Number 9   Volume 92   September 1992

Editorial

G'day and welcome to #2. Thanks to Phil VK2TPH, Dale VK2DSH, Harry VK2JHW and Graham VK2GID for the 'packet' compliments on the Propagator. Congrats to Phil for finding the three 'deliberate' errors (the cheque's in the mail, Phil). Thanks to others for you verbal compliments.A surprising things compliments; they can drive a person to greater heights. How often do you use them? I'll bet not enough. You can even compliment yourself. If you beat someone, instead of saying how well YOU did, praise your opponent. Since you think he's great and you beat him, it means you are greater.

Yes, I know this isn't a proper editorial, but I've no inspiration. How about you, are you inspired? You should be since there's so much opportunity around these days. Can we inspire 'Our Club'? We've rested on out laurels for far too long. In fact, I'll be pushing so hard you'll be glad to get rid of me but I have some bad news - I want this job next year as well so don't bother nominating.

Program

September
A technical night of some sort, but more info later when the committee decides what is going to happen. Might lead us into a big club project to put our club on the map again.

October.
This will be a rag-chew night, but specifically we will be deciding which club project to undertake and what direction our club is going to move in the next 12 months.

Remember there is a visit to the CSIRO at North Ryde on the 19th. Names will be taken at the September meeting.

November
I expect this will be our usual auction night. The Auctioneer will be open to negotiation. I have some idea's on a different method of auction - come along and see.

December
Our usual family night - bring a plate of goodies and the family. With a bit of luck, someone else might take your harmonics by mistake.

********* Page 1 *********

****** WIA ******

Yes, we're back on the old subject. Why? 'Cause I heard a couple on one of the repeaters knocking it. One said he didn't belong because he didn't agree with what they were doing which is a bloody stupid statement since if you don't belong, you have no input into the organisation. The other agreed ' yes, they do nothing for us'! Also a stupid comment, and if those two gentlemen are readers of this fine journalistic achievement and wish to debate the subject, I'll be glad to oblige.

Let's face it, the WIA is our voice and it's up to us to support them. If you don't like their policies, join up and say so, don't whinge.

****** What? ******

Yes, completely off the subject, but I was just sitting here finishing tea (very nice Blueberry pie, ice cream and cream. Gee, my wife Sylvia really looks after me) and thinking about money. Not much to think about I know, but what is more depressing is that it doesn't have 'character'. Remember the deeners and zacs and trey bits and quids? What have we got now?

****** Chore! ******

I don't know about you, but washing the car isn't one of my favourite jobs. Last Sunday (16th August) was a perfect day. I woke up, (which I generally do) and said to myself "Self, it's a perfect day to wash the car". Then my otherself jumped in and said "If you wash the car, you'll spoil your day so why wash the car". Fortunately, my otherself won.

****** Hate! ******

Heard someone you hate? Last year I heard someone on one of the repeaters who gave me the ..... . What a dork I thought. Soon after that, I happened to meet him and g▓▓s what, he's a great guy ▓▓▓▓ him ▓▓ ▓ I thought of him on the ▓▓▓▓▓▓ (I'm ▓ke that; no tact or diplo▓▓▓▓ ▓▓ wha▓ I think) and he said 'Thanks, I didn't realise it came across like that. I'll have to change." Maybe there's a lesson to be learnt there.

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****** Science Centre ******

Well, due to the volunteer shortage, I worked three Saturdays in a row and what a shocking job it was! I had to talk to Germany, America, Japan, Ireland, and Russia not to mention Australia and New Zealand, and a lot of parents and children. We've had to plan how to layout our room, where to put the tower, how to control the satellite dish, what equipment we need and other things too. Don't know why I put myself through this torture.

Sat	5/9	VK2XGJ	VK2FPN
Sun	6/9	VK2XQX	VJ2JRH
Sat	12/9	VK2GID	VK2DSH
Sun	13/9	VK2GNV	VK2GMC
Sat	19/9	VK2FPN	VK2XGJ
Sun	20/9	VK2JRH	■■■■■
Sat	26/9	■■■■■	■■■■■
Sun	27/9	VK2ALU	VK2DSH
Sat	3/10	VK2XGJ	VK2FPN
Sun	4/10	VK2XQX	■■■■■
Sat	10/10	■■■■■	■■■■■
Sun	11/10	■■■■■	■■■■■
Sat	17/10	VK2XGJ	VK2FPN

Notice the 'Black Holes'?

******* Missed *******

One of the errors that Phil found was the omission of Graeme VK2CAG off the 'Life Member' listing. It wasn't an omission, rather the 'tab setting 'was too great and it went into the bit bucket. Talking about Life Members, is there anyone who has done more than their fair share over the last few years? I don't think we really appreciate the work done by members. How about we have a 'Thank you' list and mention people who are doing just that little bit extra for Our Club.

**** Committee Meeting ****

A good roll up with several VK2's in attendance.
Here's the comprehensive minutes.
Some letters came in.
Some letters went out.
The treasurer said we had some money.
Rob VK2MT gave a repeater report.
Then followed a lot of intensive discussion on Our Club. A lot of suggestions were put forward but in the end, it was decided that the Science Centre would be our major project. This should be no surprise.

***** Monster Sellout ****

Hey Phil! Take care, you're likely to lose your crown!

From Stiven VK2KSP we have the phollowing:-

Kenwood TS120s (inc 26-28MHz)	$520
MFJ 948 ATU - under warranty -	$210
240w Linear HF (3 - 30) + Rx amp	$200
Dick Smith 2 way coaxial switch -	$30
UHF/70cm Revex SWR/Pwr meter	$45
Shinwa HF low pass filter -	$25
Uniden 27MHz am radio -	$50

All equipment (except 27MHz am) in perfect working and visual condition. Nearly all items with receipts, instructions and packaging.

Phone Stiven on (042) 83-3073.

**** Satellites ****

Satellites are becoming very common now, and maybe it's time you started looking at this branch of our hobby. It's a little expensive at the moment with the cost of rotators, but there will soon be geosynchronous satellites so you'll be able to use a fixed antennae and contact the world!

I subscribe to a newsletter called AMSAT Australia. Cost is $25 a year, most of which is used to put satellites in the sky for us to use.
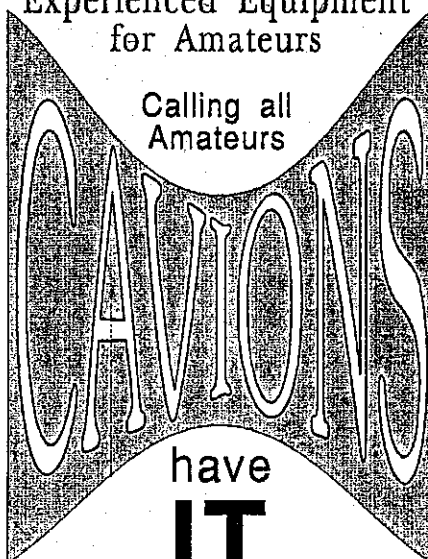
For more info contact John VK2XGJ or Amsat Australia, GPO Box 2141. Adelaide. 5001. PH (08) 297-5104.

**** Do you know? ****

Last month's question was about the difference in temperature between steel and wood, but I don't think anyone is really interested in the answer, so I won't waste space telling you why.

*** Congratulations! ****

Ray, VK2XCC, VK2PHD is now VK2AGU. Although the call signs are alphabetically going down, the level of knowledge is going up. Maybe AGU stands for Always Going Upwards. Maybe his next step is Packet Operation - John VK2XGJ lives in eternal hope.

Are there any more members out there who are going to progress? How about you Harry? You're always thinking about it?

***** Thank you *****

Ok, I've started one. Each month I'm going to feature one member who has done something for our Club. Unfortunately, I don't meet too many so I'm going to need your help to let me know who is doing what.

First on the list is Dale VK2DSH.
Dale has worked tirelessly for the past few months on establishing our Club at the Science Centre. He has been there each weekend, usually on both days ensuring that things are done and we have nothing missing. He is liaising with Glenn Moore (the Science Centre Director) to have a decent room so we can look more professional. By this means, we are able to have more contact with the general public from who we gain our members. On the surface, it may not seem like Dale has done a lot, but for anyone who has done any organising, you'll really appreciate what goes on that isn't seen. Why does Dale do it? Damned sure it's not for the money! It's definitely not for the adulation. It's not because he has nothing else to do. Maybe it's for personal satisfaction? It'll be great in the future when he can sit back and say .... yep, I started all this!
To you Dale, on behalf of Our Club, I say **Thanks a lot.**

N.B.Dale stresses that this is not HIS project. It is Our Club project. Dale just happened to be the instigator, but it is Our Club who is doing the work.

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***** Science Centre *****

We had a meeting today at the Science Centre regarding the future of the exercise.
Glen Moore from the Centre showed us a room which he suggested that we might use, instead of the present location. This room has yet to be fitted out, but lies in the "How We See The World" section at the front of the Centre.
The room will be about 2.3m by 4.6m, and will be capable of being locked up when we are not present. There will also be a window into the Centre, through which visitors will be able to see the display when we are not there (eg during the week). So if we had a permanent computer/TV display (such as say WeatherFAX), this could run all of the time. It all looks very promising. All those others out there not yet involved in the Centre, you should check it out. Wow!!!

73 de Graham VK2GID.

******Science Centre******

Here's a suggestion to generate more interest amongst the younger community. Once every so often we advertise 'Training days'. We assist the kids to construct certain electronic projects. Maybe start off small like a crystal set and build up a different module each session that culminates in a big project.
There are many ideas from Dick Smith's 'Fun Way into Electronics'.
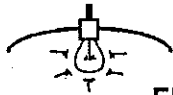
***** CSIRO *****

If you are ultra observant, you will have noticed that we have a trip organised to the CSIRO in Epping. The date is Monday 19th October, and I for one have reserved my place! We have to tell the CSIRO what we would like to see, and since you won't put forward your suggestions, here are mine:-
Chip (NO! Not Smith's) design and construction, Ultrasound, Computerised Image Compression, Imaging radar, Antennae design, Antennae measurement, microwave propagation and their antenna farm.

Actually, I have an advantage over you - I have a book from the CSIRO that shows all these things. All will be revealed at the September meeting. We will be taking names, what you want to see, when to start, how long to stay, how to get there and a million and one other important details. Numbers are very limited. I have room for 2 or 3 in my car; no need to take more cars than needed. This is a great chance to see the latest in high technology, and what is planned for the future.

********* Page 6 *********

** Packet Technical Column **

It has been suggested to me that someone should write a series of articles on how Packet works, seeing as how many people use it but only a few understand it. With a bit of luck, this article will be the first of a few that just about anyone will be able to understand, and just about everyone will find useful. Here goes....

You may already know that Packet Radio is a method of moving information from one computer to another, by using a radio link. To get some idea about the Packet mystery, we should probably look at the hardware involved in a typical system. Let's look at the station of VK2GID. Basically there are four parts, a computer, a thing called a Terminal Node Controller or TNC, a radio and an antenna. The computer is required so that you can type things in on the keyboard, and see the results on the screen. Some people use simple terminals (a keyboard and screen, such as are always being sold at IARS auctions), others use computers that can imitate terminals.

At VK2GID, an IBM type computer is used, but just about anything will do. Basically the purpose of the computer is to take information from the keyboard and send it down wires at the back, then take information from the wires and display it on the screen.

Next we have this thing we call a TNC. This is a small box with lights on it and is all very mysterious. The TNC does most of the work in the Packet Radio process. My particular TNC is a PacComm Tiny 2, many types exist and all of them do at least what I will describe later. The output of the TNC is a two tone sound, which is passed on to the radio.

The radio in most cases is a two metre FM rig, although other modes and freqs can be used. It takes the sounds from the TNC and sends them over the air, in the manner that is normal for a radio. The antenna puts the RF to air.

So, most of this Packet mystery must be in the TNC, because the computer is doing a fairly simple job, and we understand radios and antennas already. We will then need to concentrate on the TNC most of all. Hmmm...I suppose that next we should look at how the mode works. Let's start with the very basics (then everyone will be able to understand, regardless of their experience). In communications, there are basically two methods of moving messages about the place: circuit switching and packet switching. Circuit switching is how the telephone works: when you dial, two private "channels" are established for you (one channel each way). Each channel has one transmitter and one receiver, so it is pretty obvious who each chunk of information is from, and who it is to be sent to. Packet switching is different, you have many transmitters and receivers all on the one "channel", so there has to be something in each chunk of information to say who it is from, and who it is to. Consider working two metres voice, generally each "over" will have a pair of call signs on the front so that everyone knows who is transmitting and who should be listening. Or you use the sound of the voice to figure it out. As you may have guessed, Packet Radio uses packet

switching, hence the name. The "chunks" of information are called packets, and do in fact have a pair of call signs attached to them so that everyone knows the source and destination of each packet. When you use the telephone, you do three things: you dial (establish a contact), talk (send information) and hang up (clear off the contact). A voice or CW radio QSO has these three parts as well. It would then not be surprising that with Packet Radio, these three parts also exist. This is why you hear Packet freaks talking about "connecting" to someone: this is the call establishing part; and similarly "disconnecting" is the call clear off part of the contact. All the connecting and disconnecting is handled by the TNC. From here, I can get into how you do things on Packet, however most users would know that, and most non-users would not follow it, so instead I will talk about what Packet Radio does and how it does it. One of the problems is that computers are very stupid - they do exactly what they are told. If you are working voice or CW, you KNOW when what you have just received is rubbish - if you hear me send "Antenna is a fong wire" on CW, then you figure that you didn't hear me properly and you either figure out what I must have said, or you ask me to repeat it (anyone who has worked me CW will understand what I am talking about). On Packet Radio, the computer is not smart enough to figure out what I must have said, in fact it doesn't know if what it received was right or wrong. So each packet has an error check built into it, so that if a packet gets hit with noise, the TNC will ask for a repeat. Well, that is about as much as I have room for this month. I'll see you next month.

73 de Graham VK2GID.

****** Thanks ******

Thanks Graham, that's very interesting. I use packet, but know very little about how or why it works.

Can you tell us what AX25, Node, TCP/IP, Worm Holes, headers, Netrom, Rose and other weird things do.

What is FidoNet, EtherNet, InterNet, fishing net?

What is deviation? I've been called a deviate, is that similar?

****** For Sale ******

Yaesu FT207R 2M HT 144-148MHz complete with manual and carry case. Fitted with low capacity Nicads. 6W Hi, 1W Low @ 12v, 4 Tx and 1 Rx memories with LED display and DTMF keyboard. In very good condition. $180.00

Icom IC-502 6M SSB/CW portable complete with manual, microphone and in-built antenna. 3W output @ 12v. In very good condition. $200.00

Icom IC-202E 2M SSB/CW portable complete with manual, microphone and in-built antenna. All crystals installed including satellite. 3W output @ 12v. In excellent condition. $225.00

Waterman Products Lab Pulsescope in working order. Complete with probes, workshop manual and 125v 21A power supply. $50.00

Peter, VK2KHE Phone 722266.

Transmitting equipment sold only to licensed Amateurs.

****** Page 8 ******

Dapto Moonbounce Project

As at January 1972 we could obtain 500 watts output immediately after tuning up the transmitter but average o/p from the push-pull 4CX250 amplifier was only about 450 watts caused by detuning due to temperature increase, even with lots of cooling air. Water cooling of these tubes was not thought of until many years later!

Our calculations showed that 450 watts into the 30 ft. dia. dish antenna would provide only a marginal chance of us hearing our own echoes from the moon with the receiving system noise figure provided by the best of the preamps that VK2ALU had been able to make up. So the word went around to our overseas EME contacts "how do we get our hands on a hotter transistor?"

In the meantime we added some "frills" which would play their part when we really got going. These included a 2 speed chart recorder, the faster speed providing 0.5 inch (1.25cm) of chart movement over the 2.5 secs. that it takes a signal to travel to the moon and back. (ie no 2.5 sec. delay between transmitted and subsequent similar received signal - not an echo via the moon - simple!)

A rather basic type of audio filter was initially constructed to improve the signal to noise ratio. At this time we were using VK2ALU's Galaxy 5 Transceiver as an IF channel receiver. Oh for something better! So we started looking for a good cheap, second hand, stable receiver, hopefully with an IF filter! (Remember, the Club was not to be asked to provide finances for equipment).

Next came an automatic CW keyer, the first model of which used notches on the rim of a slowly rotating wheel to actuate a microswitch (Eproms, never heard of them!). This produced quite readable "CQ de VK2AMW"s. Its use allowed the operator to go out to check the o/p of the transmitter in the cubicle at the base of the dish tower, check to see if the dish was really still pointed at the moon, which involved clambering up the steel support tower (no ladder provided) quite a hazardous operation if it was after dark and especially so if the steel had a covering of dew on it! (Oh yes some of the steel braces which had to be climbed were at 45 degrees to the horizontal). But then we were mad to take the project on in the first place - but not silly enough to install a ladder which could have enticed passing kids to climb up, fall off and break THEIR necks! Off our "portable" feed point access platform, yes, but not off the dish.

Then we got quite "classy" - remote metering in the operating room of transmitter power output and PA plate and grid current, followed by a sighting telescope with an 0.6 degree field of view (the moon, and also the sun, having a diameter of 0.5 degrees as seen from the earth). This telescope was mounted on the dish in a weatherproof box (courtesy of Alan Ward's tinsmithing shop) and was fitted with an optional sun filter outside the box. Not only that, but Roger Evans came up with a device incorporating a "new

fangled" LDR which was fitted to the eyepiece - with an ammeter on the dish control cubicle in the operating room, giving maximum meter reading when the dish was lined up exactly on the moon! There was the small matter of getting the dish pointing close enough to "see" any of the moon in the sighting telescope in the first place!. This was solved by our "bunny" climbing up to the dish (at whatever angle it had to be pointed at the time) and peering through a peepsight attached to the sighting telescope and calling out pointing movement required to the guy operating the dish pointing controls in the operating room some 15 metres away - not always as easy as it might seem, especially if the "bunny" got his "rights and lefts" and "ups and downs" mixed up, as sometimes happened if the dish and the "bunny", was at some significant angle to the horizon!

Why all this, well the dish was polar mounted and the drive speed had been made by the original owners (the CSIRO) such that it tracked the sun. Fine, but the moon "moves across the sky" faster than the sun by an AVERAGE of about half an hour or so a day, thus with our 5 degree half power beamwidth, we needed to correct the pointing angle in the Hour Angle plane (you don't know what H.A. is? Well go look it up!) about each 15 minutes or less. Pity the poor guys with Az-El mounts! But then, they were either using large commercial dishes with fancy astronomical drives or had "backyard" antennas somewhat smaller than ours (and hence wider half power beamwidth). Therefor, once "on the moon" our remote meter indication of pointing proved quite handy. The main pointing problem we then had to contend with was that of backlash in the old drive gears, especially in a gusting wind. Life was not meant to be easy! Now if there are any budding EME types out there reading this, my 6ft. dish at home has a 1.2 degree half power beamwidth on 10GHz. Would any of you like to make me up a dish mount and drive system suitable for EME use? If you do, I will give you a demo. of signals from WA7CJO via the moon on 10368MHz!

Lyle VK2ALU.

****** Power Supply ******

A Simple Regulated 13.8V 20A Power Supply
PART 1
The following circuit is based on a simple conventional design that will allow full regulation with up to 20 amps of current draw continuously or even higher pulse rates when used with equipment of lower duty cycle.

One of the first considerations when building a power supply is how many pieces of equipment are going to hang off it and what will be the maximum current draw at any one time. For the average amateur shack, a value of 20 amps is quite a respectable figure.

Parts for the supply are easily obtainable through local electronics stores, how ever, I feel that most amateurs will have the majority of parts in their junk boxes thereby keeping costs to a minimum.

It is not my intention to show you how to construct this unit, but rather to show you the basic principles involved so that

you may experiment with the given circuit. But please note, the circuit as is works very well indeed.

PARTS.

250V/18V @ 20A Transformer
25A or better Bridge Rectifier
Electrolytic Capacitors to 40,000 uf total 50V
Electrolytic Capacitor 100 uf 35V
Capacitor 0.01 uf Disk Ceramic or suitable 4 required
LM723 Voltage Regulator
2N3055 Power Transistors 5 required
15V 1.5W or heavier Zener Diode
20A 50V min SCR
1K 5% 1W Resistor 3 required
0.1 Ohm 5W Resistor 4 required
47 Ohm 1/2 W 5% Resistor
10K Trimpot
Misc
Case to house unit
Heatsink(s)
Power plug and cable
DPST switch 250V rating
Hookup wire
Associated hardware
20A fuse and holder

The transformer should have a secondary voltage of 18 Volts and rated at the current level required (20 Amperes). For SSB operation, 15 amps will be suitable to drive a 100 watt solid state transceiver. The output of the supply will be capable of delivering 20 amps on voice peaks. If the chosen transformer has been obtained from another piece of equipment or from surplus/disposal areas, care should be taken to ensure that the transformer is of the correct type for the purpose. Also, transformers with a secondary centre tap can be used but this may require the use of a full wave rectifier consisting of separate diodes which in turn will require heat sinking.

The smoothing capacitor(s) should be rated at 40,000 uf 50V. Several smaller values may be connected in parallel to achieve this as long as they are 50V types. As a rule of thumb when choosing capacitance value, 10,000 uf per 5 amps is recommended.

The chosen transistors are 2N3055 or similar power types. One is used as a driver and the other four are used to pass the current. Before installation, I would recommend that the four transistors being used as the pass types be checked to ensure that they exhibit similar characteristics, otherwise, one or more of these devices may not carry their fair share of the load and cause the others to over load.

Whilst it is not always possible to use matched transistors, equalising resistors should be used to balance the load between the pass transistors. These resistors should be of the wire wound variety usually 0.1 or 0.22 Ohm. In our 20 amp supply, each of these resistors will be asked to carry 5 amps, therefore the power rating must be at least 2.5 Watts if the 0.1 Ohm types are used and 5.5 Watts if 0.22 Ohm are used. A safety factor of 2 is recommended I.E. 5 Watts for the 0.1 Ohm types.

The LM723 voltage regulator is a variable output voltage low current device and is capable of driving the single 2N3055 transistor for an output of 13.8V.

In any kind of high current power supply, output protection is mandatory.

(Imagine cooking your power supply with a short circuit or your new $2000 + radio with overvoltage!). Whilst the humble fuse is a necessary item in the output circuit, it does not prevent increased output voltages when the unforseen happens, e.g. Unusually high mains voltage periods, regulator failure etc. So, another type of protection device should be incorporated on the output. Here I have used a circuit known as a Crowbar Overvoltage circuit. This circuit simply senses the output voltage and remains inactive if the voltage is below a specified value. Should the voltage equal or exceed this value, the output is shorted causing the output fuse to blow.

The main components of this circuit are a zener diode and a thyristor. The voltage rating of the zener diode must be as close as possible to 15V and should be checked accordingly (3% or less is ok). The thyristor should be a 20 amp 50V minimum rated type. A lower current type may be used but larger heatsink and a fast blow type fuse must be used.

The circuit diagram and more information will be included next month.

de Peter VK2KHE

****** Packet ******

OK so here is another Packet article. I'm so glad that you like these Packet articles, as this will be my main theme. As most IARS Members know I run a Packet BBS on 145.575 Mhz, 144.700 MHz and 439.075 MHz. Well here are some of the features of this BBS plus the one that I run on the phone-lines as the Illawarra BBS using FidoNet number 3:712/518.

The Packet BBS is at the moment using the MSYS s/ware which allows multiple connects on the one freq along with multiple ports. The TNC's are Tiny2's and are run in the KISS mode to give the multi-access plus TCP/IP if you are using that protocol. The main use of the BBS is in msg forwarding to and from overseas or interstate and for the general user, in the Download areas, a series of text files. These may cover many subjects relating to our hobby of Amateur Radio or some general interest subjects. These can be listed with the W command for a list of the file areas then W RADIO for a list of the files in the RADIO mods area. Some of the file areas are: RADIO, TNC, HUMOUR, PIX, NETROM, ROSE, STS, KEPS, MAPS, TCPIP, EXSATS and so on. I keep adding of removing them from time to time so keep a look-out for the new ones. The EXSATS area is a file area where I dump all text files that I download from the Microsats ie the latest Keplerian data or the latest in AMSAT news etc. The reason I don't put them out as a Bulletin into the Packet traffic network is that all Bulletins should have a unique BID number so as to stop any duplication of traffic. Plus only nominated stns can actually send out these Bulletins. You may have seen some of the duplicate or triplicate Bulletins on the VK2XGJ BBS. These are caused by SysOps either incorrectly adding Bulletins to the traffic or actually changing the BID numbers. I have my own theories on the last reason. When you have found a file that you would like to Download type in: D RADIO/DJ560.MOD to download the file DJ560.MOD. There are no program files that the general User can download on the MSYS BBS unless you can use the TCP/IP protocol. This is a higher level protocol and allows FTP, SMTP etc. There is a set of s/ware for the IBM type computers and can be set up in a short time, the learning do to drive it takes a little longer! If you want/ need further info on this protocol leave me a msg on the VK2XGJ BBS. Or better still download some of the TCP/IP files from that area. After saying that the MSYS BBS will not allow program files to be up/down loaded I have a second system on-line called VK2XGJ-9. This system is on 144.700 MHz and uses the well known Paket 5 prg. It has a series of directories with, at the moment, IBM type program files. These can be accessed by the general user by using the excellent program Paket or YAPP. Give me a yell if you need/want either. In the near future I'll be setting up the FBB BBS s/ware to give a better access level to all users and in time that program will take over from the MSYS BBS. At least that is Plan A.

73, John de VK2XGJ

*** Repeater Report ***
(28/7 to 27/8/92)

VK2RAW(146.850) - Since re-installation of rptr on the 2nd July the system has been working quite well. The only problem is a minor one. Occasionally on the Sunday WIA broadcasts there is crackle & break-up on the audio. On Friday the 7th August, Ken went to the site to investigate. Checked & tightened all connections but could find nothing. The following Sunday the crackle was still apparent. Tends to appear more at the beginning of broadcasts. Not a major problem, just annoying. Further investigation to be done.

VK2RIL(147.275)- The rptr is still working OK. Unfortunately the pager interference is still continuing. For those counting, it has now been over 4 months that our 7275 repeater has been getting interference from pagers. As reported last month, W'gong DOTC were informed of the problem on the 23rd of July. They were very helpful & found time to check it out immediately. A Telecom pager on 148.0375MHz was identified as having a spurious, around 40dB down from the fundamental, in the top part of the Amateur Band. From my own observations the interference was at its worst outside of business hours, when the pager was TXing less, with complete bursts of pager audio coming through. Obviously the spurious was moving up & down in frequency in relation to the temperature of the pager's TXer. DOTC informed Telecom of the

apparent problem with their pager. It took till the 5th of August for Telecom to get around to rectifying the spurious. DOTC informed me of their work & asked us to check if the interference had ceased. After listening to 7275, we found that there was still something continually triggering the rptr. After some more hours spent listening to all the different pagers (what agony), found another pager on 148.1875MHz whose transmissions coincided exactly with the triggering on the rptr. Reported findings to DOTC the next morning (6/8/92). This pager frequency turned out to once again belong to Telecom. DOTC were going to investigate & report their findings to Telecom. At this time, the interference still continues. Observations have shown this spurious to behave in an opposite manner to the previous one. It is at it's worse during business hours. Even at it's "best", our rptr is falsely triggered twice every time the Telecom pager transmits a message. Do you know how many "false-triggers" & pager bursts 7275 has suffered in the last 4 months? Consider this... The pager TXmits around 3 times every minute (more in Bus. Hrs). Every transmission triggers 7275 twice; that's 6 false-triggers per minute.

6×60 mins. = 360/hr
360×24 hrs. = 8,640/day
$8,640 \times 120$ days = 1,036,800 false triggers in 4 mths!

I don't know what the rest of you think of this incredible figure but it makes me damm mad. Do you think an Amateur Radio rptr would have been tolerated for this much interference, for this length of time? What about

compensation for the "wear & tear" on our rptr? Isn't there a law that states something like "if one licensed radio service interferes with another licensed radio service, then the one causing the interference should be shut-down until it's problem is rectified"? Shouldn't their TXers be maintained to the required specifications? At this point I must repeat that our local DOTC have been VERY helpful in all dealings with them & I guess this sort of problem must place them in a difficult position. Before concluding 7275 report, let's ponder on Telecom's current commercial song... "good, better, best, we will do our best, to make our better better & our better best". No comment.

VK2RIL(438.725)- Not much to report. The rptr is still working well. A battery has been acquired & a charger constructed to be installed soon. Also, the antenna will be changed back to the intended 7 elmt Yagi.

VK2RUW (438.225) - The rptr itself is still functioning fine, but as with 7275 it has been suffering from external interference. Around the end of July a pulsing sound of around 5 to 8Hz started appearing over the top of RXed signals on 433.225MHz. (The pulse was very similar, if not the same, as we once RXed on the 10m rptr's 70cm link around 3 years ago. It was found to be some type of spread-spectrum Defence Dept transmissions). As it turned out the current pulse was also severely affecting all the Sydney 70cm rptrs. During the WIA Broadcast on the 2nd of August, mention was made of Sydney's problems. Discussions

followed on Dural 7000 regarding this. Our experiences were brought to their attention. VK2 WIA were going to investigate. The pulse disappeared about 10 days later. I haven't heard anything since, but it was felt the pulse transmissions were emanating from just off the coast of Sydney. It may be noted that even though 8725 is much closer to Sydney than 8225, it's location at Sublime Point & it's south facing directional antenna gave it protection from the transmission. 8225 is also RXing a very occasional noise coming in on the Goulburn Link RXer. I can best describe it as a "space-ship" sound. Presently not to concerned about it as 8225 will be taken off-air in the near future & up-graded for the coming linking to 8525 at Mt Ginini.

VK2RUW(144.775) Packet - Hopefully by the time you read this Michael (VK2XCE) will have been able to install the VHF port. Try it.

VK2RUW (29.620) - Nothing to report.

Till next time - Rob VK2MT

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What

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this?

POST BOX   "THE ILLAWARRA AMATEUR RADIO SOCIETY Inc"
              PO Box 1838, Wollongong, 2500.

REPEATERS	VK2RUW	29.620	Voice	Mt Murray/Knights Hil
	VK2RUW	144.775	Packet (ROSE)	Knights Hill
	VK2RAW	146.850	Voice	Mt Murray
	VK2RIL	147.275	Voice/RTTY	Sublime Pt
	VK2RAW	147.575	Packet (NetRom)	Mt Murray (Off air)
	VK2RUW	438.225	Voice	Knights Hill
	VK2RIL	438.725	Voice/RTTY	Sublime Pt

BROADCASTS - The Wireless Institute of Australia, N.S.W Division broadcast is relayed to 29.620 MHz and 146.850 MHz at 10.45am and 7.15pm each Sunday. Callbacks after the broadcast. RTTY broadcast in the week before the Club meeting, Sunday evening, 6:45pm on 147.275 MHz, relayed onto 3.618 MHz +/- QRM and 29.620 MHz, with callbacks immediately after.

NEWS LETTER - The "PROPAGATOR" is published each month to reach all financial members in the week preceding the Club meeting. Articles and letters are always welcome. Commercial advertising $60 per half page per year, member's classifieds free for one issue. See Peter VK2FPN for details.

MEMBERSHIP - $20.00 P.A, concessions $15.00 P.A, expiring immediately after the Annual General Meeting in July.

LAWRENCE HARGRAVE AWARD   VK stations require 10 contacts with IARS members. Overseas stations require 5 contacts. One contact with the Club station VK2AMW is suitable. Details of contacts are to be sent to the Club secretary.

********* COMMITTEE *********

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