

THE PROPAGATOR

NO. 6/76

JUNE 1976.

NO. 6/76

THE MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY

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Illawarra Amateur Radio Society
P.O. Box 1838
WOLLONGONG. 2500

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NOTICE OF MONTHLY GENERAL MEETING. JUNE 1976.

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, 21st June 1976, at 7.30 p.m.

AGENDA.

1. Apologies and welcome to visitors.
2. Minutes of previous General Meeting.
3. Correspondence.
4. Financial Report.
5. General Business.
6. Raffle.
7. Trade Display.

TRADE DISPLAY. To be presented by Peter Schulz, VK2ZXL, one of our members, who sells a large range of amateur equipment from his premises in Loftus. For further details see elsewhere in this issue.

CHANGE OF ADDRESS.

Please take note that the postal address for all mail is now -

P.O. BOX 1838, WOLLONGONG. 2500.

SALE OF AMATEUR GEAR

The gear listed below was owned by the late Kevin Brady VK 2 AFF. Gear built by Kevin is very good both in workmanship and appearance. It is mostly valve gear.

The equipment is on display with prices clearly marked at 24 Barellan Street Dapto. Phone Mrs Brady on 61 4287 to make sure she will be there.

Commercially built equipment is marked by a *.

TEST EQUIPMENT

* Philips sweep generator GM 2891.	\$20
* Class C wavemeter A.W.A. 1450 kc to 10260 kc (old).	\$ 5
* R.C.A. RF signal generator 85 kHz to 30 MHz.	\$40
Dummy load, oil filled with UHF socket.	\$ 5
Crystal checker.	\$ 2

TRANSMITTERS AND RECEIVERS

* 3 - low band 12V F.M. transceivers.	\$15, \$25 and \$35
* Pyc Ranger hi band F.M. transceiver, no Xtals 1 channel.	\$25
* TCA hi band F.M. transceiver with F E T preamp and A.C. power supply. Two channels.	\$45
* Weston low band base A.M. transceiver, complete with A.C. power supply 53.982 MHz.	\$30

The above units are all converted to the amateur bands and are of good appearance.

6 metre A.M. transmitter with separate A.C. power supply. About 40 W output.	\$25
S.S.B. transmitter 3.5 MHz to 30 MHz with power supply. 60 W output.	\$150
Linear amplifier, about 400W output with self contained power supply. -	\$150
3 - 30MHz, 813 tubes.	

MISCELLANEOUS

* Yaesu type F SSB generator.	\$20
Transformer in box with 240V plug, terminals etc., 240/13V about 5A.	\$ 8
4 element 2 meter Yagi antenna.	\$ 7
Power supply 240V, probably for carphone.	\$15
Power supply with 425-0-425V transformer, I.V. transformer, choke, rectifiers etc.	\$10
Inverter 12V DC to 240V AC.	\$30
* Eddystone split stator condensers (new).	\$2 and \$ 3.50
* Morse keys.	\$ 1
T.V. power transformers (used).	\$ 2

Plus other odds and ends.

FOR SALE.

TRIO 9R-59Ds Receiver and Speaker, with Crystal callibrator and instruction manual. \$110.

18AVT Vertical Antenna and radials. \$60.

Take Both----- \$150.

Telephone John WATT-BRIGHT, VK2YN.

PICTON 77 1316, A.H.

Address 1 Downing St., Picton. 2571.

REPEATER.

A working bee was held at the repeater site on 23/5/76. The new mast was erected on top of the hill near the old site, however the new antenna consisting of 3 half waves in phase did not perform as expected. A temporary antenna set up has been mounted on the new mast. The receive element is a single half wave mounted at 20ft up the mast, and the transmit element is a half wave dipole mounted at the top of the 80ft mast.

This new arrangement has resulted in better coverage to the South and the West, but there has been a decrease in the radiation towards Sydney.

Graeme, VK2AGV, and Garry, VK2ZOM, will be carrying out some further work and it is hoped that the final system will give improved coverage with the use of 5/8 wave elements. Some further work is also proposed to improve the access to the new site.

W.I.C.E.N.

Jim, VK2BBG, has been kept busy making contacts and keeping up with developments in the revitalisation of W.I.C.E.N. Arrangements are at present under way to hold a mobile exercise. The proposal is to join with a local Vintage car club on 25/7/76 when a day trip to Nowra is to be held. Final arrangements will appear in the next issue of the Propagator, but in the meantime brush the cobwebs from the Mobile and you can be assured of an interesting and enjoyable outing, families to be included.

It would be of assistance if those members intending to take part in this exercise could contact either Jim, VK2BBG, or Ian, VK2ZJA, so that we have an idea of numbers of persons for catering etc..

NOVICE EXAMINATION PAPER.

Members proposing to sit for the Novice Licence will be pleased to learn that we have a sample of the Novice Exam Paper. It is expected that copies will be available for the June meeting. Those members who would like a copy should see Secretary at the meeting. We regret that we will not be able to accept any requests for copies by mail.

We have obtained some copies of two Electronics Australia publications - Basic Electronics, and Projects and Circuits. These will also be available at the June meeting.

Finally on the subject of examinations, there are still two copies available of the reprints of the AOCF papers with sample answers.

COMING MEETINGS.

JULY 12th. We expect to have a film from the IBM library. The title is "Graphic Applications Demonstration".

AUGUST 9th. Arrangements are yet to be finalised, but will be an "Emergency Communications" night with a film on the subject of earthquakes in California and it is hoped that representatives from the Illawarra Division of the State Emergency Service will be speaking about their activities.

Something from the past.

While browsing through some old issues of "RADIO and HOBBIES", I noticed a familiar call sign appearing in the Ham Bands columns.

Checking in the "Short Wave Handbook" of 1947 revealed that in fact the call sign VK2ALU was held by Lyle, and he was living at Lane Cove.

Certainly a lot of changes in VHF since then Lyle!

N.S.W. AMATEUR STATIONS ON 50 MC.			
SIX METRE STATIONS			
2ZN	50.001	2LS	51.5
2JU	50.112	2AEX	51.6
2JX	50.12	2TR	51.6
2AHF	50.16	2NP	51.7
2DN	50.25	2VN	51.728
2NO	50.4	2LY	51.84
2ABZ	50.6	2LZ	52.1
2EM	50.7	2FO	52.15
2BG	50.8	2AFE	52.2
2ALO	50.94	2ABC	52.38
2AZ	50.96	2AFO	52.5
2XV	51.0	2WJ	52.8
2YQ	51.14	2DF	53.0
2MO	51.15	2AHG	53.328
2QG	51.246	2IQ	53.53
166 MC. STATIONS			
2FK	2ABZ		
2KI	2AEE		
2LY	(169.7 xtal)		
2LZ	2AGL		
2NP	2AHF		
2NQ	2AHG		
2PW	2ALG		
2VS	2ALO		
2WJ	2ALU		

RADIO AND HOBBIES FOR AUGUST, 1947

THE UHF's

Each month brings further news of contacts between different continents on the 6mx. band.

On October 18 at 1100 hrs. EAST communication was established between J9AAO in Okinawa and CE1AH in Chile, a distance of 11,000 miles. Records are broken weekly but this effort just doubles previous distances.

J9AAO heard CE1AH and after paralleling a couple of beams broke through. A lot of further distant contacts have been reported but no details or confirmation is available as yet. Reported are a cross band QSO on 5 and 6mx. between an English and a Canadian station, contacts between W6 and J. cross band work between ZS on 6mx. and G's on 40mx. work between South America and California. The band is really opening up for international work and as the population increases so will the DX contacts.

In the US the possibility of a worked all States certificate for 6mx. during 1948 is being discussed. Over 18 stations have contacted 40 States or more and W9DWU is leading with a total of 45 States (only 3 more to contact). Here in Australia a number of Eastern stations only require Western Australia for all States and win the special trophy to be presented by the WIA. There has been little sporadic E work during the last month. VK4PG broke through to VK3 on a couple of occasions but only for a short period.

In Newcastle VK2BZ and 2ADT of Cessnock have been running schedules with ZS6JB and J9AAO with negative results to date.

2KO of Toronto has newly arrived on 6mx. and 2VU of Singleton will shortly be on. The latter was very active on 5mx. prewar.

NSW has lost one of its stalwarts on 6mx. with the transfer of F/O Les Pace, VK2YQ to Ballarat. Operating from Schofields just west of Sydney he was the first station to work through to Newcastle. Victoria gains an active and enthusiastic UHF man.

The Gladesville Radio Club organised a 168mc. field day on November 2 with 3 mobile stations on the air. Results were very satisfactory. Stations were located at Kurrajong where 2NP and 2HL operated, Mount Keira near Wollongong where 2AXB, 2AKB and 2ALU assisted and at Central Mangrove Mountain west of Gosford with 2AEX and 2AGB operating.

Communication was established between all Stations besides working with Sydney and Blue Mountain amateurs. 5 element Yaesu Arrays were used and average power 4 watts. greatest distance covered 65 miles Keira to Mangrove Mountain.

RADIO AND HOBBIES FOR DECEMBER, 1947

THROUGH January and early February, 6MX was rather quiet, if compared with December; however on a number of occasions the band opened for interstate work and for NZ. The best day for NZ seemed to be Saturday 31st Jan. when VK2LY contacted 3ZL stations. VK2NO and 2WJ in Sydney also broke through. The first week in February saw the band open to VK3 and VK5 from VK2 and from VK4 to VK3, VK5, and VK7. On Wednesday, 4th February, VK3BQ, 3RR, 3US, 3HZ and 7XL were all S8 to S9 in Brisbane and 3VL, 3GE, 3PG, 3UU, 5GF, and 5GL were all logged in Bundaberg.

VK4LN and VK4HD have opened a 6MX link between Gympie and Budrum. The Sydney-Canberra link between VK2IU and VK2GU is open on most occasions and prolonged tests have been carried out. Signals running between S9 and a complete fadeout on occasions. 2GU using an 8JK beam and 2JU three elements both horizontal.

VK2ALU using 20 watts has also contacted 2GU and most Sydney stations hear him at good strength.

2LY of Katoomba has observed 2GU building up from S1 to S9 plus for a second or so at irregular intervals, apparently reflections from ionized trails of meteors a phenomenon observed overseas. 2ADX of Maitland listens every night except Tuesday at 1845 hours EAST on 7mc for anyone requiring tests on 166mc. He transmits at 1900 hours on 166mc, using 4 elements vertical.

RADIO AND HOBBIES FOR MARCH, 1948

A VISIT TO PETER SCHULZ

A couple of weeks ago, I visited one of our members, Peter Schulz at his business premises/home in Loftus, near Sutherland.

Peter has for sale all the latest amateur gear, as advertised in the Propagator this month and on the back of A.R.

He has all the equipment nicely laid out on benches and has H.F. and V.H.F. antenna connections coming into the room, so that you can try out the gear and fiddle about to your hearts content.

His prices are quite reasonable. Don't forget to mention that you are a member of our club.

Peter also services amateur equipment.

If you are interested in anything ranging from an FT 101E to a UHF plug a visit to Peters place could be well worth while. Before you decide to go, phone Peter on 02 521 7573 to make sure that he will be there.

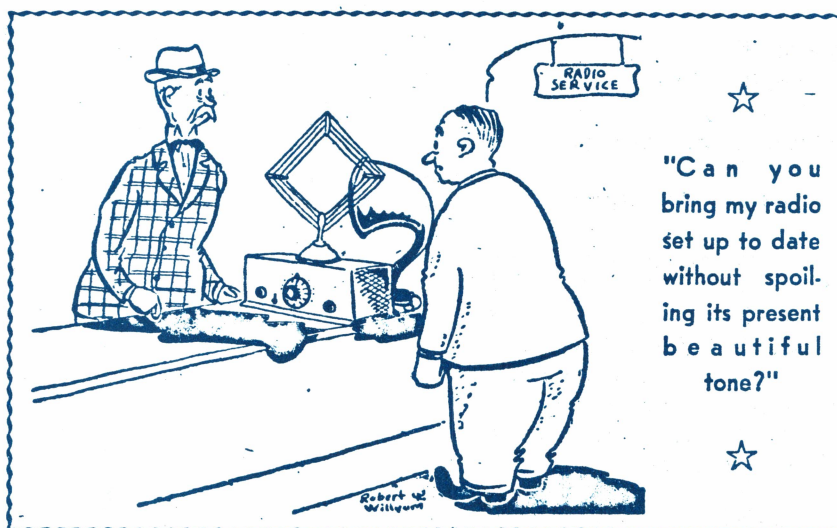
Charlie VK2ZFN

EAD DISPLAY

One of our members, Peter Schulz VK2ZXL who sells a large range of amateur equipment from his premises in Loftus will bring down a selection of equipment and display it at the June meeting.

If you aren't interested in a transceiver, you might like to look at a single meter SWR/Power indicator. As well as reading SWR, this gadget has direct reading 10W and 100W power scales and works up to 200 MHz - all for \$15.

If you want to look at any particular item of amateur equipment, without obligation, phone Peter at 02 521 7573 and he will make sure he brings one down.



SIDEBAND ELECTRONICS SALES

UNIDEN model 2020 AC-DC transceivers 10 to 80 M with 3 crystal filters \$550

TRIO-KENWOOD model TS-520 AC-DC transceivers 10 to 80 M. Still only \$530

YAESU-MUSEN model FT 101-E AC-DC transceivers 10 to 160 M w. speech processor \$650

TRIO-KENWOOD model QR-666 receiver 170 KHz to 30 MHz AC-DC \$300

BARLOW-WADLEY model XCR-30 MK II portable DC communications receiver \$225

HY-GAIN ANTENNAS

14AVQ 10-40 M. verticals, 19' tail, no guys \$65

14AVT 10-80 M. verticals, 23' tail, no guys \$90

TH3BK 10-15-20 junior 3 el. Yagi 12' boom \$135

TH3MK1 10-15 20 senior 3 el. Yagi 14' boom \$180

TH6DXY 10-15 20 senior 6 el. Yagi 24' boom \$225

HY-QUAD 10-15-20 cubical quad Yagi 8' boom \$200

TIGER ARRAY 204DA 20 M 4 el. Yagi 26' boom \$190

BN-88 balun for beam purchasers only \$18

ANTENNA ROTATORS

Model CDR AR-22 junior rotator for small and light beams \$55

Model CDR Ham-II for all hf beams except 40 M ones! \$135

KEN model KR-400 for all medium size hf beams with internal disc brake \$100

KEN model KR-500 for vertical elevation control of satellite tracking \$100

All models rotators come complete with 230V AC indicator-control units.

4-conductor light cable for AR-22 20 cents per yard

12-conductor light cable for Ham-II 30 cents per yard

8-conductor heavy cable for Ham-II 70 cents per yard

6-conductor heavy cable for KR-400-500 60 cents per yard

DRAKE W-4 SWR—WATT METER 0-200 and 0-2000

Watt scales \$60

DRAKE TV-1000 TVI Low pass Filter \$25

SINGLE METER SWR METER \$15

TWIN METER SWR METER \$22

MARK MOBILE ANTENNAS

Helical 6' long HW-40 for 40 M. \$18

High power KW-40 for 40 M. \$25

HW-20 for 20 M. \$16

Swivel mobile mount and chrome plated spring for all \$12

ASAHI MOBILE ANTENNAS

AS-2-DW-E 1/4 wave 2 M. mobile whip \$8

AS-WW 3/8 wave 2 M. mobile whip \$18

AS-GM gutter clip mount with cable and connectors \$10

M-Ring body mount and cap for 1/4 M. whips \$5

CUSH CRAFT ANTENNAS

Model DGPA 52-27 MHz adjustable ground plane \$25

LAC 2 lightning arrestors \$6

Model AR 2 RINGO 3/8 waves verticals \$20

AR-2X RINGO RANGER double 3/8 waves verticals \$35

ARX-2 extension for AR-2 \$15

A147-20T combination vertical-horizontal 2 M. Yagis, 10 elements each \$60

A147-11 11 elements 2 M Yagi \$30

CRYSTAL FILTERS 9 MHz, similar to FT-200 ones, with carrier crystals \$35

KYOKUTO 2 Meter FM 15 Watt output transceivers with digital read-out and crystal synthesized PLL circuitry, now with 800 transmit and 1000 receive channels 5 KHz apart, covers all of 144 to 148 MHz, receive to 149 MHz, no more crystals to buy, includes simplex, repeater and anti-repeater operation. Still only \$300

ICOM IC-2022 2 Meter SSB handy transceivers, 144.0 to 144.4 MHz. Not \$215, but still only \$185

TRIO-KENWOOD model TS-700A FM-AM-CW-SSB transceivers, full 144 to 148 MHz coverage, 10 Watt output VFO controlled, self contained AC-DC operation \$575

AUTOMATIC MORSE KEYERS EK-150 with built-in squeeze key paddle AC operated with monitor \$75

FERRITE CORE BALUNS cheaper Japanese product for up to 500 W RF \$12

COAX CABLE CONNECTORS-SWITCHES Amphenol type male for RG8U and RG58U cable, two types, female chassis mount, double male, double female, all types 100 cents each

Amphenol angle and T-connectors 150 cents each

3 Position coax switches \$3

RG-8U coax cable 3/8" diam. 80 cents per yard

RG-58U coax cable 3-16" diam. 30 cents per yard

Add \$1 cutting and handling cost for coax and rotator cable orders

P.T.T. DYNAMIC MICROPHONES 50K or 600 ohms with 4-pin Jap. plugs \$10

DUMMY LOADS, 50 ohms with Watt meters built-in 0-200 MHz, two types 0-15 Watt and 0-6—0-30—0-150 Watt \$45 and \$80 resp.

TRIO-KENWOOD DIP METERS Model DM-800 0.7 to 250 MHz few only \$60

27 MHz TRANSCEIVERS 5 Watt AM 6 channels with 27.880 MHz crystals \$75

1 Watt hand-held 3 channels 27.240 crystals \$50

15 Watt PEP 23-channels AM-SSB model SE-501 \$175

CUSH CRAFT model CR-1 27-29 MHz Ringo 3/8 wave antennas \$35

IMPORTANT CHANGE, PLEASE NOTE!

Effective immediately all retail sales are handled by Peter Schulz, VK 2 ZXL, business address 24 Kurri Street, LOFTUS, Postcode 2232. Postal address, Postbox 104 SUTHERLAND, Postcode 2232, telephone 02-521-7573. Peter Schulz will attend to all orders, service and repairs, not \$12 per hour, that is a bit stiff, \$6 per hour suffices for expert attention with the aid of all sorts of modern instruments. I shall continue to back Peter, no his name is not Williams, Schulz, with my business experience and finances for quality imports at the lowest available prices, a 12 year record that will not and has not yet been broken. Arie Bles.

MESSAGE FROM PETER SCHULZ VK2 ZXL

Effective 1 May 1976 I shall take charge and be responsible for all retail sales of **SIDEBAND ELECTRONICS SALES**, operating from my address of 24 Kurri Street, LOFTUS near Sutherland. Fully equipped with a modern workshop and test instruments, all service and repairs to amateur equipment will be done expertly, and be available for business from Monday to inclusive Saturdays or on appointment outside normal business hours. All attempts will be made to continue and perhaps even improve on the standing built up in over 12 years of the oldest amateur business in Australia.

As you would have read in last months notes the 1976 Federal Convention was held in Melbourne on the 7, 8 and 9 May with NSW being represented by Tim Mills and myself. During the convention numerous reports were received, and discussed, from the different sections within the W.I.A. as well as a large number of agenda items being dealt with. This Convention was most significant as the full impact of WARC1979 was fully explained to those present. But first some of the results of agenda items which may be of special interest to the members of our society.

With regard to the new Novice Licences it was decided that any person holding a Novice Licence would become a FULL member of the W.I.A. As for the problem of the 2 year tenure it was learnt from Mr. Wilkinson of the P.N.T. Dept. that following representation from the W.I.A. his Dept. had already agreed to extend Novice Licences under certain circumstances - the actual mechanism is not known at this time.

Also during discussions with Mr. Wilkinson the overall problem of examinations was raised with emphasis on both the problem of the examinations and the time taken to obtain results. Mr. Wilkinson could not give any specific details but he did indicate that his Dept. was looking at the possibility of passing all of the examinations etc. to the Education Dept. as they are specialists in the setting of syllabus, education and examinations etc.

For the Z call desiring on air practice CW it was decided to request permission from the P.N.T. to allow CW on the top end of 2 metres with voice identification. So now with the increase in tuneable activity on 2 metres this will be a good opportunity for some slow C.W.

As for the fees for the next year the good news here is that even though the C.P.I. (Consumer Price Index) for this year was over 14% the Federal organisation is only asking for a 50c increase. This does not mean that next years fees will automatically rise.

WARC 1979 stands for the "1979 World Administrative Radio Conference of the International Telecommunications Union". This conference will be held in Geneva in 1979 and is expected to extend for 10 weeks. The basic function of this conference will be to look at the complete radio spectrum and its allocations. It can be seen then that this conference will decide the future of Amateur Radio for the world, and we have the opportunity of obtaining new bands or retaining what we have or we may loose some or ALL.

The great danger of WARC 1979 has resulted from the numerous small new Independent Countries that have come into existance and now have an equal vote at WARC. The United States of America has one vote, so does Nauvu! A large number of these small countries are opposed to Amateur Radio to various degrees so it is vital that our case for Amateur Radio be presented at every opportunity. The fight has already began on the International level by such people as Michael Owen VK3KI, and David Wardlaw VK3ADW. A lot of work will be required over the next three years if Amateur Radio is to continue.

The WIA is asking for your support in this most important period. Firstly we are looking for an increase in membership as the WIA is the only voice of the Radio Amateur on both the National and International level. The larger the number we represent then the stronger will be the voice. There is also of course the financial aspect of such a campaign as this and the greater the number to share this then the less for the individual.

The answer to the old question "what do I get for my \$20?" may well be "The right to continue as a Radio Amature". Michael Owen concluded his report by saying, "There is, however, one thing we cannot be, we cannot be complacent about the future".

This item has been contributed by Barry, VK2FE.



AMPHENOL SALES DIVISION

176 Albany Street, Watson, N.S.W. 2017, Australia — Telephone 69 5264 — Telex AA25643

COAX CABLES AND CONNECTORS:

HOW THEY GOT THEIR NAMES

Ever wonder why the coaxial cable you specified was called "RG-59/U", or the coax connector that goes with it was called a "BNC"?

The "RG" designations came about through a United States Navy coding system designed to be compatible with a huge federal-parts stocking and number system. The letters don't mean anything themselves. "RG/U" always stands for cable; and the corresponding "UG" for coax connectors. The number in the designation refers only to the order in which the cables were developed and then approved by the military. They have no relationship to cable diameter or electrical characteristics.

Connector-type designations have a more interesting story behind them. The UHF connector referred to its "ultra-high frequency" operation, and in the days of World War II, 200MHz was an ultra-high frequency. But not for long. As engineers developed high frequency systems, the need for coax connectors with better performance arose.

Today's popular "N" connector was developed and named after a man from Bell Laboratories named Neill. The "HN" soon followed as the high voltage version of the "N". The "C" type connector was named after its developer, Cal Concelman, an engineer at Amphenol RF Division and its predecessor companies.

As smaller coaxial cables came into use, the BNC connector was developed, jointly by Concelman and Neill. Hence, the "N" and "C"; the "B" comes from an old type "B" connector. No one knows what the "B" meant. The next logical step was to name the threaded version of the BNC the "TNC". And so on, and on.

Moonbounce Report - June 1976.

Water leakage into a coax. fitting in the transmitter RF. output cable prevented operation during the U.S.A. window period of the monthly EME tests on 8th May. Signals were heard from JALVDV while the cable was being dried out, but none from our scheduled stations in U.S.A.

The European window test period later in the evening also resulted in no scheduled stations being heard although our echoes were up to 11dB. over noise.

Charlie VK2ZEN was assisted by Tom VK2ABI for the above test.

A special EME test was arranged by the Stanford Research Institute (WA6LET) Group for 23/5/76. Moonrise at VK2AMW during this test was 0218 EAST on 24/5. Charlie VK2ZEN made all the necessary preparations over several days prior to the test and had the equipment operating some minutes prior to moonrise. Signals were not heard until the moon came up but it was subsequently found that the high power test scheduled for this time had not taken place.

Signals were peaking to 20dB above noise and averaged 15-16dB. WA6LET was heard in contact with W3CCX, WB7DST, VK3ATN, JA9B0H and W9WCD during the test period. Some time was required to calibrate our system against the WA6LET signal level in preparation for the anticipated high power tests starting at 1800Z (0400 EAST) but they did not take place. However WA6LET carried out the scheduled reduced power test shortly after this time and their signals were copied down to their lowest power level even though we were using 3.6KHz I.F. passband at the time. Another calibration run was then carried out on our receiving system.

No attempt was made to transmit to WA6LET or any other station as they had indicated that this test was aimed at them working stations that they had not worked before, plus obtaining information from their special high power tests. Charlie's time was fully taken up with calibration checks etc. Club member Ken Grimm helped out by operating the chart recorder, entering information on the chart record etc. Bruce Proctor also assisted again during this test, which was in the wee small hours of the morning. Bruce has become an excellent second operator at Dapto and is quite an expert in such things as dish pointing, information logging, assisting in signal checks etc. All such help is very welcome. Keith VK2ZYI also loaned a good quality stereo tape recorder for this special test to facilitate correlation of comments with signals on the tape.

I am still not able to get about for tests etc. Charlie has battled on, doing such chores recently as fencing in the cables inside the dish mounting with wire netting to stop the cows chewing them (one has been chewed right through!), opening up the feed box up on the dish to let out water that had leaked in then properly sealing it up etc. etc. All this illustrates that the Project requires constant attention to keep it viable!

Lyle VK2ALU.

P.S. Heard while monitoring 2 meters from the bedside receiver recently.

Long-time married Ham - 'I have my wife well trained, she realises that she cant lick ham radio - she wont join it, so she just ignores it!!!' - - - Well trained??

THE DAPTO MOONBOUNCE PROJECT (as at June 1976)

Last month we included an article on the Wollongong Repeater. This month we are providing very brief details of the Dapto Moonbounce Project for the information of our newer members.

The Project -To carry out experiments and communication on the 70cm Amateur band (and later possibly at 1296MHz) via the Earth- Moon- Earth (Moonbounce) path with other groups interested in this work.

How the Project started -Late in 1969 we were approached and invited to activate the disused radio telescope facilities at West Dapto which were originally part of a CSIRO Solar Research Observatory but had been passed on to the Wollongong University College (now University of Wollongong) some years previously. Apart from the actual radio telescope there was no usable equipment on site. This we had to construct and install.

The Moonbounce Equipment

(i) The Antenna -consists of the original 30 ft. diameter parabolic reflector (the 'dish') with its driving equipment which allows the dish to follow the movement of the sun or moon. A crossed dipole and reflector type feed antenna was installed at the focal point of the dish. This allows for the changing of polarisation of the antenna by 90 degrees to help overcome fading due to Faraday Rotation of signals when passing through the Heavyside Layer. Dish gain is 28dB over a dipole (approx. 1000 over an isotropic radiator). A sighting telescope is installed on the dish, which can also be pointed at the moon when it is not visible by the use of calculations applied to the calibrated tracking equipment.

(ii) The Receiving System - uses a very low noise transistor type preamplifier mounted in a box near the feed dipoles, on the dish. A similar type low noise postamplifier is at the other end of the feed cable, immediately prior to the 432MHz to 28MHz converter which is located in a cubicle near the base of the dish structure. The received signal then goes via coaxial cable to the Operating Room approx. 50 yds. distant from the dish and into a 28MHz IF channel receiver (a Drake 2B receiver). The audio output from the receiver can be selected either to a speaker, power level meter, chart recorder or tape recorder. The receiver threshold sensitivity at 80Hz bandwidth is -154dBm (approx. 0.004 microvolts). Either CW, SSB, or RTTY can be received.

(iii) The Transmitting System - consists of a transmitter frequency source located in the Operating Room and crystal controlled, using a constant-temperature oven for stability. The RF output can be frequency shifted when RTTY is being transmitted. The transmitter output frequency can be varied to allow operation on any frequency between 432.000MHz and 432.050MHz as required. The 13.5MHz output from the frequency source is fed to the main transmitter which is located, with its power supplies, in a cubicle near the dish, where the signal frequency is multiplied and raised in power to approx. 650 watts at the output of the final stage (a pair of 4CX250 type valves). Approx. 400 watts is available at the antenna feed dipole due to loss in the output filter, coaxial cable, receive/transmit relay and dipole selection relay.

(iv) Control, Protection and Metering Systems - A comprehensive control, protection and metering system is provided to assist in remotely operating the receive/transmit system and protecting the receive preamplifier and transmitter stages.

Results to date - We hear our own echoes at up to 10dB above noise. Two way contacts have been made with stations in USA, Canada, England, France, Italy and Japan and stations heard in Holland and Rhodesia.

VI2AMW and G3LTF in England have successfully exchanged signals over the longest point to point distance currently obtained on the 70cm Amateur band. (10535 miles/16955 kilometers)

COMPONENTS FOR SALE.

BOOKS Books suitable for beginners. Excellent value.

BASIC ELECTRONICS. A very useful book for beginners and more advanced amateurs alike.

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R SISTORS

Bags of 130 1/2W resistors plus 4 Greencaps.

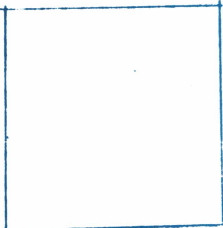
10 each of 13 values : 22, 47, 82, 100, 470 ohm

1K, 2.2K, 10K, 22K, 47K, 100K.

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Greencaps 2 - .1, 2 - .0047, .01 or .022 to bring
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