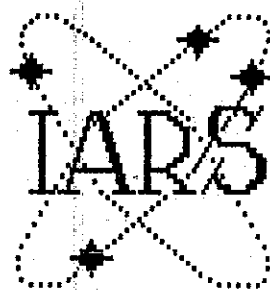


# THE PROPAGATOR



ILLAWARRA AMATEUR RADIO SOCIETY

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY.  
VOLUME - 87, NUMBER : 1 FEBRUARY 1987.  
REGISTERED BY AUSTRALIA POST PUBLICATION NUMBER : NBH - 1491.

MEETINGS ARE HELD ON THE SECOND TUESDAY OF EACH MONTH  
(EXCEPT-JANUARY) AT 7.30. PM. AT THE STATE EMERGENCY SERVICES,  
BUILDING, IN MONTAGUE STREET, NORTH WOLLONGONG.

VISITORS ARE MOST WELCOME TO ATTEND THE MEETINGS.

## TOP MARKS TO THE LADIES

An enjoyable evening was had by all who attended the Illawarra Amateur Radio Societies December 1986 meeting.

Top marks must go to all the Ladies who turned up for the occasion. Also the plates of goodies they brought along was well appreciated by all present.

Thank you Ladies for your presence at our meeting, and we hope you won't wait 12 more Months before coming again.

Mr. Roger Downs was guest speaker for the evening, and enlightened all present as to the responsibility of all Club Members if a claim for damages was ever taken out against the Club by a Member of the Public.

He suggested we become a Registered Corporate Company as this would take the onus off Members in the advent of a claim for Compensation against Members.

He also pointed out that although the percentage of having a Claim against Members was remote, the gamble was still there. And if such a Claim was ever made, the cost could run into Millions of dollars, and that Members would be required by law to pay. And

that this could involve having to sell personal property or and chattels. Because of the seriousness of these facts the Committee discussed the item at much length at the Committee meeting held on December 16th 1986.

### COMMITTEE - \* - REPORT

At the I.A.R.S. committee meeting held on Tuesday 16th December 1986 a number of points were raised and in most cases agreed upon by those present.

The most important being, the I.A.R.S. becoming a corporate thus taking the onus off Club members. It was unanimously agreed that this was the way to go and the wheels are underway to this end.

Other items raised was the "ROOM" that has been given to the Club by the

S.E.S. has now been officially handed over, but needs a few things done to it before we can seriously think of equipping it out.

Also a complaint has been received from the S.E.S. as regarding new lawns laid around the S.E.S. building. It appears that some members have driven vehicles on the lawns

CONTINUED PAGE 2.

## ABOUT YOUR FRIENDS

.....  
 VK2QB - Keith recently spent a week in Figtree Hospital after being operated on. Whilst there, a fellow club member VK2ZHU - Geoff who was in for the same operation kept Keith company in the same ward. Both of the lads are ok and now back home.  
 .....

Jim VK2QU recently went into Hospital for a check up, and is now back home. Hope to hear you up on the net Jim.  
 .....

John Moody is in Bulli Hospital and would appreciate visits from his club mates. So come on lads, give John a visit. He is in the Malouf ward. Best 73's John.  
 .....

Jim VK2EJH was one of the lucky people recently to have a ticket for the Australia V England cricket match at the S.C.G. Jim had the pleasant experience ( HI HI ) of seeing the Aussies pipped at the post.  
 .....

Lyle VK2ALU was in Hospital recently but is now home again. Good to have you back again Lyle.  
 .....

Fred VK2YSB recently had a self inflicted injury to his jaw, no! it wasn't from talking on his hand held whilst mobile on his push bike, but from falling off his bike. Hope you get better soon Fred.  
 .....

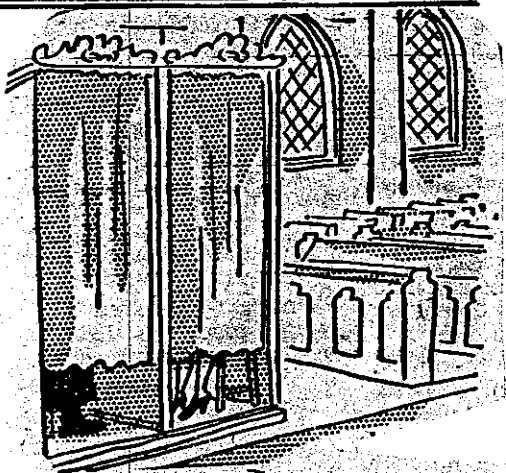
## COMMITTEE REPORT

CONTINUED.

causing ruts to be left. So in the interests of good relations with the S.E.S. the committee has asked members to park their vehicles outside the fence, and only bringing them in if its for delivery of goods etc.

Also brought up was a question regarding packet radio. The details of this will be discussed by Graeme VK2CAG in his regular column elsewhere in this issue of the Propagator.

The meeting ended at around 10.p.m.



★ "NO, madam, we do not do passport photographs."

George decided to become a monk and joined an order where silence was the cardinal rule. Only two words were allowed, and only at the end of a decade. He duly served 10 years and was called into the head monk's office.

"Now, my son," he was told, "feel free to speak your two words."

George took a deep breath. "Food's cold," he blurted. Another 10 years, and he again had the chance to speak.

"Bed's hard," he uttered. At the end of the next decade he was again summoned. George had had enough.

"I quit," he announced firmly. The head monk looked at him. "I'm not surprised," he said with a shake of his head. "You've been complaining ever since you got here."

—FOR—  
 COURTESY TO  
 AMATEURS AND  
 VALUE.  
 IN  
 OUR AREA  
 NOT USUALLY  
 SEEN ELSEWHERE  
 WE RECOMMEND!!!!

## CAUTIONS

11. MOLLOY STREET, BULLI.

PHONE: 042-84-6838

TO ALL OUR CLUB MEMBERS

## EME REPORT BY EYLE VK2ALU

Our Moonbounce Project is starting the year "somewhat behind the eight ball". The damage last caused by the intruders has not been repaired because the intruder alarm system is not yet completed, though Paul VK2KPS advises that it is well on the way. No further damage was evident as at 18/1/87, but some items had been disturbed since my previous visit to site.

As the result of lengthy correspondence with Dr. Dick Turrin W2IMU, it has been agreed that the next move to resolve the problem of "lower than expected level of received EME signals compared with our own echos" is for the receiving system to be connected, via the coax. changeover relay, to each of the transmit and receive ports on the W2IMU feed horn of the dish. It is to be left in this configuration for several months and listening tests carried out from time to time on signals from other stations - to compare their level via the right hand and left hand polarised feed ports on the W2IMU feed horn. In theory, there should be a large difference in favour of the right hand polarised port.

Before commencing the above tests, I had agreed to remove the receiving preamp. and converter units from the EME dish and to install them for a short period on my 6 ft. dish at home (part of my new 1268-1270MHz Mode L satellite system) so that Cor Maas VE7BBG could carry out tests with me on 1296MHz via the Moon. He considers that his EME signals may be just copiable when the Moon is at Perigee. This experiment will have to wait until I am physically able to do the necessary climbing etc. I hope that it will be carried out in February and that the receive tests back at the 30 ft. dish will be commenced shortly afterwards.

### SO THE STORY GOES.

A ham was going over to England for a holiday and when his neighbour Mrs. Dunn heard of this she asked the ham if he could do her a favour and look up her Son named "NEARLEY" who was in London.

She told the ham that she hadn't received a letter from her Son in 12 months and was worried something was wrong.

The ham agreed to help her, and armed with Mrs. Dunn's Son's unusual name of

" NEARLY " and his London address plus the area code W.C.1. he took off on his holiday.

on arrival at London airport, and after going through customs, he noticed a door with WC on it, so promptly entered and on looking along the row of doors saw number 1 on the end door.

He tapped on the door and called out " are you nearly Dunn " and a voice answered back, " yes but i can't find any paper " to which the ham replied, " that's no excuse not to write to your Mum in Australia.

### COAST-WIDE COMMUNICATIONS

LOT.B. LAWRENCE -  
HABGRAVE, DRV. THIRROUL

WE STOCK: CB RADIOS  
CB AERIALS - COAX CABLE  
MARINE RADIOS  
TV - AERIALS, ETC ETC.  
SALES AND SERVICE

OPPOSITE THE  
SHELL GARAGE  
PHONE : 67 2134.

VK2KWN WAYNE NEWPORT

# REPEATER REPORT GRAEME VK2CAG

Since there was no Propagator in January, and no general meeting, this repeater report contains two months news.

## 6850 Mt. Murray.

This is the first summer holiday period for a long time that this repeater has operated faultlessly, and without any criticism from anybody. The same period over the last few years has seen 6850 suffering some form or other of energy shortage. When the repeater was powered by low voltage buried landline several years ago, electrical storms used to cause surges in the landline and frequently damaged the repeater, putting it off the air. Later, when the wind generator was installed, we found that it could not provide sufficient energy to cope with the increased repeater usage with the many visitors to the area. Restrictions in the form of shortened time-out period and psychological persuasion by means of this column and on air were used to discourage the use of the repeater to help to conserve the energy that was available. The wind direction at Mt. Murray in the summer time comes mainly from the East or North-East, and had little effect at the repeater site because of the escarpment funnelling the winds to a higher altitude over the mountain top, and leaving only low energy turbulence close to the ground. The situation was improved somewhat last year when wind power was supplemented with one solar panel, but was still not satisfactory.

Full solar power seems to be the answer. With 80 watts worth of solar panels now in use, there has not been any hint of energy problems. In fact, the power reduction circuit which was fitted a few months back has never switched on. One fault did appear in the repeater around mid-January, when it appeared to be difficult to access from some places. When we visited the site on Jan 25, the receiver checked out to be 20db deaf compared with normal. The first I.F. stage an MPF121 mosfet had failed. This was quickly fixed and the repeater was back to normal just before the Sunday morning broadcast. This was the first time in five months that anything had to be done to the repeater. It was a pleasure to be able to drive all the way to the site in a conventional vehicle. The boys who worked on the track did an excellent job.

## 7275 Sublime Point.

Pager interference still plagues this repeater. The particular paging transmitter causing the problem operates on 148.4125MHz. and can easily be observed on a receiver or scanner, etc. This pager has a deviation in excess of plus/minus 10KHz. and a spurious from it can be heard right on the repeater's input frequency of 147.875MHz, especially strong in Wollongong's Northern suburbs. An official complaint has not yet been lodged with DOC, as from past experience I have found that they have requested a written log of the times and frequency and nature of the interference to assist them in locating its source. Written logs containing this information (for the input frequency) would be of assistance to the repeater committee, and will be passed on to DOC when requested.

## 8225 Hill 60.

The aerial situation remains unchanged since last repeater report, however, a new receiving antenna has been prepared and is ready to be installed as soon as time permits. 8225 is still giving satisfactory local coverage, but lacks that bit of extra sensitivity due to de-sensing, and is noticeable when DX conditions exist.

## Packet Repeater.

At the December committee meeting it was decided to re-locate the proposed packet repeater from Mt. Murray to High Range near Mittagong, and to do tests from that site to check its suitability for coverage into the Illawarra area. We have obtained the co-operation of the Southern Highlands club in gaining the use of their site at High Range. There is mains power on site as well as a suitable building and tower. At present there are no other amateur repeaters

CONTINUED PAGE 9.



RG 214U COAX. CABLE

WANTED

For test leads and permanent connections for Moonbounce equipment.

Any length, from a few centimetres up to several metres or more.

With or without type N coax. connectors fitted. If coax. connector has been removed or cable has been cut then the "cut" end should have been well sealed against moisture ingress, so as not to have affected condition of cable.

NOT RG 213U coax. cable, thank you. RG 214U only.

Please contact Lyle Patison VK2ALU Phone (042) 296984 or QTH as in Callbook if you can help.

RG 214U COAX. CABLE

WANTED

WHICHEVER WAY YOU LOOK AT IT  
YOU CANT GO PAST

**MARINA GARAGE**

FOR SERVICE CALL IN AND SEE  
**PETER CHIECO**

For Your :-

- \* Electronic tune up \* Wheel balancing
- \* Front end alignment \* Brakes
- \* And also Rego Checks.

146 PRINCES HIGHWAY. CORRIMAL

PHONE: 84 5650

A SAILOR had been marooned on a desert island for almost a year. Day by day, he scanned the horizon for a ship and had nearly given up when a skin-diver suddenly emerged from the sea and walked up on the beach.

As the astonished sailor watched, the diver doffed her helmet, and a mane of glorious blonde-hair cascaded down to her shoulders.

"Can I do anything for you?" she asked huskily.

"Well I haven't had a drink for months," the sailor replied. The diver smilingly unzipped a side pocket in her wetsuit, took out a slim flask and poured him a Scotch. "Anything else?" she queried.

"I'd sure give anything for a good smoke," the tar mumbled, whereupon she opened another pocket, took out a fragrant Havana cigar and lit it for him.

He lay back in delight and when she asked if anything else was required shook his head.

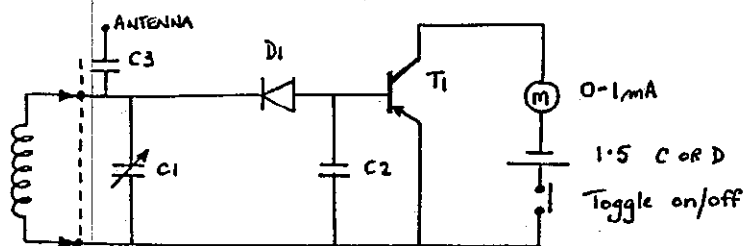
"I'm O.K. now, thanks," he said.

The girl was rather astonished. "Well wouldn't you like to play around after being alone for so long?" she suggested.

The sailor was goggle-eyed. "Don't tell me you have a set of golf clubs in there as well!" he drawled.

# BUILD A 1.5 - 150.MHZ

## WAVEMETER



### CIRCUIT DIAGRAM:

#### PARTS LIST:

- C1. Small single or dual gang capacitor as used in a transistor radio.
- C2. 1000 pf
- C3. 47 pf
- D1. 0A90 or similar germanium diode.
- T1. 2N217 or similar germanium transistor to act as a D.C. amp

0-1mA meter toggle switch if required, banana plug and socket for short antenna if required.

8 - 4 pin speaker plugs.  
1 - 4 pin matching speaker socket.

1 - box to house components  
A quantity of 28-30 gauge enamelled wire.

A quantity of telephone single strand plastic covered wire.

#### CONSTRUCTION:

Mount the components as shown

Perhaps the most difficult task is the number of coils and their final dimensions. This will be determined by the type and value of tuning gang being used. Therefore the dimensions given should be used as a guide only.

The construction of the coil formers is as follows.

You will require about 18" (450mm) of 5/8" (20mm) electricians conduit.

Examination of the speaker plug reveals a lip which is used to secure a plastic boot. This should be carefully removed with the aid of sidecutters. It may be necessary to clear away any jagged pieces left with a file. Next, cut a 90mm length of conduit, clean up edges and force onto the plug. One method of doing this is to open the jaws of a vice wide enough to allow the pins to drop through but

provide a shoulder for the rest of the plug.

Lightly tap the top of the conduit to drive on. In some circumstances a plastic fixing cement may be necessary.

This former will be for the lowest frequency coil. Next, drill two small holes as shown about 65mm apart. Feed the wire through the bottom hole and then through one of the plug pin holes. As the coil former is long this may be a bit tricky. Wind on the fine wire to top hole and feed through and secure as shown below.

CONTINUED NEXT PAGE.

## WOLLONGONG ALUMINIUM CENTRE

Available Ex Stock a Range of ALUMINIUM:-

- \* Rectangular Hollows.
- \* Round Hollows.
- \* Square Hollows.
- \* Flat Bars.
- \* Channels.

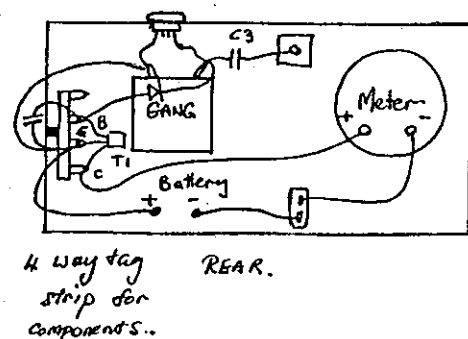
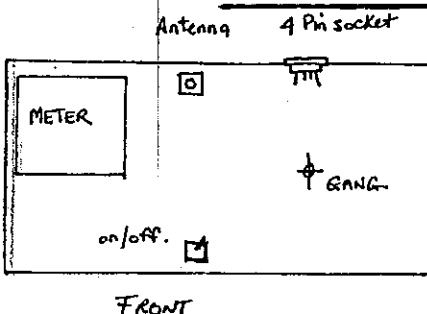
\* Cutting Service Available \*

ALL at COMPETITIVE WHOLESALE PRICES. Suitable for building your own antennas.

Situated At :-

79 Gipps St; WOLLONGONG  
Located close to railway crossing.

Phone: 299382 or 285932.



# WAVEMETER CONTINUED

COIL DETAIL Nos 2-5

## CALIBRATION

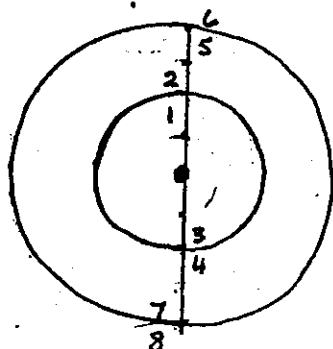
You will require a signal generator or G.D.O. to calibrate the unit.

1. Plug in low freq coil, and set tuning gang for maximum capacitance.
2. Use the G.D.O. or sig gen to determine the lowest frequency.
3. Now tune the gang to its high capacity end and again use the G.D.O. or sig gen to determine the upper frequency. If you are lucky then the range should be around 1.5 to 3.0 Mhz. It may be necessary to make some minor changes to the number of turns.
4. Next plug in coil No 2 and repeat steps 1-3 ensuring that the lowest frequency of coil No 2 is equal to or just below the maximum of No 1. That is if coil No 1 has an upper limit of 3.0 Mhz then the lower limit of No 2 should be 2.9 Mhz to ensure an overlap.

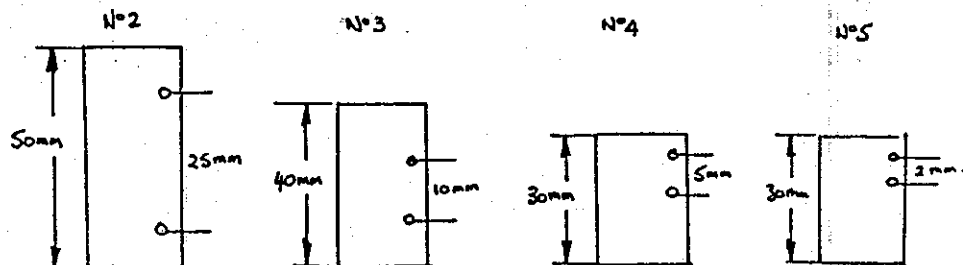
When all coils have been calibrated lacquer those using the fine wire to hold them in place.

## DIAL

When mounting your tuning gang in the box ensure you have enough room to clearly show the calibrations. One arrangement is shown below.

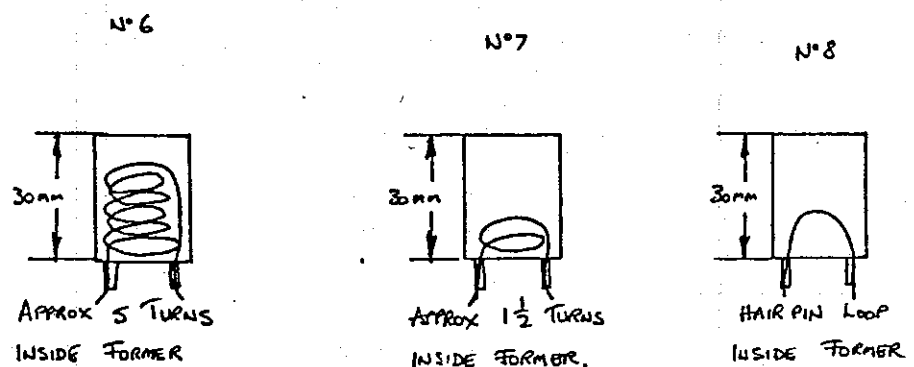


APROX	FREQ'S FOR EACH	RANGE
1.	1.5.	2.8.
2.	2.6.	5.0.
3.	4.9.	9.5.
4.	9.5.	18.0.
5.	18.5.	36.0.
6.	35.0.	62.0.
7.	60.0.	95.0.
8.	80.0.	150.0.

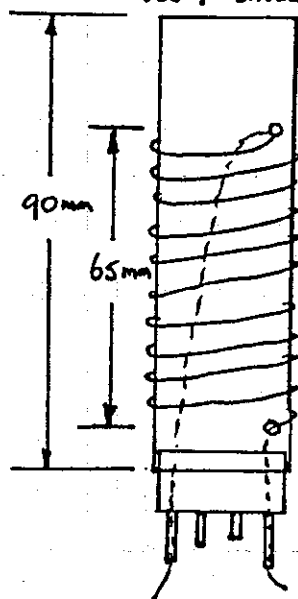


USE: 28-30 gauge wire close wound.

COIL DETAIL Nos 6-8



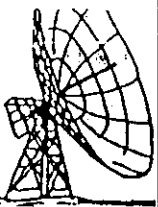
USE: SINGLE CONDUCTOR TELEPHONE PLASTIC COVERED.



COIL DETAILS N° 1

## NEWTEK- ELECTRONICS

WE STOCK:  
ALARMS - ANTENNAS  
BOOKS - BOXES  
COMPONENTS-COMPUTERS  
HARDWARE - KITS - TOOLS  
WIRE AND A LARGE RANGE  
OF SEMICONDUCTORS FOR  
THE PROFESSIONAL AND  
HOBBYIST : 116 CORRIMAL  
STREET. WOLLONGONG.  
(JUST FROM HARP-HOTEL)  
PHONE : 27 1620.



# SATELLITE NOTES BY LYLE VK2ALU

Much has happened with regard to Oscar10 since the December Notes were prepared. Without going through it all in detail - Oscar10 is back in restricted operation on Mode B only, and signals through the transponder are generally of quite good strength.

It is essential that ALL stations using Oscar10 observe the following operating conditions until further notice:

1. DO NOT transmit into it between Mean Anomaly (Phase) 200 to 020 - as to do so will help to drain the batteries at a time when they cannot be recharged, due to the satellite being in Earth's shadow.
2. Keep your own return signal level down to about that of the beacon AND ALSO ensure that your ERP does not exceed 100 watts (e.g. 10 watts into a 10dB gain antenna.) In practice, there are many occasions when 50 watts or less is sufficient to produce a return signal equal in strength to that of the beacon.

Many good contacts are at present being enjoyed via Oscar10. I have had QSO's of up to an hour or more with VE7BBG of recent weeks and have heard Harry VK2JHW in amongst the DX from time to time.

The following areas are included in those which it is possible to work at present (and you don't have to have a quick contact for fear that the DX station will fade out!) - Central and South Africa, the Mid East (places like Oman and Kuwait), India, Russia, Central and Eastern Europe, Far East, Pacific Area and Alaska.

A rundown on the computer indicates that - the first two weeks in February will progressively see, from the local area:

- (i) Far East, Mid East, Pacific area and Russia.
- (ii) West Coast of USA and of Canada.
- (iii) Central USA and West Coast of South America.
- (iv) Central America.
- (v) All of USA and Canada.
- (vi) All of Africa, except west coast of North Africa.
- (vii) Nearly all of Europe, except western part and UK.

And so it goes on, but it will be late March and again mid then late April before stations in UK can be worked from this area.

Packet is being used on Oscar10 by VE7BBG and others. He states that with his present setup, he requires a signal level of approx. 10dB above noise and conditions where little phase distortion exists (which appears to be during periods when Spin Modulation fading is at a minimum; which is prior to Appogee). The Packet "Store and Forward" facility on FO12 also appears to be coming along nicely.

We are all hoping that Oscar10's "new lease of (somewhat restricted) life" continues for some time!



# REPEATER REPORT CONTINUED

there, but there are plans in future by the Southern Highlands club to put in a 70cm voice repeater there, and the ARPRA packet radio group are planning a high speed data link repeater on 70cm at the same location, its purpose being to link Sydney and Canberra packet repeaters.

The 2 metre digipeater was made by myself and made available for use as a packet repeater for as long as it is needed. Other equipment needed such as aerial, power supply, etc., is to be financed by the proceeds of the wind generator, since no more solar panels are needed at Mt. Murray.

The repeater was installed on site on 28/12/86 by VK2CAG, VK2DFK, VK2XGA, VK2BZZ (Daryl from Mittagong), and VK2HA (John from Mosman). The repeater's callsign is VK2BFI-1, (VK2BFI being the club callsign of the Southern H/lands group).

Over the next three weeks the repeater worked OK, with some interesting observations.....A small number of stations in Sydney could hear it at good strength but were having difficulty in accessing it. Also we found that there were an unusually high number of short term power failures at the site, which caused the processor controller to 'crash', and had to be remotely re-programmed a number of times.

Coverage was found to be excellent around Sydney, with regular contacts being made direct to Newcastle. No VK1 activity has yet been heard, but that is not surprising, as the VK1 boys have not yet got their digipeater going. Coverage in Wollongong is a bit disappointing. The only two regular packet operators VK2CAG and VK2DFK are in the Northern Suburbs, and shielded from the repeater by Mt. Keira. To make matters worse, when the beam is pointed towards High Range from here, it also points directly at Mt. Keira where those pagers are located. However, it is a 'minimum' system at High Range at present, with only 20 watts and unity gain antenna, so there is plenty of room for future improvement, and results are encouraging enough to press on with the project.

Another visit was made to the site on 25/1/87 by VK2CAG and VK2EXN. Some alteration was made to the receiver de-emphasis characteristics, which cured the 'selective reception' problem with some stations. There appears to be no-one hearing it who cannot access it now ... A small battery and charger were installed to prevent the blackouts causing resets. A better aerial is available which will give an improvement of about 4db, but it was too windy to erect it at this time.

At this time of writing, (end of Jan), the digipeater is working well, but a few extra db in Wollongong direction would be helpful. The new aerial may achieve this.

## Repeater rebuild.

This year we plan to commence the job of completely re-building 6850 repeater. There are two main reasons for this. Firstly, the repeater was commissioned almost 15 years ago, various parts of it having been built at different times. Its getting a bit 'long in the tooth' now, and although it performs well, and its unlikely that a more up to date design will make any significant improvement in performance, it was designed to fill a particular requirement, which is totally different from its present one. It was designed and built back in the days when there was provision for only four repeaters in the bandplan. Channel spacing then was 100kHz, where it is now 25kHz. The repeater has been modified and added to over the years, and is getting to the stage where it is becoming difficult to maintain. We cannot expect its reliability to continue forever. Parts are beginning to fail for no apparent reason (take the mosfets in the TX last year, and in the RX recently)... The other reason is that there is an ever increasing pressure put on us to reduce the bandwidth of our receiver so that the adjacent channel 6825 can be allocated in the Sydney area without interfering with us. Because of the special design of the receiver, and unusual I.F. filtering system employed, it is not a simple matter of replacing the crystal

CONTINUED PAGE 10.

## SO YOU THINK YOU'RE CLEVER

HERE is a quiz that's practically guaranteed to have you tied in mental knots for an hour or so. You'll probably hate us when you get through. If so, you can repair your shattered ego by trying some of these teasers on friends.

If you can answer every question right, you are obviously a genius. Anyone who makes only five mistakes or less is still fit company for the Brains Trust. But any mortal with the normal complement of brains should get nine to twelve right out of the twenty-one.

There are plenty of catch questions, with no holds barred, so read every word carefully.

1. If 3 cats can kill 3 rats in 3 minutes, how long will it take 100 cats to kill 100 rats?
2. A whisky-and-soda costs 55 cents. The whisky costs 50 cents more than the soda. How much does the soda cost?
3. A little Eskimo and a big Eskimo are walking in the snow. The little Eskimo is the big Eskimo's son. The big Eskimo is not the little Eskimo's father. Who is it?
4. Which is correct: 8 and 8 are 15, or 8 and 8 is 15?
5. Is it legal for a man to marry his widow's sister?
6. A monkey is at the bottom of a 30-foot well. Each day he jumps up three feet and slips back two. At that rate when will the monkey reach the top?
7. There are 10 black stockings and 10 white stockings in a drawer. If you reach into the drawer in the dark, what is the minimum number of stockings you must take out before you are sure of having a pair that match?
8. Take two apples from three apples and what have you got?
9. I have two minutes in which to catch a train, and two miles to go. If I go the first mile at the rate of 30 miles per hour, at what rate must I go the second mile in order to catch the train?
10. The number of eggs in a basket doubles every minute. The basket is full of eggs in an hour. When was the basket half full?
11. A shepherd had 17 sheep. All but nine died. How many did he have left?
12. A rope ladder 10 feet long is hanging over the side of a ship. The rungs are a foot apart, and the bottom rung is resting on the surface of the ocean. The tide rises at the rate of six inches an hour. When will the first three rungs be covered with water?
13. Two fathers and two sons each shot a duck, and none of them shot the same duck. Only three ducks were shot. Why?
14. A customer hands a cigar salesman a five dollar bill for two dollars' worth of cigars. The latter has no change, but gets some next door from another salesman, who gives him five one dollar bills for the five dollar bill. The customer leaves with the cigars and three dollars in change. Later, the second salesman rushes in, saying the five dollar bill was counterfeit. The first salesman gives him a good five dollar bill. How much did the cigar salesman lose in money and cigars?
15. What is the smallest number of ducks that could swim in this formation: two ducks in front of a duck, two ducks behind a duck, and a duck between two ducks?

16. A boat will carry only 200 pounds. How may a man weighing 200 pounds and his two sons, each of whom weighs 100 pounds, use it to cross a river?

17. A set of ten books is arranged in orderly fashion on a shelf. Each book has 100 pages, making 1,000 pages in all. A worm starting on the first page of the first book eats through the last page of the last book. How many pages has he eaten?

18. The archaeologist who said he found a silver coin marked 649 B.C. was either lying or kidding. Why?

19. Two trains, 100 miles apart, approach each other on the same track, the first at the rate of 60 miles an hour, the other at the rate of 40. A bee is going 25 miles an hour. What distance does it cover by the time the trains meet, if it started at the same time as the trains?

20. A king, wishing to get rid of his prime minister, puts two pieces of paper in a hat. He tells a judge present that if the prime minister draws out the scrap marked "Stay", he may remain in the kingdom, but if he draws the scrap marked "Go" he must scam. The hitch is that the king wrote "Go" on both scraps of paper. But when the crafty prime minister showed the judge one piece of paper, the judge decided in his favor. How did the prime minister outwit the king?

21. In which book of the Bible does it tell about Abel's slaying Cain?

### ANSWERS TO "SO YOU THINK YOU'RE CLEVER"

1. Three minutes. It takes each cat three minutes to kill each rat.
2. Two and a half cents.
3. Mother.
4. Neither; 8 and 8 are still 16.
5. Only dead men have widows.
6. On the 28th day. At the end of the 27th day he had ascended 27 feet. On the 28th day, he reaches the top.
7. Three. You might have a pair after taking out two, but the third one must match either the black or the white stocking already removed.
8. Two apples, of course.
9. Too bad you missed it. You used up all your time going the first mile.
10. In 59 minutes. If the basket is full in 60 minutes, it was half-full a minute earlier, or at the end of 59 minutes.
11. Nine.
12. Never. The ladder and ship will rise with the tide.
13. There were a grandfather, father, and son. The father was both father and son.
14. Five dollars, two in merchandise and three in cash.
15. Three ducks in a row, one after the other.
16. The two sons go first. One brings back the boat and Pappy rows over. Then the other son returns for his brother.
17. He ate 802. Look at a row of books on a shelf. You can see why the worm didn't touch 99 pages of the first and 99 pages of the last.
18. How did anyone know Christ was coming in 649 years?
19. Twenty-five miles. The trains met in an hour, giving the bee one hour to travel.
20. The prime minister destroyed the first scrap he drew, and said "Stay," the judge decided.
21. None. Cain slew Abel.

## REPEATER REPORT CONTINUED

filter. Taking these factors into account, a complete re-build seems to be the way to go. It is envisaged at this stage that we make an exact duplicate copy of 7275 repeater, since it is a proven design, uses easily available parts and we have the artwork for the boards, circuits, etc. The whole project may take up to two years, and will be a club project, with various members making the boards, hardware, wiring, etc. 7275 was designed as an energy efficient unit, suitable for operation on solar power, is a single chassis construction, and is designed with future expansion in mind... with accessory connection ports for such things as auxiliary receiver, remote control decoder, etc. We will have plenty of time to do a good job on the new repeater, since the old one will remain on air until the new one is finished.

# ON THE NET

7th December 1986:

VK2MT-Rob (Co-ordinator)  
VK2EBI-Kevin, VK2PZY-Dave,  
VK2JNC-Neil, VK2PJC-Merv,  
VK2BIT-Peter, VK2PHD/P3-Ray,

21st December 1986:

VK2PZY-Dave (Co-ordinator)  
VK2JTB-Tom, VK2NBH-Les from  
Bermagui, VK2DTZ-Paul,

## NEXT GUEST SPEAKER

GUEST SPEAKER for  
February meeting is  
Mr Bob Lloyd. Bob, who  
works for the D.M.R. as a  
surveyor, will be giving  
a demonstration with various  
pieces of equipment.

Are you one of those  
people who have wondered  
what is involved in the  
preparation of a main  
highway etc. Well come to  
the 10th of February  
meeting and be enlightened.

A weary mother was having extreme  
difficulty getting her son off to school.  
In desperation she stripped the covers  
off his bed and threw his clothes at  
him. "You'll be late again if you don't  
watch it," she began sternly. He pulled  
the covers back over his head. "I'm not  
going," he sulked. "The teachers all  
hate me and the kids write my name  
on the lavatory wall."

"Oh, don't be so silly," his mother  
said. "You have no choice in the matter.  
You *have* to go!"

"Why should I if I don't want to?"  
her son rebelled.

"I'll give you two good reasons, son,"  
came her reply.

"One, you're 43, and two, you're the  
headmaster."

### F.R.L.2. WINNERS

.....  
Week No: 7. Club.  
Week No: 8. D. Routledge.  
Week No: 9. M. McConnell.  
Week No: 10. S. Harju.  
Week No: 11. B. Chadburn.  
Week No: 12. J. Taylor.  
Week No: 13. S. Harju.  
Week No: 14. M. Woodward.  
Week No: 13. J. Lawer.  
.....

VK2ENX-Tony, VK200-Ray.

11th January 1987:

VK2ENX-Tony (Co-ordinator)  
VK2MT-Rob, VK2EJH-Jim,  
VK2KSD-Stan from Berowra,  
VK2PZY-Dave, VK200-Ray,  
VK2BHD-John.

18th January 1987:

VK2PZY-Dave (Co-ordinator)  
VK2JTB-Tom, VK2NAK-Bill.

25th January 1987:

VK2ENX-Tony (Co-ordinator)  
VK2PHD-Ray, VK2BHD-John,  
VK2EMV-Morry.

Dont make expensive mistakes by buying blind  
What should you expect as a minimum when  
purchasing an IBM compatible?

- \* Dual speed 4.77MHz & 8MHz
- \* 8088-2 Processor
- \* Fully socketed Mother Board
- \* Socket provided for 8087 arithmetic chip
- \* Eight Expansion slots (2 should only be occupied)
- \* Extra sockets for ROM's
- \* Minimum 640K on Mother Board
- \* 135w Power Continue output
- \* Built in cooling fan
- \* Centronic parallel printer port
- \* 2 RS-232 serial Communication port ( you will probably  
end up with a Modem & Mouse or A/D card etc )
- \* Joystick Port
- \* Dual floppy Controller
- \* Battery backed clock/calendar
- \* Legal Bios eg. ERSO
- \* 2 Quality Floppy Japanese Disk Drives as used in Sperry,  
IBM, Olivetti etc .
- \* An on site Warranty & Insurance must be available from  
Computer Shield or Hills Industry. (Nationally protected).  
If these companies dont offer maintenance on the machine  
you are purchasing then forget it, Companies only offer  
maintenance contracts on machines they believe are reliable.

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# THE ILLAWARRA AMATEUR RADIO SOCIETY

## P.O.BOX. 1838. WOLLONGONG 2500. N.S.W.



**MEETINGS:** Are held every 2nd Tuesday of the Month except January, at 7.30.p.m. in the S.E.S. Headquarters, Montague street, North Wollongong.

**REPEATERS:** VK2RAW - 146.850. - (VOICE) VHF Mt Murry.  
 VK2RIL - 147.275. - (VOICE & R.T.T.Y) VHF Sublime Point.  
 VK2RUW - 438.225. - (VOICE) UHF Hill 60 Port Kembla.  
 VK2RIL - 438.725. - (VOICE & R.T.T.Y) UHF Sublime Point.

**BROADCAST:** On Sunday evening prior to the club meeting, at 7.00.p.m. R.T.T.Y. Mode, and at 7.15.p.m. on voice. Transmitted on 147.275.VHF, and relay on 3.562.Mhz. Callbacks will be taken after the voice broadcast.

**W.I.A. RELAY:** On 146.850. at 11.00.am. and at 7.30.p.m. each Sunday.

**CLUB - NETS:** On 3.562.Mhz. SSB on Sunday at 8.00.p.m. and a slow morse net on 28.440.Mhz. on Thursday evenings at 8.00.p.m.

**NEWSLETTER:** "THE PROPAGATOR", published monthly to reach FINANCIAL-MEMBERS in the week preceeding the club meeting. All articles, adds etc, to the editor must be in, or try, by the 3rd Tuesday each month.

**MEMBERSHIP:** The Secretary, I.A.R.S., P.O.Box.1838. Wollongong. 2500. Full membership is \$10 per annum; students & pensioners concessional members \$5 per annum.

**AWARDS:** The award of the Illawarra Amateur Radio Society is the LAWRENCE-HARGRAVE-AWARD. VK stations require 10 contacts with I.A.R.S. members. Overseas stations require 5 contacts with I.A.R.S. members. A contact with VK2AMW. is sufficient for the award. Band-details, date, frequency, station worked and \$2 or 4 I.R.C.'s. to THE AWARD-MANAGER, I.A.R.S., P.O.Box. 1838. WOLLONGONG.2500. No QSL-CARD is required.

**STORE:** The club store operates at each club meeting. by COMMITTEE-MEMBERS.

### COMMITTEE:

PRESIDENT	VK2OB - KEITH CURLE. 24. Beach Drv, Woonona.
VICE-PRESIDENT	VK2DYU- BILL CHADBURN. 45. Beltana Ave, Dapto.
SECRETARY	VK2EJH- JIM HAYES. 1 Kathleen Cres, Woonona.
TREASURER	VK2VAV-YKQ-DAVE HENDERSON.8.Gladstone st.Bellambi.
AUDITOR	VK2ZHU- GEOFF CUTHBERT. 1 Nioka Ave, Kieraville.

**GENERAL-COMMITTEE:** VK2EXN- IAN CALLCOTT. VK2ENX- TONY MOWBRAY. VK2MT- ROB McKNIGHT.  
 VK2ALK- LES KIRCHMAJER. VK2DWR- DAVE ROUTLEDGE. VK2JAM- PETER WOODS.  
 VK2OE- WOJCIECH TOMCZYK. VK2BMH- MARTIN HUTCHINGS.

**REPEATER - CHAIRMAN:** VK2CAG - GRAEME DOWSE.

**REPEATER - COMMITTEE:** VK2EXN - IAN CALLCOTT. VK2EMV - MORRY.v.d.VORSTENBOSCH.

VK2DFK- MIKE KEECH. VK2MT- ROB McKNIGHT. VK2JAM- PETER WOODS. VK2EZY- DAVE COLLESS.

**QSL-CARD'S OUT :** VK2EXN - IAN CALLCOTT.

**QSL-CARD'S IN :** VK2DWR - DAVE ROUTLEDGE.

**E.M.E. CO-ORDINATOR:** VK2ALU - LYLE PATISON.

**PUBLICITY - OFFICER:** VK2VAV/YKQ - DAVE HENDERSON

**BROADCAST - OFFICER:** VK2ENX - TONY MOWBRAY.

**CARTOONIST :** VK2AXI - BRIAN WADE.

**PROPAGATOR-EDITORS :** VK2PZY - DAVE CAPON. VK2EMV-MORRY.v.d.VORSTENBOSCH.

**PRINTERS :** VK2DFK - MIKE KEECH. AND POSTED BY VK2EJH-JIM HAYES.

**LIFE - MEMBERS :** VK2CAG-GRAEME DOWSE. VK2OB-KEITH CURLE.VK2ALU-LYLE PATISON

### SUNDAY - EVENING - CLUB-NET - ROSTER:

FIRST SUNDAY OF THE MONTH :	VK2MT - ROB McKNIGHT.
2 nd SUNDAY OF THE MONTH :	VK2ENX- TONY MOWBRAY.
3 rd SUNDAY OF THE MONTH :	VK2PZY- DAVE CAPON.
4 th SUNDAY OF THE MONTH :	VK2DWR- DAVE ROUTLEDGE.
5 th SUNDAY OF THE MONTH :	VK2EBI- KEVIN MURPHY.