

NCRG SPECTRUM

The official Newsletter of
**NORTHERN CORRIDOR
RADIO GROUP**
P.O.BOX 244
North Beach
Western Australia 6020

VK6ANC ZONE 29

Volume 1

Issue 1

The 1995 NCRG AGM
HAMFEST 95
AR on the Internet
NCRG Monthly Newsletter
ATV by VK6TVA
VK6DXC PACKET CLUSTER
Electricity by Greg Short VK6JCK
Presidents Report
Hamilton Radio Club ZL1UX
CO-LINNEAR Antenna Project
Repeater Listings
Novice Limited
HF DX Report
ICOM IC-706

The 1995 NCRG AGM

On Tuesday night the 13th June it was once again the Annual General meeting of the Northern Corridor Radio Group VK6ANC. Firstly we all would like to thank very much all the previous officers and helpers who have given much needed assistance to the running of our group.

The elections were conducted by Duncan VK6ZDP with the following results:

President:-VK6XH Keith Bainbridge

Vice Pres:-VK6ZDP Duncan Page

Treasurer:- VK6ZPP Phil Jamieson

Secretary:- VK6ZDJ Tony Jenkinson

Club Contributors:-

Satellites VK6KCC Alex

Disposals VK6XH Keith

Contests VK6APK Alec

Packet VK6KS Phil

ATV VK6TVA Mel

Microwave VK6XH Keith

Equipment VK6BQN

Publicity VK6KS Phil

Hamfest 95 VK6UE Bill

Exam Team VK6ZPP + VK6KS

Cluster VK6XH Keith

NCRG Monthly Newsletter

We have now started our own club newsletter available to all club members local and interstate. If you are not financial then you will not receive your newsletter, if you want to be a member then please fill out the form provided at the rear of this newsletter. We will be providing to you information of our various activities and other exciting articles. This newsletter will need input so if you have something interesting to share with others or if you have a demanding query then maybe we can all help you. You will also be informed of the available bargains that come to hand and other bits n pieces. Please support your newsletter. Ed.

Presidents Report

Hello all and welcome to this, the first issue of the NCRG Spectrum. I'd like to thank Mel VK6TVA for his fine effort in getting the newsletter off the ground. He will, of course, require your continued support and input to keep it going!

Please dig out those useful articles and anecdotes you have around and get them to him.

The clubs incorporation is progressing well, though Tony VK6ZDJ has had to re-write the clubs constitution in a format acceptable to the powers that be. By the time you read this, it will be well on its way to completion through government departments.

Good luck to all of you who will be participating in the RD contest, don't forget to send your logs in to Alec VK6APK.

As Disposals Officer, I can report all is going well with 70cm FM92's and associated bits + pieces.

Once again for this newsletter to succeed it means input from the members!

73's de Keith VK6XH

HAMILTON RADIO CLUB ZL1UX NEW ZEALAND

The Hamilton Radio Club ZL1UX in New Zealand has asked our club to be a sister club to them, we will be passing our newsletter to them and they will be sending theirs. It will also help to know what has been going on in another part of the world. They have also asked any of our members who may be visiting New Zealand to drop in and say hi, as you will be most welcome. The Hamilton club has their meetings on the 3rd Tuesday of each month at the centre of Hamilton. Hamilton is situated about 1hr drive south from Auckland one Highway 1, the clubrooms are situated at Seddon Road and the meetings start at 1930hrs. Various members of ZL1UX monitor on 2 mtrs 146.950 called the 690 repeater and also on 70cm they monitor 438.450 Mhz. If you are going to visit then let John ZL1UST (Pres.) know on PH: 855-5912.

The club also runs their own BBS called ZL1UX.

If you know of any other clubs that we can share info with then please let me know. Ed.

Ham Radio on the INTERNET

Ham-Radio on the Internet, by Mark Neely

Believe me there is tremendous items on the Internet to date. I just downgraded the latest software on satellite tracking and it was only 2 weeks old. I would like to inform new users of what the Internet is all about and where it all started.

The first record of the Internet was about 20 years ago when the US Defence department wanted a system where if their computer network was disrupted (bombed) by others then they would be helpless to defend, in those days their was the Mainframe and all the terminals, whereby each terminal had to check in with the Mainframe for confirmation, if one of the terminals wanted to talk to another terminal then it had to get permission from the Mainframe. If there had been an attack on the Mainframe then the terminals communications would be cut and blinding the entire military operation. The US Defence force then set about contacting their engineers and formed the (ARPA) Advance Research Projects Administration to design a system wish would not breakdown had there been an attack. The ARPA came up with the ARPANet. ARPANet, being a military network, was engineered principally around dumb-terminals, these systems needed to still communicate without destruction on the network. The network was designed so that each computer on the network was charged with the responsibility of ensuring that its communications were successfully carried out. Each computer knew where every other computer linked to the network was, by the use of unique addresses stored on a distributed database, which painted an overall network "map". Each type of computer had to be equal in its operating system, every computer system regarded other computers as un-reliable and if a particular system was unable to be contacted then this would be noted and not use those computers when passing on information until the situation was remedied.

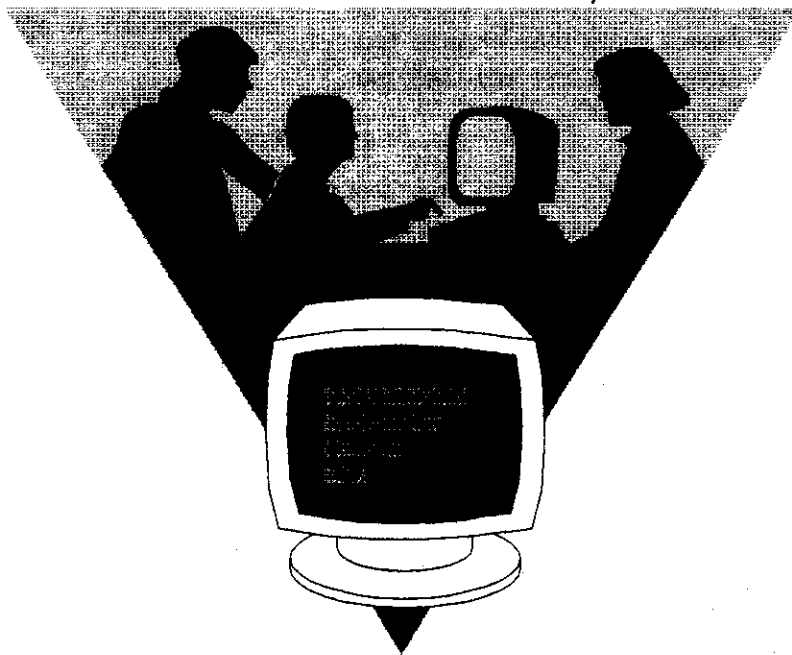
Central to the design was the TCP/IP (Transmission Control Protocol / Internet Protocol) software. The network was used to link the Defence computers were linked with other academic sites and soon this networking principle grew. From the early days, ARPANet quickly grew, linking most US universities, and even some UK and other European computers. The entire growth of this system worried the Defence and so Military was modelled.

The Internet is owned by no-organisation owns or controls each individual server make system and they can decide provide to their users. But it person, group or country has the access to the Internet's say that they would not pay to but someone has to contribute to associated costs incurred when Fibres, Modems, Routers and the flow of information.

Network, well there is LAN which is a local network of via a cable, when more than 1 (Wide Area Network) and most lines. The router is a hardware that data sent over a network destination in one piece and as

computers connected to the Internet share a common language, or protocol, known as TCP/IP. Every computer could contact each other using this TCP/IP software and know the exact path, without delay. If a particular system was busy then the host was contacted to find an alternative system with the same information and the path to that particular system. When TCP/IP was designed the scientists were using Unix machines. The scientists presumed that all computers were going to use Unix until IBM PC came along. Because of this all computers had to have their own interpretation on the TCP/IP protocol.

So long as your XT, AT, MAC, Amiga, Pentium spoke TCP/IP it didn't matter. However information from, say, an IBM network, would be passed through a gateway program, which would translate the data into Mac'inese or Unix. That way, a person with an IBM could send E-Mail to his friend with a Macintosh PC, the translation process is invisible to both users and occurs almost instantaneously. *More next month.....*



MILNET- purely for the

one, yes not one person or the Internet. The owners of their own controls on the what services they will also means that no one ability to censor or restrict resources. Alot of people much to be on the Internet the access fees and Telephone Lines, Optical computers to co-ordinate

(Local Area Network) computers linked together LAN you have a WAN are connected via leased device which makes sure gets to its intended quickly as possible. All

Electricity found by Greg Short VK6JCK

Today's scientific question is: **WHAT IN THE WORLD IS ELECTRICITY?** and **WHERE DOES IT GO AFTER THE TOASTER?**

Here is a simple experiment that will teach you an important electrical lesson: On a cool, dry day, scuff your feet along the carpet, then reach your hand into a friend's mouth and touch one of his dental fillings. Did you notice how your friend twitched violently and cried out in pain? This teaches us that electricity can be a very powerful force, but we must never use it to hurt others unless we need an important electrical lesson.

It also teaches us how an electrical circuit works. When you scuff your feet, you picked up batches of "electrons" which are very small objects that carpet manufacturers weave into carpets so they will attract dirt. The electrons travel through your bloodstream and collect in your fingers, where they form a spark that leaps to your friend's filling, then travels down to his feet and back into the carpet, thus completing the circuit.

Amazing Electronic Fact: If you scuffed your feet long enough without touching anything you would build up so many electrons that your finger would explode! But this is nothing to worry about unless you are carpeting.

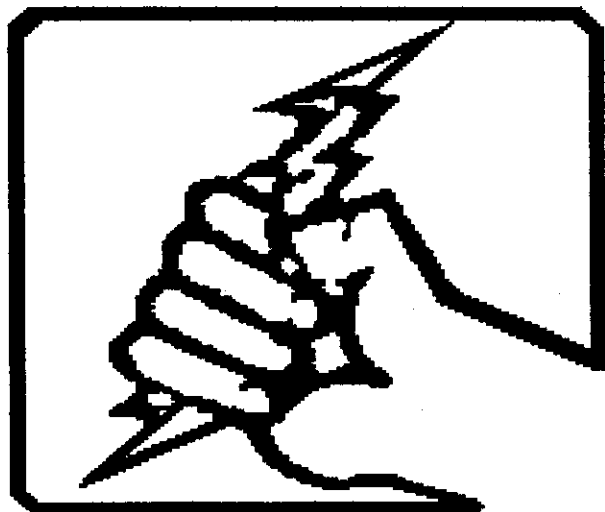
Although we modern persons tend to take our electric lights, radios, mixers, etc. for granted, hundred of years ago people did not have any of these things, which is just as well because there was no place to plug them in. Then along came the first electrical pioneer, Benjamin Franklin, who flew a kite in a lightning storm and received a serious electrical shock. This proved that lightning was powered by the same force as carpets, but this also damaged Franklin's brain so severely that he started speaking only in incomprehensible maxims, such as "A penny saved is a penny earned." Eventually he had to be given a job running the post office.

After Franklin came a herd of Electrical Pioneers whose names have become part of our electrical terminology: Myron Volt, Mary Louise Amp., James Watt, Bob Transformer, etc.

These pioneers conducted many important electrical experiments - Among them, Galvani discovered (this is the truth) that when he attached two different kinds of metal to the leg of a frog an electrical current developed and the frog's leg kicked, even though it was no longer attached to the frog, which was simple electrical circuit: The electric company sends electricity through a wire to a customer, then immediately gets the electricity back through another wire, then (this is the brilliant part) sends it right back to the customer again.

This means that the electric company can sell a customer the same batch of electricity thousands of times a day and never get caught, since very few customers take time to examine their electricity closely. In fact the last year any new electricity was generated in the United States was 1937; the electricity companies have been merely re-selling it ever since, which is why they have so much free time to apply to rate increases.

Today, thanks to men like Edison and Franklin and frogs like Galvani's, we receive almost unlimited benefits from electricity. For example, in the past decade scientists developed the laser, an electronic appliance so powerful that it can vaporise a bulldozer 2,000 feet away, yet so precise that doctors can use it to perform delicate operations to the human eyeball, provided they remember to change the power setting from "Vaporise Bulldozer" to "Delicate"



Welcome to the World of Internet Amateur Radio

Amateur Radio (aka "Ham Radio")

Welcome! You're number **71563** of the people who've visited us since March 1995. We thank you for making this server so successful, and for all your wonderful suggestions! We've had over 50,000 visitors in the year we've been *on the air!*

Check the [Sarex Page for the Latest on STS-71/MIR!](#)

For a list of things that have changed and/or are changing, check out the new [What's New](#) page! For those interested in Amateur Radio check out the first item on the list. If you're studying for an upgrade, check out the [Exams](#) page. Once you've studied for your theory test, you can [Take a sample examination](#) courtesy of Stephen McClaran - KC5KSD. Once you pass the exams, You can also learn to be a Volunteer Examiner!

And if you just want to know whats new in the Amateur Radio World, check out the latest from [NewsLine](#) (*made possible by Bill Pasternak, WA6ITF, copyrights reserved.*) If you're looking for Software, check out the [FTP Sites List](#) or if you're looking for other servers, check out the [Other Web Sites](#) page.

And of course, there's always activity on the [Sarex/Satellite operators](#) page! You can even [Predict Passes of a satellite](#) over your antenna now!

Note that you need a forms capable browser, such as Netscape or Unix Mosaic to use such links as the [Repeater Database](#) and [Satellite Tracking](#) and [Feedback](#) pages.

Amateur Radio Services

[Information For New/Interested Radio Amateurs](#)

[Amateur Radio NewsLine \(Weekly Newspaper\)](#)

[The HF/DX Operator's Page](#)

[Sarex Mission Info / Satellite Info / HF Info](#)

[Amateur Radio Callbook Servers](#)

[The Online Repeater Database Project](#)

[FCC Part 97 Rules And Regulations and NPRMs](#)

[Study the Licensing Question Pools](#)

[Download Amateur Radio Software from an FTP site](#)

[Amateur Radio Usenet Newsgroups](#)

[Other Ham Radio & Club Web Servers](#)

[QSL With me with your comments](#)

[Usage Statistics for this server](#)



Advanced Search Engine Results

Move down the page to see your search results.

This page contains current pricing information. Don't forget to **subtract** the manufacturer coupons or rebates to get your bottom line cost. Go [here](#) to see the coupons and rebates currently in effect. Prices are subject to change without notice or obligation.

- 1) KANTRONICS KAM PLUS, KAM WITH PACTOR BUILT-IN \$299.95, In Stock
 - 2) KANTRONICS KPC-2, 300/1200 BAUD PACKET \$179.95
 - 3) KANTRONICS KPC-3, SMALL LOW POWER PACKET TNC \$114.95, In Stock
 - 4) KANTRONICS KPC-9612/128K, SAME AS KPC-9612 W/ 128K MEM. \$229.95, In Stock
 - 5) KANTRONICS KPC-9612/32K, 9600/1200 DUAL PORT \$199.95, In Stock
 - 6) KANTRONICS KPC4, DUAL PORT TNC \$299.95
-

Would you like to do another search? Go [here](#) to do it.

[[HOME](#) | [Specials](#) | [Stores](#) | [Products](#) | [General](#) | [Catalog](#) | [Interests](#) | [Search](#) | [ORDER](#)]

Copyright ©1995, HRO, Inc., Danville, CA. All Rights Reserved.
Designed by Chuck Wyrick, E-Mail comments to: clw@hamradio.com

VK6DXC PACKET CLUSTER

PACKET CLUSTER by Keith VK6XH

DX is always there when you aren't! One way not to miss out is to log onto the VK6DXC Packet Cluster. This month I will give a brief outline of what is available on the cluster and how to access it. Next month, further info, watch this space.

FREQUENCY 144.950 Mhz VERTICAL POLARISED.
STANDARD AX25 PACKET 1200 BAUD SPEED
24 HOUR OPERATION FROM QTH DE VK6XH IN EDEN HILL, 6054.

PacketCluster® V5.4

Have you read about this state-of-the-art software package which has become THE network application to have in the Contesting/DXing/ARES/RACES world? Do you want to increase your all-around fun in the hobby? Increase your effectiveness in handling emergency traffic? If so, then you should bet into PacketCluster!! Join the thousands of users who already make use of this package to increase their ham radio enjoyment.

PacketCluster is a multi-user, multi-mode application which supports the interest of contesting and DXing enthusiasts as well as providing a whole lot of fun for the general packet radio user community. Using the DRSIPC*Packet Adapter board TNC, or the Kantronics KPC-2 or KPC-4 TNC, and an IBM compatible PC, PacketCluster links up to 64 users into a local cluster. With its exclusive networking capabilities, the software permits multiple PacketCluster nodes to link together to form one large network, thereby connecting potentially thousand of users into the system!

Some of the unique features of PacketCluster include:

- * Ability to link multiple PacketClusters into a network
- * Requires IBM AT compatible hard disk (disk cache highly *recommended*)
- * DRSI PC*Packet Adaptor (*recommended*) and Kantronics KPC-2, KPC-4 support
- * Support of two TNCs (up to 2 DRSI boards per TNC) per node
- * All traditional mail functions
- * Automatic cluster-wide mail and file forwarding
- * DX alert announcements, logging and recall
- * WWW propagation announcements, logging and recall
- * General announcements, logging and recall
- * Individual talk messages and group conferencing
- * Sunrise/sunset time calculations
- * MUF calculations
- * Beam heading calculations
- * User-defined Commands to access customs databases
- * Remote PacketCluster commands for sysops
- * Automatic forwarding of mail to outside-cluster PBBS systems
- * Remote database access/update
- * Sysop output directed to individual windows
- * Support of two local consoles for contest activities
- * Automatic message deletion based on message age
- * Systems messages accessible for easy modification/translation
- * Limited-protocol connections between PacketCluster nodes
- * Protocol message lifetime control to limit network width
- * System-maintained country needs databases
- * Automatic connect scripts for easy network linking
- * User-specified command procedures executed on connection
- * User-specified filtering of DX announcements
- * Critical weather announcements, logging and recall
- * Full routing control of certain protocol message types
- * Alias call support for both sysops and users
- * Local time calculations for DXCC countries

In addition to all of these features, you get a fully-supported package. Maintenance releases of the software which are required to fix where problems are sent to you automatically. Reduced-cost upgrades to new versions which enhance capabilities will also be available.

The available PacketCluster commands are:

A,A/F,BYE,CONFER,DE,DI,DI/A,DI/O,DX,SH/DX,H,R,
REP,S,S/P,SET,SH,T,TY,UPL,UPD,WWV,SH/WWV,SH/WX

ANNOUNCE <A> - Make a general announcement to local node <A>
ANNOUNCE <A/F> - Make a general announcement to all nodes <A/F>
BYE - Bye,disconnect from the PacketCluster <BYE>
CONFERENCE - Enter network conference mode <CONFER>
DELETE <DE> - Delete mail message <DE MSG#>
DIRECTORY <DI> - Show active mail messages <DI>
DIRECTORY <DI/A> - Show all active mail messages <DI/A>
DIRECTORY <DI/O> - Show mail to or from yourself <DI/O>
DX <DX> - Make a DX spotting info announcement <DX FREQ CALL>
LIST <L> - Synonym for DIRECTORY <L>
Show DX <SH/DX> - Show a DX spotting announcement <SH/DX>
HELP OR ? <H> - Help (displays this listing) <H>
HELP command - Display help for a particular command <HELP SHOW>
QUIT <Q> - Synonym for BYE <Q>
READ <R> - Read a mail message <R MSG#>
REPLY <REP> - Reply to the last-read mail message <REP MSG #>
SEND <S> <S/P> - Send a private mail message <S CALL> or <S/P CALL>
SET <SET> - Set user-specific parameters Example: <SET/Name Tim>
SET/BEEP - Set Bells on or off <SET/NOBEEP>
SET/DX - Set DX announcements <Default ON> OFF=<SET/NODX>
SET/WWV - Set WWV announcements <Default ON> OFF=<SET/NOWWV>
SET/ANN - Set Announcements <Default ON> OFF=<SET/NOANN>
SET/MAIL - Set mail announcements <Default ON> OFF=<SET/NOMAIL>
SET/TALK - Set talk feature <Default ON> OFF=<SET/NOTALK>
SET/LOGIN - Set Login announcements <Default ON> OFF=<SET/NOLOGIN>
SET/LOGOUT - Set Logout announcements <Default ON>
OFF=<SET/NOLOGOUT>
SET/FILTER - Filter any DXCC prefix <SET/FILTER/CW/BANDS=40,20 JA>
- Filter command continued <SET/FILTER/SSB/BANDS =15,10 JA>
SET/NOFILTER - Clear Filter settings <SET/NOFILTER/CW/BANDS=40,20 JA>
SHOW <SH/COM> - Display various PacketCluster Databases <SH/COMmands>
SH/USERS - Display local Cluster users/Show all users <SH/USERS/FULL>
SH/TIME Prefix - Show local times of any DXCC prefix <SH/TIME YI>
SH/DX freq1 freq2 - Display DX between frequency range <SH/DX 1450-14200>
SEND Call - Send a message to a single station <SEND N6IXX>
SEND call,call - Send a message to multiple stations <SEND N6IXX, W6GO, K6LLK>
TALK <T> - Talk to specified station <T K6LLK>
TYPE <TY> - Display a particular file Example : TY/BULLETin User.cmd
UPDATE <UPD> - Update a database <UPD/Data>
UPLOAD/FILE - Upload a general file <UPL/FILE>
UPLOAD/BULLETIN - Upload a bulletin file <UPL/BULL>
WWV <WWV> - Make a WWV announcement <WWV SF=xxx, A=xx, K=xx, Forecast>
WWV <SH/WWV> - Show a WWV announcement <SH/WWV>
WX <WX> - Make a weather announcement <WX>
SHOW WX <SH/WX> - Review recent weather announcements <SH/WX>

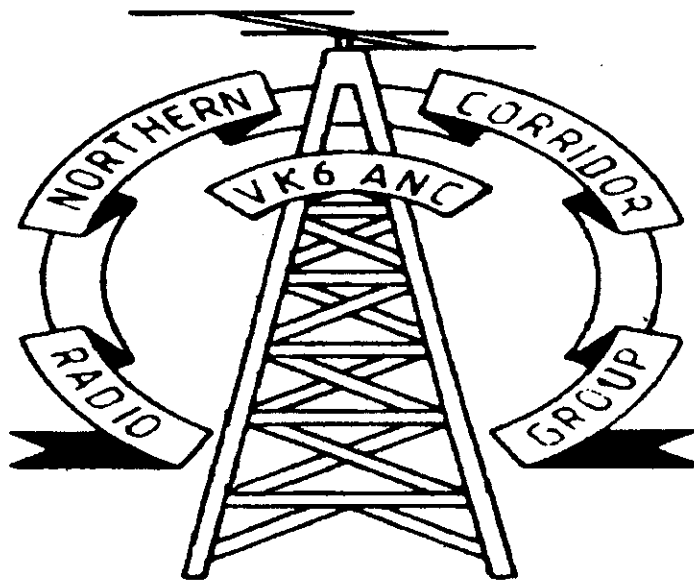
NORTHERN CORRIDOR RADIO GROUP

HAMFEST "95"

HOBBY ELECTRONICS, COMPUTER AND RADIO COMMUNICATIONS SHOW

NOVEMBER 5 TH - STARTS 10 AM

ATTENTION
FIRST 400
PEOPLE
THROUGH
THE DOOR
GET FREE
GIFT
VALUED AT
OVER
\$20.00



INFORMATION AVAILABLE
CONTACT:
BILL: VK6UE PH:409-9751
DAVE: VK6YEL 015-998524
PHIL: VK6ZPP FAX:4091203

LOCATION:
C Y R I L
J A C K S O N
C E N T R E
F I S H E R S T
B A S S E N D E A N

CATCH THE
TRANSPERTH
TRAIN TO
A S H F I E L D
S T A T I O N .

THE MAJOR AMATEUR RADIO EVENT OF THE YEAR FOR ALL ENTHUSIASTS

CONDITIONS: ENTRY FEE: (BUYERS) \$2.00 AT DOOR - (SELLERS) \$10.00 PER TABLE OR CAR BAY

PRE LOVED EQUIPMENT STALL, OVER 30 DEALERS DISPLAYS INSIDE, REFRESHMENTS
AVAILABLE, SPECIAL INTEREST GROUPS AVAILABLE, MEET OLD AND NEW ACQUAINTANCES

THE EVENT YOU HAVE ALL BEEN WAITING FOR

New Amateur Licence Conditions

NOVICE LIMITED

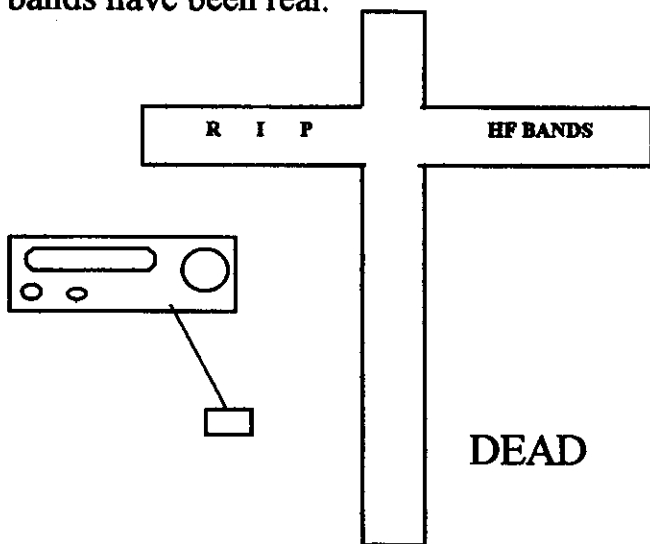
A new license has been released and it is designed for the holders of a pass in Novice theory and Regulations. This grade of license allows the holder to operate on the 2m and 70cm bands. Operators can only use a maximum of 30 watts on FM and operate Packet on either band.

The allocated letter to their call is the letter H, and they are allowed to operate on the following group of frequencies. Packet only 144.692 to 145.208 MHz and 146 to 148 Mhz voice. On 70cm they can use 433 to 435 MHz and 438 to 440 Mhz FM or packet only. If you are aware of any potential Novice Limited grade people then pass the info on to them.

Also Limited Grade License holhers have been given 29.000-29.700 FM 10 Mtr Band usage.

HF DX REPORT by VK6APK

Welcome to an exciting start to this newsletter, however all I have to report for this month is that the bands have been real:



ICOM IC-706 HF/VHF ALL-MODE TXR

ICOM announces the only radio of its kind in the world-the IC-706 HF/VHF transceiver.

The ultra-compact IC-706 features a removable control head, for safe, effective mounting in even the most compact vehicles. This full-featured transceiver is equally capable of high performance in home and field applications.

The IC-706 covers all of the traditional HF bands from 160 through 10 meters, with the addition of the popular six and two meter bands. The IC-706 includes all modes over its entire frequency range including FSK for RTTY operation, and narrow band FM on the HF bands. The receiver offers continuous coverage from 30 kHz to 200 MHz with wide AM and FM broadcast reception.

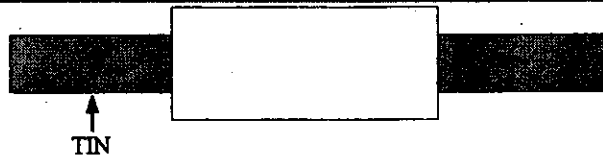
The full-featured IC-706 includes a 100 watt output transmitter (40 watts AM) from 160 through 6 meters, with 10 watts on 2 meters (4 watts AM). VOX is included, as well as a speech processor, and optional narrow SSB filter. CW features include a built-in keyer, optional narrow receiver filter, full break-in (QSK), adjustable CW pitch and CW reverse functions.

101 memories are offered in the IC-706, with up to 9 alphanumeric characters for each memory. A powerful dot matrix display shows all of the popular menu features, frequency and multifunction meter data, and a spectrum scope display which shows band activity at a glance.

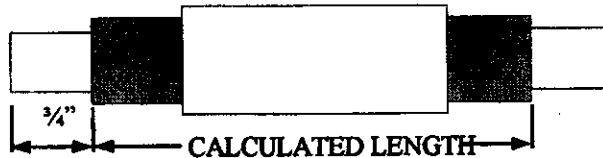
These and a host of other features are included in the ICOM IC-706, as well as a complete offering of popular options.

SIZE: 167(W) x 58(H) x 200(L)mm.

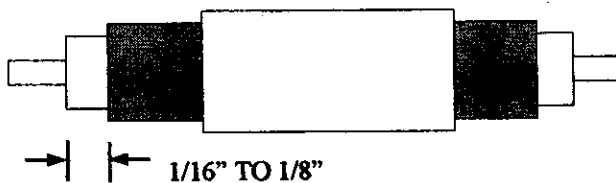
RG-8/U SOLID DIELECTRIC



Cut insulation back 1" on each end. Flux and tin each end, allow to cool.



Using tubing cutter, cut shield off $\frac{3}{4}$ " from first end. Measure off final dimensions from shield on cut end to other end, mark, and cut shield with tubing cutter.



A COLLINEAR-COAXIAL ARRAY

The antenna shown in Page 10 is an excellent array for home station or repeater use. The antenna will provide from 6 to 9-dB omni-directional gain, depending on the number of elements used. This system is one that has been around for years. The refinements shown here were developed by K2CBA, K1DEU, and WA1KJL.

The antenna is a multiple of $\frac{1}{2}$ -wavelength elements with $\frac{1}{4}$ -wavelength sections on each end and a $\frac{1}{4}$ -wave stub at the feed point to reduce feed-line radiation. The dimensions shown are for 146 to 147 MHz, but the antenna can be made for other bands and frequencies.

In order to provide the same amount of gain, it would be obtained with stacked dipoles, a large number of half-wave sections are required. One of the reasons for antenna gain is spacing between the antenna sections. The four stacked dipoles previously described approached optimum spacing for maximum gain. In the coaxial collinear arrangement shown, there is always the problem that more sections are added, the antenna current decrease from one section to the next. In other words, one end of the antenna isn't radiating as much power as the other end. Slightly more than twice the number of elements are required to obtain the same amount of gain as with stacked dipoles. Where four stacked dipoles as described, provided slightly less than 6-dB omnidirectional gain. It takes eight half-wave coaxial elements, connected end-to-end, to obtain the same gain figure.

However, the coaxial collinear antenna has certain advantages when installation problems are considered. The completed antenna is encased in either Plexiglas or PVC

pipe and can be mounted above the supporting tower to get best omni-directional coverage without the tower interfering with the antenna pattern.

Construction

From the formula 492 divided by the frequency in MHz, calculate a half-wavelength for the desired frequency. This comes out to 3.4 feet, or 40.8 inches for 146 MHz. Next, select the type of coax you plan to use and get the velocity factor from the manufacturer. Generally, the velocity factor for the solid dielectric lines is 0.66 and 0.82 for foam dielectric. The antenna shown in Page 10 is based on the solid-dielectric coax, 0.66 velocity factor. Using this type of coax provides a shorter overall length for the antenna.

The first step in fabricating the antenna is to make a 3-element version (3 half-waves plus the $\frac{1}{4}$ -wave top element, the $\frac{1}{4}$ -wave coax section and the bottom $\frac{1}{4}$ -wave section.) Page 10 shows the details for making the coaxial sections. The top section can be made from a piece of copper tubing or No.12 wire.

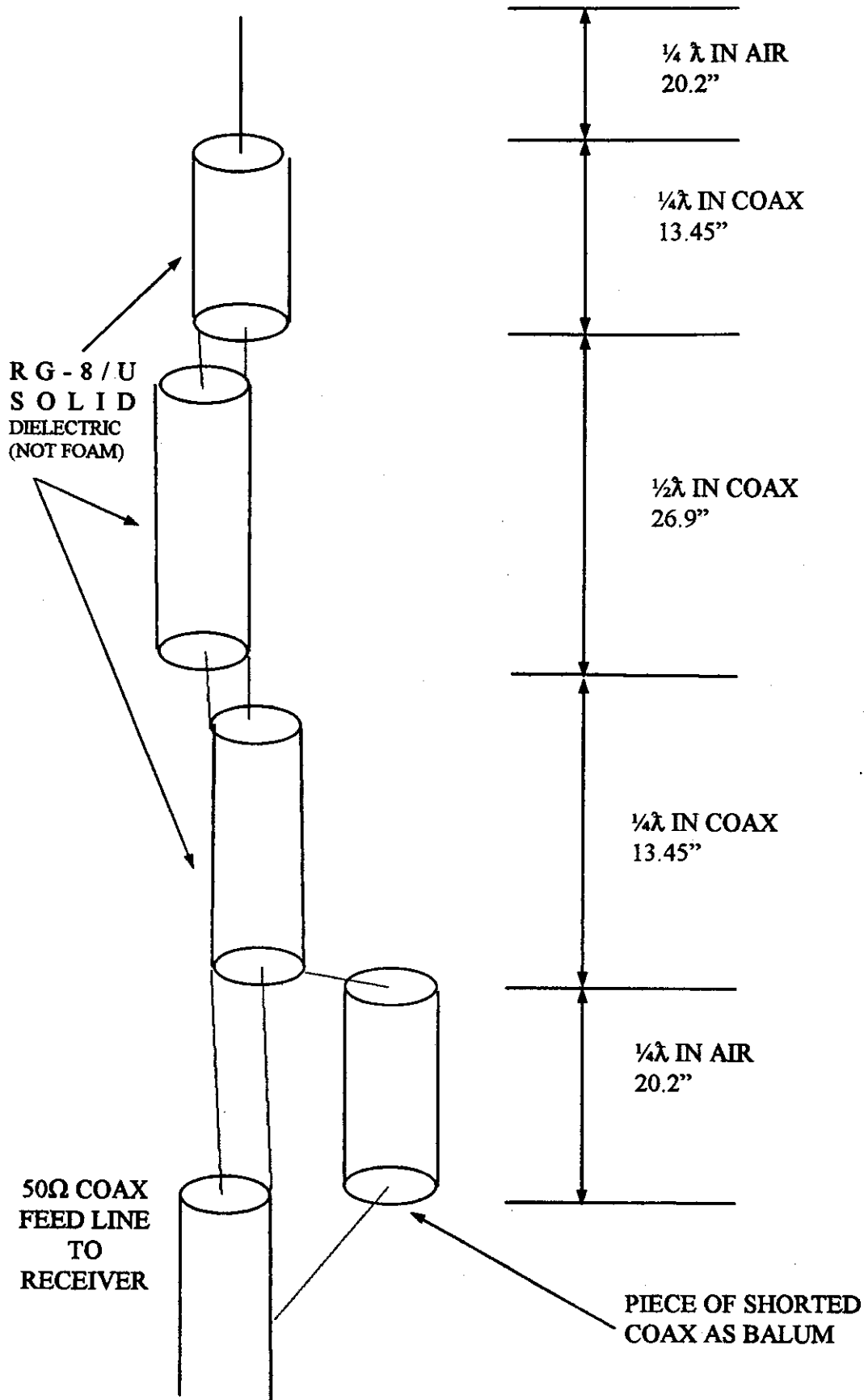
When the antenna is completed, suspend it clear of any metallic objects. Using a low-power transmitter and SWR bridge make a check across the band to determine if the antenna is high or low in frequency. The lowest SWR reading will occur at resonance. If this is not within ± 1 MHz of the desired frequency, trim the halfwave elements accordingly. More than likely this will not be required. Also, don't be concerned about the specific SWR at this time. Look only for the minimum reading.

Depending on whether resonance is too high or too low in frequency, alter another pair of half-wave elements, making them $\frac{1}{4}$ to $\frac{1}{2}$ inch longer if the antenna is too high in frequency, or a like amount shorter if the antenna is too low in frequency. Continue this operation adding pairs of elements until you reach the desired length. Eight half-wave elements will provide about 6 dB of gain.

Next, tape each connection with a good grade of electrical tape, applying several layers. This will provide mechanical strength and weather-proofing. With the several arrays that were built using this design, the SWR was always below 1.3 to 1 at the design frequency.

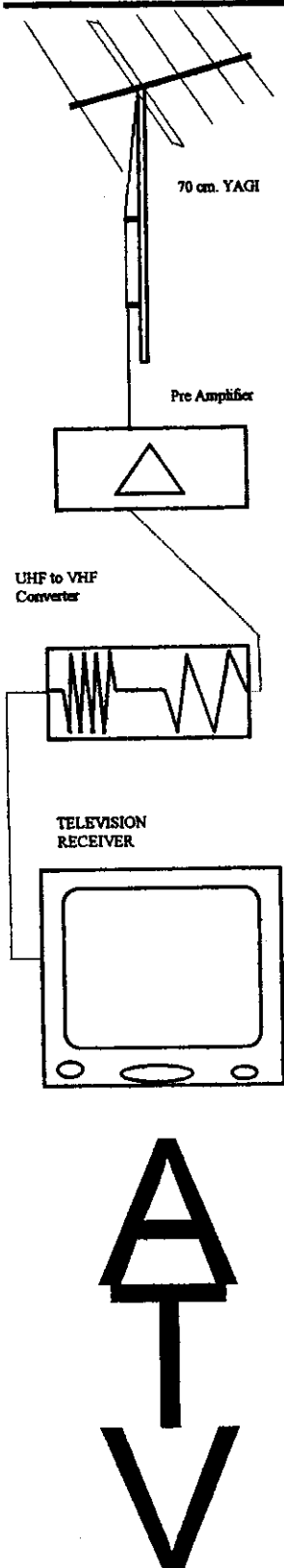
The antenna can be housed inside 1- $\frac{3}{4}$ inch diameter PVC pipe. Also, a new type of pipe has recently become available from plumbing supply dealers. This is Fiberglass pipe and is available in 25-foot lengths with diameters starting at 2- $\frac{1}{2}$ inches. The ends of this pipe are tapered so that it can be joined to another section. The Fiberglass pipe is extremely flexible without danger of breaking so it can be supported at one end, such as at the top of a tower, permitting the antenna to be in the clear.

Basic details of the coaxial-collinear antenna. Only one half-wavelength section is shown



◆ AMATEUR TELEVISION ◆

REPRINTED BY MEL ZL1WTV BY PERMISSION OF WAYNE ZL1UJK



RECEPTION

ATV is a rapidly growing hobby, for those who like something a little bit different. Anyone can receive (DX) an A.T.V. signal, with normal television receiver and only a few simple add on circuits. The main purpose of the add on's is to enhance the, otherwise, weak signals used.

The basic receiving set up is shown in fig 1. Hardware add on requirements are as follows:

1. A 70cm broadband Yagi, with a gain of about 8db to 10db. The aerial should be mounted about 12mtrs to 5mtrs high, and will have to be rotatable. All A.T.V. antennas are horizontally polarized.
2. Good quality co-ax must be used, with "N" type connectors being preferred. (PL259's are lossy at 70cm, or higher.)
3. A pre-amp is a must for A.T.V. reception. A common Pre-amp uses a BFR91 bi-polar transistor, which gives it a nominal gain of 15db. A noise figure of around 1db should be expected. The average receiver does not have enough front end gain, for even across town operation. 2 stage pre-amps can give 30db gain, also main centre's need a badness filter in front of it to prevent overload from high power TV + FM stations.
4. The TV set used can be either a VHF model using a special down converter, or an UHF model which can tune down to 444.250 Mhz. Many of the modern auto tuning TV's may not be able to tune so far down the band. Some late model video recorders like the BETA range have excellent receivers for 444.250mhz which can be found to be given away at times, also some technicians can tune some receivers down but check the model out first.

Your local TV repairman can advise.

Next month we look at transmission keep tuned.(Liason ATV 147.400 MHz)

73's de ZL1UJK

Wayne Griffin

Packet: ZL1UJK@ZL1AB (Modified by VK6TVA/ZL1WTV)

WESTERN AUSTRALIA REPEATER LISTINGS (Jun 94)

2 Meter Voice Repeaters

chnl (FM92)	Area	VK6	Freq	T/o	Pwr	Rnge	HAAT	Site	Sponsor	Status
0.5 (1)	Perth	RNC	6625-		50		300	Walliston	NCRG ATV	P
1.0 (2)	Bunbury	RBY	6650-	5m	25	40k	20	Bunbury	SW AR Group	O
1.5 (3)	Northampton	RNR	6675-	4m	25	65k	60	Hudgejah	Geraldton	O
1.5 (3)	Whimcreek	RCA	6675-		20		100	Whim Creek	ARS NWA	O
2.0 (4)	Perth	RAP	6700-	4m	40	100k	300	Roleystone	WARG\WIA	O
2.0 (4)	Wickham	RWR	6700-		20		80	Wickham	ARS NWA	O
2.5 (5)	Albany	RAL	6725-			30k	50	Albany	Southern Elect	O
3.0 (6)	Perth	RLM	6750-	4m	20	80k	250	Lesmurdie	WARG	O
3.0 (6)	Rottneest	RAT	6750-	4m			70	Forbes Hill	WARG	P
3.0 (6)	Esperence	RES	6750-				100	Esperence	Esperence ARS	O
3.5 (7)			6775-							V
4.0 (8)	Perth	RTH	6800-	4m	60	100k	230	Tic Hill	WARG	O
4.0 (8)	Dampier	RWP	6800-		250	50k	100	Karratha	ARS NWA	O
4.5 (9)	Albany	RAA	6825-	3m	40	100k	200	Mt Barker	Southern Elect	O
5.0 (10)	Exmouth	REX	6850-	3m	20	100k	200	Exmouth	ARS NWA	N
5.0 (10)	Kambalda	RKB	6850-	5m	20	100k	80	Kambalda	Goldfields	O
5.5 (11)		RSR	6875-							V
6.0 (12)	Bunbury	RMW	6900-	4m	20	150k	400	Mt William	WARG/WIA	O
6.5 (13)			6925-							V
7.0 (14)	Fremantle	RPD	6950-	3m	10	50k	65	Fremantle	WARG	N
7.5 (15)	Portable	REE	6775-	4m	20			Portable	WARG (sec.ch)	O
8.0 (16)	Portable	REE	7000-	4m	20			Portable	WARG (Pri.ch)	O
8.0 (16)	Kattaning	RAW	7000-	5m	25	135k	150	Fairfield	VK6LD	O
8.0 (16)	Kalgoorlie	RAK	7000-	5m	20	60k	80	Kalgoorlie	Goldfields ARG	O
8.0 (16)	Geraldton	RGN	7000-	5m	16	40k	30	Mt Fairfax	Geraldton ARC	O
8.0 (16)	Pt Hedland	RNW	7000-		20	35k	80	Pt Hedland	ARS NWA	O
8.5 (17)			7025+							V
9.0 (18)			7050+							V
9.5 (19)			7075+							V
10.0 (20)	Perth	RWC	7100+				250	Millendon	Western ARG	O
10.0 (20)	The Lakes	RLK	7100+					The Lakes	Western ARG	P
10.5 (21)			7125+							V
11.0 (22)	Manjimup	RMJ	7150+	5m	25	60k	150	Nannup Rd	SW AR Group	O
11.5 (23)	Emergency	RIC	7175+					Portable	WIA/WICEN	O
12.0 (24)	Cataby	RCT	7200+	4m	10	80k	100	Yandan Hill	WARG	O
12.5 (25)			7225+							V
13.0 (26)	Boddington	RMS	7250+	4m	20	120k	200	Saddleback	WARG	O
13.5 (27)	Toodyay	RWN	7275+	4m	30	100k	150	Hoddy Well	WARG/VK6JMT	O
14.0 (28)			7300+							V
14.5 (29)	Kellerberrin	RKL	7325+	5m	25	100k	150	Narelinghil	WARG/VK6JMT	O
15.0 (30)	Busselton	RBN	7350+	5m	10	100k	130	Chapman Hill	WARG/WIA	O
15.5 (31)	Morse Beacon		7375+	0	10				WIA/VK6SO	O

Other Voice Repeaters.

Perth	RLM	29.???	4m	50	ww	250	Lesmurdie	WARG	P
Perth	RTH	52.800	4m	10	60k	230	Tic Hill	WARG	O
Perth	RTH	438.225	4m	40	90k	230	Tic Hill	WARG	O
Perth	RUF	438.525	4m	30	100k	300	Roleystone	WARG/WIA	O

Area	VK6	Freq	T/O	Pwr	Rnge	HAAT	Site	Sponsor	Status
Perth	RFH	438.575	4m	25	80k	100	Wireless Hill	WARG WADDCA	O
Busselton	RBN	438.675	4m	25		130	Chapman Hill	WARG	P
Perth	RFI	439.500	4m	10		250	Lesmurdie	VK6NT	P
Perth	RWL	439.875	3m	25	50k	300	Walliston	VK6YBN	P

Packet Radio Digipeaters

Type	Area	VK6	Freq-In (FM92)	Pwr	HAAT	Site	Sponsor	Status
Digi	Pinjarra	RTR	144.750 (38)	25	300	Turner Hill	Western ARG	O
Digi	The Lakes	RLK	144.750 (38)	25	100	The Lakes	Western ARG	O
Digi	Bunbury	RMW	144.750 (38)	25	100	Mt William	WAADCA/WARG	P
Digi	Perth	RTH	144.825 (41)	25	230	Tic Hill	WAADCA/WARG	O
Digi	Albany	RAA	144.850 (42)	25	230	Mt Barker	Southern Elec	O
Digi	North West	RCA	144.850 (42)	20	100	Whim Creek	ARS NWA	O
Digi	Boddington	RMS	144.850 (42)	25	200	Saddleback	WAADCA/WARG	O
Digi	Katanning	RAW	144.850 (42)	25	150	Fairfield	VK6LD	O
Digi	Perth	RFH	144.850 (42)	25	100	Wireless Hill	WAADCA	O
Digi	Bussleton	RBN	144.850 (42)	25	130	Chapman Hill	WAADCA/WARG	O
Digi	Perth	RAP	144.875 (43)	25	300	Roleystone	WAADCA/WARG	O
Digi	Perth	RPA	440.050	25	300	Roleystone	WAADCA/WARG	O

ATV Repeaters

Mode	Area	VK6	Input	Output	Pwr	Site	Sponsor	Status	
AM/AM		Perth	RTX	444.250	579.250	30w	STW9	WARG/NCRG	L
AM/AM		Perth	RTV	444.250	1242.250	10w	ECU	Perth ATV Gp	L
FM/AM		Perth	RTV	1250.000	444.250	30w	ECU	Perth ATV Gp	L
AM/FM		Perth	RTV	426.250	444.250	30w	ECU	Perth ATV Gp	L
AM/FM		Perth	RTV	1242.250	444.250	30w	ECU	Perth ATV Gp	L
AM/FM		Perth	RTV	444.250	1250.000	10w	ECU	Perth ATV Gp	P

Packet Radio Bulletin Boards

Type	Area	VK6	User Freq (FM92)	Site	Sponsor	Status
			144.700 (36)			V
Pkt	Perth	WFH	144.750 (38)	Wireless Hill	WAADCA	O
Pkt	Bunbury	AJJ	144.750 (38)	Bunbury	Private	O
Pkt	Perth	ZMH	144.775 (39)	Doubleview	Private	O
Pkt	Perth		144.800 (40)	User to User		
Pkt	Perth	ZSE	144.825 (41)	Edgewater	Private	O
Pkt	Perth	BBS	144.875 (43)	Roleystone	WARG	O
Pkt	Perth	ANC	144.900 (44)	Carine	NCRG	O
Pkt	Cl Perth	DXC	144.950 (46)	Eden Hill	Private	O
Pkt	PERLAN		147.575 (96)	BBS to BBS forwarding ONLY		

L=Licensed Q=Operational P=Proposed V=Vacant T=Test
 HAAT=Height Above Average Terrain

N=Not Operational







OFFICIAL NEWSLETTER OF THE NORTHERN CORRIDOR RADIO GROUP PO BOX 244 NORTH BEACH

Any correspondence for the NCRG SPECTRUM can be sent to the following locations:

 **VK6TVA @ VK6ANC**

 **VK6TVA@wontree.com.au**

 **09-4593879 (FAX)**

 **P.O.Box 244, North Beach, 6020**