

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY .
VOLUME - 86 , NUMBER : 5 JUNE 1986.
REGISTERED BY AUSTRALIA POST PUBLICATION NUMBER : NBH - 1491.

MEETINGS ARE HELD ON THE SECOND TUESDAY OF EACH MONTH ,
(EXCEPT JANUARY) AT 7.30.PM. AT THE STATE EMERGENCY SERVICES ,
BUILDING , IN MONTAGUE STREET , NORTH WOLLONGONG .

VISITORS ARE MOST WELCOME TO ATTEND THE MEETING'S.



There was a good attendance of members at the last monthly meeting of the I.A.R.S., there being 64 members present. Some of the items on the agenda read by president Keith VK2OB

were , notice from the Port Macquarie club about their field day, to be held on the Queens Birthday weekend , more information on this venue is inside propagator.

This was followed by the announcement of the lucky winners of the I.A.R.S. F.R.L.I. (fund raising list) for the previous month.

Keith VK2OB then mentioned about one of our members (who shall remain nameless) and how he was so keen to attend our monthly meetings , that he arrived outside the clubs meeting place 1 WEEK EARLY. Now that is what I call a very keen member and should be rewarded with an OSCAR (not the heavenly one)

Club President Keith was inspecting his tower recently and noticed a few rust marks here and there. He decided the time had come to take the tower down for a closer inspection to see if it warranted a complete overhaul, or if this condition was too bad, perhaps build a new one.

He decided the next day was the right day for the inspection and decision making and went to bed that night a happy man.

Fate stepped in during the night and took Keiths decision away from him. A high strong wind sprung up during the night and devastated his project

by blowing his tower over
and smashing it beyond use,
included his antenna system.

It has been reported by a well known and reliable source, that on first sighting of this catastrophe Keith was heard to say "fun fun fun"

followed by the words\

We believe Keith is now trying to negotiate with "THE BIG AUSTRALIAN". Not B.H.P. but "CAVIONS". Our condolences to Keith and hope you will be back on the Air waves soon with a new tower and antenna.

After the general business was dispensed with members present were entertained with an interesting video show of the use of solar power . The video tape was supplied by Morry VK2EMV and as usual Mike VK2DFK supplied the video recorder, and set the show into motion. Thanks to Mike & Morry for their efforts.

After the show there was the usual tea & bickies supplied in the canteen.

REPEATER REPORT GRAEME VK2CAG

The wind generator is working well at Mt. Murray after being given a mechanical overhaul. Just in time for the coming windy season. The amount of activity through this repeater has dropped dramatically in the last month, and as a result the battery has been in a nearly fully charged condition most of the time.

We are in possession of a couple of deep cycle 90AH batteries, the same style as the ones in use at Sublime Point only bigger, and they are to be installed at Mt. Murray in the near future. The existing batteries up there are getting a bit old and it is good to have the replacement ones on hand.

It is the general feeling of the committee that we should look at disposing of the wind generator and using the proceeds to purchase a solar panel. Our energy problems seem to occur only in the summer when there is more activity on the repeater and less wind about. If you know of someone who is interested in purchasing the newly overhauled generator, then the committee is willing to negotiate.

Peter and Rob have finished putting the cavities together for Sublime Point 7275 duplexer. They are being tuned and connected together to form the complete duplexer. Once the duplexer is on line, we will have to have a think about replacing the co-ax and making a suitable antenna for Sublime Point to bring about the same degree of improvement in performance that we got from Mt. Murray after we did "the job" on it.

LETTER FROM AMERICA

From our overseas correspondent Denis VK2DHR.

Greetings from the land of "Reaganomics". I hope that this is the first of the opportunities that I have to sit down and let you know a little about the States, especially as they pertain to amateur radio.

Firstly, I guess I should tell you a little about where I am and what I am doing. I am living and working in the state of Connecticut which is on the eastern seaboard just above New York and New Jersey. I am living in the town of Guilford which was first settled in 1636 and was one of the original colonies. I am working in the city of New (pronounced 'Noo') Haven

which was (and to some extent still is) the centre of firearms manufacturing centre of the US with such names as Winchester, Colt & Marlin being situated here.

I can use at least 8 repeaters from either home or work with my two metre hand-held (I now have too call it a "handi-talkie"). I belong to two repeater groups, the Shoreline Amateur Radio Club (SARC) and the Southern Connecticut Amateur Repeater Association (SCARA). SARC has three 2 metre repeaters and SCARA has six! To give you some idea, the main SARC repeater at Killingworth has phonepatch and is also linked to a 10 metre repeater so that I can work DX with my handheld!!!! Maybe that's another project Graeme!!!!

Surprisingly there is not the level of 70 cm activity that we are used to in Australia and RTTY repeaters are not all that popular at least around where I am. There is however a great amount of packet activity with quite a number of digipeaters. No doubt it, Packet Radio is the coming wave and the IARS plans seem to be heading in the right direction.

I hope that by the time that you read this I will call my reciprocal callsign ("call letters"). This normally takes about six weeks.

I have just started setting up some sort of station so I will let you know how this goes in my next letter.

73 S

The Hybrid G4ZU Super-Beam

Any ham who has built and used the G4ZU mini- or super-beam*, knows the advantages of these antennas—cheap, light, readily tuned elements and 20-15-10 meter operation. The disadvantages—special clamps, insulators, and feeding problems.

First, a re-cap of the G4ZU element tuning principle (see Fig. 1). AB and CD are two lengths of aluminum tubing arranged in dipole fashion and insulated from each other. The lengths are such that, if B and C were joined together, AD would be a half-wave on 15 meters. The problem of electrically joining BC together, but only on 15 meters, is readily done by inserting a quarter-wave open stub across the two points. On 20 meters this stub appears as a small capacitive reactance, on 10 meters as a small inductive reactance. AD can be electrically lengthened on 20 meters by adding a small closed stub across BC and adjusting its length for resonance; this will also give (almost) a resonant full-wave length on 10 meters.

The original G4ZU mini-beam employed this method of tuning and automatically switching. A director was used as a half-wave element on 10 and 15 meters and a full-wave element on 10 meters. The driven element consisted of a 15-meter dipole, centre fed by 300 ohm twin-lead or 450 ohm open-wire line. A special antenna coupler was inserted an electrical half-wave on 20 meters from the element and this was coax fed from the transmitter. This minibeam's performance and spacing is outlined in Table 1.

The super-beam was an attempt to improve performance on all bands, especially on 20 meters, and it certainly succeeded. Its detail is also found in Table 1 and this is the beam used for the constructional details to follow.

To construct this antenna, a twin boom is used with the quarter-wave stubs made from 300 ohm twin-lead and inserted inside the boom, centrally locating them by use of corks or plastic inserts and using the boom elements as the tuned shorting stubs, (Fig. 1). This method of stub-loading works very well for the passive elements but is not suitable for the driven element. The original design used a 24' driven element fed at the centre by balanced line through an antenna coupler. This method works, but the difficulties of rotating the beam and the constant manipulation of the controls in the coupler for changes in frequency or weather led to a search for a better method. G4ZU had suggested a trap-loaded, coax-fed driven element might be suitable, so one was built and tried. This idea worked but, with home-brew construction techniques, was not mechanically strong and suffered from weather effects. Digging into the catalogues provided the answer—the Moseley TA-31 trap dipole. The results obtained proved the value of this investment.

The completed beam has the configuration shown in Fig. 1. Note the extra 10 meter director. The passive elements are made from 1/2" OD aluminum tubing with 24" end inserts of 3/4" tubing for length adjustment. The outer tubing is notched with a hacksaw for approximately 1" and stainless steel hose clamps are used to hold the two pieces firmly together once the tuning has been completed. Large stainless steel clamps are also used to hold the passive elements to the twin boom, see Fig. 1. One clamp per element

is satisfactory (mine has withstood heavy icing and winds up to 60 mph), but two, arranged in "X" fashion will add more strength. These clamps are readily available from auto supply houses (gear-type hose clamps, price 20 to 50 cents). The elements are reinforced with an additional 5' length of 3/4" tubing insulated from the element and positioned under the boom. Any good grade of plastic insulation can be used—I prefer nylon rod for its extra strength and easier working.

To attach the boom to a mast, use a piece of 1/4" aluminum plate, 8" x 8", drilled and attached to the boom by four TV U-clamps. Bolt a six inch piece of 4"x4" (or 6"x6") steel angle to the aluminum plate, using 3/8" cadmium-plated, flat-head, counter-sunk machine screws, and drill the angle bracket for two TV U-clamps so that the top of the

supporting mast will end up against the steel angle. Plate all steel parts or give them two coats of porch enamel before assembling.

The tune-up procedure is simple. Erect a stub mast so that the beam is parallel to the ground and about 10 feet high. Feed about five watts into the antenna through a length of 52 ohm coax, and pick up the radiated energy with a field strength meter or receiver located at least 120' away. Start on 15 meters and adjust the director length for maximum output; rotate the beam 180° and adjust the reflector for minimum output. Lock the adjustable element lengths in place and check the twin-lead stubs by shorting across them when tune-up is finished—there

should be no change in output. Tune the director and reflector on 20 meters by adjusting the shorting bars on the boom and lock in place. Tune the extra 10 meter director length and position for maximum output. Attach a small tuning capacitor, 50 pF, across the tri-band director and tune for maximum output.

Permanently weatherproof and install the variable capacitor or replace it with a fixed capacitor (two concentric lengths of aluminum tubing separated by polystyrene sleeving). If the additional gain and front-to-back ratio is small, forget the whole thing! Note: if more than about 20 pF must be added, recheck the director tuning on 15 and 20 meters.

Useful information: all stubs are made from 300 ohm ribbon. The director stub is resonant between 22 and 23 MHz, approximately nine feet long. The reflector stub is resonant between 19 and 20 MHz, approximately ten feet long. Shorting bar settings on the twin boom: director—30 to 40 inches; reflectors—35 to 45 inches. The twin boom uses 1 1/2" to 2" diameter tubing with 3 1/2" to 4 1/2" centre-to-centre spacing. Follow the instructions given for the TA-31 dipole regarding method and type of feed and liberally coat all fittings with the liquid plastic supplied.

Two beams of this construction are in use in the Kingston area, mine and 3C3EME's. Judging from the reports and comments received over the air, the beams are performing very well. Performance on 20 meters is as good as any 3 element trap beam. On 15 meters it out-performs the trap type of beam and on 10 meters it is in a class by itself.

VE3AIH

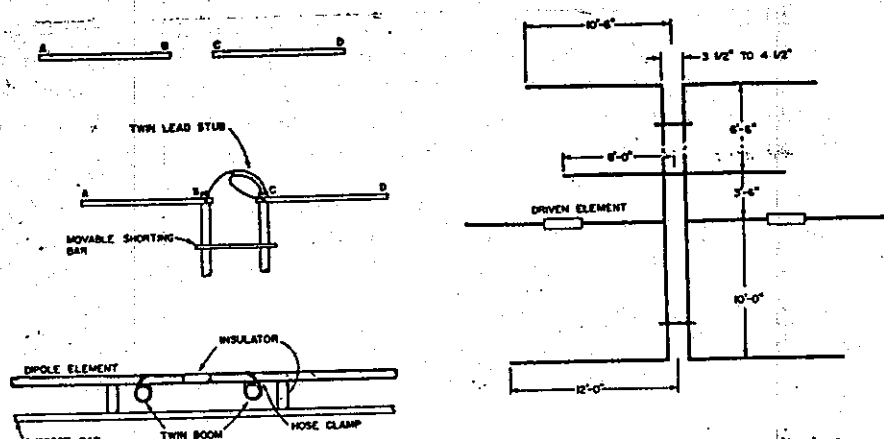


Fig. 1. Construction of the hybrid G4ZU super-beam. In this design a Moseley TA-31 trap dipole is used as the driven element.

Mini-beam			
Band	Reflector Spacing	Director Spacing	Comparable to
20M	0.1		2 element narrow spaced beam
15M	0.15	0.1	3 element beam
10M	0.2	0.15	5 element beam
Super-beam			
20M	0.15	0.15	3 element beam
15M	0.2	0.2	3 element wide spaced beam
10M	0.3	0.1	
		0.3	6 element wide spaced beam

Table 1. Performance comparison between the G4ZU mini-beam and super-beam.

EME REPORT BY LYLE VK2ALU

Moonbounce Report - June 1986.

Optimisation of the 1296MHz feed horn (as covered in last month's Report) is about $\frac{3}{4}$ completed at the time of writing. (28/5) Reflected power at each of the feed ports has been reduced considerably. The return loss is now better than 23dB (less than 1.2 to 1 SWR) . Adjustment of circularity of the circular polarised characteristic of the feed horn is progressing, with that of the transmit port looking very good but adjustment of the polarising screws is not so far producing the desired result at the receive port.

The work came to a temporary halt late this afternoon when the driver tube power supply in the 1296MHz EME exciter failed. Cause is not yet investigated.

It is hoped to have the feed horn replaced in the dish well before the date of the proposed activity weekend at the dish site.

I have advised the publisher of the monthly EME newsletter of the VK2AMW Activity weekend and have indicated that we could be on 1296MHz EME over the period 2300Z June 27 to 0600Z June 29. Our window to the European area is between approx. 2300Z June 27 to approx. 0130Z June 28 (9am local on Sat. to 1130am) and again between approx. 2330Z June 28 to 0145Z June 29 (930am to 1145am Sunday local time). There is just a chance that we could be on during the USA window between 1400Z to 1600Z June 28 (0200 to 0400 on Sunday local time) if we are feeling very keen!! We may be able to arrange some skeds with stations in Australia and New Zealand at other times during the morning on Sunday, before the moon goes down.

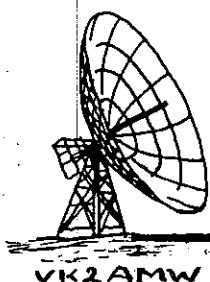
The above EME newsletter (432 and Above EME News) is sent to all the active EME operators around the world , so our activity weekend should be well publicised amongst the EME fraternity at least.

Satellite Notes (as at 28/5)

Oscar 10 became unservicable about 10 days ago. Reports have been heard that the cause was an onboard computer memory failure and that it was hoped to have the problem corrected in about 2 weeks.

In the meantime all that I can hear is the Mode B General Beacon transmitting PSK data. It is not providing either the CW or RTTY bulletins on the $\frac{1}{2}$ and $\frac{1}{4}$ hours and the communication transponder on Mode B is not coming on. ZL2AQE reported last Saturday that Mode L is also unusable.

Lyle VK2ALU.



COMMITTEE - * - REPORT

Concern as to the Financial affairs of the I.A.R.S. was expressed by members at the April 1986 monthly meeting of the I.A.R.S.

The Treasurers Report for 1985-1986, has not to this time been presented, and a need to see where the society is going is needed.

Many areas over the years have just "CARRIED ON" So a review is needed to bring the Society up to date and also plan for the future.

A motion was put forward at the May 1986 monthly meeting as follows:-

That the committee of I.A.R.S. undertake a complete review of the

financial status of the Society, with the view to placing the Society on a more sound and business like footing.

Also that the outcome and findings of the review be presented to all members at the AUGUST monthly meeting for RATIFICATION. This motion was seconded & carried on committee level.

THE FERRITE BALUN*

Its Uses and How to Make Your Own

JOHN HUGO, ZSISC

This is a popular device in use today by many Amateurs. If you look at any of the recent Amateur magazines from the U.S.A. ("CQ," "QST," "73," etc.) you will see several makes of Ferrite Baluns being advertised.

Why a Balun? For what purpose? The one which we will refer to here is the 1:1 variety, which basically is a matching device which is used to efficiently feed a balanced and symmetrical antenna system of 72 or 50 ohm characteristic impedance, with an unbalanced co-ax feedline of corresponding characteristic impedance.

Yes, unbalanced to balanced feed or vice-versa, that is, what it does. You might say, "We've been feeding dipoles with co-ax. for years and they work fine." So they do, but they work better with this gadget!

Why? Because:

- (a) Feedline radiation is eliminated.
- (b) The radiation pattern (directivity) is improved.

Obviously (a) has many advantages—less power wasted and more power radiated from the antenna, less chance of b.c.i., better s.w.r. and so on.

With unbalanced feed to a dipole or driven element of a quad or yagi radiation is also inclined to be lopsided and so the pattern is upset, causing a loss in ultimate front to back ratio and of course forward gain. Many worthwhile advantages—not so?

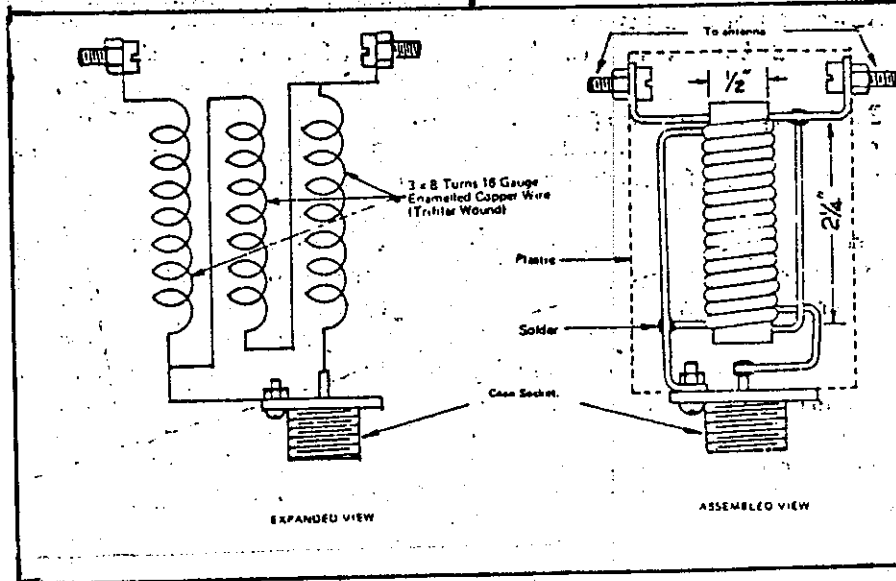
The best news, however, is the ridiculous simplicity with which you can "roll your own" Ferrite Baluns. All you need for a 3 to 30 Mc., wide-band 1:1 balun capable of easily handling a

kilowatt with completely negligible insertion loss is the following:

- (1) A few feet of 16 gauge enamelled wire.
- (2) Three feet of Ferrite Rod (up to 30 Mc. varieties).
- (3) A co-ax. connector socket.
- (4) A couple of solid nuts, bolts and washers.
- (5) A plastic tumbler—Tupperware box, or other insulating protective cover.

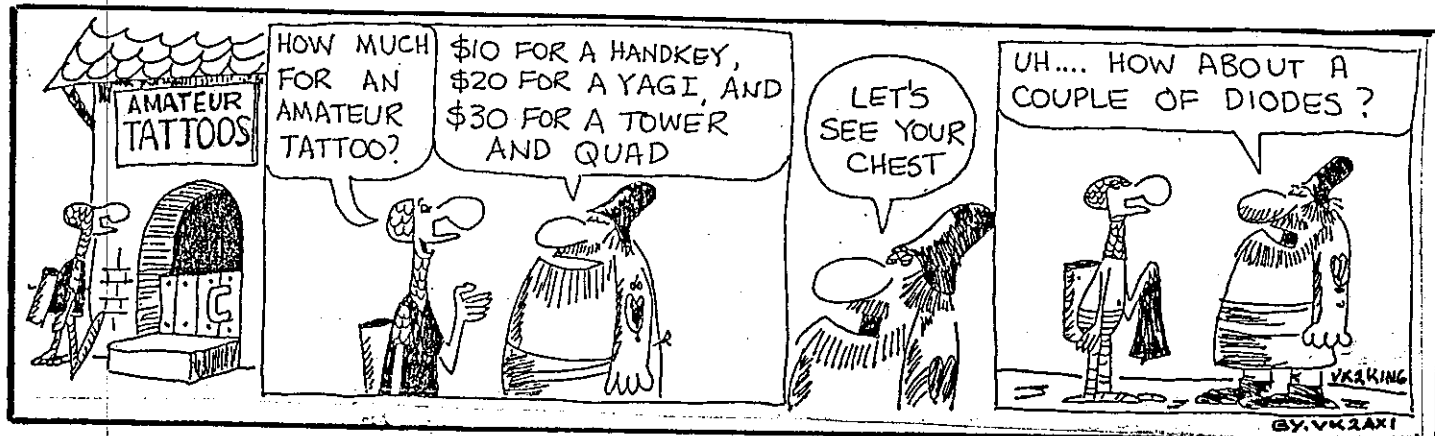
The accompanying figure shows the construction—the coils (each 8 turns) are trifilar wound on the ferrite rod and the ends are connected as shown. The whole thing then is encased in the plastic box to make it weather proof—with the co-ax. connector plug at the bottom and the bolts opposite one another at the top, which, incidentally, go to the driven element on your beam, quad or dipole (with the shortest connecting leads possible!).

These jobs should be particularly suitable in a co-ax. fed inverted vee or multiband trap dipole. They are so cheap and easy to make that they could also in fact be ideally used on each in the separate driven elements of a triband quad and should materially improve the directional properties of antenna. Why not try it?



ANXIOUS AMATEURS

The club has some new members who are anxious to acquire a H.F. Rig. If you have a second hand rig that is now spare, working or not and would consider selling it please let a club committee member know and they will be happy to arrange a buyer for you.



PORT MACQUARIE FIELD DAYS:

"OXLEY MOBILE AWARD"

RULES:

PURPOSE: To encourage contacts with other stations whilst travelling to the Port Macquarie Field Days each year.

- 1: **START:** Queen's Birthday Friday 9am: **FINISH:** Queen's B'day Sunday 12 noon:
- 2: Contestants **MUST** be mobile: Use any mode/band: Work any station: **REPEATERS** are O.K.
- 3: Only one contact per station permitted: Use special log sheet below:
- 4: Only amateurs registering at Port Macquarie Field Days are eligible:
- 5: 25 stations **MUST** be logged: 10 of these **MUST** be with fellow amateurs who register at our Port Macquarie Field Days: Identify these 10 stations by simply exchanging vehicle registration numbers.
- 6: Rule 5 does not apply to Novices, who may log any 25 stations what-so-ever.
- 7: Logs **MUST** be signed and handed to Club Secretary by 12.05pm on Sunday.
- 8: Special unique Award Certificates will be issued to each qualifier. Please take part and enjoy this "special mobile contest".

No.	Station Worked:	Band:	Car Rego:	No.	Station Worked:	Band:	Car Rego:	No.	Station Worked:	Band:	Car Rego:
1				11				21			
2				12				22			
3				13				23			
4				14				24			
5				15				25			
6				16				I personally certify that the above contacts were genuinely made in accordance with the rules Signed: Callsign: Q.T.H.			
7				17							
8				18							
9				19							
10				20							

No:	Time:	SATURDAY'S EVENTS:	PROGRAMME
***	10.00am	REGISTRATIONS at RSL YOUTH HALL (Please assist us by registering as soon as you arrive) At Oxley Beach near Oxley Cricket oval:	
No.1	2.00pm	2 Metre x 2 Trans. Fox Hunt (Ch40) (C'ship event: See 24)	Trophy by Keith Lutton Lake Cathie T.V. Service.
No.2	3.30pm	40 Metre Fox Hunt. (7.050 apprx) (C'ship event: See 24)	Trophy by Malaysian Hot Wok Family Restaurant:
No.3	4.30pm	10 Metre Fox Hunt: (Championship Event: See 24)	Trophy supplied by Judith & Geoff Hutchison. LADY PASSENGER trophy by Coast Radio & TV:
***		SMORGASBOARD MEAL BREAK AT THE QTH: Only \$5.00 each with young children at \$2.00 each. (A really top line meal for sure!!!) PLUS..Lucky smorgasboard registration prizes!!! Wow! What a show!	
No.4	7.30pm	2 Metre "TALK-IN" Fox Hunt. (C'Ship event: See No.24)	Special trophy by "BIG W" of Settlement City.
No.5	ENTER THESE CONTESTS ANY TIME SATURDAY OR BEFORE 3 PM ON SUNDAY	HOME BREW CONTEST: Enter your favourite home-brew item. Card your entry. Trophy supplied by Mid Coast Electronics:	
No.6		Q.S.L. CARD CONTEST: Enter your best (6) QSL cards on a piece of cardboard at our special display. Trophy by Noelle & Dick Hoffman of Lord Howe Island.	
No.7		OLD GEAR CONTEST: Enter your favourite piece in this popular contest. Trophy from Bob Brodie's Pet Shop.	
No.8		Handy Kink Contest: Enter your best "Handy Kink" idea. Give full details on foolscap paper. Trophy; Col Terry Hastings Crane Hire.	
No.9		BEST PRESENTED FOX HUNT VEHICLE: Judged on 8 point features, including rigging. Trophy by Todd Holden - GMH Dealer.	
No.10		COMPUTER PROGRAMME CONTEST: Must be amateur radio orientated and on print-out format. Must be your own work. Trophy supplied by Robertson Electronic Wholesalers.	
No.11		SATURDAY CROSS WORD PUZZLE. Trophy from Chandlers of Port Macquarie	
	Closes 6 P.M.		

No:	Time:	SUNDAY'S EVENTS:	PROGRAMME
***	9.00am	REGISTRATIONS AT RSL YOUTH HALL (Please assist us by registering as soon as you arrive) At Oxley Beach near Oxley Cricket Oval.	
No.12	10am	7 Mhz Fox Hunt. 1 Trans. (Championship Event: See No.24)	Trophy by Warren Turner Electronics.
No.13	11am	146 Mhz x 2 Trans. Fox Hunt. (C'Ship Event: See Event 24)	Trophy by Arthur Monck TV & Radio Service.
***	12 NOON	BARBEQUE LUNCH: Super Special & Famous Fill-Up Service! Hi!	
No.14	10am to 3pm	C.W. SENDING CONTEST: A test of your ability to send C.W very accurately, irrespective of your speed. Accuracy in every aspect is the key to winning. Trophy by Hall of Electronics.	
No.15	1.15pm	40 Metre FUN TYPE PEDESTRIAN FOX HUNT: Bring along your Short Wave transistor for the fun. Trophy; Alex Oliver TV Service.	
No.16	2.15pm	10 Metre Fox Hunt: (Championship Event: See No.24)	Lady Passenger prize also. Trophy by Walder & Twohill Retravision.
No.17	3.15pm	144 Mhz x 2 Trans. Pedestrian Fox Hunt. (C'Ship Event: See No.24)	Trophy by Future Electronics.
No.18	Ladies & Gents	IDENTIFY MYSTERY OBJECTS IN THE SEVERAL PHOTOS contest. Trophy by Mrs Margaret Monck.	
No.19		SUPER SUNDAY CROSSWORD PUZZLE. Trophy by Chandlers of Port Mac.	
No.20		GENERAL KNOWLEDGE & TECHNICAL QUIZZES. Trophy by Jim McIntyre.	
No.21		LADIES DART THROWING CONTEST: (Best score from (3) darts) Club Trophy	
No.22		LADIES HANDI-CRAFT CONTEST STALL: Right-ho girls! Bring along your best samples! Club trophy; after judging, goods can be sold @ 10% commission to our club, for which we thank you!!	
No.23		OXTALES CUP for Foxhunt Championship Winner. Conducted over events 1-2-3-4 (Saturday) and 12-13-16-17 (Sunday). Each event stands alone but attracts Championship points made up of 1st=10; 2nd=8; 3rd=6; 4th=4; Each starter finishing =2. (Annual Cup with replica)	
No.24			

OXLEY MOBILE AWARD: Open to any mobile station attending the Port Macquarie Field Days. Special unique award certificate. See separate sheet for rules and log sheet.

FEES:	FULL REGISTRATION:	SUNDAY ONLY:	N.B. Saturday night has \$5. smorgasboard fee.
XYL	\$8.00	\$5.00	
O.M	\$10.00	\$7.00	
FAMILY	\$20.00	\$15.00	



EDITORS * REPORT.

If you are a new club member of the I.A.R.S. and have not yet obtained a license to operate, and would like to "GET ON THE BAND". Then contact me on 849872 and I will endeavour to arrange with a licenced club member near where you live, for you to get on AIR during our SUNDAY-CLUB-NET-NIGHTS..

FOR SALE

For anxious new members or new novice license holders, and would like to get on the H.F. band. Here is a cheap way to get on the air. I have for sale a converted Pearce-Simpson for ten meters, also with manual. For more information contact UK2EMV Morry or UK2PZY Dave.

PRICE : \$ 80.

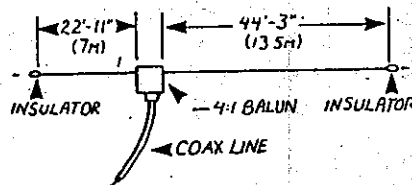


Fig. 2 — The off-centre fed antenna revisited. This version, used by JK1AYE, is designed for 7, 14 and 28 MHz operation and is fed via coax and a 4:1 balun. SWR is quite low on all three bands. The antenna is not designed for 21 MHz operation.

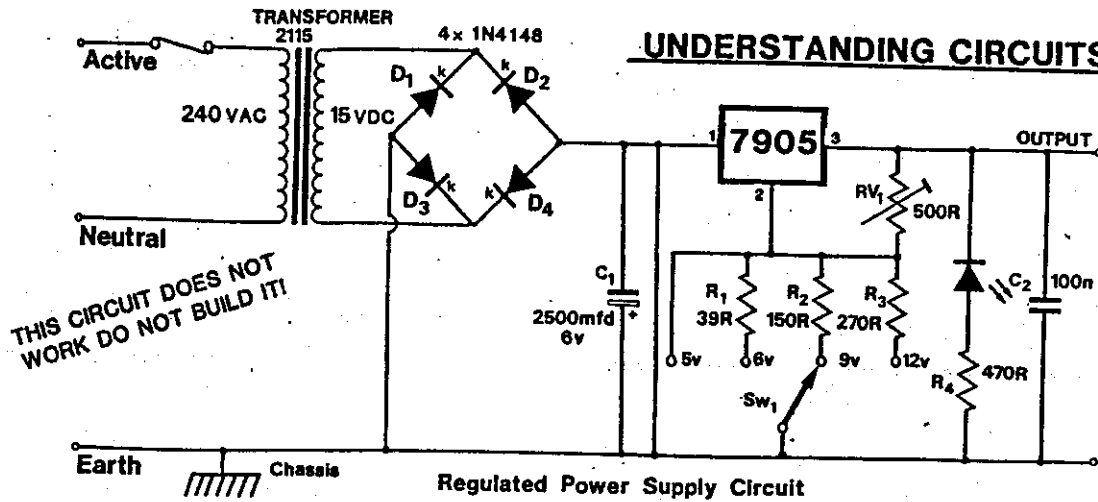
SIMPLE TRIBANDER

The Japanese amateur radio magazine CQ Ham Radio describes an interesting triband antenna used by JK1AYE. It is an updated version of the old off centre fed antenna that used a 300 ohm ribbon line for the feed system.

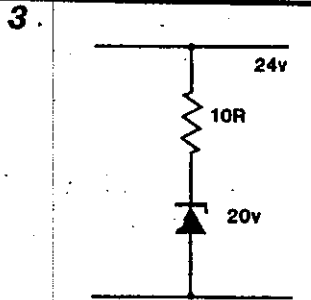
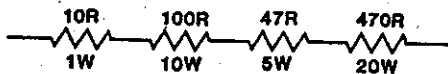
In this simple design (see Fig. 2), a 4 to 1 balun and coaxial line replaces the ribbon line. JK1AYE adjusts the lengths of the flat top sections a bit at a time until he achieves the lowest vswr in the middle of each band.

TEST YOURSELF.

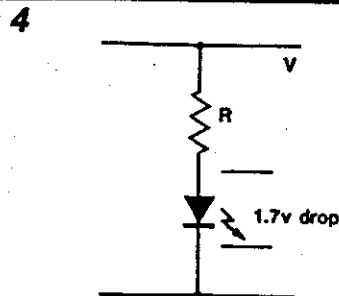
- 1 THIS POWER SUPPLY CIRCUIT CONTAINS AT LEAST 10 FAULTS. CAN YOU LOCATE THEM?



- 2 Which resistor will burn out first when the combination is connected to a high voltage.

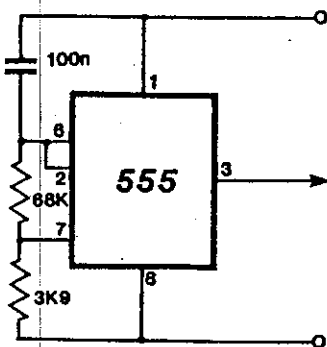


A 20v zener diode is connected to a 24v line via a 10 ohm resistor. What is the current in the zener diode?

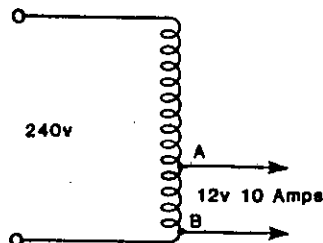


A light emitting diode is connected to a high voltage rail via a dropping resistor. Calculate the value of the resistor when the voltage is: (a) 10v (b) 15v (c) 20v. The LED requires 10mA.

- 5 can you list the faults in this circuit?



- 6 An auto transformer is tapped at 12v and is required to deliver 10 amps to a load. What is the approximate current in winding 'a'?



1. Fuse - no rating
2. Diodes D1, D2 around the wrong way
3. 4x 1N4148 not 1N4148
4. 2500mfd up-side-down
5. 7905 is a negative regulator
6. Regulator numbering should be 132
7. LED reversed biased
8. 15VAC not DC
9. 6v electrolytic should be 25v
10. Short-circuit wire near electrolytic.
The 470 ohm resistor has the lowest wattage rating for the current flow.
The voltage across the resistor is 24-20v = 4v. From ohms law $I = E/R = 4/10amp = .4amp$
Supply voltage 10v.
Voltage across the resistor = 10 - 1.7 = 8.3v
 $I = E/R = 8.3v / 1.33k = .01 = 13.3/R$
Supply voltage 15v.
Voltage across the resistor = 15 - 1.7 = 13.3v
 $I = E/R = 13.3v / 1.33k = .01 = 18.3/R$
Supply voltage 20v.
Voltage across the resistor = 20 - 1.7 = 18.3v
 $I = E/R = 18.3v / 1.33k = .01 = 18.3/R$
Obviously you will use the nearest preferred value for the dropping resistor.
We cannot find anything incorrect with the circuit excepting that it is up-side-down!
The auto transformer can be treated as a normal double-wound transformer for this situation. The output wattage is 12x10 watts (actually volt-amps) so that the input must be 120 watts, assuming the transformer is 100% efficient. This gives us an input current of 240/120 = .5 amps.

Answers



You might not agree with some, (if any) of my comments, and I will welcome any replies (good or bad) you the member would like to send me in a LETTER TO THE EDITOR.

All letters will be published (unless containing 4 letter words) and I will do my best to give them my reply. (no bricks through my windows please) .

GOOD ON

Denis VK2DMR for keeping his promise to me and the club, in sending an article for inclusion in the propagator. Thank you Denis to go to all this trouble from the U.S. of A. to us in OZ, we look forward in anticipation for more articles in the future.

GOOD ON

All the members that patronised the I.A.R.S. - F.R.L.I. Your support was overwhelming, especially to myself who had a small part in its conception. Thanks to all concerned.

BAD ON

Those members who have still not PAID their CLUB-DUES. A club (any club) is only as good or bad as its MEMBERS-SUPPORT-IT, financially and with attendances.

The amount of help, knowledge and friendship from belonging to a club such as ours is unlimited to its members (you) as long as we ALL share in helping to keep it running.

GOOD ON

Brian VK2AXI-(VK2KING) for coming to our monthly meeting (all the way from out west).

Brian is staying for a few days with Relatives in the Wollongong area. Although we don't see much of Brian in the flesh (heaven forbid) these days, we do see the fruits of his labour for the club in the propagator every month.

His humorous cartoon strip he sends in brings a few chuckles from his fellow members. Thanks Brian your efforts are always appreciated.

Thats all for now 73's

DAVE VK2PZY (ED).

SICK LIST

One of our well known members Kevin VK2EBI was recently admitted to Wollongong Hospital suffering from a heart attack.

Jim VK2EJH and Morry VK2EMV popped in to see how Kevin was progressing and to cheer him up.

We all wish you well Kevin and all the best and hope to hear you back on the "AIR WAVES" very soon.

Also heard that LOLA xyl of VK2EXN was admitted to Shellharbour Hospital, hope you are making good progress, hope to see you back on your feet again soon, all the best from all of us, from VK2EMV - Morry.

FIELD WEEKEND

The Illawarra Amateur Society Field Weekend is fast approaching. What is a field weekend. A good question. A field weekend is when we Amateurs go into the field ie not at home or in the car and try a few things that we dont normally do with our radios. On this accasion we will be using EME on 1296 Mhz. HF bands with a dipole and multi-band vertical antennas plus VHF & UHF rigs. The object of this weekend will be to give exposure to our fellow amateurs to the Lawrence Hargrave's Award through working the rare Club Callsign VK2AMW. So there it is. It has been some years since the last field weekend, so to some of you it may be something new so why not come up and have a look and perhaps grab the microphone or the key for a while. See you on the weekend of JUNE 28 & 29 West of Mount Kiera.

TONY — VK2KAJ

TO MEMBERS OF I.A.R.S.

Your Club is in need of much needed funds, and a system was initiated at the April meeting to try to overcome this problem.

The system is called the I.A.R.S./F.R.L.I. This stands for the Illawarra Amateur Radio Society, Fund Raising List 1 (list 1).

This list (list 1) is already completely filled and has already paid back to winning members \$50 in prize monies in its first month of conception.

There were a large number of members who because they were not at the April meeting missed out on being on list 1 and also do not know how the system works.

So for their benefit a new list (list 2) could be started if they desire, and in so doing, would endeavour to help their Club get into a firm financial status as well as perhaps winning some financial reward for themselves.

1---- The system works for a 26 weeks period.

2---- The member is allocated a LOTTO number between number 1 and number 40 (1-40).

This is picked by ballot and keeps this number for the full 26 weeks.

3---- The member is also allocated 1 share per number in a lotto coupon for 26 weeks.

4---- On each monday Lotto draw (as seen on T.V.) if his allocated number is the SUPPLIMENTARY - NUMBER drawn on the monday lotto draw he wins a prize. This prize is determined by the TYPE of list he is on. As described later.

5---- On the same monday nights LOTTO draw (as seen on T.V.) if the lotto coupon (that he will have a copy of and is valid for the full 26 weeks) has the winning lotto number he will be eligible for his share in any prizes the coupon he holds wins (\$1,000,000 dollars etc).

6---- Because of the chance of winning THOUSANDS OF DOLLARS on the lotto coupon, it is IMPORTANT that the persons named on their particular list keep themselves in ADVANCE financially, as anyone who is in ARREARS when a LARGE PRIZE is won on LOTTO could lose out on their share of the WINNINGS.

A---- Subscription to this list is \$1 - week for 26 weeks.

This gets you allocated 1 number (to keep for 26 weeks). If your allocated number is the SUPPLIMENTARY number (picked on T.V. on mondays) you win \$10 per win. This is paid to you at the monthly meeting. This also gives you a 26 week Lotto coupon with 8 games per week (mondays only) with one share on its winnings.

B---- Subscription to this list is 50.c week for 26 weeks.

This gets you allocated 1 number (to keep for 26 weeks) if your allocated number is the supplimentary number (picked on T.V.) on monday nights draw you win \$5. paid at monthly club meeting. This also gives you a 26 week Lotto coupon with 4 games per week (mondays only), with one share on its winnings.

FOOTNOTE

1---- A member may have as many numbers as he can afford. This will give him more chances of getting the supplimentary number and entitle him to shares in any Lotto coupon winnings.

2---- A member may involve any relative or friend etc, to have a number in the Fund Raising List (F.R.L.) but it will be his responsibility to collect the subscriptions and pay them any winnings after collecting same from the club monthly meeting.

If you have any queries or do not understand anything about the above system please feel free to contact me, DAVE VK2PZY at my home Phone 84-9872.

Finally in closing I would like to say, that I hope after reading the above information you can see the advantages of this system to you and your Club and like your fellow members who were present when the first list (List 1) was proposed will give it your 100% support.

THANK YOU
DAVE-VK2PZY.

COAST-WIDE COMMUNICATIONS

LOT.B. LAWRENCE -
HARGRAVE, DRV. THIRROUL

WE STOCK: CB RADIOS
CB AERIALS - COAX CABLE
MARINE RADIOS
TV - AERIALS, ETC ETC.
SALES AND SERVICE

OPPOSITE THE
SHELL - GARAGE
PHONE: 67 2134.

ON THE NET

27 APRIL

- VK2PZY Dave (co-ordinator)
- VK2PHD/mobile Ray Coffs harbour.
- VK2MT-Rob, • VK2EXN-Ian, • VK2JNC/P4 Niel
- VK2JAM/mobile Peter
- VK2PEL-Ralph; VK2NAN-Dennis
- LAKEMBA (HARGRAVE AWARD)

4th MAY

- VK2KAJ-Tony (CO-ORDINATOR)
- VK2EMV-Morry, VK2EXN-Ian,
- VK2NH-Dave Canberra,
- VK2JNC/P4 Niel QLD.

11th MAY

- VK2KAJ-Tony (co-ordinator)
- VK2JAM-Peter, VK2MT-Rob,
- VK2JNC/P4 Neil, • VK2EXN-Ian,
- VK2EBI-Kevin, • VK2EZY-Dave,
- VK2PZY-Dave, • VK2NAN-Dennis
- lakemba (HARGRAVE AWARD)
- VK2PHD/P4 Ray Harvey Bay QLD

18th MAY

- VK2PZY-Dave (co-ordinator)
- VK2EXN-Ian, • VK2JAM-Peter,
- VK2MT-Rob, • VK2KAJ-Tony,
- VK2EMV-Morry, • VK2PYX-Fred,
- VK2PGL-Phill, • VK2PHD/P4 -
- Ray, VK2JNC/P4-Neil, • QLD..

25th MAY

- VK2MT-Rob (co-ordinator)
- VK2JNC/P4 & • VK2PHD/P4 -
- Neil & Ray in QLD, • VK2EMV -
- Morry, • VK200-Ray Seppala
- Oak Flats, • VK2BBG/P4 Jim
- Potts Currumbin Valley QLD.
- ZL4HI-Fin, New Zealand.

VK2AMW/P CALL BACKS

SUNDAY 11th. MAY.

Call/back from the I.A.R.S. MONTHLY BROADCAST were:-

- on 2 metre were VK2EXN-IAN,
- VK2JAM-PETER, VK2DVB-ANDY,
- VK2KCV-PAT, VK2CAG-GRAEME,
- VK2MT-ROB, VK2ALU-LYLE.
- VK2EMV-MORRY.

Call/back on 80 metre were, VKAJ-TONY, VK2MT-ROB, VK2HQ-FRANK, VK2EBI-KEVIN, VK2AXI-BRIAN, VK2EXN-IAN. Thank you all for coming up on the call-backs, hope to hear from you again next month.

NEWTEK-

ELECTRONICS

WE STOCK:

ALARMS - ANTENNAS
BOOKS - BOXES
COMPONENTS-COMPUTERS
HARDWARE - KITS - TOOLS
WIRE AND A LARGE RANGE
OF SEMICONDUCTORS FOR
THE PROFESSIONAL AND
HOBBYIST : 116 CORRIMAL
STREET. WOLLONGONG.
(JUST FROM HARP-HOTEL)
PHONE : 27 1620.

C.W. NET

It was very good to see the nice turn up on the C.W. net since we have gone from tuesday night to thursday evening the following stations were on 15th May:-
VK2PZY-DAVE, VK2EMV-MORRY,
VK2JT-JOCK, VK2JAM-PETER,
VK2PEL-RALPH.

C.W. NET. 22th MAY, were:-
VK2PZY-DAVE, VK2EMV-MORRY,
VK2PEL-RALPH, VK2JAM-PETER.

Good to see a roll up on this net, and for any one interested please join in even if its only on voice, just to let us know you are there and hope the stations will help to break the ice on the air-waves. A good way to get in that needed practice!, and to upgrade for those sitting for the exams. GOOD-LUCK.

from your EDITOR....

F.R.L.I. WINNERS

- | | | |
|------|------|--------------|
| Week | NO:1 | B.Aldridge |
| Week | NO:2 | J.Hayes |
| Week | NO:3 | S.Harju |
| Week | NO:4 | D.Routledge |
| Week | NO:5 | C.Lacy |
| Week | NO:6 | H.Williamson |
| Week | NO:7 | C.Vaughan |

SO THE STORY GOES

The story goes of A "HAM" who had worked most of his life in the city and who decided to go "BUSH" as he thought it would be a better life being a chicken farmer.

After purchasing a suitable property he contacted the best hatchery and asked them to send to his chicken farm 200 of the best day old chicks. These were duly dispatched.

Two weeks later the hatchery recieved a telegram from the same chicken farmer asking for another two hundred day old chicks as the 200 already send before had all died.

The manager of the hatchery couldn't understand this as he had sent his best chicks. After dispatching another two hundred of his best day old chicks he called his best "REP" into his office and told him to call on the chicken farmer next time he was in his area.

The rep duly arrived at the chicken farm a few days later, and when asking the chicken farmer if he had recieved his new batch of 200 chicks the farmer replied "YES" but everyone of them have died.

When hearing this the rep asked to look over the farm, and on agreement from the chicken farmer went round the back of the farmhouse to look around.

The first thing he saw was rows and rows of little chicken legs sticking up out off the ground, he counted 800.

The chicken farmer then said "CAN YOU TELL ME WHAT I AM DOING WRONG, AM I BURYING THEM TO DEEP OR TO FAR APART ???



THE ILLAWARRA AMATEUR RADIO SOCIETY

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



MEETINGS: Are held every 2nd Tuesday of the Month except January, at 7.30.p.m. in the S.E.S. Headquarters, Montague street, North Wollongong.

REPEATERS: VK2RAW - 146.850. - (VOICE) VHF Mt Murry.
 VK2RIL - 147.275. - (VOICE & R.T.T.Y) VHF Sublime Point.
 VK2RUW - 438.225. - (VOICE) UHF Hill 60 Port Kembla.
 VK2RIL - 438.725. - (VOICE & R.T.T.Y) UHF Sublime Point.

BROADCAST: On Sunday evening prior to the club meeting, at 7.00.p.m. R.T.T.Y. Mode, and at 7.15.p.m. on voice. Transmitted on 147.275.VHF, and relay on 3.562.Mhz. Callbacks will be taken after the voice broadcast.

W.I.A. RELAY: On 146.850. at 11.00.am. and at 7.30.p.m. each Sunday.

CLUB - NETS: On 3.562.Mhz. SSB on Sunday at 8.00.p.m. and a slow morse net on 28.440.Mhz. on "Thursday" evenings at 8.00.p.m.

NEWSLETTER: "THE PROPAGATOR", published monthly to reach FINANCIAL-MEMBERS in the week preceeding the club meeting. All articles, adds etc, to the editor must be in, or try, by the 3rd Tuesday each month.

MEMBERSHIP: The Secretary, I.A.R.S., P.O.Box.1838. Wollongong. 2500. Full membership is \$10 per annum; students & pensioners concessional members \$5 per annum.

AWARDS: The award of the Illawarra Amateur Radio Society is the LAWRENCE-HARGRAVE-AWARD. VK stations require 10 contacts with I.A.R.S. members. Overseas stations require 5 contacts with I.A.R.S. members. A contact with VK2AMW is sufficient for the award. Band-details, date, frequency, station worked and \$2 or 4 I.R.C.'s. to THE AWARD-MANAGER, I.A.R.S., P.O.Box. 1838. WOLLONGONG.2500. No QSL-CARD is required.

STORE: The club store operates at each club meeting. by COMMITTEE-MEMBERS.

COMMITTEE:

PRESIDENT	VK2OB - KEITH CURLE. 24. Beach Drv, Woonona.
VICE-PRESIDENT	VK2DYU- BILL CHADBURN. 45. Beltana Ave, Dapto.
SECRETARY	VK2EJH- JIM HAYES. 1 Kathleen Cres, Woonona.
TREASURER	VK2VAV-YKQ-DAVE HENDERSON.8.Gladstone st.Bellambi.
AUDITOR	VK2ZHU- GEOFF CUTHBERT. 1 Nioka Ave, Kieraville.

GENERAL-COMMITTEE: VK2EXN- IAN CALLCOTT. VK2KAJ- TONY MOWBRAY. VK2MT- ROB McKNIGHT.
 VK2ALK- LES KIRCHMAJER. VK2DWR- DAVE ROUTLEDGE. VK2JAM- PETER WOODS.
 VK2OE- WOJCIECH TOMCZYK. VK2BMH- MARTIN HUTCHINGS.

REPEATER - CHAIRMAN: VK2CAG - GRAEME DOWSE.

REPEATER - COMMITTEE: VK2EXN - IAN CALLCOTT. VK2EMV - MORRY.v.d.VORSTENBOSCH.
 VK2DFK- MIKE KEECH. VK2MT- ROB McKNIGHT. VK2JAM- PETER WOODS. VK2EZY- DAVE COLLESS.

QSL-CARD'S OUT : VK2EXN - IAN CALLCOTT.

QSL-CARD'S IN : VK2DWR - DAVE ROUTLEDGE.

E.M.E. CO-ORDINATOR: VK2ALU - LYLE PATISON.

PUBLICITY - OFFICER: VK2VAV/YKQ - DAVE HENDERSON

BROADCAST - OFFICER: VK2KAJ - TONY MOWBRAY.

CARTOONIST : VK2AXI - BRIAN WADE.

PROPAGATOR-EDITORS : VK2PZY - DAVE CAPON. VK2EMV- MORRY.v.d.VORSTENBOSCH.

PRINTERS : VK2DFK - MIKE KEECH. AND POSTED BY VK2EJH- JIM HAYES.

LIFE - MEMBERS : VK2CAG- GRAEME DOWSE VK2OB- KEITH CURLE. VK2ALU- LYLE PATISON

SUNDAY - EVENING - CLUB-NET - ROSTER:

FIRST	SUNDAY OF THE MONTH	:	VK2MT - ROB McKNIGHT.
2 nd	SUNDAY OF THE MONTH	:	VK2KAJ- TONY MOWBRAY.
3 rd	SUNDAY OF THE MONTH	:	VK2PZY- DAVE CAPON.
4 th	SUNDAY OF THE MONTH	:	VK2DWR- DAVE ROUTLEDGE.
5 th	SUNDAY OF THE MONTH	:	VK2EBI- KEVIN MURPHY.