PROPAGATOR

NO. 4/77

APRIL 1977

NO. 4/77

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
PO Box 1838

WOLLONGONG

NSW

2500

PRESIDENT

Bill Calvert VK2DJ 19 Springfield Ave, FIGTREE 2525 Ph. 713569

SECRETARY

Brian Boseley VK2NBB Figtree Hotel FIGTREE 2525

NOTICE OF MONTHLY MEETING - April 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, 18 April 1977 at 7.30pm.

AGENDA

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

TRADE DISPLAY

This month Peter Schultz will again present his trade display of amateur equipment. If you wish to purchase a specific item from Peter at the meeting you can contact Keith Curle VK2BUU, or you can contact Peter direct and ask him to bring it with him.

Remember "BRING YOUR MONEY WITH YOU".

MOONBOUNCE PROJECT - APRIL 1977

Scheduled 432MHz EME tests by VK2AMW on 26/3/77 yielded the following results:

OZ9CR - Called - nothing heard F2TU - Called - nothing heard

Our echoes at this stage were peaking 7dB over noise.

G3LTF - Contact made with 'M' signal reports both ways.

A contact was also made with F9FT who called us near the end of our contact with G3LTF.

Visitors to the shack during the above tests were Peter Venner and two friends - VK2ALU and VK2ZEN operated.

Visits during the monthly scheduled EME tests

Should anyone wish to come along to Dapto to see what goes on during Moonbounce tests, then if they will give a phone number, on which they may be contacted a day or two prior to the test weekend, to either VK2ALU or VK2ZEN then one of us will phone them to advise of the test period.

Monthly tests are scheduled for most stations interested in 432MHz EME contacts by Cor Maas VE7BBG who passes on the test schedules via the 432 EME News which is sent each month to all concerned by Allen Katz K2UYH. I don't usually get the 432EME News until a few days prior to the test weekend.

VK2AMW is scheduled on over the period shortly after moonrise at our location, for stations in North America and shortly before moonset for stations in Europe, as it is only during these periods that both stations concerned can each "see" the moon simultaneously.

Thus the test periods "change with the Moon"!!

We would be happy to have visitors at any test.

Ron Wilkinson VK3AKC

A letter was received a few days ago from 2 meter Moonbounce man VK5MC. It included the sad news of the death of Ron Wilkinson, VK3AKC on 23/3/77. Ron will be sorely missed by those of us in VK and other areas who are interested in Moonbounce. He had made moonbounce contacts on 1296MHz and was preparing to come on to 432MHz EME of recent months. He was also very active in VK3 on VHF and UHF generally. He was always ready to help others in these fields.

Sideband Electronics Sales

HF TRANSCEIVERS	DOA	FDK MULTY QUARTZ wi crystals supplied 10 Watts,		sets of \$265
ASTRO - 200 digital solid state 200 W.P.E.P. TRIO KENWOOD model TS 520 - D AC - DC 1	P.O.A.	YAESU MUSEN model FT- 10 to 160 M with speech pro		P.O.A.
to 80 M.	\$590	YAESU MUSEN model FT		P.O.A.
TRIO KENWOOD model 520 - D AC only 10	\$650	YAESU MUSEN model FT		
to 80 M. TRIO KENWOOD model TS - 820 - S AC on				P.O.A.
160 to 10 M. with digital readout	\$980	YAESU MUSEN model FT		P.O.A.
TRIO KENWOOD model TS - 820 AC only	0050	YAESU MUSEN model FP		P.O.A.
160 to 10 M.	\$850		Uses Wadley loop p	\$300
TRIO KENWOOD DS 1 DC Converter	\$ 65	YAESU MUSEN model YO FREQUENCY COUNTERS	:-500	P.O.A.
VFO - 820 DG - 1 Digital Display	\$145 \$160	PRECOENCY COONTERS		P.U.A.
YG. 88C Crystal Filter	\$ 64	HY - GAIN ANTENNAS		
SP. 520 - 820	\$ 36	14AVQ 10-40M, verticals, 1		\$ 65
TRIO KENWOOD model TS - 700 - A FM-AM-	CW-SSB	18AVT-WB 10-80 M. vertica		\$ 95 \$ 160
transceivers. Full 144-148 MHz coverage, 10 W	att out-	TH3JR 10 15 20 junior 3 et. TH3MK3 10 15 20 senior 3		\$220
put, VFO controlled, self-contained, AC-DC op	\$650	TH6DXX 10-15-20 senior 6		\$250
TO 000 A FM AM		HY-QUAD 10-15-20 cubical		
TRIO KENWOOD model TS-600-A FM-AM. transceiver full 50-54 MHz coverage 10 Watt ou	itout	TIGER ARRAY 204BA 20MBN-86 balun for beam purch		\$ 25
variable form 1 Watt to full power. VIFO control		Div oo balan ioi beam paroi	idsor's orny	V 20
AC DC operation. Styling as TS-700-A.	P.O.A.	CUSH CRAFT ANTENNAS		0.45
TRIO KENWOOD model TR 7400 2 meter FM		A144-11 11 Element 2M-Ya A147-11 11 Element 2 M Ya		\$ 45
transceiver 10 to 25 watts output. Frequency r. 144.00 to 147.995 MHz No. of channels 800, [A147-20 combination horiz		\$ 70
conversion superheterodine sensitivity better	Journe	A144-20 combination Yagi	with matching	
than 0.4 UV for 20 DB.	\$385	harness circular polarization		\$ 75
KYOKUTO 2 M FM 15 W output transceivers	with	ANTENNA ROTATORS	11	
digital read-out and crystal synthesized PLL cir	cuitry	Model CDR Ham-11 for all I 40 M	it beams except	\$200
now tiwh 800 transmit and 1000 receive chann KHz apart, covers all of 144 148 MHz, receive	to 149	Model CDR AR-22 L junior	rotator for small	0200
MHz. No more crystals to buy. Includes simple	х,	beams		\$ 65
	\$310	KEN model KR-400 for all a beams with internal disc bra		\$110
NOVICE OPERATORS		KEN model KR 500 for ver		\$110
All above HF transceivers will be modified for	low	satellite tracking		\$110
cost to suit novice. Requirements 27 MHz convin stock now for kenwood models.	7. x tais	All models rotators come co		
	o pow	volt AC indicator-control ur 6-conductor cable for	iits.	
IT IS HERE AGAIN, the well known SE-501 is style case 15 Watt pep 23 AM SSB for as low as	s \$215	KR-400-500	65 cents per me	tre
Same model with AC built in supply and DC be	uilt in	COAX CABLE CONNECTO	RS	
SWR power meter and many goodies.	\$260	PL 259 SO-239 Chassi Mount		\$1.20 \$1.20
ICOM		Male to male joiner		\$1.20
VHF TRANSCEIVERS SSB ICOM model IC-202 2 M SSB portable transcei	ver 144.	Female to female joiner		\$1.20
144.4 MHz	\$215	Angle connector		\$1.70
ICOM model IC 502 6 M SSB portable transcei	vers	Tconnector		\$2.00
52 53 MHz	\$215	COAX CABLE RG - 8 - U foam filled	per metre	\$1.20
USED EQUIPMENT		SWR METER		
Collins KWM 2 - A in new condition with po	ower	*Twin meter model: Y.M1. prof quality	E. 3.5 to 145 MHz	\$ 28
supply	\$1,600		nnas filter	\$ 31
PM.2 6146 – b valves RCA new Large stock \$10	each	DRAKE TV - 3300 TVI low SSR-1 Receivers	pass miter	\$270
1 D140 - D Valves BLA New Large Stock \$10	Cacii.	0011 1 11000.4010		

All prices quoted are net SYDNEY, N.S.W., on cash-with-order basis, sales tax included in all cases, but subject to changes without prior notice. ALL-RISK INSURANCE from now on free with all orders over \$100; small orders add 50c for insurance. Allow for freight, postage or carriage; excess remitted will be refunded.

Sideband Electronics Sales

For personal attention: 24 KURRI STREET, LOFTUS

P.O. BOX 184, SUTHERLAND, 2232

OPEN ON SATURDAYS TILL 12 NOON

TELEPHONE: 521 7573

PETER SCHULZ, VK2ZXL

SECRETARY'S REPORT - ILLAWARRA AMATEUR RADIO SOCIETY 1977.

This year has seen the continual growth of the Society. There has been 11 general meetings and a similar number of committee meetings.

The attendance figures averaged around 41 per meeting and the number of new members is very pleasing. There are now in excess of 120 paid up members and while this shows only a 38% attendance it must be remembered that a lot of our members are from outlying areas - from Sydney in the north to Tuross in the south. We don't expect the odd member from Victoria or Queensland to make it to the meeting very often.

I would like to express the thanks of the committee to Ian 22JA & his XYL for their hospitality over the first 9 months of the Club year and to Pill 2PJ and his XYL over the past 2 months in making us welcome for the conducting of the monthly committee meeting.

I am retiring as secretary tonight and will not stand for re-election as I have had 3 years sitting out the front of these meetings and feel that for the good of the Club we should have new blood and new ideas every once in a while.

I would like to thank the committee and members for the assistance given to me during the year and hope my successor has the help and co-operation I did.

Keith VK2BUU.

FOR SALE

AWA CARPHONE JUNIOR

2 metre single channel valve type transceiver with crystals for 146 MHz simplex. In good working condition, with copy of circuit. Works from 12V DC supply. \$15.

PYE 50W BASE STATION

With crystals for 146 MHz simplex operation. Not working properly and without 6/40 output valve. Could be restored to working order by someone who knows what he is doing. In beautiful hammertone cabinet. Has good high voltage power supply. With copy of instruction manual. \$15.

Contact Charlie Proctor VK2 ZEN at the meeting or phone 611607.

SOLID STATE 40 METRE TRANSCEIVER

Solid State 40 metre Transceiver 75 watts PEP. This is an AFQ building blocks unit and is complete with microphone and speaker. Size of the unit is $8" \times 6" \times 3"$.

Contact Barry Hartley VK2FE 291455 Work or 842439 at home.

Sideband Electronics Sales

HF TRANSCEIVERS		FDK MULTY QU			sets of
ASTRO - 200 digital solid state 200 W.P.E.P.	P.O.A.	crystals supplied			\$265
TRIO KENWOOD model TS 520 - D AC - DC to 80 M.	10 \$590	YAESU MUSEN I 10 to 160 M with			P.O.A.
TRIO KENWOOD model 520 - D AC only 10	9330	YAESU MUSEN	model FT - 301		P.O.A.
to 80 M.	\$650	YAESU MUSEN	model FT 301 - [D	P.O.A.
TRIO KENWOOD model TS – 820 – S AC on 160 to 10 M. with digital readout	\$980	YAESU MUSEN	model FT - 301 -	S	P.O.A.
TRIO KENWOOD model TS - 820 AC only	4300	YAESU MUSEN	model FP - 301		P.O.A.
160 to 10 M.	\$850	YAESU MUSEN	FR 6-7. Uses	Wadley loop p	orincipa
TRIO KENWOOD DS 1 DC Converter	\$ 65	YAESU MUSEN	model YC-500		\$300
VFO - 820	\$145	FREQUENCY CO	UNTERS		P.O.A.
DG - 1 Digital Display YG. 88C Crystal Filter	\$160 \$ 64	HY - GAIN ANT	ENNAC		
SP. 520 - 820	\$ 36	14AVQ 10-40M.		no duvs	\$ 65
TRIO KENWOOD model TS - 700 - A FM-AM-		18AVT-WB 10-80	M. verticals, 23'	tall no guys	\$ 95
transceivers. Full 144-148 MHz coverage, 10 W		TH3JR 10 15 20 j	unior 3 el. Yagi	12' boom	\$ 160
put, VFO controlled, self-contained, AC-DC or	peration.	TH3MK3 10 15-2 TH6DXX 10-15-2	O senior 3 el. Ya	gi 14' boom	\$220
	\$650	HY-QUAD 10-15-	20 cubical guad	Yaqi 8' boom	\$250 \$250
TRIO KENWOOD model TS-600-A FM-AM.		TIGER ARRAY 2	204BA 20M4el. \	Yaqi 26' boom	\$250
transceiver full 50-54 MHz coverage 10 Watt of variable form 1 Watt to full power. VIFO control		BN-86 balun for b	eam purchasers	only	\$ 25
AC-DC operation. Styling as TS-700-A.	P.O.A.	CUSH CRAFT AN	NTENNAS		
TRIO KENWOOD model TR 7400 2 meter FM		A144-11 11 Elem	ent 2M-Yagi		\$ 45
transceiver 10 to 25 watts output. Frequency r		A147-11 11 Elem			\$ 45
144.00 to 147.995 MHz No. of channels 800, I conversion superheterodine sensitivity better	Double	A147-20 combina A144-20 combina			\$ 70
than 0.4 UV for 20 DB.	\$385	harness circular po		latering	\$ 75
KYOKUTO 2 M FM 15 W output transceivers		ANTENNA ROTA			
digital read-out and crystal synthesized PLL cir		Model CDR Ham-		ns except	
now tiwh 800 transmit and 1000 receive chann		40 M Model CDR AR-2:	2 Liunios sotato	ton con 11	\$200
KHz apart, covers all of 144 148 MHz, receive MHz. No more crystals to buy. Includes simple		beams	2 L junior rotato	or for small	\$ 65
	\$310	KEN model KR-4		m size hf	4 00
NOVICE OPERATORS		beams with intern			\$110
All above HF transceivers will be modified for		KEN model KR-50 satellite tracking	UU for vertical co	ontrol of	\$110
cost to suit novice. Requirements 27 MHz conv	/. x-tals	All models rotator	s come complete	e with 230-	\$110
in stock now for kenwood models.		volt AC indicator-	control units.		
IT IS HERE AGAIN, the well known SE-501 in style case 15 Watt pep 23 AM SSB for as low as		6-conductor cable KR-400-500		cents per met	220
Same model with AC built in supply and DC bu		COAX CABLE CO		cents per meti	re
SWR power meter and many goodies.		PL-259	NINECTORS		\$1.20
ICOM		SO-239 Chassi Mo			\$1.20
VHF TRANSCEIVERS SSB		Male to male joine			\$1.20
ICOM model IC 202 2 M SSB portable transcei 144.4 MHz		Female to female Angle connector	joiner		\$1.20 \$1.70
	\$215	Tconnector			\$2.00
ICOM model IC 502 6 M SSB portable transcei 52 53 MHz	vers \$215	COAX CABLE			
32 33 WHZ	3213	RG - 8 - U foam fi	lled	per metre	\$1.20
USED EQUIPMENT		SWR METER			
Collins KWM 2 - A in new condition with po	JVVCI	 Twin meter model prof quality 	:Y.M I.E. 3.5	to 145 MHz	¢ 20
supply	\$1,600	pror quarry			\$ 28
		DEALE THE ALL	S = 1 (1)	C. C. C.	A 74
PM.2 6146 – b valves RCA new Large stock \$10		DRAKE TV - 3300 SSR-1 Receivers	TVI lowpass fil	ter	\$ 31 \$270

All prices quoted are net SYDNEY, N.S.W., on cash-with-order basis, sales tax included in all cases, but subject to changes without prior notice. ALL-RISK INSURANCE from now on free with all orders over \$100; small orders add 50c for insurance. Allow for freight, postage or carriage; excess remitted will be refunded.



For personal attention: 24 KURRI STREET, LOFTUS

P.O. BOX 184, SUTHERLAND, 2232

OPEN ON SATURDAYS TILL 12 NOON

TELEPHONE: 521 7573

PETER SCHULZ, VK2ZXL

SECRETARY'S REPORT - ILLAWARRA AMATEUR MADIO SUCTETY 1977.

This year has seen the continual growth of the Society. There has been 11 general meetings and a similar number of committee meetings.

The attendance figures averaged around 41 per meeting and the number of new members is very pleasing. There are now in excess of 120 paid up members and while this shows only a 33% attendance it must be remembered that a lot of our members are from outlying areas - from Sydney in the north to Tuross in the south. We don't expect the odd member from Victoria or Queensland to make it to the meeting very often.

I would like to express the thanks of the committee to Ian 2ZJA & his XYL for their hospitality over the first 9 months of the Club year and to Bill 2DJ and his XYL over the past 2 months in making us welcome for the conducting of the monthly committee meeting.

I am retiring as secretary tonight and will not stand for re-election as I have had 3 years sitting out the front of these meetings and feel that for the good of the Club we should have new blood and new ideas every once in a while.

I would like to thank the committee and members for the assistance given to me during the year and hope my successor has the help and co-operation I did.

Keith VK2BUU.

FOR SALE

AWA CARPHONE JUNIOR

2 metre single channel valve type transceiver with crystals for 146 MHz simplex. In good working condition, with copy of circuit. Works from 12V DC supply. \$15.

PYE 50W BASE STATION

With crystals for 146 MHz simplex operation. Not working properly and without 6/40 output valve. Could be restored to working order by someone who knows what he is doing. In beautiful hammertone cabinet. Has good high voltage power supply. With copy of instruction manual. \$15.

Contact Charlie Proctor VK2 ZEN at the meeting or phone 611607.

SOLID STATE 40 METRE TRANSCEIVER

Solid State 40 metre Transceiver 75 watts PEP. This is an AFQ building blocks unit and is complete with microphone and speaker. Size of the unit is $8" \times 6" \times 3"$.

Contact Barry Hartley VK2FE 291455 Work or 842439 at home.

MACELEC 99 KENTY STREET WOLLONGONG PHONE 29 1455

- SOMETHING TO THINK ABOUT -

If you bought a Kenwood 5 Band H.F. Transceiver for \$660.00 and used it for an average of 10 hours per week, sold it after 5 years for \$200.00, it would have cost you

\$0.17 per hour or \$1.70 for each weeks enjoyment "Vorking The World." KENWOOD TS520 Now One of the most popular and versatile Transceivers about. 80 thru 10 metres AC-DC. KENWOOD TS820 When only the best will do. 160 thru 10 metres - variable T.F. - Full speech processor - Speech Monitor etc. etc. \$880.00 DGI Digital Display Option (with 820).....\$160.00 * * * * KENWOOD 7400A Mobile 2 metre F.M. 144-148 MHZ complete coverage - 800 channels - Digital Readout - Conservative 25 watts Power output, with 5 watt Low Power Select, Unique Squelch System, Automatic Pepeater 600 KHZ offset selection. * * * * KENWOOD TS7007. Base or Mobile Operation complete 2 metres coverage - Automatic Repeater offset Select - SSB - CW - AM - PM. MIDLAND 13 - 893 27 MHZ mobile Transceiver 15 watts P.E.P. LAFAYETTE MICRO 75 23 channel 27 MHZ SSB - Mobile, For the serious Operator. * * * *

KENWOOD HC2 World Time Clock Showing Country Call\$ 29.50 Prefix

Also a wide range of Mobile Antennea and test equipment.

COMMYCIA BARRY HAUTLEY VK2FE 99 KENTY STREET WOLLONGONG 2500 PHONE 29 1455

AMATEUR RADIO COURSE, 1977

The course will cover the theory, regulations, and morse code needed for the novice, limited, and full amatour licences

LOCATION: Wollongong Technical College, Matthews Building, room 216 (see map below).

TIME: 6 p.m. to 9 p.m. on Friday nights, starting on Friday 18th February.

ENROLMENT: Enrol on the first night of the course, Friday 18th February, at room 216. Fees are only \$2.

RECOMMENDED STARTING TEXTS:

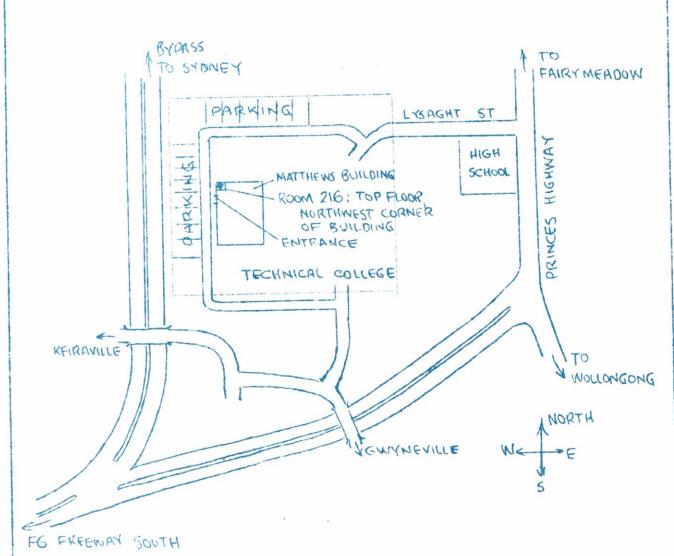
"Questions and Answers for the Novice Licence"

- published by Westlakes Radio Club

"Basic Electronics"

- published by "Electronics Australia"

FURTHER INFORMATION: Contact Brian Wade, VK2YAW. Phone (home) 84-1381.



YOUR COMMITTEE FOR THIS YEAR

At the Annual General Meting of the IARS the following members were elected to these positions:-

PRESIDENT:

BILL CALVERT VK2DJ VICE PRESIDENT: BILL CALVERT VK2DJ

VICE PRESIDENT: JOHN HODKINSON VK2BHO

SECRETARY. BRIAN BOSELEY VK2NBB

SECRETARY: TREASURER: WIA OFFICER:

GEOFF CUTHBERT VK2ZHU GEOFF CUTHBERT VK2ZHU

WICEN

JIM POTTS VK2BBG

3 OTHER COMMITTEE

MEN:

CHARLY PROCTER VK2ZEN RICHARD WILSON VK2ZVX GERRY ROSAM VK2APG

At the committee meeting held the week after, the following additional duties were delegated:

QSL OFFICER:

GERRY ROSAM VK2APG

CATERING:

CHARLY PROCTER VK2ZEN

RAFFLES:

JOHN HODKINSON VK2BHO

One more member was seconded to the committee in the form of:

STORE OFFICER:

KEITH CURLE VK2BUU

We are still looking for an editor for the PROPAGATOR which is now under my control.

FOUND

For the unknown person who was looking for one "Handset Control Unit for MR10".

Geoff - VK2ZHU

SUBSCRIPTIONS FOR 1977-8

Subscriptions are now due for 1977-8. Subscriptions finish in March 1978. Subscription rates are as follows:

Paid April - July \$3
Aug. - Nov. \$2
Dec. - March \$1

Pensioners and Students pay half.

The subscriptions cover the costs of postage of the Propagator and hall hire. The rest of the running expenses of the Club and of the Channel 5 repeater are covered by the monthly raffles and profit from sale of components.

The following members have prepaid their 1977-8 subscriptions and should not pay again. H. Laauw, S. Orfans, G. Rhodes, B. Dale, J. Moorley, D. Goddard and those who paid at the March meeting.

If paying by mail, you might like to use this form for convenience.

Subscription To the	Illawarra	Amateu	r Radi	o Club					
Attached is \$3 in p	ayment for	member	ship f	or the	perio	d Ar	ril	197	7 to
Name							• • • •		
Address					• • • • • •		• • • •	• • • •	•••
				•••••	• • • • •	• • •	• • • •	• • • •	• • •
Call Sign If Any						•••		• • • •	••
Please send to:	The Hono Illawarr P.O. Box	a Amate : 1838	eur Rad		ib,				

COMPONENTS FOR SALE

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. 31.50

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 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 trim	Ceramic trimmer, mica insulation				
Small solder	type feed through	capacitors	5c		
Wire wrap ty	e trimmers		10c		
Ceramic bolt-	-down trimmers		10c		
25V Electroly	ytics, double ended				
	4.7 uF	6c			
	100 uF	12c			
	220 uF	15c			
	470 uF	20c			
Greencaps 10	VOC				
	.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 18" 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 } 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.	

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.

THE PROPAGATOR.
Newsletter of the Illawarra
Amateur Radio Society.

MR.L. PATISON VKZALU

S500

MOLLONGONG

S500

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