

THE PROPAGATOR

NO 4/76

APRIL 1976

NO 4/76

THE MONTHLY NEWSLETTER OF THE
ILLAWARRA AMATEUR RADIO SOCIETY

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Illawarra Amateur Radio Society
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NOTICE OF MONTHLY GENERAL MEETING. APRIL 1976.

Members are advised that the Monthly General Meeting of the Illawarra Amateur Radio Society will be held at the Wollongong Town Hall Meeting Room on Monday, 12th April 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. Lecture.

The Lecture will be given by Roger Evans, VK2BRE, on the subject -

HOW TO USE A CATHODE RAY OSCILLISCOPE.

Roger is well qualified to talk on this subject, and as he is an amateur it will be of great interest to both newcomers and old hands alike.

Ian. VK2ZJA.

U

SILENT KEY. -- VK2AFF.

Kevin Brady passed away suddenly on 8th March 1976, aged 45.

Kevin received his professional electronics training in the Air Force before he moved to Wollongong. Working for a time with the PMG, he moved into Television servicing where he became well known, eventually moving to the Systems Engineering Laboratory at Wollongong University.

He always had time for the beginner, and was instrumental in founding the Wollongong University Amateur Radio Club, and for assisting many new and old call signs, my own in particular.

Receiving a letter of commendation for his part in the 1957 floods, Kevin was deeply committed to WICEN, and was working as assistant co-ordinator of Wollongong WICEN at the time of his death. Much of the initial Illawarra WICEN organisation and the excellent relations that WICEN in this area now has with the State Emergency Service are directly related to his untiring efforts.

A good friend has passed on.

Jim. VK2BBG.

COMMITTEE FOR 1976-77.

Election of office bearers was held at the Annual General Meeting on 8th March 1976. Results were as follows:

President. . .	Ian Bowmaker. VK2ZJA.
Vice-President. . .	Bill Calvert. VK2DJ.
Secretary. . .	Keith Curle. VK2ZYI.
Treasurer. . .	Charles Proctor. VK2ZEN.
Committee men. . .	Graeme Dowse. VK2AGV.
	Jim Potts. VK2BBG.
	John Hodgkinson. VK2BHO.

At the Committee Meeting held on 17th March 1976, the following appointments were confirmed.

Editor of Propagator.	Ian VK2ZJA.
Combined Radio Clubs representative.	Geoff Cuthbert VK2ZHU.
Repeater Officer.	Graeme VK2AGV.
WICEN Co-ordinator.	Jim VK2BBG.
Moonbounce Co-ordinator.	Lyle Patison VK2ALU.
Store Officer.	Bill VK2DJ.

We have reached yet another milestone.

We now have our first 'associate' member in Mrs. Ruth Birdsall of Berry. Ruth has attended a number of our monthly meetings and also has a very pleasant voice on 2 metres. Ruth's husband is John VK2QJ.

Welcome Ruth.

Moonbounce Report - April.

Charlie VK2ZEN, with kind assistance from Charles Hedley VK2MT on the brass pounding side, carried out the March EME tests. As usual at this time of the year Charlie was tied up for much of the Saturday and Saturday night for the American and European tests.

JALVDV and F9FT were worked and VE7BBG, I5MSH and VB4JX were also heard. Weak but unreadable signals were heard during the SM5LE and ZE5JJ test periods.

Our echoes were between 6dB and 10dB above noise during the test periods.

As I am back in hospital with further problems, it is not clear when I can get back into the project, just at a time when some new and most interesting developments could have become possible.

Our overseas friends in the EME field have asked us to do what we can but they will try to reduce our commitments a little after the April tests, which had already been organised, as I believe that it is asking too much of Charlie 2ZEN to keep the full programme going.

VK5MT is working towards 432MHz Moonbounce capability and has provided interesting information on his gear.

I5MSH is hoping to get RTTY equipment to go with his fine moonbounce setup and this may allow us to reactivate our RTTY work.

Thanks to Neil VK1ZT and Eddie VK1VP for digging out a most interesting bit of SATCOM info on Ionospheric Scintillation effects, which has further references that may throw more light on as yet (as far as I can find out) unexplained features of the EME path in the ultra high frequency region.

How much more useful amateur work could be done if more were interested in these things??

Lyle VK2ALU

IMPORTANT

SUBSCRIPTION NOW DUE

SEE RENEWAL FORM ELSEWHERE
IN THIS ISSUE

PLEASE RETURN PROMPTLY

SUBSCRIPTION NOW DUE.

DX PANORAMA

by Gerry VK2APG.

As most of you will have noticed, the DX bands have been very poor lately with the exception of 40 metres. This band has been providing some excellent DX from 0700 GMT onwards. I've heard Barry 2FE working some rarities on 40 with his new solid-state transceiver.

On 20 m the band is still opening to Europe around 1100z on the SP, and some quite good openings to the east coast USA and Caribbean areas around 1200z.

There was an excellent band opening on 10 metres to central USSR on the 26 March 76. I worked several UL, RL, UA stations with 5 by 9 both ways around 10.45z... Keep a listen out on this band.

I haven't worked too many exotic stations lately but here are a few....

VK200/Lord Howe	0656	20	DX-pedition.
GW3NNF	1256	"	Angelesy Wales
A35Af	0250	"	Tonga
OZ7YY	0637	"	Laven Denmark (Long Path)
OK3KKF	0647	"	Czechoslovakia
JW5NM	1055	"	Svalbard (Short Path)
UL7PAC	1056	10	Karaganda USSR
UL7PBY	1106	10	Kazakh USSR
RL7PCV	1159	10	Karaganda USSR
VP2G	0524	20	Grenada
ZF1MA	1305	"	Grand Cayman Is. PO Box459.
JY9EK	1258	"	Amman JordanC
CR9AJ	1036	"	Macao

These are about the most interesting over the last month. I hope to have more DX news from other members. Please send me news of any DX you may have heard or worked for the page. Thanks, My address is 2/38 Hilltop Ave, Mangerton 2500.

QSL CARDS HAVE ARRIVED AT MY QTH FOR THE FOLLOWING PEOPLE.....

VK's.. 2BJL, 200, 2wo, 2AGW, 2AUP, 2AYF, 2BLS, 2BHO..

See you at the meeting .

Gerry VK2APG

ILLAWARRA AMATEUR RADIO SOCIETY.

Renewal of Propagator subscription and membership for 1976-77 is now due.

Fees for this year are - \$ 3. Full membership.
\$ 1.50 Students and Pensioners.

Please fill in the particulars below and bring to the next meeting or send to

The Secretary,
I.A.R.S.
PO BOX 110
DAPTO NSW 2530.

NAME. CALL SIGN.

ADDRESS. Street, Postcode.
Town.

W.I.A. membership status. Full / Associate / Nil.
(cross out those not applicable)

I.A.R.S. membership status. Full / Student / Pensioner.
(cross out those not applicable)

QSL QSL QSL QSL QSL QSL QSL QSL QSL QSL

The QSL Bureau is now in operation through the Hunter Branch of the W.I.A. Both inwards and outwards.

Address - VK2 QSL BUREAU (W.I.A. Hunter Branch)
C/O POST OFFICE
TERALBA N.S.W. 2284.

For members of the W.I.A. -

OUTWARDS cards will be handled FREE
Cards may be sent direct, or via IARS.

INWARDS cards will be delivered to IARS and will be available on meeting nights.

Non members of the W.I.A. may use the QSL service by making their own arrangements. This can be done by writing to -

Administrative Secretary,
Wireless Institute Centre,
14 Atcheson St.,
Crows Nest. N.S.W. 2065.

For non members there will be a handling charge of 2c per card with a minimum charge of 50c on any handling of either inwards or outwards cards.

Any questions regarding the above arrangements may be directed to any committee member.

W.I.A. Application for Membership Forms are available from Geoff, VK2ZHU.

WANTED.

SSB Transceiver. (Similar to FT101)

Failing this a good Communications receiver would be considered.

Contact Brian Tucker, VK2ZGB.
80 Murray Park Rd., Figtree Heights.

WANTED.

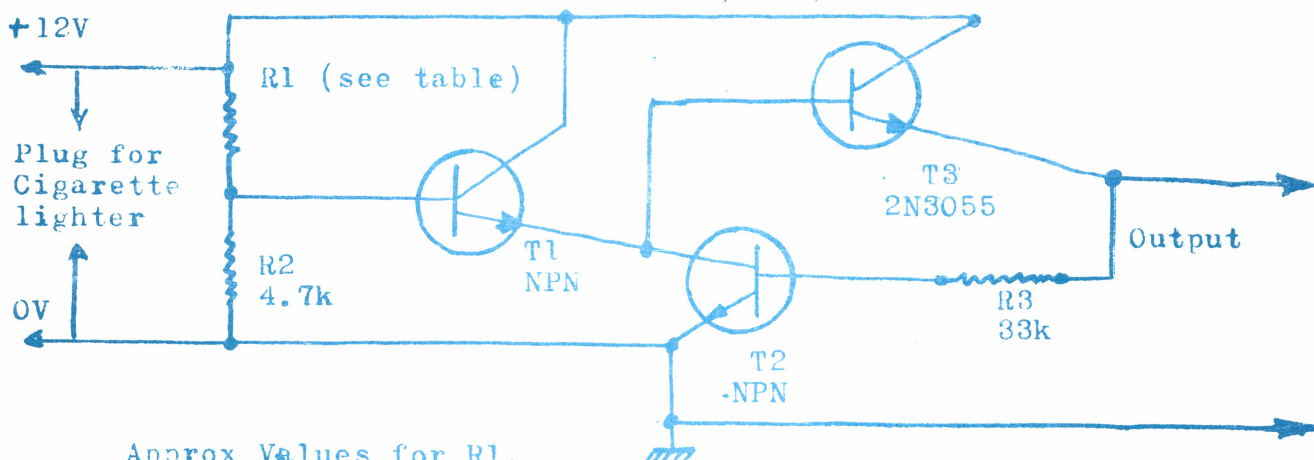
Carphone. Must be in working condition.
Prefer 2m FM, but 6m will do also.

Contact Peter Laughton, 29 5047.

SIMPLE CIRCUITS CORNER.

Below is the circuit for a D.C. Power source suitable for running a portable tape unit, radio, calculator etc from your car cigarette lighter socket by dropping the 12Volts down to 9V, 7.5V, 6V etc. The original circuit used a 200K log pot in place of R1 but I found that it was much too touchy to rely on this when a set voltage was required, as even the slightest movement varied the volts a lot especially around the 9V end of the scale.

T1 & T2 were some strange English transistors I couldn't find an equivalent for so I used 2x087 computer board transistors. I imagine that any old NPN transistors capable of running at 400 to 500 mills would be fine. The 2N3055 should be mounted on a suitable heatsink as it is possible to run this unit at about 3A for ever and it generates a fair amount of heat at this sort of current.



Approx Values for R1.

4.5V	5.6k Ohms.
6.0V	3.3k "
7.5V	2.2k "
9.0V	1.0k "

W.I.A. NEWS & NOTES.

Compiled by Geoff Cuthbert VK2ZHU.

As you will have read elsewhere in this issue of the "Propagator", I have been delegated to the position of "Combined Radio Clubs Committee" Representative.

Currently, representatives from almost all of the Radio Clubs from Wollongong to Newcastle meet with the NSW President, Tim Mills and other members of Divisional Council, on a monthly basis. At these meetings we have been aiming for a two way exchange of information where by the individual club representatives can clearly put the requests from their Club members to Council, and in the same way Council can clearly and concisely give answers and report on progress of long term projects.

Another basic aim at the Combined Radio Club Committee meetings was to present problems and requests from Federal Council for the Clubs' discussion and direction. In other words, those who are setting policies and keeping the W.I.A. operating want to know what we, the individual members, desire.

A typical example of the above is the current Channel expansion on 2 metre Repeater allocations. There are three alternatives and the NSW Division is asking us as members as to what we want; if we do not reply then the decision is left to the five Councilors to set the policy for the state.

As this years representative to the "Combined Radio Clubs Committee" I will be attempting to keep you all informed of what the W.I.A. is doing for you. I will also attempt to answer any questions you may have regarding the State and Federal sections of the W.I.A. and if I do not have the answers on hand I will obtain a satisfactory answer for you.

One of the advances to have come out of the "Combined Radio Clubs Committee" is the new QSL Service now being set up. Also this group and the W.I.A. are working on improvements to Novice Licencing (the 2 year tenure), changes to repeater licencing requirements, 70cm bandplan, improvements to Dural Broadcasts (both HF and VHF), etc..

If any person wishes to support the work of the W.I.A. by becoming a member I will have Membership Application Forms at the next meeting.

WICEN NEWS

Compiled by Jim Potts VK2BBG.

Our first exercise was held in February, and proved to be an interesting activity. Mistakes were made, mostly by myself, but even so the six stations operating did a creditable job. Many thanks fellas. Another exercise will be held shortly. All you need is Channel B and a couple of hours. This time the de-briefing will include uncapping a few 807's--one of my mistakes included the heat wave on top of Saddleback.

In March WICEN adjusted the SWR's of the State Emergency Services mobile control Land Cruiser - we only have another 34 installations to go. HELP!

I went to the 48hrs S.E.S. conference last weekend. The reception given to me as WICEN representative and amateurs in general was little short of spectacular. Many thanks to Ross Sampson for inviting me, and as we now have good relationships with S.E.S., Police, Councils, Health Authorities, etc. please help us to keep up the good work by joining WICEN. Remember our public relations are in YOUR hands.

You don't want to be called out? Neither do I. So lets get their gear operating so that this will not be necessary. In times of emergency you CAN be called out and if the situation is bad enough, you WILL be called out by the Statutory Authorities eg. Police, in or out of WICEN.

Jim. VK2BBG. 844639.

CRYSTALS CRYSTALS

We received a quantity of FT243 crystals from the W.I.A.

Keith has spent many hours sorting them out and has prepared a list of the frequencies available and has all the crystals sorted out according to frequency.

Some are in short supply - distribution will be on a first in first served basis. COST IS 5cents PER CRYSTAL.

Please submit a written list of frequencies you would like and we will extract them from the heap. Don't forget to put your NAME on the list.

FT243 XTALS

FREQ MHZ	X2	X3	X4	X6	X8	X12	X16	X24
3.7600	75200	112800	150400	225600	300800	451200	601600	902400
3.8850	77700	116550	155400	233100	310800	466200	621600	932400
3.9550	79100	118650	158200	237300	316400	474600	632800	949200
3.9900	79800	119700	159600	239400	319200	478800	638400	957600
3.9950	79900	119850	159800	239700	319500	479400	639200	958800
4.0350	80700	121050	161400	242100	322800	484200	645600	968400
4.0800	81600	122400	163200	244800	326400	489600	652800	979200
4.1350	82700	124050	165400	248100	330800	496200	661500	992400
4.1650	83300	124950	166600	249900	333200	499800	666400	999600
4.1750	83500	125250	167000	250500	334000	501000	668000	1002000
4.2150	84300	126450	168600	252900	337200	505800	674400	1011600
4.2400	84800	127200	169600	254400	339200	508800	678400	1017600
4.2550	85100	127650	170200	255300	340400	510600	680800	1021200
4.2800	85600	128400	171200	256800	342400	513600	684800	1027200
4.2950	85900	128850	171800	257700	343600	515400	687200	1030800
4.3300	86600	129900	173200	259800	346400	519600	692800	1039200
4.3400	86800	130200	173600	260400	347200	520800	694400	1041600
4.3950	87900	131850	175800	263700	351600	527400	703200	1054800
4.4450	88900	133350	177800	266700	355600	533400	711200	1066800
4.4900	89800	134700	179600	269400	359200	538800	718400	1077600
4.5350	90700	136050	181400	272100	362800	544200	725600	1088400
4.5400	90800	136200	181600	272400	363200	544800	726400	1089600
4.6200	92400	138600	184800	277200	369600	554400	739200	1108800
4.6350	92700	139050	185400	278100	370800	556200	741600	1112400
4.6950	93900	140850	187800	281700	375600	563400	751200	1126800
4.7100	94200	141300	188400	282600	376800	565200	753600	1130400
4.7350	94700	142050	189400	284100	378800	568200	757600	1136400
4.7800	95600	143400	191200	286800	382400	573600	764800	1147200
4.7850	95700	143550	191400	287100	382800	574200	765600	1148400
4.8400	96800	145200	193600	290400	387200	580800	774400	1161600
4.8525	97050	145575	194100	291150	388200	582300	776400	1164600
4.8800	97600	146400	195200	292800	390400	585600	780800	1171200
4.9000	98000	147000	196000	294000	392000	588000	784000	1176000
4.9300	98600	147900	197200	295800	394400	591600	788800	1183200
4.9500	99000	148500	198000	297000	396000	594000	792000	1188000
4.9950	99900	149850	199800	299700	399600	599400	799200	1198800
5.0350	100700	151050	201400	302100	402800	604200	805600	1208400
5.0900	101800	152700	203600	305400	407200	610800	814400	1221600
5.3850	107700	161550	215400	323100	430800	646200	861600	1292400
5.6450	112900	169350	225800	338700	451600	677400	903200	1354800
5.6600	113200	169800	226400	339600	452800	679200	905600	1358400
5.6875	113750	170625	227500	341250	455000	682500	910000	1365000
5.7400	114800	172200	229600	344400	459200	688800	918400	1377600
5.8600	117200	175800	234400	351600	468800	703200	937600	1406400
5.9500	119000	178500	238000	357000	476000	714000	952000	1428000
6.1000	122000	183000	244000	366000	488000	732000	976000	1464000
6.1425	122850	184275	245700	368550	491400	737100	982800	1474200
6.1850	123700	185550	247400	371100	494800	742200	989600	1484400
6.2350	124700	187050	249400	374100	498800	748200	997600	1496400
6.2750	125500	188250	251000	376500	502000	753000	1004000	1506000
6.3150	126300	189450	252600	378900	505200	757800	1010400	1515600

COMPONENTS FOR SALE.

NEW ITEM. PC BOARD * FIBREGLASS * 12 inch square pieces.

NEOSID. Formers. 8c each
Balun formers - small 12c each
large 15c each
Cans - single 10c each
double 12c each
Slugs - F 29, F 16, long ferrite beads. 7c each

10K A and 15K A potentiometers	50c each
500K C switch potentiometers	60c each
.0068 mf feed through capacitors	10c each
Philips "beehive" trimmers	30c each
Ceramic trimmer, mica insulation.	30c each
Ground Plane Antenna Base.	1.00 each
Edge Connectors.	1.00 each
Tag strips	10c each
Ceramic bolt-down trimmer.	10c each
Twin wire lead fitted with 2 1.5mm plugs.	50c each
Small solder type feed through capacitors.	5c each
Wire wrap type trimmers.	10c each

GREENCAP CONDENSERS 100V

.0047, .01, .022	8c each
.047, .1	12c each

METERS

1. S Meter 400 uA movement, calibrated in S units
1 to 9 and 10 to 40 over S9. Cutout size 1 7/8" x 5/8" \$2.50
2. Level Meter This is a dual movement meter indicating
L and R level. Each side from -20 to +3. Each movement
is 200 uA F.S.D. The dual scale is translucent, for
illumination from the back. Very pretty. Cutout size
1 7/8" x 1 1/2". Probably the same as the meter used in an
Electronics Australia mixer/preamplifier project a few
months ago. Only two left. \$3.00
3. 0 - 1mA Meter A standard 2" square meter. \$4.00
4. 0 - 1mA Meter A standard 3" x 2" meter. \$5.00
5. 0 - 10A Meter A standard 3" x 2" meter. \$5.00

RESISTORS

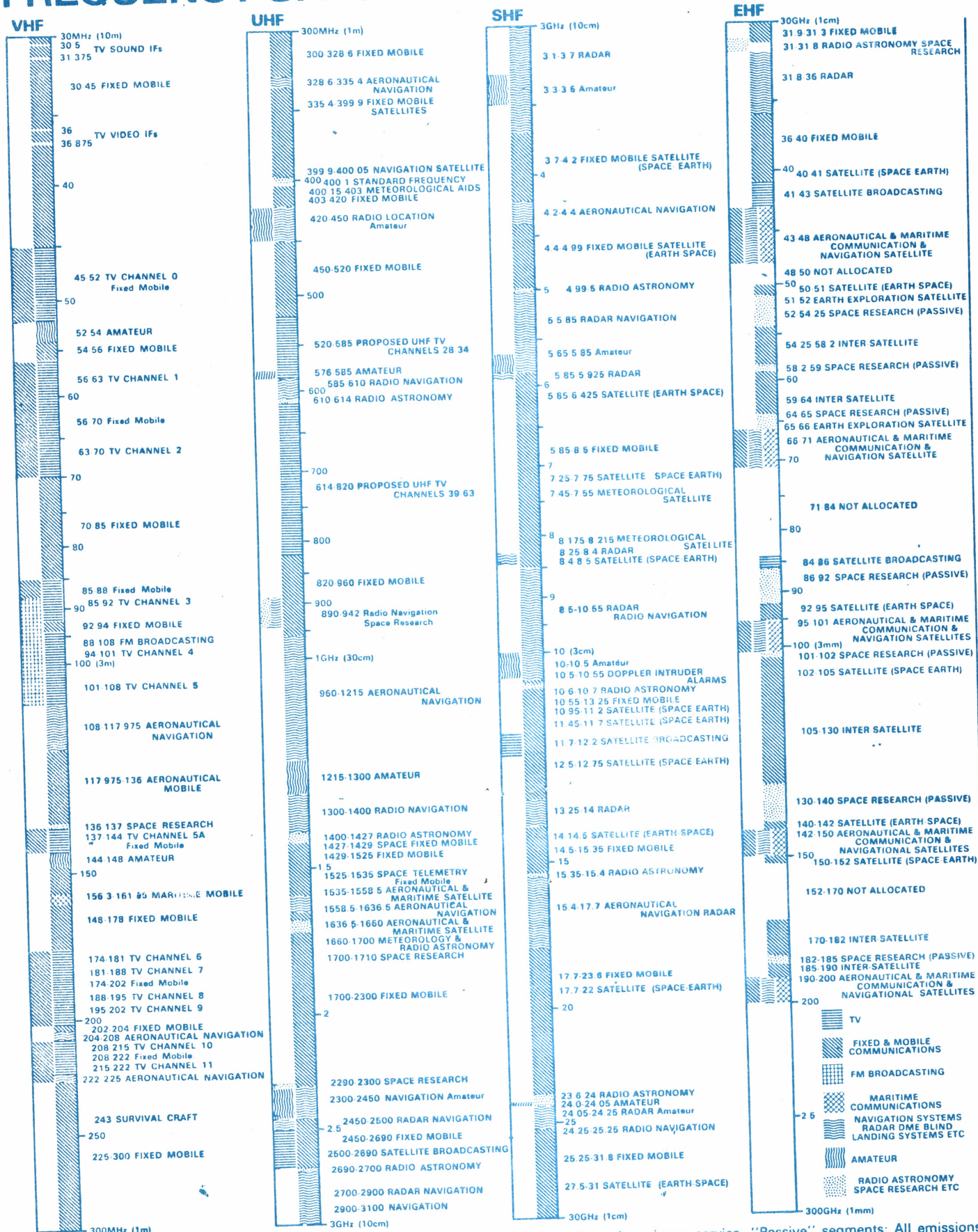
Bags of 130 1/2W resistors plus 4 Greencaps.
10 each of 13 values : 22, 47, 82, 100, 470 ohm
1K, 2.2K, 10K, 22K, 47K, 100K.
Greencaps 2 - .1, 2 - .0047, .01 or .022 to bring
cost of resistors down to 2c each and still make a
round \$3. \$3.00 per bag

Published below is a further chart from Electronics Australia.
We again wish to gratefully acknowledge the source.

(Ed. - I hope members find these reprints of value.
Any requests for similar items or further suggestions
would be most welcome.)

ELECTRONICS AUSTRALIA DATA

FREQUENCY SPECTRUM



Services shown in small letters are secondary services. They must not cause interference to the primary service, and must tolerate any inter-

ference from the primary service. "Passive" segments: All emissions prohibited. Passive (receiving) devices only allowed.

Dapto Moonbounce Project - Annual Report, March 1976.

The project has continued throughout the year. Results obtained were substantially better than previous years due to

1. Improvements to the operation of our equipment.
2. Much greater participation in 432MHz EME activity by overseas groups.

EQUIPMENT

The more important changes made to equipment were

1. The transmitter power amplifier was replaced by one made up to the K2RIW stripline design. This resulted in an improvement in rf output from 350 watts to over 650 watts at 1KW input.
2. An improved receiver preamplifier with input coaxial filter was built and installed in place of the preamp. in the feedbox. This unit has an 0.2dB. lower noise figure. The receiving system noise temperature is now approx. 120 degrees Kelvin.
3. The transmitter frequency source was modified to allow variation of frequency without requiring internal access to the circuitry.
4. The receiving system I.F. channel Drake 2B receiver frequency checking crystal oscillator was modified to allow precise adjustment of frequency from an external control unit.
5. A 15MHz. dipole antenna was erected by VK2BJF to allow reception of WWV for accurate adjustment of transmitter frequency.
6. Much needed repairs were made to the dish supporting steelwork and the dish drive was given a thorough overhaul.

OPERATING FREQUENCY RANGE

Verbal approval was received from the PMG on a 'non-interference' basis for operation of the transmitter at full input power over the frequency range 432.000 to 432.050MHz. to allow us to get clear of overseas non EME QRM on and near 432.000MHz.

EME TESTS

432MHz EME tests are programmed internationally on a regular monthly basis, together with some special tests.

Tests involving VK2AMW were programmed with 48 stations during the last 12 months. We were also allocated 13 separate CQ periods. During these tests we had a total of 17 contacts and heard 15 of the remaining stations. This is an improvement over previous years as there was a number of occasions when the scheduled stations could not get on.

Twelve of the contacts were 'first time' contacts with the stations concerned, including one with W6LET during their special test.

New countries worked were Canada, France, Japan and Italy.

GENERAL

The project has now entered into its seventh year. It continues to provide new and most interesting information, particularly with respect to as-yet unexplained non reciprocal propagation conditions over the EME path.

Those regularly participating in the project are VK2ALU and VK2ZEN, with assistance being given on specific matters by other club members and it is hoped that they have obtained something of interest in return. The assistance of Peter VK2BJF in putting up the 15MHz dipole, is specifically acknowledged.

The staff of the Electrical Engineering Dept., University of Wollongong also assisted with metalwork for the new P.A. & coax. filter.

It is hoped that the Elec. Eng. Dept. of the University may be able to make use of the Dapto facilities during the next 12 months.

Finally, it is noted that VK2AMW is still the only station representing Australia in 432 EME activity.

Lyle Patison VK2ALU.
Project Coordinator.

THE PROPAGATOR.

Newsletter of the Illawarra
Amateur Radio Society.



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