



THE PROPAGATOR

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY.

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

CLUB STATION VK2AMW. CLUB 2m REPEATER VK2RAW.

I.A.R.S. is a Member Club of the Wireless Institute of Australia.

<u>PRESIDENT.</u>	<u>SECRETARY.</u>	<u>EDITOR.</u>
Jim Potts, VK2BBG, 14 John St., WOONONA. 2517.	Brian Boseley, VK2BCI, Figtree Hotel, FIGTREE. 2525.	Ian Bowmaker, VK2ASN, 15 Akuna St., Keiraville. 2500.

MONTHLY MEETING. Held on the Second Monday of each Month,
at 7.30 pm, at the Wollongong Town Hall Meeting Room.

I.A.R.S. MONTHLY BROADCAST.

The Monthly Broadcast takes place on the Sunday preceeding
Meeting night each month, at 1900 Hours EAST.

Frequency used by VK2AMW for the broadcast is -

Repeater Channel 5, or Simplex Channel 40.

Relay by Brian, VK2BCI, on 28.460 MHz.

JULY 1978

Members are advised that the Monthly Meeting of the Illawarra
Amateur Radio Society will be held at the Wollongong Town Hall
Meeting Room at 7.30 pm on Monday 10th July, 1978.

Visitors are most welcome to attend.

LECTURE - DEMONSTRATION for JULY MEETING.

A domonstration of RADIO TELETYPE (RTTY) is to by given at
the July Meeting by Lyle, VK2ALU, and Gerry, VK2APG.

This is yet another interesting field of Amateur Radio, and
is gathering an increasing number of operators in the Illawarra
area. The demonstration should be both informative and entertaining.

DATES FOR YOUR DIARY.

The following are tentative arrangements for the remainder of 1978.

August 14. Trade Display by Barry, VK2FE, of MACELEC.

September 11. FILM.

October 9. Possibly a talk on Naval Communications.

November 13. Talk by District Radio Inspector, Mr John Milton.

December 11. Auction Night. See details elsewhere in this issue.

MONTHLY BROADCAST

Please note that the Monthly Broadcast from VK2AMW will in
future be on air at 1900 Hours EAST, Sunday before Meeting.

The Morse Code and the Amateur. (or - Let he who wants to use voice on HF without doing the morse code exam, try CB.)

Last month's contribution on this subject in the Propagator sure put an interesting point of view. However it seems to me that maybe the one thing that really is different between the Amateur and the CBer (and no disrespect meant to 'genuine' CB operators) is the added sense of responsibility and self discipline which tends to result when a challenge is met and beaten by the individual.

I believe that many of the privileges at present enjoyed by all Amateurs were gained from the licencing authorities in most countries because they recognised that Amateurs were not only technically competent, but were prepared to earn their privileges.

Dont let the SPARK go out of Amateur Radio, please.

Lyle VK2ALU.

JULY RAFFLE

As a special treat this month we offer a First Prize AND a second prize. First --- MINI DRILL STAND.

Second -- ARRL HANDBOOK, 1977 Edition.

We value your continued support of these raffles and wish to remind you that this is our source of finance to make purchases of stock for the Store and also to provide funds for the operation and maintainance of the Channel 5 Repeater.

I.A.R.S. NET.

It seems quite a long time, no, it IS a long time, since the days of 10.00 am Nets, on 53.982 AM would you believe?

It is proposed to get some Net activity under way in the area.

For starters , how about the following -

9.00 am Sunday, 52.525 MHz FM.

8.00 pm Sunday, 28.460 MHz USB.

How about it chaps?

Any old 6M FM gear lying around? Dust off the cobwebs, and get it on the air. Alternatively, if you dont want to use it, or you have a spare set, how about selling it to someone who is trying to get onto 6M.

TWO METRES AND CHANNEL 5A

There has been a lot of publicity given recently to the problem of expansion of the Television Service and the future increase of use of Channel 5A.

The W.I.A. Federal Executive is currently making representation to the powers that be concerning the problems of interference between Amateur operations in the 2M band and the reception of television Channel 5A.

There are two ways of getting your voice heard in this matter. First and foremost is to support the W.I.A. - Federal Council has asked members to notify the State Division of any instances of Channel 5A interference you may have experienced. Second, and possibly of less value, is to write to your Local Member or to the Minister for Post and Telegraph.

IN ANY CASE, DO SOMETHING. WE COULD EASILY LOSE TWO METRES.

Any queries may be directed to Geoff, VK2ZHU, who is I.A.R.S. representative to the W.I.A.

QSL BUREAU SERVICE. An important reminder to members that the QSL service is only available to members of the I.A.R.S. who are ALSO members of the W.I.A.

Any persons who are not qualified as above can not get QSL cards through I.A.R.S., but may make their own arrangements through the Bureau. Better still, how about joining the W.I.A.!

Enquiries regarding QSL can be made with Gerry, VK2APG.

Enquiries for W.I.A. membership go to Geoff, VK2ZHU.

HITCH HIKING from "Worldradio" March 1978, via A.R. June 1978.

With his finger (of scorn?) a hitch hiker says, "You furnish the car, petrol, attend to the repairs and upkeep, pay the insurance and I'll ride with you. But if you have an accident I'll sue you for damages." Maybe he'll bash your head in if you don't keep alert. Thus you would lose your car as well. How many members of organisations are hitch hikers or drivers?

STORE.

Please note that there have been added a number of new items to the list of stocks in the store.

NEW -- 1977 issue of ARRL HANDBOOK

Would you believe - - \$6.00 per copy.

Available after meeting only.

Meeting Nights.

Committee has long been well aware of the discomforts of members on meeting nights. For over 12 months we have been looking for a suitable alternative meeting place. Should any member have some knowledge of a hall available for hire at a 'token' fee, central in location, with adequate car parking, accomodation for about 100 or more in comfort, tea (or coffee) making facilities and easily available power outlets, please contact a member of Committee. Judging by the last few meetings particularly, the problem is becoming desperate, so any help would be greatly appreciated by all.

As a temporary measure, it is proposed to start the formal part of the meeting PROMPTLY at 7.30 pm. The Store will only be in operation after the closure of the meeting and talk or film. The Store will not be in operation before the meeting. We seek your co-operation in this matter to see if we can get the formalities over quickly and thus have more time for 'rag chew' and making purchases from the Store.

Whilst on the subject of the Store, we must insist that purchases from the Store may be made on Meeting nights ONLY, or by mail order. Some problems have arisen recently, and because of these we must make a firm rule that no sales from the Store can be made other than as given above.

✱ STORE SALES AT MEETINGS OR BY MAIL ORDER ONLY ✱

We would be most grateful for members to observe this ruling.

Let's see if we can get these two together this Month !

For Sale. FT200 complete with Power Supply and Manuals.
In full working order. C. Hedley. F 20052.

Wanted. FT200 or Similar with Power Suply. Any condition.
See Richard Fox, VK2ZFO, at meeting, or QTH at
57 Barton St., Oak Flats.

(Sorry Charles, Richard doesn't have the phone!)

Moonbounce Report - July 1978.

The feed antenna and its reflector, the feed box and all of the coaxial cable, control cables etc. from the feed box were removed from the dish by VK2B0Z, VK2ZHU and VK2ALU.

None of the equipment installed by the Moonbounce Group now remains at Dapto.

Enquiries are continuing as to means of transport of the dish to the proposed new site.

Oscar Report.

Contacts are easy to come by on Oscar 8 Mode A and on Oscar 7 Mode B, with a little less activity noted on Oscar 7 Mode A.

Oscar 8 Mode J presents more of a challenge in this area, but it has been mastered by some stations in various States and in ZL.

Microwave News.

Response to my enquiry as to interest in 3cms. has been practically zero from the locals. How about it, Good Buddies?

NAME BADGES

The Committee is currently investigating the possibility of re-introducing the name badges as still worn by some members.

It is felt that these badges help identify members, and make it easier for everyone to know who-is-who.

The format of the badge will probably be:-

John	VK2NHA
Illawarra A.R.S	

The cost per badge is expected to be between \$2 and \$1.50, the final cost depending on the number ordered. The more we order, the lower the cost.

If you would like to have your own badge, please fill out the order form and hand it to John Doherty at the next monthly meeting.

To IARS Committee

I would like to have my own name badge to wear at meetings.
Would you please order on my behalf one badge giving the following details:

First name Call Sign

THOUGHT OF TAPPING THE SUN ?

It takes little imagination to appreciate the value of having a source of 12 volts D.C. which could be made available in isolated areas away from commercial A.C. mains power.

The basic requirements of such a system are described and it is left to the imagination of the constructor how he will mount the various components and how he will use the source of energy he has constructed.

All you will need is a 12 volt solar panel of about 6-10 watts output, possibly a diode of about 1 amp capacity, a battery and a fuse. If you do not have a battery you can use your solar power source to charge your flat car or boat battery over several days.

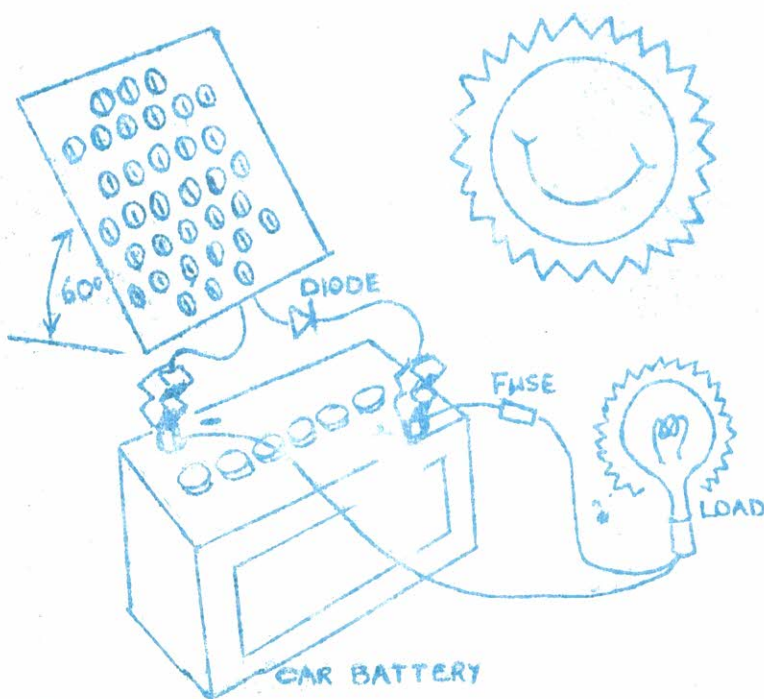
Looking at the simple diagram, the system consists of a solar panel connected as shown through a diode to the 12 volt battery. The load is fed from the battery through a fuse.

Some solar panels include a diode internally connected.

The diode acts as a one way valve, allowing energy from the solar panel to be fed into the battery, but preventing the battery from feeding back into the solar panel during the night. Assuming you use a car battery of about 45 ampere hours or greater capacity, your solar system should be capable of continuously feeding a load of up to one-fifth the maximum power generated by the solar panel. Greater loads can be carried, provided they are not continuous and the system has the chance to recover between uses.

If you wish to charge a flat battery, simply replace the battery shown with your flat battery and hope the sun shines brightly for several days.

Convenience, however, does not come cheaply. You can expect a solar panel of 6-10 watts peak output to cost up to \$300. A small solar panel like this, however, would be able to provide sufficient power to flash the light on a floating signal beacon.



Solar panel mounted facing north and inclined at about 60° in Melbourne or 50° in Brisbane.

Information copied from the pamphlet "Sun Sand and STD". Copies of the pamphlet are obtainable without charge from the Telecom Public Relations Office, G.P.O. Bldg, Sydney.

George SWL.

AUCTION NIGHT. DECEMBER 11 th 1978.

We are asking members to bring items along to the December meeting, for auction.

Such items should be clearly labeled with the members name, and a reserve price if you consider necessary. In the event of your reserve price not being met in bidding, you may then do some haggling with the bidders.

Whatever the outcome of each sale, it is proposed that 10% of the selling price goes to Club Funds.

So start looking around the Shack for those bits of gear that are sitting quietly gathering dust - somebody else may have a use for it and, more to the point, may be prepared to pay up real money for it.

FOX HUNT

A 2M Fox Hunt was held on 18 June, and by all accounts was a success. Further Fox Hunts are to be held regularly on the Sunday following Meeting Nights. Further details via Broadcast.

ANTENNASCOPE

At the May Natter Night, John 3BAF, gave us a demonstration of the construction and operation of his antennascope.

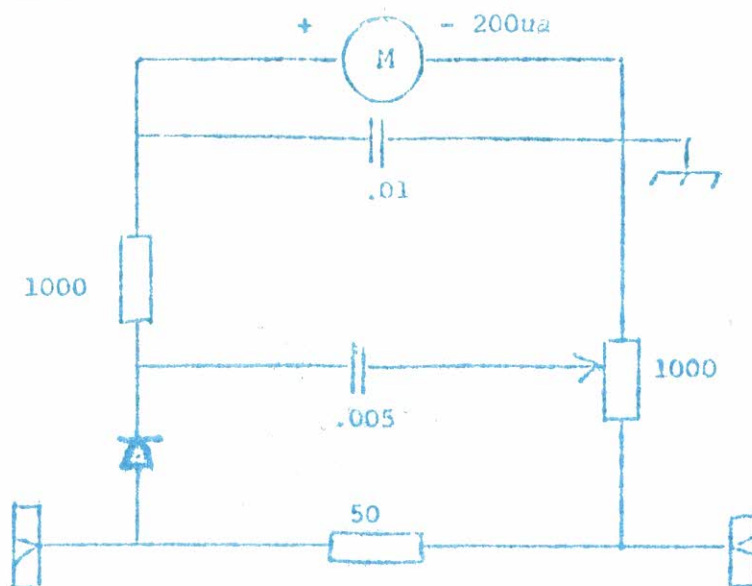
READ ON AERIAL TUNING USING A ANTENNASCOPE

This article has been prepared in conjunction with our Natter night talks and serves to fill in those points which may have been missed. It must be stressed that there is nothing really original about the antennascope but its operation and use is the basis of this article. Several construction articles have appeared in various publications.

The use and construction of the instrument came about after trying to make the antenna noise bridge demonstrated last year here at the club. Two problems arose, firstly obtaining a suitable Toroid, the second and more difficult obtaining a 100ohm carbon pot. As will be seen this instrument uses no toroid and in place of the 100 ohm pot a 1000ohm unit is used. This pot is easy to obtain as a shelf item. I may add that the unit made by myself was checked against a laboratory type resistance and reactance bridge together with signal generator piped back into the station transceiver and the measurements were right on, but much broader than the lab unit. This is to be expected as the lab unit value was some \$7,000 which places it a little out of amateur class.

The antennascope is a modified SWR bridge in which one leg of the bridge is composed of a noninductive variable resistor. This resistor is calibrated in ohm's and when its setting is equal to the radiation resistance of the antenna under test, the bridge is in a balanced state. If a sensitive voltmeter is connected across the bridge it will indicate a voltage null at bridge balance. If the antenna under test is a non resonant or reactive state, the null indication on the meter of the antennascope will be incomplete. The frequency of the exciting signal must then be moved to the resonant frequency of the antenna to obtain a complete null.

A typical circuit is shown. The calibrating potentiometer is mounted on a phenolic plate placed over a 1 $\frac{1}{8}$ " hole punched in the front of the box. This reduces the capacity to ground of the POT to a minimum.



When the instrument is completed a G.D.O. may be coupled to the input via a 2 turn link. Coupling should be adjusted to obtain a half scale reading on the meter. Various values of resistors (carbon) are then plugged into the output and the pot is adjusted for a null on the meter. The pot settings may now be calibrated in terms of the load resistor indicated by the null.

In general the measuring terminals of the Antennascope are connecting in series with the load at a point of maximum current. This means the centre of a dipole or the base of a quarter wave ground plane. Excitation is applied to the instrument and the pot varied together with the frequency of the GDO until a complete null is obtained. The source frequency is now the resonant frequency of the antenna and the radiation resistance may be read off the dial of your antennascope.

It is also practical to measure off $\frac{1}{2}$ wave and $\frac{1}{4}$ wave lengths of co-ax with this instrument. Remember to measure a half wave short out the end of your cable. For a quarter wave leave it open. Also if it is not practical to take antenna measurements at the centre they may be taken $\frac{1}{2}$ wave lengths away. However do not take measurements on random lengths or quarter wave lengths.

J. KERR
VK3BAF

The above item has been reproduced from the June 1978 issue of "A" the monthly newsletter of the Moorabbin & District Radio Club. Ian, VK2ASN.

WANTED BY EDITOR
ARTICLES FOR PUBLICATION

I WOULD LIKE TO SEE SOME
TECHNICAL OR CONSTRUCTION
ARTICLES FROM OUR OWN CLUB.

Bi-Band Antenna

Ron May
VK1PM
84 Brereton St.,
Garran.
832213 (BH)

This antenna uses the impedance properties of $1/4$ wave stub lines to present an approximate 300 Ohm load to a 300 Ohm feedline on two harmonically related bands.

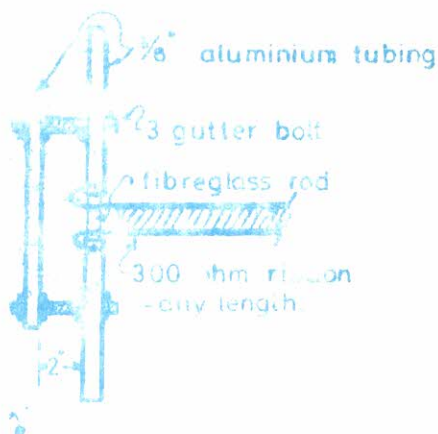
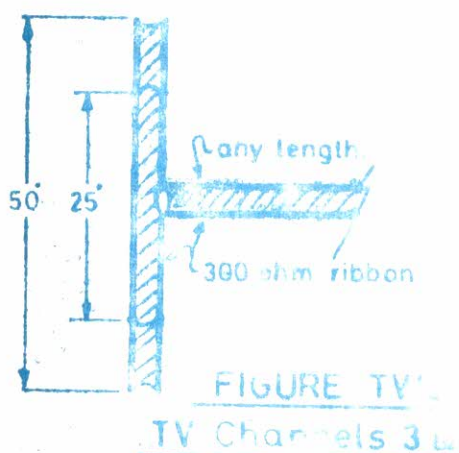
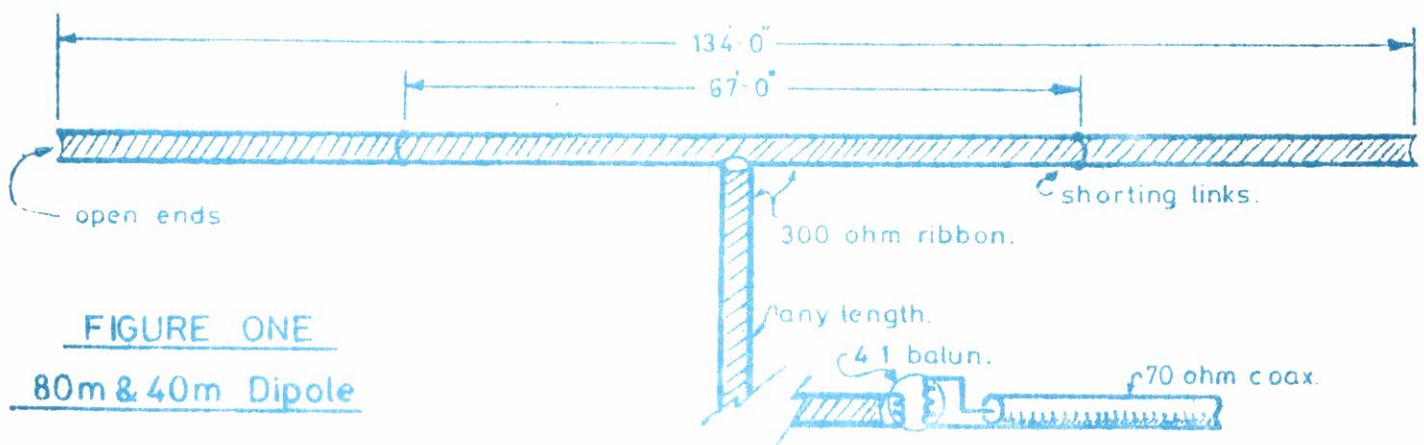
On the lower frequency band the full length of the antenna acts as a half wave dipole with a "T" match section to the 300 Ohm line.

On the higher frequency band the centre section of the antenna acts as a folded dipole which presents 300 Ohms to the feedline. The end sections, being each a $1/4$ wavelength long do not introduce unwanted reactance, but are effectively disconnected from the folded dipole section because of impedance mismatch.

A standard 4:1 balun transformer as shown for example in the "ARRL Antenna Book" at page 103, can be used to feed a 70 Ohm co-axial line or connector.

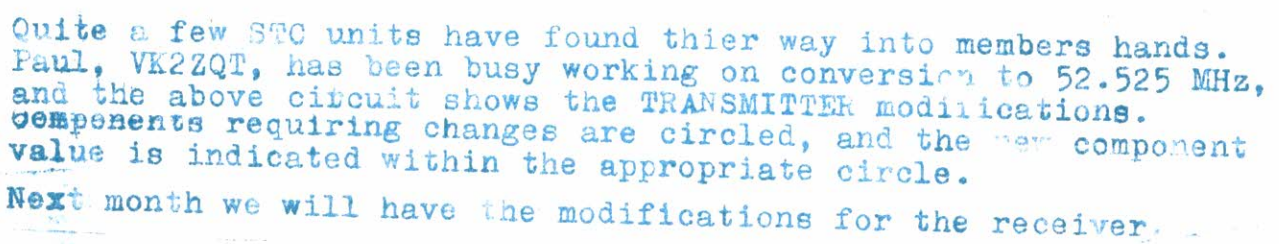
Two applications are shown below. Fig 1 is an 80/40 metre dipole with obvious possibilities as a compact field day antenna or to complement the usual three element tri-band beams so popular these days. Fig 2 shows a Television receiving antenna particularly suited to VKI conditions since channels 7 & 3 are (virtually) harmonically related.

Reflectors 10% longer and directors 5% shorter may be added approximately 0.2 wavelengths for each frequency behind and in front of the driven element resp. in known manner. Some tuning may be necessary to optimise front/back ratio in this case.



The above is from Foreward Bias Issue of February 1973 Newsletter of the ACT Division of the WIA.

MODIFICATIONS FOR 52.525.



< MACELEC >
99 Kenny st. WOLLONGONG.
Phone 291455.

KENWOOD TS820S - The Ultimate -	\$ 1199
KENWOOD TS520S - Most Popular -	\$ 735
KENWOOD TR7500 2 Metre P.L.L. Mobile	\$ 299
S.B.E. "Sidebender" 10 Metre Mobile	\$ 210
KENWOOD R300 All Band Communications Receiver	\$ 260
KENWOOD AT200 Antenna Coupler - S.W.R. - Power Meter -	
Coax Switch	\$ 173
QUAD 2 Elements for Ten and Fifteen Metres - 8db Gain -	
50 ohm Input	\$ 95
HANSEN Transformer Coupled Power Meter Reads True	
P.E.P. and R.M.S. to 200 Watts	\$ 82
HY-GAIN TH3JR 10/15/20M 3EL. Beam	\$ 229
NAGARA V5JR Trap Vertical 80-10M	\$ 139
CUSHCRAFT ARX-2 2 Metre Ringo Ranger	\$ 49
HANSEN Dummy Load 30 Watts up to 150 MHZ	\$ 15
DAIWA FD30LS Low Pass Filter Cuto Off Frequency 32 MHZ -	
3 Stages - Top Quality	\$ 70
HI-MOUND HB708 HORSE SHY.	\$
KENWOOD DG5 Digital Display for TS520S.	\$ 195

* We now represent VICOM in Wollongong and have access to the full range of VICOM AMATEUR EQUIPMENT.

CONTACT BARRY HANSEN VK2FE

Prices subject to change without notice

Above items normally available ex stock.

I.A.R.S. COMPONENTS STORE.

GREEN CAPS. .001, .0047, .01 ... 10c.
.047 ... 15c. .1 ... 20c.

Disc Capacitors. .001, .0047, .01, .022. ... 8 cents.
.047 ... 10 cents. .1 ... 15 cents.

Electrolytic condensers, 25V, double ended.
4.7 uF ... 10c. 100 uf ... 15c.
220 uF ... 20c. 470 uF ... 25c.
Also... 2500 uF, 50V... 2.00.

Trimmer Condensers.
Wire wrap type trimmers. 10c.
PCB mounting trimmers, 3-13 pF. ... 15c.

Tantalum Capacitors. New Values... 1.5, 2.2, 4.7, & 6.8,..20c.

.47 mF ... 20c. .1 mF ... 20c.
4.7 mF ... 20c. 10 mF ... 25c.
22 mF ... 45c. 47 mF ... 65c.

Coil Former, complete with can. ... 10c.
Neosid Small Balun Formers 15c.

ANTENNA BASE, 'Belling Lee' mobile type ... \$4.00 ea
PL259 Plugs... \$1.00. PL259 adaptors(for RG58U)... 25c.

METERS

S Meter 400uA 1-3/8" x 5/8" \$2.50
Level Meter dual 200uA meters, illuminated \$3.00
2" sq. 100mA centre zero meters \$6.00

Resistors

Bag of 160 1/2 watt resistors
10 each of values 10, 47, 68, 100, 220, 470, 680, \$4.00
1K, 2.2K, 4.7K, 6.8K, 10K, 22K, 47K, 68K, and 100K.

DIODES. 1N4148 ... 10c. OA91 ... 12c.
EM404 ... 20c. EM410 ... 25c.

LED's colour RED 35c. each.

I.C's 741 ... 85c. LM38 ... 1.85.
7812 regulators ... 2.50. NE555 ... 90c.

TRANSISTORS. 2N5485 .. 95c. BC109 .. 35c.
'MPF131 .. 85c.

PC Board Trim Pots.

New item in stock.
Values - 2K, 5K, 10K, 25K, 50K, & 100K .. 25c. each.

CO-AXIAL CABLE

RG8U (heavy) ... \$1.20 per metre.
RG58U (light) ... 50c. per metre.

ANTENNA WIRE

Bronze alloy single strand, 1.2mm diameter. See sample at meeting.
Lengths cut to order 5c/metre

— WESTLAKES NOVICE MANUALS New Stock \$3.50 —

Pair meter leads with alligator clips 30c
Four pin plug and socket - pair 20c
Alligator clips - large, insulated. Red or Black 20c
Edge connectors \$1.00

MEETING NIGHTS ONLY. NO 'AFTER HOURS'

I.A.R.S.
P.O. Box 1838,
WOLLONGONG, NSW 2500

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CATEGORY B.

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