
THE PROPAGATOR

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY

PO BOX 1838 WOLLONGONG NSW 2500

VOLUME 82, NUMBER 11

DECEMBER 1982

Registered by Australia Post Publication No. NBH 1491

MEETINGS ARE HELD ON THE SECOND MONDAY OF EACH MONTH (EXCEPT JANUARY) AT 7.30 P.M. IN THE CONGREGATIONAL HALL, CORNER OF COOMBE AND MARKET STREETS, WOLLONGONG. VISITORS ARE WELCOME TO ATTEND MEETINGS.

NOTICE OF MEETING: THE DECEMBER MEETING OF THE ILLAWARRA AMATEUR RADIO SOCIETY WILL BE HELD ON DECEMBER 13TH AT 7.30 P.M. IN THE CONGREGATIONAL HALL, COOMBE ST., WOLLONGONG.

FOR THIS END-OF-YEAR MEETING NO SPEAKER HAS BEEN ARRANGED, SO IT'S YOUR OPPORTUNITY TO HAVE A GOOD RAG-CHEW, TRY YOUR LUCK IN THE RAFFLE, OR PATRONISE THE CLUB STORE. THE USUAL TEA, COFFEE AND BISCUITS WILL BE PROVIDED.

LAST MONTH'S MEETING: The meeting which was held on November 8th was the occasion of the Annual Auction and was attended by about 60 members and several visitors. President Keith VK2OB soon disposed of General Business, which was followed by the raffle of two W.I.A. lapel badges and two W.I.A. car badges. The lapel badges were won by Richard VK2ERF and by Gerhard, and your Editor Leo VK2YJK won a car badge.

The auction comprising 85 lots was conducted by Denis VK2DMR and bidding was very slow with many lots being passed in through not attracting a bid. This appeared to point up the tight money situation due to the recession which is badly affecting the Wollongong district. However, about \$600 was grossed of which \$60.50 went to the club (about half that realised at last year's auction). Some undoubted bargains were obtained by members and it is hoped that next year the economic situation will allow more spirited competition.

Members are reminded that there will be no meeting (and no Propagator) in January. The Committee and Editors take this opportunity to wish all members and their families a very Merry Christmas and a Happy and Healthy New Year. We can look back on a year of great progress in Club activities, in particular the results achieved by hard work at the repeater site (and elsewhere) and the E-M-E project, while RTTY received a boost due to the availability of Siemens teleprinters. We would also like to thank all who have contributed to the Propagator, either with articles or in the production and distribution, and we look forward to your continued co-operation in the coming year.

SAEONS GREETINGS SEASONS GREETINGS SEASONS GREETINGS SEASONS GREETINGS

DOI DOINGSFX 1588 Toroids

Regarding my note in last month's Propagator that Mullard give B2 material a frequency range of only 0.5 to 2MHz, Keith VK2OB has assured me that in practice the above toroids are quite suitable for use up to 28MHz. I shall therefore be using mine as an antenna balun as originally intended, and I offer my apologies if I misled anyone.

Siemens M100 Motor Speed Adjustment Strobe

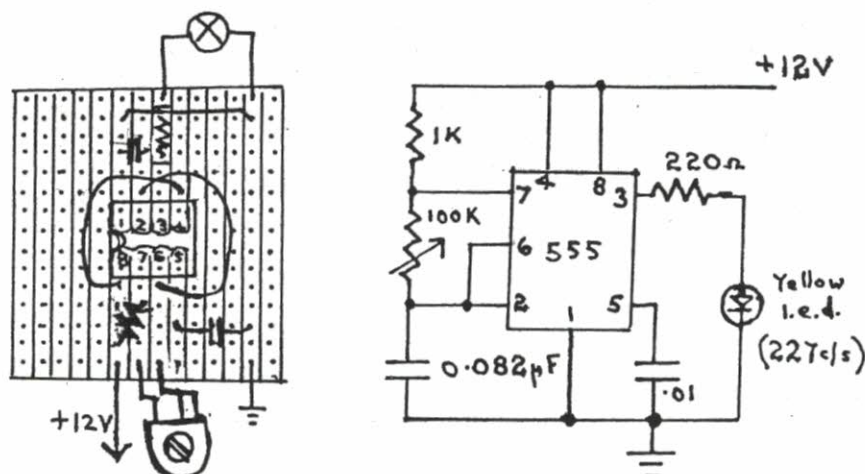
Denis VK2DMR informs me that the strobe I passed to him for evaluation is very successful, and although it does require a frequency counter for initial setting up, it should remain calibrated and does not need one for the speed measurement. First some definitions:

BAUD: The Baud is the unit of telegraphic speed and the speed in Bauds expresses the number of shortest elements of signal which may occur in one second.

SINGLE CURRENT SIGNALLING: This type of signalling involves current flowing for the condition designated Mark, and no current for the condition designated Space.

DOUBLE CURRENT SIGNALLING: involves current flowing all the time, the difference between Mark and Space being indicated by a reversal of current. It is conventional for Space to be positive and Mark negative. The most commonly used speed is 50 Bauds, and it can be seen that this gives 20 millisecond impulses of each polarity, or a frequency of 25 Hz. Standard amateur RTTY speed is 45.45 Bauds representing a frequency of 22.725 Hz.

WORDS PER MINUTE: In computing telegraph transmission speeds, a "word" is considered as consisting of 5 letters and 1 space, or a total of 6 code characters. 45.45 Bauds is roughly equivalent to 60 w.p.m. This then is the maximum speed obtainable in amateur RTTY.

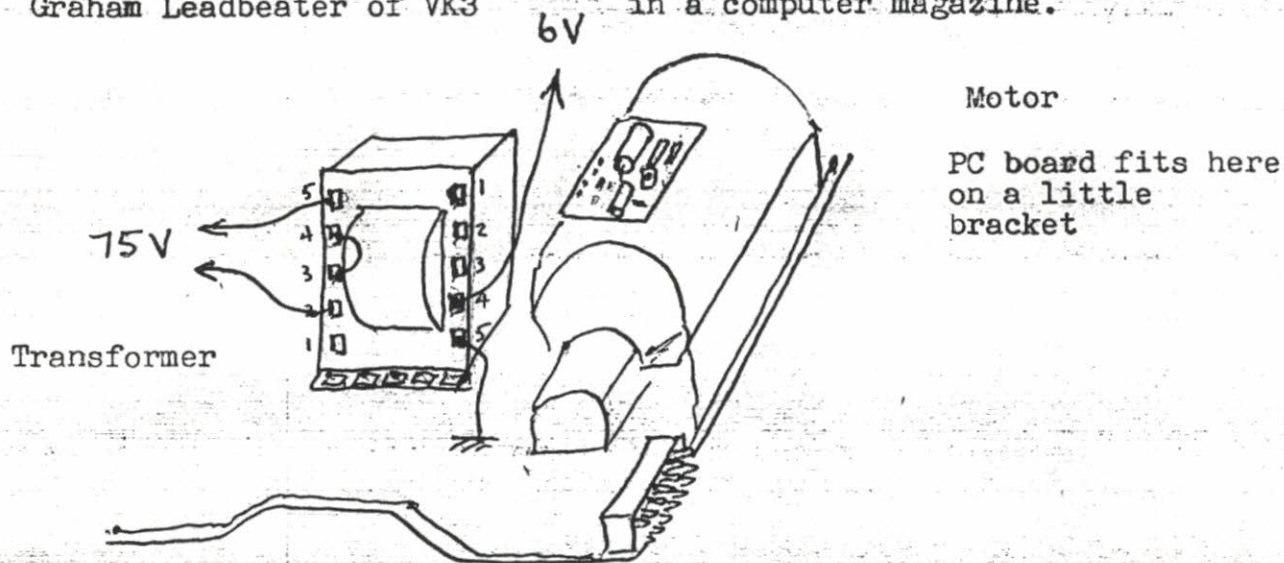


Adjust the 100 k pot for 227 c/s as measured with a frequency counter. If the range is not great enough, change the 0.082 uF capacitor.

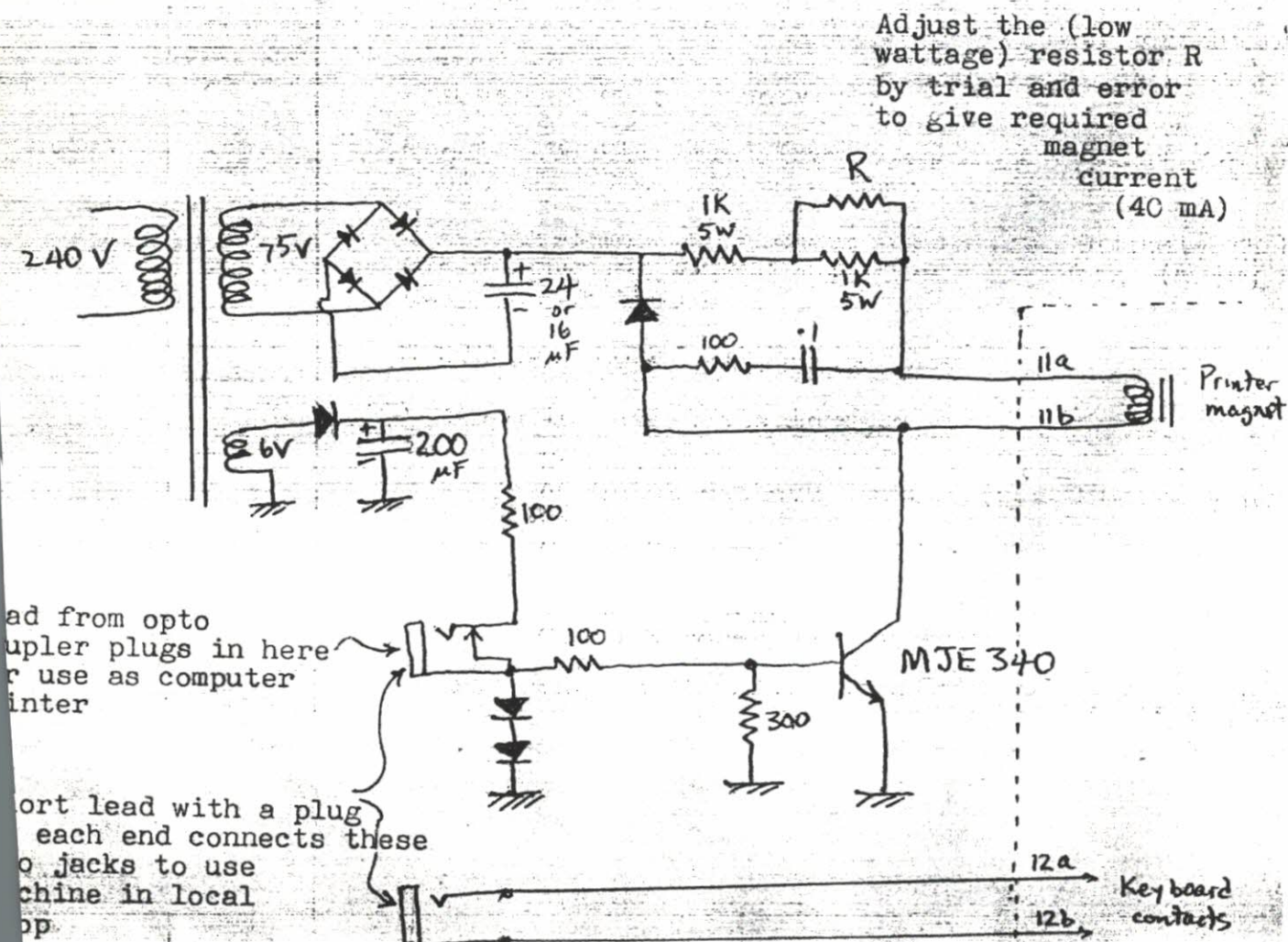
VK2DOI

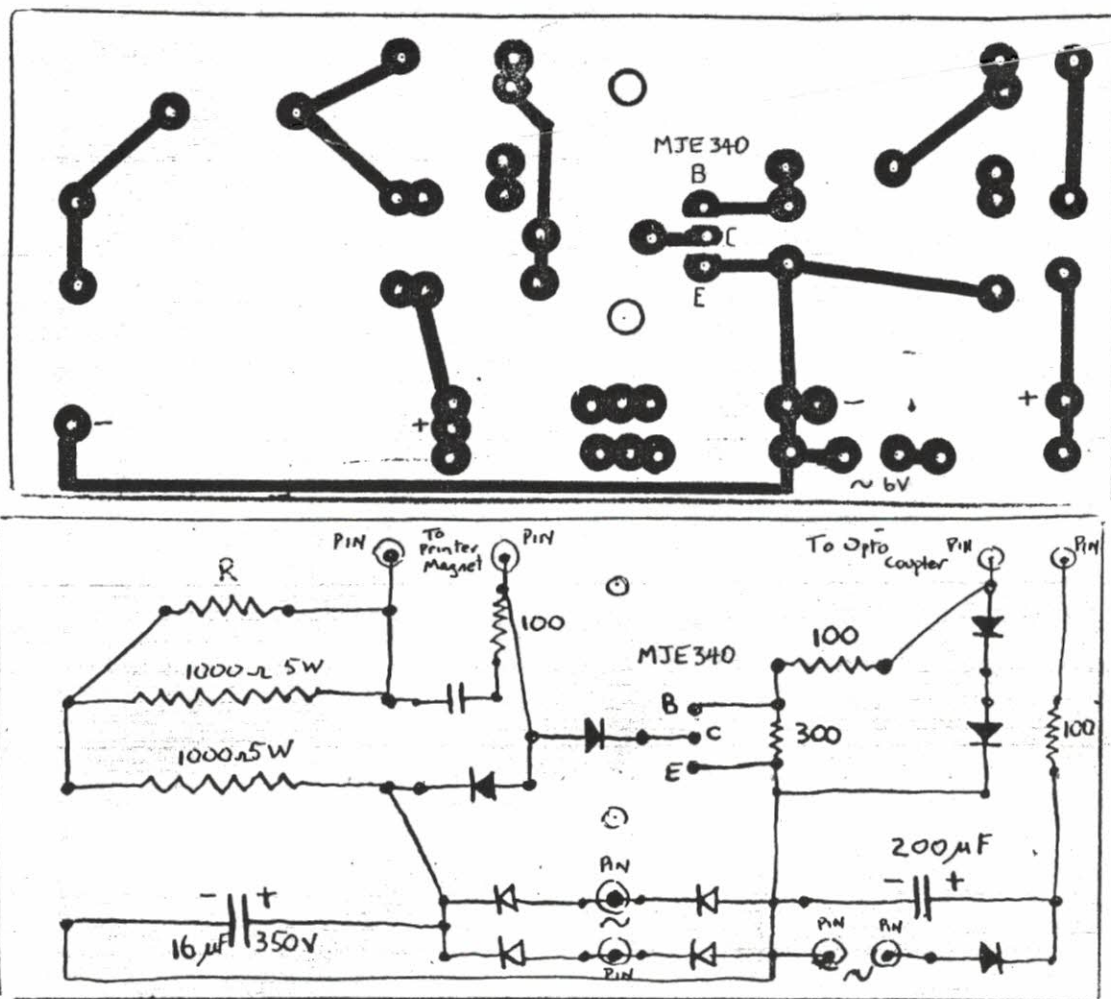
Veroboard (bottom view)

There is room inside the TTY case for this PC board, carrying a D.C. supply for the printer magnet. Power comes from the unused windings on the transformer already in the teleprinter. I've included an MJE340 transistor in series with the supply, so the printer can be controlled via an opto coupler (for a computer printer outer). The circuit was adapted from one provided by Graham Leadbeater of VK3 in a computer magazine.



It shouldn't be hard to adapt some or all of this to use with a demodulator instead of a computer, for RTTY.





On-Board Power Supply for Siemens TTY (continued)

Diagrams above show PC board and component layout for the power supply, both views from the same side of the board. The easiest way to make a one-off copy is to photocopy the layout, tape the print onto a piece of unetched PC board, and drill straight through paper and all where all the holes are to be. Then remove the paper, de-burr the holes, clean up the copper, and paint on the pattern using the holes for a guide. A little bracket of narrow aluminium can be shaped to support the PC board neatly on top of the motor housing, hard against the body of the printer where it will not prevent the case being placed over it.

WANTED

TO COMPLETE RTTY STATION REQUIRE URGENTLY A DRIVE SHAFT FOR THE PAPER TAPE PUNCH ON THE SIEMENS S100 MACHINE.

ALSO WOULD LIKE TO PURCHASE AN ANTENNA ROTATOR.

MIKE HORT VK2BZE

PHONE: 96.4595

By Royal Decree:

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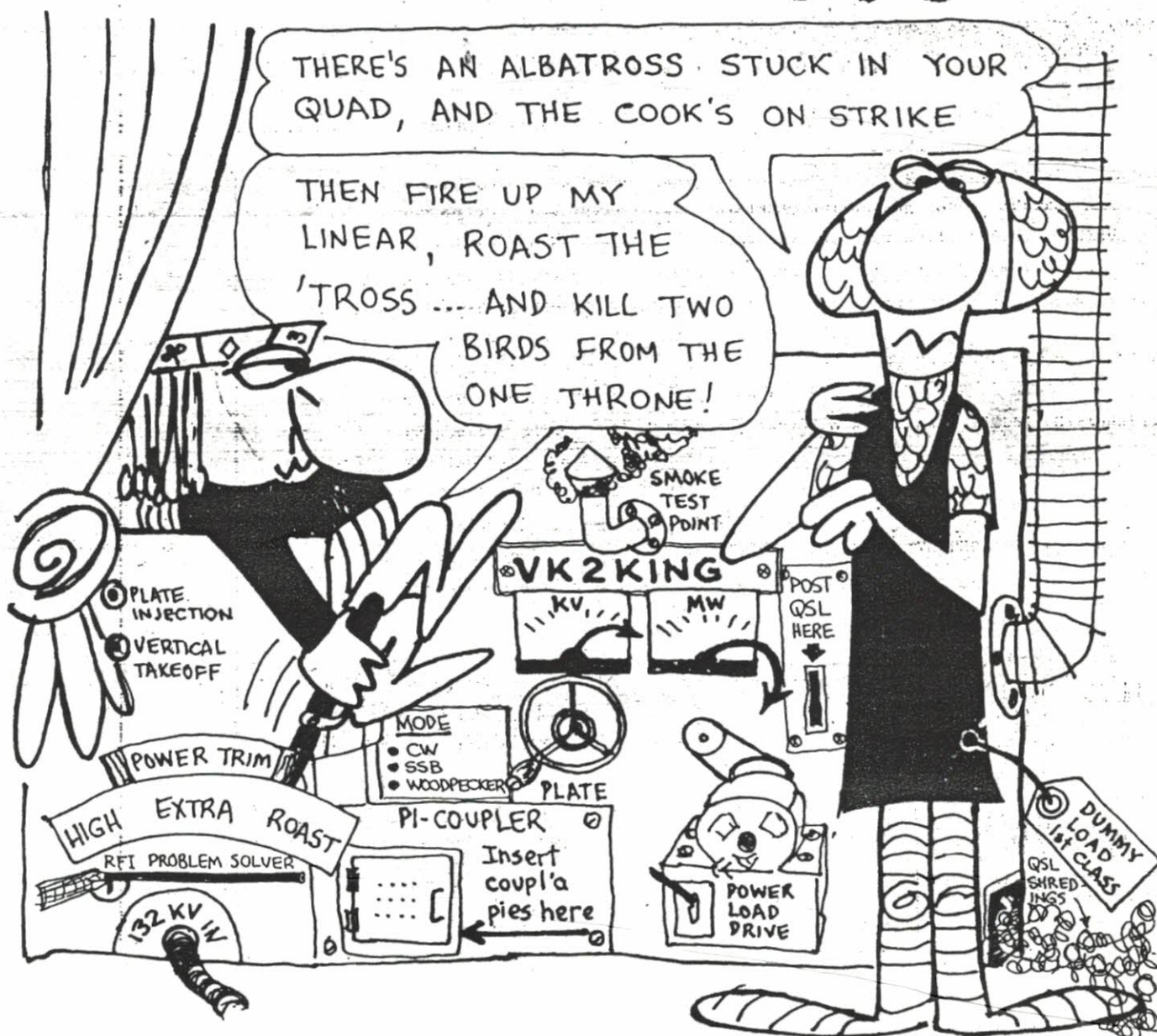
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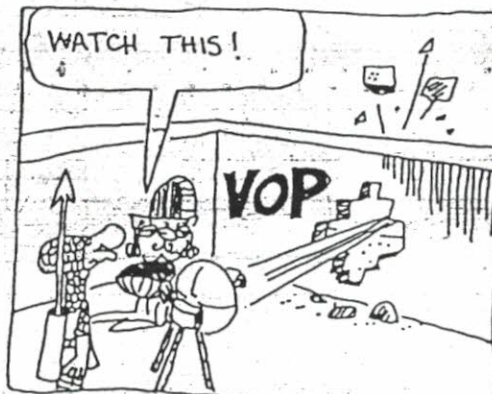
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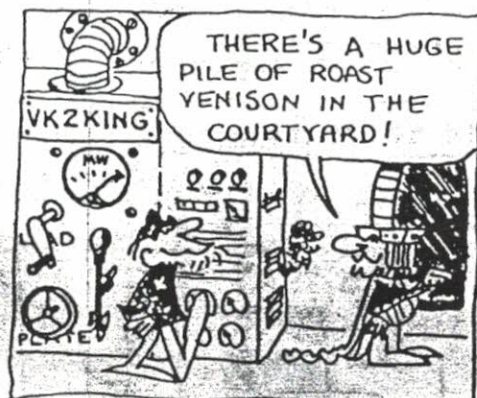
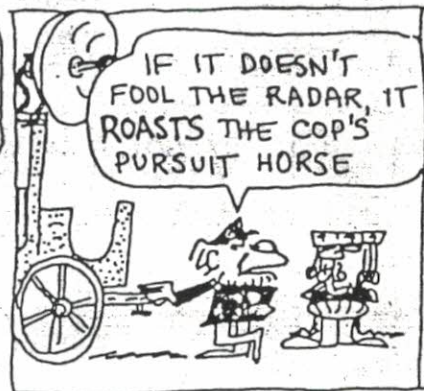
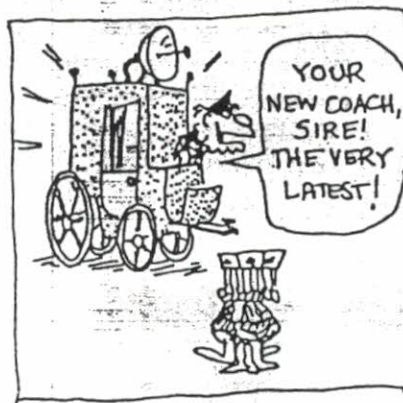
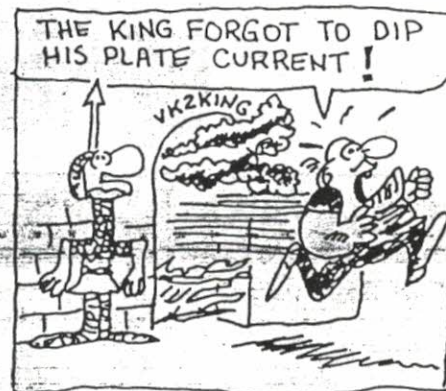
1982

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VK2 KING









Macelec Pty. Limited

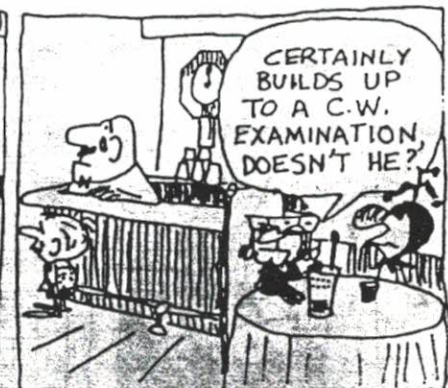
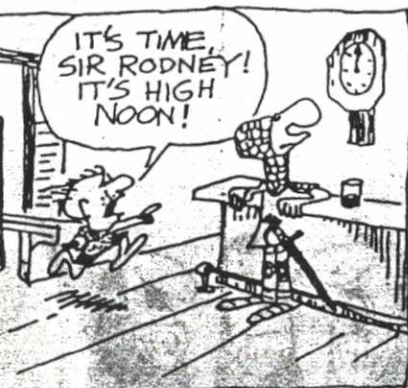
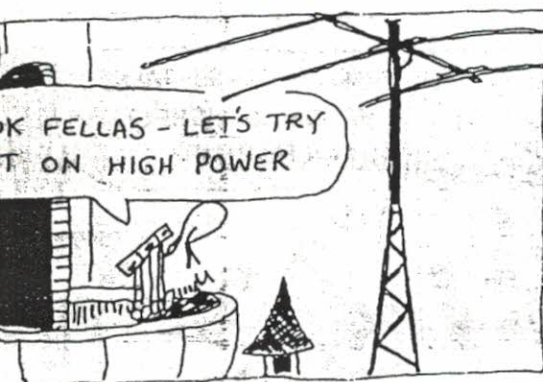
Professional and Industrial Electronics

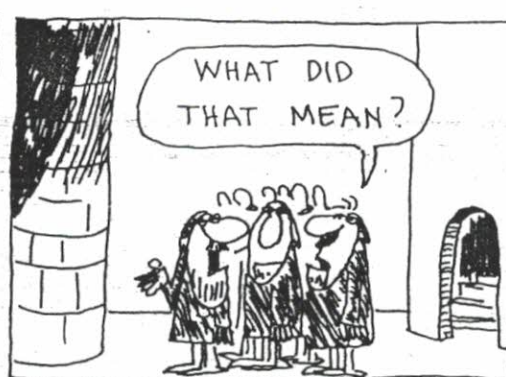
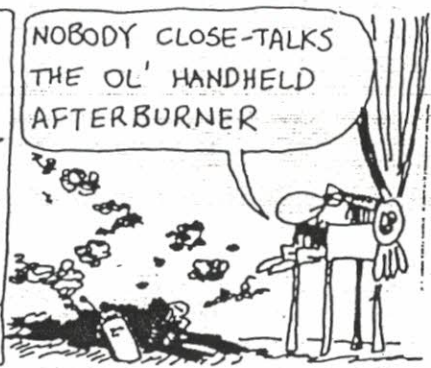
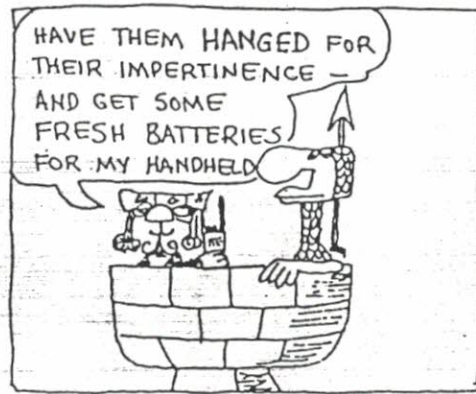
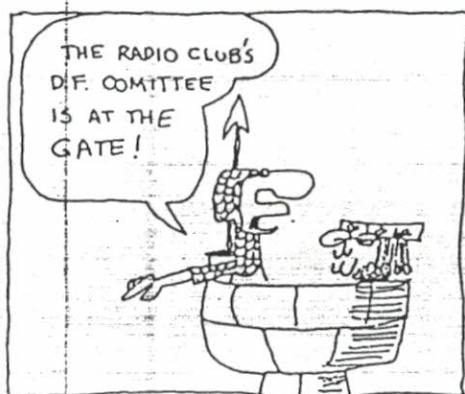
99 Kenny Street, Wollongong
P.O. Box 1755, Wollongong. 2500
Telephone (042) 29 1455
Telex AA29232

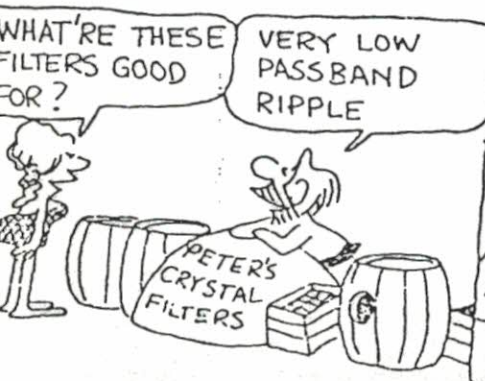
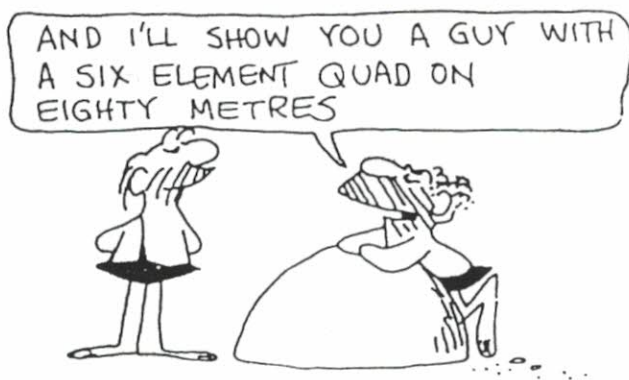
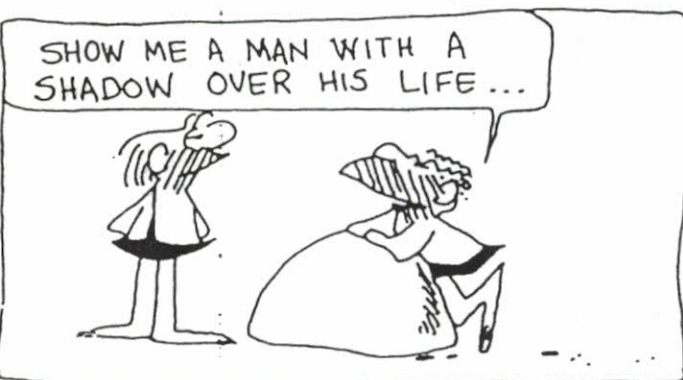
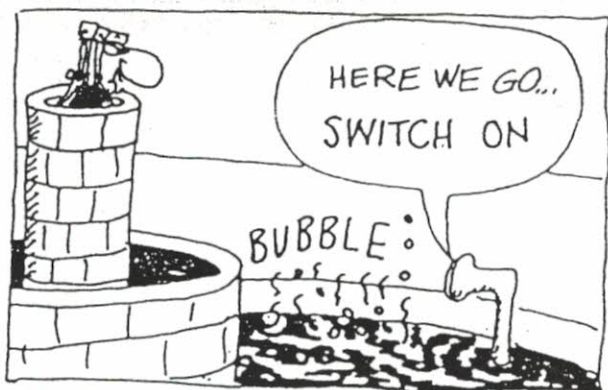
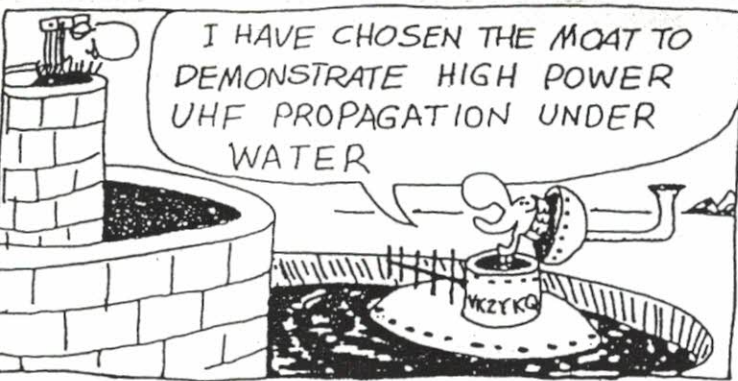
*** AMATEUR EQUIPMENT - CHRISTMAS SPECIALS ***

ICOM IC720A HF. Deluxe Transceiver with general coverage Receiver.....	\$1,150.00
ICOM IC2A 2 metre Hand Held c/w Charger.....	\$319.00
ICOM IC4E UHF Hand Held c/w Charger.....	\$375.00
KENWOOD TR8400 UHF Mobile.....	\$375.00
TONO Linear Amplifier UHF with Preamp 10watts in 50 watts out.....	\$275.00
DAIWA DR7500 Rotator and Control Unit.....	\$229.00
Cable to suit (per metre).....	\$1.20
DAIWA CN630 SWR/PWR Meter 140-450MHZ.....	\$149.00
DAIWA CNA1001 Automatic Antenna Tuner (1 only).....	\$220.00
PALOMAR Impedance Matching Transformer (switched) ideal for H.F. Mobiles.....	\$39.00
KENWOOD HS4 Headphones.....	\$20.00
KENWOOD PS20 4amp Power Supply.....	\$99.00
KENWOOD PS30 20amp Power Supply.....	\$185.00
KENWOOD SP230 Extension Speaker with Audio Filters.....	\$69.00
KENWOOD SP180 Extension Speaker with Audio Filters.....	\$69.00
KENWOOD MA5 Mobile Antenna Kit includes :- 80-40-20-15-10 Metres.....	\$120.00
UHF 16 Element Log periodic Fed Yagi.....	\$49.00
SCAN-X Discone (Receive only) Antenna 65-520 MHZ.....	\$40.00

ALL ITEMS EX STOCK SUBJECT TO PRIOR SALE:







THE ILLAWARRA AMATEUR RADIO SOCIETY

Meetings: Second Monday of each month except January at 7.30 PM in the Congregational Church Hall, Combe Street, Wollongong.

Postal: The Secretary, I.A.R.S., P.O. Box 1838, Wollongong 2500.

Repeaters: VHF 6850 (146.250 in / 146.850 out) - VK2RAW

UHF 8225 (433.225 in / 438.225 out) - VK2RUW

Broadcasts: Club news on VHF 6850, UHF 8225 & by relays via VK2YBP on 28.460 Mhz and VK2YKQ on 3.565 Mhz at 7.15 PM on the Sunday night preceeding the monthly meeting. News to Eric Fien VK2YVF on telephone 71 6364 by 6.30 PM.

W.I.A. relays via VHF 6850 at 11.00 AM & 7.30 PM every Sunday.

Net: 3.565 Mhz SSN on Sundays at 8.00 PM & 28.440 morse at 8.00 PM every Tuesday.

Newsletter: The Propagator is mailed to reach members in the week preceeding the meeting. Editor Leo Kleeborn, VK2YJK, telephone 84 9751 for news items and advertisements. Copy deadline is the last Tuesday of the month.

Membership: Write to the Secretary or contact any committee member. Annual dues are \$ 7.00 full member & \$ 4.00 pensioner or concessional member.

QSL Service: Available to members of the I.A.R.S. who are ALSO members of the W.I.A.

Bureau managers - Mike Keech (Inwards) & Ian Calcott (Outwards).

Award: The Award of the I.A.R.S. is the Lawrence Hargrave Award. VK stations must work 10 different I.A.R.S. members: Overseas stations must work 5 I.A.R.S. members. Alternatively any amateur who works the Club Station VK2AMW qualifies for the award. Send details of contacts - stations worked, day, date, time and frequencies together with \$ 2.00 or 4 I.R.C.'s to the Secretary. QSL cards are not required.

Store: The store operates at each meeting. Contact Paul Ferguson for stock details.

Committee: President - Keith Curle, 24 Beach Drive, Woonona 2517. VK2OB
Vice President - Denis McKay, 17 Doncaster Street, Carrimal 2516. VK2DMR
Secretary - Dave Myers, P.O. Box 1838, Wollongong 2500. VK2MBP
Treasurer - Geoff Cuthbert, 2 Nioka Avenue, Keiraville 2500. VK2ZHU
Repeater Chairman - Graeme Dowse, VK2CAG. Repeater sub-committee :-
Pat Jordan, VK2KEY; Denis McKay, VK2DMR; Mike Keech, VK2VXS, Eric Fien, VK2YVF; Mark Ryan, VK2KFI.

Broadcast Officer: Eric Fien, 331 Cordeliers Road, Mount Kembla 2526. VK2YVF

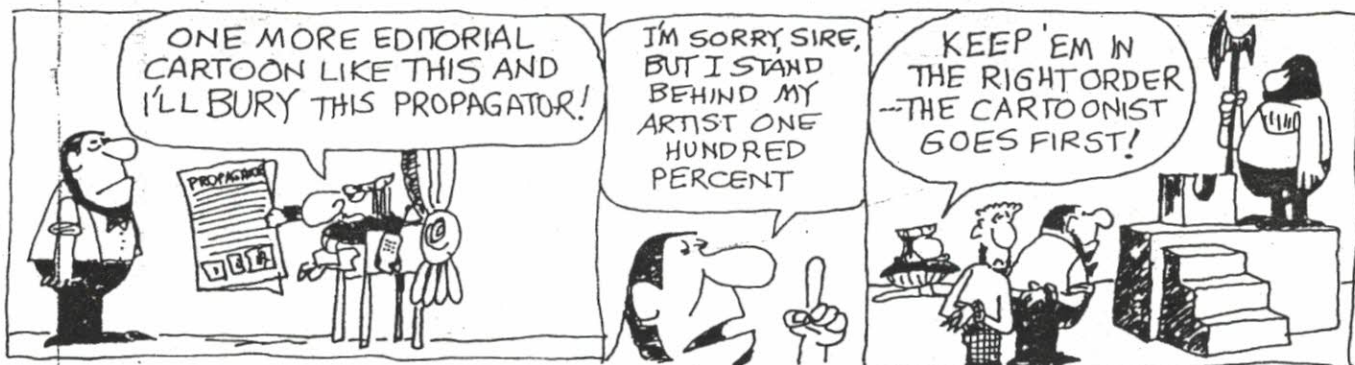
QSL: Mike Keech VK2VXS & Ian Calcott VK2IXN.

Propagator Editors: Leo Kleeborn, VK2YJK & Ken Frost, VK2DGI. Cartoonist - VK2KING by Brian Wade, VK2AXI.

Store: Paul Ferguson, VK2DZJ.

Publicity: Dave Henderson, VK2YKQ.

General Committee: Jack Taylor, VK2JT; Ray Ball, VK2PHD & Morry Van de Vorstenboach VK2ENV



Cheers & 73's Dave VK2VAV
Royal Printer

REVIEW OF DELTA COMMUNICATIONS AR280VHF TRANSCEIVER

By Peter Laughton VK2XAN

Several months ago an advert in A.R.A. advertised a hand held 2MTR XCEIVER. I sent the requested payment away and 2 months later it arrived.

The unit is an A.O.R. Model AR280 2mtr FM Transceiver. Size is a little smaller than the ICOM and about 2/3 size YASEU, handheld.

It came ready to go with NICADS semi-charged charger unit, DC 12 volt cord, the usual inadequate manual. A "Rubber Duck" antenna is STD.

Overall layout is neat and functional. Controls consist of + simplex (-) RPTR switch, hi-low power switch, 3 memory channels, vol, squelch, led XMIT and battery indicator. External power, charger mic and earphone terminals as I said, well laid out, PPT switch on side.

The spec's are impressive.

Plur coverage 140 → 149.995 MHz (yes it can operate out of Band).

Sensitivity 20 3uV 12 db SINAD. Current drain muted 27MA unmutated 150MA.

Image and spurious rejection -60DB
Audio O/P power 500 MW, 10% distortion.

TRANSMITTER

RF output low 1 watt, high 5 Watts

Current Drain 400ma 1.1 amps

Harmonic Suppression:

Battery Pack 9.6volts DC NICAD 440MAH.

Deviation 5KH_z for 100% @ 1KC Spurious -60db, overall weight 525grms_z including battery.

On air tests quickly proved its ease of operation with most Sydney RPTRS being accessible from high spots in Wollongong. From my home QTH at Mt. Keira, Nowra, Ulladulla and Wollongong RPTRS were easy to access. (high range being out). Audio quality is excellent (due no doubt to a 50mm speaker).

Further test established it to be very neat with several minor but irritating faults.

The PPT switch is very sensitive. When the battery starts to fail on receive images appear on the receiver i.e. they will open the mute even though no signal is present.

Lastly the low battery indicator does not seem to work.

Receiver tests indicated that it was not as sensitive as my YASEU FT290R but was still most satisfactory. If you could hear them you could work them!

As expected on the 5 watt setting batteries lasted less than hour intermittent use. I would only use the 5 watt position when operating on external 12 volts.

After using the YASEU digital readout which also reads the memory channel your on, I could never remember what channels were in the 3 memories. I think a dymo label would help here.

A quick look at the 'guts' revealed lots of black legged binary bits, and a rather large heatsink for the output transistor. All components are on one PCB (single sided) and appear easy to service.

The instruction manual was ok but in typical Japanese English. No circuit diagram was supplied.

The unit came with a charger but unfortunately it had the Japanese type 2 round pin plug on it. (A jug cord does fit it though).

A DC power cord was supplied.

Accessories available include:

- Soft Carry case
- AC Quick Battery Charger (could be very useful).
- External Microphone/Speaker Unit.
- Carry Strap
- 1750 Hz Tone Burst Unit
- Touch Tone Pad
- CTCSS Encoder/Decoder

The last 3 options are to be factory fitted.

Prices for the R 6 was \$170 Aust P.P. Paid from Hong Kong, Duty 2 % and Sales Tax 32½% came to \$70.55 bringing the total price to \$240.55.

Two other versions are available, one covers from 150 → 159.995 MHz, the other 160 → 169.995 MHz.

Be prepared for a two month wait also. Overall I am quite satisfied with the units performance with its major advantage being its compact size.

Noise Rejector

-- great for CW
or phone receivers

S. T. Rappold WB6ZYK
PO Box 4678
Redway CA 95560

Here is another version of the outboard noise and interference-rejecting circuit for both phone and CW. It is an accessory aid to even the most modern of receivers. The unit is widely variable and flexible, doing a real job under difficult on-the-air conditions for which the unit was designed.

Throughout my more than forty years of hamming, I have tried many types and combinations of both simple and complex filter circuits, to find that indeed they all do some specialized job. But this circuit has proven to be simple, most effective, and a pleasure to build and use, providing much-needed RN-QRM rejection and

cutting background noise to almost nothing. Of equal importance — it is cheap and dirty. No doubt every ham has the components in the junk box, or can get them at the local electronics surplus store. This simple and straightforward circuit produces surprisingly effective results. The unit has only three controls: a 4-position rotary switch to select desired combinations of the noise-

limiting diodes, an af filter notch control, and a tone control.

The unit is to be plugged into the receiver's headphone jack; the unit's output jack can take either phones or speaker. The circuit input begins by cutting sharp and heavy noise pulses in three steps with the 4-position rotary switch. The three diode combinations handle progressively more severe

noise pulses.

This is followed by the af filter, which is simply an af T-notch circuit, a smoothly adjusting type, being quite effective in limiting the af passband over a sufficient range for both phone and CW uses. This filter is without any of the ringing of some filter types. The inductor is an 88-mH toroid, a common item. This part of the unit is also noise-limiting.

The filter is followed by an audio peaker circuit in order to overcome insertion losses of previous circuitry. The peaker restores the audio level back up to desirable level.

The output of the unit incorporates an old-fashioned and long-employed circuit to cut still other types of noise and adjust and clear up received signal problems: an ordinary tone control circuit. It is remarkable how much this simple circuit modifies signals and atmospheric conditions.

Try this simple unit on the workbench some evening, and see if it isn't a delightfully cheap and dirty way to enhance receiver performance and utility. Its noise control makes possible 160 meter operation all through the QRN season of the year, and I have been able to stay on the air on 160 in particular when others QRT because of atmospheric and Loran QRN and heavy QRM.

The unit is housed in a 6" x 3" x 2½" utility box. ■

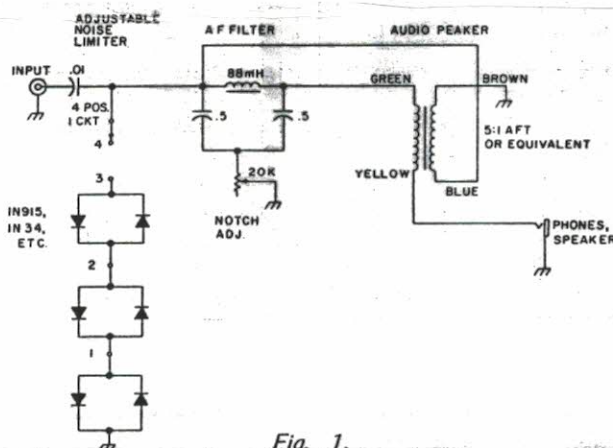


Fig. 1.

Meetings: Second monday of every month except January at 7.30 P.M. in the Congregation Church Hall, Coombe Street, Wollongong. Committee meet 3rd tuesday of each month S. building Auburn Street, Wollongong at 7.30 P.M.

Repeaters: VK2RAW - 6850 VHF Mount Murray. VK2RIL - 7275 VHF Sublime Point.

VK2RUW - 8225 UHF Hill 60 Port Kembla. VK2RIN - 8725 UHF Sublime Point.

Broadcasts: Club news - RTTY on 6850 VHF repeater at 7.00 P.M.; Voice on 6850 VHF, 8225 UHF and by relay on 3562 Khz and 28460 Khz at 7.15 P.M. on Sunday night prior to Club meeting. Call backs after the W.I.A. relay at 7.30 P.M.

W.I.A. relays - on 6850 VHF at 11.00 A.M. and 7.30 P.M. weekly on Sunday.

Club Nets: 3562 Khz SSB on Sundays at 8.00 P.M. and slow morse net on 3562 Khz on Tuesdays at 8.00 P.M.

Newsletter: "The Propogator", published monthly to reach financial members in week prior to meeting. All articles, ads etc to the editor, Leo Kleeborn, VK2YJK at 33 Lombard Avenue, Fairy Meadow 2519. Telephone 84 97 51. Copy deadline 3rd tuesday each month.

Membership: The Secretary, I.A.R.S. P. O. Box 1838, Wollongong 2500. Full membership is \$ 7.00 per annum; students and pensioner concessional members \$ 4.00 per annum.

QSL's : For financial members who are also financial members of the W.I.A. ONLY.

Inwards: Mike Keech VK2VXS, QTHR ; Outwards: Ian Callcott VK2EXN QTHR.

Awards: The award of the I.A.R.S. is "The Lawrence Hargrave" award. Vh stations require 10 contacts with I.A.R.S. members; overseas stations require 5 contacts with I.A.R.S. members or contact with the Club station VK2AMW is sufficient in itself for the award. Send details - time, day, date, frequency, station worked + \$ 2.00 or 4 I.R.C.'s to Awards Manager, I.A.R.S., P. O. Box 1838, Wollongong 2500. No QSL cards required.

Store: The Club store operates at each Club meeting. Storeman Paul Ferguson VK2DZJ QTH

Committee: President - Keith Curle, 24 Beach Drive, Woonona 2517 VK2OB. 842469

Vice President - Denis McKay, 17 Doncaster St., Corrimal 2518 VK2DMR.

Secretary - Dave Myers, P. O. Box 1838, Wollongong 2500 VK2PBP.

Treasurer - Geoff Cuthbert, 2 Nioka Avenue, Keiraville 2500 VK2ZHU.

Repeater Chairman - Graeme Dowse, VK2CAG. Repeater Committee - Pat Jordan VK2KEY,

Denis McKay VK2DMR, Mike Keech VK2DMR, Eric Fien VK2YVF, Dave Collis VK2EZY.

Broadcast officer - Eric Fien, 331 Cordeaux Road, Mount Kembla 2526. VK2YVF.

QSL's - Mike Keech VK2VXS & Ian Callcott VK2EXN.

Propogator Editor & staff: Leo Kleeborn, Editor VK2YJK, Ken Frost VK2DOI, cartoonist Brian Wade VK2AXI.

Storeman - Paul Ferguson VK2DZJ. Publicity - Dave Henderson VK2YKQ.

General committee:- Jock Taylor, VK2JT ; Ray Ball VK2XCC ; Morry Van de Vorstenbosch VK2EMV & Jim Mead VK2EJM.

Life Member: Graeme Dowse VK2CAG elected 1982.
