



THE PROPAGATOR

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY.

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

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.	John Doherty, VK2NHA, 7 Risley Road, 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.

CLUB STATION - VK2AMW. CLUB REPEATER - VK2RAW, 2m, Channel 5.

I.A.R.S. MONTHLY BROADCAST.

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

Frequency used by VK2AMW for the broadcast is -
Repeater Channel 5. or Simplex Channel 40.
Relay on 28.460 MHz.

I.A.R.S. CLUB NETS.

6 Metre. 9.30 am Sunday, 52.525 MHz FM.
10 Metre. 8.00 pm Sunday, 28.460 MHz USB.

----- DECEMBER 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, 11th December, 1978.

Visitors are most welcome to attend.

AUCTION NIGHT FOR DECEMBER MEETING.

Members are asked to bring along any useful items of equipment
or parts for auction sale at the meeting. A reserve price may
be placed on items. Small items and parts should be put into
lots. Items for which bidding does not reach the reserve price to be
sold by negotiation.

An amount of 10% of the selling price of all items will be
retained to go into Club Funds.

So how about a search through the shack for that unused gear,
somebody else might be in need of it, and be prepared to pay
good money for it.

The success of this night will be entirely in your hands.

PLEASE NOTE. There will not be a Monthly Meeting in January.
The next Meeting will be on Monday, 13th February, 1979.

SEASONS GREETINGS TO ALL READERS.

This is the last issue of The Propagator for 1978, and we take
the opportunity to wish you the compliments of the Season, and
best wishes for the coming year, 1979.

< MACELEC >

**99 Kenny st. WOLLONGONG.
Phone 291455.**

KENWOOD SM220 Station Monitor-Oscilloscope.....	\$ 310.00
KENWOOD BS5/BS8 Panoramic Adaptor for above.....	\$ 57.00
KENWOOD TS820S - The Ultimate -	\$1175.00
KENWOOD TS520S - Most Popular -	\$ 699.00
KENWOOD TR7500 2 Metre P.L.L. Mobile.....	\$ 275.00
S.B.E. "Sidebender" 10 Metre Mobile.....	\$ 150.00
KENWOOD R300 All Band Communications Receiver.....	\$ 260.00
KENWOOD AT200 Antenna Coupler - S.W.R. - Power Meter- Coax Switch.....	\$ 173.00
HANSEN Transformer Coupled Power Meter Reads True P.E.P. and R.M.S. to 200 Watts.....	\$ 82.00
NAGARA V5JR Trap Vertical 80-10M.....	\$ 150.00
CUSHCRAFT ARX-2 2 Metre Ringo Ranger.....	\$ 49.00
HANSEN Dummy Load 30 Watts up to 150MHZ.....	\$ 15.00
DAIWA FD30LS Low Pass Filter Cut Off Rrequency 32MHZ 3 Stages - Top Quality.....	\$ 20.00
HI-MOUND HK708 Morse Key.....	\$ 21.00
HI-MOUND HK702 Morse Key Marble Base.....	\$ 38.00
KENWOOD DG5 Digital Display for TS520S.....	\$ 187.00
DAIWA DR7500 Med Duty Rotator Fully approved C/W Circular Scaled Indicator.....	\$ 189.00
DAIWA DR7600 Heavy Duty Version of above.....	\$ 259.00
KENWOOD HC2 Hamclock.....	\$ 79.00
KENWOOD TS7005P All Mode 2 Metre Transceiver AC-DC Full Digital Readout.....	\$ 812.00

**** DUE FOR RELEASE NOVEMBER ****

KENWOOD TS120V 80 Thru 10 Metre Mobile, Styling Similar
to TS820 but Much Smaller. Digital Display - I.F.
Shift - Noise Blanker - Analog Dial 25KHZ Per Rev -
Vox - R.I.T. 30 Watt P.E.P..... \$ 604.00

CONTACT BARRY HARTLEY VK2FE

As The Japanese Yen Is Still Changing
Prices Subject To Alteration Without Notice.
Above Items Normally Available Ex Stock.

432 MHz REPEATER.

The Club repeater is now operational on a limited basis. Paul, VK2ZQT, now has the repeater operatin when manned during the hours of 6 pm to 10 pm daily.

So far results have been very good and Paul in looking for more operators on the Band.

Frequencies of operation are - 433.225 MHz Repeater IN
438.225 MHz Repeater OUT

WICEN EXERCISE.

Members are advised that there will be a WICEN exercise held sometime after the December meeting. |
Details will be advised at the December Meeting.

IARS STORE.

The following new items have been added to the stocks held.

TOROIDS. . . F25. Small.....20c.
Large.....25c.

Ferrite Beads.... Large, F8, .. 10c.
Small, F25 .. 10c.

Feedthrough Capacitors, 0.001, .. 10c.

RF TRANSISTORS. ... SRF 1076, ... \$2.
SRF 1077, ... \$2.

INTEGRATED CIRCUITS. Quite a number of types, but some in short supply. 50c. each.

WANTED.

Information regarding SIEMENS 16 mm Film Projector, Type SL PS.11
Source and availability of parts.
Contact Richard Fox, 57 Barton St., OAK FLATS.

FOR SALE - COMPLETE STATION.

HF Transceiver - TS511
Antennas - 5 element 10M. 14 element 2M.
2M FM Transceiver and Antenna - brand new.
RF Speech Processor.
Assorted Components.
Antenna Hardware.

Contact Richard Hill, VK2NNL, at December Meeting.

The Wireless Institute of Australia



Founded 1910



Founded 1910

THE UNITED VOICE OF AMATEUR RADIO

DOES IT SPEAK FOR YOU?

Give the Amateur Service a Stronger Voice

JOIN NOW!

DON'T STAND BY AND WATCH US LOSE OUR
BANDS.

CONTACT Geoff Cuthbert,
VK2ZHU, for further
details and Membership
Application Forms.

Home-brewing seems to be a "dying art" lately, but for those who still indulge, and for those who need a little encouragement, the following is as item originally published in "Splatter", the University of Adelaide Radio Club Journal, April 1971.

Many of those who construct electronic equipment fail to pay adequate attention to front panels and mechanical layouts. Too frequently we see a mass of anonymous knobs, sockets, and meters adorning a grotty piece of aluminium - not very impressive, and not very functional. The author therefore hopes to encourage some thought on this matter, and to pass on a few experiences.

There are several points to consider in the production of a front panel, and the end result will most likely be a compromise. Having decided on the dimensions of the panel (these may have to be modified later), it is a good idea to take the piece of aluminium to be used (or even better, a piece of cardboard), and experiment with different layout combinations, keeping the following points in mind.

1. Most frequently used controls should be most accessible.
2. Allow sufficient spacing between controls (e.g. pot diameter may be greater than knob diameter)
3. Location of these items relative to appropriate circuitry (e.g. attempt to keep lead lengths to a minimum, etc.)
4. General appearance.

Once the panel has been designed, the appropriate holes should be drilled and/or cutout. A point to note at this stage is that if the panel is to be etched (as described later), all holes should be minimum size, since etching will enlarge them slightly.

ETCHING and LABELLING

The following pointers should assist in producing a panel with "near-professional" appearance.

If the natural aluminium finish is desired, then the surface treatment need consist only of a gentle polish with steelwool (taking care that the polish strokes follow the "grain" or rolling marks, otherwise the result will be most uneven and unsatisfactory). This technique is quite effective in removing minor surface scratches.

However, for best results, it is suggested that the panel be given a "satin" or "anodised" appearance. This is most easily achieved by etching the panel in caustic soda. Actual anodising could also be carried out, however it is felt that etching produces equal, or better, results with much less effort.

A shallow tray (such as an old pyrex baking dish, plastic tray or the like), is filled with warm water and a liberal amount of caustic soda. The caustic soda can be obtained quite cheaply from most hardware/gardening supplies stores. The quantity of caustic soda used is, of course, dependant on the quantity of water, area of panel to be etched, and the speed with which the etching is to occur. Care should be taken in handling the caustic soda, and solution. Note: replace lid firmly on tin immediately after use, as caustic soda is hygroscopic. With a bucket of water on hand (or a tap) the panel can be placed in the caustic soda bath - VERY IMPORTANT: ensure adequate ventilation, and avoid cigarettes etc., since the etching process gives off rather acrid fumes, containing hydrogen, among other things.

It is suggested that a small test piece of the aluminium is etched by hand to establish the approximate etching rate. After several minutes, the panel should be removed, washed, and the black deposit washed off. The etched surface can then be inspected. This process is repeated until the required degree of etch is obtained. Note that the required surface should always rest faceup in the caustic bath. Small scratches and surface imperfections may be completely polished off. Deep scratches should be avoided initially; in any case a light polish with steelwool and a rub down with meth. spirits before etching would improve the process.

When etching has been completed, the panel should be rinsed and wiped dry with a clean soft rag, keeping fingers off the surface. From now on, this surface should not be touched.

The panel can now be labelled, and the recommended procedure is to purchase a sheet of pressure-sensitive lettering; sold under the trade names of "Letraset" or "Instatyp", the latter being recommended since it's cheaper, and you get more letters. These products can be obtained from most stationers and drawing office supply houses. Both brands offer a wide range of sizes and styles - ask to see the catalogue.

Applying the lettering to the panel is a fairly delicate operation, and again, a practise run is suggested (i.e. on the "ally" test piece). Ensure that each letter is properly applied before removing the sheet. Aligning the letters is a simple matter - the letter currently being applied is positioned such that already applied lettering is aligned with letters remaining on the sheet. The backing sheet should be placed over the lettering and rubbed so that the lettering adheres adequately to the metal. The whole panel is then sprayed with clear lacquer (from an aerosol can at a distance of at least 18"). Several light coats should be applied. Letraset 101 is recommended for this purpose, since most other preparations tend to bubble the letters.

EDITED SUMMARY OF A TALK ON B.B.C. "WORLD RADIO CLUB," 24/11/78
2100 HOURS G.M.T.

The new Frequency Allocation Plan:

In Australia and in some other places affected and in accordance with an international agreement, a re-organisation of "medium wave" frequency allocations has taken place, as from 0000 hours local time, on Thursday, 23rd of November, 1978.

In consequence, in Australia, it may be possible to licence about 10% more channels than was the maximum possible before.

In other countries, where it is relevant, corresponding changes have been made in the "long wave" frequency allocations; there will be corresponding frequency changes in the high-frequency broadcast bands, next year. The present changes have not yet been completed and will go on in one place or another, for some time yet.

The new standards have been adopted in Europe, Africa, Asia and Australasia but not in North or South America. Even there, however, medium and long wave dx listeners, will be affected in a number of ways.

The medium wave band is a large and popular band with broadcasters, because it propagates so well at night and at one time, this was its main function - evening entertainment. As a result of its popularity, it has become very crowded.

Most transmitters on this band are primarily intended for listeners in their own country, but, particularly at night, they spill over beyond their normal service area and in the evening, transmissions may travel very long distances and perhaps cause interference.

In consequence, from quite early times, there have been periodic conferences between nations, to regulate frequencies and power, with the aim at least to minimise interference; it is not possible, completely to eliminate it. By this means, as much broadcasting as possible, is fitted into the available spectrum space.

Heretofore, the channel spacing in Europe and Africa has been 9 KHz; in Asia and Australasia, it has been 10 KHz and the division between these areas has run roughly down through the Soviet Union and the Middle East.

Hereabouts, there has been a very considerable amount in which there has been serious heterodyne interference between stations on the one system and on the other, because, as a little thought will show, many stations were separated by 10 KHz or even 9 KHz, but frequently, by much less than that.

As a result of the Geneva Agreement, all stations affected, will now be on 9 KHz spacing and in addition the frequency will be a multiple of nine, thus 2FC, previously on 610 KHz, is now on 576 KHz, i.e. 9×64 KHz or on the 64th channel.

One future consequence of the change, is that in the evening, heterodyne whistles will be heard unless there is a marked roll-off in audio response in transmitter and in receiver at about 4.5 KHz, whereas, previously, the roll-off could be at 5 KHz.

CONTINUED OVER

Thus there will be a rather unimportant (in the context) loss in frequency response, as a price to be paid for the greater availability of channels.

The problem of heterodyne whistles is not a very serious issue, because the high frequency response is usually not that good, but in addition, to-day, an important part of broadcast listening occurs during daytime and in the evening, T.V. takes the audience on to the V H F bands.

VK 2ABI.

Where to find your station

The new frequencies for radio stations in NSW and the ACT from November 23, with the present frequencies in brackets are:

Albury: 2CO 675 kHz (670), 2AY 1490 (1494).
 Armidale: 2AD 1134 (1130), 2AN 720 (720).
 Bathurst: 2BS 1503 (1500).
 Bega: 2BE 765 (1480), 2BA 810 (810).
 Bolwarra (Newcastle): 2NX 1341 (1360).
 Broken Hill: 2BH 567 (570), 2NB 999 (1000).
 Canberra: 2CY 846 (850), 2CA 1053 (1050), 2XX 1008 (1010), 2CC 1206 (1210), 2CN 1440 (1440).
 Cooma: 2XL 918 (920), 2CP 1602 (1570).
 Deniliquin: 2QN 1521 (1520).
 Dubbo: 2DU 1251 (1250).
 Glen Innes: 2GL 819 (820).
 Gosford: 2GO 1323 (1310).
 Goulburn: 2GN 1368 (1370).
 Grafton: 2GF 1206 (1210), 2NR 738 (700).
 Giffith: 2RG 963 (1070).
 Gunnedah: 2MO 1980 (1080).
 Inverell: 2NZ 1188 (1190).
 Kempsey: 2KM 531 (530).
 Lismore: 2LS 900 (900).
 Lithgow: 2LI 1395 (1380), 2LG 1405 (1370).
 Moree: 2VM 1530 (1530).
 Murrumbidgee (translator): 2BI 765 (750).
 Murrumbidgee: 2MI 720 (560), 2MW 972 (970).
 Moswellbrook: 2UH 1044 (1040), 2NM 1458 (1460).
 Mudgee: 2MG 1449 (1450).
 Newcastle: 2HD 1143 (1140), 2NC 1233 (1230), 2KO 1413 (1410), 2NA 1512 (1510).
 Nowra: 2SI 999 (1000).
 Orange: 2OR 549 (550), 2GZ 1089 (990).
 Parkes: 2PK 1404 (1400).
 Tamworth: 2NU 648 (650), 2TM 1287 (1290).
 Taree: 2TR 756 (760), 2RE 1557 (1560).
 Wagga Wagga: 2WB 1152 (1150).
 Wilcannia: 2WA 1584 (1570).
 Wollongong: 2WL 1314 (1430), 2WN 1431 (1580).
 Young: 2YF 1359 (1440).

At one minute past midnight on November 23, all but 26 of Australia's 224 medium-frequency AM radio stations will begin changing their positions on the dial.

But because so many stations and ABC translators are involved, the move will take until sunset to complete.

A number of stations will move frequencies to such an extent that listeners may need to tune some distance from where they thought their station was. Others will be only slightly "off."

Sydney's "1270 2SM" for example, will move one kilohertz to 1269 and become something of a misnomer. But its listeners will hardly notice.

Of the other Sydney radio stations, only 2CH will remain unchanged.

The frequency shift will apply not only to Australia but to stations throughout Europe and Asia.

The move, the first time so many stations will change, was decided at the 1975 Regional Administration Broadcasting Conference held in Geneva under the auspices of the International Telecommunication Union.

In Australia, it will allow for 12 extra channels or about 30 more stations.

Problems with international radio interference had already

caused some countries to come to agreement with their close neighbours to reduce the levels of power their radio stations

A World Administrative Radio Conference due next year is likely to consider changes to the comparatively less used frequency-modulation (FM) band.

On November 23, 25 of the ABC's stations will change by 5kHz or more, 52 will change by less than that and 12 will be unaffected.

In Sydney, those most affected include 2FC, which goes from 610 kHz to 576, and 2BL, which goes from 740 to 702.

As with 2SM, 2JJ and 2EA move only 1 kHz, from 1540 to 1539 and 800 to 801 respectively.

Most will move 3kHz — 2GB (870) to 873, 2KY (1020) to 1017, 2UW (1110) to 1107, 2KA (780) to 783.

Station 2UE will move from 950 to 954.

Radio 2SM has lodged an appeal against the frequency allotted to the new Blacktown station 2WS 1224, due to begin transmission on the change-over date. The case will be heard in the Supreme Court on Monday.

The biggest move in the Sydney metropolitan area is for the low-coverage station 2CF Campbelltown, due to go from 1390 to 1602. The change is also still under discussion.

According to Mr Alan Foster, director of the Australian Broadcasting Commission, the move will not cause any upset or expense to stations.

2FC
2FC
2BL
2BL
2KA
2KA
2EA
2EA
2GB
2GB
ETC.
ETC.



MOONBOUNCE REPORT -- DECEMBER 1978.

A meeting of University of Wollongong staff, attended by VK2ALU, affirmed that the dish should be shifted to the new site if a firm quote was received in the vicinity of the cost of the preliminary quote for dismantling, transport and re-erection. The move would be by road.

A secure building would be erected next to the dish by the University.

We would only have to instal the Moonbounce equipment and associated wiring and cables.

After further discussions with CSIRO and University staff, an experimental dual band disc feed is being made up. Although we need to use it on 432 MHz only, the possibility of operation of the feed system at 1296 MHz without having to perform the tedious substitution of feeds, has aroused much overseas interest by the EME groups who are planning to use both frequencies.

The CSIRO have indicated that they will test the system on their antenna test range to find out if the 432 MHz radiation pattern is affected by the 1296 MHz components.

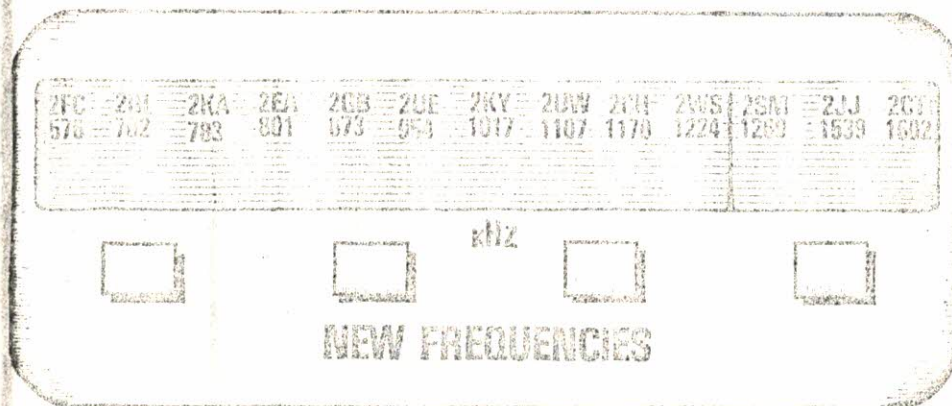
SATELLITE REPORT.

As I am away from home on holidays, I have not had the opportunity to keep a check on satellite operation over recent weeks.

I hear from VK2AHH at Kempsey that he has not heard any communications via the new Russian satellite RS1. It's 29.402 MHz beacon continues to be heard at good strength.

Oscar 8 is the most reliable of the Satellites at present.

Lyle, VK2ALU.



GET YOUR AMATEUR RADIO LICENCE IN 1979 !

Get your licence, and start making friends throughout Australia every evening on 80 metres - talk to other amateurs all over the world on 20 and 15 metres - operate through amateur satellites - run radioteletype - try slow-scan television - use VHF repeaters for reliable mobile communication.

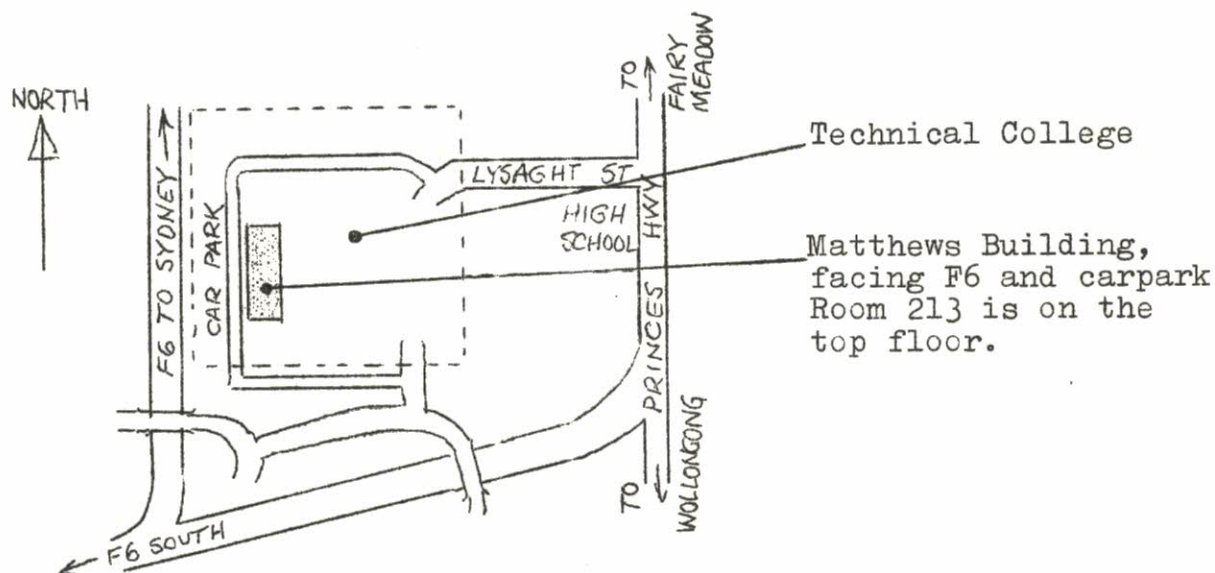
The School of General Studies at Wollongong Technical College is running an approved course in Electronics, which includes all the information and training you need to get your Novice, Limited, or Full Amateur Licence.

If you have NO knowledge of electronics - but are prepared to study hard, you should be able to pass the Novice Examinations in May or November of 1979.

If you have a Novice Licence, OR electronics background - you should be able to pass the Full or Limited Examination in August of 1979.

So - enrol in the course - and become an amateur operator next year! As dozens of new (and old) amateurs in Wollongong will tell you - it's well worth the effort.

ENROLMENT DETAILS



ENROLMENT: Be sure to enrol on the first night of the course, Friday 16th February, at Room 213, Matthews Building, at 6 p.m. The class is certain to fill quickly.

CLASS TIMES: 6 - 9 p.m. every Friday night, starting on Friday 16th February.

CLASS LOCATION: Wollongong Technical College, Matthews Building, Room 213 (see map above).

FURTHER INFORMATION: Contact Brian Wade, VK2AXI.
Phone (after hours) 84-1381.

I.A.R.S. COMPONENTS STORE

CAPACITORS.

GREEN CAPS. .001, .0015, .0022, .0039, .0047, .0056, .0082,
and .01, each 10c.
.039, .047, .056, and .082, each 15c.
.1, .15, and .47, each 20c.

ELECTROLYTIC CONDENSERS, 25V, double ended.
4.7uF, 10c. 100uF, 15c. 220uF, 20c. 470uF, 25c.
2500uF, 50V, 2.00. 4700uF, 50V, 2.00.

TRIMMER CONDENSERS.

PCB mounting trimmers, 3-13pF and 2-20pF, each 10c.

TANTALUM CAPACITORS.

.47, .1, 1.5, 2.2, 4.7, & 6.8 mF each 20c.
10mF, .. 25c. 22mF ... 45c. 47mF ... 65c.

NEOSID COILS.

Former .. 10c. Slug, F29 (VHF) ... 10c.
Cans.... Single, 10c. Double, 15c.
Small Balun Former, 15c.
Coil former and can complete, 10c.

CABLES AND CONNECTORS.

Belling Lee. Connectors, 50c.

PL259 Plugs, 1.00. S029 Sockets, 1.00.

Adaptors for RG58U cable for PL259 plugs, 25c.

CO-AXIAL CABLE. RG8U (heavy) ... 1.20 per metre.
RG58U (light) ... 50c. per metre.

Sheathed, light hook-up co-ax, lengths of 4 metres, 1.00.

METERS. S Meter 400uA 1-3/8 x 5/8 2.50.

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

DIODES. 1N4148 ... 10c. 0A91 ... 2c.
EM404 ... 20c. EM410 ... 25c.

LED's. colour RED 35c each.

I.C's. 741 ... 85c. LM38 ... 85c.
7812 regulators ... 2.00. LM35 ... 20c.

TRANSISTORS. MPF131 ... 85c. BC109 ... 35c.
2N3568 .. 30c. TIP32A .. 50c. BF157 .. 50c.
2N3054 .. 80c. 2N485 .. 95c. 2N5457 .. 50c.
2N5459 .. 50c. 2N410 .. 50c. 2N3568 .. 20c.

PCB TRIM POTS.

Values, 2K, 5K, 10K, 25K, 50K, & 100K. .. 25c each.

PRINTED CIRCUIT BOARD.

Fibreglass PC board, copper on one side.

Sheet sizes - 18" x 5" ... 1.50.

12" x 4 1/2" ... 1.00.

POTENTIOMETERS.

Values of 5K, 10K, & 25K. each 50c.

SUPPRESSOR RESISTORS for ignition high tension leads.
In line, screw type. each ... 50c.

SUNDRY OTHER ITEMS. Cable clamps .. 10c.ea. Plastic Tape .. 20c.
Power Cords... 1.00 ea. Wafer Switches... 1.00 ea.
Meter Leads... 20c. pair. Four Pin Plug & Socket... 10c.
Alligator Clips - large, insulated. Red or Black... 10c.

I.A.R.S.
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