JANUARY/FEBRUARY 1990 $3.20

CB Action

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Sydney-Hobart Yacht Race Frequencies

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CB Action

Managing Editor:
Len Shaw VK3NLS

Production Manager:
Paula Parker

Editorial Office:
603-611 Lt. Lonsdale St.,
Melbourne 3000
Postal — GPO Box 628E,
Melbourne 3001
Phone: (03) 601 4222
Fax: (03) 670 9096

CONTRIBUTORS

Russell Bryant
P.O. Box R16,
Roselands, NSW 2196

David Flynn
P.O. Box E160,
St. James, NSW 2000

Rod Fewster
P.O. Box 29,
Kallangur, Q 4503

Greg Towells
P.O. Box 514,
Toukley, NSW 2263

Rob Williams
P.O. Box C111,
Clarence St P.O.,
NSW 2000

Jack Haden
P.O. Box 299,
Ryde, NSW 2112

Ken Reynolds
1290 Nepean Highway,
Cheltenham, Vic 3192

Stephen Newlyn
24 Justinian St,
Elizabeth Downs, SA 5113

Patrick McDonald
P.O. Box 357,
Round Corner, NSW 2158

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TOWARDS 2000 - well sort of....

Well, there goes 1989 and another decade, what if any were the highlights so far as CBers were concerned...?

For openers (and at least for myself) the highlight has to have been the way the DX has been building up for the past few months. Cycle 22 is in full swing and the latest predictions are that it will continue to get better for several more months. Even after it peaks the conditions will continue to be excellent for another 12 months or so and although the DoTaC folk have made life difficult for many operators above 40 channels there's been plenty to work within the legal limits.

The low point of the year (decade maybe) has been the introduction of on- the-spot fines. Now these didn't sound all that bad when first announced, but, with the benefit of a few month's thinking time the introduction of these 'infringement notices' spells major trouble for those unfortunate enough to be lumbered by an R.I. I suggest in the strongest possible terms that you read the article in this issue on this most recent of DoTaC moves...I think that most of you will receive a very nasty shock.

IT'S BEEN A GOOD YEAR

It's been a good year for the magazine.

We have introduced new areas of communication and expanded on old ones. We now have strong, interesting columns and articles which, while not yet quite 'DC to Daylight', give our readers plenty of information and advice on everything from 27 MHz AM to the latest in scanners, from UHF to HF...and most things in between.

This issue has sufficient advice on frequencies to listen to during the Christmas-New Year period to keep you all off the streets for weeks at a time, particular thanks to Russell and Rob for the information on where to listen for the Sydney-Hobart yacht race activity and on a slightly unhappier note the frequencies likely to be in action during the bushfire season.

In fact, right about here, my thanks to all our contributors for their tremendous assistance throughout the year. As I just heard David Flynn say, "don't send thanks just send money", but, these guys go out of their way to help you the reader each and every day...and I can assure you that they'll never get rich on what we can afford to pay them. All of them spend countless hours replying personally to the many letters and enquiries they receive and keep in mind that being a contributor to CBA is not their full time job...it's a strictly after hours operation.

Thanks also to our advertisers and thanks to you for buying from them — while it's not always a mutual admiration society — the advertisers help us to stay in business and our readers do the same for them. Particular thanks to the companies which have supplied prizes for the Wordmaze competition — they've been great prizes and much appreciated.

Thanks for your support, have a great and safe Christmas-New Year, keep away from the RIs, and I hope that Father Christmas brings you just what you want — me, I'm holding out for an IC-781 or at least an R7000 — have fun.

CB Action

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Kate Shaw
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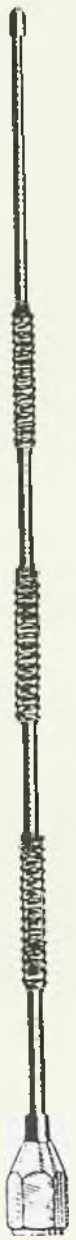

FEATURES

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If you pay an on-the-spot fine

YOU WILL HAVE A CRIMINAL RECORD!

So your're not too worried about the recently introduced 'on-the-spot' fines for a breach of the Radiocommunications Act...? So you think that you'll just pay the money and forget about it...? This report by Ron Lear is MUST reading for all CBers.

Referring to your article on page 14 of the Sept/Oct issue of CBA re. the introduction of 'on the spot' fines. With due respect to Mr. Fewster's predicting ability, one has only to read the Acts & Regulations to equal his ability.

The Radiocommunication Act No. 130 of 1983 was asserted to on 22 December 1983, but, did not come into operation until the date of proclamation of 20 August 1985. Amending Act No. 165 of 1984 introduced and added section 93(2A) (a),(b) and (c) which are the details of penalties as given on page 15 of CBA.

Amending Act No. 36 of 21 May 1988 added to that list...section 65(9) which appears to have been misread by Mr. Fewster who has called it 65(g) and later 65(a)..neither of which exist in the Act.

Statutory Rules No. 151 of 1987 called 'Radiocommunications (Penalties) Regulations' dated 29 June 1987 and notified in Commonwealth of Australia Gazette on 3 July 1987, introduced Infringement Notices for offences prescribed under the Act and prescribed penalties in accordance with subsection 93(2A) of the Act.

Still with us..? Read on...it gets better.

All these documents are available from the Commonwealth Government Printer or at most libraries...they are recommended reading because it is here that the DoTaC folk got very sneaky indeed.

In the Annual Report of the Department of Communications for 1986-1987, on page 40, can be found the following (refer to panel 1).

Under the Radiocommunications Act 1983 regulations were made in May 1987 which will allow inspectors to issue fines in lieu of prosecution in much the same way as on-the-spot traffic fines are issued. The level of prescribed fines range from $50 for a simple offence to $2000.
During 1986-87 1051 official warning notices were issued by inspectors for breaches of licensing conditions. Two Citizen Band Radio Service licences were suspended, the first licence cancellation notice under the Act was served on an amateur radio operator, and six prosecutions resulted from failure to comply with warnings.
In the period 1986-87 71 charges were laid under the Act which resulted in the prosecution of 58 offenders. Twelve prosecutions were made in Victoria, 35 in Western Australia, six in Queensland, four in NSW and one in South Australia. The majority of offences involved the use of unlicensed transmitters. Fines imposed by the courts for unlicensed operation ranged from $20 to $450 and confiscation of the operator's equipment.

It can be seen that the Department says May 1987 as the date the regulations were made, ignoring the fact that they must be gazetted (as mentioned earlier this was in fact 3 July 1987). It is not revealed whether any of the 1051 issued notices attracted a fine and I believe they did not, as I know of a number of people who received a 'Report of Irregularity', Form DOC 168, which warned of breaches of the Act having been commited and that prosecution could follow. This could be the six prosecutions mentioned in the Annual Report.

The plot thickens in the Annual Report of the Department for Transport and Communications for 1987-1988 where, on pages 90-91, the following appears...(refer to panel 2).

Regulatory actions in the interests of radiocommunications users. The Department attempts to deal rapidly and efficiently with unlicensed or unlawful operators. Misuse problems range from minor irritations and disruptions of business activities to threats to life where essential services are involved.
Regulations under the Radiocommunications Act have been enacted to enable fines to be levied in lieu of prosecution for a range of breaches of the Act. The proposed system, scheduled to be introduced early in 1988-89 will be similar to that used for traffic offences.
Typical fines-in-lieu range from $50 for an unlicensed Citizen Band radio to $1000 for an unlicensed base station in an extra high density area.
During 1987-88, 1715 official warning notices were issued by inspectors and 81 offenders were prosecuted for breaches of the Act. In all, 37 prosecutions occurred in Victoria, 13 in Western Australia, five in Queensland, 19 in NSW and seven in South Australia. Most offences involved use of unlicensed transmitters or breaches of licence conditions. Fines imposed by the courts ranged from $100-$1000.

It can be seen that 1,715 'warning' notices were issued and 81 prosecutions resulted. In neither yearly report is it stated how many of the prosecutions resulted in fines or how many were lost by the Department.

We now come to the Media Release 10/89 dated 24 July 1989 which states that the Minister for Transport and Communications Support, Mrs. Ros Kelly, announces the introduction of on-the-spot fines from 1 August 1989 by the issue of a 'Radio Infringement Notice' to offenders.

So we get back to DOC 53 in Mr. Fewster's light-hearted article. He forgot, or was unaware, of one very important point. There is no such thing, under the Radiocommunications Act, as a 'minor breach'.

Any offence you commit under this Act is a **CRIMINAL OFFENCE** and will

appear on your record **FOR LIFE** if you are convicted. It will affect your future in every possible way in respect to obtaining work, travel and future licences. When applying for work, most companies ask whether or not the applicant has any criminal record and if you are convicted under the Radiocommunications Act for any offence — even one so small as not having a licence — you must answer yes as **YOU WILL HAVE A CRIMINAL RECORD !**

Read the Act and the associated Crimes Act 1914 for offences against a Federal Government Act.

I cannot stress this enough. If you are unfortunate enough to cop one of these seemingly minor on-the-spot notices and you pay the fine without making the DOTC inspectors prove their case, **BEYOND ANY REASONABLE DOUBT**, before a court of law, then you are depriving yourself of all the benefits that the law entitles you to have by way of its protection.

Form DOC 53 is the greatest example of the Department not telling the whole story that I have yet seen. It says,'Short Title of Offence' and goes onto section 23(1)....then read the Act !

Section 23(1) states: "A person shall not, without reasonable excuse, operate, or have in his possession for the purpose of operation, a radio-communications transmitter except in accordance with a transmitter licence or temporary permit". Section 23(2) then goes on to list what comprises a reasonable excuse, acceptable by any court of law, but, certainly not available if you throw away your right to it by admitting your **CRIMINAL** offence by paying the fine demanded.

Similarly with the **CRIMINAL OFFENCES** as listed on the form and in Section 93(2A) in the article. When the Radio Inspector says in a friendly manner that he will just ask a few questions and write them down with your answers, then **SAY NOTHING, ADMIT NOTHING and above all SIGN NOTHING.**

Then obtain legal advice as to your situation. Chamber Magistrates in local courts are free as are many local Justice Centres.

This is **NOT** like a traffic ticket, the offence is commited against the Federal Government and it is a **CRIMINAL OFFENCE.**

I believe that it is a blatant attempt by a bunch of public service cowboys to sidestep the system of legal justice upon which our society depends by preying on the ignorance and/or gullibility of radio operators, both CB and Amateur.

EDITOR'S NOTE: I believe that what is written above has given a lot of you somewhat of a fright and I think that the author deserves a vote of thanks for reminding us all that what might seem to be a minor infringement, about as important as a parking ticket, is considerably more serious. Regardless of the penalty, which might be just a few dollars, you will, as pointed out, carry a criminal record against your name for the rest of your life.

Think about it....

SECTION 93(2A)(a) OFFENCES

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

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

SECTION 93(2A)(b) OFFENCES

10(8) Contravene condition of test permit
27 Contravene condition of transmitter licence
35(8) Contravene condition of temporary permit
36(8) Contravene condition of receiver licence

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

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

SECTION 93(2A)(c) OFFENCES

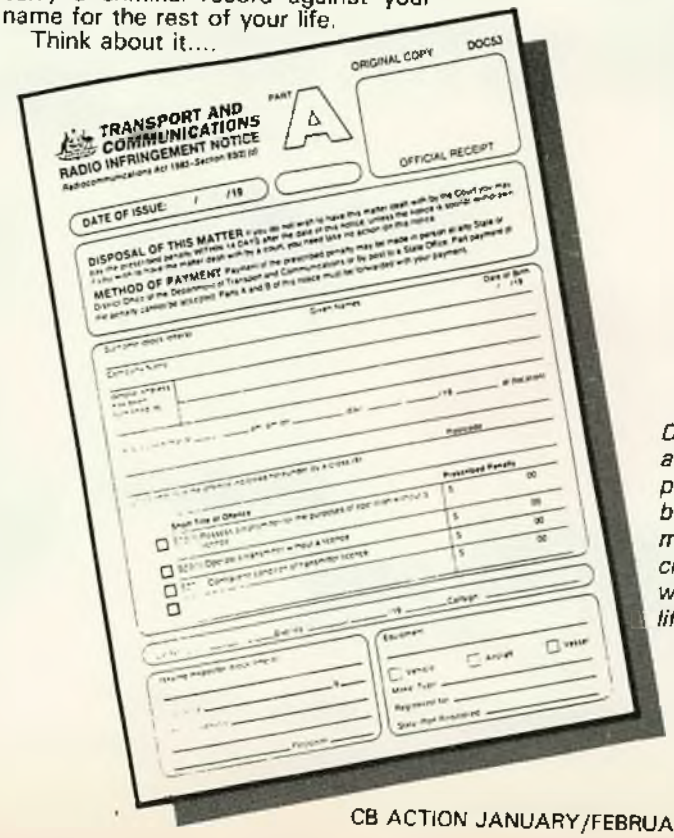
23 Operate or possess an unlicensed transmitter
37 Operate or possess and unlicensed receiver

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

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

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

The one thing it doesn't say in the list of prescribed penalties is that although the penalty in cash is not all that much, the end result can be disastrous to your life.



DOC53 appears to be about as serious as a parking infringement, but, a conviction will mean that you have a criminal record which will stay with you for life.

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So let's get nostalgic and

LOOK BACK ON THE 80s

What sort of an impact have the last 10 years made on our hobby? And where might we be in the year 2000, now only a decade away? Our resident experts give you some clues.....

UHF CB It's rather ironic that I've been asked to write how this last decade has treated UHF CB, because it was 10 years ago I began writing for CBA — my first article appropriately titled 'Into The 80s With UHF'. And here we are all of a sudden, looking back over those years and wondering what the next 10 will bring. 10 years ago, buying your 477 MHz rig was a three-horse race, a choice between the Philips FM320, Sawtron 880 and Apollo AP400. Today we've got 10 times that number to choose from, counting secondhand radios, and all the variety that goes with them — choice of features, construction, technology — a radio to suit almost any price. We've also seen new technologies such as surface mounting trickle down to our level. This applies to not only transceivers, but antennas — the first few years of 477 MHz saw some truly horrible aerials unleashed onto the market, testimony both to the lack of skill of new manufacturers and the lack of demand for a better product from the user. There is today a huge diversity of UHF antennas, virtually all of them manufactured within Australia and all of them good. The other hallmark of the band's growth must of course be repeaters. Australia's first public access UHF CB repeater appeared on air in November 1979, using channels 1/39 — at that time there was no bandplan because no-one had thought of this wonderful concept — repeaters for CB! Think about that next time you access any of the near 250 repeaters across Australia. There've been other changes. Directional antenna approved, and new regulations to make the most from repeaters. And 10 years ago we saw UHF CB as the beginning of a standard worldwide CB system; maybe on 477 MHz, or in the higher 900 MHz region; a world market, the travelling radio. But for various reasons, no country managed to emulate our success with the idea. 477 MHz is no stranger to controversy. From the earliest days came the arguments — was this new service 'true' CB, for fun and social antics, or a 'black tie' band for those who'd left 27 MHz behind? Then, were repeaters really necessary? And in more recent years, to whom

Back in the late '70s, early '80s, buyers had a somewhat larger choice of rigs than they do today — just count the varieties — wonder what happened to all of 'em . . .

does UHF belong, hobbyists or commercial users? Or, do we really need 5/35 emergency repeaters? The future? The safest visions come from hindsight, they say, but never the less we can look at the fairly steady path of UHF CB since 1980 and see where it leads us. As a service, there are no major changes in sight — no extra channels (unless we opt to split the band into 12.5 kHz spacing), no out-of-band repeater inputs. The fate of emergency channel 5 and the 5/35 repeaters is still unclear. We'll undoubtedly see some new brands of 477 MHz rig, but with the top and bottom end of the market firmly held the newcomers will further carve up the lucrative middle ground. Mobiles and handhelds will continue to benefit from newer technologies, most likely from their amateur cousins — decreasing size, better specifications, more features and a higher level of performance. If anything is unavoidable it is the continued growth of UHF CB outside the capital cities, its increasing role as a 'community radio service' rather than just a 'CB' band, a place for residents, hobbyists, businesses, farmers and emergency services. And with this, the increasing need for co-operation, not confrontation between users. After all, CB is for citizens, and for sharing. Roll on the 90s!

— ***DAVID FLYNN***

27MHz — THE NAME OF THE GAME

What's changed over the past 10 years on the hobby radio scene?

UHF-CB, once the domain of hobbyists who wanted to escape the Good Buddy image of 27 MHz and hold serious conversations without the inevitable "Who's on, go?" and "Anyone got a 10-36?", became a "poor man's two-way radio", almost totally annexed by commercial users.

Repeaters bred like rabbits and are no longer a novelty, and as the '80s draw to a close a new SIMPLEX repeater system is lurking just over the horizon.

Scanning grew in popularity as equipment became cheaper and more sophisticated, and several times over the years scanners received bad publicity due to their use by criminals to avoid capture and by hobbyists to eavesdrop on sensitive "private" telephone conversations which resulted in a number of public figures having their dirty washing (and language) hung out for all to see.

27-Meggers got 40 channels (those who didn't already have 400, that is) CB boomed briefly, then died.

The worldwide slump in sales, attributed by those who know about such things to the fall-off in propagation, saw Cybernet, manufacturer of the original Pearce-Simpson range and many other popular brands and once the "biggie" of the CB world, fade into obscurity, leaving Uniden as the world's largest CB manufacturer.

Well-known Aussie brand names — old standbys like Ferris, HMV-Roadhound, Karinna, and Apollo — disappeared from the shelves along with international names like Kraco, Midland, Hy-Gain, Teaberry, Kemtronics, Gemtronics, and American Electronics.

Fly-by-night CB shops run by guys who were just in it for a quick buck dropped like flies, leaving behind a small group of dedicated CB dealers, many of whom still advertise in the pages of CB Action. For years, if you wanted to buy a CB radio you had to go to one of these specialist dealers. There just wasn't anyone else.

President became Uniden, and most of the Uniden-manufactured "home brands" vanished as Uniden tightened its stranglehold on the diminishing market by selling CB rigs under its own name (a notable exception was Cobra, which is still manufactured by Uniden). Early in the '80s, Uniden, chasing cheap labor, moved production from Japan to Taiwan, but managed to retain its envied reputation for quality.

As time marched on, Japan's skyrocketing yen, Cybernet's departure from the CB scene, and Uniden's virtual "one-brand" policy meant that non-Uniden importers had to look to other Asian manufacturers. Many early Taiwanese and Korean rigs left much to be desired, and popular brands which were once regarded as top quality lost their reputations and became bottom-end cheapies with performance to match their prices.

(continued over)

Hy-gain was a top name way back when Adam was but a youth, but, it was also one of the 'top names' to vanish during the big shake-out.

We stand to be corrected, but, as best we can tell not one of these rigs, the power supply or antenna still lives on in name today. A Johnson Viking, bottom right in the photo, is still on active duty in one of our staff's car and according to him it's never given a bit of trouble . . . he's also too tight to buy a new rig.

LOOK BACK ON THE 80s

(continued from page 13)

Taiwan and Korea, and to a lesser degree Hong Kong, began churning out CB radios by the bucketful as the market picked up in time with the increase in "skip" conditions but many of the factories were incapable of producing anything but rubbish. Reputable CB specialist dealers avoided these rigs like the plague. Importers began flogging their "Super-Ying-Tong" junk through discount car sound warehouses, auto accessory stores, and supermarkets, and a few of the old established CB dealers (blinded by dollar signs) flushed their ethics down the toilet and began selling this crap, but there are still a couple of hardcore holdouts left who would rather miss out on a sale than prostitute their reputations by selling you a shitbox.

1989 saw Ranger, Taiwan's second-largest CB manufacturer, move into direct marketing in Australia with its Commex brand-name. Uniden followed suit by buying out its longtime sole Australian importer, Santronics and, again chasing cheaper labor, moved its manufacturing facilities from Taiwan to the Philippines.

DoC became DoTaC and was given more teeth, including on-the-spot ticketing for minor breaches and Ministerial Standards which technical types in the CB industry assumed would rid the airwaves of much of the spectrum pollution caused by cheap-and-nasty rigs. Instead, all we got was a heap of airy-fairy idealistic gobbledygook about how the "tough" Ministerial Standards would prevent importers from bringing "sub-standard" rigs into Australia. Looks to me like a rig would need to cover DC-to-Daylight in one Hz steps with a kilowatt output before being classified as "sub-standard". The rubbish just keeps pouring in by the containerload, faster than ever, and spectrum pollution gets worse every day as more and more are sold.

The '80s saw a few good hoaxes perpetrated on the CB community, the most memorable of which had various marine ornithological specimens ready to commit mass suicide when, backed by excellent fake documented "proof" from DoTaC, their beloved Channel 35 was officially designated as a secondary AM calling channel.

The RIs knocked off dozens of old pirates in the '80s but as I write this the skip's in and out-of-banders are EVERYWHERE.

What's changed over the past 10 years on the hobby radio scene ?

In the trade....quite a lot, and much of it for the worse.

On-air....only the names of the players.

The Game is still the same!

— ROD FEWSTER

SHORTWAVE NOW MEANS SATELLITES

When you look back over the last ten years, short-wave has played an important part in many worldwide events, and numerous international happenings reinforced the need for countries to have a shortwave radio service to voice their opinions. In my opinion the single most important development affecting shortwave would have to be satellites. Without them, the rapid development of relay stations and the idea of swapping airtime on other stations' transmitters could not have been so successful. It was in January 1982 that the Voice Of Free China (VOFC) and Family Radio (WYFR) introduced a reciprocal broadcasting agreement to swap airtime on each others' transmitters. This was the beginning of many such arrangements, through which stations were able to provide stronger signals into their target area. Satellites have also played a major role in utility DXing. We have seen an increasing number of fixed land (point-to-point) services move onto satellite. And do you remember 'voice mirrors', those short station IDs used widely by maritime stations? Thanks to satellites they are now few and far between. Of couse the 80s have seen many new stations come on air and, sadly, some of our favorites leave. The proliferation of non-government shortwave broadcasters in the United States has introduced commercials to shortwave listeners, who had formerly only been accustomed to hearing ads on domestic stations or public service spots over AFRTS. I remember when commercial shortwave broadcaster WRNO, the "Rock of New Orleans", first started broadcasting in January 1982, and the controversy it created. It was all so new, and exciting. Old time broadcasters like AFRTS died a slow death. Now satellites brought local broadcasts of events from home direct to military personnel wherever they were stationed, in a much more efficient form, and thus bypassing the need for AFRTS on shortwave. In the early part of the 1980s we saw reports of HCJB using just 100 watts on 26 MHz to broadcast to North America, with many reports from Australian DXers — a far contrast to the rush by other stations to increase transmitter power. This continuous leapfrogging over each other to have the most powerful transmitter on the block has pushed current technology to its limit, with 500 Kw transmitters now being the norm.

1982 was a busy year for DXers. During the first half of the year Britain became involved in a war with Argentina over a small group of islands in the Atlantic. The Falkland Islands war provided listeners with a chance to hear both sides of the story, including the propaganda, on shortwave radio. British Forces Broadcasting Services began transmissions to the area and Radio South Atlantic, backed by the British Ministry of Defence, broadcast propaganda programs to Argentinian troops in the war zone. From the other side, Argentinian AM and FM stations also broadcast on shortwave via government transmitters and voiced their opinions on the war. The popular hobby of utility DXing also gave us the opportunity to listen to major international happenings as they occur. Events like the Falklands War gave us an insight into military events from both sides, and is yet another example of how the shortwave listener was there as it happened. Problems developed for the shortwave listener when a strange noise began popping up on various bands, and soon became known as 'the Woodpecker'. The interference couldn't be explained at first, and before long many theories were circulating. Early ideas suggested that it was a secret transmitter being used to experiment with weather control, or a high-powered unit designed to burn a hole in the ionosphere. It took research from DXers, the scientific community and defence experts to discover the true identity of the woodpecker, an early over-the-horizon (OTHR) radar system. And now with many countries operating or planning to build OTHR systems, the problem of noise will be a continuing one for DXers. On mediumwave, more and more Australian stations began 24-hour operation, making overseas DXing harder. However it wasn't until later into the decade that the ABC decided to match commercial stations with extended services. In August 1980 Radio Australia was regularly heard over mediumwave transmitters in the Northern Territory. This was the first time our own international broadcaster had been relayed on domestic ABC stations, and in 1988 ABC's Radio National began to rebroadcast Radio Australia throughout Australia from midnight to dawn. Towards the end of 1988 listeners got an early Christmas present, when glasnost broke into the shortwave scene, with the curtailment of jamming of Radio Free Europe and Radio Liberty transmissions for the first time in history. Politicians are always looking at ways to cut back funds to international broadcasters, and why not — it doesn't bring in votes, does it? During the last 10 years many shortwave stations have gone through seesawing exercises with their finances; Radio New Zealand, Radio Canada International and our own Radio Austra-

lia, to name a few. Yet when there is an international crisis, such as the Fijian coup or the riots in Peking, shortwave stations are the first to respond by extending broadcasts in the native tongue of that particular country. When you look back at receivers and the developments that have shaped shortwave radios of the 80s, you can see how microchips have been used to provide more facilities than most listeners actually require. Small portable multi-band radios became popular and, for the first time, pocket-size radios with digital displays appeared on the market. You could accurately locate your favorite station within seconds, a feature ideal for the international traveller who wanted to listen to his homeland via shortwave. Towards the second half of the decade receivers incorporated interfaces which allowed DXers to control their radio via a personal computer. Progress had brought semi-professional communications receivers into the reach of thousands of users.

Through the decade we have seen the continuing battle between manufacturers such as Kenwood, Yaesu, National Panasonic and Sony, all releasing receivers to capture a part of the market and trying to improve on the competition with even more 'bells and whistles'. What the next 10 years will bring we can only surmise, but you can be sure that technology will be involved. While poorer third world countries will need shortwave for many years I believe new branches of our hobby could also develop — receiving satellite broadcasts. Using small dishes with the latest microprocessor-based receiver you will be able to listen to your favorite international broadcaster beaming strong stereo signals as its satellite orbits over your house. We will see many new shortwave stations, and as satellite services become cheaper more stations which were once exclusively on shortwave will move towards a parallel service of both HF and direct satellite broadcasting.

So stay tuned for the next 10 years, I'm sure the shortwave bands will still have a lot to offer us...I just hope my wife will allow me to put a satellite dish in the back yard!

— ROB WILLIAMS

SCANNERS — GETTING BETTER ALL THE TIME

January 1, 1990, will mark not only the end of the year, but the end of a decade. The year 2000 is ten short years away and already we are seeing tomorrow's technology today. Scanners capable of receiving massive amounts of the RF spectrum, in nearly all the modes, are available now and they are becoming even more advanced with each passing year.

Today, names such as AOR, Saiko, Realistic and Uniden are common place among scanning enthusiasts. Looking back ten years, it was a different story. Australian monitors were content to spend many hours listening to the then 'state of the art' Bearcat and Regency scanners. They were 'state of the art' simply because there wasn't much else available and if you could not afford the Bearcat 220FB, retailing for $475, or the Regency M400E at $445 then you were not on the air....the choice was limited.

In those early days programmable portable/handheld scanners were the figment of the imagination of a design engineer at the Electra Company (Bearcat's manufacturer), in Indiana USA. To monitor away from the shack or when mobile, necessitated the purchase of either the Bearcat 4/6 or 2/4 crystal controlled handhelds. Restricted to either four or six channels, hobbyists were limited to fixed frequencies and two bands. The Bearcat 'Thinscans' as they were known, lacked the Australian low band VHF, leaving only high VHF and the UHF bands to be monitored.

Irrespective of the extent of models available, scanning as a hobby was in its embryo state. There were little or no specialist antennae or other equipment such as RF amplifiers. Frequency guides and lists were unheard of, anybody who claimed to have a one hundred percent accurate list, was treated with a degree of disbelief.

Tracking a frequency was a time consuming laborious task, involving many hours of listening and logging, each piece of the jigsaw going to make up the final picture. Sometimes that picture was a little distorted, misinformation and red herrings were common and as a result you never revealed a catch to anyone, other than the most trusted of fellow enthusiasts. Always as a swap one for one or two for one, depending on the rarity of the frequency or user.

Regardless of the politics of the hobby, it was on the move, gaining popularity daily. Every year it seemed the ultimate scanner had arrived, bigger memories, extended frequency ranges and better specifications. Each new release was hailed as the ultimate receiving machine. That was until the next scanner arrived.

Today the market supports over two dozen different scanners, programmable handhelds, mobiles and desktops in all shapes, sizes and prices. No longer limited to a few discreet bands, scanning receivers now have frequency ranges below some communications receivers of old. Instead of a cut off point around 520 MHz, you can now explore the microwave portion on some models.

Is the ICOM IC R9000 the limit to which technology can go ? Massive memory capacity, quality appointments such as the spectrum display, superior specifications and extended frequency coverage places the ICOM apart from any scanner (if that name, scanner, can be applied to the R9000) currently available. Who knows what the future holds, maybe a receiver that does, as the saying goes cover " DC to daylight" ? Maybe unlimited memories ?

One thing hobbyists can be assured of, and in the relatively near future, is the coupling of a scanner to a PC or home computer. CAD, or Computer Aided Display, will provide a data base linked to a given frequency. Information previously written down or contained in a computer separate to the receiver will be obsolete. This facility is here today, in a limited form for owners of the Yaesu 9600 (known as CAT or computer aided transceiver).

Advances in chip technology will certainly reflect on scanner design, miniaturization of components will mean smaller and smaller receivers, perhaps even a scanner that will fit into the human ear, similar to a deaf aid ? Who knows ?

The United States Senate once attempted to introduce a bill to close the US Patents Office.

Their reasons were simple, 'everything that could possibly have been invented, has been invented'.

The year was 1860 ! — RUSSELL BRYANT

DO YOUR OWN BEAM HEADINGS

Greg Baker explains how

Directional beam antennas are useful for CBers and SWLs alike. Greg Baker describes a simple home computer program to tell you where to point your beam.

With the freeing of the rules on CB antennas, the use of directional beams has become an option to push a bigger signal just where you want it. The problem, of course, is to know exactly where to point the beam when you have it set up and connected to your transceiver.

Browsing through a road map or atlas will give you some idea of where to point, but, if your beam is efficient (which means that it will have a narrow directional lobe) or you want the biggest possible DX signal, a great deal more precision is needed.

That precision can come from messing around with a calculator and set of formulas, but, it can come far easier come from a home computer...and now that we all have computers or access to them, there's no excuse not to be spot on with your beam headings.

So, push the kids off the computer for a couple of hours and tell them to kick a football around the yard instead of playing computer games. Then type in the program listed over the page and run it on your favourite DX targets.

If you and the machine can't get on, call the kids back. They'll love to lord it over you and tell you what to do. Let them enjoy it, it's good for them. They can have the ego trip....all you want are the headings.

PROGRAMMED IN BASIC

The program is written in BASIC, the standard home computer language. There are no fancy features used, so it should run without modification on most machines. It has been developed and tested on the Dick Smith VZ200.

As it is listed, the program assumes you are in Sydney. If your base station, or mobile for that matter, is elsewhere, replace line 40 with your latitude in L(1,1) and longitude in L(2,1).

Remember the sign on the latitude.

Remember also that latitudes and longitudes are the usual way to precisely locate a place on the face of the earth. Latitude is the number of degrees north or south of the equator run-

DO YOUR OWN BEAM HEADINGS

ning from zero at the equator to 90 degrees at the poles. Longitude is the number of degrees west or east of the north south line running through Greenwich in England.

PROGRAM:

```
10 DIM L(2,2),D$(2)
20 D$(1) = 'ORIGIN'
30 D$(2) = 'TARGET'
40 L(1,1) = -33.9 : L(2,1) = 151.2
50 E = 57.29578 : PI = 3.14159
60 PRINT 'NEW ORIGIN? Y OR N'
70 INPUT Y$
80 IF Y$ <> 'Y' THEN 110
90 K = 1
100 GOSUB 350
110 K = 2
120 GOSUB 350
130 P = L(2,1) - L(2,2)
140 PS = 1
150 IF P < 0 THEN PS=0
160 P = ABS(P)
170 PM = 0
180 IF P > 180 THEN PM = 1
190 P = P/E
200 PA = (90 - L(1,1))/E
210 PB = (90 - L(1,2))/E
220 Z = COS(P)*SIN(PA)*SIN(PB)
+COS(PA)*COS(PB)
230 GOSUB 460
240 KM% = 6366.7 * M
250 Z = (COS(PB)-COS(PA)*COS
(M))/(SIN(PA)*SIN(M))
260 GOSUB 460
270 A = M * E
280 A% = ABS(360 * (PS-PM) *
(PS-PM) - A)
290 PRINT 'BEARING IS: '; A% ;'
DEGREES'
300 PRINT 'DISTANCE IS: '; KM% ;
'KILOMETRES'
310 PRINT 'CONTINUE? Y OR N'
320 INPUT Y$
330 IF Y$ <> 'Y' THEN END
340 GOTO 60
350 PRINT D$(K);' LATITUDE?'
360 INPUT L(1,K)
370 PRINT D$(K); ' LONGITUDE?'
380 INPUT L(2,K)
390 FOR I = 1 TO 2
400 T = 90 + (I-1) * 90
410 IF ABS(L(I,K)) <= T THEN 440
420 PRINT 'ERROR: TRY AGAIN'
430 GOTO 350
440 NEXT I
450 RETURN
460 M = - ATN(Z/SQR(1- Z * Z)) +
PI/2
470 RETURN
```

USING THE PROGRAM

When you **RUN** the program, it will ask you whether you want to change the origin latitude or longitude. If you are mobile or a friend wants to use the program from his location, you can temporarily change the origin here by typing Y and INPUTting the new latitude and longitude. Otherwise type N to continue.

The program then asks for latitude and longitude of the target. Type in the target latitude and longitude using the list below. **Remember to type in the minus sign for latitudes from the list.**

If the target you want is not in the list, turn to an atlas or gazetteer (list of place names) and look up the latitude and longitude of the target you require.

The program will function to and from places other than in Australia, so if you want to listen in to what is happening elsewhere, use the latitude and longitude of the place you are interested in.

DON'T FORGET THE MINUS MARK

Make sure all places south of the equator, ie southern latitudes, are input with a minus sign in front of them. Northern latitudes are positive and thus require no sign.

Similarly, places up to 180 degrees west of Greenwich in England should have a negative sign. All DX targets in our region are east of Greenwich and hence are all positive numbers and need no sign.

You will need to convert the latitudes and longitudes you have found in your atlas or gazetteer to values which this program can use. Notice that the latitudes and longitudes from an atlas or gazetteer are written in the form of degrees and minutes. Convert these by dividing the minutes by 60 with a calculator and adding to the degrees. Thus Grenfell in N.S.W is 33 degrees 54 minutes South, 148 degrees 11 minutes East. The latitude to use in the program is 33 plus (54 divided by 60) which equals 33 + 0.9 or 33.9 and this becomes - 33.9 when you add the negative sign for the south latitude. Similarly, the longitude is 148 plus (11v60) = 148 + 0.1833 = 148.2 when you round it for ease of INPUTing.

WARNING: The program may produce errors if your chosen target is within about fifty kilometres of the origin or you want to see if there is anyone at the poles calling CQ DX.

Still, in either case you wouldn't need this program anyway. Up to fifty kilometres you don't need the precision of this program, and for that lone CBer at the pole, just point your beam due north or south. And even then DoTaC rules mean you won't be allowed to reply to that plaintive call for a ragchew from the wilderness.

TEST DATA

When you have typed the program into the computer and double-checked that you have typed it properly, you should test it on the following DX paths. Note that for each of these you will need to change the origin latitude and longitude where the program requests it. You will also need to re-RUN the program for each new origin. This involves, at the end of each test path, typing N when asked if you want to continue. Then start again with another RUN.

HOW TO USE THE BEARINGS

The program will output the true bearing of the target from the origin and the distance in kilometres.

ORIGIN	TARGET	BEARING (Degrees)	DISTANCE (Kms)
Sydney -33.9,151.2	Lismore -28.8,153.3	19	600
Whyalla -33.0,137.6	Adelaide -34.9,138.6	156	230
Geraldton -28.8,114.6	Brisbane -27.5,153.0	97	3748

end of chart

If you didn't get these results, you will find a typing error in your program.

The distance is useful in finding out whether the target is within the coverage of the ground wave, in the blank area within the skip zone but outside the ground wave coverage area or in useful DX range beyond the skip distance.

The true bearing differs from a magnetic bearing given by an ordinary compass and it differs by different amounts depending on where you are. The difference is called the local magnetic variation though sometimes it is called declination.

To find the magnetic (compass) bearing from the true bearing output by the program, subtract the magnetic variation at the origin station from the computer calculated true bearing. Approximate magnetic variations are given in the table of latitudes and longitudes below.

Notice that when magnetic north is east of true north the variation is easterly and given a positive sign. When magnetic north is west of true north (as it is in some parts of Western Australia) the variation is westerly and given a negative sign.

Regardless of the sign though of the variation, you must add it to the true bearing to get magnetic bearing. To find the variation at origins other than on the list you will need to use the nearest from the list or check out a good army survey map at your local library.

Align the beam with this magnetic bearing, remembering to keep your compass away from such large amounts of steel as your car. Once you have found the bearings of your most usual DX targets, mark them near the beam so that you can easily align the antenna next time.

PLACES AND THEIR LATITUDE/LONGITUDE

Place	Latitude	Longitude	Magnetic Variation
A.C.T.			
Canberra	-35.3	149.1	12
NEW SOUTH WALES			
Albury	-36.1	146.9	12
Armidale	-30.5	151.7	12
Bathurst	-33.5	149.6	13
Broken Hill	-32.0	141.5	9
Dubbo	-32.3	148.7	12
Goulburn	-34.8	149.7	14
Grafton	-29.7	152.9	12
Lismore	-28.8	153.3	11
Lithgow	-33.5	150.2	15
Newcastle	-32.9	151.8	15
Orange	-33.3	149.2	13
Sydney	-33.9	151.2	15
Tamworth	-31.1	151.0	11
Taree	-31.9	152.4	12
Wagga	-35.1	147.4	14
Wollongong	-34.4	150.9	14
VICTORIA			
Ballarat	-37.6	144.0	11
Bendigo	-36.8	144.4	11
Geelong	-38.2	144.4	12
Hamilton	-37.8	142.1	11
Horsham	-36.8	142.3	11
Melbourne	-37.8	145.0	13
Mildura	-34.2	142.2	11
Morwell	-38.2	146.4	12
Shepparton	-36.4	145.4	12
Wangaratta	-36.4	146.3	12
Warrnambool	-38.4	142.5	11
QUEENSLAND			
Brisbane	-27.5	153.0	11
Bundaberg	-24.8	152.4	10
Cairns	-16.9	145.7	7
Gladstone	-23.9	151.3	10
Gympie	-26.2	152.6	11
Mackay	-21.2	149.2	9
Maryborough	-25.5	152.6	11
Mount Isa	-20.8	139.5	7
Rockhampton	-23.4	150.5	10
Townsville	-19.2	146.8	8
Warwick	-28.2	152.0	11
SOUTH AUSTRALIA			
Adelaide	-34.9	138.6	9
Mount Gambier	-37.9	140.8	10
Port Augusta	-32.5	137.8	8
Port Lincoln	-34.7	135.8	7
Whyalla	-33.0	137.6	8
WESTERN AUSTRALIA			
Albany	-35.0	117.9	-4
Bunbury	-33.3	115.6	-3
Geraldton	-28.8	114.6	-2
Kalgoorlie	-30.8	121.5	1
Perth	-32.0	115.8	-3
TASMANIA			
Burnie	-41.1	145.9	15
Devonport	-41.2	146.3	15
Hobart	-42.9	147.3	16
Launceston	-41.4	147.1	15
NORTHERN TERRITORY			
Alice Springs	-23.7	133.9	5
Darwin	-12.4	130.9	4

PREFIX/ COUNTRY	CENTRED ON CITY	SHORT PATH	LONG PATH	KILOMETRES (SHORT PATH)
MINNESOTA	ST PAUL	57	237	15017
MISSISSIPPI	JACKSON	75	255	14982
MISSOURI	JEFFERSON CITY	66	246	14904
MONTANA	HELENA	52	232	13622
NEBRASKA	LINCOLN	62	242	14659
NEVADA	CARSON CITY	50	230	12740
NEW HAMPSHIRE	CONCORD	60	240	16738
NEW JERSEY	TRENTON	66	246	16493
NEW MEXICO	SANTA FE	66	246	13723
NEW YORK	ALBANY	61	241	16561
NORTH CAROLINA	RALEIGH	74	254	15981
NORTH DAKOTA	BISMARCK	54	234	14460
OHIO	COLUMBUS	66	246	15784
OKLAHOMA	OKLAHOMA CITY	68	248	14262
OREGON	SALEM	51	231	12760
PENNSYLVANIA	HARRISBURG	66	246	16223
RHODE ISLAND	PROVIDENCE	63	243	16764
SOUTH CAROLINA	COLUMBIA	78	258	15918
SOUTH DAKOTA	PIERRE	57	237	14447
TENNESSEE	NASHVILLE	71	251	15389
TEXAS	AUSTIN	75	255	14226
UTAH	SALT LAKE CITY	58	238	13426
VERMONT	MONTPELIER	58	238	16644
VIRGINIA	RICIMOND	71	251	16677
WASHINGTON	OLYMPIA	49	229	12860
WEST VIRGINIA	CHARLESTON	69	249	15882
WISCONSIN	MADDISON	60	240	15296
WYOMING	CHEYENNE	60	240	14005
KC6 EASTERN CAROLINE IS. (0-27)	-	0	180	4529
KG4 GUATANAMO BAY (NA-8)	-	100	280	15834
KG6R/S/T MARIANA IS. (0-27)	TINIAN	2	182	5421
KH1/KB6 AMERICAN PHOENIX IS. (0-31)	-	55	235	5554
KH2/KG6 GUAM (0-27)	APIA HARBOUR	0	180	5244
KH3/KJ6 JOHNSTON IS. (0-31)	-	48	228	7435
KH4/KH6 MIDWAY IS. (0-31)	-	35	215	7974
KH5KF6 PALMYRA/JARVIS IS. (0-31)	-	62	242	7138
KH6 HAWAII (S. (0-31)	HONOLULU	53	233	8648
KH7/KH6 KURE IS. (0-31)	-	34	214	7969
KH8/KH6 AMERICAN SAMOA	FAGATOGO	73	253	5200
KH9/KW6 WAKE IS. (0-31)	-	25	205	6347
KP1/KC4 NAVASSA IS.(NA-8)	-	103	283	15757
KP2/KV4 AMERICAN VIRGIN IS. (NA-8)	-	112	292	16639
KP3/KB4/HK0 SERRANA BANK	-	105	285	15042
KP4 PUERTO RICO (NA-8)	SAN JUAN	111	291	16543
KP4 DESECHO IS. (NA-8)	-	110	290	16416
KX6 MARSHALL IS. (0-31)	KWAJALEIN	31	211	5364
KZ PANAMA CANAL ZONE (NA-7)	-	111	291	14754

Bint Services produce a computer based 'beam heading list' which has both short and long path bearings to all amateur callsign areas — cost for the listing (which is based on the lat/long of your QTH is $15.

RUSSELL BRYANT'S

SCANNING ACTION

THE WHERE, WHY AND WHAT ABOUT SCANNERS

Normally, each alternate column will feature the letters you send in, however, due to the volume of correspondence received over the last few months, this column will also contain reader mail.

I have deliberately remained silent on the 'Ban the Scanner' issue that was raised by the States' Police Ministers at a meeting some months ago. My silence has been in the form of wait and see, because, as inevariably happens, politicians expend vast amounts of hot air when they attend mutual admiration society meetings.

We (the scanner users of Australia) elect these people to office — a fact most of them seem to forget other than around election time. If they or any other elected body decides that we cannot pursue a legal and valid pastime then it must be time to remove them from public office at the next election. It appears to me that among the political rhetoric, the usual answer is, "if you don't like it — ban it" followed by, "if you can't ban it — legalize it".

I do not have anything else to say on this ridiculous proposal at this time — let's wait and see what, if anything, comes from this idiotic suggestion...my own thoughts are that it will all go away when the politicians involved realise what a stupid idea it was in the first place.

POLICE COMMUNICATIONS

Of the three emergency services — fire brigade, ambulance and police — the latter are arguably the most listened to and the fact that they even have such a communication system can be largely attributed to Australia's worst natural disaster, here's why.

There exists today as never before, greater public access to police communications. This access is brought about with the proliferation of scanning receivers and general coverage receivers, as well as the many frequency guides clearly showing the police channels.

Once only listened to by the news media and tow truck operators, police radio was something that these organizations used to further their own requirements, however, they didn't bother to tell many people about their activities.

The history of police radio can be paralleled to the history of radio itself. Along with the railways, and many of the laws, each State took a single minded approach when it came to supplying its police forces with radio communications.

Queensland decided on 77 MHz, New South Wales on 83 MHz, Victoria was 'bands' away on 168 MHz, Tasmania introduced a 76 MHz system, the Northern Territory decided on 72 MHz along with South Australia and Western Australia went to 79 MHz.

Comparing the systems it is obvious that the different frequencies made it difficult, if not impossible, for one State department to communicate with another...the possible exception was the Northern Territory and South Australia.

In 1974, the worst natural disaster ever to strike Australia changed police radio.

Cyclone Tracy roared over the coastline and destroyed the capital city of the Northern Territory on Christmas Eve. The strong winds collapsed radio masts and towers as if made of match sticks. Communications on a large scale was impossible with what little there was being restricted to short range simplex contacts.

As police contingents from Queensland, New South Wales, Victoria and South Australia arrived in Darwin to assist in the general policing and evacuation of the city, it became difficult to co-ordinate operations due to the wide and varied radio systems used by the visiting departments.

Soon after the Darwin clean up, a meeting of Police Commissioners from each State and Territory decided there should exist a common radio network for police forces throughout Australia. It was further decided that because of the increasing traffic on the VHF channels in use at the time, that utilization would be made of the relatively new UHF frequencies for police communications in the capital cities and some regional areas.

Ultimately sixty four paired channels between 458.350 to 459.925 MHz and 467.850 to 469.425 MHz were allocated by the Department of Transport and Communications for the exclusive use of police forces Australia wide. How these frequencies were to be used was left to the individual department to develop as they desired. Today, most departments have relegated their VHF channels to country and regional areas.

The police were not the only group to gain from the aftermath of Cyclone Tracy. Many of the disaster organizations, State Emergency Services and the like acquired three of the paired channels in the 64 channel allocation. They are channels 31, 32 and 33 respectively. All police departments have access to these channels to co-ordinate major disasters and liaise with SES groups.

The VHF bands were not alone in suffering from this single minded attitude. The high frequency allocations were also a State by State arrangement. There are, however, a few HF frequencies common to the police forces, 4560 kHz is an example of this. Most of the remaining channels are within a few kilohertz of each other, but still far enough away to be useless.

A browse through one of the many scanner directories shows frequencies (other than the known ones) allocated to the police forces throughout Australia. These allocations can be found in the marine and aircraft bands and generally across the spectrum.

As technology advances so does radio and police communications.

DIGITAL VOICE PROTECTION

An example of these advances is D.V.P or Digital Voice Protection.

This is a sophisticated form of voice scrambling now used to keep the scanner user (legal or otherwise) from eavesdropping on sensitive operations. No doubt D.V.P will be broken, however, with a theoretical 26 trillion codes available to the user it will be sometime before we see the result. As digital and data becomes common place on the air (as with the amateur radio operator's 'packet' communication), it can be expected to be introduced into police communications.

It is possible that outback areas will be serviced by AUSSAT, not only for television and commercial AM and FM radio but also police radio. It will bring a new dimension to the police in these remote areas and State wide control from a central police headquarters may be possible.

Born of a shaky beginning, the future brings a co-ordinated, compatible network available to the Australia wide law enforcement bodies.

I wrote this article several years ago while studying journalism. I decided to reproduce it here to give readers an insight as to the price paid for a common radio network for Australian law enforcement authorities.

Think of that price next-time you listen to VKG, VKC, VKR or whomever.

ONTO A BRIGHTER NOTE

Now that summer is well and truly with us, how about tuning your scanners to the low band VHF frequencies between 29.7-45 MHz FM. This band is very prone to skip and is ably assisted by the warmer weather. Previously, low band VHF had few users except the military, however, since 1988 allocations have been made to the land mobile service. Let me know what you hear.

Let's take a look into the mail bag...Steven, in Hobart, says he is planning a trip to America and would like to pack his Bearcat 100 XL handheld scanner. He was wondering if he could use the scanner aboard the aircraft to monitor what is happening up front, also whether he will be able to charge the batteries when he arrives in America. Steve, firstly, using the scanner on the aircraft may land you (no pun intended) in hot water. Aircrew have the power to confiscate articles considered to be harmful to the aircraft. They dislike radio receivers because of the potential problem of interference with radio navigational aides. You may also find yourself arrested for good measure so the answer to your question is a firm NO !. As for charging the batteries, simply purchase a 110VAC to 12VDC power adapter on arrival in America...remember not to use it here when you return.

A letter from Greg, in Werribee. VIC,. asks, is it legal or illegal to use a scanner? **He was told by a police officer that it is legal to buy and sell but not the use.** He also States that a friend almost had her scanner confiscated because it had the police frequencies programmed into it. It is **NOT** illegal to use a scanner in the lawful pursuit of your hobby even if the law is not overly happy about the situation. If the police confiscate or remove from your custody a scanner without the issue of a receipt or without laying charges, I suggest you seek legal advice from a qualified legal practioner. As to which is the best frequency list, you will have to go a long way to beat the ESG guides.

S.A. PRISON SERVICE

A South Australian reader sent in his listings for that State's prison service,

CH. 1 494. 075 Statewide and Adelaide CH. 2 494. 950 Dog Squad

CH. 3 494. 775 Country prisons CH. 4 494. 800 Adelaide prisons

CH. 5 493. 225 Adelaide Remand centre CH. 6 498. 425 Mobilong Prison

Many of the users on these channels use low power, making it necessary to be close to, or within (?) the gaol.

TASMANIAN FREQUENCIES

Shaun, Queenstown TAS, congratulates Scanning Action for being a great column and offers some frequencies from the Apple Isle. Here they are starting with the Police on 76.700 Hobart and Burnie, 76.115 Hobart, 76.175 Hobart and Launceston, 76.205 Burnie and West Coast, 76.640 Devonport and East Coast, 76.235 Devonport, 76.670 Launceston, 76.085 Deloraine.

The Road Division of Transport Tasmania can be found on 78.580 and 78.760 as well as 467.025 in Hobart. Shaun asks, why Uniden cannot develop a scanner like the Cobra SR 15, with the air navigation band (108 to 118 MHz) as part of its frequency range. Uniden do have a scanner with airnav frequencies included, it is called the Cobra SR 15 !

In the May/June '89 column Mark of Raymond Terrace NSW wrote requesting the new frequencies used by the Port Stephens Shire Bushfire Brigade. Darryl from Killarney Vale NSW says the new channels are 163.030 and 162.820 MHz. Thanks for that Darryl.

POLICE CALLSIGNS

Andrew in Adelaide would like to know the callsigns for the police in each State. They are, New South Wales VKG; Victoria VKC; Queensland VKR; South Australia VKA; West Australia VKI; Tasmania VKT; Northern Territory VKM; and although I have never heard it used, the Federal Police are VKX, normally they identify as 2CP or 3CP and so on. As for the codes used by VKA I can't help you...maybe a reader in South Australia can ?

BEARCAT MODIFICATIONS

For owners of the Bearcat 70 XLT, 100 XLT, 200 XLT, Cobra SR12 and Cobra SR15 who wish to wipe the memories of any of the aforementioned scanners, or return to the factory pre-set frequencies..here's how. With the radio turned off, press 2, 9 and MANUAL at the same time, turn the scanner on and zeros will appear in a few seconds. For the factory frequencies, switch the scanner off, press 2, 9 and SCAN, switch on, and wait a while for the channels to be displayed.

If you can't afford a stamp, but have access to a PC and modem you can leave a message for me on the Shortwave Possum BBS — the number is 02 651 3055. That about wraps it up for another issue....to keep things going and up to date, how about telling your fellow readers what you listen to and where.

The address to write to is,

SCANNING ACTION
P.O. BOX R16 Roselands, NSW 2196

NATIONAL SPECTRUM ANARCHY

— FURIOUS FEWSTER TELLS IT AS IT IS —

ILLEGAL MY FOOT!

Every time I start thinking that the attitudes of my fellow man are on the improve some wanker comes along and destroys my faith in human nature all over again.

Last issue I reported that a Melbourne blind amateur's father dictated the contents of CB Action and Amateur Radio Action to tape for distribution to blind radio operators.

A couple of days after the magazine was released I overheard some miserable bastard in Melbourne crapping on about how this was illegal and a breach of copyright and that it shouldn't be allowed.

The guy he was talking to said he couldn't see anything wrong with the idea, but Mister Legal Knowall reckoned that the laws must be upheld regardless of whether the people in question were blind or not.

Unfortunately, despite several attempts, I was unable to break into the conversation.

I would have liked to give the bugger a real blast on air! Obviously the dill reads CB Action, so I'll content myself with giving him a blast right here instead.

Go back and read your law books, you idiot.

Transferring copyright material to audio or Braille for the benefit of the blind or to enlarged print format for the benefit of the partially-blind is NOT a breach of copyright.

As a matter of fact these transfers are specifically permitted in most countries.

Even if it WAS in breach of the Copyright Act we here at CB Action wouldn't object to it, and I don't know of any other publishers who would.

But then publishers wouldn't need to lodge complaints about people helping make life a little more interesting for blindies, would they? Not with turds like you around!

ON THE SAME SUBJECT

I had a quick phone call from Julie, a teenage American CBer who's been blind since birth, who told me she enjoyed the story (CB Action sure gets around, doesn't it?) and that similar schemes were in operation in various parts of the USA.

She's also a computer freak who "talks" DX by modem (see David Flynn's report in the last issue) while her sighted brother reads incoming messages aloud to her from the screen.

Julie told me that specialized software is available for the Amiga computer which converts incoming BBS messages to synthesized speech, and she's hoping to get hold of this in the near future so she can "read" messages without her brother's help.

Apparently in the USA there are special computer bulletin boards known as "Blinkie Boards" (blind Americans refer to themselves as "blinkies") for blind users, and some other boards have special sections set aside for blind and otherwise disabled people to communicate with one another, and some are even "echoed" to Australian BBSs.

UHF HAND-HELD USERS BEWARE!

A British journalist recently needed specialist treatment after perforating an eardrum when he accidentally poked the antenna into his ear while answering a portable cellular phone in the dark.

27MHz hand-held users needn't worry about falling into the same trap unless they happen to have arms around two metres long.

INVESTIGATIVE JOURNALISM?

Speeding truckies came under fire following the recent horrific smash between a passenger coach and a semi in northern NSW, and once again CB radio copped a lot of flak from police and the media.

If you believe all the adverse publicity, truckies have an extensive sophisticated national CB radio network set up solely for the purpose of broadcasting radar trap and Highway Patrol locations.

One Brisbane newspaper even carried a story about an alleged Bad Buddy known as "Gateway Base".

A lot of investigative journalism went into that one, I don't think! You couldn't listen for five minutes without hearing poor old Alex do his thing (no mention of how many times Alex has phoned up for an ambulance to attend accidents or for the RACQ to attend breakdowns, but we've all come to expect this, haven't we?).

Sure, there are a lot of "Smokey Reports", but anyone who's driven Australia's highways with a CB tuned to Channel 8 will tell you that messages between long-haul truckies are more likely to be about road conditions, slow- moving traffic, accidents,or simply "Owyagoinmate?" than about radar traps. Only the "cowboys", pillheads and go-faster types who are hated by the majority of professional truckies use radar trap reports as carte blanche to go like bats out of hell.

I must admit it's a bit frightening to have 30 or 40 tons of potential sudden death barrelling alongside you at high speed on a potholed stretch of "highway" which was designed for horse-drawn carriages, but very few truckies are suicidal and their livelihoods depend on keeping their driver's licences.

Most of them seem to stick fairly well to the speed limits.

The ones who don't would put the boot in whether they had CB radio or not (anyone remember the old flashing-the-headlights trick?). I used to drive around 1000 miles a week, right on the limit, back in the days when CB radios were as rare as rockinghorse poop, but of the hundreds of semis I encountered on the roads only a handful ever rounded me up at over 60 miles an hour.

I don't drive anywhere near as much as I used to but I still manage a few long trips, and things don't seem to have changed much.

Only the occasional semi passes me when I'm driving at the speed limit.

Bugger the proposed tachographs.

Unless they're inspected hourly they'll prevent as many accidents as the flight recorders fitted to aircraft.

Great for telling bereaved families WHY their loved ones were killed, but otherwise useless.

Bugger 100kmh speed-limiters even more.

The people proposing these have rocks in their heads! Better for a truckie to do a short burst at 110kmh to safely pass a car towing a 40-foot caravan at 85kmh in a 100kmh zone than hit someone head-on because a speed-limiter cut in when he was right alongside it.

Authorities should look at providing better roads, enforcing vehicle maintenance, policing log-book entries (particularly in regard to rest periods) more closely, prosecuting the arse off companies whose late-delivery penalty schemes encourage (if not actually promote) speeding, and de-licensing recidivist speeders for lengthy periods, if they REALLY want to reduce the carnage on our roads.

QUEENSLAND SCENE NOW SPECTRUM ANARCHY

To give Furious Fewster a greater spread for his timeless prose, his Queensland Scene has now become Spectrum Anarchy, mainly because we're bloody sure that Furious is at heart a raging anarchist and where better to anarchise than on the spectrum...no, we're not all that sure what it means either, but, as of this issue you'll find Furious under the new column heading.

VIC CBer PROSECUTED

There are a lot of scary stories doing the rounds about how you can be fined $10,000 for having an unlicensed CB radio, stories fuelled by the "journalistic licence" of the media.

There **ARE** some $10,000 penalties, but **NOT** merely for having an unlicensed CB.

The "scratch-and-win" penalty for this offence is $50.

No more. No less.

However, if DoTaC decides to **PROSECUTE** the charge rather than issue an "instant ticket" the fines can be as high as $2000, as a Victorian CBer recently found out.

That's right, the guy was fined $2000 plus costs for having an unlicensed CB radio, the maximum financial penalty prescribed by law, and another Victorian "no-licence" prosecution resulted in a $1000 fine.

Dunno whether the fact that the guy who copped the $2000 fine was allegedly singing songs which were insulting to the Queen adversely affected the sentence, but I don't suppose it helped much.

SIMPLEX REPEATER

Ever hear of a **SIMPLEX** repeater? No? Well you're about to.

Hot off the drawing board, this creature captures analog (normal) speech input, converts it to digital format, stores it in DRAM (Dynamic Random Access Memory almost like a tape recorder contained in an IC chip) then converts it back to analog and retransmits it verbatim on the same frequency when the incoming signal is terminated.

Imagine you have a large property of several thousand hectares and your house is situated near the road.

You can talk to the house on UHF-CB from a hill on your property about 10 kilometres away, but when you move further away you lose contact, so you set up a simplex repeater on top of the hill.

Now you can easily contact the house from 20 kilometres away because the repeater re-transmits everything you say, just like the duplex repeaters we're all familiar with.

The difference is that duplex repeaters re-transmit your signal virtually as you speak, while the simplex repeater stores your transmission until you finish talking then re-transmits the whole transmission in one block after you release the PTTswitch.

It doesn't sound like one of Doctor Who's Daleks either. The processed speech is unaltered, and is recognizable as your own voice.

The drawback is that it takes twice as long to get messages through because everything you say is transmitted twice, but that's a small price to pay for the extended range.

The simplex repeater can be tone-controlled if you want to prevent the wood- ducks from using it.

You can talk on the same channel without triggering the repeater if you're in direct contact range by simply switching off the tones.

Naturally anyone else can still use the channel in simplex mode.

As far as I can tell there's nothing in DoTaC regulations to prevent the use of simplex repeaters on UHF-CB in fact DoTaC seems to be viewing the idea very favorably.

Best news is the price, which should be well within the reach of serious users and hobbyist clubs.

A remote system (rechargeable battery pack, photovoltaic (solar)panel, and antenna) should cost under $1200, and tone systems around $100 per rig.

You read about it in Queensland Scene first!

PEST EXTERMINATORS MOVE IN

One of Brisbane's old established 27 MHz and UHF pests fell victim to a long-overdue bust by the RIs recently, for operating out-of-band.

The guy must have thought the "scratch-and-win" ticket was a licence to do whatever he liked because he paid the fine and immediately went back on-air, out-of-band, on the very same frequency he'd been using for weeks, and stayed there night after night, repeatedly referring to the Radio Inspector who'd knocked him off as a "bloody idiot", a "bloody dickhead", and an "effing wanker" among other things, and openly challenging DoTaC to bust him again.

Naturally the RIs were not amused, so they did, only this time for REAL! As I write this column, he's awaiting trial.

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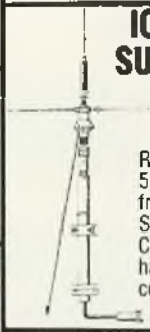

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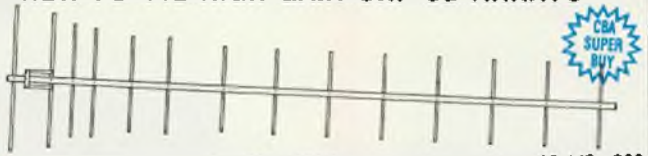

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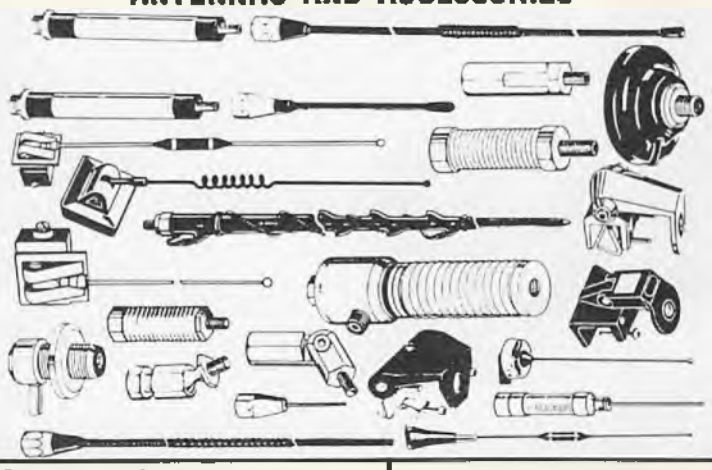

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200 ch. Intelligent memory 12 bands with 10 priority ch. ch. lockout scan delay.
Clip-on batt pack.

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See review CBA Mar/Apr.

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200kg/cm min torque.
Stationary braking torque 1000kg/cm min.

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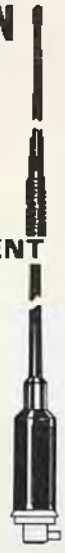

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CB Radio is great, but, is there . .

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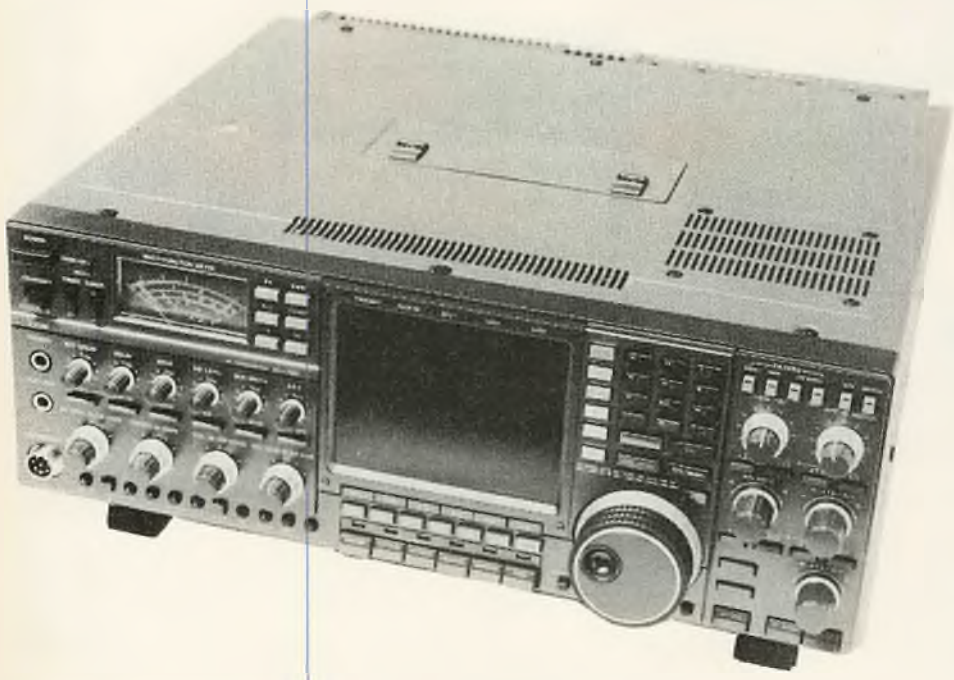


Tired of 40 channels? Amateur radio may or may not be what you need. DAVID FLYNN introduces ham radio and exposes a few home truths...

To many of our readers it is The Goal, The Big Thing in radio, passport to a world of endless exotic DX and almost limitless power, a place where CB is discarded like an old toy.

Some see it as merely an adjunct to CB, adding a new hobby to their list without displacing 27 MHz or 477 MHz.

Yet others call it a waste of time, the pursuit of old men with lives as dim as the fading valves in their home-brew transmitters, a private club of snobs, a playground of junior politics practised by small fish in big ponds.

For a simple hobby, amateur radio evokes complex reactions.

Perhaps the difference between CB and amateur radio was best defined by Dick Smith, who once likened them to comparing a Tiger Moth and a Boeing 747.

The Moth is short-range, fairly spartan and essentially fun; the Jumbo, a sophisticated, complex long-distance aircraft requiring a far higher degree of skill to fly.

An excellent analogy, which we can use right away to dispell a common myth — that amateur radio is 'better' than CB.

I enjoy a wild and windy jaunt in an open Moth as much as the quiet comfort of a 747, probably more so — although not in the pilot's seat, of course. But there are as many folks who wouldn't go near a Tiger Moth, as enthusiasts for whom the smooth perfection of the Jumbo takes all the fun out of flight.

It's horses for courses — what you get out of CB or ham radio, or scanning or shortwave for that matter, depends on what you want.

If you like an almost endless choice of bands and modes, of power and radios, of whether to build, experiment of simply operate — you'll love amateur radio.

Choice is the key to ham radio.

Once you have a ham ticket, no longer are you locked into AM, sideband or (on UHF) FM. No more will each spin of the channel selector end at 40, nor must you be content with the same local crowd and sporadic (no pun intended) skip.

Especially the skip. For the ham operator overseas skip is legal and limitless, although the rare countries still present challenge enough.

Not that this is all there is to amateur radio, but for most CBers it is more than enough. And combined with the lure of being allowed, nay, encouraged to wield a soldering iron in the call of duty, it is heaven.

The Amateur — What You Get...

Because of the long history and respected standing of the hobby, amateur radio has in number more slices of the RF spectrum than almost anyone except the military. The segments may not be large, but together they give

ham operators a number of bands to choose from.

On HF alone there are nine amateur bands, so you can switch between them in search of DX — when one band is dead, just dial up another.

There are also the very popular VHF and UHF allocations, where the variety is not so much in how distant a contact is but how you communicate with them — on voice (SSB and FM are most popular), data (teletype and digital 'packet' radio) or even pictures (amateur television), direct or by relay (repeater or satellite).

That amateur radio occupies such slabs of increasingly valuable spectrum is questioned by some — mostly outside the hobby, naturally (ever hear of a rich man wanting to pay more tax ?). The origin of this situation is of interest.

Once upon a time ham radio enthusiasts were real experimenters, on what is today called the 'leading edge' of their technology. For many years, until the technology itself overtook them, amateurs were responsible for developing almost everything that spurred on the growth of broadcasting and communications.

The hams sat quietly on a few megahertz of spectrum and by the famous combination of inspiration and perspiration found ways to develop new modes and techniques, or improved existing ones.

Each time this happened the hams were quickly thanked for their work, after which broadcasters moved onto the band and pushed the hams further up the spectrum to regions considered useless.

Then the hams would prove the band far from useless, in many cases having definite advantages over other frequencies — the reward for which was being given the shove once again..."Thanks lads, we'll take over now, how about you go and play on these frequencies, you'll have them all to yourself because they are no good to anyone else."

That was what they said about the MF band, at first. And then the HF band, then VHF, and so on. Every time, amateurs proved the 'professionals' wrong and got booted off the air for it. You think they'd have learnt after a while.

So it was pretty much like the old American pioneers, which is what hams were in a sense.

The pioneer wagon trains rolled west, settling new lands, taming the wild frontier, making a home where the buffalo roam and all that sort of thing. Their settlements grew into towns, the miners and farmers and bankers and merchants came along, and many of the pioneer folk packed up and went further west. Of course they still owned some of the best land in the towns, a privilege of being there first.

In the same way today's amateurs still have 'prime real estate' in the spectrum, a legacy of their innovative founding fathers.

That the nearest most modern hams get to home brewing is making a cup of coffee is beside the point, of course.

...And What It Costs

In the time-honored tradition of There Is No Such Thing As A Free Lunch, amateur radio exacts a cost both in commitment (hours of study to gain your licence) and cash.

Quite a bit of cash, in fact, although the rapid progress in rigs means that even a decade-old secondhand ham radio can cost as much as a top-line CB and still kick it to death in the flashing lights department.

But don't fall for the old line that amateur radio is cheap to get into, that you can build your own rig for a few bucks with components scrounged from TV sets and so on.

This spiel is in the same category as "of course I'll respect you in the morning," and "but officer, the light was orange when I went through it."

Any fragment of truth to this line could as well apply to motoring. Sure, you can build a go-cart from an old lawn mower and some spare parts, and it is very satisfying as such — but take it onto the freeway and you'll soon be brought back to reality.

Most hams just don't build radios any more. It's as simple as that. They might throw together some basic test gear or whip up an antenna (bad pun) but that is the end of it. Some will get old rigs and modify them to a degree, but you'll never catch one with his hands inside the shiny new Icom or what-have-you. Give them credit for being smart enough to know their limits.

For the well-heeled ham who wants everything factory-fresh, a budget-priced HF rig such as Yaesu's FT747GX comes in around $1400. 'Budget' being a relative thing — because there's nothing cheaper and there's plenty more expensive, from over $2000 for a midrange model to $4000-plus for ritzy rigs with the lot.

Then again, look at what a $1400 Yaesu gives you. AM/SSB/CW and optional FM, 100 watts output, all MF/HF bands and a general coverage receiver from 100 kHz to 30 MHz, a selection of noise filters and 20 memory channels with full scanning facility. Top-notch tech specs. And this in a rig promoted as being 'no frills'.

I won't list what the amateur fraternity consider as frills, but a rig with all the window dressing will come in shy of $10,000.

Equipment for VHF and UHF is more affordable, and naturally compares well with 477 MHz gear in both price and performance. Tiny powerhouse handhelds start at $400 and mobiles around $600. Current favorites include dual-band (2m and 70cm) mobiles and handhelds with full duplex crossband.

Once you have an amateur licence you get to play around with all sorts of antennas, mind you, the above photo is certainly taking things to the extreme.

Translation — you can talk on one band and listen on another at the same time, just like using a telephone.

The market for secondhand amateur radios is healthy, as in many instances it halves the cost of entry into amateur radio, and a number of stores now display 'pre-loved' rigs alongside their chaste cousins.

...And What You Need

The most obvious difference between amateur and CB radio is that whereas CBers are simply given their licence, amateurs must earn theirs — a reason why hams tend to behave better than CBers once on the air. They've worked for their right to radiate, and won't jeopardise it.

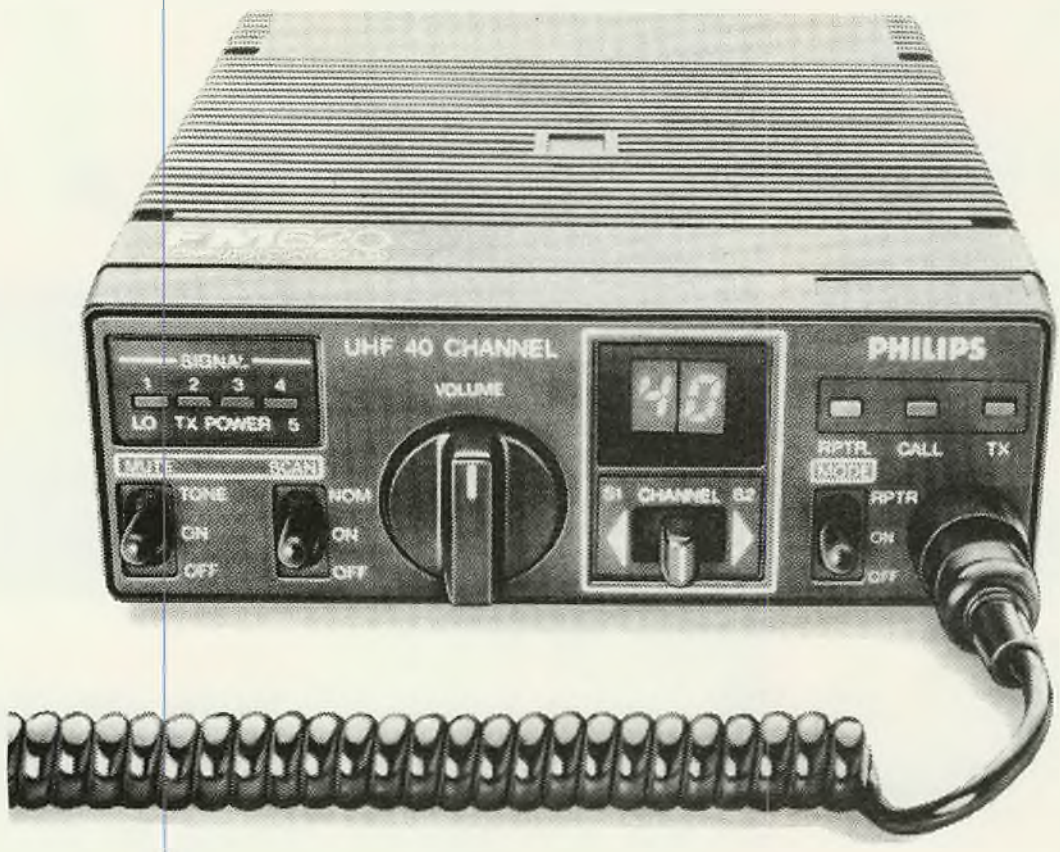
All hams must hold an appropriate licence, which is only obtained after passing a number of examinations held by the DoTaC.

There are three levels of licence — novice, limited, and 'full call'. No prize for guessing that 'novice' is generally designed for the beginner, and in keeping with being the easiest ticket to obtain it also limits you to a handful of bands and low power.

The idea is that you should progress from the lowest grade to the highest, being rewarded by increased 'privileges' such as more power, access to new bands and more sophisticated modes. You can of course start at any grade you choose, and in practice many amateurs remain at the level which best suits their interests, even if this isn't the full call.

Licences are based on several exams, graded to a suitable level.

If it could sing it'd sing Waltzing Matilda.



They don't come any more Australian than the Philips FM 620. It's designed here in Australia. And it's manufactured here. So you know it's tough enough for local conditions.

And though it can't sing it does just about everything else.

The micro computer inside every FM 620 makes it the ultimate two-way in its class.

You get advanced technology at an affordable price.

The FM 620 is crammed full of features: fast channel scan, super bright visual indicator, easy switch controls and a lot more that has to be seen and heard to be believed.

See and hear the FM 620 at your local Philips dealer.

He'll be happy to sing Waltzing Matilda with you.

PHILIPS

SSB/PCS 185

Having passed the necessary examination, you no longer need to fear the dreaded knock on the door to ask why you're working overseas skip. Above QSL cards cover everything from Iran, through Bear Island to El Salvador — not a bad collection for a Novice operator...!

Common to all grades is the regulations exam, a multiple-choice paper based on the rules and regs of the amateur radio service. This is a cinch.

The theory exam can be taken at two levels — the simplest is for the novice ticket, while the more advanced goes towards the limited and full call licences. Both papers are multiple choice.

CW (carrier wave, best known as morse code) sending and receiving are required for the novice and full call, but not limited, licences. Novice CW is at five words per minute, and full call at 10.

And that's all there is to it. Because each exam can be sat seperately you can slowly build up a licence one session at a time, and upgrade just by sitting the next appropriate exam.

The novice amateur needs regs, novice theory, and CW send/receive at 5wpm. This is the most common starting point, introduced in the mid-seventies as a fairly simple entry into the hobby and very much intended to curb the then piratical desires of illegal CBers by giving them an easy way into ham radio.

Novices get AM, SSB and CW on portions of the 80m, 15m and 10m HF bands, and FM on part of the 2m VHF allocation. This provides a good smattering of DX bands plus a chance to mix it with the locals on the very active 144 MHz band.

A limited ham needs only regs and full theory, but not CW. The limitation is in frequency only — below 30 MHz thou shalt not pass. But everything in the VHF and UHF spectrum is fair game, as are all modes and power levels. More limiteds tend to operate UHF CB and own scanners and computers than any other licence grade, it seems.

You can also find many 'combined' licencees who hold both novice and limited tickets at the one time — having began as a novice, upgraded their theory (giving them a limited ticket and so unrestricted access to the VHF/UHF bands, advanced modes and more power) and then working on the higher speed morse.

Once you have regs, full theory and 10wpm CW under the belt, that's as high as you go. Every frequency, every mode, and every ounce of legal power awaits your command.

The callsign you receive depends on your licence grade and in which state you live.

All Australian amateur callsigns commence with the letters 'VK', which are specifically allocated to our country. Other prefixes are held by other countries (such as 'G' for England and 'VE' for Canada), so once on the air you can identify the origin of each operator — very useful when the DX starts to flow.

Following VK comes a number, the state numeral mostly used in postcodes and other administrative purposes — 2 for NSW, 3 for Victoria and so on.

Then, two or three letters, part of which identifies your licence grade — all two-letters calls or three letters commencing with 'A' signify a 'full call'; T, X, Y and Z are for limiteds; and M, N, V and P for novices. Combined licencees may hold two callsigns, one for each grade or a single callsign beginning with J or K.

The last letters make up your unique callsign. It is quite common for these to be the initials of the licence, although other combinations may also have less obvious meanings. Others are taken at random from the block of available callsigns.

Some examples then. VK3NLS is a novice from Victoria, and happens to be editor Len Shaw. VK7TM is a full call (two letters only) from Tasmania, being ARA contributor Tom Moffat. My own call is VK2YYN, a NSW-based limited licence.

Yes, I have been limited for nearly 10 years now and am happy to remain so — FM as a mode, and not DX as a method, is my pleasure, and the only reason I might ever get off my bum and get a full call would be to muck about on 10FM.

As I said at the start, horses for courses.

Where To Begin?

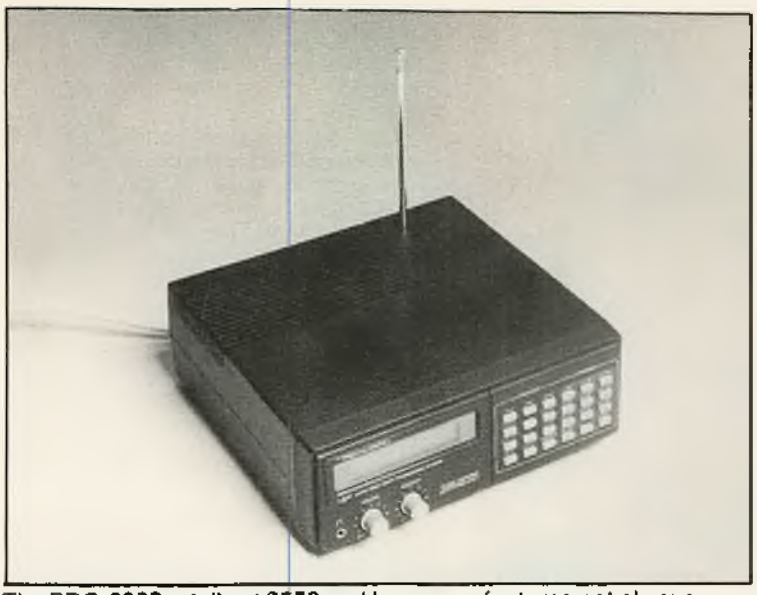
By now you should have a pretty good idea whether or not amateur radio will appeal to you. If you have a scanner or HF receiver you can go a step further by listening to the ham bands. If you like what you hear, go for it.

Study for the ham licence can be done in a class, most often through your local amateur radio club, or on your own. Once again this depends on how you best learn, at your own pace and to your own timetable or with the support and commitment of a group.

There is no shortage of suitable texts and learning aids for the various amateur grades. The novice licence is well catered for, being the most common entry point, and there are many excellent study guides written by Australian hams to suit local rather than overseas requirements.

There are theory guides, sample exam papers, morse tapes, even a much- praised videotape course (available from the Gladesville Amateur Radio Club). Most public libraries hold some of these texts, so you can get your feet wet without having to splash out, so to speak.

Is amateur radio your Next Big Thing? Remember that, like CB radio, it has something to be said both for and against; whether you consider it better than CB depends on your own sense of value, and if you like variety then it's not a bad way to get more out of your hobby.



The PRO-2022 retails at $550 and has many features not always found on more expensive models.

From just $230 to $550

TANDY HAS THE GOODS

PRO 2022 DESK TOP SCANNER.

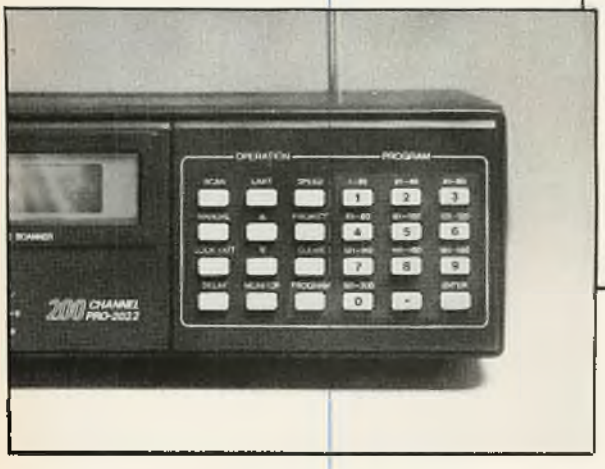
A couple of months ago, Tandy released the up-graded PRO 2021 desk-top scanner. Designated the PRO 2022, it is a mid range receiver with some top of the range features. This new Realistic set is a desk top or base unit, with many features not always found on more expensive models.

Frequency coverage of the PRO 2022 has been increased from its predecessor with the inclusion of the 806-960 MHz portion which allows access to the 800 MHz trunking channels. Other bands covered are 68-88 MHz, 108-136 MHz (AM), 136-174 MHz and 380-512 MHz, overall that is in excess of 32,000 frequencies the user can program into the 200 memory channels.

Along with the extended frequency coverage, the 2022 has undergone a change in image. The metal case has been replaced with charcoal colored ABS plastic, the sloping front panel is now more upright, in fact, the whole package is much neater and now closely resembles the PRO 2005. The new model doesn't have provision for mounting in a car and, unlike the PRO 2021, no bracket is supplied.

Happily, a manufacturer has decided to standardize on one antenna socket for the majority of its scanning radios and the rig has a BNC socket instead of the now antiquated Motorola type car radio plug. The on-board antenna is of the standard telescoping variety and, as always, it is adequate for local listening. It is inserted through a hole in the top of the scanner and screwed down.

The low cost PRO-57 is small in size, but, big in performance.



Keypads on the 2022 are clearly labelled and easy to operate.

Does the 'PRO' in Tandy scanners mean Prolific? Seems that way as they certainly have a scanner for all markets. Our scanner expert Russell Bryant looks at three brand new sets for 1990.

The PRO 2022 can sit flush with the desk or the front can be raised to provide better viewing of the front panel. The grey rubberized keys of the 2021 have been retained as has their location on the keyboard. The top mounted speaker delivers sufficient audio to be heard in all possible situations and, overall, the PRO 2022 is functionally the same as its forebear.

POWER CORD IS A PROBLEM

The 240 volt power cord is a problem if you wish to use the radio mobile as it is permanently fitted to the set — then again, you will never lose the cord. The rear panel also supports the 12 VDC connector, extension speaker jack, battery back up compartment and BNC antenna connector, the recording jack has been deleted from the PRO 2022.

As always, the handbook leaves nothing in doubt, it clearly and simply sets out the procedure for setting up the unit. It takes the user on a guided tour of the controls, the LCD display and operation of the memory function. Notes as to reception techniques, common problems likely to develop and birdies are included in the booklet. In all, there are only fifteen birdies likely to interfere with the function of the scanner.

Sensitivity ranges from .5mV on mid VHF, to 1mV for high VHF and 2mV on air VHF and 800 MHz. Quoted at 20db S/N ratio, these specifications improve if calculations are made using the SINAD system. At its fastest, the scan rate is eight channels per second, taking 12.5 seconds to cover the 200 memory channels. In search mode the PRO 2022 covers 16 steps per second, or eight steps per second, fast and slow respectively.

The 'love it or leave it' beep accompanies each depression of a key. Personally, I think the tone is handy to have, at least you know if a function has been activated. During the search mode, any active frequencies can be stored in the ten channel MONITOR bank for review at a later time.

The neat slim lines, expanded frequency coverage and best of all, the price, makes the PRO 2022 a welcome addition to the Tandy range of programmable scanning receivers.

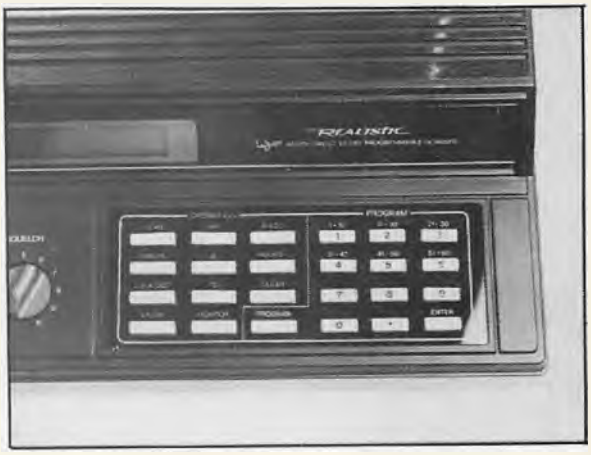
Recommended retail of the PRO 2022 is $549.95.

PRO 2024 60 CHANNEL DESK TOP SCANNER

While most monitors live in the metropolitan areas of Australia, a fair proportion come from country regions where the amount of activity is limited. For example, 800 MHz trunking is restricted to the more populated capital cities and surrounds, likewise, cellular telephones have not yet reached beyond the coastal fringes.

With that in mind, the need for a scanner that receives 800 MHz is low, as is a large capacity memory. The PRO 2024 is ideal for our country dwellers, or for those who are happy to live without the higher frequencies. It has all the usual features — lockout, delay, priority, dual scan and search speeds and a six channel monitor bank. Memory capacity is a handy sixty channels, not too small, not too large.

PRO-2024 is well suited to country dwellers who are happy to live without the higher frequencies.



PRO-2024 has 60 channel operation with all the usual features.

PLENTY OF ACTION

Frequency coverage of 68-88 MHz, 118-136 MHz AM, 138-174 MHz and 380-512 MHz means that there is plenty of action to be monitored with access to over 22,000 frequencies. Provision is made for an extension speaker, headphones and external antenna, power is via 240 VAC only so no mobile operation.

Sensitivity is on par with the larger and more expensive models in the Tandy catalogue. The LCD displays all instructions along with channel number frequency and monitor channel number. The front panel is clean and well laid out while the keyboard has a positive feel to it with little chance of error.

Overall the PRO 2024 is a value packed, tidy unit that retails for $349.95.

PRO 57 10 CHANNEL DESK TOP OR MOBILE SCANNER.

Need a second scanner for the shack ? Possibly a simple unit that you can use mobile ? The PRO 57 may fit the bill. Covering VHF mid and high bands as well as UHF, the PRO 57 is small in size, yet big in performance. A straight forward, no frills ten channel unit, the '57 has the basic controls plus lockout and delay.

Specifications of the PRO 57 are equal to its big brothers, sensitivity is approximately 1mV across the entire range. The ten memory channels are scanned in just over a second. Measuring 5cm X 20cm X 17.5cm and weighing around three quarters of kilogram, the PRO 57 will fit neatly into any radio room or motor vehicle.

One plus for mobile operation is the fact that the AC cord is detachable.

At a recommended retail of $229.95, you can probably afford two of these compact scanners which certainly have a performance in excess of what you might expect.

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All information on this survey will remain confidential to the editorial staff of CB Action magazine.

Name .....

Age .....

Address ..... **P'code**.....

I presently own/operate

- ☐ AM/SSB
- ☐ UHF CB
- ☐ scanner
- ☐ shortwave receiver
- ☐ personal computer

CBA has six regular columns - these are

Bandspread
DX International
HF Link
Queensland Scene
Scanning Action
477 Report

Which of these columns is your favorite, and why ?

1.....

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Please rank the next four columns in your order of preference (from '2' for your second favorite to '5' for your fifth favorite)

2.....

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Are there any other comments or suggestions you wish to make?

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Thanks for taking part - we're anxious to hear what you want to say, and anxious to give away those free subscriptions - so please send this survey to CBA Reader Survey, GPO Box 628E, Melbourne, Vic. 3001.

ONLINE

With PATRICK McDONALD

Got a radio of some kind? Of course you have!
Got a computer? Bet you have one of these as well.
Stats compiled by CB ACTION show that a steadily increasing number of readers and radio enthusiasts all have at least one computer, perhaps the ubiquitous C64, a TRS80, or, more and more likely, an IBM clone or a Macintosh.
And that's where this new column comes in...your personal computer, whatever kind it is, can be the best radio accessory ever, even as important as a good antenna...well, almost!

In future issues of CBA I will try to show how you can use your PC to enhance the radio hobby: CB radio, shortwave listening, ham radio and even scanning...all these can be a lot more fun with a computer and various specialised programs.

First, however, I would like to mention a modern communications phenomenon that may be unfamiliar to those unfortunate readers who missed last issue's article 'DX By Computer'. This phenomenon is the computer 'bulletin board service'.

In a nutshell, the BBS (as it is called) is a means of linking the computer in your home or business to thousands of other specialised computers around the world, through a modem connected to an ordinary telephone line.

You can swap radio tips, frequencies, and chat about whatever you like — it even sounds a bit like radio, doesn't it?

Well, naturally, a number of radio hobbyists have combined the two fields and come up with BBSs that are dedicated to radio listeners. Ready for the plug? Here it comes!

Yours truly runs one of the first such services in Australia, the 'Shortwave Possums' BBS, which has been catering for all kinds of radio listeners for more than a year now. I guess that's why I'm writing this column for CBA, come to think of it!

IT'S FREE FOR BASIC USAGE

But, best of all, the SWP BBS is free for basic usage, the only cost being a phone call to (02) 651-3055. You can ring in on your modem 24 hours daily and get in touch with shortwave listeners tuning into the international radio bands (or maybe the tropical broadcast bands) CBers, ham radio operators and scanner enthusiasts.

However, for now let's turn to another use you can make of your computer in the radio hobby and a very important one...

COMPUTER LOGBOOK PROGRAM

If you are a fairly serious listener or operator, you will usually want to keep some record of what you hear — a logbook, which lists frequencies, stations, and the dates and times you heard them or chatted with them. And if you are like me, with...ummmm, quite a few years of radio experience in the 'logbook of life', you will have at least one enormous, tattered volume with umpteen thousands of scribbled entries on hundreds of dog-eared pages. A real historical treasure trove, and a prized possession!

But have you ever tried to find that frequency you heard Deutsche Welle on in 1981, late in the evening?

"Was it from their Sri Lanka transmitting site? No, that site wasn't even in existence then! Or was it...? Damn! Can't find that entry at all! Can't even read my own handwriting some of the time!"

Sound familiar? Then you need the Australian 'Recom' electronic radio logbook, a special computer logkeeping program written by Robert Nagy. As the name suggests, Recom allows you to keep all your radio records in a kind of database and instantly call up any information previously entered at the touch of a key...sounds like sliced bread, right? Wrong! It's even better!

The program is in fact not only useful, but easy to use. The version I received from the author (via a computer BBS — quick and inexpensive, no postage costs and no risk of it being lost in the mail) was designed for an IBM-clone type of computer, using the MS-DOS or PC-DOS operating system.

"Recom has been designed to help anyone who regularly listens to or transmits on a radio frequency," says Robert. "Its only purpose is to make this task easier. With Recom you can enter a particular frequency you have heard — enter the mode of transmission, time (in UTC) and date, and any notes or comments, and then save this information into a database."

You can then recall any part of this information directly from the computer disk.

Find all shortwave frequencies you have logged on 31 metres? Easy! Check recent scanner loggings on 467 and 468 MHz? No problems. You can instantly recall any single frequency you want, or call up a listing of frequencies over any range you choose.

Recom even has an online clock showing both local and UTC time!

WHERE DO YOU GET IT?

So where can you get this fabulous logbook program? If you have a modem, simply ring Sydney's 'Shortwave Possums' BBS and download it via the phoneline to your own computer. Otherwise you can write directly to **Robert Nagy at PO Box 142, Glenhuntly, 3101.**

Robert would, of course, appreciate any small contribution towards his costs. Programs like Recom are called 'shareware' — they are copyright to the author, but available on an honor system for a small donation to meet mailing costs and the like. Most importantly Robert is keen to receive feedback on his program and how it can be further improved from the users' point of view. (These comments for Robert can be left in an electronic message on SWP).

Whoa! Time's up now and space has run out! But I'll be back next issue with more radio and computer tips...in the meantime, drop me a line **(at PO Box 357, Round Corner, 2158)** if you have questions or suggestions relating to using computers with radio. Or even better, ring me via your computer and modem at SWP BBS!

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Uniden UH-005 Sundowner
Superb performance at a price you can afford. • High/low power
• Rechargeable NiCad pack
• External mic. facility

Commericial UHF – repeater acces available

Sawton KG109
The toughest portable you can get!
Dust-proof, splash proof, with 5 watts power. Can be programmed for 40UHF CB channels and any business band frequencies, 470-480MHz.

Sawtron KG107
Built to full commercial standards. Complete flexibility , with programmable CB and commercial channels, , memory, priority and band scan and telecall or CTCSS options. 99 channels • scan operation • transmit time limiter • squelch tail eliminator • scan operation • battery saver circuit • wide channel frequency spread

SAWTRON

27MHZ AM MOBILE

Pearce Simpson Super Cougar MKII
A full featured AM rig in a compact package • Channel 9 reset • Switchable ANL • LED channel display and LED power/signal meter

PEARCE-SIMPSON

Uniden Pro 510e and Pro 520e
Professional mobile CB with latest technology.
• LED readout • Dual conversion superhet • LED metering of output/signal
• Biggest seller

Full range of KENWOOD and ICOM Amateur Equipment.

Colt 55
Quality and features at an affordable price. • Electronic channel change
• Channel 8 recall • Last channel memory • Super compact design

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Uniden Pro 540E
The latest technology in an AM rig Comprehesive facilities, backlit controls and modern styling

GME | Electrophone:::

GME TX820
GME reliability in a compact radio.
• Auto-recall of channel 8 • Last channel memory • LOC/DX & ANL switching
• Mic. with channel 8 switching

GME TX 830
Superior AM Transceiver from GME.
• Channel 8 recall • Front mounted speaker • Digital and numeric channel readout • RF gain and noise suppression circuitry.

27MHZ AM/SSB

Cobra

Cobra 148GTL
One for the true enthusiast • Mic. and RF gain controls • Built-in SWR meter • Display dimmer

PEARCE-SIMPSON

Pearce Simpson Super Puma
Full featured sideband rig • Full 12 watts output on SSB • Antenna warning

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Uniden PC-122
Ultra high performance in a very compact package. Popular model, ideal for in-dash or console mounting.

Uniden Grant
One of the best CBs ever built. Feature packed Uniden quality. Bright LED channel readout and RX/TX indicators. NB/ANL Modulation switch.

GME | Electrophone:::

GME TX-840
A high performance, feature packed sideband radio • Compact, with flush rear panel • Auto-recall on ch.8 • ANL, noise blanker and Local/DX switch

Laser Antennas
High performance mobile antennas Fibreglass and stainless steel.

27MHz Antennas
We stock a complete range of mobile and base station antennas.

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Uniden Pro 640
Outstanding heavy duty unit. Illuminated controls, automatic noise limiting/ blanking, S/RF and SWR meter, dimmer control, RF ATT and PA mode.

Uniden Washington Base Station
27MHz feature packed AM/SSB CB radio. Dependable and hard working. LED display, automatic noise limiting, noise blanking, instant channel 9.

Scanners and Receivers
All bands

27MHZ HANDHELDS

Uniden 310e
40 Channel handheld with optional NiCad battery pack and trickle charger – perfect for emergencies. Standard pack supplied (batteries not included).

TX64
6 channel handheld Perfect for bushwalking marine and general outdoor use. Floppy and telescopic antenna versions available

Frequency Registers

ZCG Antennas
2', 4', 5' and 6' models
The most breakproof antenna you can get. Pre-tuned. 2 Year warranty

Helical whips
Light, strong and totally corrosion resistant. Epoxy coated.

Stationmaster Antenna
1/2 wave feed design for maximum range.

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ACCESSORIES

Full range of:
- VSWR/Power Meters
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Extension Speakers

Horn Speaker

Gutter Mount

Magnetic Base/Lead

Spring

Folding Snapdown

Roof Rack Mirror Mount

Slope Adjust Fitting

Bullbar Bracket

Permanent Angle Mount Bracket

Guard Mount

Teflock - the ultimate PL259 connector
UHF connector guaranteed not to break or short. No soldering.

DM7000 Base Compression Mike
Full range available
- Dynamic Handheld
- Power mics
- We can wire to most CBs.

CODAN HF

CODAN 8528 TRANSCEIVER
Top of the line – the right choice for long range communications..
- 2-28MHz/400CH capacity
- 100 watts PEP
- Scan, selcall General Rx

CODAN 8525 TRANSCEIVER
- 2-28MHz coverage
- 99 programmed channel capacity
- 100 watts PEP output.
- Scan selcall General Rx

CODAN 8727 TRANSCEIVER
- 2-16 MHz coverage
- 10 channels
- 100 watts PEP output
- XTAL locked

CODAN

CODAN 8558 ANTENNA
A completely automatic tuning whip antenna system for multi-frequency land mobile applications

AUSTRALIAN MADE

13.8V Regulated Supply
240V mains to 13.8 volt DC supply.
- 3,5,6,10 amp.

"The Brute"
- 25 Amp continuous operation.

Voltage Reducers
20-30 volts down to 13.8 volts. For trucks, boats, aircraft.
- 3,5,10,20,30 amp

CELLULAR PHONES

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Uniden CP2000
Mini Transportable from Uniden. Ideal for car, boat, office, home.

NEC Portable
Compact and light weight, 99 memories. Talk time report. Works without antenna extended.

NEC

Pearce Simpson
Top brand mobile at a budget price.

PEARCE-SIMPSON

Pagers, Networked paging systems.

A complete range of alphanumeric, numeric and tone pagers. State-of-the-art performance from NEC and Swissphone.

NEC Swissphone

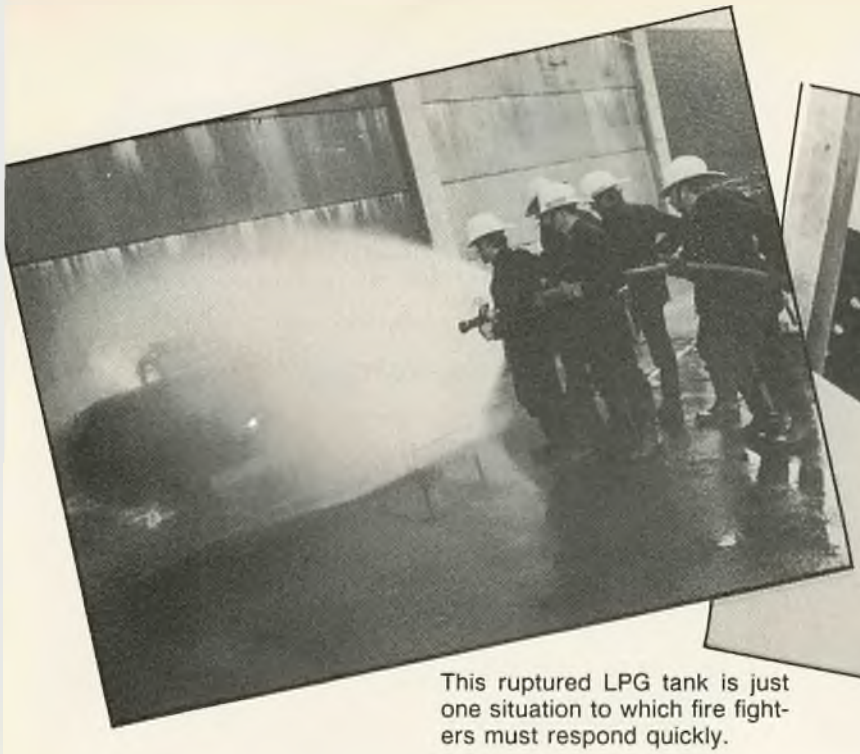
Whistler Radar Detectors

The best detectors money can buy. Miniature and modular units available.

Whistler

Model 4000

Model 500



This ruptured LPG tank is just one situation to which fire fighters must respond quickly.

Senior offices of the NSWFB co-ordinate fire fighting at a chemical fire, using radio to direct crew and equipment on the scene.

It's bushfire time again and Bob Lopaka reports on where to find the

FIRE BRIGADE FREQUENCIES

and what the codes mean.

In the monitoring circles I mix in, scanner programming invariable favors police agencies. Many very enthusiastic emergency service monitors either forget or have never realised the high-intensity excitement that can be heard on Fire Brigade radio.

Not only is there much high drama to be monitored on the fire frequencies, often as not their channels are the most comprehensive and informative when you are trying to piece together lots of facts and details of an emergency-related incident.

A glaring example of this is what occurs when an Airport Alert is in progress. Police, Fire, Ambulance all attend but frequently after the conclusion of the Alert, police and ambulance radio quickly put the incident out of the limelight, and move on to other outstanding calls. Fire Brigade radio however takes a much bigger interest in having a senior officer at the scene report back by radio virtually everything you need to know if you were there. . . aircraft tail number and type, persons-on-board figures, departure point, destination, type of problem believed to have caused the incident, any casualties. Frequently even names of those injured are heard over fire frequencies. The media realises the value of fire radio and remains glued to it!

Many of my neighbors are aware of the four scanners and one communications receiver inside my home, but until a large house fire nearby, not one of them showed any interest. When the house caught alight, and firemen were running around in the street in front of them using UHF handheld portables, all that changed, and those same neighbors were asking me if my scanners were picking up anything of interest about the fire. When I said "yes, I know exactly what's happening there" I could sense a few scanner sales were imminent at the local Tandy stores!

I must point out that scanner ownership from anyone's viewpoint is most definitely a terminal disease! Once bitten by the marauding scanner bug, the out-of-control condition quickly escalates, deteriorating the logical portion of the mind, commanding it to go out and obtain more of the same. This further encompasses the enthusiast into what will eventually become a way of life, not just an all-consuming hobby.

While actively using my scanners, I particularly enjoy FREQUENCY TARGETING, which is a very specialised form of monitoring involving focusing total concentration on a particular frequency or series of frequencies, until you know everything there is to know about the user and the operation being conducted.

Several years ago, I successfully targeted Australia's Wonderland for CBA and the immense amount of reader feedback I enjoyed has spurred me on to look at other interesting organisations Australia-wide.

I have decided to target State Fire Brigades, placing operational techniques under the microscope, and presenting very useful radio communications system information from these very professional public safety organisations.

PROCEDURES

When public calls for assistance are received, calls are initially received by specially-trained officers in the Communications Section who assess the information and despatch details of the emergency fire call to the appropriate fire station responsible for attending to fire incidents in that particular area. The despatch is made by landline-terminal-display, with capability for immediate printout so the officer in charge (OIC) of the fire station can rip and read and hand the message physically to the attending firefighters.

The OIC of a fire appliance responding to an emergency fire call has a primary role to fulfil, that of FIREGROUND MANAGER. This

FIRE BRIGADE FREQUENCIES

means that on his arrival, he must immediately assess the fire situation, become involved in fire-fighting operations from a purely organisational viewpoint while his men actually fight the fire, and as soon as possible transmit a brief message outlining the situation. This includes the approach being adopted, requests for other fire stations to attend and so on. No assumptions are ever made by these senior personnel that an officer in the radio section will automatically despatch further units. Further support is positively requested.

The OIC is held to be personally responsible for the continual maintenance of a radio watch with Control. He is further charged with ensuring that the driver of his appliance leaves the radio switched on to act as a Mobile Command Relay Centre. If portable radios are being used by fire-fighters in the field, many of these appliances are fitted with cross-banding equipment, which will convert the simplex signals from the low-power UHF portables into mid-band VHF for transmission back to Control. This also works in reverse, allowing the fire-fighters to receive mid-band signals direct through their UHF portable radios as they go about their business of actually fighting the fire.

A second unit arriving will cause the OIC to demand that the radio in that second appliance is left on as a backup system. The callsign of the appliance acting as the base station is notified by radio to Control.

Channel 3 on mid-band VHF is the emergency frequency for the NSW Fire Brigades, and all appliances that are responding to RED (channel priority) messages to which the Forward Control Vehicle (FCV) is responding also must change to channel 3. Appliances on non-emergency trips such as refuelling or while on exercise must not change frequencies, but remain on their normal working frequency.

SPECIAL TERMINOLOGY

PUMPER — fire engine (appliance); **LADDER** — turntable ladder; **PLATFORM** — hydraulic platform; **CAR** — sedan or wagon belonging to Brigades; **TANKER** — water tanker vehicle; **FC** — forward control; **BA** — breathing apparatus.

CALLSIGNS

Callsigns are broken into two elements. Simply, these are the type of appliance and the station at which it is based. While perhaps it would sound more natural to have a PUMPER from No. 62 station identity as "SIXTY-TWO PUMPER", in fact policy dictates that it be swapped around the other way. This is in case a fireman, while using the radio, cuts off the first word or so of his transmission while under pressure, Control will still be able to copy the station number which is broadcast at the rear of the callsign.

MESSAGE FORMATTING

An example of a typical fire brigade radio transmission of a routine nature:

APPLIANCE: "Pumper sixty-two"

CONTROL: "Pumper sixty-two go ahead".

APPLIANCE: "Pumper sixty-two, blue, code one, code eight".

In this sample message, the codes mean "investigating" and "have arrived on the fire ground". If the appliance is the first to arrive, it is an indication that it will be the appliance providing further information. No personal messages, slang terminology, or offensive language may ever be used on a NSW Fire Brigade radio.

KEY WORDS

"Come in", "standby" and "channel clear" are just a few of the common key radio phrases. Of course, "come in" means the same as "go ahead and start your transmission", while "channel clear" is a message from Control (only) indicating that all mobile stations (appliances, cars etc) have concluded their use of the frequency, and the channel is available for immediate use.

KEY MESSAGES

These include arrival messages, with brief summaries of the situation, requests for further assistance, spoken as "make stations six" for six additional backup stations, or "make stations eight" for eight extra fire appliances.

Where additional assistance is required, certain information which is of vital importance will be passed over the network. This will relate to the size of any building on fire, the number of levels it has (not spoken of as floors or storeys), any hazardous materials that may be encountered, the extent of the fire, what fire-fighting measures are being adopted and whether ambulance, police or other public authorities are required. You will also hear INFORMATIVES, which are messages providing further details of situations. These messages must be transmitted within five minutes of the first appliance arriving at the fireground.

The ingredients that these messages must include are: 1. Type and size of building; 2. Occupancy. . . whether factory, residential or commercial; and 3. Degree of fire severity.

Severity is always advised as "well alight" or "alight". The term "well alight" means the total floor area is on fire, whereas "alight" means less than the total floor area is burning.

When the spread of fire has been held in check by attending brigades, a "fire contained" message may sometimes be broadcast, meaning the fire, although not extinguished, is under some sort of positive control by the fire-fighters.

Stop messages mean "stop further action being initiated" and the fire emergency has ended. Stop messages are sent by the OIC on the fireground and in his radio report the OIC will when large fires or other major incidents are involved, include a great amount of detail.

NSW FIRE BRIGADES

78.13 MHz channel 1 City/inner suburbs
78.07 MHz channel 2 Southern/western suburbs
78.04 MHz channel 3 Morning radio checks
78.01 MHz channel 4 Outer western suburbs
78.055 MHz Gosford
78.16 MHz Katoomba
78.1 MHz Newcastle
78.115 MHz Wollongong
78.28 MHz workshops
471.35 MHz channel 1 senior officers UHF portables X-band
471.525 MHz channel 2 pumpers UHF portables X-band.
471.7 MHz channel 3 breathing apparatus portables X-band
471.725 MHz channel 4 multi-purpose
471.85 MHz channel 5 technical portables X-band
169.45 MHz Nowra (hi-band VHF)

RADIO CODES:

Blue code 1 — no sign of fire, investigating; code 2 — called off the incident, return to station, no color code as it's only broadcast by control.

Blue code 4 — minor fire, one pumper only required. A fire already put out by other than brigades can be attended and Code 4 used, with no further information expected to be relayed unless situation changes dramatically.

Blue code 8 — arrival by all appliances responding. First station to provide more information at first opportunity.

Blue code 9 — available to respond.

Blue code 10 — malicious false alarm.

Blue code 11 — needless false alarm.

Green code 14 — minor fire extinguished, no further advice necessary.

Blue code 20 — spillage of flammable or hazardous substance,

A NSW fireman checks a building fire alarm, and uses a Motorola MX-350 UHF handheld to 'crossband' back to headquarters via his VHF mobile.

taking action to render it safe. Further information on quantity and toxicity must be sent, prefixed blue, red if urgent. A green informative message must be sent when the area is rendered safe.

Blue or red code 30 — persons trapped, injured or hurt, including by asphyxiation. Prefix the message red if urgent, and if ambulance is required, type of injury/injuries, extent, whether civilian or fireman.

COLOR CODES:

YELLOW — message not associated with emergency; WHITE — information on unreported fire or incident; BLUE — incident messages; GREEN — incident stop message; RED — channel priority messages, usually spoken three times — RED RED RED!

QUEENSLAND FIRE SERVICE

466.85 MHz channel 1 Brisbane South
466.925 MHz channel 2 Brisbane Central
467.325 MHz channel 3 Brisbane North
466.875 MHz channel 4 Fireground
466.975 MHz channel 5 Fireground
467.675 MHz channel 6 Caboolture brigade
467.575 MHz channel 7 Gold Coast/Logan brigades
467.35 MHz channel 8 Ipswich brigade
467.8 MHz channel 9 Sunshine Coast/Toowoomba brigades

RADIO CODES:

K1 — arrived and investigating; K2 — arrived, smoke showing from structure; K3 — arrived, smoke showing from grass/rubbish; K4 — returning to station after investigation; K5 — returning to station after incident; K6 — malicious false alarm; K7 — returning to station to replenish; K8 — arrived, checking with officer in charge; K9 — arrived, special service incident (traffic accidents etc); K10 — fuel/oil/chemical incident; K11 — justified call; K12 — ambulance required; K13 — electricity authority required; K14 — QLD police required; K15 — gas company required; K16 — turncock required to control water supply; K17 — gas examiner required; K20 — high-rise building procedure; K30 — no lights or sirens; K40 — cancel, return to station; M — male; F — female; A — ambulance; C — coroner; Case 1 — first aid lines (small hose); Case 2 — large hoses from the pump; Case 3 — large hoses from mains supply; Case 4 — large hoses from static supply.

APPLIANCE NUMBERS:

1 — first pump; 2 — second pump; 3 — third pump; 4 — telescopic aerial appliance; 5 — salvage tender; 6 — hydraulic platform; 7 — ladder; 8 — breathing apparatus tender.

RADIO CALLSIGNS:

Appliances have callsigns consisting of appliance number followed by number of the home station. For example, first pump (1) from headquarters (01) call sign 101.

NORTHERN TERRITORY FIRE SERVICE

75.5 MHz; 170.55 MHz Nhulunbuy; 467.75 MHz channel 1; 467.8 Mhz channel 2.

SA METROPOLITAN FIRE SERVICE

168.82 MHz channel 1; 168.85 MHz channel 2; 168.25 MHz channel 3; 168.34 MHz channel 4; 168.88 MHz channel 5.

CHANNEL ALLOCATIONS:

Channel 1 Adelaide; 2 Fireground; 3 Northern Area; 4 Central; 5 Country towns serviced by MFS.

APPLIANCE NUMBERS:

1 — first pump; 2 — second pump; 3 — skyjet; 4 — support tender; 5 — snorkel; 6 — breathing apparatus tender; 7 — turntable ladder; 8 — foam tender/grass fire unit; 9 — salvage unit.

RADIO "K" CODES:

9-1 — fatality-one; 9-2 — fatality-two; 10 — persons reported in danger; 10-2 — all persons accounted for; 11-1 — ambulance required-one casualty; 11-2 — ambulance required-two casualties; 12 — electricity authority required; 13 — gas company required; 14 — police required; 15 — fire prevention required; 16 — details to follow; 18 — mobile to . . .; 19 — available; 20 — off and clear at station; 21 — arrived at change of quarters station; 22 — responding to call; 23 — appliance breakdown-cannot proceed; 23-2 — appliance in accident-mobile; 26 — engaged for some time; 27-1 — one relief pump and crew required; 27-2 — two relief pump and crew required; 28 — return to station; 29 — senior officer responding; 29-2 — senior officer in attendance; 29-3 — senior officer leaving scene; 29-4 — senior officer not proceeding; 31-2 — available on radio; 31-3 — radio check; 32 — has the alarm cleared?

ACT FIRE BRIGADES

71.0 MHz; 71.54 MHz pumps; 465.025 MHz channel 1; 466.85 MHz channel 2; 465.325 MHz channel 3; 465.65 MHz channel 4.

VICTORIAN METROPOLITAN FIRE BRIGADES

467.775 MHz channel 1; 467.475 MHz channel 2; 466.875 MHz channel 3; 466.275 MHz channel 4; 465.975 MHz channel 5; 465.675 MHz channel 6; 465.375 MHz channel 7; 465.075 MHz channel 8; 469.575 MHz channel 9 simplex; 469.9 MHz channel 10 simplex.

Shielded in his fire-resistant suit, this fireman looks like an alien from space as he searches a blazing building for people trapped inside.

TASMANIA FIRE SERVICES

76.46 MHz country VL7CFB
76.52 MHz country VL7CFB
76.745 MHz country VL7CFB
77.03 MHz urban VL7UFB Currie
77.15 MHz urban VL7UFB Zeehan
77.21 MHz urban VL7UFB Main Ops south/north/northwest/northeast
77.405 MHz country VL7CFB Bridgewater/Collins Ville/Glenorchy/Melrose/Molesworth/Moriarty/Mt Claude/Mt Cleveland/Mt Faulkner/Ridgley
77.435 MHz country VL7CFB Hobart/southeast
77.565 MHz country VL7CFB Central
77.645 MHz country VL7CFB Launceston/northeast
77.735 MHz urban VL7UFB Main Ops Launceston/northeast
77.915 MHz urban VL7UFB Hobart major incident backup channel
77.975 MHz country VL7CFB Southeast/northeast/northwest
78.055 MHz country VL7CFB Southeast main channel

WEST AUSTRALIAN FIRE BRIGADES

76.07 MHz Perth VL6AR
76.13 MHz Karratha VH6BB9
76.13 MHz Perth VL6AR
76.265 MHz Falcon VH6ESX
76.265 MHz Mandurah VZ6TT
76.265 MHz Pinjarra VZ6UG
76.46 MHz Geraldton VL6RG
76.46 Mhz Kalamunda VH6COC
76.46 Mhz Kalgoorlie VL6RK
76.46 Mhz Perth VL6AR
76.46 Mhz Rockingham VL6RF
76.52/75.53 MHz Darlington VZ6HE
76.52/75.74 MHz Kelmscott VZ6HG
76.52/73.55 MHz Mt Dale VZ6HF
76.52/72.905 MHz Mt Solus VZ6HE

In another TARGETING feature in the not-too-distant future, we'll examine in detail the Bush Fire Brigades in various states. These very professional, mainly volunteer organisations are responsible for the majority of fire-fighting in Australia.

The information I have provided here should assist you to zero-in on your State Fire Service, and have a better understanding of what is happening on the fireground.

If you've found the information helpful, write and tell me. If you'd like a reply, an enclosed SASE please.

HF LINK

WITH ROB WILLIAMS

Greetings to the first HF Link for 1990. To start off the new year I have information on AWR-Guam and details on the 1990 WRTH. Remember all times are in UTC (same as GMT) and all frequencies are in KHz. International broadcast stations are in AM and utility stations in SSB unless stated otherwise.

What Is HF Link?

New readers of CBA may wonder what this column is all about. Well, HF Link is about shortwave broadcast stations and utility stations which transmit between 1.6 and 30 MHz, and how you can listen to these on a shortwave or HF receiver. As a bonus I occasionally include details concerning changes to mediumwave stations to assist those who keep track of events in this band. Now on with the news.

Trio-Kenwood Goes On-Line

News from Radio Netherlands of a new computer bulletin board service from Trio-Kenwood in the USA. The BBS provides hints on useful mods to the many Kenwood amateur radios and communications receivers, including a program to control the popular R-5000 receiver using a computer. You can ask technical questions and there is also a section on antennas. The BBS operates from 0100 to 0500 weekdays and 24 hours weekends — just dial 0011-1-213-761- 8284. But remember it is an overseas call, so international rates apply. The board operates at up to 2400 baud with the usual 8-N-1 data configuration.

AWR-Guam Expands Its Facilities

According to a report over Radio Australia approval has been given to AWR-Guam to install a third SW transmitter at Guam, and is expected on air within 12 months. It will most likely carry Chinese language programs, which already occupy half the airtime of AWR-Guam's existing transmitters, so the station will be able to increase broadcast times in English and other languages.

Upgrade Plans For Radio Australia

In the fineprint of the 1989 budget for the DoTaC there has been an allocation for $1.25 million over the next two years to replace facilities at Radio Australia's Shepparton station. The matrix switch, which connects the output from the transmitters to the antenna farm, has been marked for replacement. The recent report into Radio Australia claimed that the wooden poles are in danger of collapsing and putting them off the air. Stamp-collecting SWLs will also be pleased to add the Radio Australia 50th Anniversary stamp to their books. The 41 cent stamp, designed by Brian Sandgrove, symbolises the international broadcasting of RA, with radio waves emanating from the southeast corner of a globe (where Australia is usually depicted) to cover the rest of the world.

Questions And Answers

John Abrim from Shepparton writes with details of a 'monitoring net' he has heard on frequencies 4550, 6810 and 18880, using the callsigns VNA3 Melbourne; VNA5 Adelaide; VNA7 Hobart; VNA4 Brisbane; VNA6 Perth and VNA21 Townsville.

John, this is the Telecom monitoring network, and I believe that 9440 is also used — please tell me if you hear anything on this frequency. Gary from Ulverstone in Tasmania would like to know where he can buy a book listing frequencies for the police on HF. There is no such book, Gary, and most knowledge on the subject has been through monitoring and logging frequencies over many years. There is no easy way. Check my notes on mainland police frequencies in the May-June edition of CBA.

New WRTH Out Soon

January will see the release of the 1990 World Radio & TV Handbook, the DXer's bible. WRTH editor Andy Sennitt informs me that the 44th edition will be filled to capacity with the latest DX news and information. The regular listing of world radio schedules found in the front of the book has been improved, with computer-based systems to store all the data needed for this essential guide to the shortwave bands. To supplement this, crossreferencing of the shortwave tables in the back has been done to eliminate any errors. Feature articles will include international radio...the mistakes in marketing; a background report on propagation research at WWV; directional antennas for the SWL; receiver and computer software test reports; a comprehensive list of radio-related computer bulletin boards, and a review of 1989 by Richard Dixon. In response to last year's article on satellite communications Paul van Rossum has compiled even more information on this fascinating new area. The WRTH doesn't need any introduction nor anyone to sell it — it's reputation speaks for itself. Copies of the book will be on sale through Dick Smith Electronics stores or technical bookshops in early 1990. If you experience any difficulties in obtaining a copy you can write directly to the WRTH at PO Box 50558, 1007DB Amsterdam, The Netherlands. While on the subject, the WRTH newsletter "Downlink" will be relaunched during 1990 with new publication dates to coincide with changes made by the majority of international broadcasters. Instead of four per year they will revert back to three. The issue at the end of March and September will contain most of the schedule changes, while the mid-winter edition will have special articles and equipment surveys.

I'm a bit disappointed by this move, as I believe there is still a need to have four editions per year to cover all the changes and information that occurs outside the two main transmission periods.

Name Change For KYOI

It has been reported that KYOI has changed its callsign to KHBI. No further information is available yet but if anyone can verify this I would appreciate it.

New Shortwave Station From New Zealand

Media Network has reported that 2XA, New Zealand is testing on a new frequency somewhere between 3900 and 4000 kHz with a power of 990 watts. Transmissions are schedules for Sundays, Mondays and Thursdays between 0630 and 1000. Reception reports to Print Disabled Radio, Box 360 Levin, New Zealand.

Review Into Radio Australia Released

The internal review into Radio Australia has been released to the public for comments. The review itself is too large to go into in this column, but I will give a full report in an article next issue so, as the announcers say, "stay tuned for more information!"

Sangean To Release New Radio

According to a report on RCI, Sangean is to release its ATS-808 receiver in March 1990. The receiver was planned for release in April 1989 but NEC Japan, which makes the computer chip for the radio, has experienced a high failure rate as chips come off the production line. The ATS-808 is smaller than the ATS-803A, has 45 memory presets and uses the popular up/down two- key tuning arrangement together with a conventional rotary tuning knob which can be varied in speed. I'm sure Gary Cratt from Access Communications will provide a receiver for review when it becomes available. In the meantime I have on loan several Sangean receivers to review in an upcoming edition, so if you're looking to buy a shortwave radio then don't miss CBA.

BBC And Radio Nederlands Plan For Asian Relay

News was released recently over Media Network that the BBC and Radio Nederlands plan to establish a shortwave relay station in Asia. This station will consist of four or five transmitters and some 15-20 antennas.

Unfortunately nothing has developed as yet, as Radio Nederlands hasn't the capital for a project this size. But let's hope it does get off the ground, as I'm sure the BBC is worried about its Hong Kong site when China resumes control of the colony and would like to have another facility just in case.

SW SUMMER SERVICES

Four times each year shortwave stations find it neccessary to change frequencies and times in order to reach various countries. This coincides with the start of each new season, which affects propagation of signals from these international broadcasters. The latest change is for the D-89 period — effective from December 1989. The next three periods are M-90 (March), J-90 (June) and S-90, from September. With summer and a new sunspot cycle now upon us there should be some very good catches by SW DXers. Also, if you listen to a particular shortwave station for programs in another language or news of that country, this listing will tell you where to tune for the next three months. All times are in UTC (also known as GMT) and all frequencies are in kHz; all stations use AM for their broadcasts.

Radio Austria To Australia

Radio Austria International broadcasts to Australia between 0800 and 1100 daily on 15450 and 21490. The transmission is in Dutch with English between 0830 and 0900, also English to Asia can be heard between 1130 and 1200 on 15430 and 21475. On Sundays the popular DX program "Austrian Shortwave Panorama" is aired at 1430 on 13730 and 21490 with the latter being the best frequency.

Belgium Beams Down Under

BRT-International, the voice of the Flemish community in Belgium, broadcasts to Australia daily at 0800 to 0830 on 11695 in English. Other transmissions which may be heard are to Asia at 0800 and 1330 on 21815 in English.

Nordic News From Sweden...

Radio Sweden has three English transmissions to Asia throughout the day. Transmissions are one hour long and are at 1230 on 15190, 21570 and 17740, 1400 on 11905 and 17740 and 0100 on 9640 and 7225. The 1230 transmission on 21570 and 17740 has been logged at home carrying Sweden calling DXers on Tuesday night local time packed with up-to-date information on all subjects related to radio communications. It's a pity that reception of Radio Sweden here in Australia is not as good as from other stations in this part of Europe. Reception varies throughout the year from average to poor.

...And English From Norway

Each Sunday Radio Norway broacasts a half-hour program in English to its target zones around the world. Try these times and frequencies — 0600 and 0800 to the Pacific on 15165; 0900 on 17740 and 1400 on 21710 to India, South Asia and Australia.

Summer Broadcasts From The Red Cross

The Red Cross Broadcasting Service will have six English broadcasts to Australia and South East Asia till ending in early March. Broadcasts are on 1, 4 and 29 January; 1 and 26 February and 1 March. Transmissions to Australia are aired betwee 0740 and 0757 on 9560, 13685, 17670 and 21695. To South and South East Asia between 1310-1327 on 11695 (via Beijing), 13635, 15570, 17830 and 21695. All transmissions are via the facilities of Swiss Radio International unless otherwise stated.

Kiwi News From Across The Pacific

Radio New Zealand has issued its D-89 schedule effective till 3 March and reads as follows: The Pacific service 1730-2005 on 17730 and 15485. 2245- 0045, 0230-0630 on 17705. 0045-0230 Saturday and Sunday on 17705. Australian and PNG service is 2245-0045 and 0230-0630 on 15485. 0800-1105 on 9850 and 11780. 0045-0230 on 15485 on Saturday and Sunday only.

Radio Canada

Effective from 1 October, RCI commenced a Chinese broadcast to China. This daily program service was expected to start in April 1990 but was brought forward after the recent events in China. RCI will be broadcasting two news and current affairs programs in standard Chinese daily. Its D-89 schedule reflects these changes and is as follows: 1300-1329 in English on 15210

(continued over)

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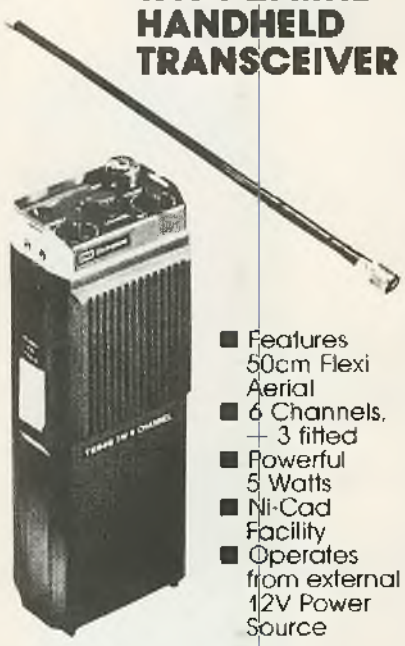

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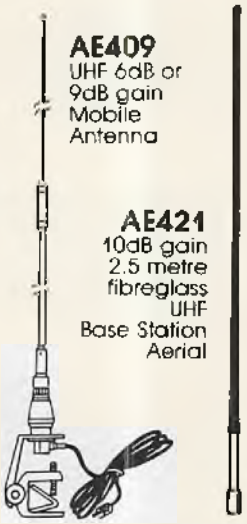

and 11955 via the Xian relay in China. 1300-1329 in Chinese to China on 17810 and 15270 via the Yamata relay in Japan. 1330-1359 on 9535 and 6150 in Japanese to East Asia via China. 2100-2129 on 17820, 15150 and 11880 in French to Africa. At 2130 for half an hour, English to Africa on 17820, 15150 and 11880. 2200-2229 in English to South East Asia via transmitters in Japan. 2230-2259 in French on 11705 via Japan to South East Asia. Their schedule is effctive till 25/3/89. Shortwave Listeners' Digest currently can be heard on Sunday mornings at 2136 on 17820, as the best frequency. Other frequencies used are 11880 and 15150. The last segment of the program carries the latest DX tips from internationally renowned DXer Glen Hauser, who is always picking up little snippets of DX news which makes the program so interesting. Glen has also got on the propagation bandwagon like many other DXers and presents a forecast at the end of his segment.

Inside News From Russia

According to Radio Netherlands, Russian SW station Vilnius has English language broadcasts to North America between 2300 and 2330 on 7400, 9700, 15180, 15455 and 17665.

Late Change For Radio Netherlands

Radio Netherlands has made a last-minute change to the current schedule. The English broadcast to Australia between 1030 and 1125 via Bonaire is now on 11890 instead of 9505. The complete English schedule effective till 25/3/90 to this part of the world is: 0730-0825 on 15560 and 9630; 0830-0855 on 9770; 0830-0925 on 21485 and 17575; 1130-1225 on 21615, 21480, 17575; 1430-1525 on 17605, 17575 and 13770. The top DX program "Media Network" is broadcast every Thursday in English transmissions which go for 55 minutes.

Swiss Radio International — The Happy Station

SRI, a long-time favorite of Australian DXers, provides a highly respected service to Australia. Broadcasts in English can be heard at 0800 to 0900 on 9560, 13685, 17670 and 21695. 1100-1130 on 13635, 15570, 17830, 21770. 1330-1400 on 9620, 11695, 13635, 15570, 17830 and 21695.

Japan's World Shortwave Service — NHK

The general service of NHK has English to Oceania between 0500 to 0600 and 0700 to 0800 on 17890, 1900 to 1930 on 11850 and 15270 and between 2100 and 2130 on 17890 and 15270. Transmissions via Gabon in English are on between 2300 and 0000 on 11835, 1500 to 1600 on 21700, 0700 to 0800 on 21690 and 0300 to 0330 on 9645. Their regional service carries English to Oceania between 0900 to 1000 on 15270 and 17890. Other English transmissions from NHK are 0100 to 0130 to North America on 17755, 0300 to 0330 to North, Central and South America and Hawaii on 11870, 17825 and 21610. To Central America between 0300 and 0330 on 15325 from French Guyana using 500KW. NHK's DX program editor, Kaz Matsuda has now left the program and has moved to a new job in Australia. There has been speculation that the program will end now that Kaz has left, but the last word I heard was that it will continue, under a new announcer.

Papal Service From Vatican Radio

Radio Vatican carries English to Australia, Asia and New Zealand at 0200 on 7125, 9650 and 11750. At 1200 on 17865 and 21515. 1500 on 11955, 15090 and 17870. 2205 on 9615, 11830 and 15105.

Australian Shortwave Guide Due Out Soon

News from The Australian Radio DX Club that the next edition of the Australian Shortwave Guide from Australian Monitoring Services (AMS) is due out in January. Full details from AMS 2143T, Melbourne 3001. **Well, that ends the first HF Link for the new year. As always if you have any questions on the hobby you can contact me at PO Box C-111 Clarence St, Sydney, NSW 2000 or via Sydney's 'Shortwave Possums' computer bulletin board. Letters with a SASE will receive a reply via the mail, others via this column. ends**

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BAND SPREAD

FROM DC TO DAYLIGHT

WITH GREG TOWELLS

Welcome to a new decade of CB radio and to the first Bandspread for the year. Well, I suppose that's a bit premature as this issue goes on sale prior to Christmas but the cover dateline is January/February so the hell with it...

Remember, this is your column and Bandspread covers all areas of the spectrum and is for all interests.

So, come on, get out your writing paper and pen (or computer and local bulletin board) and let me know what's happening in your area of the airwaves.

The address to write to is;

Greg Towells
P.O.Box 514 TOUKLEY NSW 2263.

Lets hear from you.

MORE ABOUT THE MAD DXer

Further to my comment some issues back about an avid UHF CBer with the beam mounted permanently to his mobile, is, we've finally caught up with him.

It appears that the beam is not used for DXing (maybe in the summer months ???), but, for increased distance simplex, and to reliably access repeaters around Sydney.

As for the equipment used for this interesting station?..

Well, the noticeable part is the Clipsal 5 element beam mounted horizontally on the side of the panel van. Inside, beside the operator, is a Uniden UH-005 UHF HANDHELD powered by its own battery pack with a headset.

Paul, the 824 or 02 SR39, says that the performance from this combination is very good, citing his usual example of clear operation from the city centre to the Chatswood channel 7 repeater.

Paul says that he has tried a lot of radios and his setup is the best so far. So there you go people out there with a handheld radio (especially the Uniden UH-005, mine works great too!!), if you need a mobile radio without the added expense of a mobile radio, all you need is an external mobile antenna, a speaker/microphone and you're in business. This combination has the advantage of mobile operation and, when you leave the car, just take the radio with you and continue talking.

The UH-005 in particular has a power socket underneath the radio which, when the battery pack is removed, can be powered direct with 13.8VDC. A five element beam is, of course, a desirable extra, and thanks to Paul (and no, I can't print your North Shore name), for enlightening us.

FED UP WITH THE RUBBISH ——CHANGE CHANNELS

Further to the ballooning sleaze list of the channel three repeater in Sydney is the JD station, who combined with his equally repulsive friend from Ermington, manage to make operating on channels one and three in Sydney a frustrating and annoying business.

I suggest for those who come across this problem the answer is to utilise the channels two and four repeaters.

These seem to be blessed with sensible operators most of the time.

So people, just ignore the brain-dead and change repeaters (and/or pick up a pen and register your protest at such anti-social behavior on radio to the Department of Transport and Communications, their address can be found at the front of your Telecom White Pages)

THEFT-PROOF ANTENNA

Have you ever had the misfortune of returning to your car to find those valuable mobile antennas have gone walkabout? I know I have, on more than one occasion.

Apart from the expense (and the fact that some scumbag out there has your antenna), the inconvenience caused is the worst thing, especially when you liked the performance of the departed antenna.

Wagtronix Australia have come up with an idea that will certainly deter antenna theft.

The Wagtronix Antenna Base looks and functions as a conventional plastic helical antenna base, but has two hidden wires that act as a normally closed switch when your antenna is in place.

The wires come out underneath the antenna base and are terminated into a coax mounted terminal strip. The wires can then be connected to your vehicle's existing alarm.

If the antenna is turned one to two turns whilst the vehicle's alarm is on, then the alarm will sound.

Wagtronix Director, Graham Jacobs, said that the new base should prove very popular with Amateurs and CBers alike and, hopefully, will deter the theft of your mobile antennas.

Call Wagtronix on (02) 750-0072 during business hours for further info about this amazingly simple but effective deterrent to mobile antenna theft.

MOBILE CB ILLEGAL...?

Further to the new laws in NSW relating to the use of mobile telephones, two-way radios and the like while mobile, some clarification of these laws has been received by the Wireless Institute of Australia, NSW division.

As mentioned on the Sunday morning broadcast 12 November 1989, a letter from the NSW Transport Minister, Mr. Bruce Baird, said that while the use of mobile telephones while mobile was outlawed, the operation of two-way radios in a moving vehicle was permissible.

It was pointed out that this only included two-way radios using a hand-held microphone. It appears that the use of hand-held radios falls into the same category as mobile telephones, and as such, cannot be used by the driver while mobile. It was not directly said that handheld radio use while mobile was illegal, so the WIA is following up this point.

Until then, exercise due care while using any device in the car that is likely to distract you from your driving. I wonder at times how some drivers can negotiate Sydney's chaotic stunt drivers and traffic and still have an in- depth conversation on their phones.

And if you are in Sydney, and you happen to miss the WIA's broadcast in the morning, an edited version can be heard simply by dialling (02) 6511489.

NEWS FROM THE EAST COAST CLUB

Received a letter from the East Coast Radio Club.

Formed just 12 months ago, the club now boasts a membership of around 150, and is based around Bexley, in Sydney. The aim of the club is to support charities, clean up the airwaves (now that's a lifetime job on its own!!), and teach the young how to behave on radio.

Criteria for membership is to hold a current DoTaC licence and to abide by the club rules of not misusing the CB radio and to uphold the club name.

PRESENTING THE BEST IN BASE STATION ANTENNAS

STARDUSTER-3 (3 ELEMENT YAGI) **$130**
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SSB ENGINEERING . . VOLUME 3 covers the latest PLL ICs, has a ham radio modification section and an AM-to-FM CB conversion section. Price $20, $1 P&P.

THE CB PLL DATA BOOK is the CB modifier's Bible. This all-new International Edition covers over fifty specific phase-locked loop ICs, with manufacturers' cross-references. Price $15, $1 P&P.

THE SCREWDRIVER EXPERT'S GUIDE will enable the average non-technical CBer to locate and repair up to 95% of CB radio problems, as well as helping the advanced hobbyist to tune and modify his equipment for improved performances. Price $15, $1 P&P.

THE CB MODIFICATION HANDBOOK covers Australia's most common CB radios. Everything from a few extra channels to full-house conversions covering hundreds of channels, 5 kHz steps, increasing power, slides etc. Price $15, $1 P&P.

THE LINEAR AMPLIFIER HANDBOOK has thirteen complete transistor amplifier plans, HF, VHF AND UHF, from 15 watts to 1000 watts, full parts lists, component layouts, and full-scale printed circuit negatives take the mystery out of building your own CB or ham linear. $15, $1 P&P.

CB ANTENNA CONSTRUCTION. Illustrated plans for quarter-wave and half-wave ground-planes, two-element quad, three-element beam, and high-performance stacked beams. Price $3 including postage.

HAM AND CB ANTENNA DIMENSIONS 130 charts covering dipoles, beams, quads, vees, triangles, and verticals. An essential reference work for any serious antenna builder, this book covers the CB band, HF bands from 160 metres to 10 metres, and the 2 and 6 metre bands. Price $15, $1 P&P.

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STEPHEN NEWLYN REPORTS ON

RADIO JAPAN

Japan, an island country located in the north west of the Pacific, has made a tremendous impact on the economic and technological life of almost every country on Earth. When you think about it and have a look around you, the chances are you will find a Japanese-made product near you. As this country affects us all in some way or another it is important to know what current and future trends are occurring in this intensely busy society.

Of course in the late 1930s and '40s Japan's SW services were mainly concerned with the war effort and were mainly propaganda in nature, then after 1945 SW broadcasting was banned by the Allied Occupation Forces. It wasn't until 2 February, 1952, that SW broadcasting was allowed to resume with the title of Radio Japan.

NHK (Nippon Hoso Kyokai) or, as it is known in English, Japan Broadcasting Corporation, is the parent body of Radio Japan. NHK's head office also serves as Radio Japan's nerve centre which provides up-to-the-minute news coverage, especially items concerning the Asia Pacific region, plus of course latest news from Japan. As with most other international broadcasters, Radio Japan operates in accordance with the provisions of a broadcasting law ensuring its impartiality and the provision of accurate news. Radio Japan's main objectives is to deepen the mutual understanding between Japan and other countries and to promote international goodwill and friendship. Shortwave listeners all over the world appreciate the fact that Radio Japan, unlike some other stations, does not engage in blatant propaganda or biased news reporting.

UP-TO-DATE

Broadcasts of Radio Japan are in 21 languages with the largest service in English and Japanese. News is the most popular of the services provided by Radio Japan and its emphasis on regional affairs has made it a respected SW broadcaster in our region.

Broadcasting in Japan has a long history. It began in 1925 with the Tokyo Broadcasting Station transmitting its first program on 22 March at the Shibaura Provisional Radio Station. Only 5000 people were listening then, however during that same year a boom in the number of listeners together with commissioning of a new transmitter at Atagoyama in July saw the number of listeners increased to 45,000. Listeners used either valve-type or crystal-type receivers with crystal-type sets most used because of price and being able to be made by the listeners themselves.

NHK: THE BEGINNING

At first, three separate broadcasting stations were operational in Japan, one was located in Tokyo, another in Osaka and the third in Nagoya. By 1926 however, these stations were united under the NHK name. As landlines linking these stations were being laid, experimental TV transmissions were being conducted with a Japanese "I" as the first image way back in 1927. By 1928, Radio networks covered 5.5 per cent of the country.

1935 was the year that school radio was started and also the year that overseas broadcasting by shortwave began officially. In 1941 when Japan entered World War Two, government control of broadcasting was strengthened and programs aimed at stimulating the nation's morale were broadcast.

As the devastation of war spread throughout the country, air-raid alarms were broadcast throughout the country via radio almost every day. The Japanese people were in a tragic state which, however, made them keenly aware of the importance of broadcasting. When war ended in 1945 Japan was in a state of lethargy so to help people feel happier a new approach was made in broadcasting. Cheerful bright programs helped people look to the future, programs such as Broadcasting Forum, Our Word and On The Spot Recordings were broadcast live featuring the general public through the nationwide networks. This made people feel aware of the arrival of an age of democracy in which they could live and talk freely.

Commercial broadcasting in Japan began in 1951 with Osaka and Nagoya the first cities to have it. By 1953 the first regular TV transmissions from NHK and some commercial networks began, however in those days all the TV sets were imported! Because of this most people could not afford them, so many people took advantage of coffee shops and noodle restaurants which had TV sets there to attract business.

Japan's overseas service which started in 1935 initially had only 20 kilowatts of transmitting power. The Nazaki station belonged to the Kokusia-Denwa Kaisha (International Wireless Co. of Japan). This company then merged with another to form Kokusai Denki Tsushin Kabushiki Kaisha (International Telecommunications Co.) In 1937 a 50-kilowatt transmitter came into service, then in 1941 Yamata was put into operation. In 1955 a 100-kilowatt transmitter was introduced to Yamata and the Nazaki site has not been used since 1971. In 1953 the Yamata site ownership was changed to the KDD (Kokusai Denshin Denwa Kabushiki Kaisha).

MODERNISED

Radio Japan before 1984 had six 100 and two 50-kilowatt transmitters with rhombic, curtain and log-periodic antennas predominant at its Yamata transmitting station. The transmitting equipment and antennas were, for the most part, very old and required frequent maintenance. Radio Japan's signal was not well heard in North and South America, and in some parts of Asia and the Pacific so in 1984 a four-year modernisation program was begun.

This was done in such a way as to minimise any disruption to regular transmissions. Four 300 and four 100-kilowatt transmitters have been installed and are now operational and a totally new antenna system has been installed with the latest in automatic tuning equipment.

You may ask why only 300 Kw of power as, after all, most major international HF broadcasters have 500 Kw transmitters. Well, the reasons are not technical, but rather environmental and social. When the Yamata transmitter site became first operational in 1941, the surrounding countryside was sparsely populated, however now the transmitter site is surrounded by houses which has given rise to problems such as TVI and BCI.

Radio Japan and NHK have done everything possible to cope with these problems and minimize their effect on the daily lives of local residents near the transmitting site. Any attempt at raising transmitter output higher than the maximum 300 K2 is likely to aggravate the problem so it is unlikely it will be attempted. It should be noted that Japan, while having a long coastline and many islands, has a land area where people can live limited by mountain ranges. With this in mind Radio Japan must take into consideration the people who live near the Yamata transmitter site.

Because of this power limitation and the fact that Radio Japan wanted to improve reception of its broadcasts,

Continued over

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A PUSHUP fitted in the supply line means you forget about wiring voltage drop. As long as the 'OK' light on the case remains on, you are transmitting at full power, and can do so until your battery drops below 9 Volts, and it won't do THAT for a number of hours!

If you are working from a tent or a table out in the field a PUSHUP cuts out time-consuming relocation of the car battery. With the extra voltage drop no longer a worry, you can run a length of twin cable out to the rig from the car bonnet.

Although the PUSHUP cannot generate electricity, and thus will not help you much if you want to run a 5 Watt rig from eight cheap 'D' cells, it will raise the voltage from any battery supplying more than six volts. This means that out on the sea, with your battery dying and the water coming in, you'll get a few minutes more on-air. Could be handy . . .

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AM 40 CHANNEL CB RADIOS

CB 40 CHANNELS FROM	$65
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RADIO JAPAN

Continued

Japan's broadcast law was partially revised in 1987 which enabled NHK to conduct relay broadcasting through two-way leasing of transmission facilities with overseas broadcasting services located in other countries.

RELAY SITES

Before 1987 however, one-way relay broadcasting was conducted and NHK rented air time from transmitting stations which were wholly set up for this purpose. The first Radio Japan relay from an overseas relay station was from the Sines transmitter station in October 1979. This station is located on the west coast of Portugal and south of Lisbon.

However Radio Japan has stopped using this station in favor of three other transmitting sites which provide much better coverage and allow for future expansion of broadcasting schedules if needed. As explained before, Radio Japan cannot expand its transmitter power output, so therefore the use of agreements, which allow for the exchange of airtime between SW broadcasting stations, has become a policy of Radio Japan. Pure economics and the fact that some of the countries also want exchange agreements to get to their own target audience means that Radio Japan is not the only SW station which wants to do this.

The first transmitter exchange agreement came into being on 1 October, 1986 when Canada's SW service RCI (Radio Canada International) entered an agreement with Radio Japan. The use of a 250 Kw transmitter was granted by RCI for Radio Japan's broadcasts to North Amercia. At first only one hour of exchange time per day was granted via the Sackville (New Brunswick) site but it has now increased to about four hours a day and may increase further. In return RCI has airtime for its English service to the Asian region and the Pacific via Radio Japan's Yamata site.

This new service has greatly increased Radio Japan's signal quality into the North American region and reception reports indicate strong signals. The signals for this relay transmission are sent from Tokyo to an Intelsat Communications Satellite over the Pacific ocean. From there the signal is beamed to a receiving station on the west coast of Canada which then sends it by conventional landline to the east coast transmitter site at Sackville.

AFRICA NUMBER ONE

Radio Japan has also acquired time on Africa Number One, a commercial station located in Gabon. This station rents out airtime to interested buyers although it does have its own programs. Its 500 Kw transmitter has been used by Radio Japan since April 1987 and is also shared by other SW broadcasters. Another relay agreement has been reached with RFI (Radio France International).

RFI Has its own relay station in French Guiana, a country located on the north east coast of South America. Three 500 Kw transmitters are at this site and Radio Japan started its relay services here on 1 August 1988 and in exchange RFI was given airtime on the Yamata transmitter for broadcasts to Asia.

OTHER PROGRAMS

Apart from news services, Radio Japan has programs giving the latest in science, Japanese language lessons, music and a program called Hello From Tokyo which has a mail bag and request segment.

The regional service to Australia and New Zealand can be heard daily at 0900 to 1000 UTC on 15270 and 17890 Kz. They are well heard in our area and a small portable receiver is all you need. Radio Japan also has regular competitions where you can win prizes. The last one had Radio Japan T-shirts as prizes, but not far back digital SW radios were offered as prizes so keep an ear on Radio Japan. Apart from being informed and entertained you might get a good prize in return.

EXCELLENT QSL CARDS

Radio Japan's QSL cards are among the best issued by a SW station. To obtain one just mention the date; the time (UTC); frequency (MHZ); SIO code ("S" is for signal, "I" is for interference, "O" is for overall merit. Rate "S" and "I" one to five and "O" is the average so 1 is bad and 5 is excellent. Therefore an SIO of 544 is a good signal with slight interference near the frequency); program details on what you heard; your name and address, and of course don't forget to request the QSL card.

Radio Japan sends out lots of helpful material including schedules and brochures and you can write to this address to obtain them:

English Section,
Radio Japan,
NHK,
Tokyo 150-01,
Japan.

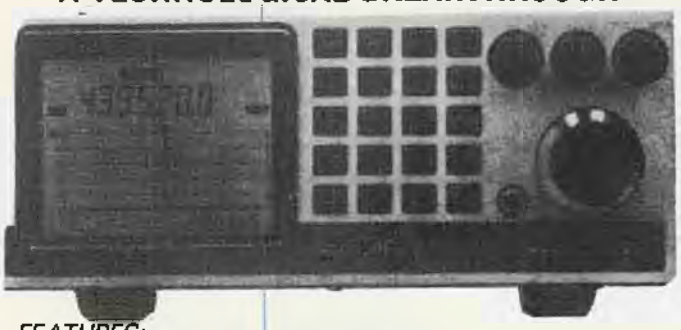
No reply postage is required and Radio Japan even will send information airmail to you!

My thanks to Radio Japan for supplying various editions of 'Radio Japan News' from which I gathered much of the material for this report.

YOU SEE THEM BEFORE YOU HEAR THEM!

NEW SPECTRUM SCANNER

A TECHNOLOGICAL BREAKTHROUGH



Model AX700E Series

The strange looking liquid crystal display not only shows the frequency, mode, channel and so on, it also displays the spectrum over a range of 100,250, or 1000 KHZ. The vertical line on the left hand side of the display shows the signal strength and the horizontal line along the bottom is the frequency range. The freq. displayed at the top is the frequency at the centre of the line. Now comes the magic. Every time a signal comes up within the freq. range, it will show up as a spike on the display. The height will show the signal strength and the position will indicate the frequency. By moving the cursor to the desired spike or unknown signal, its exact frequency will be displayed. To receive the new signal, just press a button. It is possible to monitor visually more than 100 channels simultaneously. If you are looking for a specific signal but you only know the band - just set up the appropriate band edges and then sit back and watch the display. Any appearing signal can be instantly spotted and tuned to in seconds.

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SPECIFICATIONS:

Frequency Range	*60-90 MHz* *118-174 MHz* *405-435 MHz* *825-925MHz*
Search Frequency Increments	*5 KHz, 10 KHz, 12.5 KHz, 25 KHz, 30 KHz*
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Selectivity	*± 7.5 Khz (6 dB FM/AM)*
Scanning Rate	*Minimum 15 channels/sec*
With Selectable Delay	*Approximately 2.0 seconds*
Audio Output	*120 mW 10% or less THD*
Power Requirement	*6 VDC*
Size	*145(H) x 55(W) x 40(D) mm*
Weight	*620 grams*

Specifications subject to change without notice

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Fax: (07) 394 4316

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336 Albany Highway
Victoria Park, WA 6100
Ph: (09) 470 1118

THE AOR ROAD RUNNER 880

Read about this issue's Wordmaze prize . . .

It is said that "good things come in small packages". The AOR Road Runner 880 handheld scanner is small in size, but big on performance. Russell Bryant checks out the latest from Access Communications.

Scanners bearing the AOR brand made their presence felt some years ago when the AR 2001 continuous coverage scanning receiver was released. Since then, AOR have cemented themselves firmly into a very competitive market place with scanners featuring extended frequency range such as the AR 2002 and their latest desktop masterpiece the AR 3000.

Marketed locally under the brand name Road-Runner, the latest addition to the AOR catalogue is the AR 880. The 880 is a compact handheld scanner with features which are the envy of many of the larger (and more expensive) portable receivers.

The AOR handheld covers the 800-950 MHz cellular and trunking bands, as well as the mid and high VHF bands together with full UHF coverage from 406-525 MHz. Sensitivity on both VHF bands is quoted at .4mV, on UHF at .5mV and 1.0mV on the 800 MHz portion.

It takes the 880 just over a second and a half to cover its twenty memory channels. The full feature LCD display shows frequency, receiving mode (fixed at FM), channel number, function being performed, such as SCAN and LOCKOUT, plus the search increment selected for the band being searched, either 5, 10, 12.5 or 25 kHz.

For frequencies above 520 MHz, the 880 searches in 25 kHz steps, to accommodate the 800 MHz trunking allocations which has channels 12.5 kHz apart, the user can activate the -12.5 kHz key. This will halve the 25 kHz spacing, allowing full coverage. While it doesn't have 30 kHz spacing on the cellular band, that shouldn't be a problem because you can't legally listen anyhow...

SUPERIOR IMAGE REJECTION

Image rejection is superior to handhelds in the same price bracket, due to the use of 21.4 MHz as the first intermediate frequency. Any images will be twice that figure above or below the carrier. The 120mW audio output is sufficient for most listening applications.

Although the overall size of the Road-Runner is small, the controls and keys are of sufficient size to allow people with large hands easy and comfortable operation.

Atop the scanner is the BNC antenna connector, volume, squelch, key lock to prevent accidental activation of the keyboard, the -12.5 kHz key for the trunking channels and, finally, the earphone socket. The uncluttered appearance of the 880 is continued on the keyboard with the number of buttons kept to a minimum. For example, to lock a channel out of the scan sequence, simply depress the channel number and it is instantly removed. A separate key to perform that function is unnecessary.

A reset switch is provided should you tire of the frequencies in the memory, or, if the LCD display should malfunction (it is recessed to prevent other than a deliberate press). The key board has the standard 0-9 numbered buttons, as well as manual, scan, priority (channel one), clear, increment, search and search program.

One function which bears special attention is marked delay/hold. How many times have you been searching, found an interesting frequency, then lost it because the delay time was not long enough ? By entering hold in the search mode a frequency discovered will be locked in until you hit the search key again. No lost goodies.

The 880 is powered by four AAA size batteries or from a six volt battery eliminator/charger. The spring steel belt clip is as strong as the proverbial out-house and will not break after extended use. The instruction sheet takes the user through the controls, programming steps, scanning, lockout and so on. It is comprehensive, yet simple, written in non-technical terms and it will not require a weekend of reading before you can operate the scanner.

Accessories available for the Road Runner 880 are leather type carry case, car cigarette lighter power adapter, AC power adapter and rechargeable battery pack.

The Road-Runner 880 is an economical handheld that is extremely compact and nearly half the size of units with similar frequency coverage. It is a basic model aimed at the user who does not need or want a fully optioned handheld. It sports the necessary features to get you 'on the air'at a very acceptable price. It is easy to program and easy to operate with instant access to thousands of frequencies.

Access Communications, importers and distributors of the Road-Runner range of scanners, have a winner with the little 880....its size and frequency coverage make sure of that. Thanks to Access for the loan of the 880. A review of the Road-Runner 900 handheld and 950 mobile scanner will feature in an up and coming edition of CBA.

The price was subject to finalisation at the time of our review but is expected to be in the vicinity of $499.

EDITOR LEN SHAW DISCOVERS THAT

TODAY'S CBs CAN TAKE PLENTY OF PUNISHMENT

Back in September 4x4 Australia magazine (one of our stable publications) undertook a major expedition in Northern Queensland. Called Project Jardine, the venture set out to retrace the route of the 1874 explorer Frank Jardine from Carpentaria Station (then the northern most point of Australian settlement) northwest of Townsville to the tip of Cape York.

There were plenty of deep, often wet and invariably rough holes into which the 'Cruiser fell with monotonous regularity. Above is a minor problem with infamous Gunshot creek crossing on the Cape while below is just another minor worry encountered along the way.

It was a large undertaking with six Toyota four wheel drives, two Suzuki DR200 trail bikes and two Zodiak inflatables and, naturally, there needed to be good communication between vehicles, bikes, inflatables and other traffic which might be encountered along the way and/or the highway where as might be expected we used channel 8 AM.

The complete report on this adventurous and often exciting venture can be read in either 4x4 Australia or Australian Motor Cycle News magazines, however, as we're a communication publication a few words need to be written about what was used to keep in touch and how well the equipment performed.

VEHICLE TO VEHICLE

It was decided to use UHF CB for communication between the vehicles. A fair amount of debate was carried out before making this decision and, obviously, the choice was between this service and 27 MHz and, just as obviously, all the drivers who had used UHF before wanted to go down this route while the couple who were used to 27 MHz felt this service would prove to be the most useful and reliable.

As a sensible compromise all vehicles were equipped with UHF and two were also fitted out with 27 MHz rigs. My own 'Cruiser carried a Uniden 640e and Philips FM620 and both these proved to be totally reliable and functioned without a problem for the duration of the trip. Now keep in mind that this trip covered in all some 12,000 kilometres with around 5,000 km being driven well off anything resembling the bitumen.

The route went up the west coast of the Cape and, in the main, used either station tracks or went literally across country on compass direction. In consequence, it was exceptionally rough and exceptionally dusty — and when I say dusty any traveller who has visited this part of Australia knows just how dusty this is....like bloody dusty ! Billowing bulldust is as fine as talcum powder and will find its way into anything...certainly into CB rigs....and in some areas you can be in this perpetual cloud of powder all day.

Most of the radios had problems of some description — all of them minor and of nuisance value only. They ranged from power cords continually coming loose due to vibration, internal speaker leads also coming adrift for the

same reason to the UHF rigs developing whistling noises on transmit caused, as we eventually discovered, by bulldust finding its way into the works.

The FM620 suffered no problem whatsoever, nor did the 640e.

As a comparison of signal strength on UHF there were many occasions on which a distant vehicle could only contact my vehicle, others parked alongside either could not hear it, only received a broken transmission and/or could not be heard by the other vehicle.

Much the same with the 640e which outperformed the other 27 MHz rig (admittedly an older one) when being used to listen for other vehicles in the vicinity and on the highway between Melbourne and Townsville.

The antenna used with the Philips rig was a PowerBand 6db gain whip which sells for around $50 and the 27 MHz antenna was a Mobile One DX1 whip in scrub country where height was a problem and a longer DX2 when out in the open.

VEHICLE TO MOTORCYCLE

Because of the difficulty associated with travelling in largely unmapped areas, across country on compass heading and finding suitable places to cross both dry creek beds and fast flowing ones, we received the support of Suzuki who supplied two DR200 trailbikes which were used as outriders.

Here we also received the much appreciated support of Standard Communications in respect to 'keeping in touch'. This company provided us with two 2.5w TX-475 UHF handhelds plus 240v and 12v chargers and plug-in speaker/microphones. The latter proved invaluable as it enabled the bike riders to usually hear us on the first or second call, something they certainly wouldn't have done with the handhelds stuck in a pocket.

If anything, these handhelds received even rougher treatment than did the rigs fitted in the vehicles and, despite this, they gave us not one problem.

We were initially concerned about the expected communication range of handheld to vehicle rig, however, on the average, the handhelds performed even better than we had anticipated. Sure, there were occasions when, after calling the bikes, nothing was heard, even though we later found that the riders had heard us but we were also surprised to often receive perfectly readable (full mute) signals when they were anything up to 15 km ahead. Now 15 km might not sound far for UHF contact, but, keep in mind that this was handheld to mobile and handheld antenna to mobile antenna — not base to base and we were using 2.5 watt transceivers.

These handhelds were also used for vehicle to Zodiac (inflatables) communication and again the system worked just fine. On one occasion we also found that they worked pretty well bike to ultra light aircraft as well when a local property owner flew over to direct the bikes (and us) to a particularly hard to find river crossing.

There were creek and river crossings by the dozen and while the one above might not look all that bad the very soft bottom stopped virtually everyone.

As an experiment, one of the TX-475s was fitted with a standard rubber- duckie type antenna and the other with a Larsen Kul-Duckie (model KD14-450-HW) whip. The latter gave a decided increase in range over the 'as supplied' antenna. Mind you, at an approximate cost of $40 for the Larsen you would expect improved performance — and you get it.

Given the treatment that both the mobile and handheld rigs received, the overall performance was excellent and, candidly, better than we expected.

***SUMMARY:** Given the rough and dirty treatment received by all the above units you cannot help but be impressed by the high quality of today's CB equipment. As a comparison, the amateur HF rig which also went on the trip provided more problems than all the CB rigs put together — and no, we won't say what make or model it was.*

Our thanks to Uniden Australia (640e), Standard Communications (Electrophone TX-475 handhelds) and Philips (FM620) for their much appreciated support.

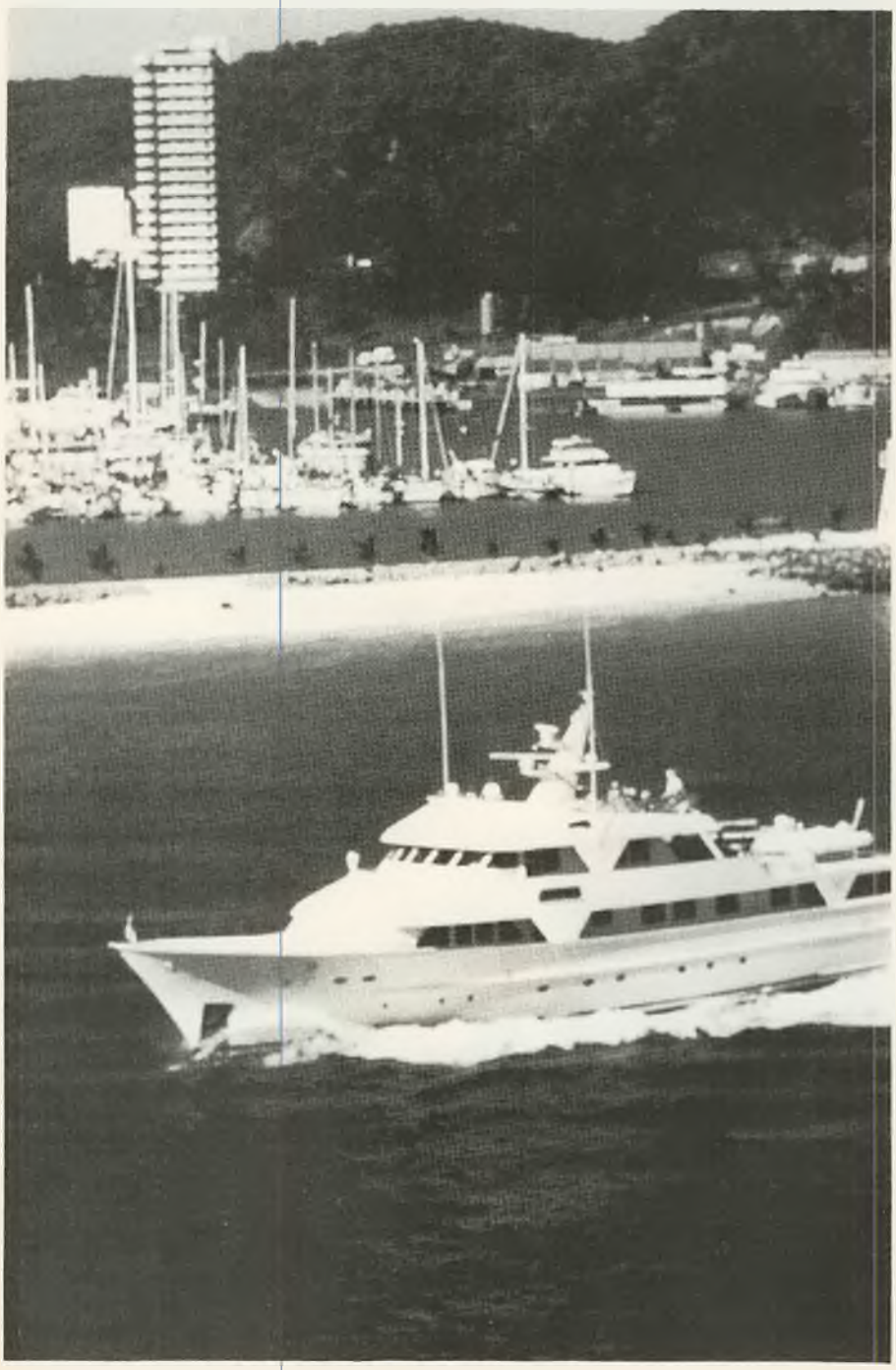
In most instances you just closed your eyes and hoped for the best. This particular creek exit had the front wheels several feet off the ground and you can figure for yourself whether or not the CBs were somewhat shaken up — the driver was anyway.

THE SYDNEY-HOBART YACHT RACE . . .

WHERE TO HEAR THE ACTION

December 26th is normally associated with families enjoying Christmas, a time to relax and unwind, however, for one group of dedicated people, Boxing Day is for anything but relaxation. They have been preparing for one of the world's greatest blue water yacht classics.

CBA monitoring experts ROB WILLIAMS and RUSSELL BRYANT explain that no matter where in Australia you live, there will still be frequencies you can tune into to follow the race.....



On Boxing Day (26 December) 1989, the 45th annual Sydney to Hobart yacht race will sail from Sydney Harbour. This race is a great opportunity for listeners on HF, VHF and even UHF to 'sandbag' on this epic highseas contest. From before the race starts till after the first yacht crosses the finish line some three days and 650 nautical miles later, communications will play a vital part both for participants and the many associated services working behind the scene to bring you coverage of the event. This year there is also an added communications angle with the race now being sponsored by NorTel, the Australian arm of America's Northern Telecom — one of the world's leading telecommunications suppliers. To begin, let's take a look at HF communications. Later on, Russell Bryant will detail where scanner enthusiasts may also find some of the action in the VHF and UHF bands.

Sydney Harbour on race day is alive with traffic. There are all types of ships and yachts, some using the waters for business while others are just there to enjoy the splendor of the race. An estimated 300,000 watch the start of each race from spectator craft or vantage points around the harbor. One noticeable change to this year's race is that there will be two distinct starting lines, aimed at easing the problems of crowding between the various sized yachts and pleasure craft. The maxi yachts and finalists in the NorTel Southern Cross series (of which the 1989 Sydney-Hobart race is the last round) will be in the first group while the remainder of the field will start from the second line. Well before the start, this year's field of some 150 contestants will be fine-tuning their yachts to make sure everything is shipshape. MSB vessels, NSW Water Police launches and official boats will be heard marshalling pleasure craft clear of both lines so a clean start can be enjoyed, and the 27 MHz marine channels will be busy with all types of communications.

With the solar cycle fast approaching its maximum, propagation on HF frequencies will carry vast distances. The 27 MHz channels are 27680, 27720, 27820, 27860, 27880, 27900, 27910, 27940, 27960 and 27980. The third and fourth numbers of the frequency indicate the channel number, eg 27.720 is ch 72. Channel 88 is for distress and calling, so start on this one.

The Achilles II, communications vessel for the 1989 Sydney to Hobart race.

SPECIAL HF FREQUENCIES

There are a number of special HF frequencies allocated to the race. The primary race frequency is 4483 KHz, and as yachts prepare their equipment before the start you can hear them tuning up their transmitters to make sure all is okay. In the event that 4483 is unsatisfactory the secondary channel of 2524 kHz will be used. The race officially starts at 0200 UTC, and each day there will be two position reports. The yachts are divided into two groups to allow easier management. On the first day the schedules are at 0605 UTC for group one and 0635 for group two. Each day following, schedules are held at 0405, 0435, 1935 and 2005 UTC. On all days a safety schedule is broadcast at 1235 UTC. This provides updated weather details as well as safety and personal messages, and continues until after the last yacht has crossed the finish line. Once again the race will rely on Achilles II as its radio relay vessel. This yacht co-ordinates all communications with competitors and also carries radio and TV reporters. The Achilles II travels with the fleet throughout the race, and is assisted by two other relay yachts spread throughout the field. Two minutes before the commencement of every sked Achilles II, using the callsign VH7TC, will send a lengthy carrier signal to allow boats to tune in their radios. The relay vessel then gives current weather details and its position, and requests a position report from each yacht as called. The yachts respond with the name of their boat followed by a four-figure group indicating their latitude and a five-figure group representing longitude. HF listeners should be able to hear the Achilles II and contestants for most of the voyage. There were many interesting aspects to last year's race, with heavy seas and high winds causing a quarter of the field to retire and equipment being lost overboard. Two days out to sea the Achilles II warned competitors of a family of three large whales along the course, something all the yachts had to worry about! These sort of things make listening to the race all the more exciting.

CALLING VH7AM

Once the yachts have crossed Bass Strait and travelled down the eastern coast of Tasmania they will call the Royal Yacht Club of Tasmania, VH7AM, which provides a continuous listening watch on 2524. As each yacht passes Tasman Island, near Port Arthur, they advise the RYCT of their position and ETA to the finish line on the Derwent River. VH7AM takes over communications once the relay vessels arrive in Hobart. Another user of the HF bands during the race will be OTC. Through its coast radio station (CRS) network you will hear traffic being relayed both day and night. The three CRS involved will be VIS Sydney, VIM Melbourne and VIH Hobart. Listen during their weather reports for details — on VIS at 0148, 0348, 0548, 0748, 0948, 1148, 1348, 1548, 1748, 1948, 2148, 2348; VIM at 0133, 0333, 0533, 0733, 0933, 1133, 1333, 1533, 1733, 1933, 2133, 2333; and VIH at 0018, 0218, 0418, 0618, 0703 and 2218. All three stations use the same frequencies of 2201 and 4428.7 kHz. If the need arises for a search-and-rescue operation you can be sure that a CRS will co-ordinate activity through advice from the Sea Safety Centre in Canberra, so other frequencies may be used as required. 2182, 4125 and 6215.5 are allocated as maritime distress frequencies. So there is no shortage of frequencies to listen to, and at times you'll find so much happening it will be hard to keep up with it. That should keep you busy on HF, now let's hand over to Russell Bryant who will move up a few megahertz and tell you how to listen to the race on your scanner.

FOLLOW THE RACE ON YOUR SCANNER

The Sydney to Hobart Yacht Race will take boat crews on a journey where radio communications can mean the difference between life or death. While most of the action will take place on HF and satellite frequencies, at the commencement and conclusion of the race VHF and UHF will be just as important.

Through a co-ordinated effort, police and maritime authorities will ensure maximum enjoyment and safety for the thousands of spectators on land and water, who will bid the yachts farewell in Sydney, later greeting them as they arrive in Hobart.

For those who are unable to witness the excitement first hand, our nation's media organizations will be there to provide detailed coverage. Radio and television stations go all out to provide in-depth reports on the boats, their crews and sponsors, as well as the race to the Sydney heads. The best vantage point along the harbor foreshores to view the yachts can often be obtained by keeping an ear to your scanner.

As with previous years, spectator craft can be expected to be everywhere, with hundreds of boats chasing the yachts to sea. The job of controlling this disorganized flotilla falls to the NSW Water Police and Maritime Services Board. Both services employ special channels to oversee the activities, the MSB have frequencies within the VHF maritime allocation such as 156.600 and 156.650 MHz for this purpose. Also keep an ear on the MSB in-house frequencies of 82.740 Port Jackson, 169.495 Port Kembla, 467.450 MSB Inspectors and the Bureau of Sea Safety channel 492.625 MHz.

The water and land based police will be operating on a number of channels, for crowd control try 468.475 (CH.26), for normal dispatching in the City area program in 468.400 (CH.23). The Water Police can be found on 469.050 (CH.49) as well as the 27 MHz marine frequencies, 27.680, 27.720, 27.820, 27.860, 27.880, 27.900, 27.910, 27.940, 27.960 and 27.980 MHz.

When helicopters track along the Parramatta River to the City and Harbor, they are directed onto 120.800 MHz, known as the Helicopter Lane channel, it is an ideal channel for those who wish to monitor rotary winged aircraft.

Other airband frequencies are, 123.000 Sydney Departures, 124.400 Sydney Approach, for aircraft down wind to runway 16 and 125.800 Aquatic Airways and light aircraft operating in the Rose Bay area. If the Bond Airships return to Sydney for the event, dial up 126.400 MHz. In the excitement, aircraft captains (often in error) give detailed descriptions of the event below on 123.000 in the belief they are talking to their passengers.

Before completing the frequencies for Sydney, I should mention the media organizations that cover the race. The television stations' helicopters use the Lane Channel as well as company frequencies, channel TEN can be heard on 492.725 and 167.920 MHz, channel NINE on 75.860 MHz and for channel SEVEN try 166.030 and 165.640 MHz. Radio stations 2UE (488.200), 2UW (489.050) and 2GB (493.925) are among the many to broadcast race details.

THE HOBART CONNECTION:

Once the first yacht has crossed the line, it can be many days — sometimes weeks — before the last boat reaches its goal in the safe waters of the Derwent River.

The celebrations that bid the competitors farewell in Sydney are duplicated in Hobart when line honors are taken by the fastest boat home. Spectator craft will be there to meet the winner regardless of the time, therefore the Marine Board of Hobart will be active on 157.675 for in house communications, with Harbor Control on 156.600 MHz.

For police crowd control try 76.700 (CH.3) Hobart City area, 76.115 (CH.5) Special Operations Hobart area, 468.225 (CH.16) foot patrols and 468.250 (CH.17) crowd control simplex.

The various media groups will certainly be active during the week of arrivals, radio stations 7HO on 160.540 and 7HT on 165.760 can be worth monitoring while television news crews from TVT 6 have 485.825 and 164.920 MHz for outside broadcast communications to the station.

A scanner will keep you abreast of the happenings as well as provide up to- date information on the best viewing locations and traffic delays to and from the harbor.

Happy sailing !

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DAVID FLYNNS'

477 Report

UHF NEWS AND HAPPENINGS

NEW UHF CB HANDHELD AND IT'S ILLEGAL

I've just seen Australias's newest and undoubtedly most sophisticated 477 MHz handheld. It has a swag of scanning modes, memory channels and a 'dual watch' priority feature and it's made by Icom.

Here's the twist — it's not the IC-40G, which we hope to review in our next issue. The unit of which I speak is the IC-4S, a 70cm (430 MHz) amateur handheld modified to UHF CB.

It's illegal, of course, but, at least the pirate spirit of UHF CB is more the quest for a better class of radio (and the odd receive-only channel on 468 MHz !) than increased power or out-of-band frequencies to chat on.

The minute I saw the IC-4S I understood the temptation. This is the most compact handheld you can find. At 44 x 104 x 33 mm, it's not much larger than a pack of cigarettes (and far healthier), and weighs a mere 280 grams (10 ounces). But into a radio that literally fits in the palm of your hand Icom has packed 10 MHz coverage (430 — 440 MHz amateur band); 48 memory channels; a user programmable one-touch call channel reset; band scan, memory scan and skip, and dual-watch; three levels of power output (nominal 3 watts down to 500 mW) and a power-saving standby circuit.

That's the standard model. The IC-4ST adds a DTMF touch pad for phone patching (with ten number memory) and programmable selcall/tone squelch, and makes it much easier to drive all the above functions through the keypad rather than a combination of function keys on the 4S. And all the way through it exhibits the quality, style and attention to detail for which Icom is famous.

Now imagine this extraordinary radio swung up to the UHF CB band and also programmed to receive the national 468 MHz police allocation. The downside is that you're guaranteed to make the local RI's day if caught; but, 'you pay your money and you take your chances'. The money is around $600 for the original 430 MHz IC-4S, added to the know-how to re-program and re-tune the rig. At this stage the modified 4S is simply a one-off by a curious 'best of everything' friend in Melbourne, so don't bother asking in hushed voice at your local CB store.

But if there was ever a rig to replace my 'old faithful' IC-4E, this is it !

UHF DIRECTORIES

Previous columns have illustrated the many roles of UHF CB in country towns, where it is more a 'community radio' than 'CB radio' service.

But when you've got almost everyone in town on 477 MHz, how do you know on which channel to find them ? Thus was born the UHF 'directory', a complete list of users in a format akin to an old-style telephone directory.

Directories are normally compiled by the local communications store or repeater sponsor, printed and distributed amongst UHF users free of charge. Two of the most interesting of these I've seen have come from Phil Shields Electronics and the Central Highlands Repeater Association.

Phil Shields is the sponsor of the ch 4/34 repeater in Hay, a region where UHF CB is heavily used on farms, and his twelve-page list includes the station name, owner's name, and location (on a local area grid map). A browse through this directory gives an insight into the way 477 MHz has become a part of life in Hay — besides the usual personal and commercial users the bands boasts several Government bodies, ambulances and hospitals, police and emergency services, the NRMA and even the school bus.

The CHRA, sponsors of Ballarat 2/32, have also produced a local 'Channel Listing', which would have to be the most professional I've seen and a model for any other groups considering such a list. The printing and layout is first rate and the list appears to be well supported by local advertisers. It commences with helpful 'points to remember', including operating and emergency procedures, licencing, and a list of Victorian repeaters.

The directory then goes on to list all local users by channel number (with name, callsign and location), complemented by a second list sorted in alphabetical order. Congratulations to Phil Sansom, Ron Grey and the CHRA for their efforts. If you live in the Ballarat/Central Highlands area then the CHRA must deserve your support — they can be contacted at PO Box 4, Wendouree 3355.

REPEATERS — THEY'RE HARD WORK !

I've always thought there should be a final question on the DoTaC application for a repeater licence — something along the lines of, 'Do you really want to go through with this ?'. It would give you an honest way out, before embarking upon a path of many trials but few triumphs; one that leads to cost over-runs and endless hours of hard work, before you can join that special group of madmen known as 'repeater sponsors'.

A letter from Ian Bartlett, of the Mt Victoria Repeater Association, detailed the history of the MVRA's 7/37 repeater on Tasmania's north-east coast, and it is typical of what other organisations and individuals have gone through.

The repeater hardware includes a Philips FM828U powered by two solar panels and a pair of 6v 200 AH lead acid batteries. 'The software', says Ian, 'is 2000 litres of blood, sweat and tears'. 7/37 is located atop a mountain accessible only by a three hour return walk — carrying each component one piece at a time was good practice for the challenges ahead.

The repeater was commissioned in mid '89 and despite rigourous testing 7/37 still had some bugs hidden in the works — just waiting to cause problems in the middle of winter, when the mountain walk became lined with snow and ice ! The most damning situation was an intermittent fault which could only be rectified by taking the repeater back down the mountain and putting it into a deep freezer to re-create the problem — which turned out to be a faulty crystal.

Along with difficulties with the power supply and an eventual ice build-up which crushed the mast, this is the sort of fun which repeater associations get up to — the MVRA has climbed Mt Victoria 23 times to date, an average of once every month since the licence was issued in 1987 !

EXTRA LIFE FOR ELECTROPHONE

If you're the happy owner of Electrophone's brilliant little TX475 (I sometimes wonder why I sold mine), but, find it stops working each day long before you do, Brisbanite UHFer Mark Ogilvie and his company Marktronics have the answer.

The TX475 is incredibly popular on the land (no doubt due to the compact size, high ouput and fast recharge battery), but according to Mark the average farmer usage sees the standard 450 mAH battery pack run dry in four hours.

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The pack is manufactured in Australia, solidly built in a moulded impact plastic case the same dark colour as the TX475. Price should be around $180, and the first batch off the line has already been spoken for. So if you want longer legs for your TX475 then I'd recommend you stretch yours and move fast — call Captain Communications on (02) 633 4333, trade enquiries to Marktronics on (07) 844 1281 or toll-free (008) 77 7745.

That's it for another two months. If you find yourself with some spare time over the holiday season, why not drop me a line — let me know what's going on in your area, tell me what you think of the UHF scene, or just sound off on your favourite topics ! As a result of my getting involved in the computer communications scene, I can now be reached through Telecom's Viatel system (no. 062012090, can also be accessed via telex 152872), or on the 'Shortwave Possums' computer bulletin board — dial in direct on (02) 651 3055 or log onto your local BBS and send Netmail to 3:713/605.

And if all else fails, try the traditional pen & paper route to PO Box E160, St James NSW 2000 — at 41c postage it's probably the cheapest way out !

My best wishes to all readers for a safe and happy Christmas — see you in 1990 !

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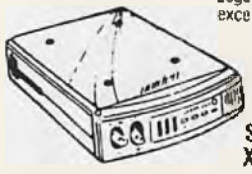

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DX INTERNATIONAL

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

They say the older you get the quicker time passes you by and 1989 was no exception. As the curtain falls on this year many of us will be reflecting on DX achievements over the past 12 months, and, of course, some will be noting the failures. During 1989 a few new countries appeared on the band. Although most were brief operations associated with various DXpeditions launched throughout the year, they were better than nothing.

Sunspot Cycle 22 was not all that it was cracked up to be during 1989, although the peak is actually expected this December (1989) with improved conditions to follow through well into 1990. Throughout 1989 we were subjected to erratic and unstable DX paths, and in many cases the DX was there one day and gone the next. A large number of solar flares occurred during the year which didn't help the band to perform to expectations, with the end result being depressed and unreliable signals being observed. The so-called experts say that 1990 will be much better DX-wise compared to a topsy-turvy 1989. Let's wait and see, hoping that they are indeed correct.

Australia's reputation as a reliable QSL card source took a battering during 1989. Time and time again I heard overseas DX operators complain about the QSL record of Australian DXers, some quoted only a one-third return on the total number of cards sent to this country confirming DX contacts, a very poor response in anyone's book. Then again, numerous Australian DXers have expressed dissatisfaction regarding QSL returns from countries such as Yugoslavia, Hungary, Poland, Qatar, along with areas such as Central and South America and the famed blackhole of QSLs, the islands of the Indian Ocean region.

AFRICAN & INDIAN OCEAN REGION

Some surprises have emerged from this region over the past few weeks keeping most DXers on constant alert. The first surprise was the appearance of RADIO-643, operated by Paula in the Bijago Archipelago group of islands off the coast of Guinea Bissau, West Africa. Paula appeared on the band at 0655z with a very poor report of four by zero. As Paula is only in the country on a temporary basis, working for an international aid organisation, her equipment is very limited.

An unidentified French-speaking station was logged at 1158z calling from Maji in Ethiopia with a fair five by three signal report. I would treat this one with suspicion as he failed to answer any calls directed to him in French both from stations in Europe and Australia.

A station signing as 149-SR-01 was heard at 0637z from the Laccadive Islands, off the west coast of India. Although the signal was a poor four by zero here in Australia, there were no shortage of callers from Europe, in fact there were so many calling I failed to hear as to whether a contact was secured. Subsequent monitoring failed to find the station again.

Uganda was noted on the band at 0542z by way of Mick who signs as 174-AT-598. He was barely readable here and his signal quickly faded away into the noise of the band.

Popular Japanese DXer, Toshi, the 25-AT-101 is well known in Australia and often spends his vacation down under with his DX friends.

A quite reasonable signal was heard from the North African Spanish territory of Melilla by way of Juan, who signs as 106-AT-105. Juan was logged at 0730z with a five by two signal report and had no shortage of Indonesian stations wishing to contact him.

Questions have been raised about the validity of the station signing as 255-ICC-01, operated by Fabrice. A number of operators have been given the station's location as Kerguelen Island, others, it appears, have been told it is in fact Amsterdam Island. My DXCC listing from Alpha Tango indicates that 255-AT is allocated to Kerguelen Island and 249-AT is allocated to Amsterdam and St Paul Islands. Maybe the ICC DX Group has a different system of prefix allocation, but in the past its prefixes have always corresponded with that of the AT Group. Anyway, Fabrice is still about. He was five by nine plus 10 at 0830z.

The MacDonald Islands' only 11-metre band operator has ceased transmission and returned to Australia. Ken, signing as the 44, gave many of us a unique opportunity to work this small plot of land due west of Heard Island. From time to time Kevin, whose callsign varied, appeared also and accurate information received here indicated he was aeronautical mobile in the region aboard a RAAF aircraft servicing MacDonald Island.

The Papa Whiskey DXpedition to Mozambique some months ago was hailed as a major success and there are rumors that another one may be planned for some time in 1990, perhaps by another group. The Papa Whiskey DXpedition worked a total of 1257 stations in 60 different countries during the three days the station was on air. Despite wind gusts of up to 70 kms per hour and a temperature of 27 degrees celsius, the camp held together. It also had to contend with cannon and mortar fire from the war which kept everyone on alert even though it was five to seven kilometres away. A good effort from all involved considering the risks taken in giving many DXers a new country.

MIDDLE EAST & ARABIA

Marwan, who signs as 112-AT-108 from Lebanon, delivered the good news that Beirut International Airport has been reopened recently and thus will allow the mail to finally get through. Those of you who have sent cards to Lebanon airmail must be patient and wait for the backlog to clear as the mail has only just started to filter through again. Marwan was logged at 0730z with a steady five by five report.

Those of you who are still chasing a confirmation from Qatar should look for Abdullah, who signs as A7AJ from the capital of Doha. Abdullah was logged at 0908z with a healthy five by nine plus 30DB signal, although he seemed a little lax in his operations by inviting those he didn't work to send a card to him. I tend to treat these types of operators with suspicion.

Another station from Lebanon has been quite active around the bands. Claude, who signs as 112-AT-125 from

Mansourieh-Matenn in Lebanon, was heard at 0410z with a five by four signal report. Claude was most keen to work stations in Oceania and Asia.

A number of Kilo-Alpha members from Kuwait have been active on the band, with the director, 1-KA-01 operated by Mohammed, being most popular. Mohammed was noted at 1239z with a stable five by five report and had no shortage of takers to his calls.

The odd weak signal has been heard from Saudi Arabia, a relatively scarce one on the 11-metre band. Judging by the response from Europe they could hear them better than countries south of the equator.

EUROPE

Quite a surge of activity has been noted from Luxembourg. In just one evening I logged four stations commencing with the 54-AT-107 operated by Norbett at 0953z. He was a good five by six report and was followed by 54-AT-105, Tom, from Ettelbruck in Luxembourg at 1248z. Tom was five by three and mentioned the poor response of QSL cards from Australian contacts. At 1258z the 54-AT-102 was logged. Operated by Carlos, he was five by three and the signal held quite well only to be followed by 54-AT-848, Roger, who was five and six at 1310z.

The Republic of San Marino was heard by way of Anthony, who signs as the 36-SK-101 from Mamer in San Marino. Anthony was a steady five by four at 1315z and was closely followed by top San Marino DXer Guido, who signs as 36-AT-102. At 1333z Guido was five by nine plus 10DB but was experiencing heavy noise from fellow Europeans on the band.

Sardinia was well represented on the band by way of Franco, who signs as 165-AT-448. Franco was a massive five by nine plus 20DB at 0516z and had his hands full with a pile-up of Indonesians wishing to work him.

Batz Island, off the west coast of France, was represented by way of Eric, who signs as the 169-AS-005. Eric was logged at 1215z with a good five by six report. Despite the 169 prefix Batz Island is not a separate country under DXCC rules, at the most it may count for a couple of IOTA points if you are lucky. In reality Batz Island is under the 14-AT prefix.

Yugoslavia has been plentiful about the band. One good signal was heard from 45-AT-180, Zoro, at 0648z he was five by nine and steady. Also heard was the illustrious 45-AT-124 operated by Max, the man who doesn't answer his QSL cards when he receives them. By now most people in Oceania know Max and usually ignore him when they hear him calling. Yugoslavia is one country in particular you have to watch when QSLing.

An impressive signal from Switzerland came by way of Peter, who signs as 15-VP-101. Peter was exceptionally strong at 1126z with a solid five by nine plus 20DB signal and was concentrating on stations in the Pacific Islands at the time.

Quite a few strong signals from Scandinavia have been noted. At 1307z I heard the 47-AT-125 operated by Michael on the band. Michael was a good five by nine plus 10DB and was operating from Solrod in Denmark. He was followed by the usual big signals from Finland and Sweden.

Cyprus was also heard about the band by way of Chris who signs as the 110-AT-210. Chris was a poor five by two at 1213z but quite readable and was closely followed by 110-AT-904, name unknown, with a five by five signal report at 1236z.

One of the rarest catches on 11 meters would have to be a card from the Republic of Tuvalu, a much sought after country for DXers.

One of the best signals out of the Netherlands belonged to Jan, who signs as the 19-AT-117. At 1403z Jan was a solid five by nine plus 10DB from his home in Den Haag, Holland. Jan just seemed to plough straight through the usual rabble from western Europe.

Lido Island in Italy was represented by Morris, who was signing as the 110. He was five by seven at 1408z and had no shortage of takers to his call, mostly those thinking that he was a rare DX country. I am sorry to say Lido Island falls under Italy and is counted as 1-AT division.

Greece was noticed on the band at 0545z by way of WAC-95, name unknown. He was a good five by seven report and was looking for stations in the Indian Ocean and Australia. At 0751z I logged a rather poor signal from 18-AT-134 operated by Leonidas on Kefalonia Island in Greece. He was only a five by two peaking three but still managed to arouse a great deal of attention.

Hungary was noted at 0644z with a reasonably strong signal from Andreas who signs as the PW-466 from Budapest, the capital. Andreas was a good 20DB over the nine at the time and the signal held quite well for nearly an hour before fading off.

Balearic Islands DXer Jaime, the 49-AT-102, was logged at 0739z with a solid 20DB over nine signal but subject to noise from Indonesia. Jaime was busy looking for the Marshall Islands and Tonga to boost his DX tally.

The usual rabble from Ireland and the United Kingdom has been about, one notable signal was from Robbie, the 169-AT-106 on Guernsey Island. He had no shortage of calls indicating that there are still quite a few who need this country. Robbie was logged at 1116z at a five by three report.

CENTRAL/SOUTH AMERICA & THE CARIBBEAN

As usual the big guns from Central America have been about and with signals well in excess of strength nine. I am still trying to track down some activity from Belize but have heard nothing to date, also Guyana is another one that is hard to get these days.

A rather loud signal from Suriname was heard at 2312z by way of Hank, who signs as the UNIT-779 from Paramaribo, the capital. Hank was a good steady five by eight and was using a Superstar 360 FM into a five-eighth wave groundplane antenna.

Didrik, who signs as 5-AT-101 from Caracas in Venezuela, was a solid five by nine plus 10DB at 2055z. Didrik was busy searching for stations in the Pacific Islands and wasn't too worried about Australian and New Zealand calls directed to him.

As usual the big signals from Costa Rica have been about. Oldemar, who signs as 69-AT-103 from Heredia, was near pinning the needle with a 35DB over nine report at 0312z. With a signal like that he had no shortage of callers and created a near pile-up on the band as a result.

Guatemala in Central America was represented by Mario, the 72-AT-103 who was heard at 0421z with a good five by nine report which held for nearly an hour before fading right out.

A few stations from Paraguay were about for the taking, although a number of them were not very fluent in English. The 67-HB-105 operated by Sergio was an exception. Sergio was five and nine at 0409z and had quite a number of stations chasing him for a contact.

Ecuador has also been about with Roberto, the 61-AT-101 being the strongest. Roberto was logged at 0551z with a five nine plus 10DB report. He lives in Guayaquil the capital and is the director of the AT group in Ecuador.

The usual rabble from Brazil has been about, together with a poor QSL record. I know quite a few prominent DXers who refuse to exchange QSL cards with Brazil. The best method is to wait for their card first. The poor QSL record of Brazil didn't stop 3-AT-210 operated by Gerhard making a few contacts into the Pacific. He was five by six at 0319z.

Panama was noted at 0756z by way of Andres the 1-HP-CED. He was five by nine

plus 20DB. At times his signal held constantly and appeared immune to any fade about the band.

Signals from the Caribbean haven't been too strong lately, although Earl, who is the 158-AT-124 from Trinidad, was a five by six at 0502z but quickly faded away to nothing. He was closely followed by Jacobo from Aruba in the Dutch West Indies who signs as 232-AT-102. He started off at a massive 20DB over nine at 0530z only to fade away minutes later to nearly zero signal strength.

Some rather poor signals from Uruguay have been about the band, although the New Zealanders seem to be receiving them better than us. Juan-Manual, the 12-AT-151 was noted at 0030z just about the noise level, although later on I logged 12-AT-142 operated by Miguel at 0113z with a four by two report. Nothing much of use was heard from Argentina at the time but when the band picks up no doubt they will be about again.

ASIA & THE PACIFIC REGION

Not a great deal of news from this region to report by way of new countries but that doesn't mean there is nothing about worth taking a look at. South Korea was heard at 0900z by way of Lee who operates as the Alpha Romeo out of the capital Seoul. Lee was a reasonable five by six at the time and had his hands full working Australia. Perhaps this is the same person just mentioned as I heard another station named Lee but signing as the UNIT-791 out of South Korea a few weeks later at 0750z with a clear five by four signal report. Maybe Mr Lee wears many hats.

Thailand has been noted by way of 153-SR-03, name unknown. He was logged at 0841z with a five by five report but was subject to heavy interference from Indonesia thus making it hard to secure this one.

Taiwan is still there for the taking (despite what some people say there are 11-metre band DXers active in Taiwan. I have two cards to prove it, one post marked on the day of contact!). Rainer, the 155-AT-101, was heard at 0726z working a huge pile-up of hungry Europeans. Rainer was five by nine and at times had trouble maintaining order on the frequency.

Also noted from Taiwan was Whiskey-310 operated by Jason. He was noted at 1236z with a poor five by two report which often peaked to five by five at its best. Jason was operating from the National University area of Chungli in Taiwan and was using a homebrew dipole antenna. Although his English wasn't too good he was doing a sterling job.

Hong Kong has also been about. Joe, who signs as CB-10 was noted at 0643z with a good steady five by seven report, and had no shortage of callers.

A weird station that appeared for a brief time was TIGER, operated by a Miss Phuang. She was heard on the band at 0530z with a poor four by two report. Miss Phuang stated that she was located on the Thailand-Laos border at a place called Nakhon Phanom and she was soliciting "donations" for a cause that she couldn't explain over the radio. Miss Phuang was giving a QSL address in Thailand and assured all who donated that they would be sent QSL card. One prominent Asian DXer informed me that she is not where she says she is but is in fact somewhere in Cambodia.

The Solomon Islands has been heard about the band by way of Len, who signs as the 10-W-01 from the capital, Honiara.

A card most sought after by European DXers but relatively common to those in the Pacific and Asia.

Len was noted at 2321z with a reasonable five by three report.

Nothing further has been heard from Alden, who signed as the 132-AT-101 from Majuro in the Marshall Islands. It appears that Alden owes quite a number of DXers QSL cards and despite numerous enquiries as to his whereabouts nobody has heard him about for some time now.

A new station from the Kingdom of Tonga has appeared on the band by way of Lucy, who signs as A-40 from Nuku'alofa, the capital. Lucy was noted at 0758z and was a five by three signal report. It is known that Lucy is not very active so you may have to search for this one.

Guam Island has been about by way of John who signs as W-196. He was a good five by nine at 0733z and was being chased by the numerous Brain Dead south of the equator.

DXPEDITION NEWS

The Isle of Scilly DXpedition operated by Russ, the 26-AT-415 appeared on time and gave many a chance to pick up a few IOTA points. Russ signed from Scilly as 26-AT-OG for the duration of the Alpha Tango contest. Cards go to his home address and must have a contact number and SASE.

Mount Athos was activated by some Greek DXers who signed as 254-AT-0. The DXpedition appeared on time and was barely audible here in eastern Australia, but that didn't stop the big guns in western Europe who were heard falling over each other to work it. If you were lucky enough to catch this one then cards go via 18-AT-104, Xenofon, who is the QSL manager, and don't forget the return postage.

Sovereign Base Cyprus DXpedition 291-AT-0 ZC4 appeared on time but proved to be a hard one to catch in the later operations as conditions on the band here were not good. The station closed down in early October so if you secured this one cards go via 26-AT-440 with all the usual trimmings.

Malta appeared on time with 93-CHBO being the call used. Again, conditions to eastern Australia were poor at the time and the big guns from Europe didn't exactly make things easier but if luck was on your side cards go via Clive, the 26-AT-102 in the UK.

A small one-man DXpedition to the Turks and Caicos appeared unscheduled on the band. Operated by Joe, 248-CE-711, he was a good five by eight at 2258z. Cards go to Joe's home address in Freeport in the Bahamas, with the usual trimmings of course.

By the time you read this the 225-AT-DX DXpedition to Brunei should have got underway. It was due to appear on 24 and 25 November. I have nothing official on this one so it may be a case of wait and see. Cards by the way, go to PO Box 185, Pontoniak, Borneo, Indonesia.

On 30 and 31 October Luxembourg was supposed to have been activated by a DXpedition performed by 14-AT-337. He was to sign as 14-AT-337/54-AT. Being out of the country at the time I failed to find out as to whether it turned up on time. If it did and you were lucky then cards go via 14-AT-337 in France.

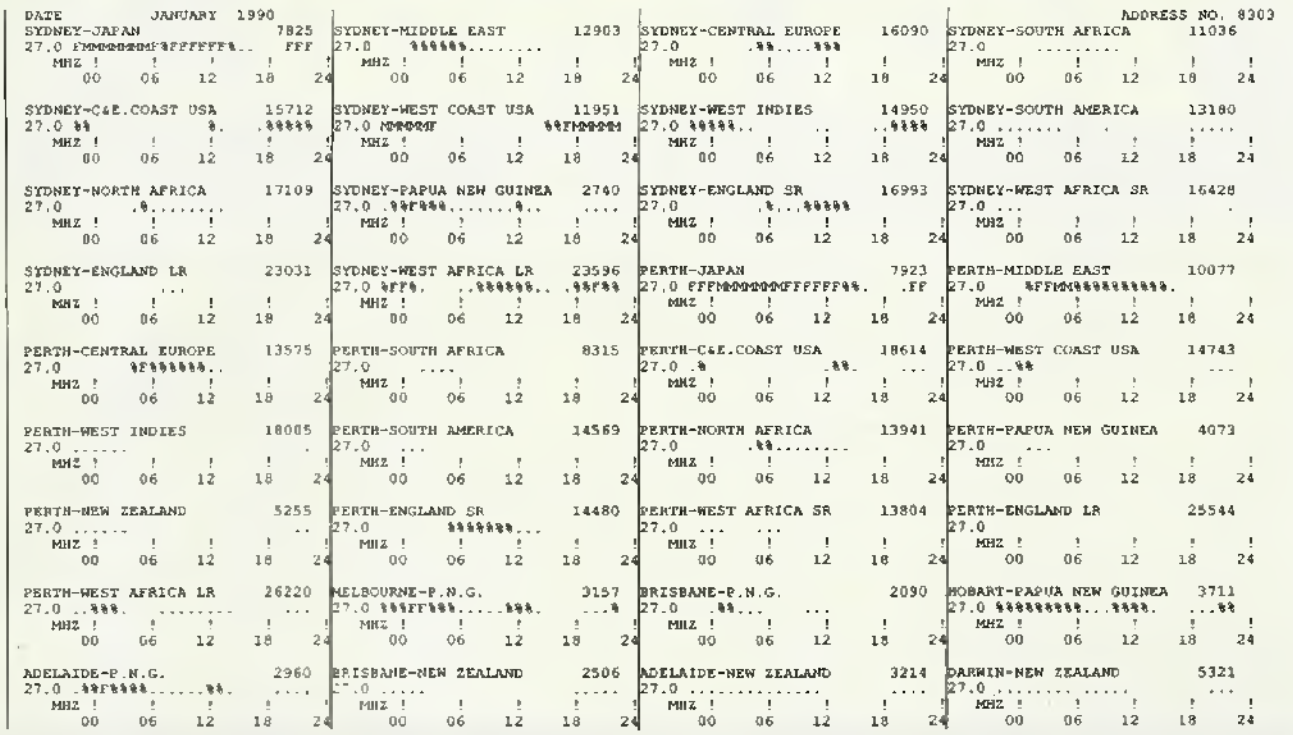
There was a rumor circulating that some Japanese DXers were in the midst of planning a DXpedition to Minami Torishima (270-AT prefix) around mid-1990. This would be a much sought after DXCC country so I will try and keep you posted.

For those chasing IOTA points, on 28 and 29 April 1990, 14-AT-217, 218 and 337 will be launching a DXpedition to Tudy Island and sign as EU-48 Tudy Island. The IOTA points are good for the French Islands Award. Cards will go via the QSL manager 14-AT-337, with the usual trimmings.

Cards are starting to filter through to those who worked the EU-48 DXpeditions to Houat and Hoedic Islands. These are not new countries but are good for IOTA points. If you haven't received your cards yet than 14-AT-337 is the QSL manager to check with.

Before I close for 1989 I would like to thank all those who have been kind enough to keep me informed, both via the telephone and through the mail, as to DX happenings over the past 12 months. Your help, as usual, was much appreciated. Have a pleasant and safe festive season.

NOTE: Skip conditions are virtually the same from Sydney as they are for all other East Coast areas — likewise Perth predictions can be taken as similar to those for other West Coast areas.



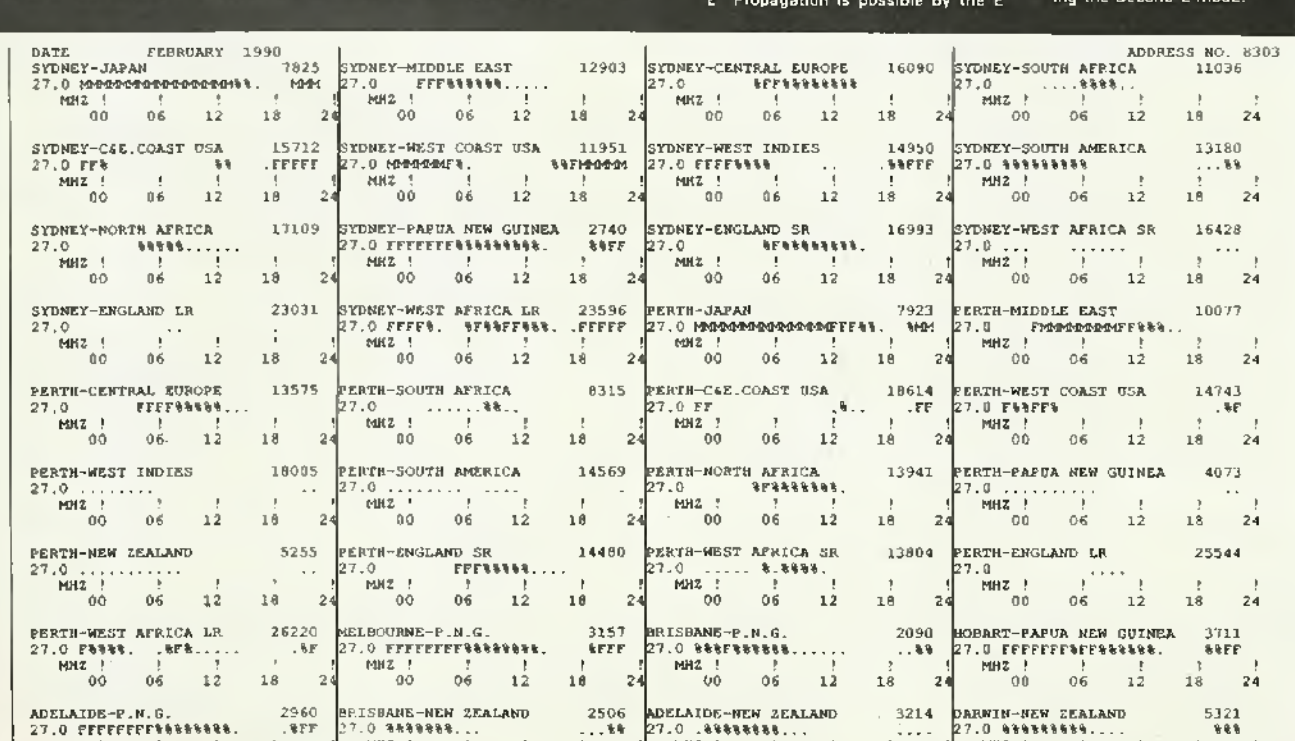
These GRAFEX style predictions present in pictorial form the expected HF propagation conditions between Australia and a number of important DX areas. For each circuit, the "East" terminal refers to the eastern half of Australia. The horizontal axis of each graph represents the hours of the day in Greenwich Mean Time from 0000 hours to 2300, reading left to right. The vertical axis represents increasing frequency.

A GRAFEX symbol represents the predicted propagation conditions for a particular frequency at a particular time. The meaning of each symbol used is given in the key on the next page. The letter "F" designates the best conditions for HF communications.

Grafex prediction charts supplied courtesy of the Ionospheric Prediction Service, 162-166 Goulburn Street, Darlinghurst, NSW. IPS offers pre-recorded telephone information. To access the service, please phone (02) 269 8614.

LEGEND TO GRAFEX SYMBOLS

- '.' Propagation is possible but probably on less than 50% of the days of the month
- '%' Propagation is possible on between 50% and 90% of the days of the month.
- 'F' Propagation is possible by the First F modes on at least 90% of the days of the month
- 'E' Propagation is possible by the E modes on at least 90% of the days of the month.
- 'M' Propagation is possible by both the First and Second F modes on 90% of the days of the month.
- 'S' Propagation is possible by the Second F mode on 90% of the days of the month.
- 'A' High absorption — above the ALF but probably too close to it for good HF communication.
- 'X' Complex mixture of modes including the Second E mode.



'BACK TO YOU...'

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

ON THE SPOT FINES

Dear Sir,

Ok, so I owe Fewster an apology about what I thought was just another 'Fewster Hoax' when he sounded off about 'on the spot' fines a year or so back.

He usually talks so much rubbish that I figured this was just another 'let's get everyone going' thing, but, this time he looks as though he's got it right for a change.

I'm a channel 9 monitor so I do not count Fewster as one of my best friends, but, seeing that I rubbished him on air when he starting claiming that there was a move to 'on the spot' fines I'm big enough to apologise to him in the letter's department.

Sorry Fewster.

Fred Nile
Coolum.

For openers Fred it would be nice if you had at least signed your correct name to the letter. Still, Furious should be happy even with that half-baked apology for an apology.
Editor.

UPGRADE PROBLEMS

Dear Sir,

After recently upgrading my rig from AM-only to one with SSB in the hope of gaining more reach on my mobile unit, I am presently disillusioned at the distance I receive, which seems only marginally more than on my AM rig.

I have a four-foot whip mounted on a bracket attached to my roof rack and granted the omni-directional qualities of these antennas, I was wondering if a longer antenna would have a significant difference.

Short of mounting say, a five-element Yagi beam on my car, could you possibly suggest a few things I might do to improve my communication range to something around 15-20 kms (as opposed to 4-5 kms at present) to other mobile rigs.

Anthony J Carter
Eastwood, NSW.

Sorry, we do not have a quick-fix solution to your problem. A longer antenna will certainly improve your range (refer back to recent issues of CBA which discuss mobile antennas) but it will not necessarily increase your rig's range to what you require. AM is generally a short distance mode (yes, we know there are exceptions) but unless conditions are right SSB can be much the same — in fact it's sometimes easier to talk with interstate stations than with a station only 10 miles away.

Really, if you're looking for reliable short range coverage you will probably be better off with a UHF rig.

— Editor

PLEASE USE METRIC

Dear Sir,

I think it is about four years ago that I ceased subscribing to CB Action.

There were two reasons for that. There was a dearth of technical articles and strong opposition to the use of the metric system of measurement.

I do not mind if you use the imperial system of measurement (though I prefer that you do not) so long as the metric equivalent is also given.

Today I bought a copy of CB Action. The first one in around four years. The magazine has certainly improved, but, in some cases, you still refuse to use the metric system. Why?

In times gone by I also requested that the date be put on the front cover and was twice told that, "it can't be done". What a ridiculous reply! It is good to see you are now doing the impossible.

I also objected to the half-naked females on every front cover of a CB magazine. I was told, "that is what our readers want". Someone was out of touch with the real CB world. It is good to see that the latest edition has an appropriate cover.

I was quite pleased to see the subjects of scanning and shortwave listening covered in the latest edition. Both are long-time hobbies of mine. On topics about shortwave listening, I hope you do not restrict coverage to the International broadcast bands. There is an abundance of activity between them using SSB, CW, FAX, RTTY and TOR.

All the best with the improved magazine, but please use metric.

Robert Den Heyer
Islington, NSW

OK — point(s) taken, however, the reason for the lack of the actual date back in those days was that we published 13 issues per year and it was difficult to identify them by date. We now use metric (in most cases), but, every so often an imperial measure slips through and candidly, we would still love to run those half-naked females but, sadly, times change.

— Editor

PIRATE RIG WANTS HELP

Dear Sir,

Please, I wonder if you can help me. Not long ago I purchased a pirate transceiver called a SuperStar 3600. It was brought in from Singapore and is very similar to a Cobra in appearance while having the apparent characteristics of the Hy-Gain V2795.

My problem is that recently I turned on the set and it would not work even though I have looked after it like a baby.

Now I have made numerous enquiries and 'phoned many service and repair people that it's not funny and the end result is that it can only be repaired if I can find a circuit diagram.

I would be most appreciative for any assistance you may be able to provide.

Phillip
Richmond North. Victoria.

Bloody hell Phillip, will people never learn. There is simply no future in bringing in 'pirate' equipment and expecting it to work well in Australia and, if it drops dead as your's has done, expecting someone to repair it for you.

If you want to be a 'pirate' for Chrissake at least purchase your equipment in Australia and then you will be able to have it fixed. Also, your cruddy SuperStar probably spouts TVI and CBI like there's no tomorrow and only gets the average sensible CBer a bad reputation.

Anyway, if by chance anyone has a circuit diagram for this heap of rubbish please forward it to PO Box 1292, Richmond North 3121.
Editor

HELP WANTED

Dear Sir,

I am in the process of establishing a home base station and will soon be erecting an 18-foot Stationmaster aerial. My problem is that the only two vantage points on my roof for the aerial are a disused chimney, which already has a TV antenna secured to it by a home-made metal strap, and another chimney which is in use every day.

What I want to know is where should I put it, how should I attach it (keeping in mind that the chimneys are old and fragile) and how can I keep it from interfering with my or anyone else's antennas?

Nathan Wheat
Richmond Sth, VIC

Well, you sure don't need to put the antenna on the same chimney as the TV antenna unless you want bulk TVI.

The other chimney sounds like a reasonable proposition and Dick Smith Electronics or Tandy carry the correct hardware to mount the mast to the chimney.

There's no way we can give you a place or a method of guaranteeing that you won't interfere with the TV without seeing the relationship of the Stationmaster and the TV antenna — keep them as far apart as possible and ideally have the CB antenna higher than the TV antenna.

— Editor

NEW CLUB

Dear Sir,

I am interested in forming a CB radio club on the 11m band for past and present railway workers within Australia.

I have spoken to a number of railway employees interstate and they all say it is a good idea.

Would you be able to supply me with some information on how I can get the ball rolling, as I want to get the club started as soon as possible.

I wonder if a letter could be published in CB Action, under Club News, regarding the formation of the club.

If a letter can be published, I would like it mentioned that I would require the following from all intending members:

1. Present call sign; 2. Name; 3. PO Box or address; 4. The past or present position/grade for which they were, and are presently employed; 5. If intending members are prepared to take a voluntary position in the club, eg. Secretary, President, Liaison Officer for their State etc.

The above information is to be sent to: SBD-474 Paul, PO Box 76, Peterborough 5422, SA.

There will be a membership fee to cover the cost of a membership list, postage and envelopes. Once the club is formed, a discussion over the air could be held regarding QSL cards and a newsletter.

I hope you can help and I hope to hear from you soon. Keep up the good work with CB Action as it is a good magazine.

P Meier
Peterborough, SA

Due to space limitations we no longer carry 'Club News', however, I am sure that someone among our readers will be happy to contact you and provide the information which you require.

— Editor

IT'S A NICE MAGAZINE — BUT . . .

Dear Sir,

CB Action is an excellent magazine, a mine of information for CBers, a magazine which Bunbury Radio Club has recommended to its members for years.

However, since Don Stewart hung up his typewriter, the news from the West is sorely missed and I'm sure I speak for most West Australian CBers when I implore you to consider resuming the 'Out West' feature. Surely you cannot base your decision not to run the feature on a survey in which only a small percentage of your readers participated.

And with reference to the Wordmaze competition and your rule that "photostat copies of the entry form are not acceptable." Fair enough, I understand your reasons but my complaint is that I like to keep my magazine intact so may I suggest that you either:

1. Put an all-page advertisement on the reverse of the competiton or
2. Print the competition on a separate page as an insert which would keep the magazine whole because when you tear out a page, the opposing page within the publication comes adrift, further mutilating the magazine.

I thank you in anticipation of your co-operation.

Dave Lindsay
Bunbury, WA

David, while I appreciate how your members feel, the facts are that the readers' survey indicated in no uncertain manner that the State columns attracted little interest. Also, space is at a premium for general interest editorial material and, while the subject of such columns is always open to review, at this point in time we are reluctantly obliged to drop them in favor of material which has a national interest.

However, while you lost that one you win the Wordmaze one and from this issue onwards we will accept photostat entries, BUT, only one entry per reader. Where we find that a reader has sent in more than one entry all his/her entries for that issue will be consigned to the rubbish bin.

— Editor

STOLEN EQUIPMENT

Dear Sir,

I am writing to you hoping you will publish my letter asking your readers for their help.

During the last weekend of September 30/1 October, my house was robbed. Among the electrical goods stolen, colour and B/W TV, 3-in-1 stereo, video, etc, was my Base Station.

It was a SUPER BENGAL MK II BASE STATION, SERIAL No 0303.

It was also marked with an invisible ink marking pen that shows up under an UV or black light, with my call sign SBY 280.

There was also a TVI filter with the set.

If any of your readers or their friends see or hear of a Super Bengal Base Station, or an ad for sale, could they please check it out and see if the Serial No 0303 is on it. If so, would they please notify their nearest Police Station with the information.

Hoping your great magazine and readers can assist me in this matter.

M. Burnett
Fisher Street,
Caltowie, SA 5490

AUSTRALIAN UHF REPEATER LIST

AREA	CHANNEL	LOCATION	SPONSOR
ACT			
Canberra	2/32	Isaacs Ridge	Philips — TMC
Canberra	8/38	Isaacs Ridge	Philips — TMC
New South Wales			
Adjungabilli	6/36	—	—
Albury	4/34	Lavington	Albury Communications
Armidale	4/34	Armidale	New E'land Mobile Comms
Barraba	6/36	—	—
Bathurst	8/38	Mt Panorama	Serv-U Appliance Centre
Bega	6/36	Mumbulla Mtn	A. McCoy Two-Way Radio
Belbora	1/31	—	—
Bombala	1/31	—	—
Booral	7/37	—	—
Bowral/Mittagong	6/36	—	—
Brewarrina	1/31	—	—
Brindabella Ridge	8/38	Mt Gingil	Outward Bound Australia
Broken Hill	4/34	—	B. Hill UHF Club
Broken Hill	7/37	—	B. Hill UHF Club
Bulahdelah	7/37	Cabbage Tree Mtn	Great Lakes UHF R'ter Grp
Capoompeta	5/35	—	—
Casino	6/36	Malanganee Range	Nathan Ross Electronics
Coffs Harbour	1/31	—	—
Coffs Harbour	6/36	Coffs Harbour	Countrywide Communications
Cooma	4/34	—	Blamac Communications
Corowa	1/31	Corowa	Corowa Electrics
Corowa	5/35	—	—
Cowra	7/37	Bellview Hill	Harvey Electronic Services
Deepwater	5/35	—	—
Deniliquin	1/31	—	—
Deniliquin	3/33	Deniliquin	Deniliquin Machinery
Ebor	1/31	Nr Armidale	—
Eden	2/32	—	—
Glen Innes	7/37	Mt Rumbee	Glen Innes ARC
Goulburn	4/34	Mt Gray	Double Diamond
Grafton	8/38	—	—
Grenfell	1/31	—	—
Griffith	8/38	Mt Squareknob	—
Harden	1/31	Mt Bobbara	—
Hay	4/34	—	Phil Shields Electronics
Inverell	2/32	Inverell	—
Jindabyne	1/31	Cornya A'pine C.	Mansi Brothers
Lismore	2/32	Rans	—
Malanganee	6/36	—	—
Mooree	6/36	—	D. Groth Radio-Electronics
Murrurundi	3/33	Liverpool Range	—
Muswellbrook	4/34	Mt Arthur	General Communications
Narrabri	2/32	Castletop Mountain	L. Hannaford Electrical
Narromine	5/35	—	—
Narromine	6/36	—	—
Newcastle	1/31	Charlestown	—
Newcastle	6/36	New Lambton	General Communications
Oban	1/31	—	—
Oban	5/35	—	—
Parkes	2/32	Parkes	Bionics Australia
Port Macquarie	4/34	—	—
Syd Outer West	4/34	Kurmond	Riverlands Repeater Group
Sydney South	1/31	Hurstville	Practronics
Sydney Blue Mtns	2/32	—	Argent Comms
Sydney North	7/37	Chatswood	Philips Communications
Sydney West	3/33	Prospect	Philips Communications
Tamworth	1/31	Windworth	Landlink Communications
Taree	3/33	—	—
Tenterfield	3/33	Mt McKenzie	Nathan Ross Electronics
Tumbarumba	3/33	Mt Ikes	—
Tweed Heads	4/34	—	—
Tumut	6/36	—	—
Wagga	1/31	Riverina Communications	
Wagga	5/35	—	—
Wagga	7/37	Wagga	Riverina Communications
Walbundrie	2/32	Walbundrie	Corowa Electronics
Walcha	8/38	Walcha	WalGraz
Wilcannia	1/31	Murtee Station	—
Wingham	1/31	Wingham	—
Wollongong	8/38	—	Phil Day
Queensland			
Atherton	8/38	—	—
Atherton-Mareeba	1/31	Rocky Creek	Marteens Electronics
Bajool	4/34	Mt Hopeful	Mt H. UHF Rpt Assoc
Barcaldine	1/31	—	—
Bathurst Heads	1/31	—	
Biloela	7/37	Mt Bertha	Biloela Repeater Assoc
Blackdown	6/36	—	Blackdown UHF Rpt Assoc
Brisbane	1/31	Mt Cotton	Philips Communications
Brisbane	5/35	Mt Glorious	ACRM (Q'land)
Brisbane	7/37	Toohey Mnt	Olbis Industries
Bundaberg	1/31	Mt Perry	Bundaberg Hi-Fi Stereo
Bundaberg	4/34	Sloping Hummock	B'berg Hi-Fi Stereo
Burnett Ranges	6/36	Munduberra	Custom Scientific Elects
Cairns	3/33	Mt Yarrabah	GrG Communications
Caloundra	6/36	Bald Knob	Ralph Hill Electrical
Chinchilla	3/33	—	—
Clermont	1/31	Clermont	—
Clermont	7/37	—	Clermont SES
Dalby	4/34	Mt Mowbullan	GT Communications
Dimbulah	6/36	—	—
Emerald	7/37	—	—
Emerald	8/38	Emerald	Emerald Dist Rpt Association
Gladstone	6/36	Mt Larcom	Nixon Controls
Gold Coast	4/34	Coolangatta	Philips Communications
Goondiwindi	4/34	Goondiwindi	Border TV & Radio
Gunalda	2/32	Mt Kangan	Ralph Hill Electrical
Gympie	7/37	—	—
Ingham	2/32	Mt Gudmore	R.E. Pugh
Innisfail	1/31	—	—
Ipswich	4/34	—	Ipswich Rpt Assoc
Jericho	4/34	—	—
Kilcoy	3/33	—	—
Leichhardt	1/31	Mt Hope	Driscoll Pastoral
Longreach	3/33	—	—
Mackay	3/33	Fairleigh	McKay C'zens Rpt Grp
Mackay	6/36	—	—
Marlborough	2/32	Broadsound Rnge	M'Borough UHF Rpt Assoc
Maryborough	6/36	—	—
Middlemount	1/31	—	Middlemount SES
Millaa Millaa	8/38	Millaa Millaa	Bill Jones Communications
Millaa Millaa	7/37	—	—
Miriamvale	2/32	—	—
Monto	3/33	Pine Mountain	Monto UHF Rpt Assoc
Mt Alexandra	8/38	Mt Alexandra	Bill Jones Communications
Mt Aunt	4/34	—	—
Mt Inkerman	3/33	—	—
Mt Isa	1/31	Lake Julius	Q'Land Education Dept
Mt Janet	2/32	—	—
Mt Stewart	1/31	Mt Stewart	Olbis Industries
Mt Wolvie	5/35	—	—
Mundubbera	6/36	—	—
Murgon	7/37	Mt England	Murgon Repeater Assoc
Ocean View	8/38	—	—
Palm Island	6/36	Palm Island	Palm Island Council
Pialba	8/38	Ghost Hill	M'borough Sugar Factory
Police Mountain	6/36	—	—
Port Douglas	6/36	—	—
Quilpie	2/32	Trinidad Station	OEA Pegler & Co
Rockhampton	1/31	Mt Archer	Capricornia UHF Rpt Assoc
Roma	1/31	—	Roma Teleradio
Springsure	3/33	Rodda Lookout	Bauhina SES
Stanthorpe	8/38	Amiens	Mt Peanga Rpt Assoc
Tambo	6/36	—	—
Taroom	2/32	Mt Kinnoul	Taroom Repeater Assoc
Thargomindah	6/36	—	—
Tin Can Bay	3/33	Double Is Point	Tin Can Bay Lions
Toowoomba	2/32	Picnic Point	Custom Scientific Elects
Townsville	1/31	—	—
Wilkes Knob	6/36	—	—
Yaraka	7/37	Mt Slowcombe	Yaraka Repeater Assoc
South Australia/Northern Territory			
Adelaide	1/31	Summerton	Philips Communications
Adelaide	5/35	Upper Sturt	ACR (SA) Inc
Adelaide	3/33	Trott Park	Philips Communications
Blinman	3/33	Patawarta Hill	Gum Creek Station
Burra	8/38	Mt Bryant	Mt Bryant Repeater Assoc
Ceduna	1/31	Coppuburba Hill	Ma Ross Electrical
Clare	7/37	Quarry Hill	Midnorth Repeater Assoc
Cleve	2/32	Mt Nield	Cleve Repeater Station Inc
Darwin	1/31	Darwin	Saascan Communications
Coonalpyn	6/36	Coonalpyn Hill	Upper SE Repeater Assoc
Hawker	7/37	Mt Aleck	Wilpenna F. Fighting Assoc
Manunum	8/38	Mt Beevor	SA Antenna Services
Mt Gambier	5/35	Mt McIntyre	Crest SA Mt Gamber
Mt Gambier	7/37	The Bluff	SE Repeater Assoc
Myponga	2/32	Nr Myponga	Aust Volunteer Coastguard
Naracoorte	4/34	Lucindale	Naracoorte Repeater Assoc
Oodnadatta	1/31	Mt Jane North	Tutinoodon Cattle Co
Orroroo	2/32	Black Rock Peak	Toops Electrical Services
Pardana	4/34	Nr Pamdana	Ki Repeater Assoc
Port Lincoln	8/38	Pillawarta Hill	K.M. Electronics
Port Pirie	4/34	The Bluff	Dist Council of Mt Remarkable
Price Hill	1/31	—	Dist Council of Carneton
Renmark	6/36	—	Riverland Repeater Group
Snowtown	6/36	Barunga Ranges	Largies Electrical
Tarcoola	6/36	Nr Tarcoola	A.J.& P.A. McBryde
Truro	4/34	Nr Truro	Barossa Repeater Assoc
Warooka	7/37	Mt Gore	Power Communications Service
Wilkatana	8/38	Mt Arden	Mt Arden Repeater Assoc

Tasmania

Burnie	8/38	Round Hill	N-West Coast Rpt Assoc
C.Highlands	7/37	Barren Tier	C-H'lands Assoc
Devonport	1/31	Sunnyside	Rick Rickard TAS 000
East Coast	6/36	Moaners Tier	East Coast Rpt Assoc
Hobart	1/31	Grass Tree Hill	Sth Tas Rpt Assoc
Hobart	5/35	Mt Faulkner	CREST (Tas)
Launceston	2/32	Mt Arthur	Launceston Rpt Assoc
Midlands Area	4/34	Millers Bluff	Midlands Rpt Group
N-E Coast	3/33	Tower Hill	N-E Repeater Group
West Coast	6/36	St Valentines Pk	N-W Coast Rpt Assoc

Victoria

Anakie	4/34	—	—
Ararat	6/36	Mt William	Mt William UHF Rpt Grp
Barnsdale	1/31	—	G'land Repeater Assoc
Barnsdale	7/37	—	—
Ballarat	2/32	Mt Bunninyong	C'tal Highlands R. Assoc
Ballarat	5/35	Mr Warrenheip	B'rat Rural E'gency M'tors
Ballarat	7/37	—	Ballarat Communications
Balmoral	1/31	—	—
Bendigo	4/34	Specimen Hill	Central Vic R. Assoc
Bendigo	8/38	Mt Alexander	—
Carrajung	4/34	Carrajung	Carrajung UHF R. Assoc
Echuca	6/36	—	—
Eildon	1/31	—	—
Eildon	8/38	—	—
Euroa	3/33	—	—
Falls Creek	3/33	—	Henry's Radio Centre
Foster	6/36	Mt Fatigue	G'land Repeater Assoc
Geelong	4/34	—	G'Long Amateur R. Club
Gippsland	7/37	Mt Taylor	G'land Repeater Assoc
Hamilton	1/31	—	—
Hamilton	5/35	Mt Bainbridge	Hamilton Electronics
Hamilton	8/38	—	—
Hawkesdale	4/34	Hawkesdale	—
Kerang	2/32	Mt Kerang	—
Lorne	3/33	Weeaproinah	—
Mansfield	2/32	The Paps	—
Melbourne North	1/31	—	Omega Radio Club
Melbourne Metro	3/33	Lysterfield	Philips Communications
Melbourne Metro	5/35	Olinda	Paravic Sports Assoc
Melbourne South	7/37	Frankston	Powerband Communications
Mildura	3/33	—	Ferguson Sec & Sound
Moe	2/32	Moe	G'land Repeater Assoc
Mornington Peninsula	8/38	Red Hill	Omega Radio Club
Mt Cann	8/38	—	—
Myrtleford	8/38	—	Alpine Repeater Group
Newtown	4/34	—	—
Omeo	1/31	—	—
Penshurst	1/31	Mt Rouse	Hamilton UHF Users Grp
Shepparton	7/37	Shepparton	Angus Communications
St Arnaud	1/31	—	—
Tallangatta	7/37	—	—
Wangaratta	6/36	Warby Ranges	Corowa Electronics
Yea	6/36	—	—

West Australia

Albany	3/33	Mt Melville	—
Augusta	7/37	—	—
Bencubin	2/32	Bencubin	—
Boyup Brook	4/34	Dinninup	Boyup Brook Comms Grp
Bunbury	2/32	Shenton Ridge	B'bry & Dist UHF R.G.
Carnamah	2/32	—	—
Coolgardie	7/37	Mt Burgess	—
Denmark	1/31	Denmark	—
Esperance	4/34	Esperance	—
Kambalda	1/31	Kambalda	Goldfields Repeater Assoc
Kamboola	1/31	—	—
Katanning	1/31	—	—
Kulin	4/34	Kulin	—
Lancelin	4/34	Lake Karakin	Gingin Shire Council
Mandurah	7/37	—	—
Manjimup	8/38	—	Manjimup Comms Radio
Margaret River	6/36	Ellen Brook	Margaret R. UHF Rpt Grp
Meekatharra	1/31	Hill View Station	—
Mia Mia	1/31	—	—
Mt Barker	7/37	Mt Barker	Plantagenet Rpt Group
Mt Barrow	7/37	—	—
Mt Marypeaks	6/36	Mt Marypeaks	—
Perth	1/31	Wanneroo	Philips Communications
Perth	3/33	Roleystone	Philips Communications
Perth-Metro	5/35	Maddington	CREST (WA)
Perth-East	8/38	—	—
Ravensthorpe	8/38	—	—
The Knob	2/32	—	—
Wickham	1/31	Wickham	Wickham Radio Club
Wongan Hills	8/38	—	—
Wyalkatchem	6/36	Wyalkatchem	D & G Pearce
York	7/37	Mt Bakewell	York Repeater Group

NOTE: This information is provided by various sources and relies upon reader input for the correct information. If you are aware of any non-listed or no longer operating repeaters, please advise to: REPEATER LISTING, P.O. Box E160, St James, Sydney 2000.

HF SWR METER FROM EMONA

Emona Electronics of Sydney has introduced its new HF VSWR meter, the EMTRON EP-1, which we managed to get our hands on for a quick evaluation session.

The EP-1 is an unpretentious little instrument with its only claim to fame being that of offering the user a clear indication of forward power Vs reflected power in a Radio Frequency system.

This measurement is known as the Voltage Standing Wave Ratio (VSWR) and is usually quoted as a means of evaluating antenna efficiency.

For readers unfamiliar with the use of a VSWR meter — often termed a SWeR meter — here is a crash-course.

When you transmit on your CB rig the energy produced travels along the co-ax cable — transmission line — to the antenna, also known as the load. This is known as the Forward Power and is read on the FWD scale on the meter.

To calibrate the instrument is simple. While transmitting on AM, adjust the sensitivity control — SENS — until the meter needle is at the SET position on the right-hand side of the meter dial. When you stop transmitting the needle will return to the zero mark on the left.

If your antenna is correctly tuned it will absorb almost all the forward power and radiate it out across the terrain for all to hear.

This would indicate a LOW SWR and if the meter switch is set to REFL or

Reflected, the meter needle will move only slightly off the stop if at all.

If the antenna is not tuned properly its efficiency will be impaired and all the power will not be radiated.

The reflected scale on the meter indicates the relative difference between the forward and reflected power levels.

If the antenna is badly out of tune the reflected power will be high because the power, once released from the transmitter, must go somewhere and if it cannot be consumed by the antenna, it is simply reflected back down the transmission line toward the transmitter from which it came.

The EP-1 meter does its job very nicely and can be calibrated easily for use with a 'sick' rig that is considerably down on power.

The unit is well labelled with a good-sized meter, whose scale is uncluttered and legible. The case is strong and solidly put together with the input and output SO-239 connectors mounted on the rear panel.

The EP-1 does not pretend to read output power which we thought was a good point. Many of its peers offer a power scale which is often more misleading than accurate.

The EP-1 is designed for use in the HF High Frequency band which makes it ideally suited for 27MHz CB. It is not designed for UHF CB and to put the record straight, we checked it out with a UHF rig and the results were dismal.

We have no unfavorable comments about the instrument so there is little to do but recommend the EP-1 as a sensible adjunct to the CB shack.

CB ACTION ACCESS COMMUNICATIONS WORDMAZE

The answers to the questions in our last issue were: 1 — Uniden, 2 — Newlyn, 3 — Rod, 4 — Cycle, 5 — QRT, 6 — QRX, 7 — QRN, 8 — Selective, 9 — SWR, 10 — Towells.

The prize of the Hatadi Pearce-Simpson AM/SSB Super Tiger goes to Mr D Greaves of Mirboo North, Victoria...congratulations Mr Greaves and your rig will be forwarded to you by Hatadi within the next few days.

The prize for this issue is another great one — just released AOR Road Runner 800 handheld scanner — courtesy of Access Communications. The review on this unit is elsewhere in this issue and Russell Bryant is impressed.

It will go to the first correct entry opened after the closing date — so go for it.

1. There are three levels of Australian amateur operator licences, one is full call, another is Novice, what is the other one (one word only)?
2. What is the first name of our new contributor handling the Online column?
3. What is the surname of the author of 'Selcall — What Is It . . ?' which appeared in a recent issue of CB Action?
4. What is the Q Code for, "change to another channel (frequncy)"?
5. What is the Q Code for, "I am troubled by static"?
6. What is the surname of the inventor of the directional beam antenna (no, it's not Werner Wulf)?
7. There are two legally designated emergency channels on the UHF CB band, one is 35, what is the other?
8. What make of SWR meter is reviewed in this issue?
9. One of our regular NSW contributors holds an amateur licence which he mentions in this issue — what is his surname?
10. What is the name of the 19-AT-117 out of Holland?

There are a few difficult ones in there, but, the answers are all easily obtained and you can't really expect Access Communications to give away a beaut scanner without making you work for it can you...?

Incidentally, we suggest that you always retain your copy of CBA as we regularly go back a few issues in search of an answer just to keep you honest.

NOTE: The correct answers **MUST** be circled in the wordmaze — photostat copies are acceptable **HOWEVER** only one per reader — if we find a reader sending in more than one all that reader's entries will be disregarded.

P	U	Y	I	O	E	O	O	I	Y	P	E	Q	O	G	T	L	H	I	C
U	O	M	W	I	E	U	X	N	B	U	R	W	A	U	E	I	E	X	M
D	T	O	C	R	T	U	Y	R	E	W	T	I	B	E	N	E	H	I	A
E	O	E	J	E	I	K	V	N	O	S	I	E	W	R	I	V	Z	E	E
T	A	G	E	P	G	O	U	O	A	L	Y	E	Q	O	G	R	I	F	F
I	Y	R	C	I	I	O	Q	S	I	U	E	U	E	U	U	U	I	Y	O
M	E	P	R	O	A	S	Q	D	E	T	D	W	B	D	E	K	N	Q	H
I	E	D	V	I	Y	W	F	N	E	Z	I	N	O	E	H	I	A	A	Z
L	K	A	E	W	A	O	J	O	E	Y	K	E	U	L	L	T	E	A	J
A	M	X	Q	N	J	B	I	M	E	O	P	B	I	N	A	U	U	C	U
G	S	X	O	I	I	G	V	D	E	S	P	A	N	R	P	D	R	L	H
R	I	M	V	D	A	E	F	E	Q	P	I	V	T	U	A	D	E	V	J
E	E	A	D	Y	Y	K	M	Z	N	E	N	D	B	R	J	D	Z	I	O
S	V	W	M	G	N	E	I	S	A	N	B	N	F	E	I	A	E	S	X
A	I	S	B	E	R	L	Y	A	R	J	B	K	Y	E	N	C	Z	E	S
N	K	L	B	O	A	A	A	E	I	E	J	E	M	L	W	O	K	E	A
M	O	C	C	E	V	H	B	O	N	J	O	V	D	O	F	Z	O	H	E
N	X	L	S	A	V	E	H	L	E	Y	W	I	U	A	U	K	I	S	S
D	Y	F	H	P	J	I	O	T	A	L	O	J	Y	Y	U	E	A	L	M
A	S	E	E	E	O	M	F	P	P	R	Z	X	Y	X	B	O	M	E	J

1 .....

2 .....

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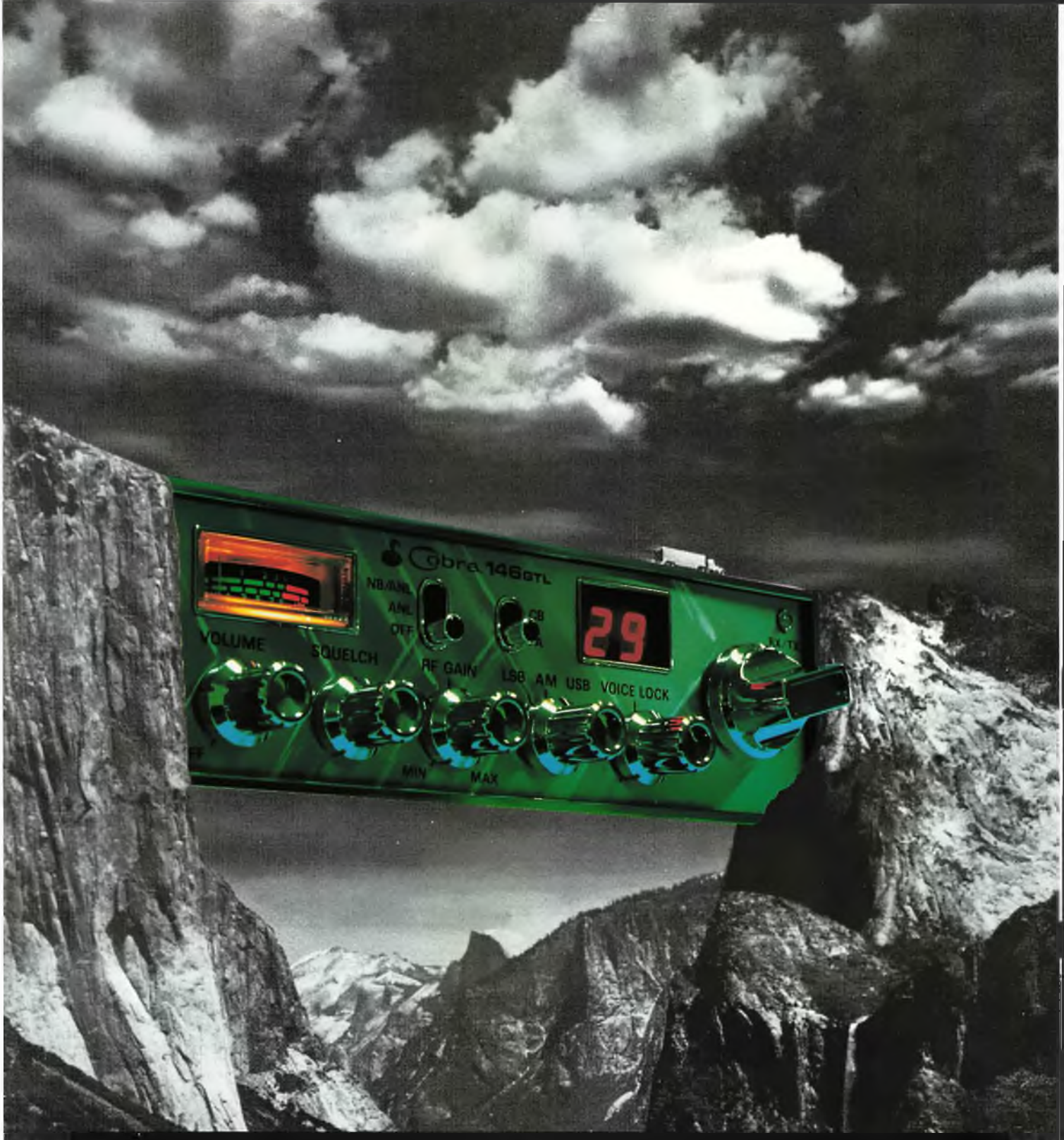
The closing date is January 20 and the winner will be the first correct entry opened after that date. The draw will be conducted in the offices of CB Action and the results and answers will be published in the next issue.

Entries should be addressed to: Access Communications/CB Action Wordmaze, PO Box 628E, GPO, Melbourne 3001.



The 146, that's all anyone has to say.
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That's the 146. So good, we've renamed it the 146GTL Classic. Because it's part of the road, part of the air, part of some people's blood. Maybe it was meant to roll forever.

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The Q4000 Quaderodyne radar detector gives you consistent, advanced warning of speed radar. Whether the radar signal is over the hill, around the corner, even from behind, the Q4000's sensitivity locks onto radar long before it locks onto you.

Operational

The Q4000 is simple to use. Just plug it in and depress the power button and it's ready to perform. The Q4000 is compact and sturdy. It can be easily removed from its mounting bracket and slipped into the pocket, purse or glove compartment until you need it again.

Unique Features

The Q4000 offers the highest performance of any radar detector available in Australia. Its performance and reliability have been well established by its predecessors carrying the Whistler name.

The Q4000 is available in no less than four high performance versions.

Designed primarily for professional drivers, the Q4000 offers a standard of performance unmatched by any other brand on the market.

The **long range Q4000** is for professional drivers. For drivers who frequent South Australia and Queensland the **Triband Q4000** is most suitable. The revolutionary **Q4000K** offers high performance combined with a 90% reduction in interference from burglar alarms and non radar sources.

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When the Q4000 encounters a radar transmission, it responds with an audio alarm accompanied by flashing red lights. As the signal gets stronger the audible and visual alarms will report with a Geiger counter like warning, increasing in rate in proportion to the closeness to the source of radar transmission.

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The Q4000 is equipped with a push button highway city switch to reduce the annoyance of unwanted signals that can be picked up whilst driving in urban areas.

Whistler Q4000 Features

1. **Highest sensitivity available for early warning.**
2. **Audible and visual alarms.**
3. **Available in a model to suit your needs.**
4. **Easy to install.**
5. **Highway city button.**
6. **Compact as possible whilst not sacrificing performance.**
7. **Convenient sun visor mounting.**

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