

IARS THE PROPAGATOR IARS

ILLAWARRA AMATEUR RADIO SOC. INC.

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOC. INC.
VOLUME - 89, NUMBER : 4
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.

NEW TIME SLOT

At the last club monthly meeting held in the S.E.S. Headquarters, the large amount of 30 members attended.

Items that were discussed at this meeting was as follows, the receiving of a Q.S.L. card from a Scout J.O.T.A, nothing unusual about that you would suppose, until you realise that this was a S.L. card from a J.O.T.A. held in the year 1970. There must be a quicker way than Cobb and company to shift the mail in this modern day and age.

Another item to be discussed was the moving

of the clubs broadcast to a new time slot of 6-45 pm and the voice direct at 7pm. This was met by most of those present with a deciding yes in favour of the new time slot. So dont forget to listen in a bit earlier in the future lads.

Another working bee for Mount Murray repeater for around the middle of may was also discussed, and John VK2XGJ has given more details on this in his repeater report in this issue.

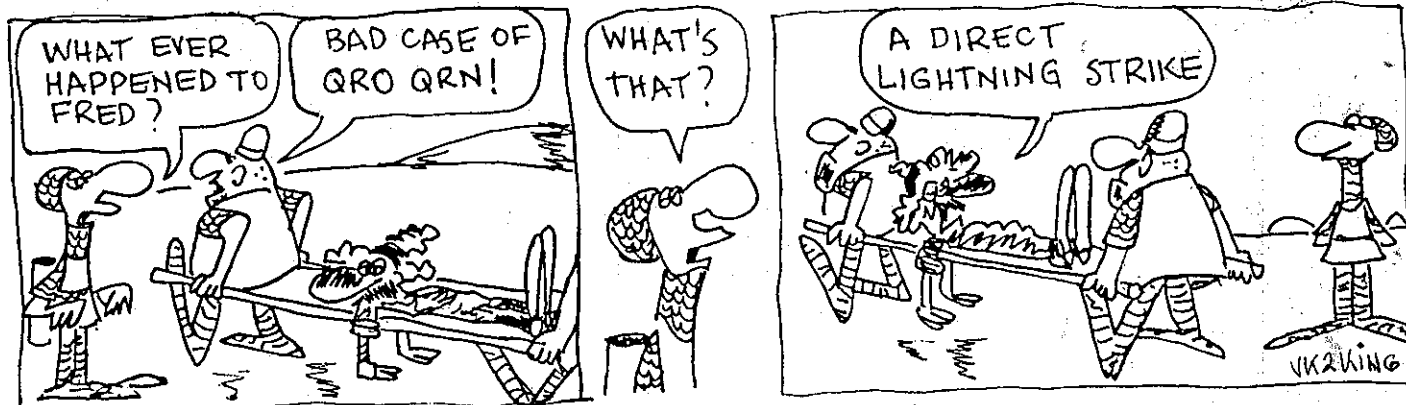
Keith VK2OB brought in his I.B.M. compatable

computer and proceeded to give a demonstration of a programme he had devised.

Using dbase, he has designed a programme for selecting questions for a D.O.C. Exam test, and by using this system the same question will not be repeated for a number of exams.

The committee still seem to have trouble finding a guest speaker for our monthly meetings, and this I think is reflected by the amount of members who used to attend meetings fairly regulary but dont anymore.

The meeting closed with the usual rag chew and the adjournment to the canteen for the usual tea and bikkies.



THE ANTENNA WITH NO HOLES TO DRILL

This project came about because, of a desire not to drill holes in or, in any way modify a new magna in order to attach an antenna. Gutter mounting is difficult because the gutter strip is a rubber compound, and a ground wire would be necessary to ground the mounting. It was time to put on the thinking cap!

I had seen many of the new through glass antennas that are used for F.M. broadcast reception and for cellular phones, but how do they perform?

I decided to try an inductance link first, and if that did not work, to try a capacitance link. I used a pre wound coil of 125 Ohms and stripped windings off until it came down to about 50 Ohms. This I thought would give me some protection from any accidental loss of the antenna part, acting as a dummy load. The coil and former came from a pot core; the type used for tuned filters. I separated the ferrite core, epoxied half the core with the coil into a plastic housing and the other half with a piece of stainless steel welding rod pushed through the centre hole into a similar housing as per figure 1.

I used a quarter wave length of welding rod, mounted the two pieces either side of the rear window, and went mobile.

The results were very encouraging the signals were not very strong and I had to use at least 25 watts to fully quiet the Heathcote repeater. Because the V.S.W.R. is a function of the feed line and the coil in this case, an S.W.R. of 1.4 to 1 was recorded whether the antenna part was attached or not.

This set me thinking that there was enough capacitance to require a longer antenna part, so I used the full length of welding rod, and tried again. This

time the results were very much better, but still not great.

By this time I had purchased some ferrite core transformers, that have a multi tapped coil with one of the tapings at 67 Ohms. When connected to my 2 metre transceiver the V.S.W.R. was 1.2 to 1 across the band, so I epoxied this transformer into a top from a shampoo container, with a BNC connector in place. This set up transfers R.F. to the outer antenna very well, but I have found some modifications will improve performance.

The transformer has a metal plate top and bottom, with the ferrite sandwiched between. Remove one of the plates by extracting

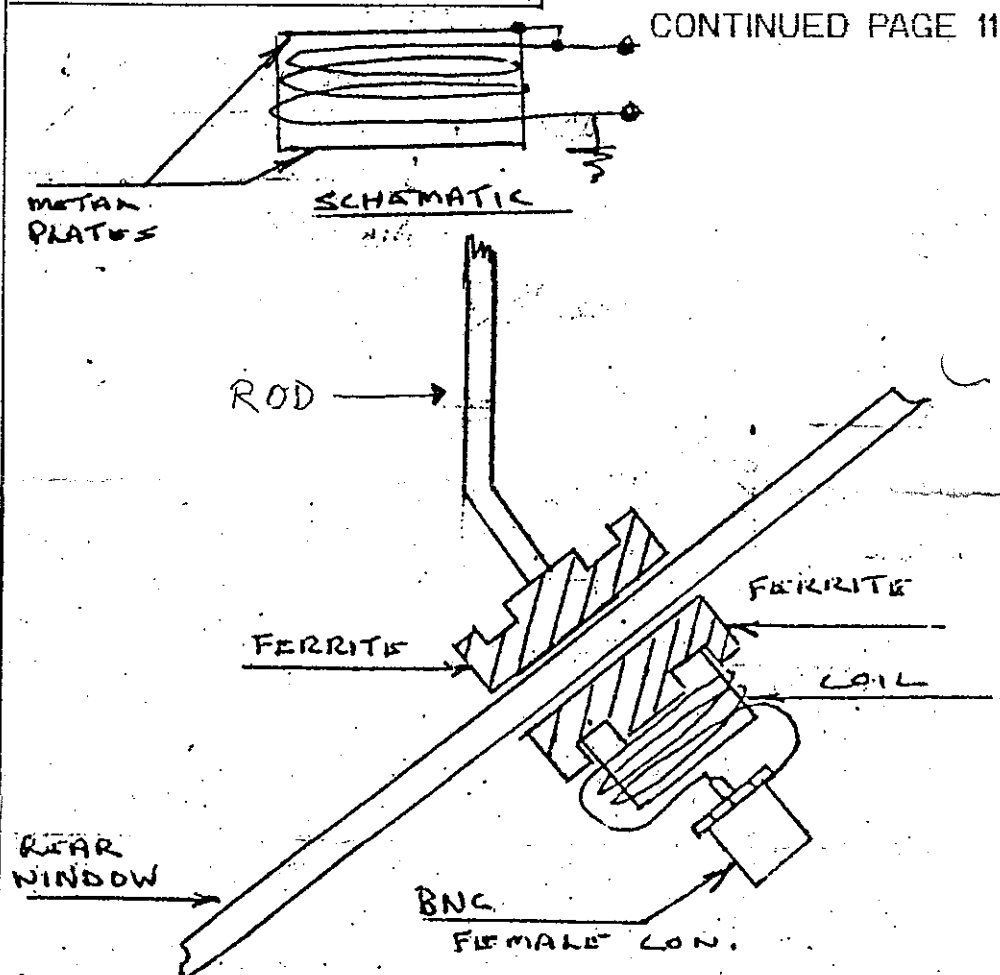


FIGURE 1

REPEATER REPORT

Not a lot to report this month as last month's report took most of the info. Peter VK2KHE and I, carried out tests on VK2RAW on the Sunday morning B/cast a couple of weeks ago and as such Graeme VK2CAG has suggested a notch filter at 147.575 might solve most of our packet break-thru. Hopefully that piece of gear might be installed by the time you read this report. Graeme will also have a look at VK2RUW, as from his memory, it has never been tuned since its installation on 26-06-82, so she has given excellent service.

The refurbished antenna for VK2RAW is living at VK2XLA's QTH ready for its next trip 'up the hill'. The Working Bee for the installing of VK2RAW's antenna will be on the Steel-works 38 Hour roster day in May, it will be on Friday 19th May and anyone needing guidance into the site, meet us opposite the Albion Park R.S.L. at 1000K and we will show you the way. If you have any old paint brushes, wire brushes etc bring them along as we will be doing some de-rusting of the mast/jib and giving it a much needed face-lift. The mast might be left down overnite, depending on conditions at the end of the day and raised on the Saturday. At the same time a new antenna will be installed on VK2RAW packet for a lift in sigs.

73, John de VK2XGj.

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MODULE. TYPE CL 8963.
CONTACT DALE HUGHES
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F.R.L.5.

F.R.L.S. LUCKY WINNERS:-
 <><><><><><><><><><>
 Week No: 21. G. Mueller
 Week No: 22. W. Chadburn
 Week No: 23.

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FLEXIBLE DISK CARE

Minimizing media wear is critical to the reliability of flexible disk drives. For the reason of extensive testing and control over its selection of media for the use of 5.1/4-inch and 8-inch, double-sided, double-density flexible disk drives.

It is a common misconception that a flexible disk will last forever. When the medium fails, critical data can be lost. You might blame the disk drive. You could point the finger at medium. More likely you should blame yourself. Proper media handling, storage and periodic replacement are critical.

The best way to optimize your success with flexible disks is to treat them carefully. The magnetic coating on the surface of the disk is only 100 microinches thick, so the smallest scratch can ruin it.

A good rule of thumb is to treat your disk as you would a valuable record album. Here are some DOs and DON'Ts to protect your disk.

DO return disk to storage envelope when not in use - if the disk is laid on a desk unprotected, it will collect dust. This is the most common cause of media failure. Also the disk is not a frisbee; don't throw it around.

DO remove disk from drive when not in use. this especially important on eight-inch media because the disk continues to rotate even

if it is not being accessed. This rotation causes wear due to particles trapped in the jacket.

DO operate your system in a clean environment - a dusty environment is deadly to a floppy disk, causing both data errors and premature wearout. The most common contaminants are dust, smoke, ashes, erasure crumbs, bread crumbs and chemical vapours.

DO maintain proper temperature and humidity - the proper operating range is 10 to 40C (50 to 104F) and 20% to 80% relative humidity. Variations in temperature and humidity cause the disk to expand, which moves the head off track. High humidity reduces wear. Low humidity allows static build up which attracts dust.

DON'T touch the magnetic surface-fingerprints are killers, particularly on the double-sided disks. The thickness of a fingerprint is enough to lift the head off the disk and cause errors.

DON'T damage the disk - don't bend, fold, staple or mutilate the disk in any way. Label the disk with a soft felt tip pen, not a ball point.

DON'T try to clean a disk - the inside surface of the disk jacket is covered with a special material that cleans the disk as it rotates. Any other cleaning method may cause solvent damage or scratches.

Besides proper handling, there are two other essential procedures you should follow for successful system operation.

First, always make a backup copy of critical data. Since flexible disk are susceptible to damage and wearout, it is important to have a backup so you won't lose your data.

The second procedure is to replace disk before they approach wearout. Because a flexible disk is in direct contact with the read/write heads, wear is inevitable. If the medium is used beyond the recommended life span for a given application, it can fail.

The table below gives some recommended replacement times for double-sided media in different applications. Single-sided disks generally wear longer (when in doubt, be conservative).

Recommended replacement frequency for double-sided flexible disk media is:

Usage	Example	Media Replacement Frequency
<20 minutes/day	Disc backup, software distribution	1 year
4 hours/day occasional access	Program storage or file access	6 months
4 hours/day moderate access	Business application some use of data base management	4 months
8 hours/day moderate access	Business application some use of data base management	2 months

A LOOK AT ELECTRICAL SAFETY PART 2

It has already been pointed out that the risk of electric shock from "all insulated" equipment is inherently small. The now obsolete mains operated valve mantel radio in a bakelite case, however, cannot be regarded as "all-insulated" if it has an aerial lead dangling out of the rear. This is because in most receivers of this type the aerial lead has a direct current path through the primary of the aerial coil to the chassis. It would be interesting to know why the manufacturers of these receivers did not fit a high voltage capacitor of not more than 0.025 microfarad in series with the aerial lead, as required for all receivers by the SAA Radio Code in force at the time.

Whilst not interfering with radio reception, a capacitor of this size would limit the 50Hz current which could reach the aerial lead due to a breakdown of insulation between the mains and the chassis, to 2 milliamps.

Note - The present SAA A.T.S. AS 3159 (1972) permits the aerial terminal to have a direct current path to the chassis if the equipment is provided with earthing facilities, and has an approved double wound mains transformer (see Clause 2.7 of this A.T.S. for full requirement).

Most receivers of this era were also fitted with a "radio

earth" lead for the improvement of radio reception. If this "radio earth" is directly connected to the chassis, it too would preclude the receiver from being regarded as "all-insulated." Since the "radio earth" is seldom used on this type of receiver, the

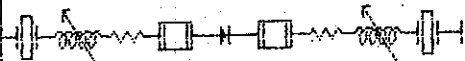
be made by means of the mains power lead, and the power outlet from which the equipment receives its power supply. The "radio earth" (or "functional earth" as it is now called by the SAA) should not be used for this purpose.

If equipment with exposed metal (as defined by SAA A.T.S. C 100) is only fitted with a two core mains power lead, this is replaced with a three core flex of the correct type provide adequate earthing of the exposed metal of the equipment (unless, of course, the exposed metal can be classed as "doubly insulated"). Should a three core flex be already fitted, a check is made to see that the insulation of the earthing conductor is of the correct colour (green or a green/yellow

striped pattern) and that the connections to the plug top and to the equipment have been made correctly and in a workmanlike manner, as outlined previously.

Fortunately there is very little radio, television and other electronic equipment in use in Australia today which does not have a mains power transformer, thus avoiding the necessity for a direct electrical connection between the mains and the chassis. Readers who do handle equipment which has a direct electrical connection between its chassis and

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simplest procedure is often to remove it altogether.

It is important to note that the earthing connection required for electrical safety should

CONTINUED NEXT PAGE

DOTC AND TVI COMPLAINTS

DoTC and TVI Complaints

Proposed Handling of TVI Complaints by the DoTC

The Federal Government plans to charge Australian's wanting to receive a picture on their television sets or clear radio broadcasts, free from harmful interference.

The Professional Radio and Electronics Institute of Australia (PREIA) spokesman, John O'Brien, said the move was the latest in the government's cost recovery policy for the public sector. The decision, taken without consultation with the union in September, was not in the public interest, and would hit the elderly, the needy and ordinary family who rely on television as a major source of entertainment.

The DoTC was considering a charge of \$50 before it investigates the 20,000 interference complaints a year.

It was also moving, to amend the broadcasting legislation to remove it's obligation to conduct interference investigations.

The DoTC investigators who track down and eliminate sources of interference said they were horrified at the decision which was taken without consul-

tation with the PREIA. Mr O'Brien said "a lot of interference problems can be traced to the fact that the government has not used it's powers under the Radiocommunications Act of 1983 to set manufacturing technical standards for TV and radio receivers."

"In the second reading speech of the Radiocommunications Bill in Federal Parliament substantial savings were foreshadowed for the government through the introduction of technical standards under the Act which would lessen interference."

"An unsuspecting public is suffering increased levels of interference because their home entertainment equipment is sub-standard."

Mr O'Brien said technical and electronic standards are envisaged in the Act were being adopted in the United States, Canada, Britain and several other European countries.

The Radiocommunications Act also gave DoTC the power to control emissions in the radio spectrum from a vast range of sources including power lines, thermostats, electric motors and home computers which could all cause interference, he said.

It was suffered not only by radio and TV



★ "Well, son, they call English the mother tongue because father rarely gets a chance to use it!"



"Now you pick the best picture, Ma'am, and I'll stop it on that one!"

receivers, but could also cause havoc to public address systems, electronic organs, videorecorders, stereo amplifiers and even heart pacemakers.

Extract from VK3 Broadcast

VK2WI Broadcast, 8th Jan 1989. Copyright 1989 WIA (NSW) & contributors.

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ELECTRICAL SAFETY

CONTINUED

of electrical safety, here are some points and suggestions worth considering.

1. Of the forty electrical fatalities which occurred in 1969 in N.S.W. over half of these were associated with cords and their fittings.
2. In at least one Australian State it is necessary to hold a "Cords and Plugs" licence if your employment requires you to fit cords and plugs to mains operated equipment.

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3. Always check any electrical equipment you repair for safety before returning it to the user. If you use job cards, have a place for this to be recorded.

4. The risk of electric shock is not the only hazard associated with the use of electrical equipment.

5. Familiarise yourself with the recognised standards of safety, including those set out in the relevant SAA publications.

6. Remember that the safest way to isolate portable equipment from the mains is to remove the plug from the mains outlet. Turning equipment off by its internal switch can be a trap! Although the equipment appears to be "dead", the terminals of this switch at least are still very much alive! Also, unless the internal switch is of the double pole type, there is no guarantee that it will break the "active" conductor.

7. Make sure your work area is as safe as possible. Wooden benches are safer than metal, and concrete floors can be covered with rubber matting. The SAA Code for safety of Electronic Equipment AS 1188 provides valuable advice on safe working practices.

In conclusion, I must emphasise that this article is not intended to provide the reader with a set of standards of electrical safety.

With electronic equipment there is unfortunately no sharp

dividing line between what is safe and what is unsafe, and the responsibility for deciding just where to draw this line must ultimately rest with the individual manufacturer or serviceman. Certainly the SAA publications, such as A.T.S. AS 3159 and C 100 can provide a useful set of minimum standards, particularly for the manufacturer.

[illegible]

In the vast majority of electrocutions and severe electric shocks, the victim has accidentally formed a path between mains active and earth, rather than between active and neutral. Because of this, a very worthwhile contribution to electrical safety is offered by the devices known as "core balance relays" or "earth fault detectors". Basically these devices operate by monitoring the currents flowing in the active and neutral lines, which should equal if there is no significant leakage to earth. If the difference between the two currents becomes significant, the device cuts off the supply. Normally the tripping current imbalance level is set at 30mA, which is regarded as the maximum safe value allowable.

There are a number of firms making the devices, which are available in either "fixed" form for incorporation into switchboards or meter boxes (either single or three phase), or "portable" form for use with power tools and similar equipment.

CARPHONE OPERATION

Changes to Law on Use of Car Phones while Mobile The NSW State Government made an announcement on April 7th on the use of Car Phones by the driver of a motor vehicle while it is moving. The changes to the law will become effective on 1st July with heavy fines imposed on anyone convicted.

It can be assumed from this announcement that similar conditions will apply to the use of a hand-held microphone on a two-way system, and this will include Amateur Radio operation. The Minister, in making the statement, indicated that it was the behaviour and apparent lack of control of the vehicle by users of "car phones" which brought about the changes.

Taken from VK2WI Broad-
cast, 9th Apr 1989.

ON THE NET

2/4/89 Were: -

VK2MT-Rob, Co-ordinator
VK2EBI-Kevin, VK2KHE-
Peter, VK2NNJ-John,
VK2EMV-Morry.

9/4/89, Club, b/cast on
R.T.T.Y. were on 80
meters VK2AXI-Brian, and
on 2 metre VK2KHE-
Peter Co-ordinator,
VK2DTC-Dave, VK2XGJ-
John, VK2EMV-Morry, Call
backs for the voice were
on 80 meters VK2JBS-Bill
VK2ENX-Tony, and call/b
on 146.850 were VK2HQ-
Frank, VK2EMV-Morry,
VK2MT/P-Rob, and on 70
were VK2XGJ-John,
VK2EXN-Ian!.....

16/4/89
VK2DTC-Dave, Co-ordinate
VK2EMV-Morry, VK2EBI-
Kevin, VK2JBS-Bill.....
<><><><><><><><><><>

WANTED

WANTED WANTED WANTED

SMALL COAXIAL RELAY.

Relay made by Magnetic Devices Ltd.(stamped on body of relay).
Relay does not have coax socket r.f. connections, but has a short pin and removable cover at each of the three coax cable attachment points. - suitable for soldered connection of RG58 coax

cable a each of the three points.
Operating solenoid Voltage - 12 V.D.C. Relay may have designation 951/12 on moving element of solenoid.

Overall dimensions approx
50mm long x 20mm wide
and 30mm high (cover
operating solenoid).

A number of these relays were obtained some time ago by various Club members either through Club store or from "Fred's".

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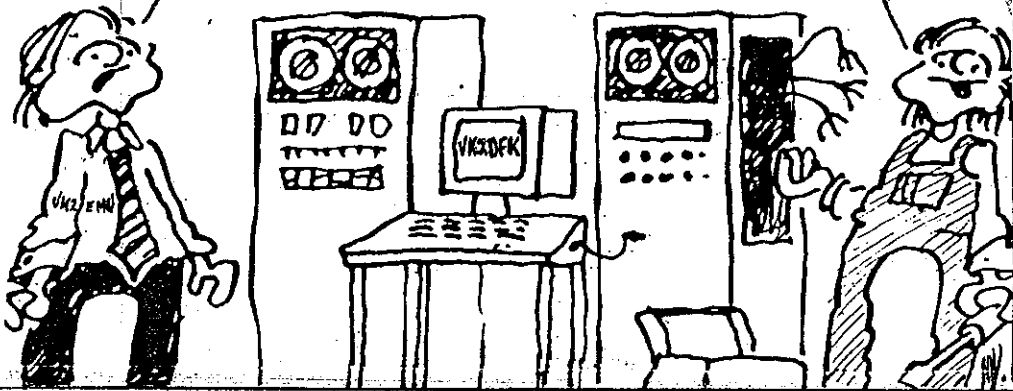
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FIGURED OUT WHAT'S
WRONG WITH
IT?

YEAH, IT'S IN
LOVE WITH THE
PHOTOCOPIER



THE ANTENNA WITH NO HOLES TO DRILL

CONTINUED

the four screws and carefully break away the ferrite cap, then replace the metal plate and replace the four screws. This will allow an air space to be formed between the core and the plate.

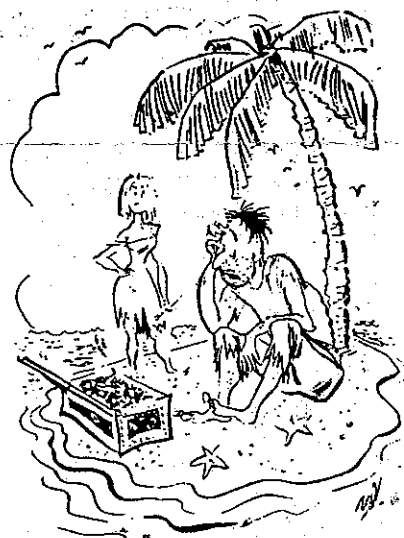
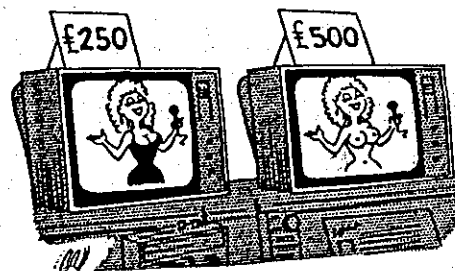
The welding rod that I used was 75cm long, and I found that it was necessary to bend it so that the rod is vertical when attached to the glass, also it is better to use a brass plate instead of the ferrite at the base of the welding rod. (see figure 2) It is very important to ground the coax outer to body of the vehicle, and I used scotch mounting squares to attach the parts to the glass. Happy experimenting.

VK2VH Brian Sharp.
taken from Lyrebird Mgz.
April 1989.

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"I can't believe it—a whole trunk full of radio parts, but not a single piece of wire."

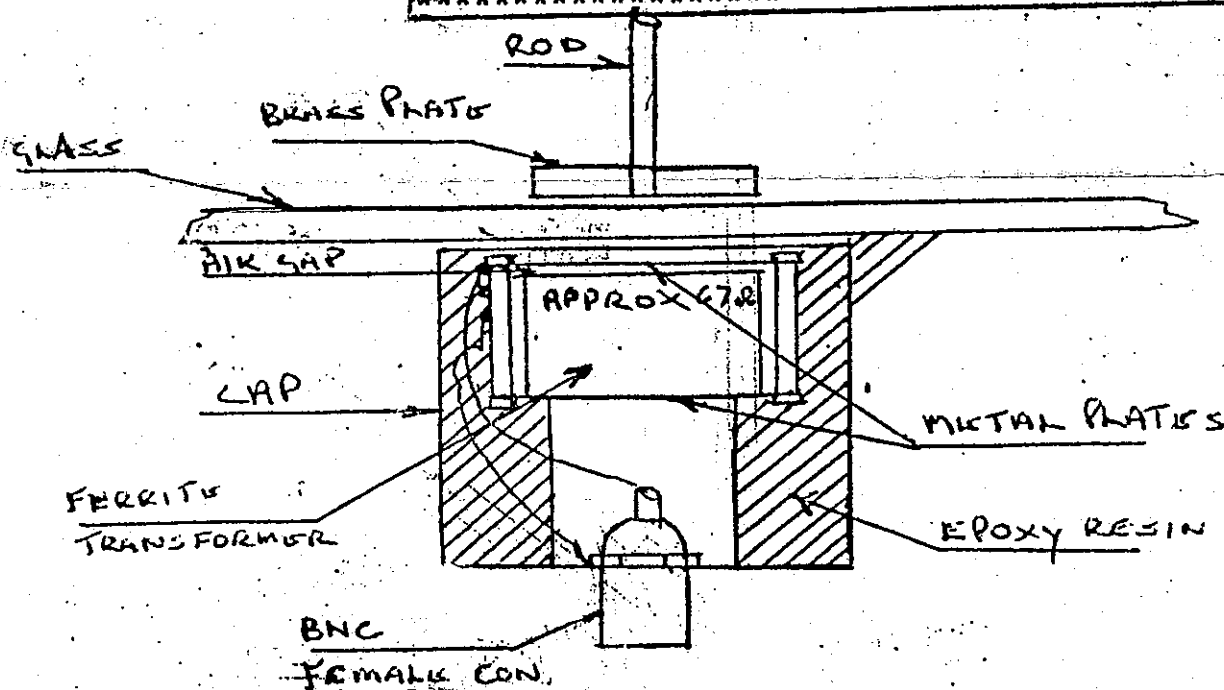


FIGURE 2

THE ILLAWARRA AMATEUR RADIO SOCIETY. INC.

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

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

REPEATERS:

VK2RAW - 146.850. - (VOICE)	VHF Mt Murray.
VK2RAW - 147.575. - (PACKET)	VHF Mt Murray.
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 6.45 pm. R.T.T.Y. Mode Transmitted on 147.275.VHF, and relay on 3.562.Mhz. +/- QRM. Callbacks taken immediately afterwards. The voice broadcast will be held straight after the WIA Broadcast on 146.850.Mhz < VK2RAW > and 3.562.Mhz +/- QRM.

W.I.A. RELAY: On 146.850. at 10.45.am. and at 7.15.pm. each Sunday.

CLUB - NETS: On 3.562.Mhz, SSB +/- QRM on Sunday at 8.00.pm.

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. Inc, P.O.Box.1838. Wollongong. 2500. Full membership is \$12 per annum; students & pensioners concessional members \$9 per annum.

AWARDS: The Award of the Illawarra Amateur Radio Society. Inc. 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 2 I.R.C.'s to THE AWARD-MANAGER, I.A.R.S. Inc, 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:	VK2DYU- BILL CHADBURN. 45. Beltana Ave, Dapto.
VICE-PRESIDENT:	VK2OB - KEITH CURLE. 24. Beach Drv, Woonona.
SECRETARY:	VK2TPH- PHILL HOWCHIN. 12. Mawarra Ave, Dapto.
TREASURER:	VK2DMR- DENIS MCKAY. 17 Doncaster street Corrimal.

GENERAL - COMMITTEE: VK2BIT - Peter Woods, VK2XCC - Ray Ball, VK2FPN - Peter.

REPEATER - CHAIRMAN: VK2XGJ - JOHN SIMON.

REPEATER - COMMITTEE: VK2CAG - GRAEME DOWSE, *VK2EXN - IAN CALLCOTT, VK2KHE - Peter Tomlin, VK2FPN - Peter, *VK2EMV - MORRY .v.d. VORSTENBOSCH, VK2MT-ROB-McKNIGHT, VK2BIT-PETER WOODS, VK2FCP-FRED BROWN.

QSL-CARD'S OUT : VK2IU - RAFFAEL BUONO.

QSL-CARD'S IN : VK2BIT - PETER WOODS.

PUBLICITY - OFFICER: - (STILL LOOKING FOR ONE) (?)

BROADCAST - OFFICER: VK2KHE - PETER TOMLIN.

CARTOONIST : VK2AXI - BRIAN WADE.

PROPAGATOR-EDITORS : VK2JT - JOCK TAYLOR, VK2EMV - MORRY.v.d.VORSTENBOSCH, VK2DTC - DAVE CAPON.

PRINTERS : VK2DFK - MIKE KEECH. AND POSTED BY VK2BIT - PETER WOODS.

SOCIAL-DIRECTOR : VK2XCC/PHD - RAY BALL. D.O.C.LIASION VK2OB - KEITH CURLE.

CANTEEN-MANAGER : VK2DYU - BILL CHADBURN.

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

SUNDAY - EVENING - CLUB-NET - ROSTER: STARTING AT 8.00.pm.

8.00.pm. FIRST SUNDAY OF THE MONTH : VK2MT - ROB McKNIGHT.

2nd SUNDAY OF THE MONTH : VK2ENX - TONY MOWBRAY.

3rd SUNDAY OF THE MONTH : VK2DTC - DAVE CAPON.

4th SUNDAY OF THE MONTH : VK2PHD - RAY BALL.

5th SUNDAY OF THE MONTH : VK2EBI - KEVIN MURPHY.

And on stand-by : VK2EMV after NOTIFICATION ONLY!