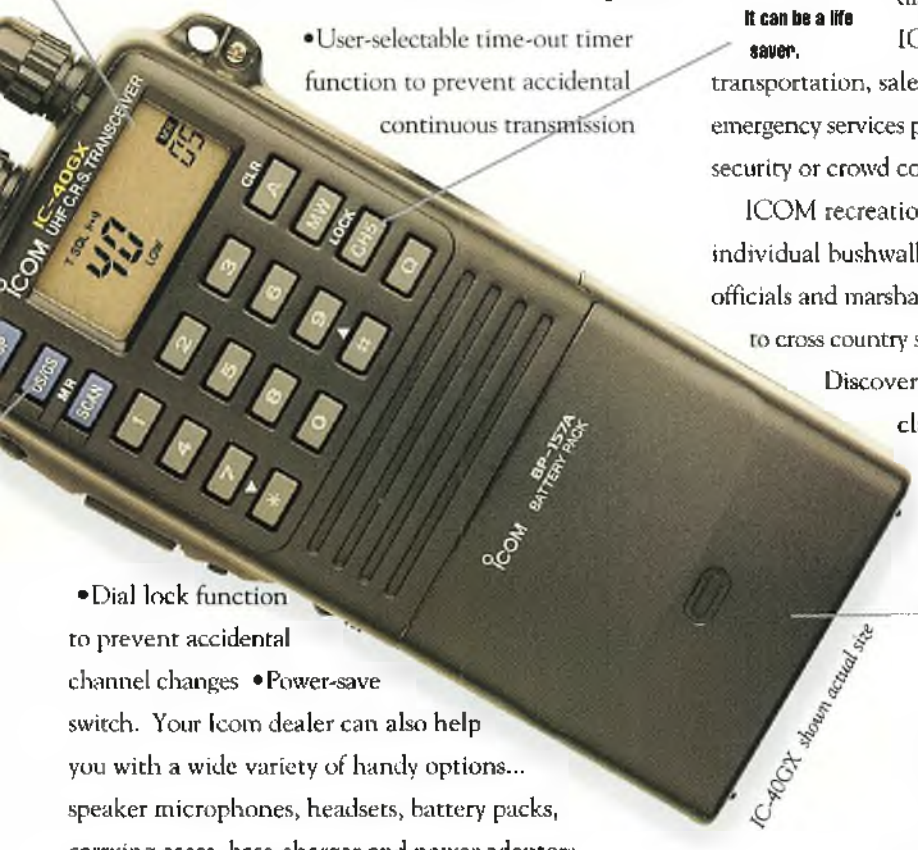

•Dial lock function to prevent accidental channel changes •Power-save switch. Your Icom dealer can also help you with a wide variety of handy options... speaker microphones, headsets, battery packs, carrying cases, base charger and power adaptors. This unit has got it all.

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SELCALL convenience at no extra cost to you.

With so many different CB users demanding SELCALL, ICOM is the first to introduce it built-in to a handheld CB at no extra cost.

Now there's no need for the extra expense of retrofitting if you want SELCALL convenience. The IC-40 GX with SELCALL gives you direct, one-to-one, uninterrupted communication. The 5 tone Encoder and Decoder allows you to personally send or receive calls from a specific individual or even a group, using the selective calling system.

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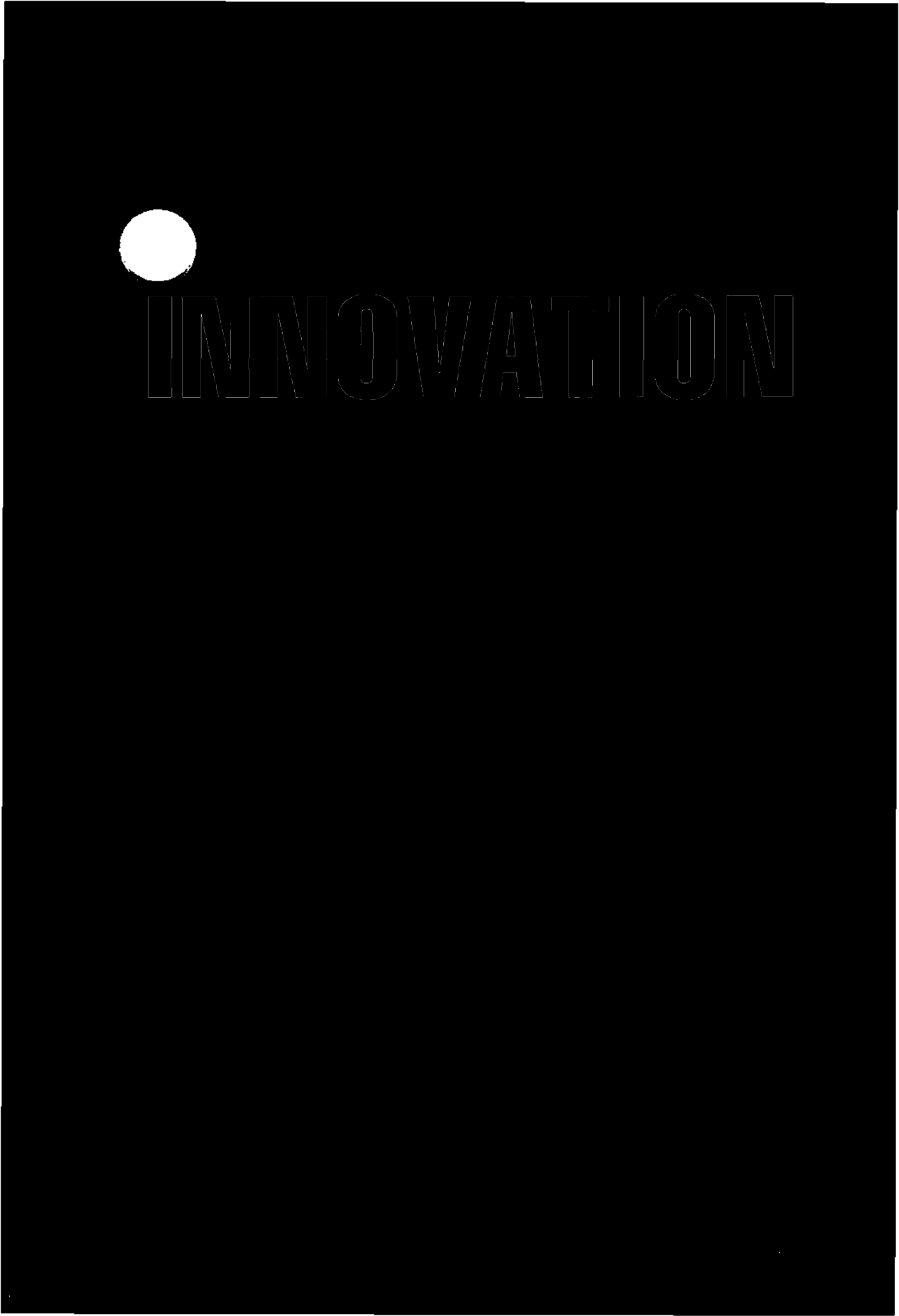
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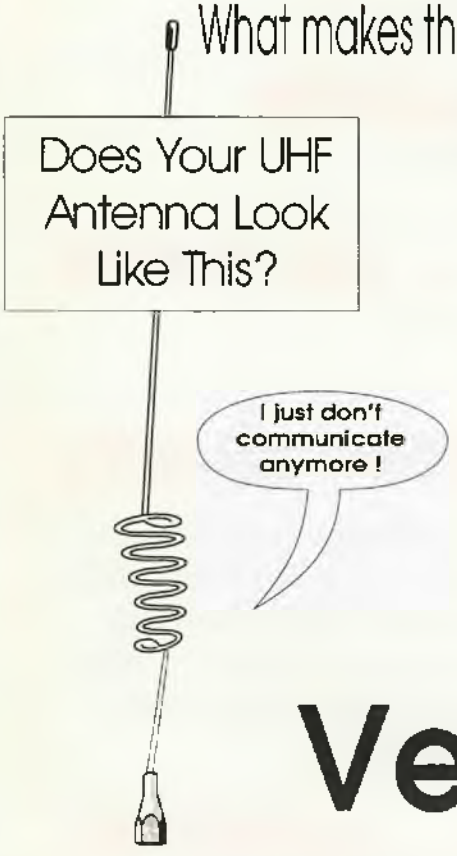

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S474

NEWCOMERS READ THIS

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 usually 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 Standing Wave Ratio.

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***.

SMA is used in this magazine as an abbreviation for the Spectrum Management Agency - 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 Short Wave Listener 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 Ultra High Frequency 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 fro an Antenna Tuning Unit 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*** - Television Interference - or - BCI - Broadcast Interference. RI stands for Radio Inspector - 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 tern 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

ICOM'S BRILLIANT NEW IC-40GX UHF RIG

By Ken Reynolds

A priceless pearl of wisdom passed down through the generations suggests that, at the precise moment anyone comes up with a great idea, some universal power causes the same idea to be shared with many other minds at the same time, and whoever acts first upon the idea usually carries off the prize.

It seems that the universal force has been busily at work right through the UHF CB industry with its focus on more sophisticated hand-held portable transceivers.

In the last issue of CBA we presented the new **Philips P65** model and, in this issue, the spotlight shines brightly on **Icom Australia** and its sparkling new, do *nearly* everything **IC-40GX**. It's also in the wind that another player might just enter the fray in the very near future...

While it is not possible to predict an outcome in respect to the eventual commercial winner, it is safe to say that the end user of the product always benefits in terms of hands-on access to the newest technologies.

So, having set the stage...

This issue, we take pleasure introducing, and reviewing for you the brand new Icom UHF CB whiz-bang miracle of the '90s — the **Icom IC-40GX**.

If it weren't for familiarity with the model numbers IC-40 and IC-40G, you might be forgiven for thinking the IC-40GX was a new sports car... but it isn't.

It is a high-performance, UHF CRS transceiver with multiple group channel scanning, keypad channel entry, built-in programmable SELCAL and many features squeezed into a minuscule package of proportions that were simply science fiction a few short years ago.

Separated from its battery pack, the black plastic and metal alloy transceiver case measures only 73mm high by 55mm wide and about 35mm deep discounting the necessary protrusions like knobs and BNC antenna connector. Even with the BP-157A battery attached the total length of the transceiver package is only 122 millimetres.

We understand Icom initially intends to supply the transceiver in standard form with a BP-160 600 mAh (milliamp hour) battery pack attached. The test sets had BP-157A commercial packs rated at 900 mAh.

As you will note from the photographs, almost every square millimetre of the front panel is occupied with soft touch press buttons — except for the four horizontal bars which conceal the tiny loudspeaker, and the LCD window which measures 30 millimetres by 15 millimetres.

Other operational keys include a recessed, circular rubberised press button located between the antenna socket, and the off/on volume control on the top control panel for toggling the transmitter between high power and low power.

Just a momentary press alternates between Hi and Lo. However, this button has a dual (secondary) function which accesses the SET mode.

This **SET** business is amazing. It allows the user to program the values of a group of subliminal functions which operate below the normal function level. When this mode is active, by using the up or down arrow keys the user can 'rotate' through the function group and alter any of the settings at each step on the way.

The Functions are, in stepping order:

1. **Time-out-timer**. This can operate in four time frames or it can be deactivated altogether using the rotary main dial switch. The times are: off or 1 or 2 or 3 or 4 minutes.

2. **Power saver**. This can be set to ON or OFF. The factory default values are preset at a ratio of 1 to 4. This means that the receiver is active for only 25 per cent of each second and inactive for the remainder of the time when the power saver function is operational. (Of course, when it's actually receiving a signal the power save function is momentarily disabled.)

Our tests showed standby receiver current drain to be 68 milliamps, but with the power saver function active the idle current was reduced to about 20 milliamps. Quite a noticeable saving.

3. **Scan resume**. This offers extra options over the usual scan and resume functions. The scan function searches for an occupied channel and, in the 'normal' mode most readers will be familiar with, after the signal has disappeared the IC-40GX will wait five seconds and resume searching.

It is also possible to set a 'temporary' pause function which operates in three time limits of 5, 10 or 15 seconds. When a signal is detected during the scan, the radio will pause on that channel for the programmed time limit, and if scan is not cancelled during that time the scan function will resume its search where a repeat performance will be enacted.

4. **Beep tone**. This is simply an on/off function which toggles between a noisy or quiet keypad and

....☞

ICOM'S BRILLIANT NEW IC-40GX UHF RIG

(continued from previous page)

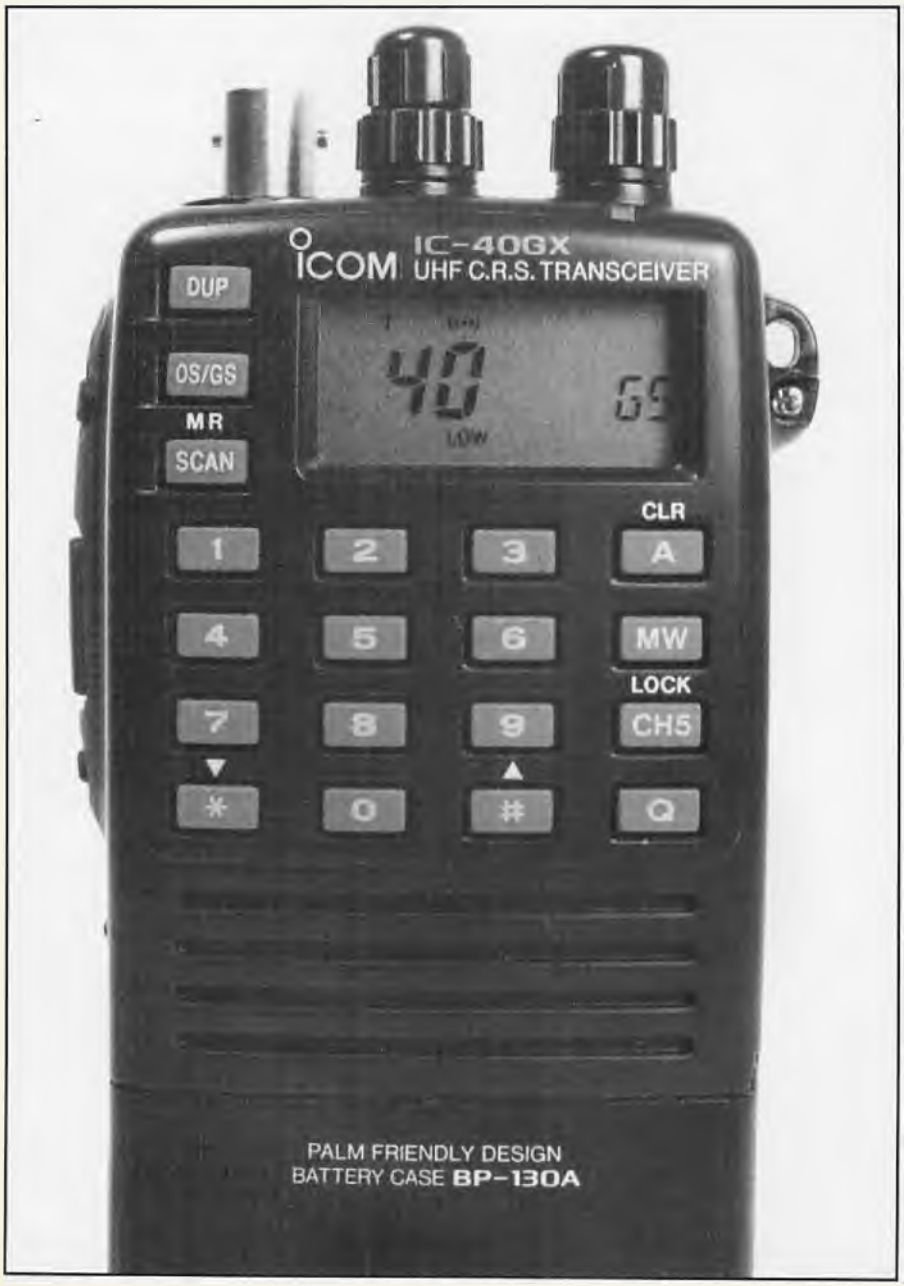
function keys. In the beep mode you get a 'beep' for every key entry — just as you would expect.

5. **Display lighting**. The **light** key — adjacent to the PTT switch — normally illuminates the LCD for five seconds. However, by using this function, the light switch is reprogrammed for continuous display illumination if desired, and the key then takes on an on/off function.

If you decide to use this function it can be a real trap under normal lighting conditions.

Similarly rubberised, but differently shaped, buttons are mounted in a group adjacent to the PTT switch, and all are located on the left hand side of the transceiver case.

The case itself is fabricated from Icom's usual high impact, tough black plastic for the front shell half while the rear case section is wrought from a diecast metal alloy which serves as heatsink for developed transmitter heat and a strong mounting point for the stainless steel belt clip which attaches near the top edge of the panel.



The two protruding control knobs visible on the upper control surface are, from left to right, concentrically-mounted potentiometers for volume control, and adjustable mute level control combined with the off/on switch.

The squelch, being the lower ring of the two controls, can be a bit tricky to operate independently of the volume control, especially for those with really blunt fingers.

The squelch can be set at a very low threshold of 0.1 microvolts to a maximum or 'tight' condition of 0.35 microvolts which, on occasions, is not quite high enough to reject some forms of interference encountered in portable use.

A maximum value of 3 or 4 microvolts would be much more useful, which would also mean you could knock out all but local signals if you chose to.

The second knob is a rotary channel change switch which suffers from the usual counter time lag preventing the operator from covering the whole band in one flick of the switch, but the step speed is still quite acceptable. However, if you prefer, two other channel selection mechanisms are provided to cover all possible contingencies:

1. A pair of press buttons stencilled with appropriate arrows located on the lower edge of the keypad enable up or down channel selection, either one channel at a time or, by holding either button depressed, at a predetermined step rate of about 40 channels every six seconds.

2. The digital keypad itself permits direct entry of channels. But wait! If you don't read the handbook first you might experience some trouble entering channels numbers from 1 to 9.

Any channel selections less than two digits require that you enter a leading zero before the channel number desired.

For example, channel 4 must be entered as 04 or the CPU will reject your entry. Naturally leading numbers above 4 will also be rejected as they are above the maximum 40 channel capacity.

A vertical row of blue-colored press buttons adjacent and to the left of the LCD window account for DUPlex operation with the top button, which allows channels from 01 to 08 to be individually activated for simplex or repeater operation.

Open scan or **group scan** selection is at the center, and the **SCAN Start/Stop** button at the bottom.

The lower key, in combination with the 'F' for **Function** button, provides for the insertion and removal of desired

channels from either of the SCAN groups.

The operator can select from all channels active to a combination of any or all channels inactive in either group just by toggling the OS/GS group button above.

Entering or removing the displayed channel number is as easy as depressing simultaneously the 'F' key and the SCAN key for a second until an audible 'beep' is heard and the LCD indicates the displayed channel is either entered or removed from the desired scan group.

SELCAL mode

It all sounds very complicated when written down on paper, but after only a few minutes hands-on experience the average operator should have the IC-40GX well under control.

For example, the SELCAL facilities included as standard equipment look tricky to grasp but in fact the functions are really quite logical.

The IC-40GX uses the standard international CCIR tone set which makes it compatible with almost all other Australian-used 5-tone SELCAL systems.

Most UHF CB transceivers only allow the operator to transmit one single predetermined SELCAL 'number' consisting of a burst of five individual tones which represent numeric values from 0 to 9.

The Icom portable allows for partial control over the transmitted number by offering the user to input values for the fourth and fifth digits. In other words, the units column and the tens column values can be selected by the user, thus offering 100 possible combinations.

Apparently Icom decided to offer only the two-digit group programming because it felt that full programmability might add a possible nuisance value to the air waves.

We feel this limitation seriously detracts from the desirability of the transceiver, since acquaintances one meets over an extended period of time may have SELCAL numbers varying over a wide range and the majority will be inaccessible to this great little rig.

To transmit a SELCAL number in its simplest form on the IC-40GX, access to the coding is achieved by momentarily depressing the MONI rubberised button just above the side mounted PTT switch. Instantly a five digit SELCAL number replaces the channel number on the LCD, with the second digit from the right flashing to prompt the user to select a number which is entered with the main rotary dial switch.

Pressing an arrow key locks the selection into the sequence and starts the far right-hand digit flashing, prompting a new entry.

To send the SELCAL tone burst simply press and hold the MONI button for two seconds and a beep, coinciding with illumination of the red transmit LED, advises the tone burst is on its way.

In the transmitted sequence the transceiver sends its own identifying SELCAL number which will identify the calling party to the decoding receiver if the radio called is another IC-40GX (or an Electrophone TX-4000 transceiver, as the SELCALs are compatible with each other).

In the case of the IC-40GX, the called station will respond with a 'beep-beep' reply to advise the call has been successful. Group call facility is also included.

Taking the SELCAL a step further, Icom has supplied 10 memories in which to store your favorite SELCAL tone groups.

To store a displayed SELCAL number simply press the **MW** (Memory Write) key on the front keypad for two seconds and the whole five digit number will begin to flash. At this point press the desired keypad number between 0 and 9 to store the data.

Retrieving a stored number is even easier. Always clear previous or half-entered functions before attempting to perform a new function. Press the CLR/A button to restore the channel display. Press and hold the MONI key for two seconds until the LCD shows a series of five dashes and TO (like this — —-TO) then enter the desired memory number and, bingo, your retrieved data instantly appears ready for transmission.

Simply press and hold down the MONI key until the tone group is transmitted.

Any or all of the channels can be tagged as a quiet channel simply by pressing the 'Q' key for two seconds in the presence of the desired channel number displayed on the LCD.

Performance

The tiny IC-40GX transceiver is so packed with features you would think that something just had to suffer in the design process. But no, the IC-40GX is a real demon in performance as well.

Operating on a 7.2 volt battery pack the transmitter delivered 2.1 watts RMS on high power and about 800 milliwatts on low power. On a 12.5 volt battery pack (or operated from a regulated 12.5 volt supply) we measured 5 watts RF output on high power while low power was reduced slightly at 750 milliwatts.

On the high power range lengthy transmissions of more than a couple of minutes will cause the rear metal case half to become quite hot.

A 1kHz sinusoidal tone produced 4.7kHz transmit deviation while normal speech peaked to about 5kHz deviation. Transmitted audio is crisp and clean when received on a variety of other transceivers.

Receive performance left little to be desired in terms of sensitivity with the measured value of 0.12 microvolts for 12dB SINAD. Squelch performance, as mentioned earlier, was threshold, 0.1

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microvolts, and maximum setting opened at 0.35 microvolts.

As you would expect, the use of such a tiny loudspeaker presents the user with some limitations in respect to using the transceiver in noisy environments.

Where possible, the use of an external loudspeaker provides greater volume and clarity.

On test the audio amplifier provided quite clean audio up to about the 260 milliwatts level after which noticeable distortion crept into the overall sound — about 10 per cent for 320 milliwatts audio output into 8 ohms. Audio performance was independent of supply voltage.

Caveat emptor...

Just a few words of warning about buying equipment overseas. We frequently get asked about buying UHF CB equipment by people travelling to Asia. The answer is ***no*** you can't buy this gear in Honkers or anywhere else.

It is unique to Australia and now New Zealand. Although you can buy a 'definitely, 100%, guaranteed, genuine Australia UHF CB' in many Asian outlets you will find when you get back to Oz that you really bought a 'puppy' and you shouldn't try to sneak animals through Customs anyway — it's illegal.

SUMMARY

While we have overlooked some of the IC-40GX's feature combinations in this review most of the important features have been covered. We apologise to Icom for the exclusion of some of the finer operational detail, however further details are available from Icom Australia or authorised Icom dealers throughout Australia. Some features of the IC-40GX are not user-programmable but can be changed on request by your Icom dealer or Icom Australia.

The IC-40GX is a compact, handheld, full featured UHF CRS transceiver including many functions not normally available in most mobile or portable CB transceivers. Overall performance is excellent and Icom has available a wide range of complimentary accessories including: battery packs, battery case, speaker microphones including those with DTMF keypad, fast charger and adaptor leads. If you are in the $700 marketplace, the Icom IC-40GX transceiver is a pretty hard act to top.

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Utility listening (signal decoding) made easy with the...

UNIVERSAL M-400 DECODER

Well, I must admit, I was pretty eager to get this little device home so that I could put it through its paces. My previous experience with modes such as RTTY and ASCII had either involved very old mechanical teleprinters which, by their very nature, are extremely noisy, bulky and messy, or various computer/modem combinations which are expensive to set up, especially if you don't have a computer to start with or, if you do, tie it up so that you can't do anything constructive with it for hours on end.

The **Universal M-400 Decoder** or M-400 for short is a multi-mode 'reader' which has been designed to be a stand-alone unit (ie no computer or other hardware, apart from the receiver, is needed to run the device).

The M-400 will decode and display Baudot (RTTY), ASCII, SITOR A & B, AMTOR FEC-A, SWED-ARQ, facsimile, ACARS, POCSAG, GOLAY, CTCSS, DCS and, last but not least, DTMF utilising a front-mounted LCD (Liquid Crystal Display) or a printer, if you have one.

The first thing that struck me was the sheer size of the carton which housed the device.

The box, proudly sporting a *Made In USA* sticker, is almost two feet long, 15 inches wide and about four inches thick. It's not that big, though — the amount of internal foam packing material would seem to suggest that the contents would survive a stampede of elephants.

The M-400 itself is housed in a solid, all-aluminium case (8.75"W, 2.5"H, 8"D), with the neatly set-out, sloped front panel being adorned with the various push button switches, LED tuning/status indicators, gain control and, probably most important of all, the centrally located LCD alphanumeric display.

The display provides the user with two lines of 20 alphanumeric characters of decoded text or data.

The rear panel contains two 3.5mm audio input sockets, one designed to be connected to the extension speaker socket of your short wave receiver or scanner, and the other input a high impedance input which is intended for low levels, such as discriminator, detector or recorder outputs from your receiver (if it has them). Another 3.5mm socket provides a speaker output which can be switched on or off via an internal relay (see below).

An 11-14 volt DC input socket provides the necessary herbs from the supplied 'plug pack' power supply and a DB-25 parallel printer socket rounds out the compliment of connectors on the M-400's rear.

The industry-standard 25-pin printer socket provides a direct feed to a 9 or 24-pin dot matrix printer giving a 'hard copy' of all received text or data.

Use of the printer is optional in all modes except fax, in which the LCD display is disabled and the received picture is sent directly to the printer port. Although specifying a dot matrix printer in the handbook, I found that my trusty HP Desk-jet performed extremely well on the text/data modes. Unfortunately, however, when I tried it in the fax mode it printed nothing but garbage.

I suppose there's a moral there somewhere.On the subject of handbooks, the printed material supplied with the M-400 could only be described as barely adequate. The 40 pages of documentation tell the user how to set the device up for the various modes of operation, however the rest is left up to the operator, and don't be surprised if you have to spend quite a few hours 'flying by the seat of your pants' when you set up for the first time.

ON THE AIR...

To use the M-400, the user must first select the desired mode using the four, slightly raised push buttons on the front panel, then other parameters such as data speed or audio offsets need to be specified.

The first mode I tried was **RTTY**. I knew, from tuning around the HF bands, that this mode seemed to be the most actively-used and would probably be the easiest to test.

After plugging the M-400 into my Icom IC-735's extension speaker socket, I tuned around until I found a reasonably strong RTTY station.

It is probably worth noting here that, if you intend to use the M-400 or any other decoder on HF, a very stable general coverage receiver is mandatory.

Any shift in the receiver's frequency during the monitoring process will degrade the performance of the decoder or, if the drift is too severe, will make decoding the text/data impossible.

After selecting the appropriate Baud rate, the correct offset and fine tuning the receiver (on USB mainly), the two red LEDs on the front panel of the M-400 start to flicker.

The top LED lights when a 'mark' tone is detected, the lower a 'space' tone. As soon as these LEDs flicker, the green 'DATA' LED lights to let you know that the M-400 is decoding and the recovered text/data is scrolled onto the LCD display.

Although only displaying two lines of 20 characters at any one time, the M-400 has approximately 4000 characters of internal memory, so if you miss some of the incoming text, you can use the 'UP' or 'DOWN' keys to scroll backwards or forwards to catch up.

The M-400 seemed to perform flawlessly during the RTTY test.

Unfortunately, however, it took me six hours of tuning around before I could find a station which was sending text in plain English! *(Try the lower end of the 20 metre amateur band next time — around 14.020 to 14.050 MHz. Ed.)* While there are many RTTY stations on the HF bands, the majority send encrypted or scrambled text to prevent eavesdropping.

I did, eventually, find several stations broadcasting news items, mostly in and around the 10 to 11 MHz frequency range.

The copy from these stations was very reliable considering the amount of fading on the signals and the amount of noise at my QTH.

One of the stations appeared to be transmitting from North Korea and it was interesting to note, throughout the duration of the broadcast, the different ways in which the news was reported from this Communist country.

Handbook is a bit vague

The next test was the **fax** facility. The handbook seemed a bit vague when it came to explaining what was actually taking place here. When the fax mode is chosen, the only user-selectable variable is the software controlled 'POS/NEG' switch.

This switch controls the polarity of the received picture. Usually it is set to 'POSitive' however if you change to LSB on you receiver, you will need to change to 'NEGative', otherwise, your picture will come out looking like a Photographic negative.

Weather fax no problem

I tuned my receiver to the Weather Bureau frequency on 5.100 MHz and, sure enough, the fax picture started appearing on the borrowed dot matrix printer. The first picture was actually half-way through when I tuned in, consequentially the fax was not centred properly on the paper.

The next few pictures, however, were properly synchronised and came out with only slight blemishes.

If you have ever wondered what all those digital signal noises are on your radio, here's your chance to find out. This clever little unit will decode and display a wide variety of such signals and open up yet another exciting facet of hobby communications.

One little gripe I did have was the lack of tuning indication given when in the fax mode. Whilst operating in this mode, the 'DATA' LED is the only tuning indication given. Once tuned to approximately the right frequency, this LED seemed to be very enthusiastic in its operation.

I soon found that, despite the fact that the 'DATA' LED was on, it did not actually signify that a good picture would result and a certain amount of fine tuning, whilst keeping an eye on the printer, was required at the receiver before a good picture was recovered. As the handbook says though, "...trial and error is the key here...".

The CTCSS (Continuous Tone Coded Squelch System) mode worked extremely well.

This mode will probably only appeal to a select few of those scanner buffs out there. You may be asking yourself what you would possibly use this mode for.

Well, if you plug the M-400 into your scanner, not only can you find out what sub-audible CTCSS tones are being employed by certain government departments or companies but, as most of the commercial repeater stations have more than one user on them and each user has a different CTCSS tone, you have the ability to nominate a particular company, program the corresponding tone into the M-400's memory, turn the speaker setting to 'Automatic' and the M-400 will only turn your extension speaker on when it receives the correct tone.

Very handy if you don't want to listen to the other companies on the frequency!

The DTMF (Dual Tone Multi Frequency) mode is very similar in operation to the CTCSS, except that the DTMF tones are normally sent as a string of numbers.

The time taken to decode the tones, both in CTCSS and DTMF modes, certainly appeared to be less than the 250 mS mentioned in the specifications page. The extension speaker can be controlled, in a similar manner to the CTCSS, by programming a group of up to 10 different DTMF digits into memory, upon which the speaker will turn on only when the correct sequence of digits has been received.

SUMMARY...

The other modes contained in the M-400 were not tested, mainly due to the fact that no matter how much I looked around the HF bands, I could not find any suitable signals to test them on. I can only assume that the M-400 performs as intended on these settings.

In summary then, the 'Universal M-400' is a dedicated stand-alone unit. Running from a 12 volt DC power source it lends itself to portable operation and, most importantly, the unit will decode and display a wide range of communication transmission techniques (it certainly leaves my old Model 100 teleprinter for dead!).

The 'Universal M-400' should appeal to quite a number of shortwave listeners out there, while the more exotic modes such as CTCSS, DTMF, POCSAC/GOLAY (pocket pager modes) will prove, I'm sure, to be very attractive to the growing number of scanner buffs. The handbook leaves a bit to be desired, but then again, some would say that half the fun is making the device work in the first place.

Our review unit came from Daycom Communications - (03) 543 6444.

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By Patrick McDonald

Welcome back, all you highly-computerised boys and girls! Here's the latest news and views about effectively using the now ubiquitous PC with your favorite radio, whether it's an amateur radio transceiver, a shortwave receiver or maybe a UHF/VHF police scanner. And even if you don't yet possess a silicon chip, have a browse below. I'll bet you'll find some interesting new developments in the radio world that will tickle your fancy.

Hey, you! Yes, *YOU* over there with the computer! Listen up! You know, my wife tells me that I'm prone to doing a lot of noisy *shouting* at the beginning of my regular ONLINE columns here in CB ACTION magazine. Well, I plead guilty, folks.

But look here, there are a whole lot of glossy magazines crowding your local newsagent's racks, right? A goodly number are about computers, a rather precious few concern radios, but there's only a pretty damn limited amount of hardcore info on using your computer together with your radio. And here's that rare commodity now, clutched in your sweaty little paws! So I'm sorry if I offend; I'm only shouting just to make sure nobody misses anything on this very important topic!

Okay, let's start out by looking over some home-grown radio-related software, born and raised right here in Oz. It's a commercial product (not shareware) called the **Spectrum Information System (SIS)**, created by Melbourne-based Andrew McColm and distributed by Gary Scafe of **Kingaroy Communications** up in tropical Queensland, a tidy little radio spectrum database carefully designed to help you keep track of all those many and varied frequencies you need to have close at hand.

I got a peek at version one this week, already loaded with the entire NSW range of UHF, VHF and HF frequencies. When fired up, the main menu screen of SIS shows the following options:

- **User Browse**;
- **Callsign Search**;
- **TX Frequency Search**;
- **RX Frequency Search**;
- **Location Search**;
- **System Set-up**; and
- **Maintenance**

The **User Browse** function steps you through the full set of frequency records, in alphabetical order of the user, from A to Z. It's quite a long listing and, at first glance, looks fairly comprehensive. In this same section you can both add and delete frequencies as you note changes and new channels in your ongoing monitoring, and it functions as you'd expect any proper database to function, with no nasty surprises.

The four **Search** functions prompt you for frequencies, locations or callsigns, respectively. SIS then goes a-lookin' for you and sees if it can find what you want.

Finally, **System Set-up** and **Maintenance** allow you to do such things as assign a particular floppy drive for making back-ups of your database (always an excellent idea), change the SIS main menu's background color and exploding box speeds, and re-index database files.

As it stands, the SIS looks simple to operate and eminently useful, and I can't fault it, especially at a cost of only $30. Naturally, Kingaroy Communications has available frequency data for the other Australian states and territories as well, and it guarantees that the program will be compatible with future frequency list releases from the SMA.

Just as this column was nearing completion, Gary Scafe rocketed down the absolute latest version of this database, with several useful improvements. Unfortunately, I haven't got the time right now to look at the upgrade properly, but will update CBA readers about SIS version 2 in the next issue.

As well, Kingaroy Comms is sending me its latest Amateur Radio Callbook and CB Callbook databases for later perusal, and I'll let you all know what this additional Aussie software looks like in a couple of months time.

For now, you can find out more for yourself from the following address and phone number:

Kingaroy Communications,
PO Box 884,
Kingaroy,
Queensland 4610
Telephone (071) 62-7700

If you have a modem, you can also contact the SIS author at Fidonet 3:635-125 on (03) 888 7741 and Gary Scafe at Kingaroy Communications at Fidonet 3:640/815 on (071) 62 7113.

Moving right along, there's a new 'freeware' version of Robert Sillett's well-known **SWL (Shortwave Log)** program just out, called SWL120.ZIP on BBS systems which use the .ZIP compression method. (You may also find it with .LZH or .ARJ extensions, which simply indicate that the collection of relevant files have been gathered and compressed with alternative methods.)

Keen listeners to shortwave radio usually keep records or a logbook of some sort concerning the details of the stations they have heard. I know I always keep up a radio log, and have for many years now. With the advent of our beloved personal computers, listeners can now store listening and monitoring logs in easily accessible electronic databases, which sure makes records a heck of a lot easier to organise and, especially, to find again when you really need 'em. In addition to storing the log entries, the SWL program maintains accurate station frequencies and addresses, which are used to speed up the entry of logs and reception report requests.

But more than this (wait for it!) the SWL program also allows the listener to actually generate reception reports in English, Finnish, French, German, Hungarian, Italian, Portuguese, Spanish and Swedish, so you can write for your verifying QSL card in the appropriate language! This makes SWL a pretty unique program, nearly one of a kind, and especially useful for those DXers who are trying to verify obscure tropical band (or medium wave) stations in Latin America, South America or Africa. My only complaint is that, so far, the program hasn't included an Indonesian module, and this is of course an important DXing language in this part of the world. Well, maybe they'll track down an Indo expert for version 121!

SWL is designed to run under MS-DOS 3.3 or better. Performance is acceptable on an 8086/8088, but the program naturally runs much faster on an 80386 or better machine. It sure flies on my 486DX2. If it's available, approximately 470k of EMS or XMS memory is used. And a hard disk and at least two megabytes of free disk space is definitely required.

By the way, 'freeware' is a special subsection of 'shareware' software, copyrighted by the author but distributed without any request for payment. Authors of ordinary 'shareware' ask for a modest payment after an initial trial of the program in question.

Finally, I want to mention quickly the latest (dated March, 1994) version of **STS Orbit Plus**, version 9414, by American author David H Ransom Jr, the satellite-tracking software many of us have known and loved for several years. I don't have the space in this issue for yet another review of this excellent package, but want to mention a few of version 9414's newer features.

This is a major upgrade of SOP, the author adding new features for satellite communications and amateur radio, user-definable map colors for certain map features, and incorporating several minor bug fixes. By popular request, he has added Doppler Shift calculations for uplink and downlink frequencies. The calculated uplink (xmit) and downlink (recv) frequencies have been checked carefully in full duplex with RS-10 and yield excellent results, say testers in the US.

Also in response to numerous user requests, Ransom has made the colors for certain map features user-definable. The assignable features are: Local Station Circle of Visibility; Iso-contour Circles in location and tracking station modes; and Tracking Station Circles of Visibility.

STS Plus's keyboard response time has

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been improved; except when the map is actually being drawn, response is immediate instead of waiting for the next second. In the Doppler Shift Mode, the arrow keys and PgUp and PgDn may be held down to repeat.

Even if you're not into receiving packet and VHF voice transmissions from the NASA Space Shuttle, STS Orbit Plus is lots of fun, with a great tracking screen that simulates the big ones used by NASA in the US. I always keep SOP up on the screen when my computer isn't in use, to sticky-beak on the exact locations of the Shuttle or other interesting satellites! You can always watch 'em go over the house, and wave! (Seriously, STS Orbit Plus also has the special capacity to plot visual sighting times for your specific locale.)

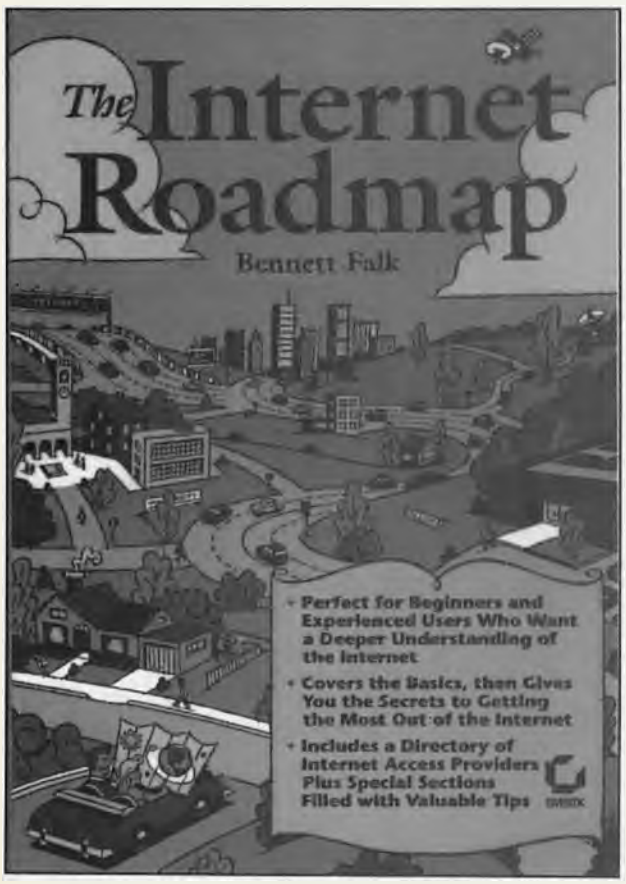
Updated 'element files', giving the latest positions of all known earth satellites, are available regularly from many Australian BBSs, including Paul Britton's highly recommended **Satcom Australia BBS**, now available on not one but *two* phone lines 24 hours daily: (02) 905 0849 and (02) 905 7694. Satcom BBS is also definitely the place to go for all your more specialised satellite comms software.

I'm still getting lots of electronic mail and a few hard copy paper messages about curly subjects. And two questions I hear a lot are: "What is packet radio, really?" and "How can I use my computer to send messages to other computers over the airwaves, for free?"

The second question answers the first, of course, because packet radio is indeed the technique of sending computer data, as opposed to voice or telegraphic signals, over the air, totally wire-less, so to speak! It's a great idea and so many people ask, why not do this all the time, and get rid of the need to use a telephone to connect your computer to another?

Well, the answer isn't altogether easy and is, in fact, a bit philosophic. Long ago, on a distant planet... no, I'm being silly now... but quite long ago, in fact, when radio was in its experimental stage here on planet Earth, the question arose, should everyone everywhere be allowed to send radio messages any time they like? Should 'Freedom of the Air' follow on from 'Freedom of the Press'? Governments around the world eventually decided against this particular freedom, and so it came to pass that, although everyone can *listen* to radio traffic quite freely in this country (well, almost quite freely, if you rule out t cellular phones and other radio telephone traffic) you have to have a *licence* to broadcast on nearly all radio bands, CB radio being the exception to the rule. (Well...!)

If, like Patrick McDonald, you have just discovered "Internet" or would like to know more about it, the book below is an excellent place to start.



The reasoning is that, unlike paper and printing presses, radio spectrum space is a limited commodity. If I print 10 books and 100 magazines every year, and hand out thousands of leaflets on the street daily, I don't take away anyone else's right to do the same thing. But if I broadcast at high power on a specific frequency, I automatically prevent someone else from using that radio space. And useful radio space is indeed limited.

Free radio enthusiasts, often called pirate radio operators, dispute this governmental decision to this day, and indeed many such illegal broadcasters can be found in North America, Europe, and even here in Australasia on the shortwave, FM and AM radio bands. Nevertheless, they all risk prosecution, heavy fines, possible jail, and confiscation of their equipment.

Now, back to packet radio! Where does all this historical background fit in? Well, to use packet radio you have to broadcast. And to broadcast you need a licence. And to get a licence you have to pass a proficiency test or tests which attest to your technical radio knowledge and (for HF at least) your ability to send and receive Morse Code at a certain speed.

Relatively few radio enthusiasts study for and receive such licences, and so not too many are allowed to use packet radio. It's as simple as that. And to answer your next question, no, present legislation does *not* allow you to send computer data on any of the established CB radio channels. All this means that packet radio hasn't really taken off in a big way with the general population of radio enthusiasts, the way computer bulletin boards have.

Interested in pursuing packet further? Pick up an issue of our sister publication **Amateur Radio Action** and you'll find out more about studying for, and eventually receiving, one of the various amateur radio operator's licences presently available.

There's an extremely useful listing of packet radio computer bulletin board frequencies compiled by amateur operator Mark Cheeseman, himself sysop (system operator) of **Radio-Active BBS** on (02) 314 6117. Check for the compressed text file PBBS.ZIP on **Shortwave Possums BBS**. The listing is unfortunately far too long for me to reproduce it here in CB ACTION.

While I'm on the subject of computer bulletin boards, I want to mention Michael Evans' rapidly growing **Spectrum Radio BBS** down in Melbourne on (03) 455 1309. Michael has improved his well-known FREQLINK Australian frequency files by releasing additional new dBase versions for those who want to feed the data into standard database programs. Updated FREQLINK files continue to be distributed weekly, carried here in Olde Sydney Towne by both Shortwave Possums BBS and Satcom BBS.

Finally, as expected, Dave ('Big Bev') Onley's **OZ DX BBS** has recently taken part in a BBS merger. He's now part of **The Radio Shack BBS** in Melbourne, on (03) 532 5737, online 24-hours daily at speeds up to 14,400 bps. Check here for tips on medium wave DXing and files relating to amateur radio.

Okay now, another sensible question which often appears in my radio correspondence is: "What in the heck is this **Internet** thing I'm hearing about everywhere, and

how does it relate to radio?"

Yep, the Internet, though running for nearly 25 years now, has really come into its own lately, especially since it appeared on the cover of a famous international magazine with a four-letter name! And since I'm active on this fantastic network myself, and use it for radio purposes, I can indeed answer this question at least briefly.

The Internet started back in 1969 in the US, as a link-up of Department of Defence computers and military-funded research organisations, known as ARPANET (Advanced Research Projects Agency Network). In those bleak days of the Cold War, the military idea of 'dynamic re-routing' arose. This concept referred to a highly flexible communication network of computers that couldn't easily be knocked out by an enemy nuclear attack, as there was no single coordinating point, and every computer could talk to every other computer, automatically establishing new mutual connections as required. This military computer network was, of course, viewed as an adjunct to radio and satellite communications channels.

Very quickly many US university computers hooked into the new system as well and, before anyone could really plan anything definite, the Internet had taken on a life of its own and was soon growing out of control, with hundreds and eventually thousands of computers participating. Finally, other entire computer networks worldwide began joining up, all linked by ordinary telephone lines, still with no-one really organising and definitely no-one in charge. Remember, of course, that we're talking about room-sized mainframe computers at this point in time, running the legendary UNIX operating system. So, until fairly recently, only those people employed in universities, government departments, or in big companies had Internet access through their heavy-duty UNIX machines.

All this has changed in the 1990s. Anyone with a simple home PC can now arrange to dial into the Internet, just like you dial into a normal computer bulletin board system within **Fidonet**. In fact, Fidonet itself is now directly linked up as part of the Internet.

So what does this mean for us radio enthusiasts? Isn't this all some kind of a threatening substitute for radio? Nope, not at all. You can actually gainfully employ the Internet in at least three ways to further your radio hobby: to communicate directly with individual radio buffs via electronic mail, or **e-mail**; to discuss and swap radio info in international forums or 'newsgroups'; and to distribute executable software programs for radio use, such as computer control programs for various rigs, ionospheric propagation predictors, Morse Code tutors, specialised frequency databases, and the like.

Let me give you a few examples of what I've been up to this past week on this network of networks. When I needed the latest *Voice of America* shortwave schedule, I used the Internet's **FTP** (File Transfer Protocol) function to enter the VOA's computer in Washington, DC, to download the relevant files into my home computer. Later I did the same thing in Tokyo, to get Radio Japan's latest offerings from NHK. (For those of you who already have Internet access, the relevant addresses are **gopher.voa.gov** and **gopher.ntt.jn**.) In order to communicate urgently with the producer of major communications program on Radio Nederland, I sent e-mail which was received and noted within *seconds*.

Finally, I tracked down several new radio software items at the University of New England in Armidale, NSW, at Internet address **grivel.une.edu.au**, a site which 'mirrors' or repeats MS-DOS and Macintosh files stored at both **ftp.cs.buffalo.edu** and **nic.funet.fi**, radio software repositories at US and Finnish universities, respectively. (I could also have zapped directly to the US or Finland, but saved hard-working Internet computers and modems the extra effort by picking up my files closer to home!) By the way, you can try local Australian **plaza.aarnet.edu.au** for radio-related stuff as well.

Another regular function of my Internet usage is my daily check of **Usenet** radio discussion groups. These are the popular electronic forums devoted to various radio topics: scanners, amateur radio, CB radio, shortwave radio listening, pirate radio, packet radio and more, all open to input from tens of thousands of enthusiasts worldwide.

Some Usenet newsgroups are very specific, strictly limited to the discussion of, say, antenna design for amateur radio transmitters. Others are very broad, allowing comment and discussion of any kind of transmission appearing on the HF (shortwave) bands. In short, there's something of interest on this gigantic computer network for every radio nut, whether novice or expert, SWL or amateur, CBer or packet radio operator.

Yep, I'm pretty enthusiastic about the Internet and I hope it shows. In fact, I think it's the path of the future for developments in radio. Communication of ideas and software will broaden the perspective of a whole new generation of radio buffs, who will see computers, satellites, optical fibre cables, telephone systems and radios as interrelated parts of a unified communications whole.

So, you're asking by now, how does little ol' me go about getting connected into all this Internet action? Sounds like it might be pretty technical and difficult. Well, surprisingly, it's not really as complicated as it sounds, especially if you're already started using communications software on your computer to dial up local computer bulletin boards with your modem, via a telephone line. Australian user groups have arisen that allow you to dial into a UNIX computer that will act as a 'gateway' for you, so that your little PC becomes a kind of 'dumb' terminal for an Internet-connected UNIX mainframe.

If you already have a computer and a modem, then, what you require next is access, in the form of a phone number of an Internet dial-up gateway and an user's account with a password. The Australian Public Access Network Association (**APANA**) offers just such access, and I strongly recommend giving your local APANA rep a ring.

Warwick Hockley in Melbourne on (03) 571 0484 and Matt Perkins in Sydney on (02) 689 3469 both had a lot of time for me as a 'newbie' and both will be happy to provide you too with the basic information you need.

Looks like we're getting near the end of things for this particular ONLINE column, boys and girls, so I've gotta start winding up. Don't let me forget to remind you about the ongoing **SWP floppy disk offer**. For those computer-using radio buffs still without modems, it's another way to access radio-related shareware software for your PC. I will manually post you a large, general selection of the shareware (but not commercial) packages reviewed in this column the old-fashioned way if you send along $35 plus six formatted floppy disks to the now legendary snail-mail postal address:

SHORTWAVE POSSUMS BBS,
Attn Patrick McDonald,
PO Box 357,
Round Corner,
NSW 2158

Remember that all the software reviewed in this column is designed for IBM-compatible computers using the much-maligned but ever-developing MS-DOS operating system. I'm afraid I don't carry software for Macintosh users. I'd suggest including either 3.5 inch (1.2 megabyte) or 5.25 inch (1.4 megabyte) floppies with your request, if your computer accepts these larger floppy sizes. Old 360k jobs are fine, too, but you just won't get as many programs.

Gee, that deadline is almost here now! (That means I'll be dead if I don't shoot this copy down the phone line to Sunny Melbourne *right now* with my trusty high-speed modem.) Keep in touch with me via Shortwave Possums BBS, Fidonet 3:713/605, online 24 hours daily on (02) 651 3055, or by my Internet address of patrick@sydgate.apana.org.au, and tell me what's on your mind radio-wise... bye!

David Flynn explains where to start and what to look for when buying a...

PERSONAL COMPUTER

The next addition to your radio shack might be a personal computer — but, if all that talk of bits and chips is new to you, where to begin? We asked David Flynn to help.

An increasing number of CBA readers are discovering that a personal computer has many uses — for the kids at school, TAFE or uni; for keeping the home and home office in order; for unwinding with a few games after hours; and of course to make it a part of your hobby of radio.

If you're wanting to get into PCs but find that all those mutterings about 386 chips and MS-DOS and autoexec.bat files leaves you cold — maybe like the first time you heard about megahertz and wavelengths and SWR — then how do you take the first step?

How do you get a grip on what it all means and, more importantly, what it means to you?

That's why this article is here! Now, don't start panicking that CBA is about to become a pseudo-computer magazine. These few pages are meant to ease those readers who are newcomers to the game into what this whole PC thing is all about.

At the same time, the personal computer has made inroads into so many parts of our lives and hobbies as much as day-to-day business have been among the winners.

This is true in radio as much as anything else. More and more radio-related software is appearing, and you use your PC to run these simple programs which can keep your log-book, calculate optimum DX times, track satellites and even remotely control and vastly enhance your shortwave radio, scanner or ham transceiver.

Several public access **bulletin board systems** have been established *by* radio buffs *for* radio buffs, and you use your PC to connect with these via the Telecom phone system, like a friendly radio club which has a private club-room open 24 hours a day every day of the year — the perfect place to swap the latest shortwave tips or hot scanning frequencies and exchange news and views on all things radio. And packet radio, one of the real saviours of the hobby of amateur radio and the sweetest-looking carrot in the long-awaited code free novice licence, just couldn't be without making a PC an integral part of your ham radio station.

Let's also stress what this article *isn't* about. It isn't about why you should buy a PC.

Yes, the ability to run great radio-related software and contact hundreds of radio enthusiasts through BBSs like Shortwave Possums or Spectrum Radio is, from our point of view, a definite plus for the PC, perhaps the only justification you need. The myriad of other uses for the PC we'll leave aside — if you don't already think you should get one, then this article isn't going to convince you otherwise.

Nor is it your one-stop guide to buying a PC. I'm assuming that you are interested in buying a PC but are looking for some advice to help you get off on the right foot.

There are several very good PC magazines at your local newsagent and this is not a replacement for them — rather, it will provide you with a leg-up into enjoying these mags even more.

And from that stems my first bit of advice for the first-timer. Buying a PC is no different to buying a radio or a video recorder or a car.

You wouldn't rush straight out and buy the first scanner or ham radio that you see (well, most of you wouldn't). You'd do a little research — read some books, magazines and brochures, speak to some friends, think about what you want and what you need from the rig. It's the same for a PC.

It's going to cost you around $1500 to $2000 for a reasonable PC. That's serious money and it's also *your* money! You're going to spend it, so spend it wisely.

Drop into some computer sellers, browse the gear and grab the catalogues and brochures. Do some background reading. *PC User* and *Your Computer* are two monthly Australian magazines aimed at the average PC user and I recommend you buy at least one copy of each for a few months, or suss out your local library for back-copies.

Sure, several pages will unavoidably bedazzle the absolute beginner, but you'll be surprised how quickly it all begins to make sense — and while you are reading the mag spend some time looking at the adverts, the PCs, the prices. And while you are at the library, see if they have a copy of Gareth Powell's *Dumb Arnold's Guide to Personal Computers* — a truly great read for the first-time PC buyer.

PC OR *NOT* PC...?

Let's now clarify just what we mean by **PC**. In the broad sense any personal computer, any computer which is easy to use and affordable and can be made a part of the daily routine of you and me, is a PC. This includes those which are called **IBM-compatible** (that is, they work on the same lines as what is generally acknowledged as the first real PC and was unveiled by IBM back in 1981), the **Apple Macintosh**, **Amiga** and even the original **Commodore 32** and **64** series.

All of these machines can be generically thought of as being PCs — they can do everything a PC should do, however they have very different ways of doing them.

They work differently and they run different software. And for these purposes, when I talk here about buying a PC I will be referring to the IBM-compatible machines.

That's not a great name for them, I

admit — it's more important that they run the **operating systems** called **MS-DOS** or **Windows**, and you'll often see these machines promoted as such.

The other machines all have their strengths.

The Macintosh is a brilliant concept bought to life in a wonderfully user-friendly machine; the Amiga, a powerhouse of graphics and sound which so far outstrips the others that you will find an Amiga in most TV stations; but they have nowhere near the range of software, market share or the sheer future of the PC.

So it is the IBM-compatible, MS-DOS machine, Windows-type PC that I recommend to you.

BROWSING AND BUYING

PCs have at last started to become a consumer item, and as such are available off-the-shelf from dozens of large retail chains. There are also hundreds of specialist computer stores which sell computers (hardware, software and add-ons) and nothing else.

And thousands of small companies which can quickly assemble a PC from various components almost to your specification — like building a car from the ground up.

If you are new to the game, go with the big guns — specialist electrical stores like Dick Smith Electronics, consumer outlets like Grace Bros, Myers, Harvey Norman etc, and the larger computer stores. Just be sure you get a salesperson who knows about computers, not one whose main interest is swapping their stock for your money.

You wouldn't buy a radio that way, so why should a PC be any different? There's ample choice, that's a certainty, but making the right choice is something else again.

So what's important when you're buying a personal computer?

CP-*WHO*?

At the heart of every PC is a microchip called a **microprocessor**, a computer chip which runs the whole show.

These process information at varying speeds, which are measured in megahertz or MHz — nice to see a familiar term creep in there! MHz means 'millions of cycles per second' and, whereas in the world of radio it indicates a frequency of radio waves, in PC-land it means the number of calculations a PC will carry out.

You probably think of 'calculations' as being maths, numbers, adding and subtracting, and wonder what on earth that has to do with writing a letter on a word processor or going head to head with an enemy pilot in the latest flight game.

But whether you are seeing words or sidewinder missiles, the processor inside the computer sees only numbers — only two of them, in fact, the digits **0** and **1**.

It's the partnership of these numbers that matter. The faster a PC can analyse these numbers and what they mean in terms of drawing a picture on the screen, the better. So a 10 MHz chip will do ten million of these calculations a second, which sounds pretty impressive until you get up to chips that run at 40 MHz and even 66 MHz.

The moral here — bigger numbers are better than smaller numbers. It pretty much applies to everything regarding PCs, including price tags!

More on numbers, and as you might expect each class of processor chip has a unique name or number which tells you how powerful it is, in much the same way that the number of cylinders in a car indicates its likely performance.

The earlier PCs were called the '**XT**' model. They used a chip known as the 8086 or 8088, and were roughly equivalent to a two-cylinder car. And would you buy a two-cylinder car? Enough said!

I'm quite serious about this. The XT will let you use a word processor, call a BBS and run the least-demanding software, but it is absolutely the last resort, if that. Most XT owners have long since upgraded to better machines and the XTs are gathering dust.

Don't buy an XT. If it's free, or ten bucks at a garage sale, take it and learn first-hand a bit more about computers.

But an XT is like training wheels for the bicycle — you'll either get the hang of it quick smart and ditch the training wheels, or you'll decide that bike riding isn't for you and ditch the whole thing anyway.

Next came the '**AT**' class, using an 80286 chip (commonly abbreviated to '286'). Common speeds were 10 MHz and 12 MHz. It will do everything that an XT does, only it will do it faster. But few companies produce new ATs, as the costs of the more powerful models have come down to the point where a 286, like an XT, is barely worth buying unless it is a near giveaway, unless you know it is exactly what you want and unless you can swear that you will never ever need anything more powerful in the next few years.

So for 95 per cent of people, I'd recommend you keep looking...

The big improve was the introduction of the 80386 or 386 machine. Not only did they process data faster, at anywhere from 16 MHz to 25 MHz, but they could actually process *more* data at the same time.

These chips came in several flavors, from several different manufacturers.

The full-power 386DX chip is available in speeds of 25 MHz to 40 MHz, with the two main suppliers being **Intel** and **AMD** (if you have a choice go for the AMD chip, which is significantly faster than the equivalent Intel model). This power came at a cost, so companies unveiled the budget-model 386SX which ran at lower speeds (20-25MHz) and also has less raw processing power. This wasn't much of an issue for most buyers, and for perhaps two years (a very long time in the PC industry) the 386SX was the preferred entry point for most home and business users and a 386DX was great stuff if you could afford it.

PRICES HAVE DROPPED

Since then, however, prices have dropped.

This is another axiom of the PC — prices always fall, and quickly. So unless you are desperate for a PC, right this weekend if not today, if you wait just a few months you will always be able to buy the same model cheaper or — and this is by far the better option — spend just as much to buy a more powerful PC.

So here we've reached a crucial part of your PC buying process: Take an XT only if it's free or damned near so, and be prepared to buy something better if you like what you see (it's practically impossible to seriously upgrade an XT).

A little less so for the 286 or AT models, provided you know just what you want — although it's not at all a wise move when it comes to your PC needs next year or the year after that, as the 286 is already well-outdated.

A 386DX is now considered the entry-point machine, because at

☞

David Flynn explains where to start and what to look for when buying a...

PERSONAL COMPUTER

(continued)

today's prices the power of a 386DX costs just a little more than the 386SX. You may or may not need that power today, but you will certainly need it tomorrow.

Next up the scale and also a worthy first PC is the 486 family. Like the 386 this comes in two models — the economy 486SX is certainly affordable power, while the 486DX is first-class grunt.

Although the chip speeds are similar to the 386 series — around 20 to 50 MHz — the superior internal design of the 486 chips means they work significantly faster than a 386 rated at the same speed.

Most 486SX machines can be upgraded to 486DX by changing the main processor chip. You will also see 486DX2 machines, which add an extra 'OverDrive' chip to double the clock speed — a tremendous boost for PCs involved in desktop publishing, computer-aided modelling and other graphics- and processor-intensive tasks.

For you as a buyer, it's nice to aim for a 486SX if it's within reach. If the 386DX is all you can afford, ask yourself if you can wait a little longer and save a little more for a 486SX.

THANKS FOR THE MEMORY...

So that's the heart and soul of the PC... by now you should have grasped the general idea that for new users the best buying preferences are 486SX, 386DX and 386SX, in that order.

Again, this isn't to say that a 286 can't do anything for you, but it sure won't do everything, and unless you can grab a real bargain or are absolutely strapped for cash you are better spending your money on a machine with a future.

Another crucial element of the PC is memory. Computers have two types of memory, and they're equally important. **RAM**, or **Random Access Memory**, is temporary memory which resides in a series of memory chips inside your PC. Also known as 'system memory', RAM is where the PC holds all the data for the program it is running.

As computer programs get bigger and more powerful, they require more RAM to run efficiently. When a program isn't running it isn't kept in RAM, but on a more permanent memory storage device — the 'hard disk drive'. Again, the bigger the hard drive the more programs you can store on your PC.

How much of both do you need? Start by aiming for 4 megabytes of RAM, and make sure you can easily add to this as needed — RAM chips generally sell for around $100 per meg.

And look for a hard drive of no less than 80 megabytes, although if you do happen across a bargain with a 40 meg drive you can still make do, and use the latest data compression software to effectively double the disk capacity.

It's no replacement for a bigger disk, but it is solution enough for most people.

The relationship between processor and both types of memory is a very close one — less powerful systems can't do too much, so they have less need of RAM and large hard drives.

The newer PCs are designed to run the latest feature-packed programs, and these require more room both in RAM and on the hard drive. When you are buying a new PC, make sure you aren't being sold short on RAM — many 386 and 486 machines are priced to sell based on the grunt of the processor, but the PC may come with as little as two megabytes of RAM, when four is really the absolute minimum for the sort of programs these machines will run.

MONITORS

No, not *those*, scanning fanatics — these monitors are the video displays which sit atop the PC. All new PCs are sold with either the VGA or superior SVGA graphics systems, and often with extra video RAM (typically a 1 meg SVGA 'card') to help process the pretty pictures.

Second-hand XT and ATs are likely to have the inferior EGA or CGA screens, which are less detailed, support fewer colors, are slower to 'refresh' the screen and are more painful on the eye. Avoid these and go straight for the brilliant, vivid colours of VGA or SVGA.

DISK DRIVES

Finally, you need a way to get the software onto the hard disk drive — this is where 'floppy disks' or the more accurate 'diskettes' come into the picture.

These disks come in two sizes, 5.25" and 3.5". We break the 'bigger is better' rule in a way here, because the smaller 3.5" disks are a more recent development and can hold more data than their larger siblings.

They are also more robust, more compact (pocket-sized, in fact) and are taking more of a share of the market. They aren't at all 'floppy' — neither is the 5.25", for that matter — but the earlier 8" computer disks *were*, and the name has stuck!

PCs come with one or sometimes both size disk drives, and software is supplied on disks of either or both sizes, so although the trend is towards 3.5" you can survive with a 5.25" drive without major drama.

Some PCs now include a CD-ROM drive — that's right, a special read-only laser disk similar to the one in your stereo. In fact, many PCs can actually play your Barry Manilow CDs while you work!

CD-ROMs are really taking off and most new programs are available on CD-ROM. If you are into computer games then you will love the CD-ROM, which lets game makers cram extraordinary graphics, sound effects and complex plots onto a single disk.

Of course, a CD-ROM is not essential. For the average home or office user it's an absolute luxury, but it can always be added to the PC a few years down the track when external CD-ROM drives inevitably drop in price.

OF MICE AND MEN...

What haven't we covered? Well,

most modern PCs come with a *mouse*, a simple pointing device which makes using some PC programs a whole lot easier and more enjoyable...

PCs also have room to add other devices such as **modems** (to communicate with other PCs over the phone line), **joysticks** (great for flight-simulator games), and **sound cards** (which connect to stereo speakers to add amazing sound effects, music and digitised speech to games and computer programs).

These are all hooked up to the PC via plugs and 'ports' on the back panel of the main box, or 'slots' inside the box.

You may or may not need a **printer**. If you are going to be doing any word processing, then a printer is required to get the words onto paper.

Avoid the older 'dot matrix' printers — the best value-for-money printers for the home or small office PC are the 'ink jet' machines such as Canon's *BubbleJet* range.

Starting at around $600, they produce high-quality output with acceptable speed and noise levels.

OPERATING SYSTEMS

All of that technology aside, the PC is no more than a silent and static slab of silicon until you tell it that **a**), it *is* a PC and **b**), you have a job for it to do.

This is where the operating system or OS enters the picture. The OS is essential software for any PC.

The standard OS for all PCs is **MS-DOS**, an operating system produced by the Microsoft company.

When software is produced it is given an edition or version number, and each generation sees the number increase — the current OS release is MS-DOS 6, which is included or 'bundled' with most new PCs. Older ones may have DOS 5, which is still quite worthwhile and can be upgraded to DOS 6 for around $99.

DOS in itself is a rather old operating system, the first version being written for the puny PCs of 1981.

Even though DOS 6 is leagues ahead of version 1.0, it still leaves much to be desired in the way it handles system memory and the sheer unfriendliness of the system.

For this reason, most new PCs in the 386 and 486 class are also sold with a special 'operating environment' called Windows 3.1, which sits on top of DOS.

I firmly believe that for the novice or average user, Windows is the way to go. It provides you with a colorful, easy to learn and user-friendly interface to the PC and its programs, indeed it comes with a few basic programs — a simple word processor, a cardfile and even a basic communications program to call BBS systems — that will get you started.

The cost of this 'window dressing' is that you need to buy programs which are specially written for the Windows environment, and while they are far more popular and readily available than DOS programs they are also generally a little more expensive and require more processing power than their DOS counterparts.

So while a 386SX or even 286 is adequate for DOS, a 386DX or 486SX is the way to go for Windows — and then, with 4 to 8 megabytes of RAM and around a 120 megabyte hard drive.

Because Windows and DOS are normally included with most new PCs, along with several programs to get you up and running, you can try both environments and make your choice from there.

At this point, you should now feel a little more comfortable and a little less over-awed by these PC things, certainly enough to browse a PC magazine and sound out the staff at the local PC store. And when you get all kitted up, keep an eye on Patrick McDonald's ONLINE column here in CBA!

COMPUTERS ARE EASY AT DSE!

Complete novices to the game (and I mean no disrespect by this — everyone was once a novice to PCs, just as there was time when you didn't know anything about radio or couldn't tie your shoelaces for love nor money) should avoid rushing into things, and even more so should be wary of bargain-hunting which could turn out to cost a hell of a lot more than what you saved!

These costs come in many ways. There's the most common cost of cheap PCs which just don't work as they should.

Even if you are covered by a warranty in most cases, there's the cost of taking days off work to drop the PC back to the store, and then waiting a week or two before you can collect it again.

There's also the less definable but quite real 'cost' of uncertainty and often frustration when you attempt to set the machine up, configure it properly and load all the software, without it running as best it can.

For all these reasons and many more besides, new chums to the game might do very well by sussing out Dick Smith Electronics' 'Computer Easy' plan. DSE has good gear at good prices, so it's the place to start your PC shopping.

All DSE PCs come pre-loaded with MS-DOS 5, Windows 3.1 and most also have the Works for Windows set of 'integrated software' which includes a word processor, database, spreadsheet and charting/graphics program.

If you're within 50km of a DSE store you get free installation, free training and, best of all, free on-site service for 12 months.

DSE has also established a 'VIP Computer Club' for Computer Easy customers, plus given them access to a telephone computer support hotline and the DSE dial-up BBS. Now here's the real beaut part — a no-risk, 7-day money-back-if-you're-not-smiling-from-ear-to-ear guarantee.

You think a PC is for you, you are pretty well convinced, and you've still got a week to try it out and make sure it feels right for you.

The current DSE prices will give you a very good idea of what you can expect to pay for a name-brand PC.

Prices in its latest flyer begin at $1999 and it's noteworthy that this is for a 486SX at 25 MHz, known in PC shorthand as a 486SX/25 — DSE isn't heavily promoting its 386 units, primarily because the 486SX is now the ideal entry point both for the home user and the small business.

The 486SX/25 comes with 2 megs of RAM (although I would strongly recommend you bump this up to at least 4 megs right away), an 80 meg hard drive, 3.5" floppy drive, 14" VGA monitor and mouse, plus the aforementioned DOS/Windows bundle.

This is a fairly standard 486SX configuration and it will blaze along with DOS programs, however you'll need to double the RAM to get the best out of Windows.

$2499 gets you the same PC but with 4 megs of RAM and a 120 meg hard drive — both of which are well worth the extra money — plus the Words for Windows program.

If you can afford it, this is the sort of gear with which to start — you will never regret having that little extra power up your sleeve.

DX Logbook

By Rob Williams

Welcome to DXers, shortwave listeners — oh, and those at Radio Australia who regularly see the column. I trust that you all find DX Logbook of use to you.
Let's dig into the logbook to see what's happening around the bands. As always, all times are in UTC (z) and all frequencies are in kHz unless stated otherwise.

Big changes for BBCWS

Changes to the **BBC World Service** next year will see the world split up into six regional areas with programming specifically targeted for those regions. The six areas will be Europe, the Americas, Africa and the Arab world, South Asia, Russia, Ukraine and central Asia, Asia and the Pacific.

Letters already received in London from listeners show a strong concern for these changes. Many feel that the excellent reputation the BBC has built up will be lost and too much local content, which can already be received from local media sources, will produce a BBC World Service which listeners don't want.

Watch for further announcements from the BBC as the time gets closer, both justifying the changes and trying to calm concerned DXers.

And, while on the subject of the BBC, an arrangement has been made with **Radio Australia** for the BBC to use a Shepparton transmitter between 2200 and 2300z daily to relay BBC programming. The frequency used is 11,695 kHz with a power of 100 kW at a bearing of 355 degrees.

Swiss Radio introduces changes

The BBC is not the only SHORT WAVE station making changes. **Swiss Radio International** (SRI) is restructuring its format effective 6th June.

The closure of *The Swiss Merry Go Round*, hosted by 'the two Bobs' (Bob Thomann and Bob Zanotti), which has a long history of helping short wave DXers with technical questions, is one of the casualties of the changes. In its place will be a media program which will not only focus on short wave, (probably in a small way), but include other media-related topics.

The new format for SRI will have a 24-hour English service being relayed via satellite with half-hour news programs, made up of bulletins, commentaries, press reviews and half-hour feature programs made up around life, science, the economy and culture in Switzerland to be fed out on short wave. This will continue every hour.

Justification for the changes was that satellite technology was now cheaper than short wave, but I think someone forgot to tell them that the majority of their listeners are still on short wave and not satellite! I guess that we'll see more of this as technology improves, to the point one day next century when 'short wave' stations will only be found on satellites! Will they be called 'satellite stations' or will we continue to call them short wave stations?

New DX segment on HCJB

Effective from 6th April last, HCJB has started a new 10-minute DX segment each Wednesday for DXers around the world. The program is made up of the hottest DX news as well as details of what will be aired on *DX Partyline* on Saturday.

The program goes out to Europe at 0700 and 2130z. To the South Pacific at 0705 and to North America at 0400 Thursdays, which is still Wednesday over there. Now that HCJB has plugged itself into the largest computer network in the world (Internet) DXers and short wave listeners will be able to pass on their current tips and loggings direct to the team at HCJB, who will in turn be able to let the world know.

OZDX BBS makes changes

Just as we went to press with the latest column, changes were afoot to the OZDX BBS. Dave Onley informs me that the BBS has merged with the VK3KSK gateway BBS to become 'The Radio Shack'. The new phone number is (03) 532 5737. The big advantage with the merger is the 24-hour access available to all DXers. So you Victorians looking for the latest DX news have another excellent BBS.

OZDX Indonesian survey

The 1994 edition of the OZDX Indonesian survey has just been released and is an important addition for any DXer interested in Indonesian DXing.

This year the survey is in a different format. Stations are listed in category rather than frequency. David Foster, the Indonesian section editor for the WRTH, has also assisted with his input into the publication, so you can be assured of having the latest list of Indonesian stations on the air.

The survey is two A4 pages long and can be yours for two 45c stamps. The current edition of OZDX is cram-packed with 12 pages of excellent DX catches, and is essential reading as we go into our winter months. There is also a swag of MW loggings for those who love to go really low.

WYFR's English output...

WYFR's current sked in English 'til 24th September is as follows:

To Europe and Africa:

0500-0600 on 9870, 11,580.
0600-0800 on 7355, 11,770 and 13,695.
1600-1700 on 15,355, 21,525, 21,615.
1700-1900 on 21,500.
1900-2000 on 15,355, 15,566, 17,612.5, 21,525 and 21,615.
2200-2300 on 17,612.5 and 21,525.

To India at **1302 to 1502** on 11,550.

Thanks to *Andreas Volk* for that update.

KBS news from Seoul

Broadcasts in English from the **Korean Broadcasting System** is beamed to the following targets:

To South East Asia between **1300-1330** on 9570, 13,670.

2030 to 2100 on 9870 and **2200-2230** on 9640.

Omnidirectional transmissions air at **1200-1300** on 7180, **1400-1500** on 5975, **1600-1700** on 5975, **2030 to 2100** on 5975 and **2200-2230** on 7275.

French to South East Asia is carried on 9570 and 13,670 between **1330 and 1415**.

Public inquiry into RCI

The Canadian Senate is holding an inquiry into budget cuts at **Radio Canada International** which occurred in 1991.

Their CAD$20 million funding was cut by a third, resulting in half the staff being sacked and 75 per cent of RCI produced programs being cut.

The 'Coalition To Restore Full RCI Funding' has been lobbying members of Parliament and the Senate to investigate the cuts and appears to have succeeded. If the committee is successful and funding is restored they want to ensure that ongoing financing continues and the same doesn't happen again.

Concerned DXers who remember the many enjoyable RCI programs can write to the Chairman of the Standing Senate committee on Transport and Communications, Senator Donald Oliver, Senate of Canada, Ottawa, Canada and express your feelings. Already hundreds of letters have been received.

Catch an RCI relay station

And while on the subject of RCI, here's a chance for you to catch a few of the relay stations RCI uses for its broadcasts. English is used at the following times:

From Yamata in Japan from **1230 to 1300** on 9660 and 15,195 to Asia.

1330 to 1357 via Xian, in China on 9535 and 11,795 to Asia.

1630 to 1657 via Xian on 7150 and 9550.

From Sackville, Canada try these times and frequencies:

2030 to 2130 on 13,650, 13,670, 15,325, 17,820, 17,850 and 17,875.

2200 to 2230 on 5960, 9755, 11,845, 11,875, 13,670 and 15,305 with 11,705 coming from Yamata.

Meanwhile...

The latest schedule for **Radio Moscow** has arrived, and transmissions to Australia and New Zealand are current from 27 March to 24 September, 1994:

0000-0200 17,860, 17,795, 17,590,

17,570, 17,560, 17,580, 15,560, 12,015, 11,960, 11,810, 11,685 kHz.
0200-0300 17,860, 17,795, 17,590, 17,570, 17,560, 15,580, 17,560, 12,015 kHz
0300-0400 21,585, 17,860, 17,795, 17,590, 17,570, 17,560, 15,560 kHz.
0400-0500 21,585, 17,860, 17,795, 17,590, 17,570, 17,560, 15,560, 15,140 kHz.
0500-0600 21,725, 21,585, 17,860, 17,795, 17,590, 17,570, 17,560, 15,560, 15,140 kHz.
0600-0700 21,725, 21,585, 17,860, 17,795, 17,590, 17,570, 15,560, 15,140, 9835 kHz.
0700-0800 21,725, 21,585, 17,795, 17,570, 15,560, 15,140, 11,900, 11,800, 9835 kHz.
0800-0900 21,725, 21,585, 17,795, 17,765, 15,560, 15,140, 11,900, 11,800, 9835 kHz.
0900-1000 21,585, 17,765, 17,590, 15,350, 15,140, 11,900, 11,800, 9835 kHz.
1000-1100 17,805, 17,765, 17,590, 15,350, 11,900, 11,800, 9835 kHz.
1100-1200 17,590, 11,900, 11,800, 9835 kHz.
1200-1300 17,590, 15,350, 11,800, 9835 kHz.
1700-1800 15,190, 11,995, 9895, 9845, 9510, 7155 kHz.
1800-1900 15,190, 12,005, 11,995, 9845, 7155 kHz.
1900-2000 17,560, 15,525, 15,190, 12,025, 12,005, 11,995, 11,960, 11,665, 9895, 9845, 9510, 7305, 7155 kHz.
2000-2100 17,560, 15,525, 15,190, 12,025, 12,005, 11,995, 11,960, 11,810, 9895, 9845, 9510, 7305, 7155 kHz.
2100-2300 17,570, 17,560, 15,580, 15,525, 15,190, 12,025, 12,015, 11,995, 11,960, 11,810, 9895, 9845, 7305, 7155 kHz.
2300-0000 17,860, 17,570, 17,560, 15,580, 15,560, 15,525, 12,025, 12,015, 11,960, 11,810, 11,685, 7305 kHz.

Thanks to *Patrick McDonald* for making this sked available on his **Short Wave Possums** BBS.

Africa — history in the making

While the elections may be finished in South Africa you can expect that Africa won't be out of the news as the region goes through many changes.

Channel Africa, once know as **Radio RSA**, is much harder to hear these days but with patience and a little planning you can hear broadcasts at good levels.

The current sked I have comes from *Reid Kelly* who posts many worthwhile loggings on the Fidonet. English airs:
0500 to 0600z on 9695 using 500 kW beamed towards Nigeria and Ghana.
0500 to 0700z on 5955 to Southern Africa with a power of 100 kW.
1000 to 1100z on 17,810 with 500 kW to East Africa.
1100 to 1200z on 9730 to Southern Africa with 500 kW and
1500 to 1800z on 11,770, also using 500 kW.

Prague issues Z-94 sked

Radio Prague has a new sked effective until 24 September with English transmissions as follows:
0000 to 0030 on 7345 and 9485.
0100 to 0130 on 7345 and 9485.
0300 to 0330 on 5930, 9440 and 11,640.
0600 to 0630 on 5930, 7345 and 9505.
0730 to 0800 on 15,605, 17,535 (to Asia and Australia) and 21,705.
1030 to 1100 on 7345, 9505 and 11,990.
1500 to 1530 on 5930, 7345 and 13,580.

....☞

VOA PROGRAM QUESTIONED

In a report from the US General Accounting Office (GAO) to the committee on appropriations, House of Representatives, the GAO has questioned the modernisation and expansion plans proposed by VOA.

In 1982 VOA began a US$1.3 Billion modernisation plan for VOA relay stations around the world. This was followed in 1983 with a plan to refurbish relay stations and build new ones. These needs grew out of what was thought at the time a way for VOA to continually reach its audiences in politically sensitive areas as well as to combat jamming.

However, because of technological changes, new political boundaries being formed and internal re-organisational moves the need to continue with this modernisation plan is now under a cloud. Short wave audiences to VOA and RFE/RL programs has diminished as democracy spreads, opening up new media outlets and better forms of communications.

But despite these changes the VOA wants to continue with its plans. As quoted in the report, over 50 per cent of the US$900 million planned to be spent on these projects between 1994 and 2003 are for short wave projects which haven't begun yet.

The GAO has sited many examples of where VOA planning has gone wrong. For example the expansion plans for Sri Lanka were approved in 1983, yet funding and delays now means the station won't be on air until mid-1995. As well, planned upgrading at several sites hasn't commenced yet, and with the changes to the international scene which are now happening, the GAO feels that more accountability should be shown as to why VOA needs to make these improvements.

Both VOA and RFE/RL now provide programming directly to local broadcast stations which was once the domain of VOA short wave broadcasts. Countries in the CIS, Eastern Europe, Latin America, Thailand and Africa now carry VOA programming regularly, reducing the need for short wave broadcasts.

There has already been a 10 per cent reduction of programming as VOA allocated resources to improve programming via more modern techniques. There is also a trend in parts of the CIS and Eastern Europe towards more Western-style listening and viewing habits, just adding more fuel to the GAO's argument.

Even in VOA's own study it was realised that, by the end of the century, DSB will begin to emerge in many parts of the world. Adding to this, the merger of RFE/RL and VOA will result in 35 owned and leased relay stations being combined into one entity.

VOA has also expressed concern about spending money on audience research to see if its broadcasts are still needed, yet a 1993 report by VOA recommends a budget of 2 per cent for audience research. But compared with the cost of building a new station (US$200 Million for Morocco) it represents a very small amount. A amount of 1 to 2 per cent of its total budget is being spent by other international broadcasters audience research.

The GAO wants VOA to undertake a more in-depth cost-benefit study of VOA's plans before approval can be given to continue with its grand plans.

With the changes that are taking place in the world VOA needs to ensure that its intended broadcast output is both wanted as well as relevant. It will be interesting to see what changes, if any, will take place to its expansion plans.

DX Logbook

...from page 27

1700 to 1730 on 5930, 7345 and 11,640.
2000 to 2030 on 5930, 7345 and 9485.
2100 to 2130 on 5930, 7345 and 9485.

Thanks to *Paul Brems* for posting this useful sked.

DX news for dedicated DXers

For those *really* dedicated DXers out there how about trying for **Radio Moldova**:

0130 to 0155 in Romanian to North America on 7190.

0230 to 0255 and **1100 to 1125** in Spanish to Latin America on 11,775.

1200 to 1225 in Spanish to Spain on 15,250.

1300 to 1325 in Romanian to North America on 15,390.

1400 to 1425 in French to France on 11,775.

2000 to 2025, once again in French to France on 7235.

2100 to 2125 in Spanish to Spain on 7245.

RMI Strikes Trouble

The DX world was happy to hear that **Radio Miami International** finally began test transmissions on April 1 after many years trying to start a short wave service.

The 50 kW transmitter was performing well, or so the engineers thought. Excellent reception was being reported from listeners in the Americas, with SINPO ratings of 55555.

After hearing of the reports WRMI decided to approach the FCC on April 9 and asked to begin official broadcasting.

The FCC's Miami office informed WRMI that they had reports from pilots of hearing their station on 119.45 MHz on departure from Miami International Airport. The FCC closed down WRMI when it was determined that WRMI's broadcast on 9955 was creating a 12th harmonic on 119.45 MHz. Further investigation revealed that the transmitter was also producing a 10th and 11th harmonic.

Jeff White, station manager and owner, has spent a considerable amount of time and effort to get WRMI on the air and at last report was working with the FCC and the Federal Aviation Administration to resolve the problems.

I met Jeff at an EDXC convention in Paris many years ago and have vivid memories of him, Andy Sennitt and myself sitting at the Hard Rock Cafe in Paris talking about Jeff's plan to one day own a shortwave station. A dream I thought would never happen...

Once back on the air it will be interesting to see if we can hear this small broadcaster "down under".

FEBA Broadcasts In English

Glen Hauser has provided the following sked for **FEBA**, from the Seychelles. Its sked is valid from May 1 to September 4.

7205 Mondays to Saturdays from **1358 to 1543**.

9810 on Mondays to Saturdays between **1458 and 1600**.

11,870 between **1458 and 1555** weekdays (until 1550 on Saturdays and 1558 on Sunday).

On Fridays only there is a broadcast to the Middle East between **0457 and 0553** on 17,750.

And with that piece of news another column comes to the end. If you wish to send in any DX notes or have a problem that you would like me to help you with just drop me a note to PO Box 108, Minto 2566.

If you want a personal reply please include a large SSAE.

IT'S TIME TO TELL US WHAT YOU LIKE - *OR DON'T LIKE FOR THAT MATTER*

It's been a long time since our last reader survey, but now it's time to tell us how we're doing. Because it's been so long since we last heard from you, it's a pretty lengthy survey and, while some of the questions may not seem to relate directly to the magazine, they are all important in building a readership profile so please answer all of them. If you find we have missed something that you feel should be mentioned, please include a note when you return the completed survey. Please note the "FREEPOST"address at the end of the survey - it means that postage is at our expense, not yours.

******* Please tick the respective number *******

As a small incentive, we will give away one free 6 issue subscription to each state and this will go to the first one drawn from each state after 15 July. No names and addresses will be disclosed to any third party and all information will be treated as strictly confidential. If you do not wish to provide your name/address, that's fine by us but you will obviously not have the chance to win a free subscription.

1. How often do you buy CBA;

Occasional issues	1
Most issues	2
Every issue	3

2. Does what's on the cover of CBA influence your decision to purchase that issue;

Yes	1
No	2

3. How much of CBA do you read;

Read only some articles	1
Read most articles	2
Read every article	3

4. How long have you been a reader of CBA;

Less than three months	1
3-6 months	2
7-12 months	3
1-2 years	4
2-5 years	5
Over 5 years	6

5. With regard to advertising in CBA, do you;

Read or look at most of the ads	1
Read some of the ads	2
Read an occasional ad	3
Rarely/never read an ad	4

6. Does anyone else read your copy of CBA;

No, only myself	1
One or two others	2
Three or four others	3
More than four	4

7. How do you normally obtain your copy of CBA;

Chance purchase	1
Regular purchase	2
Occasional purchase	3
Subscription	4
Passed on copy	5

8. If you are a subscriber, how long have you been subscribing;

1-6 months	1
7-12 months	2
1-2 years	3
More than two years	4

9. Are you aware that you can save up to 33% by subscribing;

Yes	1
No	2

10. Would you like to receive information about the benefits of postal subscription;

Yes	1
No	2

11. Please tick the number which represents your annual gross income;

Under $10,000	1
$10,000-$15,000	2
$15,001-$20,000	3
$20,001-$25,000	4
$25,001-$30,000	5
$30,001-$35,000	6
$35,001-$40,000	7
Over $40,000	8

12. What is your age;

Under 15 years	1
15-18 yrs	2
18-21 yrs	3
22-30 yrs	4
31-40 yrs	5
41-50yrs	6
51-60yrs	7
61-64yrs	8
over 64 yrs	9

13. Are you;

Full time student	1
Not employed at present	2
In full time employment	3
In part time employment	4
Retired	5
Pensioner	6

If in full time employment, please state your occupation;

_____

14. Do you live in the metropolitan area;

Yes	1
No	2

15. Do you own a 4WD;

Yes	1
No	2

15A. Do you own a boat

Yes	1
No	2

16. What make of UHF CB transceiver do you mainly use;

Philips	1
Uniden	2
GME-Electrophone	3
Pearce-Simpson	4
Comex	5
Sawtron	6
Icom	7
Roadrunnner	8
Other	
Make_____	9
None	10

17. How many UHF CB rigs do you own;

One	1
Two	2
Three	3
Four	4
more than four	5
none	6

18. How long have you owned a UHF CB;

One year or less	1
1 to 5 years	2
longer than 5 years	3
never	4

19. Do you operate UHF mobile;

Often	1
Sometimes	2
Rarely	3
Never	4

20. Do you use the UHF CB repeater service;

Yes	1
No	2

21. Can you access a repeater from your base location;

Yes	1
No	2

22. Have you ever used the UHF emergency channel for an emergency;

Yes	1
No	2

23. If yes, did you receive assistance as a result;

Yes	1
No	2

24. What type of UHF antenna do you use;

Vertical	1
Directional	2
Other	3

if other, what?

_____

25. Do you use UHF CB for business;

Yes	1
No	2

26. Do you often use a handheld UHF CB;

Yes	1
No	2

27. Do you use a linear amplifier on UHF;

Yes	1
No	2

28. Does your UHF CB have Selcall;

Yes	1
No	2

29. How long have you owned a HF CB;

One year or less	1
1 to 5 years	2
longer than 5 years	3
never	4

30. What make of 27MHz CB transceiver do you mainly use;

GME-Electrophone	1
Pearce-Simpson	2
Uniden	3
Commex	4
Other	
Make_____	5
None	6

31. Is your 27MHz transceiver;

AM only	1
AM/SSB	2

32. How many HF CB Rigs do you own;

One	1
Two	2
Three	3
Four	4
more than four	5

33. Do you operate HF mobile;

Often	1
Sometimes	2
Rarely	3
Never	4

34. Would you consider yourself a serious DXer;

Yes	1
No	2

35. If yes, do you;

Use a legal CB for DX	1
Use an amateur rig	2

36. Do you stick to legal channels;

Yes	1
No	2

37. Do you use a linear amplifier on 27MHz;
Yes 1
No 2

38. What type of HF base antenna do you use;
Vertical 1
Directional 2
Other 3
if other, what?

_____

39.Have you ever caused TVI and/or BCI;
Yes 1
No 2

40. Do you know what causes TVI and/or BCI;
Yes 1
No 2

41. Do you use HF CB for business;
Yes 1
No 2

42. Has your HF CB ever caused telephone interference;
Yes 1
No 2

43. Do you believe that AM stations should be legally restricted to channels 1 to 16 with SSB 17 to 40;
Yes 1
No 2

44. Are you a member of a CB club;
Yes 1
No 2
if yes, what club?

_____

45. What is your main interest in CB;
Serious DXing 1
Just talking to people 2
Using it for business 3
Stirring 4
Being able to call for assistance 5
other 6
If other, what;

_____

_____

46. Have you ever used HF channel 9 for an emergency;
Yes 1
No 2

47. If yes to above, did you receive assistance as a result of your using ch, 9;
Yes 1
No 2

48. Do you own a scanner;
Yes 1
No 2

49. If yes, is it a;
Hand-held 1
Base 2
Mobile 3

50, Do you own a computer;
Yes 1
No 2

51. If yes to above, do you use the computer;
As an adjunct to hobby CB 1
For general business 2
For playing games 3

52. If you have a computer, is it;
A PC or PC clone 1
Apple Mac or similar 2
Other (name)

_____ 3

53. Do you use a 'phone modem for accessing BBSs;
Yes 1
No 2

54. Are you a licenced amateur;
Yes AOCP 1
Yes NAOCP 2
Yes AOLCP 3
Yes combined Nov/Limited 4
No 5

55. If yes to above, were you a CBer before gaining your amateur licence;
Yes 1
No 2

56. If NO to 56, do you hope to eventually become an amateur;
Yes 1
No 2

57. Are you likely to buy any of the following in the next 12 months;
UHF CB 1
HF CB 2
Scanner 3
Shortwave receiver 4
Computer 5
Satellite TV system 6
Other 7

What _____

58. Do you mainly buy your equipment from an advertiser in CBA;
Yes 1
No 2

59. Do you mainly buy your equipment as a result of;
Recommendation from a CBer 1
Hearing it on air 2
Advertising in CBA 3
Reading a review in CBA 4
Reading an overseas review 5

Other _____ 6

60. Do you shop around much for a "best price" before buying equipment;
Yes 1
No 2

61. How much will you spend on equipment (rigs, scanners, computers,etc) during the coming 12 months;

Less than $200 1
$201-$500 2
$501-$1000 3
$1001-$2500 4
$2501-$5000 5
More than $5000 6

62. Which of the following would you like to see more/less of;

	MORE	SAME	LESS
Technical articles	1	2	3
Rig reviews	1	2	3
Antenna articles	1	2	3
Novice Notes	1	2	3
DIY Projects	1	2	3
Computer information	1	2	3
Comms type software	1	2	3
Satellite TV	1	2	3
Shortwave information	1	2	3
Peripheral equipment reviews	1	2	3
Other			

_____

63. Which regular features do you enjoy reading;

	OFTEN	SOMETIMES	NEVER
On Channel	1	2	3
Scanner Reviews	1	2	3
UHF CB Reviews	1	2	3
HF CB Reviews	1	2	3
Online	1	2	3
DX Log	1	2	3
Bandspread	1	2	3
Uplink	1	2	3
DXinternational	1	2	3
Scan 1994	1	2	3
HF Utilities	1	2	3
ACBRO Action	1	2	3
UHF Repeater List	1	2	3
DX Propagation Chart	1	2	3
Crossword competitions	1	2	3
General interest CB articles	1	2	3

64. Is there something specific you feel would improve the readership appeal of CBA;

_____

(please continue on a separate sheet of paper headed Attn: Editor - CBA)

65. Would you like to see more technical data included in equipment reviews;

Yes 1
No 2

66. How keen are you on DIY projects;

A lot 1
A little 2
Not at all 3

67. Do you regularly read any of the following magazines;

	OFTEN	SOMETIMES	NEVER
Amateur Radio Action	1	2	3
Silicon Chip	1	2	3
(WIA) Amateur Radio	1	2	3
Overseas Amateur Mags	1	2	3
Electronics Australia	1	2	3

68. When thinking about purchase of equipment, how much are you influenced by the equipment review;

A lot 1
A little 2
Not much 3
Not at all 4

69. How much time per week would you spend on your hobby;

One hour 1
1 to 5 hours 2
more than 5 hours 3

70. Would that time mainly be spent on;

UHF CB 1
HF CB 2
Scanning 3
Shortwave 4
Satellite TV 5
Computer 6
Experimenting 7
Other
_____ 8

71. Would you like to see 27MHz Marine Rigs reviewed in CBA;

Yes 1
No 2

72. Would you like to see mobile 'phones reviewed in CBA;

Yes 1
No 2

73. Would you like to see more computer reviews and associated software articles in CBA;

Yes 1
No 2

74. Do you think that CBers receive value for the cost of their licence;

Yes 1
No 2

75. Do you know what "Internet, Telnet", etc. mean;

Yes 1
No 2

76. If yes to 76, do you use any form of EMAIL;

Yes 1
No 2

77. Are you happy with the "policing" of CB bands by the SMA (nee DOTC) in terms of controlling bad language, poor behaviour, etc;

Yes 1
No 2

78. Do you have a current CB licence;

Yes 1
No 2

79. For <u>every</u> CB you own;

Yes 1
No 2

..and that's about it.

Sorry for the number of questions, but the more information we have the better we understand our readership and can plan the magazine accordingly.

We again stress that no names or addresses will be supplied to a third party.

If you **wish to be included in the draw for a year's free subscription, please fill in the form below**...and thanks for your help.

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Bandspread

By Greg Towells

BEARCAT BC200XLT MODIFICATIONS

Here are some modifications to cure the problem of short battery life in **Bearcat BC200XLT** scanners, and it could work in similar radios such as the 100XLT.

Short battery life is a major pain for owners of these otherwise-reliable scanners.

To my way of thinking, having to recharge the batteries after only one to two hours of operation is simply not acceptable for a hand-held scanner.

It appears that the batteries themselves are not the main problem. The zener diode which determines the voltage at which the low battery indicator comes on is at fault in many units, causing the circuit to actuate prematurely.

The obvious answer is to replace the diode and change the value of an associated resistor.

Unfortunately for the average reader, that is not an easy task. These components are miniature, surface-mounted devices mounted on double-sided circuit board. Not the type of thing that most people could competently play with...

There is a way around it. Read on, but be aware that CB Action will not accept responsibility for any damage you may do to your radio!

Here's the procedure:

- Slide off the battery pack.
- Remove the two screws on the back of the radio.
- Remove the two screws on the bottom of the radio which hold the clip in place.
- Carefully remove the back case of the scanner.
- Remove the two screws at the bottom of the board near the red contact wire.
- Separate the two boards *very carefully*. They are connected by a 16-pin DIP socket.
- On the board marked **PH-069AA** or **PH-069AC** are the subject components. Position the board so that the DIP socket is at the lower right of the board as you look at it.

At the lower left of this board, you should find two electrolytic capacitors, marked **C-214** and **C-216**. The offending zener diode, **D-203**, is located just above these two caps. It is a glass-type zener diode with colored bands for markings.

- The moment of truth! Solder a fine piece of wire across diode **D-203**.

That's all. Reassemble the radio, taking care with the DIP sockets on the two boards.

With the radio assembled and powered up, you should find that the battery indicator will not come on at all, meaning you will not have to turn the radio off and back on again to reset the battery timer.

This will enable you to use the NiCd pack to its fullest extent and avoid problems such as the dreaded NiCd 'memory effect'. The display blanks out at around 4.5 volts.

Another suggestion is to bridge the above-mentioned diode with a 6.8k resistor, still defeating the premature battery discharge indicator but preventing the battery from taking too deep a discharge. Your choice...

JVFAX on CB

Following on from the enormous interest generated by programs such as JVFAX in transmission modes such as fax and Slow Scan TV, it seemed only a matter of time before those types of signals were being heard in and around the CB portions of the spectrum.

Most of the activity that I have heard in Sydney has been concentrated on the higher channels of 27 MHz and sporadic experiments on various UHF CB channels.

The group using out-of-band 27 MHz frequencies should bear in mind, however, that the length of transmissions you are using while playing with fax transmissions makes you *dead* easy to locate...

The interest in fax and SSTV using JVFAX-type programs is not hard to explain. Just a matter of a few components, including one IC, completes the interface. Just rig it up to your mic audio, PTT and a lead-in to your speaker jack and you are away.

Connect the other end of the interface to the computer and go. Of course it does take some experimentation to get speeds right and to co-ordinate transmissions, but once you are receiving a picture via your radio, it is a big thrill.

JVFAX, version 6.01, is available from most good radio-oriented phone BBS systems, such as *Shortwave Possums* in Sydney.

It is very easy to install onto your system, and the package comes complete with circuit diagrams and layouts for many different types of interface, from the very simplest to ones with all the thrills.

A ready-made PC board is also available from R.C.S. Radio in Bexley, Sydney.

PRO-38 SCANNER FIX

Some users have noted reception problems with their PRO-38 scanners. Some seem to be intermittent sensitivity drops, others just lose sensitivity altogether.

Here is something to look at before you send yours in for service:

Open up the scanner and check the resistor at the base of the antenna socket.

On many units the resistor manages to move away from the solder joint or the lead below the solder joint has broken off altogether.

Take some time to inspect this joint if you have problems with your radio as it can be difficult to spot.

If there is an open circuit in this area, carefully apply some heat from your soldering iron to the joint to reconnect the resistor leads.

Apparently this is a fairly common fault, especially if the radio has been dropped or subjected to stress around the antenna connection.

PRO-2022 MOD IDEAS

Here are some simple mods for the versatile Realistic PRO-2022 scanner. Again, CB Action will not be held responsible for any damage you may cause to your scanner in the course of making these mods. Be careful.

After removing the two upper back screws and the top lid of the scanner, locate the black cabling just behind the front control panel. Close to this cable are four diode locations — **D42**, **D43**, **D44**, and **D45**. Ignore D43 and D44, as their placement controls only the deletion or otherwise of the 800 MHz band for countries which ban scanners capable of reception there, such as the USA.

The ones experimenters are interested in are **D42** and **D45**. This is what they do and what happens if you alter things:

D42: In radios sold in Australia this diode is present. Its function is to add the 68 to 88MHz band, removing the 30 to 54 MHz US VHF low band. Many services exist in the 30 to 50 MHz area, such as McDonald's drive-throughs, cordless phones and baby monitors, to name a few. If you add a toggle switch to switch the diode in or out, it should be possible to select either the 30 to 50 MHz or the 68 to 88 MHz band. The sensitivity may be a bit down in this area, however.

D45: This diode is not present in Australian models. Once installed, it changes the 30 kHz steps in the 800 MHz band to 12.5 kHz steps.

Since 30 kHz steps are only useful for (illegal) cellular telephone monitoring it would be useful to have the capability to select either of the stepping rates.

Connect a SPST switch in line with the diode to allow selection of 30 or 12.5 kHz steps depending on what service you are listening to. This modification could become very useful as the cellular phone service is phased out of the 800 MHz area leading up to the year 2000.

KENWOOD R5000 HINTS

If you use the scan modes on your Kenwood R5000 and would like to vary some of the scan parameters, here is something that didn't make it into many of the owners' manuals:

Remove the top cover of the radio and locate a small PC board attached to the top of the control panel.

On this board are two potentiometers, **VR2** and **VR3**. **VR2** enables you to vary the scan speed and **VR3** determines the time delay for the scan to resume once a signal has been received and the busy light comes on.

It looks as if these controls were intended to be placed on the front panel at some stage during planning but once in production were bundled up within the radio.

WEATHER REPORTS AND FORECASTS

If you have a shortwave receiver or scanner handy, and you want to find out what the weather will be like in your area soon or even what's happening out there now, it's as easy as dialling in some frequencies.

Listen on 2201, 4426, 6507 or 8176 kHz USB, or VHF marine channel 67, which is 156.375 MHz FM.

The weather broadcasts happen around three minutes past the hour.

Listen to 2182 kHz USB (Primary shipping calling/distress) or VHF channel 16, which is 156.800 MHz FM, for a list of frequencies to change to for weather information, traffic lists and alerts. A good time to listen is during periods of really bad weather, especially since the information broadcast is far more in-depth than that presented on commercial TV channels.

DICK SMITH ELECTRONICS

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Uniden Pro-330e Micro AM CB

The PRO 330e takes up less space and gives more mounting options than most CBs - it's a full-power 40-channel CB built into a push-to-talk microphone. Its small cradle acts as a wiring block to your outside antenna and power source, and can be mounted on the dash or the hump between the seats (requires a standard mobile telephone mount). Features include: Push-button tuning, emergency channel 9 switch, selectable automatic noise limiter and more!

- Push-button tuning
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- Selectable noise limiter to reduce engine noise
- Bright LED channel display and Tx indicator
- Separate squelch and Volume controls

LIMITED STOCKS

$139.95

Cat D-1120

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NEW

Uniden Grant XL AM/SSB CB

uniden.

The great new "Grant XL" is now available in limited quantities at most Dick Smith Electronics stores! This eagerly awaited successor to the popular Grant now includes an inbuilt SWR meter plus an audio pitch control, and sports a restyled black front panel. The new Grant XL retains its predecessors excellent audio quality, solidly built chassis, and smoothly operating squelch circuit, along with heaps of audio output. Cat D-1482

2 Year Warranty **$399**

Uniden 220XLT Scanner

A great addition to the Uniden range, the new Twin Turbo 220XLT hand-held scanner provides HF/VHF/UHF coverage including airband, 200 memories, super-fast scan and search features (scan up to 100 channels/sec, search at 100 or 300 steps/sec), and pre-programmed channel steps to suit Australian conditions. You also get Data Skip and Lock Out for faster scanning, direct keypad channel access, NiCad battery pack and AC charger, detailed instructions, and a 2-year warranty. Cat D-2755 ***Due late July***

NEW

$469

Frequency Ranges	Step size, kHz
66.0 to 87.995MHz	5.0
108.0 to 136.995MHz	12.5
137.0 to 173.995MHz	5.0
406.0 to 519.995MHz	12.5
806.0 to 824.00MHz	12.5
824.010 to 848.970MHz	30.0
848.975 to 869.035MHz	12.5
869.040 to 893.970MHz	30.0
893.975 to 956.000MHz	12.5

Sensitivity:

FM (nom. 12dB SINAD)	
66-88MHz	0.3uV
137-174MHz	0.4uV
406-520MHz	0.5uV
806-956MHz	0.8uV
AM (nom. 12dB S/N)	
108-137MHz	0.5uV

2 Year Warranty uniden.

Exclusive to Dick Smith Electronics!

70 XLT Scanner

Listen to the fascinating airwaves around your city! This lightweight hand-held VHF/UHF scanner has 20 memory channels, 8-band coverage (covers 66-88, 137-174, 406-512MHz) and track tuning for improved performance. With rechargeable NiCad battery pack, AC charger and carry case.

Frequency Coverage: 66-88MHz
137-174MHz
406-512MHz

Sensitivity: 0.4uV 66-88MHz
0.5uV 137-174MHz
0.7uV 406-512MHz

Cat D-2740

$269

2 Year Warranty uniden.

Wideband Scanner Pre-Amplifier

The Jim M-75 is a quality wide-band Japanese GaAsFet pre-amp designed to improve the sensitivity of most scanners. It connects between the scanner and antenna, and provides variable gain (-10dB to +20dB) over the 24 to 2150MHz range. Using surface-mount devices and a GaAsFet amp results in a very low noise figure, while the switchable band-pass filters reduce the chances of interference from strong out-of-band signals. It's 59 x 80 x 30mm (WHD), and requires a 9V battery or external AC adaptor.

Cat D-3820 **$199**

Also available: M-100 Wide-band Transceiver Pre-Amplifier NEW

Offers all the great features of the Jim M-75, plus it can be used with hand-held transceivers (5W max).

Cat D-3822 **$249**

Yaesu FRG-9600 VHF/UHF Scanner

The sensational FRG-9600 VHF/UHF receiver carries an impressive array of features and offers exceptional value. Frequency selection is by keypad or dial, and the many selectable scanning functions allow you to sweep across the bands in a variety of ways: Busy channel, clear channel, audio scan (avoids 'carrier only' channels), specific band scanning, scanning of the 100 memories and more! It covers the 60-905MHz VHF/UHF spectrum in the FM, AM, and CW modes, with SSB to 460MHz. Plus, with the optional CAT (Computer Aided Transceiver) interface and suitable software, you can control the FRG-9600's many features through your computer. Cat D-2825

Specifications

Frequency:	60-905MHz (up to 460MHz for SSB)
Bandwidth, -3dB:	FM narrow 15kHz FM wide 180kHz AM wide 6kHz AM narrow 2.4kHz SSB 2.4kHz
IFs:	47.754MHz, 10.7MHz, 455kHz
Sensitivity:	FM-n (12dB SINAD) 0.5uV FM-w (12dB SINAD) 1uV AM-n (10dB S + N/N) 1uV SSB (15dB S + N/N) 1uV
Audio Output:	1 watt into 8 ohms <10% THD
Voltage:	DC 12-15V
Dimensions:	180 x 80 x 220mm

$1199

2 year warranty

BONUS OFFER ***Diamond D-130J Discone antenna, valued at $179.95. Hurry! Offer ends 31st August 1994***

Yaesu HF Receiver

Advanced Features For High Performance!

The sensational FRG-100 high performance communications receiver gives extended coverage of the 50kHz to 30MHz range in AM, SSB, CW and FM (optional) modes, as well as a huge range of new features. It provides the user with easier access to most receiver functions. A back-lit LCD screen shows the frequency down to 10Hz resolution and an array of status indicators clearly display what receiver functions are being used. New features include: User-programmable tuning steps, 50 tunable memories (which store frequency, mode and filter setting), sharp IF filters for improved SSB reception, a special memory group scanning mode, and IF bandwidth selection by mode. Features such conveniences as twin 12/24 hour clocks, a programmable on/off timer and 16 pre-programmed international shortwave bands, while an SSB carrier offset function allows you to customise the receiver's audio performance. It comes complete with detailed instructions and a DC cable for connection to an external power supply. Cat D-2790

2 Year Warranty

$999

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The LISTENING POST

WHERE'S SCAN? WHERE'S RUSSELL?

If you missed the last issue of CBA, then you missed the announcement of Russell Bryant, BSc (Bachelor of Scanning) that he was taking a well-earned sabbatical from word processors and deadlines. Russell remains a key part of the CBA team and will continue to do rig reviews and the odd feature article, which is how he began his work with CBA some eight years ago, before he became our resident scanning columnist. He'll also make special guest appearances here in **The Listening Post**.

So, just what is The Listening Post? It's CBA's new scanning column, the best of the former **Scanning Action** and **Scan** columns with some new twists thrown in. I'll be compiling The Listening Post for the next year or so (while Russell takes his scanning siesta), but it's not a solo effort.

One of my key resources, and certainly one the best for any scanning enthusiast, are the computer bulletin board message areas of **Oz Shortwave** and **Oz Scan**, carried on BBSs such as **Shortwave Possums**, **Spectrum**, **The Radio Shack** and many more. Here's where you'll find some of the keenest, friendliest and most radio-active (no pun intended) scanner buffs in Australia.

If you're *really* into scanning, then your next purchase should be a personal computer and modem, so you can dial in and join the fun. The Listening Post isn't about to give itself over to this topic (that's precisely why CBA has Patrick McDonald's Online column) but you will find that getting on board a bulletin board which carries radio info adds to your hobby a hundredfold.

We've got other tricks up our sleeves, too. Our special State Correspondents include keen scanner fans **Michael Evans** in Victoria, **Jim Atwell** in SA and **Jason Reilly** in Tasmania to hunt down the hottest new frequencies, codes and callsigns; plus we'll bring you previews of new gear heading our way, mini-reviews of stuff that's just hit the shelves, hints for beginners and expert tips from the masters of the craft.

Victoria's State-wide Mobile Radio network

Possibly the biggest thing to hit the airwaves in Victoria in the last 12 months has been the State-wide Mobile Radio network (SMR). This is a huge network for use by agencies and departments of the Victorian state government, which uses spectrum-efficient 'trunking' technology.

The network itself comprises 100 base station sites to provide a theoretical 95 per cent coverage of the state. The SMR has adopted the popular European-developed MPT1327 trunk radio standard, which allows the end user a wide choice of equipment rather than tying them to one make or model.

The SMR will operate as a duplex service in the VHF high-band between 159-166MHz, although the government has earmarked further space for expansion as needs arise.

The base transmit frequency is 4.6MHz above the receive frequency. There are 70 voice channels (spaced at 12.5kHz) between 163.825 and 164.700MHz, with matching data channels from 164.7125 and 165.1875MHz.

The whole SMR band is divided into 17 frequency sub-groups, each of which includes a primary control channel, secondary control channel, three traffic channels and one channel dedicated for police use.

The SMR is intended to replace several other radio networks independently run by a wide number of state departments, using the best radio sites across the state.

The Victorian State Electricity Commission, which first conceived and proposed the plan, has already swung over to the SMR, as have country offices of the Sheriff's Department and several local councils.

The new network should also play host to the Victoria Police's country radio network.

The exact schedule is still unknown, but it is believed that the transfer should be completed by the end of 1995, at which time the police will hand their 168MHz channels back to the Spectrum Management Agency (SMA) for re-allocation.

So what does this mean to the scanner listener? For a start, your favorite local and state government services could very will disappear from their present allocations — indeed, they may already have done so.

When you *do* pick up a transmission you will generally hear signals from both stations if they are operating within the same base site area; eg if both stations are in Bendigo. But, should the users be from different areas and operating through different base sites (eg a mobile in Bendigo talking to another in Sale) you will only hear one side of the conversation.

Each user is limited to three minutes talk time, so you will hear up to three minutes transmission at a time, at the end of which you'll hear a 10-seconds-to-go warning beep transmitted by the SMR system, then multiple beeps for the next few seconds before the channel disconnects. After a 30-second break the users can start another conversation. The idea of this limit is to encourage brevity in transmissions and allow more efficient usage and time-sharing of the SMR in peak hours.

There is also the facility to make and receive telephone calls via the SMR, so monitors should be aware that, like listening to other telephone traffic on the cellular and VHF marine bands, it is illegal to monitor phone conversations.

Other network facilities include forwarding calls to another mobile or hand-held station, queuing for the next available channel if all channels are busy, and the ability to handle fax transmissions and computer data. Although there is the option of voice encryption, I've not heard any users taking advantage of this, possibly due to the cost of encryption-capable radios.

As the SMR has ended up way over budget, it is likely that it will be offering large amounts of air time to major users of commercial two-way systems to help offset some of the costs, so you may find more and more two-way users disappearing into the SMR.

Also of significance to monitors is that many users have been forced off their current VHF high-band allocations to make way for this new network. Probably the biggest single organisation to be shifted has been the **Country Fire Authority**, which has been forced to move its well-established 163MHz allocation to a new set of 20 channels from 160.9750 to 161.2125MHz in 12.5kHz steps. These should be up and running by the end of this year, with some test transmissions already being logged on these frequencies.

This information from Michael Evans

Expert tips

After you've gone the route of reading CBA, browsing through your frequency guide and even dropping into the Oz-Scan BBS forum, how do you add some extra knowledge and spice to your listening?

One of the best sources of information for scanning is your local newspaper. Both before and after the event, newspapers help fill in the picture.

Let's say you hear some unusual activity on one of the police 'special operations' channels. Strange callsigns, lots of codewords, no reference to streets or even suburbs... what on earth is going on? Well, if the newspaper runs a story in the next few days detailing a major drug bust or a city-wide swoop following extensive surveillance, that's probably what you were hearing. You might even be able to match the news reports with your listening to crack some new codewords or callsigns.

The major dailies such as The Sydney Morning Herald, The Age and The Herald-Sun are good for big-news stories, but don't forget those free suburban newspapers which land on your front lawn every week. They tend to dedicate much more space to local happenings, and many have a regular 'police rounds' column.

Also, be on the look-out for newspaper coverage before the event. Watch for mentions of VIP tours of visiting personalities and heads of state. Press reports will often include complete itineraries intended to let the public know where and when they can see Mr or Ms VIP and, armed with this knowledge, you'll have a very good idea of where and when to listen.

Start with frequencies used by the federal police, plus the local working channel and special operations channels of the state police. If a VIP visits a hospital or park, then listen to the frequencies used by the staff and security guards — these are active *hours* before the VIP arrives. You'll pick up all sorts of background information, and can make use of your knowledge to get an even better catch when the next VIP visits.

And if one New Year's Eve sees you stuck at home, fire up the scanner — New Year's is the busiest night of the year for police and their radio operators, with every channel going at full tilt as it gets close to midnight.

Be on the lookout for any special or unusual event — air shows, marches, ticker-tape parades, festivals, football grand finals — and you can be assured of finding lots of action on the bands. Think ahead. Naturally you'll have local and special operations police channels active. Check the St John ambulance channels, buses and trains for transport, TV and radio crews — even ground staff using hired walkie-talkies on one of several temporary channels.

Also, nothing beats a good, close, first-hand look at the two-way radios you'll be monitoring, or a chat with their operators. You can't just wander up to VKC or VKG one fine morning and ask for a look around... or *can* you?

In fact, it's becoming more and more common for government agencies to open their doors to the public, as a public relations exercise to the tax-payers who fund their operations. If ever you hear of an 'open day' at the local ambulance station or fire brigade, pay them a visit! If there are public tours of the airport or RAAF base, go along!

Alternatively, you may find these groups have arranged public displays of their equipment at local city festivals, with the chance to poke around an ambulance or an Army field communications unit.

I would, however, caution against letting everyone at such open days and displays know that you're a scanner user. Most of the personnel who work at the front-line of our emergency services units don't take too kindly to the inaccurate (but sometimes, unfortunately, true) image of 'ghouls', those people who hear about a fire or fatal car accident and then drive down to take a look.

Ambling along...

Lance Noll has supplied the following channels for Queensland's Amberley RAAF base: 80.1, 117.7, 118.3, 121.7, 123.3, 126.2, 133.1, 133.6, 134.1, 149.2, 151.34, 399.75, 411.575, 450.1 and 451.0625MHz.

For those monitoring USAF communications on HF and also the MilSat satellites, he also provides the latest Secret Service code names: Eagle (Bill Clinton), Evergreen (Hillary Clinton, who can be my first lady any time she chooses!), Sawhorse (Al Gore), Skylark (Tipper Gore), Acrobat (Andrews Air Force Base), Bamboo (Presidential motorcade), Birdeye (Department of State), Bookstore/Crown (White House Communications Center), Candlestick (Portable communications package), Cement Mixer (White House Situation Room), Electric (Emergency Command Aircraft), Finley (Secretary of Defence), Halfback (Presidential Follow-up vehicle) and Stagecoach (Presidential Limousine).

Broom broom!

Motor-racing enthusiasts are just one group of people who've discovered that a scanner makes a great difference to their enjoyment of the sport. **David Clayton** has heard Amaroo Park race control and flag marshals on 471.475MHz during the Australian Touring Car Championships. 471.475MHz is, in fact, one of several simplex frequencies used by two-way radio rental companies to provide a broad range of users with short-term communications. **John Hirt** has also logged Amaroo's race control on 493.175MHz, so there's more yet to be discovered.

Love that lingo!

Steve Bottom reported the following extraordinary but true exchange between a US Air Force fighter jet and tower:

Fighter: "This is a chrome-plated stove pipe, triple-nickel eight ball, angels eight five in the slot, boots on and laced, I wanna bounce and blow...".

Tower: "Roger, you got the nod to hit the sod," (No wonder the Yanks have so many mid-air collisions! Steve adds).

Rick Jones was able to decode some of this for us: a 'chrome-plated stove pipe' is probably a description for the jet itself; 'Angels 85' either means established on the localiser for an ILS approach or 'has the ball' for a carrier landing ('in the slot'); 'boots down' means the landing gear is down, with 'laced' meaning 'all systems go, lights green etc'; 'bounce and blow' isn't a new hairdo style but a request for a touch-and-go (a practice manoeuvre in which the aircraft does the usual approach and landing, then does a take-off straight away rather than taxi in and shut down the engines as per usual).

The tower confirms the touch and go request with 'You got the nod to hit the sod'.

Sky-high scanning

Jason Reilly, our man in the Apple Isle, kept a close ear on the round-Tasmanian SkyRace and reports the following:

118.700 MHz was used by 'Launy' Tower (the closest to Valleyfield where SkyRace was held); 129.900 MHz was 'Valley Unicom', the 'control' for SkyRace (but didn't seem much of a control, more an advisory service); various crews used 123.450MHz, the old favorite (although now officially frowned-upon) 'numbers channel' for contact with ground engineers. Air-to-air chat and media communications were also heard on this channel, along with 126.350MHz.

UHF CB was also heavily used, with ch10 for parking and traffic control, ch20 for the pit boss, organisers and timers and ch21 for pylon judges and race advisory.

The FAC (Federal Airport Corporation) was logged on 490.150MHz.

All the normal emergency services were there: police (76.085MHz), ambulance (78.160MHz), plus fire services from Evandale and Campbell Town, and the SES on 76.385MHz.

On the ball...

Heading down to the big game? **John Hudson** asked if anyone knew of frequencies used by coaches and trainers for the NSW Rugby League.

Richard Jary advises of the following club channels: 475.075MHz (Canterbury); 71.475 and 475.125MHz (Eastern Suburbs); 480.000MHz (Gold Coast); 471.625MHz and 476.975MHz (Newcastle); 475.000, 475.125 and 471.475MHz (North Sydney); 466.850 and 469.625MHz (Penrith).

"Others may just be used around the club premises," advises Richard. "Also, make sure you check out the UHF CB channels from 476 to 477.4MHz".

SA update

Jim Atwell provides the following update of SA Police callsigns: patrols heard with the callsign prefixes of Romeo and Oscar appear to belong to the RRG (Regional Response Group), says Jim. These

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The LISTENING POST

units formerly used callsigns such as Bravo 15, Charlie 15, and Delta 15.

Stephen Newlyn adds that Traffic Patrols now use their own regional channels; new callsigns for Police Security begin with Echo (such as Echo Delta, or Charlie or Bravo), and their operational channel is channel 24 in the UHF 64ch allocation (468.425MHz), although they do make appearances on local channels. Stephen reckons the best time to catch these are after school hours and on weekends.

And the winner is...

Tony Smith set himself up to monitor the TV Week Logie Awards at Melbourne's World Congress Centre, and wins himself a Silver Logie (for Outstanding Monitoring of a Special Event) with his report of the following: 469.825MHz (World Congress Staff), 485.425MHz (Channel 9 Director and Floor Crew), 466.375MHz (Channel 9 Program Audio Feed), 494.375MHz (Channel 9 Outside Broadcast Crew and Master Control); the World Congress Security guards were using 800MHz trunking radios, with local police heard on their regular ch36 (468.725MHz) and some operations on channel 24 (468.425MHz).

Rats invade Tasmania!

Hey, never let a good heading get away! In this case **RATS** is the **R**emote **A**ccess **T**erminal **S**ystem, a combined voice/data network for Tassie's Telecom field staff. Try the following voice channels: 162.9125, 162.9750, 162.9875, 163.1000 and 163.6625MHz.

Sneak previews...

Hopefully soon to be heading to our shores in the latest handheld super scanner from Japan's **AOR**, the **AR-8000**. Coverage is expected to be from a few hundred kHz through to near 2GHz, with a unique LCD readout providing alphanumeric identification for 1000 memory channels (no more 'ch 951: 469.425', as you can program the display to read 'POLAIR' or whatever instead. (This was last done on Kenwood's disappointing car radio-sized RZ-1 scanner to great effect.)

The screen also provides a 'menu' system for selecting options, with 'novice' and 'expert' settings, plus a spectrum analyser-type display of activity over a broad range of frequencies. On the HF side there's SSB reception down to 50Hz resolution and dual VFOs.

There's also a PC interface available, although I wonder how well the AR-8000 would perform with a PC sitting right next to it — and, for that matter, how portable it would then be! PCs are noted for not being the most friendly devices when it comes to radios, spitting spurious signals and noise all over the place... but time will tell.

If and when this rig comes down under, look for a review here in CBA.

Several of my favorite tools of trade for better monitoring come from **Optoelectronics**, a US company offering frequency counters, tone detectors, RF amplifiers and other amazing little black boxes.

Amongst the many and varied models, one in particular stands out. The **R10 FM Communications Interceptor** is slightly larger than a pack of cigarettes, yet is a sensitive RF detector which lets the user listen to any FM signal between 30-1000MHz (and then some) in close proximity.

You don't need to know the frequency — the R10 sniffs out the strongest signal and pumps it through the speaker, with absolutely no programming or button-pushing required.

This 'near field' device has great applications in the law enforcement, radio technical and hobby radio fields.

Although sensitivity is considerably lower than that of a scanner, recent US tests indicate it has the ability to lock onto FM broadcast stations many kilometres away.

Supplied by Russell Bryant

Targa Tasmania

Also from **Jason Reilly** come these frequencies, which were used in the recent Targa Tasmania car rally — Taswegians should add these to their little black books and be ready for next year's event.

First of all, says Jason, tune through your local police channels; also search the UHF CB channels, as 477MHz forms the backbone of communications for many race teams.

Jason logged race officials on SES and fire brigade channels; for north-east Tasmania these included 76.385 and 460.050MHz (SES), and 76.745 and 413.850MHz (fire brigade).

The normal ambulance channels were used for accidents and injuries; crash recovery was contracted to Mowbray Central Wholesale Wreckers on 71.060MHz.

Frequencies change as the Targa moves to the Central Highlands and south to Hobart, so Jason suggests listeners try their local SES, country fire and police channels (and associated UHF links) and also 144-148MHz amateur frequencies for WICEN teams.

Hot on HF

Many of the latest super scanners now include HF in their coverage, and with a decent antenna (a long wire is a good start, and certainly a lot better than those stubby helicals provided for VHF/UHF listening!) you can get a lot of listening below 30MHz. Many scanner buffs are also adding dedicated HF receivers to their radio shack.

So, every issue we'll throw in a few of the latest 'action frequencies' from the HF bands, just to round things off.

These are often used by emergency and transport services, in conjunction with VHF and UHF allocations, so they round out your monitoring and help you get the whole picture.

Darren Crick spied the following for Victoria's Traralgon unit of the Country Fire Authority (in its communications van): ch1, 4525kHz; ch2, 2488kHz; ch3, 5906kHz; ch4, 8050kHz (the last two are new additions).

Michael Evans lists this swag for the AAT-Kings tour buses as they criss-cross the countryside: 3.7775, 4.6315, 5.8915, 7.9665, 11.5300 and 14.8915MHz.

News from Newcastle

Martin Howells, of the Newcastle Scanner Group (PO Box 728, Charlestown, NSW 2290) supplied The Listening Post with this first-rate report on the Newcastle scene.

The Newcastle police voting group has been upgraded, with the addition of ch24 to reach areas south of Lake Macquarie. Here's where to find the best signals: ch24 (468.425MHz, Mount Heaton), ch34 (468.675MHz, Newcastle West), ch46 (468.975MHz, Mount Sugarloaf) and ch48 (469.275MHz, New Lambton Heights).

Hunter Valley vehicles have also been heard in this group, as well as on ch48 (469.025MHz) and their old VHF allocation of 83.850MHz. Ch65 (469.825MHz simplex) remains the favorite for radar operations.

'Waratah' is the new callsign for the recently-merged Hamilton and Mayfield highway patrols, with a new police station planned to match.

Also on the grapevine — Ipex Couriers is now on 150.775MHz; various Morisset Hospital traffic on 472.475MHz; and the local control channel for the FleetCom trunking network is 416.3375/406.8875MHz.

The sound of sirens...

Listeners to Melbourne police radio VKC may have heard a 'siren-like' sound booming over the airwaves at all sorts of odd hours. What's it all about?

Thanks to **Clive Campbell**, **Michael Evans**, **Alan Williamson** and friends, we have the answer.

This siren patten was created following the Ash Wednesday fires.

The idea is that this distinct and unusual sound can be played over a radio and TV stations, as well as from loudspeakers on police cars and choppers, to advise residents that an emergency of some kind had occurred and that they should follow police instructions.

Following each siren broadcast on the police channels is an announcement explaining that this is what the emergency siren sounds like.

Following this announcement come remarks from police themselves, such as "Okay, we're all awake now!"

Tune in to trunking

Australia Post in Victoria and NSW are just two of the users which have switched to the FleetComms trunk radio system established by OTC, now part of Telecom/Telstra. There are 200 channel pairs in all, from 415.5625/406.1125MHz (ch1) to 418.0625/408.6125MHz (ch200) in 12.5kHz steps. Tune in and see who else you can discover.

Start here...

A lot of mail we get is from newcomers to scanning, and often it's from those about to start scanning — they've read about it here in CBA, and decided to give it a try. So that inevitable first question arises: what scanner should I buy?

First of all, I don't recommend a super-scanner for any newcomer.

They have so many features and are usually way too complex for the first-timer, and even many old hands, to comfortably operate. They cost an absolute fortune, and if, God forbid, you don't find scanning as riveting a hobby as you'd hoped, it's a lot of money down the drain, or at least gathering dust on the shelf.

You can do much better by buying a less expensive, more modest scanner to begin with — even a second-hand one (see your local Trading Post-style newspaper, the Classifieds in **Amateur Radio Action** or check with your local radio shop for trade-ins; but be wary of trash-and-treasure sales, unless you can confirm everything is working to your satisfaction and that you have some recourse of action with the seller if something turns out amiss).

And make it a portable — they are the soul of convenience, and you can *really* get into scanning with a scanner which you take wherever you go.

Gone are the days when 'compact' meant 'compromise'. Portable scanners are wonderfully convenient and make scanning a much more fun hobby, because you're not tied down to listening in one room, in the car or whatever.

If the time comes when you do want more channels, more frequencies, more, more, *more*, you can buy another scanner and either sell your first to another newcomer, or keep it in the car or as a spare set of ears.

There will be times when being ale to listen to two channels at once will certainly come in handy!

Both **Dick Smith Electronics** and **Tandy** stores have some excellent portable scanners; a few caveats here, though... not one of the Tandy scanners includes rechargeable batteries, which means you'll either spend a large fortune in buying endless packets of AA cells, or you'll spend a small fortune in buying rechargeable NiCd (nickel cadmium) cells and a suitable charger.

The Uniden Bearcat scanners sold by DSE and Icom's tasty IC-R1 all come with NiCds and a charger, which also lets you run the scanner directly from the 240V AC socket.

Ignore any reference to the number of 'bands' a scanner covers. This is quite an arbitrary measure.

You can take the entire slice of radio spectrum, from 30MHz to 300MHz, and refer to it as one band — the very high frequency band, also known as VHF — or as around a dozen or more bands (three separate aircraft radio bands, two amateur radio bands, three commercial two-way bands, and so forth).

Instead, look to **frequency coverage** as your guide — it should cover at least 66-88MHz, 148-178MHz and 400-510MHz, which are the three main radio bands where you'll find two-way radio from police, fire brigades, ambulance, taxis, other government users etc. Add 118-136MHz for aircraft two-way radio, if that's of interest.

Next, consider memory channels. If you're in the country, 100 channels might well be overkill — you could probably get by with 20 to begin with, although it's always better to have more than less if you can afford it. If you're in the city, 100 channels will probably see you smiling for quite some time.

Letters

We tend to get a lot of mail each issue asking about modifications — "...can I get extra channels/extra frequency coverage/faster scanning from my XYZ-100 portable?...", and all that sort of thing. As a general rule of thumb, there's no magic wand or mystic spell which transforms your stock-standard scanner into a wideband wonder-radio.

In most cases, the frequency coverage out of the box is all you can get (in some instances, particularly with the Realistic scanners, inserting or removing the odd diode will actually *delete* a frequency range such as the 800MHz cellular allocation). Memory channels are even more so set in concrete, although the ability to put some pep into the scanning is a little more common.

Due to the number of scanners on the market, the best advice I can give to anyone wanting details of scanner modifications is to consult their back-issues of CBA — almost all such modifications have been detailed in the Scan column at one time or another.

Note that, although I encourage reader input (indeed, it's absolutely *crucial* to any column such as this!), I'm not in the position of being able to provide personal answers to your letters. Where practical, and as space allows, replies to mail will be printed directly within this column.

But writing personal replies to each and every letter I get would in itself be a full-time job, and I've already got one of those!

Okay, that's it for this month — enough, I hope, to keep you scanning and searching until next time around, and feel free to drop me a line with any new frequencies, codes or callsigns from your area, so we can spread the word here in The Listening Post.

AMBULANCE CONTROL TO ALL READERS

By Robert Peel.

Victoria, together with New South Wales were in the past the only states to have compatible radio networks, both operating on the designated VHF channels around 76 MHz.

However, due to an increase in work loads and responsibilities the VHF channels have become overcrowded and ineffective.

In consequence, the Victorian Ambulance Service has decided to implement a number of changes to their Metropolitan Region radio system.

These changes have seen the replacement of the existing VHF mid-band operation with frequencies from the national UHF ambulance allocations.

The new frequencies will ensure that the communication system will be sufficient for ambulance needs well into the 21st century.

Coverage of the Metropolitan Region is achieveable by employing several sites together with voting, within the area bounded by Warburton to Bachus Marsh, Werribee to Sorrento and Cranbourne.

The sites chosen are Rialto, Mt.Blackwood, Mt.St Leonard, Mt. Victoria, Mt.Dandenong, Mt.Macedon and Arthurs Seat.

The new channel arrangements for the Metro Region and their corresponding frequencies are;

Ch.1 West Vote (10, 11)
Ch.2 Clinic Vote (20, 21)
Ch.3 West Vote (10, 11, 12)
Ch.4 East Vote (13, 14, 15, 16)
Ch.5 South Vote (17, 18, 19)
Ch.6 East Vote (13, 14, 16)
Ch.7 East Vote (13, 14, 15)
Ch.8 South Vote (17, 18)
Ch.9 South Vote (18, 19)
413.075 403.625 Ch.10 West (R)
413.150 403.700 Ch.11 West (B)
413.225 403.775 Ch.12 West (M)
412.850 403.400 Ch.13 East (D)
413.350 403.900 Ch.14 East (R)
413.100 403.650 Ch.15 East (L)
413.375 403.925 Ch.16 East (V)
413.175 403.725 Ch.17 South (D)
412.525 403.075 Ch.18 South (R)
413.125 403.675 Ch.19 South (A)
413.025 403.575 Ch.20 Clinic (D)
412.750 402.625 Ch.21 Clinic (R)
413.300 403.850 Ch.22 Mobile
413.425 403.975 Ch.23 Admin (D)
413.075 403.625 Ch.30 West (R)
413.150 403.700 Ch.31 West (B)
413.225 403.775 Ch.32 West (M)
412.850 403.400 Ch.33 East (D)
413.350 403.900 Ch.34 East (R)
413.100 403.650 Ch.35 East (L)
413.375 403.925 Ch.36 East (V)
413.175 403.725 Ch.37 South (D)
412.525 403.075 Ch.38 South (R)
413.125 403.675 Ch.39 South (A)
413.025 403.575 Ch.40 Clinic (D)
412.750 402.625 Ch.41 Clinic (R)
412.500 403.050 Ch.42 Emerg'cy (R)
412.575 403.125 Ch.43 Emerg'cy (M)
412.650 403.200 Ch.44 Emerg'cy (D)
413.300 Ch.50 Metro simplex
413.150 Ch.51 Country simplex
413.225 Ch.52 Country simplex
412.850 Ch.53 Country simplex
413.350 Ch.54 Country simplex
413.100 Ch.55 Country simplex
413.375 Ch.56 Country simplex
413.175 Ch.57 Country simplex
412.525 Ch.58 Country simplex
413.125 Ch.59 Country simplex
412.475 403.025 Ch.60 Ballarat
412.475 403.025 Ch.61 Bendigo
412.475 403.025 Ch.62 Echuca
412.475 403.025 Ch.63 Geelong
412.475 403.025 Ch.64 Hamilton
412.475 403.025 Ch.65 Horsham
412.475 403.025 Ch.66 Mildura
412.475 403.025 Ch.67 Morwell
412.475 403.025 Ch.68 Sale
412.475 403.025 Ch.69 Shepparton
412.475 403.025 Ch.70 Swan Hill
412.475 403.025 Ch.71 Wangaratta
412.475 403.025 Ch.72 Warnambool

The use of different sub-audible tones allows for repeated use of the same frequency across the coverage area. To assist in identifying transmitter locations the following codes have been employed.

Rialto (R), Mt.Blackwood (B), Mt.St.Leonard (L), Mt.Victoria (V), Dandenong (D), Macedon (M) and Arthurs Seat (A).

The old VHF frequencies have been reallocated to country areas, however, some of the new UHF frequencies have been set aside for use in the main regional centres throughout the state.

This is so that Metropolitan cars travelling to, or through, main country towns will have communications with ambulance services in that town.

To improve communications in major country towns and regional centres a number of UHF portables have been issued to ambulance crews.

The UHF portables will replace most, if not all VHF portable equipment currently in use.

With the reorganization of metropolitan Melbourne, country Victoria will gain from an increase in available VHF frequencies.

The VHF allocations are;

76.670 Ch.10 Central Region including Shepparton, Echuca.
76.250 Ch.20 Western Region including Ballarat, Horsham.
76.430 Ch.30 North Eastern Region including Wangaratta,Wodonga.
76.490 Ch.40 South Western Region including Geelong, Hamilton, Warnambool.
76.730 Ch.50 South Eastern Region including Morwell, Sale. Leongatha.
76.910 Ch.60 North Western Region including Bendigo, Swan Hill, Mildura.
76.010 Ch.70 Metropolitan Region and Air Ambulance.

The current seven 76 MHz frequen-

Emergency services expert Robert Peel highlights the changes being made to the Victorian Ambulance radio networks.

cies have been further divided into five sub channels. For example channel 10 is 76.670, as is channel 11, 12, 13 and 14. Channel 20 is 76.250 as is 21, 22, 23, 24 and so on.

The Ambulance Service has installed different sub-audible tones on the frequencies to enable base voting.

The use of the tones will have no effect on the casual monitor of these channels.

As with all Ambulance Services across the country, Victoria uses radio codes to expedite calls.

The codes and their meanings are;

Patient Condition:

A Fair,
B Serious,
C Critical,
1 Critical or serious,
2 Satisfactory,
MCA Motor Car Accident.
0 Non urgent use,
1 Medical attention required immediately on arrival at hospital,
2 Not serious
3 Accident
4 Asphyxia
5 Baby born
6 Blood transplant
7 Burns
8 Urgent case as soon as possible
9 Case as soon as possible
10 C.V.A
11 Cardiac arrest-heart attack
12 Collapse
13 Fracture off the.....
14 Haemorrhage
15 Head injury
16 Possible drowning or internal injuries
17 Possible drowning
18 Maternity case
19 Mental case
20 Minor injuries
21 Multiple injuries
22 Murder ?
24 Number of patients and injuries
26 Overdose
27 Oxygen being given
29 Communication priority
30 Patient conscious
31 Patient violent
32 Respiratory difficulty
33 Rape
34 Severe shock
35 Shooting
37 Transfusion being administered
38 Trilene being administered
41 Brawl
46 Doctor in attendance
47 Doctor required
48 Female
50 Hazards present
51 Hospital notification
53 Male
55 Police in attendance
56 Police required
58 Relative with patient
61 Air ambulance ETA
63 Call by phone
64 Case cancelled
65 Communications/Casualty unit at scene
66 Contact communications officer at scene
74 Leaving branch station for.....
80 Now mobile and loaded for.....
81 Now at destination
82 Now clear and available
83 Patient deceased
86 Phone switched to Headquarters
87 Return to Headquarters
89 Return to branch
90 Return to residence
98 Take a meal break

Thanks to Frank Stone for the above information.

As always, stay clear of ambulance and emergency services personnel as they go about their day to day activities.

DXinternational

By Jack Haden

Are there any Australian DX clubs which are internationally orientated, a reader asks? No, there's a real lack of them, actually. So what Australian DX clubs should I be promoting through the pages of this column?

Well, you do not have to be Einstein to work out that the band is in really poor shape DX-wise. Propagation patterns have certainly changed a great deal on 11 metres in the past month or so with little or no real significant DX openings to arouse one's interest.

Sometimes *days* will actually pass before anything 'lively' appears on the band worth working.

Sure, there are the usual trans-Pacific openings to Asia and the Americas but, other than that, not too much to write home about, I'm afraid.

However, I do have a few scribbles in the log to mention in this column, as there has been the odd day or two about when the band really has exerted itself somewhat to provide us with a decent opening beyond the Pacific.

I received a rather abrupt letter from an irate reader in Melbourne saying all that I mention in these pages is the "...big overseas DX clubs that cost a mint to belong to — and how about mentioning the goings-on here in Australia...". Surprising enough the 'gentleman' signed his letter with an Alfa Tango club stamp and his AT callsign!. If you are so bloody concerned about Australian DX clubs why are you in an *Italian* one, I wonder? However, stopping to think a while I *can* see his point. What do we have to offer Australian DXers by way of our very own international DX club? None that I know of at present!

Some time back — at least a couple of years or so at the most — there was a mob running about the higher frequencies using 'Australian Radio' callsigns and at that time had quite a number of members signed up, both here and abroad from what I could gather then. The thing that turned me off joining was their international prefix designator. They had Australia as 1-AR-101 etc and Italy was 43-AR-101 and so on, going completely against the protocol adhered to by the majority of world DXers.

Really it does sound stupid calling CQDX as I-AR-999, for example, from Australia in a proverbial *sea* of Italians screaming at I-AT, I-SA, I-RA, I-GCI and the like. As far as the majority of DXers are concerned we are best known as the 43 prefix world-wide, and that is that, so why be anything else? Anyway, one doesn't hear very much of the 'Australian Radio' crowd on the higher channels any more. Perhaps they, like seven out of ten DX clubs that appear, folded up and simply disappeared?

The reason I did not give an Australian international DX group a 'plug' within these pages was simply because the club secretary never wrote to me seeking a mention in DXI. Had he or she done so I would have only been too pleased to promote something true-blue Aussie even though their callsign country designators were a little out of whack with everyone else.

Whilst on the path of Aussie DX clubs, there are still a few survivors from the past flaunts with overseas DXing from Australia. The famous '**KT**' **Kangaroo Territory** club was the daddy of them all, and still has the odd member or two kicking about the band. Now *that* was a really fair dinkum Australian-born and bred group! Not forgetting some others, too, that were extremely popular in years not so long past. The '**KBC**' mob, **Koala Bear Country** and its cousin the '**KC**' crowd, **Kangaroo Country**, used to be very popular once upon a time.

Those clubs were all the rage about a decade or so back. Most of them were spawned in the days when Australian DXing on 27MHz was still in its infancy. We were then just content to sit back and chew the fat with the Yanks who used to practically belt in all day every day at five nine plus, so to speak. Most of us by now have grown out of the obsession of working the Yanks on the band all the time and have opted to expand our intellect to higher goals and pursuits in the scene that is now international DXing.

Sadly, in our case especially, to run a successful Australian international DX club you need a hefty number of 'local' members to be viable. In reality, there aren't all that many serious DXers on the higher channels, as the majority of CBing and DXing to a certain extent still takes place on the 40-channel system.

To print newsletters, club stationery and market club QSL cards, you need funds and you must have the members to generate the funds. Clubs in Europe and the Americas flourish because they have a huge 'local' DX population to service them and thus make them continually viable. Sure, clubs will and do survive on the 40-channel block where the majority of the CB population roosts but, on the higher channels, where the population falls dramatically when the DX disappears, running a club is an entirely different ball game.

Of course, to retain its members a club must be vibrant and efficient, and

continued over page...

maintain interesting activities to keep members involved and make them feel that they belong. This in turn keeps them loyal. The problem with a lot of DX clubs on 11 metres is that their membership/callsigns are handed out like progressive numbers in a DXpedition pile-up with no prerequisites in any form.

After getting the club callsign from some clown you worked on air one day you find there is nothing more to it — nothing more, nothing less, so to speak. What type of DX group of international credibility can expect to achieve any form of success or respect operating a 'recruitment drive' like that? These clubs are the 'fly-by-nighters' of the DX world and end up much the same way as the DXpedition pile-up — it withers away in the end and soon disappears!

The reality for us is that we can never *really* expect an Australian-founded and run international DX club to achieve any form of world success, as we simply do not have the 'local' population to launch the concept to start with. The number of DXers operating out-of-band here in Australia is not growing. In fact, it is in decline, or stagnant in most cases. Like any product, to be viable it must have the market to service it otherwise it becomes uneconomical and in turn falters.

The reason that the big clubs like Alfa Tango, Sperimental Radio and the like are so successful is that they have the market (population) to service the club in Europe alone. As for the rest outside of Europe, including many Australians who are members of these European clubs, if they were to falter and go down the proverbial tubes in Europe they would be dead meat entirely.

Subscriptions from overseas divisions would not mean one jot. It would be like trying to bail out the Titanic with a paper drink cup. The European membership of these 'mega' clubs subsidises the overseas divisions and ensures their survival within the group. If they go down in Europe the whole lot goes with it and there are no second prizes at all.

Anyway, I think most of us are happy the way we are. There is no shortage of independent non-club DXers on 27MHz judging by the imaginative callsigns I hear regularly on air. Of course, if you want to be true blue and join an all-Australian DX club, there are many in existence on the 40-channel system. How well they are run and what activities they offer I do not know as I have never been in one to find out. Lists of some of the more prominent ones appear in the ACBRO column featured elsewhere in this magazine, which is a good place to start the club hunt.

Central/South America
The Caribbean Sea

Activity from this region remains varied. Sporadic openings have given us some good signals, especially from the island nations of the Caribbean, usually around the 2230z mark onwards. The big signals we used to hear from South America have all but withered away for the time being, with heavy fade most noticeable on this path.

Honduras in Central America was around the traps with the emergence of the 28-AT-111 at 0421z, at which time this station was a poor four by one. Not long after at 0439z I noted another Honduran station by way of 28-CN-101, operated by Carlos, who was a slightly better five by two at the time.

Barbados is one of the more active islands on 27MHz with quite a variety of stations on air. At 0330z one such station was Peter, who called as simply 122-Division. Peter was a good steady five by six and was doing good business with Australia. Also from Barbados was the AB-121 who was heard at 0340z with a five by two report.

Suriname was heard at 0506z with a number of Asian stations in hot pursuit. Being chased was the 73-SP-001, and at the time was a fair five by two. Also from Suriname, but much weaker was the UNIT-66 who called CQ to the Pacific but had no replies at 0511z.

Martinique in the French West Indies was observed on 27MHz at 0351z by way of 136-AT-105 (name unknown), and a very poor three by one signal report was logged at this end.

Bermuda has been heard at various times during our daylight period with the DPX-11 being most regular. Operated by Ian at 2345z he was a good five by five report. A lady operator from Bermuda was also heard on the call frequency simply calling 'CQ from Bermuda' at 0110z. She was five by one at the time and received no replies from this part of the world.

Grenada, a semi-rare country DX-wise was noted at 0358z by way of Mel, the Unit-5, who was five by five at the time and working into Australia.

Jamaica, a regular on the 11 metre band, was represented by station 911 with Leon at the microphone. At 0455z Leon was a healthy five by six and was chasing DX in the Pacific.

Cuba is one of those places where getting a QSL card can be likened to extracting the proverbial blood from a stone. At 2311z I heard Juan, using the call of AZTEC calling CQ, but due to his horrid modulation failed to get any replies. Juan hails from the capital Havana and also had frequency drift trouble too, thus making it harder still to understand him.

Chile provided the best signal out of South America for some time by way of the 32-AT-115 operated by Jose. At 0200z Jose was a good five by seven peaking eight but at 0210z had faded back to a five by four and was getting weaker by the minute.

Argentina, **Brazil**, **Uruguay**, **Paraguay**, **Colombia**, **Peru** and more are about from time to time, but don't expect really big signals from them for the time being.

Middle East
Arabia

Not an excessive amount of activity to comment about from this region. As usual the best time to look for this area is any time from 0500z onwards for any signs of life.

Palestine is still with us by way of Mr Sami, the PNZ-01 who I reported in the last issue of this column. Sami operates out of Jericho using a simple wire dipole using camera film containers as insulators and employs an American 40-channel CB with some switches to give him 10 extra channels. Although only putting out six watts PEP Sami peaked a good readable five by four at 0706z. The only problem was that Sami had *no* idea where Nauru was in the Pacific, so most of the contact time was wasted by me trying to explain where Nauru is in the Pacific. Sami is keen to speak to any Australian stations who speak fluent Arabic or French.

Kuwait is always there when the band is open to the Middle East. At 0559z 102-AT-131 with Hassan at the controls was five by seven, at 0759z 102-AT-102 operated by Aman

....☞

DXinternational

was five by three and at 0810z 102-AT-125, operator not known, was five by six peaking seven.

Qatar was logged at 0602z by way of Mousa, who operates as the 115-AB-98 from the capital of Doha. At the time Mousa was five by two at the very best with a lot of Indonesian crud across the band.

Yemen was heard about the band at 0806z by way of the 323-AT-101, name not heard, and at the time was a poor four by zero here on Nauru. I noted a station in Western Australia issuing him a five by five report so it appears the path to the west coast was holding well.

Libya made a surprise appearance on the band with the emergence of Faisal operating as the FA-01 from the capital Tripoli. At 1106z Faisal was a barely readable three by one here but this didn't stop a horde of Indonesian and Japanese stations from creating a pile-up. The end result was either Faisal faded out or changed frequency as he was definitely *not* there when the pile-up calmed! Faisal is one of just two or possibly three stations reported to be operating out of Libya on 11 metres these days.

Israel is another regular when the band is open to the Middle East region. At 0653z I noted West Bank station 97-DX-01 with Damien at the microphone. Damien was a poor four by one and was calling CQ to Africa at the time.

Lebanon came though the Asian crud at 0649z by way of the 112-LN-103 operated by Samed from Beirut. Samed was a good five by five and was looking for signal reports as he was testing a new five-element beam antenna.

Africa and the Indian Ocean Region

News is down from this part of the world. Activity from **South Africa** has declined a little with the election over, and some people are unsure of their future. A few Afrikaner friends I know on the radio have already made arrangements to migrate to Europe or elsewhere. Sadly, this will evidently mean less stations on air from the always-popular 44 Division, where almost every one of us has a good mate or two. Let's hope that the future will indeed be a calm and peaceful for them.

Botswana is usually quite regular on the bands. At 0756z I logged Nick, the 105-NP-01. At the time Nick was a very poor three by two and was looking for a mate of his in Western Australia for a scheduled weekend chat.

Malawi was noted on 11 metres under a heavy disguise that few could unmask. At 0659z I tuned to Kazu, a Japanese industry project manager, talking to his mates in Japan, of course in Japanese! Kazu uses the callsign of 7Q7, and at times was a fair four by two report. Kazu was surprised to work me on Nauru and informed me that he would be remaining in Malawi until September. You will need basic Japanese language skills to work Kazu properly, and he *does* QSL.

Rwanda is in the news here in Australia, and with the mass influx of aid and other social workers in to the country I wasn't at all surprised to hear Anna, the KE-01 on 11 metres from Rwanda. At 0631z Anna was a very weak three by one so was very poor copy. All I could make out is that she is a volunteer working at a refugee camp on the boarder. At the moment she is far too busy to even think about QSLing.

Laccadive Islands nearly blew me off the island in late May by way of the RC-101, name unknown. At 0506z this station was a hefty five by eight peaking nine. The accent spoken was heavily Indonesian so I am a little wary that this may perhaps be a slim just giving the proverbial leg pull so to speak. As the Laccadives are strictly controlled by India, at the very least one would expect an Indian accent if any! Work now and worry later is the best method to adopt at this stage.

Europe

Openings to this part of the world have been very erratic to say the least. Sometimes the band will open as early as 0430z, but at other times it can be as late as 1100z or even later. Not a lot to rave about coming through, other than the same old hubbub from the Italians and near neighbours.

Croatia, despite having many stations on air, still seems to do rather brisk business here in the Pacific. At 1212z I logged 327-AT-114 operated by Slavko with a good five by three report. Also noted was the 327-CR-103 with Milo at the controls. He was a five by three at 1242z.

Bosnia Herzegovina was loud and clear at 1256z by way of station HZ-1 operated by Stenik. Although Stenik's English was poor he did however manage to work a few in Australia before fading out at 1310z.

Ukraine stations seem to be just about *everywhere* on 11 metres when the band is open to Europe. The loudest noted, however, would have to be the 315-AT-102 who was five by eight at 1156z. He was also a filthy 7kHz wide at the time too! Also heard was Vlad, signing as the 315-AT-105 who, at 0958z, was a good five by six. QSL via 14-AT-035.

Byelorussia was also loud and clear on 11 metres by way of another Vlad, signing as the 317-BY-101. At 1058z Vlad was a good five by five steady and I was happy to give him his first Nauru contact.

Hungary is usually about the band with a variety of callsigns in use. At 1046z I noted Adam the 109-AT-101 about with a good five by four report.

Poland is another country in eastern Europe which has witnessed an explosion of 11 metre band DXers. At a rather late 0120z I could just hear Vin, the 161-POL-102 from Gdansk, with a poor four by zero report.

Andorra was also about the traps for those who may need this semi-rare one. Alain, who signs as the KK-03 from France, was operating from a campervan whilst on vacation in Andorra. At 1152z he was a poor three by two report and was more concerned about calling the 333-AT-103 which had gathered everyone's attention at the time.

Republic of Slovenia was heard at 1008z by way of 328-AT-213 operated by Zek. Despite the QRM generated by the 333-AT-103 skirmish Zek managed a five by five report to just get over the noise. The 333-AT-103 activity brought out a few semi-rare ones over a couple of hours.

Luxembourg appeared at 1059z by way of Francis, signing as the 54-AT- 106. At the time Francis was a poor three by one report — just audible above the noise level.

Russia is always about in what appears to be increasing numbers. At 0755z I heard a whopping signal from the 302-EG-06, name unknown, who was a five by nine steady for near 30 minutes or so. He was so clear I could hear the hum of the linear in the background!

At 0909z I heard the shaky signal of 302-RR-02 operated by Leonid. Poor Leonid had quite a few problems as he drifted 6kHz in just one over only to drift back about 3kHz and then

As the cards on page 44 and to the right indicate, there's still some great DX if you have the patience as both the Antarctic and Russian stations were worked during the past few months.

up another 6kHz again. The guy he was working gave it away in frustration.

Guernsey Island was noted by way of two stations — the 169-AT-113 Ivan and the 169-AZ-109 Ken — both of whom were around the four by one mark at 1220z.

Asia and the Pacific Region

As they say, 'there is no place like home', and there has been no shortage of good DX from our own backyard to keep interests alive. I myself appeared when time allowed as the 271-DX-101 and worked the odd station or two, however, most of my time was spent listening about rather than windbagging.

43-SABC was noted on the band on Saturday, March 26 in a very excited state. I don't know whether it was a special event or DXpedition call or *what* he was. At 2359z the station 43-SABC was five by six and the QSL route is via Pino, the 43-SA-01 (where-ever Pino may be!).

New Caledonia was heard many times in 'contest' mode via a variety of stations in mid-April. At 0536z Jean, the 49-RC-003, was a good five by nine contesting. QSL via PO Box 4336, Noumea 98847, New Caledonia. Also just as strong was 172-RC-101 with Jean Claude calling the tunes also in contest. QSL via PO Box 2100, Monte Dore 98810, New Caledonia. Last of all noted was the 49-NC-X operated by Phil going hammer and tong, so to speak, contesting at 0720z five by nine. QSL direct to PO Box 35, Ponerihouen, New Caledonia.

Ogasawara Island (281 division) was stumbled upon by accident whilst tuning about at 0659z. I heard Shigi signing as the 438 from Ogasawara working Kazu the 7Q7. Shigi was a good solid five by eight at the time. If it wasn't for my basic Japanese I would have missed out working this one. Anyway, Shigi was happy that I broke in as he needed Nauru as a new one on 11 metres.

Antarctica appeared on 27MHz by way of Bud operating from Williams Field with the callsign of AIR-1. I heard Bud trying to break in to a group of Aussies chatting at night to Henry on Lord Howe Island. A quick 'up 10 please' secured me a contact with Bud, and although he was only four by zero on Nauru he was audible at 0955z.

Bud said the Aussie stations talking to Henry were very strong at Williams Field but he couldn't get a word in each way! It just goes to show you never know where the band will open to next...

Thailand was logged by way of 153-YA-674 at 0153z calling CQ, at the time a good five by seven. A number of Australian stations responded but, strangely enough, the Thai station failed to answer any of the calls.

India was just barely heard on 11 metres by way of Sergio signing as the 57-TW-271 at 0515z. Sergio was a poor three by one at the time. Beware, though — there have been reports that some slims are 'borrowing' Sergio's callsign from time to time.

Lord Howe Island appeared on the band in the period April 8 to 12 by way of Henry who signed as the 268-AT-0. I heard Henry just about every day here on Nauru, and he was seldom under a strength five.

One thing that disturbed me was the relay of progressive numbers by a station in northern Australia to a station or two in the southern states who could not hear Henry properly on Lord Howe. Come on gentlemen, let's be honest with ourselves, you either make it or you don't.

Honest DXers do not accept relayed reports or progressive numbers.

I was amazed that Henry stood by and let this activity take place. Prior to hearing this I was going to work Henry and give him a Nauru contact for the DXpedition but after witnessing the progressive numbers being relayed I thought better than be a part to poor operating ethics. Little wonder that Alfa Tango is losing some of its credibility around the world! Anyway, for the honest DXers who actually spoke to Henry you can QSL via PO Box 120, Rosanna, Victoria 3084.

I hear talk about the traps that there will be another operation from Lord Howe this coming July. Perhaps those with 'rubbery' progressive numbers this time will make it through properly next time and not have some mouth in the north do the relaying and thus 'fabricating' a contact. What a shame.

Some disgruntled Australian Alfa Tango members have been heard regularly complaining about the lack of directories and, with 1994 half-over, who can blame them? Another member was rather peeved that, despite being a paid-up financial member, he was left out of the 1994 directory altogether! Things do not appear to have changed a great deal from when I was a member over three or so years back in the days of 'phantom raffles' amongst other things...

There's not a great deal more to add to this edition of DXI. I'm sorry to those readers who wrote with a SAE for their reply. The late replies are due to being in the islands for the last couple of months attending to other matters. As usual, contributions/letters are welcome via PO Box 299, Ryde NSW 2112.

For a personal reply, a stamped, self-addressed envelope is a must.

73 de Jack 271-DX-101.

CB UHF REPEATER LIST

NEW SOUTH WALES

Callsign	Town/Locality
	CHANNEL 1
BEL01	Belbora
BHI01	Broken Hill
BIN01	Bingara
BOB01	Harden
BRE01	Brewarrina
BRH01	near Broken Hill
BUN1	near Merriwa
CHT01	Charlestown
COR01	Corowa
DNQ01	Deniliquin
GRE01	Grenfell
GUY01	Guyra
JIN01	near Jindabyne
KGL01	Kyogle
MBI01	Moonbi
MRT01	Wilcania
MTE01	Mt Eagle
NEE01	Dubbo
NIM01	Nimitable
NYN01	Nyngan
RYL01	Rylestone
SYD01	Sydney
ULA01	Ulladulla
WAG01	Wagga
WGT01	Walget
	CHANNEL 2
BER02	near Gloucester
BRH02	Broken Hill
CAN02	Cangai - West of Grafton
EDN02	Bega / Eden
GDH02	Gunnedah
INV02	Inverell
KHN02	Khancoban
KOS02	near Thredbo
KUR02	Sydney - Blacktown
LGW02	Mt Lambie
LIS02	near Byron Bay
MAC02	Port Macquarie
NBR02	Wee Waa / Narrabri
NOW02	Nowra
PAR02	Parkes
WAL02	Watcha
WAN02	Wanaaring
WBD02	Walbundrie
VRB02	Urbenville
	CHANNEL 3
CAN03	near Orange
CAS03	Casino
COM03	Mt Kophi
DUN03	Dungog
GIL03	Braidwood
GTH03	Griffith
MDI03	Murrirundi
MNA03	Manilla
MOR03	Moree
MTI03	Tubramurra Shire
PLO03	East of Armidale
RWT03	Hay
SYD03	Sydney
TEN03	Tenterfield
	CHANNEL 4
ALB04	Albury
ARM04	Armadale
CBN04	Coonabarrabran
CRJ04	Carrajung
DRK04	Girard
GLB04	Goulburn
HAY04	Hay
MON04	Kandos - near Mudgee
MUS04	near Narranderah
OGU04	Ogunbi - near Tamworthl
RIV04	Penrith Area
SOU04	near Cooma
THA04	near Broken Hill
TUL04	Tullibigeal
TWH04	Banora Point
WAN04	Mt Wandera
WAR04	Warialda
YNG04	Young
	CHANNEL 5
	EMERGENCY REPEATERS
BIN05	**Katoomba**
BKE05	**Mt Gunderbooka**
CAP05	**near Tenterfield**
CHN05	**Charlestown**
COR05	**Corowa**
FOR05	**Mount Tallabung**
GLB05	**Goulbourn**
JIN05	**Jindabyne**
MTS05	**Narromine**
MTU05	**S-West Slopes, East River**
OXY05	**Bourke**
ROB05	**Illawarra**
SYD05	**Sydney**
TAM05	**Tamworth**
TBO05	**Mt Talbingo**
	CHANNEL 6
BAR06	near Narrabri
BON06	Bonshaw - Q/NSW border
COF06	offs Harbour
COL06	Oakey
GGG06	Glengary
LGW06	Lithgow
MAL06	Mallanganee
MTG06	Bowral
MUM06	Mumbulla Mountain
NAR06	Narromine
NEW06	Sugarloaf Range
ROB06	Mt Robert
TUM06	nowyMountains
WAL06	Walcha
WEN06	Tolarno
	CHANNEL 7
BAL07	Buckombil Hill
BOM07	Bombala
BOO07	Boorat - near Buledelah
COW07	Cowra
GLH07	Glen Lyon
GLI07	Glen Innes
MIL07	Milton
NUN07	Nundle - near Tamworth
SYD07	Sydney
WAL07	East of Walcha
	CHANNEL 8
BAT08	Bathurst
COB08	Cobar
CON08	Condoblin
EUC08	near Eucumbene
GLE08	Glen Innes
GRE08	Cresford - near Dungog
GRF08	near Grafton
KEM08	Kempsey
MER08	near Merimbulah
MUR08	Tomewin
NAR08	Narrandera
ROB08	Illawarra
TBC08	Tooleybuc
URA08	Uralla - near Armidale
WAL08	Walcha
WOY08	Kariong

NORTHERN TERRITORY

Callsign	Town/Locality
	CHANNEL 1
ALS01	85 KM SE of Alice Springs
BPK01	90 KM N of Alice Springs
DRW01	Darwin
KVB01	Double Hill
MLG01	Milingimbi
	CHANNEL 2
ALC02	115 KM NE of Alice Springs
DDB02	Garibaldi Station
SWN02	150 KM NNE of Alice Springs
	CHANNEL 3
ELK03	325 KM NE of Alice Springs
ERL03	185 KM SSW of Alice Springs
MMI03	Mistake Creek Station
	CHANNEL 4
DPW04	70 KM S of Alice Springs
MST04	110 KM S of Alice Springs
	CHANNEL 5
None assigned	
	CHANNEL 6
HEN06	120 KM SW of Alice Springs
	CHANNEL 7
AMB07	85 KM SE of Alice Springs
ASP07	Alice Springs
	CHANNEL 8
None assigned	

The following channels are the input channels for a repeater:

Ch	Frequency (MHZ)	
1	467.425	
2	467.450	
3	467.475	
4	467.500	
5	467.525	** for emergency use only
6	476.550	
7	476.575	
8	476.600	

The output channels are listed below:

In	Out	Frequency (MHz)	
1	31	477.175	
2	32	477.200	
3	33	477.225	
4	34	477.250	
5	35	477.275	** for emergency use only
6	36	477.300	
7	37	477.325	
8	38	477.350	

QUEENSLAND

Callsign	Town/Locality
	CHANNEL 1
ANN01	St Annes Range
BAR01	near Barcaldine
BAT01	Bathurst Heads
BNE01	Mt Cotton
DEL01	Collinsville
HAN01	Hannaford
HUG01	Hughenden
ING01	Inglewood
INN01	Innisfail
MDT01	Middlemount
MOR01	Mt Hope
OWN01	Mt Oweenee
RKY01	Mt Archer
ROM01	Mt Bassett
SPC01	Windorah
TSV01	Townsville
TTH01	Twin Hills
WBB01	Mt Perry
WCT01	Charters Towers
	CHANNEL 2
GLD02	Gladstone
GLN02	Glenden
ING02	Mt Cordelia
JCK02	Julia Creek
LAU02	Laura
MAB02	Broadsound Range
MIN02	Glenlyon Dam
POR02	Drummond Range
SPC02	Bowen
TAM02	Tambo
TAR02	Taroom
TRN02	Quilpie
TWB02	Mt Kynoch
WAG02	Aranyi South
WAV02	Wavell Heights
WBR02	Mt Kanigan
WON02	Cogango Range
	CHANNEL 3
ABC03	Gold Coast
CHI03	Chinchilla
CTS03	Charters Towers
INK03	Mt Inkerman
KIL03	Kilcoy
LAI03	Mt Beau Brummell
MBO03	Tinana
MTO03	Monto
MTW03	Mt William
PCC03	Edward River
SPR03	Springsure
VHO3	Mt Isa
	CHANNEL 4
BBG04	Sloping Hummock
DIP04	Double Island Point
EID04	Eidsvold
GDI04	Goondiwindie
HOP04	Rockhampton
IPS04	Ipswich
JER04	Jericho
MBH04	Moranbah
MOW04	Darling Downs
TSV04	Townsville
VHN4	Expedition Range
VHW4	Cannonvale
	CHANNEL 5
	EMERGENCY REPEATERS
ABC05	**Springbrook**
BNE05	**Mt Glorious**
CEM05	**Clermont**
FSB05	**Mt Goonaneman**

GEM05	**MtWolvi**
ING05	**Mt Cordelia**
MIL05	**Commodore Peak**
QBM05	**Darling Downs**
VHN05	**Charters Towers**
VHP05	**Biloela**

CHANNEL 6

BLK06	Blackdown Tablelands
BRA06	Sea View Range
CBT06	Mundubbera
CHT06	Mt Janet
CLE06	Police Mtn
CNE06	Bergen
DIM06	Mt North Iron
GLD06	Mt Larcom
MIL06	Palardo Hill
MKY06	Gympie / Mackay
PRR06	Clermont
RIC06	Yan Yean
TAM06	Tambo
THG06	hargomindah
VHN06	Wilkes Knob

CHANNEL 7

BIL07	Banana Range
BNE07	Toohey Mtn
CTR07	Towers Hill
DMD07	Clermont
ESK07	Esk
GEM07	Gympie
IND07	Fraser Island
ING07	Mt Mercer
MUR07	Mt England
VHO7	Mt Hutton
WBB07	Mt Watafgan
WRA07	Warwick
YKA07	Mt Slowcombe

CHANNEL 8

AMI08	Amiens
AMP08	Monto
BAL08	Noondoo
BLL08	Blackall
CHN08	Mt Peanga
CHT08	Charters Towers
EMD08	Emerald
HBY08	Ghost Hill
MBR08	Mt Brisbane
NEB08	Nebo
ONV08	Ocean View
TLD08	Atherton
VHN08	Barkly Down

SOUTH AUSTRALIA

Callsign	Town/Locality
	CHANNEL 1
CDA01	Ceduna
MJN01	Oodnadatta
MTR01	Leigh Creek
PRC01	Carrieton (Nth of Orroroo)
PAR01	Adelaide (North)
TYN01	Oodnadatta
VLA3	Crystal Brook
	CHANNEL 2
BOR02	Bordertown
BRP02	Orroroo
CLV02	Cleve
MYP02	Myponga
VLA4	Kingoonya
	CHANNEL 3
ADL03	Adelaide (Central)
ALN03	Yunta
BLN03	Blinman, Flinders Ranges
CTR03	Moonta
KBY03	Port Elliot
UNO03	Port Augusta
	CHANNEL 4
BLF04	Port Pirie
BAR04	Nuriootpa
KOK04	Lake Gairdner West
NAR04	Lucindale
PKI04	Kangaroo Island
	Leigh Creek (North East of)
	CHANNEL 5
	EMERGENCY REPEATERS
ADL05	**Adelaide suburb**
BEE05	**Crystal Brook**
EUD05	**Eudunda**
MNT05	**west of Woomera**
MTG05	**Penola/Mt Gambier**
	CHANNEL 6
LST06	Elliston (Eyre Peninsula)
NON06	120 Km West of PtAugusta
REN06	Renmark
SNO06	Snowtown (nearPt Pirie)
TIN06	Coonalpyn
WKI06	Kangaroo Island
WLG06	Tarcoola
WLP06	Willpena
	CHANNEL 7
CLR07	Clare
MTG07	MtGambier
MUT07	south of Cockburn
UNO07	Kyancutta
VLA7	Streaky Bay
WIL07	Hawker
YKP07	Warooka
	CHANNEL 8
BRYY08	Burra
MBV08	Lobethal/Murray Bridge
MTA08	Port Augusta
PTL08	Tumby Bay/Port Lincoln
	Oddnadatta (200 KM SW)
	Yalata (187 Km N/W of Ceduna)

TASMANIA

Callsign	Town/Locality
	CHANNEL 1
DEV01	Devonport
FIS01	Flinders Island
SET01	Grasstree Hill
	CHANNEL 2
CHN02	Herring Back
LCN02	Launceston
TWC02	Mt Read
	CHANNEL 3
NEC03	Ben Lomond
	CHANNEL 4
MID04	Millers Bluff
	CHANNEL 5
	EMERGENCY REPEATERS
HBT05	**Hobart**
LTE05	**Fingerpost Hill**
	CHANNEL 6
REC06	Mt Paul
VJA6	Mt Lloyd
WCT06	St Valentines Peak
	CHANNEL 7
CHT07	Barren Tiet
TNE07	Mt Victoria
	CHANNEL 8
BRN08	Burnie
TBL08	Table Mountain
TNE08	St Marys

VICTORIA

Callsign	Town/Locality
	CHANNEL 1
ALX01	Eildon
APS01	Apsley
MEL01	Melbourne
OME01	near Omeo
ROU01	Penshurst
STA01	St Arnaud
WAL01	Walhalla
	CHANNEL 2
BAL02	Ballarat
KER02	Mt Kerang
MAN02	Mansfield
MOE02	Moe
PYA02	Pyalong
	CHANNEL 3
ABE03	South
DEL03	Bombala
HOR03	Horsham
FAL03	Falls Creek
JNR03	near Dartmoor
WBT03	Mt Wombat
WPH03	Weeaproinah
YLA03	Yelta
	CHANNEL 4
ANA04	Mt Anankie
ARA04	Ararat
BEN04	Bendigo
HAW04	Hawkesdale
MCA04	Marambingo Hill
	CHANNEL 5
	EMERGENCY REPEATERS
BAL05	**near Ballarat**
MAN05	**Mansfield**
MEL05	**Melbourne**
RFY05	**Ruffy**
	CHANNEL 6
FOS06	Mt Fatigue
HLV06	Healesville
ECH06	Echuca
BRN06	Mt Concorde
MSS06	Mt Seldom Seen
SWH06	Swan Hill
WAN06	Wangandry
WIL06	Mt William
	CHANNEL 7
BOL07	Mt Bolton
BND07	near Bendigo
MEL07	Melbourne
MOR07	Mt Shadwell
MVL07	Mt Gordon
SHP07	Shepparton
TAL07	Mt Granya
	CHANNEL 8
ART08	Safety Beach
DUN08	Cavendish
HAR08	Mt Alexander
MCN08	Mt Cann
MYR08	Mt Porepunkah
TER08	Mt Terrible

WESTERN AUSTRALIA

Callsign	Town/Locality
	CHANNEL 1
COL01	Collie
DEN01	Denmark
GER01	Geraldton
KAM01	Kambalda
KAT01	Katanning
KLB01	Kellerberrin
LEN01	Leonora
MIA01	Mia Mia Station
MKT01	Poison Hills
PER01	Perth
WAR01	Warakuna
WIK01	Wickham
	CHANNEL 2
BIN02	Bindoon
BUN02	Near Bunbury
CAR02	Carnamah
KAL02	Mt Charlotte
LYN02	Lyndon Station
MRD02	Menredin
VLN5	Mt McLure
WLP02	Walpole
	CHANNEL 3
ALB03	Albany
CLA03	near Carlotta
NOR03	Nannup
PER03	Roleystone
VET03	near Bardoc
	CHANNEL 4
BYB04	Dinninup
ESP04	Esperance
GNG04	Lancelin
KUL04	Kulin
MTB04	Cranbrook
NEW04	Newman
	CHANNEL 5
	EMERGENCY REPEATERS
PER05	**Orange Grove**
MTR05	**Mt Barker**
VLN6	**Perth**
	CHANNEL 6
DAR06	Darkan
JUR06	Mt Lesueur
MGR06	near Margaret River
MNP06	Albany
MTS06	Mt Solus
VKM06	Wyalkatchem
	CHANNEL 7
BDG07	Bridgetown
C0007	Coolgardie
MGR07	Augusta
MTB07	Stirling Ranges
PIN07	Pinjarra East
VRK07	Mt Bakewell
	CHANNEL 8
MAN08	West Manjimup
MSA08	1 Saddleback
NCM08	Kalamunda
QUN08	Quinorlup
RVT08	Ravensthorpe

A.C.T.

Callsign	Town/Locality
	CHANNEL 1
CBA01	Canberra (Portable)
	CHANNEL 2
CBA02	Isaacs Ridge
	CHANNEL 7
GIN07	Mt Ginini
	CHANNEL 8
CBA08	Isaacs Rid

REPEATER UPDATE

To maintain the UHF repeater list in an up-to-date manner requires the co-operation of repeater owners and local users. Please ensure that when an error is found, or an update is required, that you contact:

Trevor Colwell, ACBRO Inc.,
PO Box 170,
Walkerville 5081, South Australia

who will ensure that this information is included in the next repeater list.

AUSTRALIAN ASSOCIATION OF CITIZEN and BAND RADIO

ACBRO INC

NEW PROPOSALS FOR CB CHANNEL USE SOUGHT

Two groups around Australia have been investigating possible additional uses of CB radio in their activities. One is the Australian CB Packet Radio Group (**ACBPRG**), and the other is the Australian National Four Wheel Drive Council (**ANFWDC**). The ACBRO committee is currently looking at the proposals and seeking comment from members and CBers generally.

Firstly, the ACBPRG's position: in a period when **CB Action** published information about the possibility of using packet radio on the HF band of the CBRS, and stimulating interest in this unique form of hobby, the ACBPRG was seeking approval from the authorities to have one channel on HF and one channel on UHF in the CBRS set aside for this purpose. The resultant knock back prompted its seeking support for a review of such a decision.

Its approach to one of ACBRO's affiliated clubs (in the form of a letter reproduced here) was similar to that sent to others in the hope of promoting support. They outlined a little about packet radio for the uninitiated, and enclosed a copy of the SMA form RF51 (application for a review of decision), being refusal to give permission to supply a non-standard device (section 174).

The group's reasons outlined on the form were "Times are changing. Computers are becoming a very big part of radio communications. This is another form of communications of the modern times".

The following letter is reproduced to be informative and offer opportunity for any who would wish, to contact the ACBPRG direct.

"We are writing to your club to let you know that we are putting forward a request to the Spectrum Management Agency (SMA) for an application for review of decision (form rf5) Jul '93). This application is for the use of packet radio on the CBRS frequencies. We want SMA to allocate two channels for the use of packet radio. One of these channels will be on 27 MHz and the other will be on the UHF CB allocation.

"We will not use packet on the repeater system (ie channels 1 to 8 or 31 to 38), as we know that this is where the standard repeaters operate on. We have 226 members so far in our group and it is getting bigger all the time.

"The reason for us writing this letter to your club is to let more clubs and CBers know that we are out here. We would like to hear from your committee or any of your club members if they are interested in running packet radio on CBRS.

"It will be there for all people to use and it will be used for messages and CB mail to and from each other. We hope that we will be able to help any club or person out with the information they might want to know about packet radio and what they will need to know about it.

"We are also putting together a help list for what clubs or private stations might want to do on a packet radio BBS — ie club news, what is coming up next for the club, next meetings, messages for other club members, a what's on type of thing, and anything else you or you club might want to do with it.

"We also have programs that we are giving away to any station wishing to get into packet radio. Thank you very much for your time in this matter".

The letter was signed Peter Brennan, Secretary, Australian CB Packet Radio Group.

The ACBRO was asked to respond to the ACBPRG on behalf of its affiliate, and the response was given only after some consideration, because it had not previously been approached by any of the membership showing enthusiasm for this medium. The committee did *not* favor any change to regulations governing the CBRS to provide for other than voice communications.

The letter of reply also went on to say "...such a decision is a current feeling which may be changed as circumstances dictate, and in acknowledging this point [the ACBRO] will endeavor to stimulate discussions on the subject of packet radio in the CBRS where the membership could possibly contribute input to have such a decision changed."

ACBRO further offered the suggestion that any success in getting packet approved for the CBRS would firstly require the establishment of a lobby group to push for an amendment to the current regulations. These presently provide for the CBRS to be a voice-only medium. Following such an approach the SMA would be in a position to give favorable consideration to such a request, if changes to the use of the band were modified to not exclude modes such as the packet traffic. The ACBPRG may well be on the right track in stimulating interest in packet radio, following which, if it is successful in getting the numbers in favor, clubs and organisations such as ACBRO would be obliged to act on their members' wishes, and proceed with any form of lobby to achieve having one channel on each band made available exclusively for packet radio.

A text from the page five editorial in the last issue of **CB Action** warrants consideration if stimulation of interest in Packet is to be pursued. It said:

PACKET — WHERE ARE WE AT?

"Basically I guess we're nowhere.

"The small number of letters received when we asked for an indication of reader interest in this facet of hobby radio was minimal and not sufficient to continue along that line.

"It's a pity, as packet radio has a lot going for it in terms of experimentation and information.

4WD club's road channel

The Australian National Four Wheel Drive Council (**ANFWDC**) held its bi-annual conference at Tallebudgera in Queensland recently, and radio matters were on its agenda. A lot was said about its radio network on 5455 kHz, where the group is showing a lot of initiative in respect to its members' safety in the outback of Australia.

Added to this was the fact that many of its group are equipped with CB radios. For these, a recommendation is being made for the members, when on the road, to monitor a common channel. A notice to members outlining the arrangements is reproduced here:

Common Outback CB Channel

It was decided at the conference to adopt a common channel for use by club members when travelling in the outback. The two reasons for the decision were:

Safety: It is far preferable to meet up with other road users in the vicinity via the medium of radio rather than discovering each other's presence when two vehicles meet travelling in opposite directions at the top of a sand dune.

Social Contact: On many occasions members from different clubs may be within a few kilometres of each other but may be totally unaware of the presence of the other party due to being on different radio channels.

The concept of a common channel is based on the road channels which exist on channel 8 (27MHz) and channel 40 (UHF). While this network provides a good starting point if you are trying to find out road conditions or the like, it does tend to suffer from congestion due to the numbers of transports, particularly on the major highways. The outback channel is designed for those wishing to contact other travellers but who do not particularly wish to keep in contact with general highway traffic.

When choosing a channel suitable for our needs we had to look at existing channel usage (repeaters, call channels, emergency channels, etc) and it was decided that Channel 10 on *both* bands would be suitable in that it provides no conflicts on either the 27 MHz or UHF bands. Note that operation on 27MHz is restricted to AM only.

The recommendation will be circulated to members of CB clubs, caravan clubs, and the like in the hope that it will eventually become a true outback channel which will provide an easy means for making contact with other road users travelling in outback areas.

Of course, clubs are under no obligation to adopt the common channel in lieu of their existing channel, but it is hoped that at least one vehicle in a convoy will monitor the common channels to check for other road users in the area. These details had been passed on to ACBRO with view to having their members informed of these arrangements, and discussions will be held on the pros and cons of such a move as this matter appears on the ACBRO committee agenda. Both past and present ACBRO committees have shown opposition to the scarce channels on both of the CBRS bands being used for 'exclusive' purposes. However, prior to any discussions being held on the subject, an ACBRO spokesperson said "...I can see very little difference between the arrangements made by the four wheel drive clubs and the many CBers who 'sit' on a channel to avoid the hum-drum that is often on the calling channel..."

He went on to say that he would be surprised if the current ACBRO committee would voice any objection to this move by the ANFWDC, whose motives were to establish safety and common sense.

Any reader comments that may be forthcoming on this subject to ACBRO will be shared with the ANFWDC. ACBRO is currently liaising with the ANFWDC's national radio officer.

REPEATER LIST APPRECIATED

The current ACBRO mail clearances have been swelled with many letters from readers with complimentary comments about the updated repeater list now published in these pages. Also the many letters and notes offering information about repeaters is further evidence that the list is appreciated, and the writers are keen to see accuracy portrayed.

Some of the information received is not totally qualified or is somewhat inadequate because of lack of detail, such as a repeater in a town where no callsign is provided. And, of course, ongoing confusion exists where some prefer to recognise a repeater by its actual location in preference to the major town or area it serves.

Thus the ACBRO controller will continue to be most perplexed as he sits laboriously studying such lists of names and places around the continent that are totally foreign to his modest geographical mind.

Therefore... readers are advised that the repeater list in this issue contains some amendments thought appropriate from information received. We'd ask that if you find any errors please let us know!

ACBRO ASSOCIATED CLUBS

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Plantaganet Rep't Institute of WA	PMB 306, Cranbrook, WA 6321
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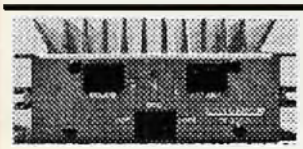

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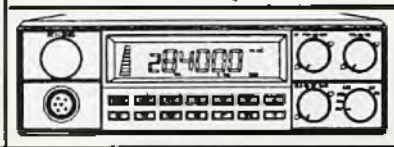

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EQUIPMENT REVIEW

Jack Hayden looks at the...

...MKII STATION-MASTER ANTENNA

Quite often our operating environment dictates the type of base antenna we use at home, as space is the critical factor when deciding which base antenna to use and where to put it. By far the most popular CB base antenna in the old days was the 'Ringo base' followed by the base coil-loaded 'Stationmaster' series which is very popular.

However, in the 1990s we have seen a switch to the sealed loading coil base antennas in the tradition of the Itron, Megatron and Benelec for starters. Not to be outdone, Stationmaster has joined the race with the release of the **Stationmaster MkII** and, like the others, is already pre-tuned for no SWRing hassles and has a sealed loading coil.

Since the debut of the CRS (Citizens Radio Service) in Australia back in the 1970s, there have been quite a variety of base antennas unleashed on to the market. Some were absolute raving success stories... whilst others were little more than piles of aluminium junk that often *looked* far better than they actually worked on air! Some were plagued by massive SWR problems, others were 'deaf' on receive, and there were the ones that just wouldn't 'get out' despite all efforts.

Over the years arguments have flared over base antennas — groundplanes over the Ringo versus the Stationmasters... blah blah blah!

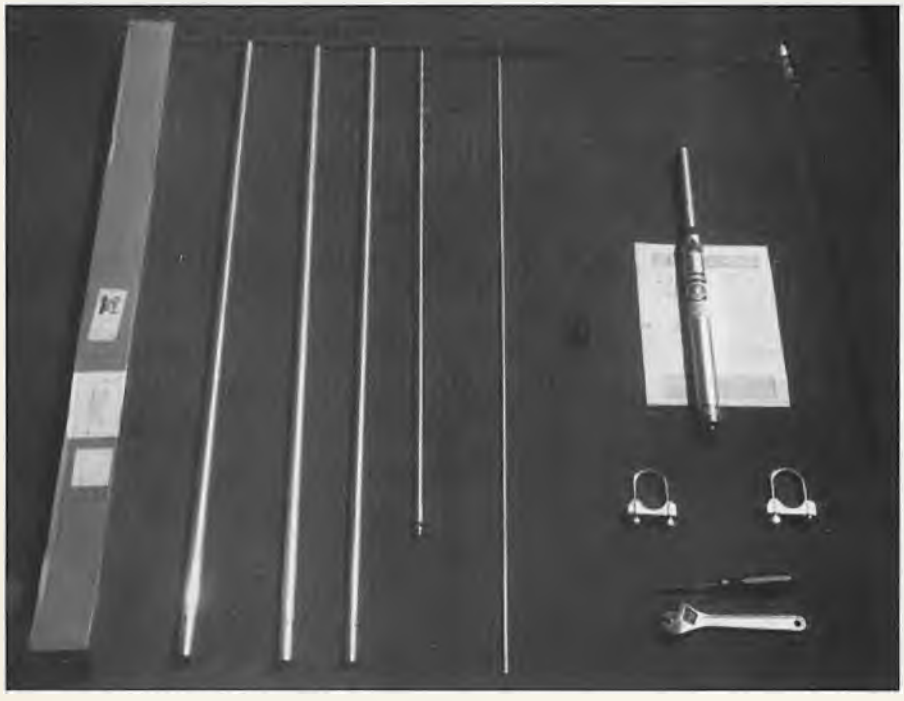
It still goes on today and it probably always will. In reality, as with anything in life, you get what you pay for in most cases and antennas are no exception to the rule.

With any good antenna some of the key factors will lie with *you* — how you assemble it, where you mount it and what coax you run, will all contribute to the success of the antenna.

A cheap price doesn't always mean a cheap and nasty antenna. Some el-cheapos in the past have turned out to be great DX antennas.

On the other hand, some other expensive 'tarted up' jobs are nothing but huge dummy loads not worth the price of the aluminium they are made of.

New antennas always create some sort of interest, especially amongst the DX community which always strives for the best in antenna systems. However, it is not too often that we see base antennas reviewed in CB Action, and I was most delighted to take up the offer in reviewing the new Stationmaster MkII half-wave base antenna supplied to us by Mr Dean Sando, manager and partner of **D & G Antennas**, based in the Sydney suburb of Kingswood.



Compact and light-weight — Ideal for DXpeditions...

The Stationmaster MkII sample antenna sent to me survived the Australia Post 'Ordinary Mail' obstacle course with flying colors.

Arriving in a small well-packed box just 44 inches in length and tipping the scales at 1.883 kilograms it only attracted $6.45 in postage, so it's ideal for mail orders.

The first thing that occurred to me as I took delivery was the neat and tidy packaging.

Sheer DXpedition material here I thought; it breaks down very well and is not at all heavy or clumsy to handle in any respect — just perfect.

The internal packaging was also top-notch stuff, as everything was sealed up in plastic to prevent 'escape' should the box get a hole or two knocked in it during transit.

Inspecting the contents I found everything to be in order, nothing missing, nor anything extra (some antenna companies often include extra screws or nuts in case you lose one or two whilst assembling).

Don't laugh! A few years back I received a beam antenna with two clamps and five screws missing from the kit. So check that everything is in place before rushing to throw it all together and get on air.

Quality materials

I was most surprised to see the quality of the clamps and screws provided. They were of really good material. Actually, it reminded me of Cushcraft amateur radio antenna components which are world-renowned for their quality.

The provision of stainless steel self-tapping screws which came with the test antenna are a must these days — espe-

cially for city dwellers where pollution in the air corrodes antenna fittings quickly. Also the muffler-type antenna-to-mast clamps are of the quality variety which fit snug and secure, and are not the junk clamps I have encountered with quite a number of CB base antennas.

Instructions... clear with no fuss

The instruction sheet is clear to read and, being Australian, it is in the Queen's English, unlike some radio accessories out of South-East Asia! It is very distinct with no hype, drivel or other gibberish set to confuse rather than amuse you. The bottom line is it's well laid out and to the point.

Good sturdy tubing

The aluminium tubing used is good robust T81 high-tensile telescoping stuff, which takes quite a bit of abuse from klutzes putting it together and from storms when you finally erect it! My wife was appointed assembly engineer and found the tubes fitted together quite easily, and the sachet of petroleum jelly provided to make the fittings come together smoothly was not required at all (a kind gesture nonetheless).

The whole assembly operation of the main sections was conducted without any complaints at all. Each section had the 3mm hole drilled accurately for the self-tappers to go and were a good firm fit... but *don't* over-tighten them!

However, I was a little vexed at seeing those horrific 'Philips' head self-tappers supplied but, then again, being of the stainless steel variety they should take quite a bit of punishment.

I usually find the ordinary Philips head screws have quite a short life expectancy on components which require routine maintenance as their survival rate is very short.

Anyway, they don't take too much abuse from rather old or worn screwdrivers before they 'chew' out and thus have to be *drilled* out!

Hassle-free assembly... Even the XYL can do it!

The whole antenna was assembled in a leisurely 10 or so minutes, with no huffing or puffing at all.

It was so easy that my wife required no assistance at all during the task and, with all due respect, if she can do it then *anyone* can as this lady has virtually *no* interest in radio at all.

Looking at the finished product, I found it to be void of any faults. Most antennas I have encountered over the years had rough edges left after cutting, a lack of weather plugs or caps, a poor coax feedpoint socket placement, plus other little annoying things. Not so with the Stationmaster MkII. There are no rough edges or short cuts taken here.

Another kind gesture was the inclusion of a coax plug/socket plastic weathershield — an added bonus to keep moisture out.

Although this shield accommodates only the skinny RG-58U type coax, a quick snip with sharp scissors should see it fit the larger RG-8U or RG-213 types of cable.

As mentioned, the whole assembly took around 10 minutes and required a minimum of tools, which of course you provide.

You will need two screwdrivers, Philips head and standard, where the standard is required for the SWR adjustment for the antenna tip. If you wish to use it on the 40-channel block there is a handy black marker near the bottom of the tip tube indicating its desired securing position for standard 40-channel operation.

Simple, no fuss operation, no messing about pushing a small sleeve around base loading coils or the like.

Versatility... 2MHz bandwidth

Having a whole 2MHz of bandwidth makes this antenna more than ideal for amateur, marine and CB applications. Not having a 27MHz marine band license nor radio I cannot vouch for its performance on this section of the band, but if it is anything like my amateur and CB findings it should serve you well on marine 27MHz too.

On the CB channels

Using a borrowed Pearce Simpson MK-2 Bengal base I found the Stationmaster MkII to be a good listener across the channels in comparison to my half-wave dipole and three-element 27MHz beam.

Unlike some over-sensitive base antennas, the Stationmaster MkII didn't drag in excessive static or other crud.

The next thing I required was a contact with a station or two to run some antenna switching tests so that signal reports could be noted and compared. As usual, the Melbourne channel 35 resembled that of the Sydney version (ie it was full of tugboats, perverts, deviates and phantom farters and, of course, the resident music man was there too as *every* city has one on CB!).

So I decided to check the channels to see if there was any intelligent life to be found. I soon came across Terry in Geelong chatting to Graeme in Seaford about fishing so I quickly broke in and was obliged with some reports.

Terry gave the Stationmaster MkII a five by eight report, and when I switched to the dipole I dropped just under three S-points to five by six and a bit.

Not bad, a near three S-point gain over the dipole mounted at the same height as the test antenna.

Graeme across in Seaford gave the test antenna five by nine steady and the dipole five by six, so again a three S-point gain over the half-wave dipole.

☞

So both reports were very encouraging and, in case you are wondering, both stations were using the 'original' Stationmaster antennas.

Just to be different I popped down to 'Animal Mode' (AM) for another signal report comparison.

Here I found Anastasia in Caulfield chatting about school projects to Michelle at Richmond.

Anastasia gave me a five by nine plus 10dB on the test antenna and I dropped to five by eight when the dipole was used.

Not too bad again, around two plus S-points again. Michelle couldn't give an accurate radio check as the S-meter in her brother's set wasn't working, but she said I was 'really loud'. (Now there's a highly-technical report for you!!)

Checking the SWR over the entire 40-channel block I found the Stationmaster MkII to be an excellent 1.1:1 on the top 30 channels and just moving off the 1.2:1 mark on the lower channels one to 10.

This proves that the marker on the tip of the antenna is in the correct place! I used both the CB radio SWR meter and an external Hansen meter to compare readings.

10 metres CW

The SWR had crept up a wee bit by the time I tuned up to 28.025 MHz CW, but after all, the antenna was still at the 40-channel CB setting. Even so, the SWR was still acceptable at 1.6:1 and the Yaesu FT-1000 was introduced in favor of the Bengal base rig.

Although the band was near dead a brisk CQ DX netted a W6 in Los Angeles, California, who gave me an RST (Readability, Strength, Tone) of 559 on the test antenna.

As for the half-wave dipole, I dropped right back to an RST 529 report, and was troubled with fade, so the report could be considered 'roughly' similar to the CB tests as conditions were unreliable.

After I signed with the American a KP4 in Puerto Rico called and quickly gave an report of RST 599 in favor of the review antenna and an RST of 559 peaking 569 in favor of the dipole. So again we arrive at the roughly three S-point gain over the dipole.

For the record, the dipole was polarised in the direction of North America, so it was a reasonable comparison and the SWR on the dipole was only 1.2:1.

29MHz FM repeaters

The excellent report from the KP4 on CW was a good indicator that I may be able to access some 29MHz repeaters in North America, so I quickly went to check 29.6 FM, the call channel. As usual, there were some Californian 'Kilowatts' calling CQ, so I checked the Florida repeater (nothing heard) so a quick carrier was dropped with tone burst and the repeater appeared along with a SWR of 3.9:1 on the test antenna.

That highish SWR was not surprising as the antenna was still tuned for 40-channel CB! Quickly the antenna was pulled down and the tip dropped about one foot (maybe a touch more) and the antenna erected again. Bingo, the SWR was a fair 1.5:1.

Checking the repeater again I gave a quick call and was responded to by a K4 in Miami who said I was 'riding' the repeater quite well from VK3-land.

The repeater was fading a little and was five by six at best. When I switched across to the half-wave dipole I couldn't hold the repeater open, even with the FT-1000's auto ATU switched in to pull the SWR down.

So it was back to the Stationmaster MkII to wind up the contact and thank the gentleman for his time and patience.

A quick excursion to 12 metres...

Taking the antenna down I extended the tip out as far as it would go and locked it into place.

I then selected 24MHz, which is known as one of the 'WARC' bands on amateur radio.

Being a good two Megahertz away from the Stationmaster MkII's 2MHz bandwidth I would naturally expect the SWR to be 'sky high' and it was — well in to the red on the meter.

However, the auto ATU from the FT-1000 soon fixed that, and I placed a quick call out on CW and netted a JDI on Ogasawara Island who gave a RST of 539 — not too bad considering he was only 559 and running a beam!

Soon after I worked three more Japanese stations and received favorable reports as near as dammit to the reports I gave them.

Of course, the antenna was not running to its full capacity at 24 MHz as the auto ATU was taking care of the SWR mismatch, but the reports received were quite healthy considering the antenna is not meant for 24MHz!

Conclusion

Whilst on the subject of SWR, Dean of A & G Antennas, commissioned the Australian Defence Industries people to run a series of SWR tests at St Marys, NSW, against three other similar CB base antennas.

By looking at the graphs supplied to Dean by ADI one doesn't have to be a Rhodes Scholar to see that the Stationmaster MkII had the best SWR levels in the range 26.000MHz to 28.000MHz.

Little wonder why the antenna required only a quick adjustment to work effectively as a DX antenna on 29MHz FM amateur radio!

So there you have it, a bloody good DX antenna still following the well-established good name of the Stationmaster series of antennas.

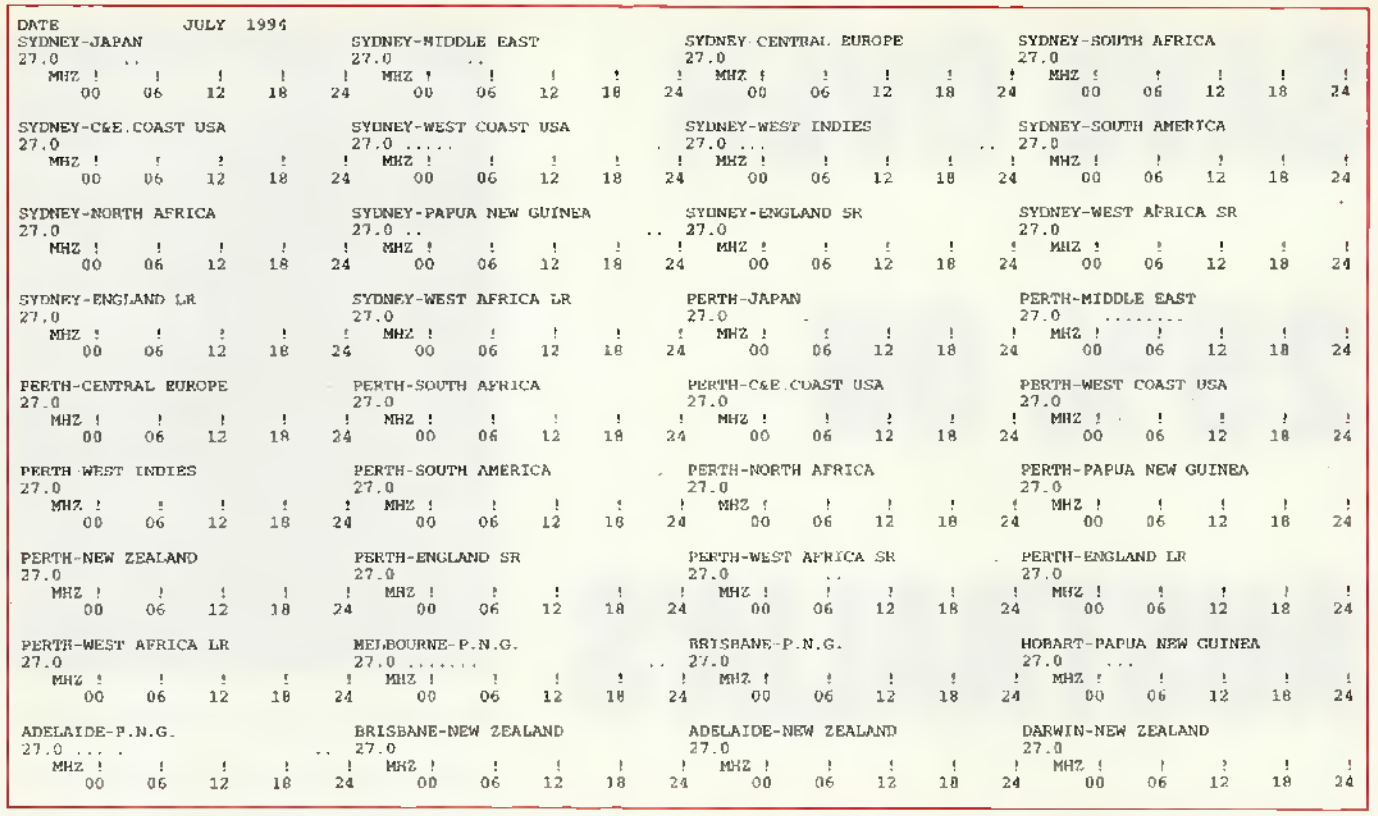
It is a well-made antenna, and for a retail price of approximately $75 it compares well with others on the market. I personally think it represents excellent value for money.

Overall, this antenna should not be overlooked when considering a replacement, additional, or first antenna.

The Stationmaster MkII is a good all-rounder, compact enough for DXpeditions and versatile frequency-wise, should you have requirements to go elsewhere on 11 or 10 metres.

My sincere thanks go to the team at D & G Antennas for supplying the test antenna for review.

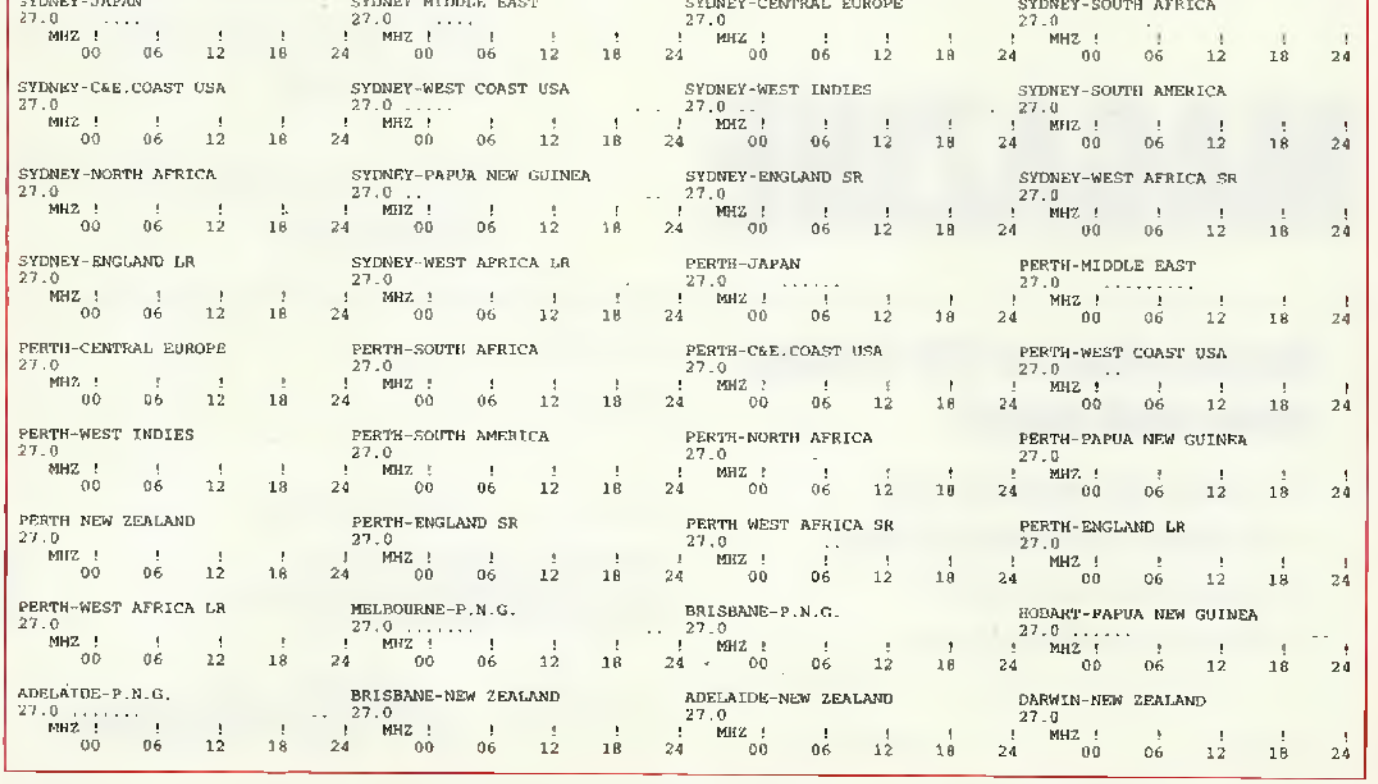
73 de Jack Haden, VK2GJH/3.



These GRAFEX style predictions present in pictorial form the expected HF propagation conditions between Australia and a number of 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 (UTC) from 0000 to 2300, reading left to right. A GRAFEX symbol represents the predicted propagation conditions for 11m at a particular time.
GRAFEX Prediction Charts are supplied courtesy of the **Ionospheric Prediction Service, P.O. Box 5606, West Chatswood, NSW 2057**
IPS offers pre-recorded telephone information on (02) 269 8514.

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 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 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.



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