

IARS

THE PROPAGATOR

IARS

ILLAWARRA AMATEUR RADIO SOC. INC.

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOC. INC.
 VOLUME - 89 , NUMBER : 2 MARCH 1989.
 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 MEETING'S .

WORKING BEE

Well another meeting went by with a very poor attendance of 26 members attending . The subject was mainly trying to get members interested in doing a little for the club in respect of helping out in repeater maintenance .

Like giving a hand with equipment to take up and test antennas and also trying to look for the problems we have been having with interference of packet break thru in the system I know that we receive a lot of complaints about it , but there is never any response from the members when it comes to volunteering in taking part or participating in this project. It is always left to the same few to do things for our club, its the old story, NO one will have a go at it . It is always left to the same old team , so come on fellow members lets see a bit of response from you and see what you can do for the club and don't leave

it up to the same ones year in and year out, as it is for your benefit to keep the best repeaters on the air waves . We hope to get a working bee going for the 12th of March 1989 and hope to see all available members who can participate on this day.

Give it your support as it is in your interest and for the benefit of your club members and mates, and in helping you will have

the feeling of assisting your club and perhaps even get that proud feeling of giving assistance when urgently needed.

There were a few volunteers that were interested and of course for those what would like to know what to bring with them , John VK2XGJ will have an article in this supplement . So please members give your support and be there to help out..... tnx.

We also had some new antennas for the upgrade of the repeaters , thanks to Regs VK2EMI and hope to have them installed as well. VK2MT and VK2BIT are not sure who else was there to help them instal the new antenna at Sublime point repeater and was completed by midday on Saturday the 18th February 1989. And the boy's gave it a good work out on the Sunday when travelling to the Gosford field day , and had a very good coverage all the way . So with a bit of help on Mt Murray we should have it back in a good state and hope to have it back to the good standard that 146.850 VK2RAW is known for.....

After the meeting we had our usual cuppa with a nice biscuit and the usual rag chew . It was also nice to see a visitor there which always comes up on the call/back on broadcast yours truly VK2ZNS was good to see you Noel

WELCOME to the Club.....

SEMI CONDUCTOR

THEORY 8

Common Collector Amplifier. The third connection used for transistors is the common collector connection as shown in fig 16. In this connection the signal is applied to the base, or between the base and the collector. When the input signal voltage is going more positive, the reverse bias of the collector is increased. The action of the input signal also acts to oppose Vee, which tends to reduce Veb, the emitter to base bias. This tends to reduce I_e , which actually makes the emitter voltage increase because the voltage drop $I_e R_L$ across the load decreases. The emitter to ground voltage is said to "follow" the input signal, and therefore the common collector circuit. The circuit is often referred to as an emitter follower. The output voltage will be less than the input by the amount of forward bias drop (emitter to base). Therefore, the voltage gain is always less than 1. The circuit does have high current gain and high power gain, but more importantly it has high input resistance and very low output resistance.

The principle application of the common collector amplifier is in circuits in which a high impedance must be

coupled to a low impedance input or load.

Transistor characteristics. Relatively complete information on the performance of a transistor can be presented by a curve or curves.

A transistor has four basic quantities of interest; they are I_V , or current and voltage quantities: the voltage and current at the input

terminals and the voltage and current at the output terminals. To show how these quantities are related, two complete sets of curves are required, one for the input and one for the output. The required two sets of curves must be plotted for the connection used: common emitter, common base or common collector. However, the common emitter connection curves by themselves generally give sufficient information on the performance of the transistor, and they are the ones most often supplied by the manufacturer.

That concludes our brief look at diodes and transistors. I hope these texts have been of use to you. For further information on this subject, there are many excellent books available from your local book shops, electronics stores and libraries. Till next time... 73's DE Peter. VK2KHE.

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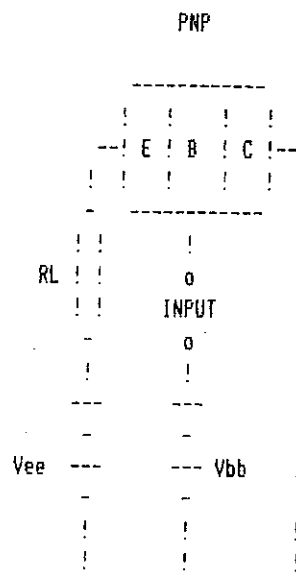


FIG 16

VK2EMV-Morry, VK2DFL-
Dave.
5 - FEB - 1989.
VK2EMV-Morry Co-ordinat
VK2EBI-Kevin, VK2DFL-
Dave, VK2ENX-Tony,
VK2PHD-Ray, VK2JNC-Neil.
12 - FEB - 1989.
VK2ENX-Tony Co-ordinator
VK2EMV-Morry, VK2EBI-

22 - JAN - 1989.
VK2DTC-Dave Co-ordinator
VK2DFL-Dave, VK2PHD-Ray,
VK2EMV-Morry.
29 - JAN - 1989.
VK2PHD-Ray Co-ordinator,

Kevin, VK2JNC-Neil,
VK2DFL-Dave, VK2PHD-Ray,
VK2DTC-Dave, VK2BIT-
Peter.

19 - FEB - 1989.
VK2EBI-Kevin Co-ordinat
VK2AXI-Brian, VK2EMV-
Morry, VK2DTC-Dave.

VK2AMW CLUB R.T.T.Y.C/B
On 80 METERS were
VK2AXI-Brian Yanco. and
VK2EMV-Morrie. and on two
meters were:-
VK2KHE-Peter, VK2BIT-
Peter, VK2KCV-Pat,
VK2EMV-Morrie. and on
voice call backs were:-
80 meters VK2ENX-Tony,
VK2BIT-Peter. and on two
meter were:-

meter were:
VK2KHE-Peter, VK2DFL-Dave,
VK2ZNS-Noel, VK2JBS-Bill, VK2EJH-Jim,
VK2KCV-Pat, VK2EMV-Morry
and on 70 cm were:-
VK2EXN-Ian, VK2XGJ-John.
Thanks to all for
participating in the
call backs and good to
see a good respond, it
makes it worth while for
the ones involved in
giving you this
broadcast Thanks to the
broadcast officer and
the ones involved in
relaying the broadcast
on the frequencies on 2
and 80 meters very much
appreciated.....

For those who are unaware of the time slot for the 80 meter Club Net it is now on the new time slot of 8.p.m 20.00.hours on 3.562.Mhz so hope to see a few more new faces there even if it is only for 15 min or so . As this is the only communications available for the traveler so give it your support.....

F.R.L.S. LUCKY WINNERS:-
Week No: 11. N. DEITCH.
Week No: 12. C. PROCTOR.
Week No: 13. G. HOOD.
Week No: 14. V. HEE.
Week No: 15. G. MUELLER.

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TOWER INSURANCE

WARNING

Have you checked your house building insurance contract lately to see if your radio mast is covered. If not you may be in for a shock.!!

Having read my policy with the Commonwealth Bank it said that damage caused by impact of radio mast or aerial is covered as well there is a personal liability coverage of up to 5 million. It did go on to say damage to mast or aerial itself would NOT be covered.

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Wayne Newport
VK2KWN

Seems simple enough. Well, I enquired at my local branch before putting in my Nally tower to see if I could get the tower itself covered as it plus some antennae added up to a few dollars.

I was told probably yes but I would hve to put in an addition form when said tower was in place.

Well, tower in place I did as the lady said. A week or so later in comes the mail with a certificate of Insurance stating that 1/ the tower was not covered 2/ damage by tower etc would NOT be covered & 3/ personal injury was not covered as well. and to top it off right on Xmas (Friday nite 23rd). I was not impressed.

The next day the bank was open (28th Dec) I went on the rampage! The result is that the bank do not consider an amateur radio mast to be a normal domestic item & will not even consider covering same.

Now, you might think you are safe because you didn't tell the bank abt your tower. Not so.!!! Make a claim and you will be told that they will refuse the claim.

Consider this. Your tower falls over in a freak storm and lands on someone. How many million are the going to sue you for & you without any insurance. Certainly worried me.!!

SO CHECK THAT POLICY..

73'S & Happy & safe New Year. de Mike VK3PS
taken from packet BBS.

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JEF VK2EWJ
on(044)-430070

A LOOK AT

ELECTRICAL SAFETY PART 1

Sooner or later most electronics enthusiasts work with equipment operating from the power mains, which in Australia are generally of 240V AC - a potentially lethal source. In order to operate and work on such equipment with minimum risk, it is important that you understand and observe the basic essentials of electrical safety.

by P. EMERY, Dip.E.E.*

It is the purpose of this article to acquaint the reader with some of the more important safety relating to radio and television receivers and other electronic equipment.

In all cases, it will be assumed that the supply is the usual single phase 240 Volt 50 Hertz alternating current mains common throughout most of Australia. One line of this supply is connected to the general mass of earth at its source, and is called the "neutral." The other line, which is maintained at 240 Volts above the neutral and earth potential, is called the "active."

It will also be assumed that the equipment referred to is connected to the mains supply by means of a "General Purpose Outlet"

This is the technical name given to a three pin power point into which radios, TV receivers, and other

electrically operated appliances are plugged in order to obtain the power to operate them. For the rest of this article a General Purpose Outlet will be referred to simply as a "power outlet."

One real problem associated with electrical safety is the fact that it is virtually impossible to make any electrical equipment which is operated from 240 Volts AC mains safe under all possible conditions of use. People have been known to do such foolish things as using an electric shaver whilst sitting in the bath!

This means that someone must accept the responsibility for setting minimum standards of safety, and in Australia this is usually the SAA (standards Association of Australia). For electronic equipment they have published A.T.S. (Approvals and Test Specification) AS 3159, "Electronic Sound and Vision Equipment" which must be read in conjunction with A.T.S. C 100, "Definitions and General Requirements for Electrical Materials and Equipment."

Some suggestions based on these publications have been made in this article, but the reader would need to refer to the original SAA publications to find out the full requirements.

It must also be remembered that the minimum

safety requirements are not the same in all countries, and even varies from state to state within Australia. Accordingly the reader should be sure to comply with any local statutory and other requirements.

Perhaps as good a starting point as any would be to examine the immediate cause of most electrical accidents.

In almost all electrical equipment the internal wiring and circuitry must be insulated from the chassis (or frame) and other metal to enable it to operate. This insulation is called the "functional insulation" because it is necessary to allow the equipment to function in the desired manner. It is also normally used to prevent the mains current from reaching the exposed metal or case, and ultimately the user.

Unfortunately there are times when this functional insulation fails partially or completely, and because the equipment sometimes continues to operate, the user may be unaware of the fault. If the equipment has exposed metal, the mains current may now reach the user, and if he is in contact with an earthed medium such as damp ground, waterpiping, etc., some of the mains current can now return to the source of the supply through the user's body, and the general mass of earth.

If the user is fortunate, his reflex action will cause him to release the faulty equipment, but if he is unfortunate it will

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ELECTRICAL

SAFETY 1

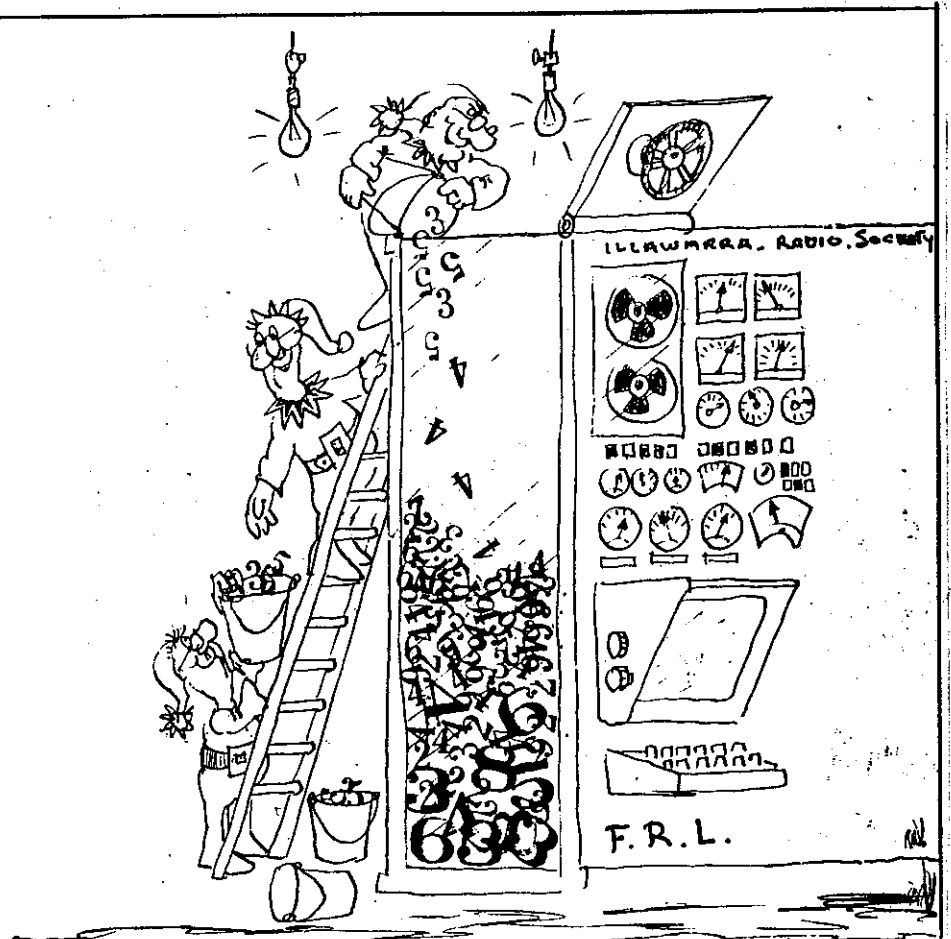
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With "all insulated" appliances the casing of insulating material normally forms the second line of defence against electrocution. Equipment made by responsible manufacturers will almost always comply with the foregoing safety principles, although one well known company did market an early post war mains-battery portable valve radio in which the volume and tuning control shafts had a make all electrical appliances this way, it would provide a simple way of reducing the number of electrical fatalities which occur each year.

3. Double Insulation

As the name implies this involves the provision of two completely separate sets of insulation between the parts carrying mains current and any exposed metal. This greatly reduces the risk of electrocution, because both sets of insulation must break down before the user can receive an electric shock.

A familiar application of this principle is to be found in most electric shavers. The frame and armature of the motor are insulated from the current carrying parts in the ordinary way by the "functional insulation", so-called because it is required to confine the current to a particular path, and without it the motor would not work. The metal cutting head



WHEN THEY ASKED US TO HELP WITH THE CLUBS FUND RAISING LOTTO WE DIN'T THINK THEY MEANT IT THIS WAY....

direct electrical connection with the supply mains. This was safe enough whilst the push-on type knobs were in place, but these knobs have a habit of getting lost!

is in turn insulated from the armature of the motor by a shaft or linkage of insulating material of suitable design such that electrical breakdown is extremely unlikely. This second set of insulation is called "protective insulation".

4. Isolating Transformer

A "one to one" ratio transformer of suitable current and voltage

The SAA approval and test specifications AS 3159 and C100 provide a sound guide to electrical safety for manufactures, but regrettably not all off the radio, television and other electronic equipment in use complies with all the safety practices required by these specifications.

The serviceman has a moral responsibility to carry out a safety check of all equipment he repairs. The extent of his legal obligation is a matter for conjecture. Certainly it

CONTINUED NEXT PAGE.

ELECTRICAL

SAFETY I

CONTINUED

could be considered unreasonable to expect him to carry out all the tests required by the SAA A.T.S. AS 3159, which seem to be designed primarily for the guidance of manufacturers.

Unfortunately there does not appear to be any single equivalent recognised publication which clearly sets out standards of safety required for servicing.

For the information of readers, the following is the routine carried out by the author on mains operated radio receivers.

Other equipment is dealt with according to its design, construction and use.

The first step in any repair is a visual inspection externally for any cracked, broken, or missing parts which would reduce the electrical safety of the equipment. Particular attention is paid to AC-DC transformerless, and similar units which have a direct electrical connection between the chassis and the mains supply.

Some repair jobs are abandoned at this stage because the replacements needed to make them safe are not available.

Next the flexible cord used for the mains power lead is inspected for damage and signs of aging. If a two core flex is fitted, a check is made to see whether a three core lead is required.

The suitability of the flex for the job is also noted. For example tough rubber sheathed (T.R.S.) or thermo-plastic sheathed (T.P.S.) or thermo-plastic connections to appliances in damp places, or over conductive floors. (See SAA Wiring Rules, Part 1.)

Except where the mains plug is moulded to the power flex, this item is checked internally to see that the connections have been made correctly, and in a workmanlike manner. Older plug tops, which are no longer approved, are replaced before the equipment is returned to the owner or user.

When the outer case of the equipment is removed for repairs, a check is made to see that the mains flexible

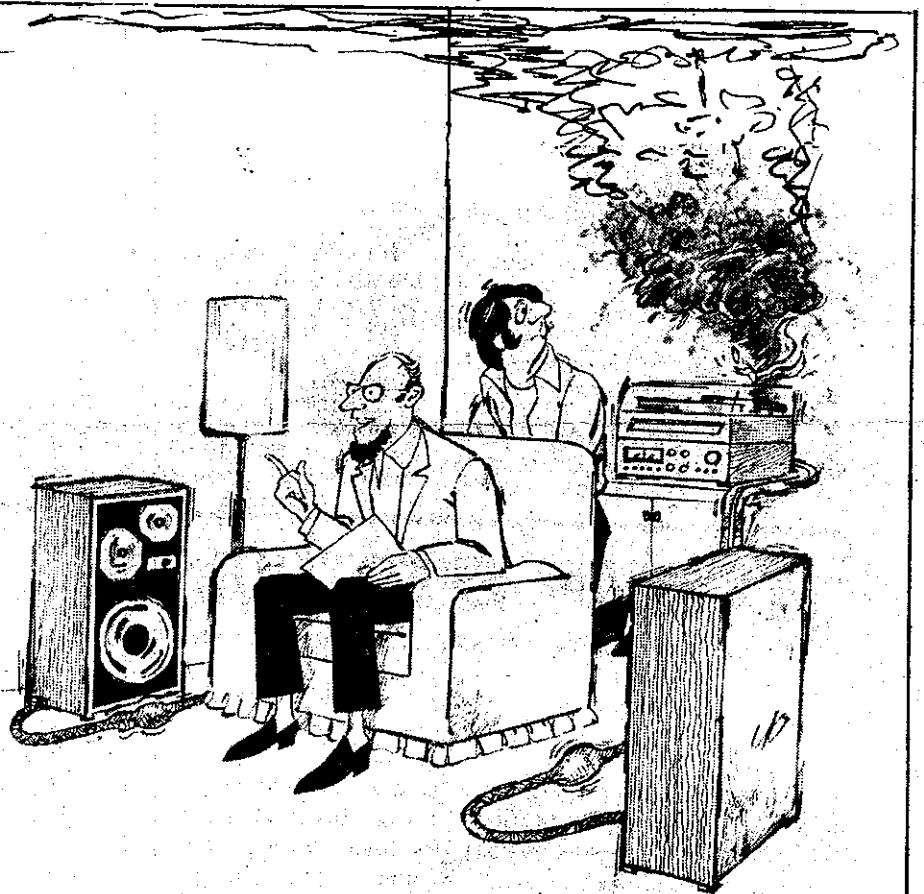
cord is correctly connected within the apparatus, and that it is securely anchored.

SAA A.T.S. C 100 does not permit the expedient of knotting the flexible cord for this purpose.

(to be continued)



★ "You've picked up one of those bugs that's going around!" VK2EMV



"Measurements aside, Bruce, these new special loudspeaker cables really do make a difference."

REPEATER REPORT

<<< STOP PRESS >>>

Mt. Murray voice repeater is of the air as from 23rd Feb of a braekdown.

The vk2raw voice repeater has been having some problems of late, and altho there are some problems within the system itself, I suspect some external ones as well. The original set of batteries, two large and two small 6v linked in series/paralell, have died. One of our members, Vx2XLA Graham, offered a pair of resur-rected 12v 90ah batts

and the system was changed to one 90ah batt in November '88. As there were still a few problems, VK2CAG Graeme supplied a pair of 6v batts and they went into service the first week in February '89. We are still getting break thru of packet sigs on the Sunday Broadcasts and suspect that the path from Dural VK2RWI to VK2RAW has changed over the years due to building construction and as a result a lower sig strength allows the packet to break into the broadcast.

VK2RUW, Hill 60 70cm, antenna mounts had to be replaced due to severe corrosion and were fixed by the Australian Volunteer Coastguard over Xmas. Many thanks to them for the supply of materiel and manpower.

At the January Club Meeting the issue was raised on VK2RAW's loss of coverage and with such the second Sunday in March will be used to do a series of

tests on the antennae, feedline and Tx. Lyle, VK2ALU has offered to come along and bring some test gear with him as my test gear leave a little to be desired. Any and all club members are invited to come along on this trip up the hill as I'm sure many don't even know where the VK2RAW repeater resides. For those who want to see one of the most woderful views we can all meet outside the Albion Park RSL at 1000K and proceed from there to the site. So come along and listen to the Sunday morning B/cast 'au naturel' and bring some portable equiptment with you as

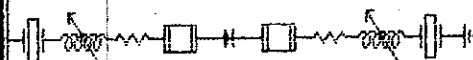
you never know when the openings are due. On the last trip up there, 290189 I managed to work VK7IK and VK7ZAR on 6Mx FM, 10 watts into the internal antenna on the IC505. How's that? 6Mx hand held!

On Saturday VK2MT Rob and VK2BIT Peter replaced the old antennae at VK2RIL with a single vertical antenna which has improved proporgation in most areas along the coast.

Many thanks to Peter and Rob and to VK2EMI for the quick antennae building. Well that is most of the happenings over the last month or two.

73 de VK2XGJ.

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MORSE SURVEY

MORSE CODE THE ORIGINAL DIGITAL LANGUAGE, WILL IT SURVIVE ?

The current international agreement between licensing authorities is such, that a morse code test must be successfully completed before a Full or Novice Licence can be obtained, to permit operation on the High Frequency Amateur Bands, to this end many learning methods have been used over the years to assist those wishing to pass the morse code test. In more recent times Morse Code has been pushed into the background by the more modern digital modes and the usage of Morse on the Amateur Bands is declining.

The Illawarra Amateur Radio Society Inc. (I.A.R.S.inc) did for some years conduct Morse Code Classes, this was transferred to the T.A.F.E. College when the college took up the theory and practical courses to assist those preparing for the Amateur Certificates. The Morse Classes were found to be a burden and were dropped, this means that no formal Morse Classes are being conducted in the Illawarra area at the current time, since the need for Morse is still the same as before.

A survey of Members or anyone interested in learning or upgrading their Morse Code will be conducted to see if any further facilities are required in addition to those already in existence. Currently H.A.R.D.C. runs a 24 hrs. Continuous computer

generated random Morse Code generator on 3.699 Mhz and 144.950 Mhz both of which are receivable in the Illawarra.

The W.I.A. conducts a nightly Slow Morse practice at 09.30 U.T.C. Both normal and daylight saving time using call VK2BWI/P. This is followed by a further session from VK5AWI commencing at 10.30 U.T.C. Depending on conditions, most nights two hours of Morse practice is available. Many sources of computer programs are available to generate Morse Code or can be written fairly easy for most computers.

There are also a good many cassette tapes available from various sources. In light of the foregoing comments it is of some interest to the I.A.R.S.Inc. If there is a need for a more specialized form of Morse Code training and also what form it may take if required, if you have NO interest in Morse Code then pass this info on to somebody else who may be interested together with the survey sheet which should be returned to the I.A.R.S.Inc. Box 1838 P.O.Box. Wollongong 2500 or handed in at a Club Meeting.

MORSE CODE SURVEY

I.A.R.S.Inc. 1989.

NAME or CALLSIGN if you wish :.....

Do you have access to:-

RECEIVER FOR 2 METERS	()	1
RECEIVER FOR 80 METERS	()	2
RECEIVER FOR 10 METERS	()	3
COMPUTER	()	4
CASSETTE TAPE PLAYER	()	5

ARE YOU IN THE PROCESS OF LEARNING MORSE (YES) (NO)

THE METHOD OF LEARNING BEING USED (1) (2) (3) (4) (5) OTHER

DO THE CURRENTLY AVAILABLE SERVICES MEET YOUR NEEDS (YES) or (NO).

IF NOT WHAT ARE YOUR SPECIAL NEEDS

INTENTION TO LEARN USING ---- (1) (2) (3) (4) (5) OTHER

THANK YOU FOR YOUR INTEREST , PLEASE RETURN TO:-

I.A.R.S.Inc. P.O.Box. 1838. WOLLONGONG 2500.

OR HAND IT IN AT A CLUB MEETING.



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.p.m. 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 7.00.p.m. 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.p.m. each Sunday.

CLUB - NETS: On 3.562.Mhz. SSB +/- QRM on Sunday 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. 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, *VK2ENV - 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, VK2ENV - 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.p.m.

8.00.p.m. 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 : VK2ENV after NOTIFICATION ONLY!