

THE PROPAGATOR

NO. 7/77

JULY 1977

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THE MONTHLY NEWSLETTER OF THE
ILLAWARRA AMATEUR RADIO SOCIETY

A Member Club of the Wireless Institute of Australia.
Published by the Illawarra Amateur Radio Society
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NOTICE OF MONTHLY MEETING -> JULY 1977

Members are advised that the monthly meeting of the Illawarra Amateur Radio Society will be held at the Wollongong Town Hall Meeting Room on Monday, 11 July 1977 at 7.30 pm.

AGENDA

- 1 Apologies and welcome to visitors.
- 2 Minutes of previous General Meeting.
- 3 Correspondence.
- 4 Financial Report.
- 5 General Business.

Top

Perch. view

W h/w etc

O o o o

Moonbounce Report - July 1977.

The 432MHz EME tests for VK2AMW on 25/6/77 resulted in a contact with W7GDI, with 'M' reports both ways.

XE1RY and JA6CZD were called as scheduled but neither was heard. Our echoes were up to 7dB. over noise.

Half an hour of the test period was lost while fractured bolts were replaced in the bottom bearing of the main drive shaft. These will now be replaced by high tensile bolts.

Arrangements have now been finalised and material received for the construction of the new waveguide feed system.

Evidence was found on 25/6 of break and entry into the moonbounce site buildings by vandals. Windows were broken and material strewn over floors. Cupboards and doors were opened and contents removed. Fortunately the locked equipment cubicles were intact.

The mess was cleaned up but a further entry occurred on the following day and spare valves were removed.

Window repairs were made by VK2ZBN and later by staff from the University. Door locks were replaced. All items of easily removed equipment of value are now being taken away between tests. This will lengthen the equipment setting up time prior to the carrying out of tests.

Assistance would be much appreciated from Club members in improving security of the VK2AMW moonbounce equipment at Dapto.

Lyle VK2ALU.

HIGH RANGE 2 METRE BEACON

This experimental beacon is situated on High Range, 15 km north west of Mittagong, 2700 feet above sea level, with omnidirectional get-away. Transmitter is on 144.12 MHz, 10 watts to 5 el. collinear vertical antenna, MCW Ident. VK2RHR.

Reports of reception would be welcomed by the Beacon Officer, Barry VK2ZAG at P.O. Box 318, Mittagong, 2575, or at I.A.R.S. meetings.

It is proposed to develop the site for a repeater if it proves satisfactory. A shack with 240V A.C. power has already been constructed.

WANTED URGENTLY

Information from other groups etc for inclusion in the PROPOGATOR, similar to above. (How about something from the southern repeater). We would also welcome articles on any interesting subject or some small device you have built and think other people may be interested in.

NOTICE OF A PROPOSED MOTION FOR THE ALTERATION OF THE
CONSTITUTION OF THE ILLIWARRA AMATEUR RADIO SOCIETY

The existing section of the constitution reads as follows:

Section 6A

The management of the Society shall be vested in the committee, consisting of the President, a Vice-President, Secretary, Treasurer and up to five other Financial Members, who shall be elected at the Annual General Meeting. They shall remain in office until Successors are appointed at the next Annual General Meeting.

It is proposed to amend this section to read as follows:

Section 6A

The Management of the Society shall be vested in the committee, consisting of the President, a Vice-President, Secretary, Treasurer and three others. The above officers are to be holders of either the AOCF, AOLCF or the NAOCF. In addition two other members may be elected to committee.

All members of committee shall be Financial Members and be elected at the Annual General Meeting. They shall remain in office until successors are appointed at the next Annual General Meeting.

This proposed amendment will be discussed at the next General Meeting and if acceptable without alteration will be then held over till the following General Meeting for voting.

If altered in any way then the alterations will be printed next month and voting the month after.

FOR THOSE PEOPLE WHO WOULD LIKE TO OBTAIN ONE OF THE NEW TRANSMITTERS FROM THE CLUB, WE NOW HAVE SOME INFORMATION ON THE POWER TRANSISTORS VIA PAUL GARDNER

2N2950

V-C/B = 60V
V-B/E = 3.0V
V-C/E = 60V
F = 200 MHZ

2N2951

V-C/B = 60V
V-B/E = 5.0V
V-C/E = 60V
F = 200 MHZ

40281

Ic-A = 1.0 AMP
V-C/B = 36V
V-B/E = 4.0V
V-C/E = 18.0V MAX
FAG IN MHZ = 400 MHZ

40282

Ic-A = 2.0 AMP
V-C/B = 36V
V-B/E = 4.0V
V-C/E = 18.0V MAX
FAG IN MHZ = 350 MHZ

MACELEC
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TS 820S 160 thru 10 metres. PSK - SSB - CW complete with true Digital Frequency Readout.
Variable I.F. Bandwidth - Full Speech Processing - Speech Monitor etc.
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THE NEW KENWOOD TS520S - Now has 160 metres thru 10 metres and Provision for Optional Digital Display. This unit has all the features of the Previous 520 except DC-DC Converter which is an option.
Price.....T..B..A.

TR 7400 A 2 metre F.M. Transceiver. Utilizing a Unique Squelch System - Digital Readout. - Fully Synthesized with 5KHZ steps from 144 Thru 148 MHZ.
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R 300 Kenwood Receiver all Bands from 170 KHZ to 30 MHZ - Selectivity selectable 2.5KHZ or 5 KHZ.

Sensitivity Better than 0.3 microvolt. Inbuilt 500 KHZ marker A.C. or D.C.. External or Internal Batteries.

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Limited Stocks at.....\$29.50 ea



We also stock a range of Oscilloscopes, Signal Generators, Audio Generators, TVI Filters, ETC., As well as a limited stock of Selective 27 MHZ equipment

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or Contact Barry Hartley VK2FE.

SUBJECT: An active antenna; edited abstract.

"One of the problems facing many shortwave listeners, is that they know full well the type of antenna that they'd like to erect, but they also know that they either haven't the space or that the neighbours wouldn't exactly appreciate a sizable antenna in the next door garden.

It was with these thoughts in mind that Dr. David Tong of Datong Electronics Limited in Leeds, set about devising a truly miniature antenna, that would retain most of the benefits of its bigger brothers. As a result he's soon to market the Datong active antenna, that really will provide an answer to those 'Lack of space' problems.

The same idea has been in use for some time now, for commercial purposes, but at a price that has usually put it outside the reach of the amateur.

The point about the large antennas, is that unless the antenna is matched correctly to the feeder, there'll be so many losses, that the antenna will not be very effective.

One answer to that, is to put a tuner unit at the antenna end of the feeder, or the other answer is to make the antenna exactly half a wavelength long and connect the feeder in the centre, so that you end up with a half-wave dipole. The drawback of using that method of matching the antenna to the feeder, is that the match is only good at one frequency, or harmonics thereof.

Now, for receiving purposes only, it's possible to solve the matching problem, by using active circuitry. In this case it would have to be an amplifier with a very high input impedance, with a differential input, that is two inputs and with an output impedance which is 50 ohms or 75 ohms, in order to match the co-ax feeder.

The best way to think of it, I think, is that the antenna itself produces a voltage at its terminals and the amplifier just has to look at the voltage, without taking any current from the antenna.

If it's done this way, then, the antenna does not need to be tuned, it doesn't have to be resonant, so that the two pieces of wire, may be quite short, in our case we think that the two pieces of wire that form the dipole would be two metres long each. An antenna like that will work without any tuning being required and give constant sensitivity right from about 30 MHz, possibly more, down to as low as 90 or 60 KHz.

The problems lie in the amplifier at the centre of the dipole; the main problem is that there are so many large voltages from strong transmitting stations all impinging on the two pieces of wire at the same time and an amplifier fed with large signals, many at the same time, tends to produce distortion problems.

Now, in the case of an antenna, these distortion products appear as phantom broadcasting stations, so one has to make an amplifier which has a very low intermodulation distortion; the second and third order intermodulation products have to be very far down and the solution to the amplifier problem is not a trivial one, but we think we've solved the problem in a satisfactory way for its intended application and we find that even in modern steel framed buildings an active antenna pasted to a large glass window will pick up an amazing amount of signal.

The length of the element is determined by two factors, one is that if they're too long, the amplifier overloads, the other one is that if they're too short, you don't pick up quite so much signal and the signal to noise ratio, seen by the receiver, is worse.

If one's main interest is in listening to broadcasting, short wave stations, in general these seem to be fairly strong in comparison, for example, with some of the very weak amateur radio signals that other people may like to listen to and signals of that type the stronger type, can easily be picked up by using quite short elements, possibly even 2/3 metre each

With an active antenna, even if one has only a box room in which to do one's receiving, one can have first-rate reception; provided the building is not made of solid steel."

COMMENT:

The device is to be marketed in about three months, apparently at as competitive a price as possible, although price is not yet decided.

While ever it is tuned to the frequency range for which it is designed ie. it remains short, compared with a half wavelength, the antenna just described is effectively aperiodic; wide band.

It seems, therefore, that it would not discriminate against noise and one would be dependent upon his receiver's noise rejection capability.

To the writer, its great advantages are:

1. its compactness,
2. the possibility that it could be rotated if it has suitable bearings,
3. that it facilitates band changing.

Of course, if tuning can be tolerated, tuned feeders will actively reject noise, provided that the coupler has a 'Q' that is great enough.

VK2ABI

THE WIRELESS INSTITUTE OF AUSTRALIA

- INFORMATION
- EDUCATION
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Components, disposals, surplus gear — Magazines and books
QSL Bureaux — Sales and exchange facilities
- Modest membership target is 8000 for WARC 79.
- REPRESENTATION
- ADVICE
- SOCIAL ACTIVITIES
- CONTESTS
- AWARDS

GET WITH IT — GET FACTS NOW

SCOTCHCAL

Photosensitive panel material for making professional looking front panels to pretty up your gear. See article in November issue.

Sheet size 10" x 12" \$3.50

BOOKS

Basic Electronics A very useful book, especially for beginners. Published by Electronics Australia. \$3.00

Projects and Circuits Over thirty Electronics Australia projects combined into a book of 112 pages. \$1.50

Westlakes Novice Licence Manual This excellent book is being revised. At the time of writing, we have run out of copies for sale, but we might have supplies of the revised Manual by this meeting.

GENERAL

- Pair meter leads with alligator clips 50c
- Vernier dials 35 mm. 4 turns knob for 1/2 turn dial \$1.50
- DPDT slide switches 25c
- Four pin plug and socket - pair 15c
- Alligator clips - large, insulated. Red or Black 20c
- Ground Plane Antenna Base \$1.00
- Edge connectors \$1.00
- Tag strips 10c

CONDENSERS

- Ceramic trimmer, mica insulation 30c
- Small solder type feed through capacitors 5c
- Wire wrap type trimmers 10c
- Ceramic bolt-down trimmers 10c
- 25V Electrolytics, double ended
 - 4.7 uF 6c
 - 100 uF 12c
 - 220 uF 15c
 - 470 uF 20c
- Greencaps 100V
 - .0047, .002 8c

NEOSID

- Formers 8c
- Balun formers - small 12c
- large 15c
- Cans - single 10c
- double 12c
- Slugs - F 16, 7c

METERS

- S Meter 400uA 1 3/8" x 5/8" \$2.50
- Level Meter dual 200uA meters, illuminated \$3.00
- 0 - 1 mA Meter 50mm square \$4.00
- 0 - 1 mA Meter 75mm x 50mm. \$5.00

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.

ANTENNA WIRE

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

The I.A.R.S. Store is stocked with selected purchases of good quality components. A small profit is marked up on these items yet prices are very reasonable. The profit goes towards expanding the range of items kept in stock.

Bring your money on meeting nights and keep stocked up with those often needed components.

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Newsletter of the Illawarra
Amateur Radio Society



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