

THE PROPAGATOR

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY

PO BOX 1838 WOLLONGONG NSW 2500

FEBRUARY, 1981

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.

THIS MONTH'S MEETING:

The February meeting will be held on Monday 9th February at 7.30 p.m. in the Congregational Hall, Coombe Street, Wollongong. The DATONG MORSE TUTOR will be raffled (at long last!) - One ticket \$2, Six tickets for \$10.

Coffee, tea and biscuits will be served at the conclusion of the meeting, and the club store will be operating - so bring your money with you.

DECEMBER MEETING:

At the last meeting for 1980, over 60 members saw solid state radio-teletype and slow-scan television demonstrated by Dave VK2YKQ/VAV with his Apple and Paul VK2ZQT with his Tono. Thanks Dave and Paul for an informative evening.

NOTES FROM CHRISTMAS FAMILY BARBECUE:

Sunday December 7th saw a good turnout by amateurs and their families on Saddleback Mountain. Paul VK2ZQT nearly collected some steaks on the hoof near Jamberoo, but on arrival at the venue got down to the serious business of flying a box kite.

Ian VK2DKS didn't have enough petrol to drive up the approach road, so had to drive back to Kiama for some more (the gradient sent his petrol to the wrong end of the tank, and he didn't especially want to go up the hill in reverse).

In the two-metre fox-hunt, one contestant made a beeline for Knight's Hill and TV Channel 5A, while another was convinced that the transmitter was roaming about in the scrub. Les VK2ALK eventually dug it out of a brown paper bag sitting up in the shelter shed with the XYL's, about 5 metres from the starting line.

The children's audio beeper hunt was hotly contested - the speed with which they found and recognised the device will stand them in good stead when they grow up, become amateurs, and shop at Fred's on Saturday mornings.

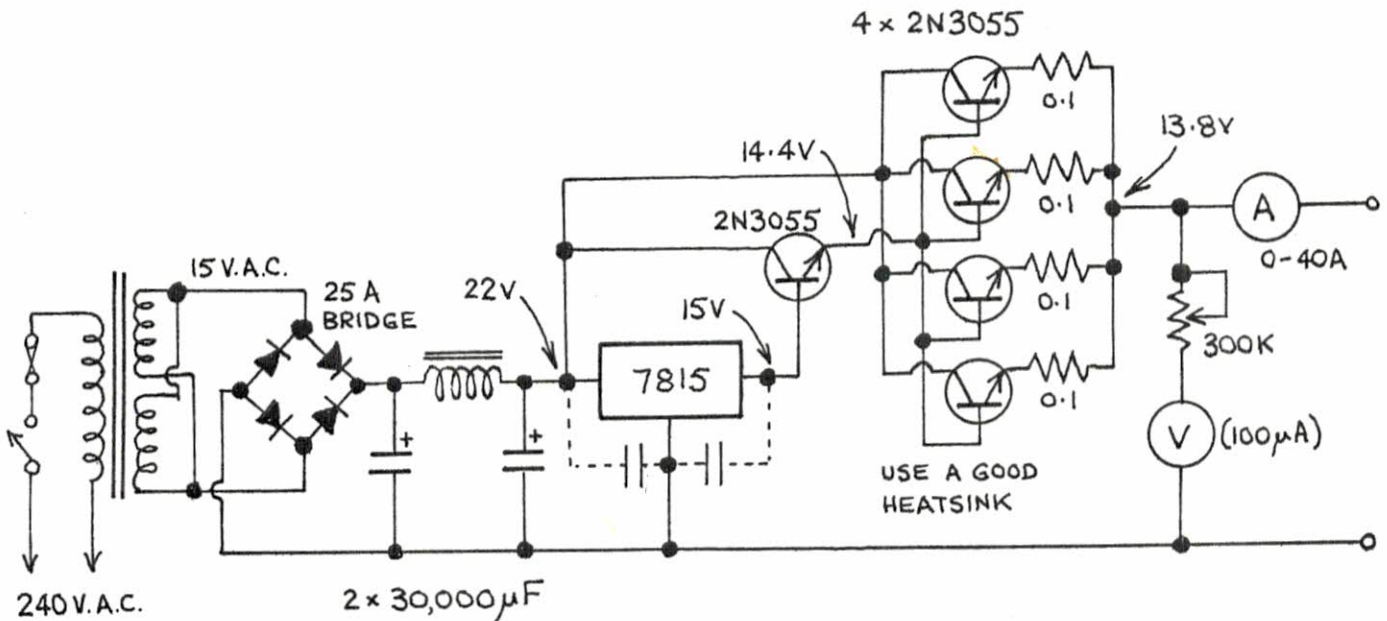
A two-metre opening during the afternoon allowed VK2BHU at Tathra to be heard on Channel 40, and several contacts were made through repeater channel 3 at Bega (VK2RFS).

COMBINATION LICENCES:

Good news for holders of both a Limited and Novice licence... the W.I.A. news on 11th January advised that the callsign series VK?KAA to VK?KZZ is available for those amateurs holding both the AOLCP and NAOCP and who apply for the issue of a combined licence to replace any current licences which they hold. One licence fee of \$15 is payable, instead of the \$15 + \$10 = \$25 now being paid by dual licencees.

On-air confusion should certainly be reduced, with both limited/novice operators and their friends needing to remember only one callsign instead of two. This reform has been pushed for by the Conference of Clubs, showing that the amateur does have a voice through his local club and the W.I.A. Join now!

- Gio Donk, VK2VPD.



There are many circuits for low power consumption D.C. power supplies using just a voltage regulator I.C., and some even have a current bypass transistor so that you can get from $1\frac{1}{2}$ to 2 amps. But when you look for a heavy duty supply there seem to be no designs available. Maybe the reason behind this is that before you start dabbling with currents that could turn wire into a molten mass of metal, you should know more about electronics than just how to use a screwdriver. As a matter of fact, let me warn you now that the discharge of a 30,000 uF capacitor can stop your heart permanently! Now I know that my using capacitors of this size was overdesign and they need not be this large, but they were available at the time, so why not? (These caps should filter out any ripple except possibly the 12 hour tidal oscillation - Hi!)

Many circuits show expensive PNP transistors with complicated biasing networks. In my design you will find a very common and cheap NPN transistor, the 2N3055. To bypass a large current I have used this transistor as a driver for the other four shown in the form of a Darlington Pair (Darlington Quintet?).

If a 15 volt regulator is used, there will be a 0.6 volt drop in the driver transistor and a 0.6 volt drop in the bypass transistors, and 15 volts less 1.2 volts is 13.8 volts. This saves a lot of mucking around with diodes on the base leg of a 12 volt regulator to try and build it up to 13.8 volts. A regulator such as an LM7815 is able to deliver a current of 300 mA without a heatsink and about 1.5 A with a heat sink. A power transistor such as a 2N3055 can handle a maximum current of 12 A with a very good heatsink, but even then it will probably tarnish brown on the outside and maybe go closed circuit on the inside. The beta of these transistors is stated as being about 20 at 4A, therefore drawing a base current of 0.2A in this condition. This means that the driver has to supply 0.8A to drive the four transistors if 16 amps is drawn from the supply. The beta of this transistor is about 47 at 0.8A and therefore the current drain of the regulator output is only about 17 mA.

I have included a table of values which I found experimentally for a 2N3055 using a 12 volt supply:

Base-Emitter Current (mA)	Collector-Emitter Current (A)	Beta
5	0.35	70
10	0.60	60
15	0.75	50
20	0.90	45
25	1.05	42
30	1.30	43
35	1.40	40
40	1.50	38
50	1.75	35
60	1.95	33

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AMATEUR LICENCE CLASSES, 1981

Courses which lead to the Novice, Limited, and Full Amateur Licences are again being run by the School of General Studies, Wollongong Technical College, in 1981.

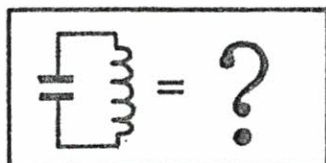
Enrol on the first night of the course, Friday 20th February, at Room 213, Mathews Building, at 6 p.m.

Further information from Denis McKay, VK2DMR and Keith Curle, VK2OB.

20 Amp Power Supply - Continued.

The 0.1 ohm resistors shown are essential because they prevent one transistor from carrying all the current while the others stand by and laugh watching it cook itself to death. The transformer should be suitably picked, and if a centre tap is used as I did make sure they are connected in phase with each other or you will end up with a potential grenade but no voltage.

If you put in a fuse in the D.C. section, put it before the regulator to save it but after the second capacitor or else it will blow every time you switch on. The heavy duty choke will hopefully slow down the charge rate of the second capacitor by limiting the surge when the power is switched on. Take care - if no voltmeter is connected in your circuit the capacitors will hold their charge for weeks - at least put in a bleeder resistor of some kind.



FIND - A - FREQ

WATCH FOR IT SOON

FOR SALE:

DUO-BAND 4 element Yagi antenna for 10 and 15 m, Chirnside CE-42, brand new, with BN86 balun. Cost \$169 sell for \$120.

John Thurstun VK2DET, 11 Cottage Grove, Corrimal.

A wife threw "almost every form of domestic utensil" at her husband, said Mr. Justice Karminski in the Divorce Court today. But she was not cruel, he decided, for on almost every occasion she missed.

- Evening Standard.

POWERFUL POWER

- Dave VK2PBP

Recently, upon putting the finishing touches to my brand new, you-beaut, 20-amp home-brew power supply, and having carefully double checked all wiring and components (MJ4502's cost \$6 each), I finally threw the big switch. Presto! 14.6 volts pure D.C.

Well things seemed great, after rewinding the transformer, designing the layout and circuit board, it finally worked first go, so it seemed!

Then the voltmeter started to drop, and while I was sitting back in the chair wondering why, all hell broke loose. When the smoke cleared and I picked myself up off the floor - what a mess. I know that electrolytic caps can go bang, but! - this one went BLOODY BANG!

It blew a two-inch diameter hole in the ceiling of the shack, moved the TS120 off its mounting place and showered the shack with silver paper, etc.

Now for the crunch. The caps were the super-duper 3300 uF 75VW (smoke and water damaged) from the club store, and they have dried out from the heat of the fire and age. Reforming the caps by applying a low voltage with a current-limiting series resistor (so I'm told) is necessary.

I fitted another to the supply (after reforming at 9 volts, 200 mA for a few hours) and fired it up. The voltage dropped, they got hot, I switched off and ducked. I have now fitted two new caps and the supply is as steady as a rock, delivering 24 amps at 14.6 volts.

Now, no reflection on the club store, but please check the capacitors out before using them - you could have your head over the top of the supply when they go BANG.

CAPACITOR INFORMATION

In the light of Dave's experience as recounted above, the following information may be of interest. It has been extracted from "Amateur Radio Techniques", by Pat Hawker (sixth edition, 1978).

"It should be recognised that electrolytics deteriorate fairly rapidly when not in use, and after being out of service for about a year (or less in some climates) require to be "reformed" before being put back into use. This applies to new as well as old capacitors. After being "on the shelf" there will be very high leakage currents during the first few minutes following the application of a voltage, gradually dropping over half an hour or so to the normal value (if the component has been out of use too long, the leakage may remain high and the capacitor must be discarded).

"The usual method of reforming is to connect a limiting resistor in series with the capacitor and to connect it across a supply a few volts above its normal working voltage until the leakage has dropped to a safe figure.

"A guide to the leakage current in microamperes to be expected in a capacitor in good condition is given by:

Current (uA) = 0.15 x C (in uF) x Voltage (for plain-foil types)

Current (uA) = 0.05 x C (in uF) x Voltage (for etched-foil types)."

QSL = QSL = QSL = QSL = QSL

QSL cards for the following callsigns will be available at the February meeting. Some are in large numbers, have been held for some time, and will not be held very much longer. Collect your own cards, or those of anyone you know but is not at the meeting. Cards are waiting for --

JJ, DJ, NHE, NVF, TB, NYW, ABI, NLJ, VBD, AHN, AKM, VDE, AUP, VGS.

Pixilated Patents

by Mike Rivise

"The Light Touch"

This is No. 129 in a series of odd and interesting inventions in the electrical/electronic field from the files of the US Patent Office.

While the handsome man in the illustration does not look sinister, the fact remains that the invention does. It is a battery operated lamp attached to a hand covering and actuated by a finger tip contact, according to F. Hodous who invented it in 1922 (patent number 1,402,609). It can easily be seen that secondstory men, pickpockets, burglars, and TV repairmen would find this device to fit like a glove.

The device pictured in the illustration could have been used by a Damon Runyon character to pick pockets on a cold winter's eve. The bright mugger using this glove would stand out as a shining example to his profession. His capers would be found illuminating. His career, in short, would be highlighted with warmth, brilliance, and recognition.

A special feature of the Hodous lamp-glove is the finger tip on-and-off contact. A pickpocket could use this to tell if a man had a wallet. He could put his hand in the pocket and pinch, and a light would indicate no wallet. If he should happen to pinch his victim instead of the wallet, the crook would have to light-out before he was pinched.

The brightest feature of the glove is the swivel lamp, but it could cause some dark moments. Operating from enlightened self-interest, our modern day Robin Hood might turn on his light to view the loot only to have the police view him. This could be a catch in an otherwise bright idea. Using the Hodous glove, a thief could find his

John Yodis, K2VV

A lot of intangibles go into designating an amateur as a "Big Gun" or even a "Little Pistol." If you're not quite sure if you or someone else belongs in one of these categories, this guide may be of value.

Big Gun

Clears his throat in a pileup and receives 40 over 9 report.

Is immediately called by name by DX station.

Writes critiques of technical articles in ham radio.

Knows beam heading of every DXCC country.

Has made high claimed scores listing in last 8 ARRL DX contests.

Speaks 14 languages well enough to get a QSL.

Receives QSL shipments from bureau by UPS.

Has 5BDXCC and 3 ZA QSLs on wall.

— Albany ARA, NY

Little Pistol

Is last W2 to get through and is 40 minutes late for work.

Usually has to spell his name four times phonetically.

Had letter to the editor printed in QST.

Knows roughly where Japan and Europe are.

Was highest-scoring Novice in section in his first ARRL Sweepstakes.

Picked up a few dirty French words in WWII — uses them to insult VE2's on 75M.

Receives QSL shipments from bureau by first class mail.

Has 40M WAS and King Hussein's QSL on wall.

Lost Cause

Wastes 4 hours calling with no luck — finds cat strangled by irate neighbor with TVI.

Is called colorful names by DX station for interrupting phone patch.

Has lifetime subscription to "73".

Turns 2-meter beam toward the other guy's house when working him through repeater.

Tied for fourth place in NYS in last Rhode Island QSO Party.

Has been spelling "amateur" wrong all his life.

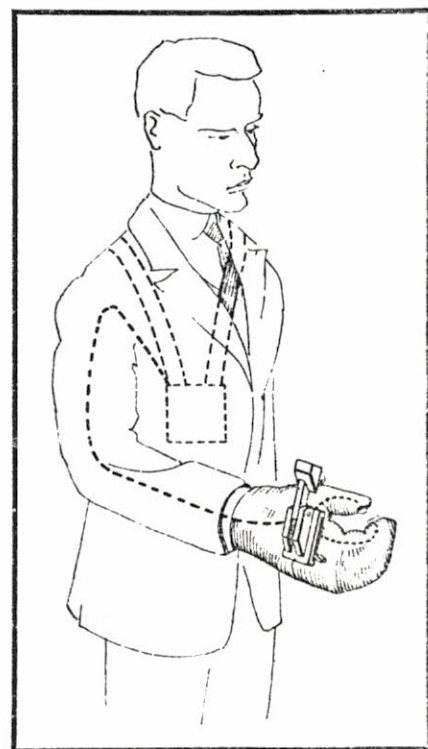
Still gets QSL samples from "Little Print Shop".

Has RCC and ARRL membership certificates on wall.

position permanently secure.

No doubt Hodous' glove could have been used for less shady applications. The ancient Greek philosopher, Diogenes, who is pictured searching for the honest man with a lamp in his hand, could have used it. He could have not only seen his man; he could have grabbed him. If he would have lived to 1921, he could have grabbed Hodous—this would have been a boon to mankind.

Even a professional boxer might be struck by the usefulness of the handy Hodous glove. Getting down to weight is sometimes a problem for athletes, but a lightning blow from the Hodous glove would at least lighten the head. It could be that Hodous was struck by his own invention, for it seems to be a rather light-headed conception.



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DUO-BAND YAGI FOR 10 & 15 M

For all the new novice calls in the club, you could be interested in an efficient, lightweight but effective beam antenna. Construction is straightforward and most of the materials can be purchased from the club Bulk Store (better known as Cavion's). Approximate cost to build is around \$45, depending on how resourceful you are and what you have at home, etc. I suggest you buy the boom from the above establishment (19 feet for \$8, as against \$38 from Alcan).

Tuning is very easy and the dimensions shown are set for 28.525 and 21.175 MHz, using coaxial gamma matching. It compares with my original monoband Yagis in performance, with less weight and wind loading.

The front of the beam is elevated approximately 3° by the boom to mast mounting plate and the boom has a cantilever made from nylon parachute cord, or heavy nylon sash cord, to support the relatively small diameter over its 15'6" length.

S.W.R. came in at 1.2:1 on 15M and 1.3:1 on 10M, and is very flat across the novice bands. Fine tuning may be achieved by adjusting the tip sections in or out for best results, but remember to move the director and reflector tips also by the same amount. Boom diameter may be increased, but with extra weight.

The beam has ridden out some very heavy winds at my QTH with no damage at all. Anyone wishing to build this antenna will find it very rewarding in performance and I would be only too happy to offer any more details required to construct same. Good DX to you.

- Dave Meyers VK2PBP

(See next page for full details of beam.)

DX NOTES

It is hoped to provide each month a section on interesting DX worked by club members. Dave Meyers VK2PBP has kindly offered to put the information together each month - so keep him busy, fellas, and pass all your DX news on to Dave.

This month, all the news comes from Dave himself:

10 metres:

A few stations heard floating around recently are VE7AQA - try 28.390 Saturdays and Sundays at 0000Z; WB2SIO New York Saturdays and Sundays at 0000Z; XELEFT Harry, Mexico, on 10 and 15 most times; TG4NX Guatemala 10M Saturdays and Sundays 0045Z.

10 metres is good to the States from 2100Z to 0200Z and then the band changes to Japan and Pacific Islands. By the way - don't give 10 metres up at night - listen via short path and work some DL, F, G, EI's, etc.

15 metres:

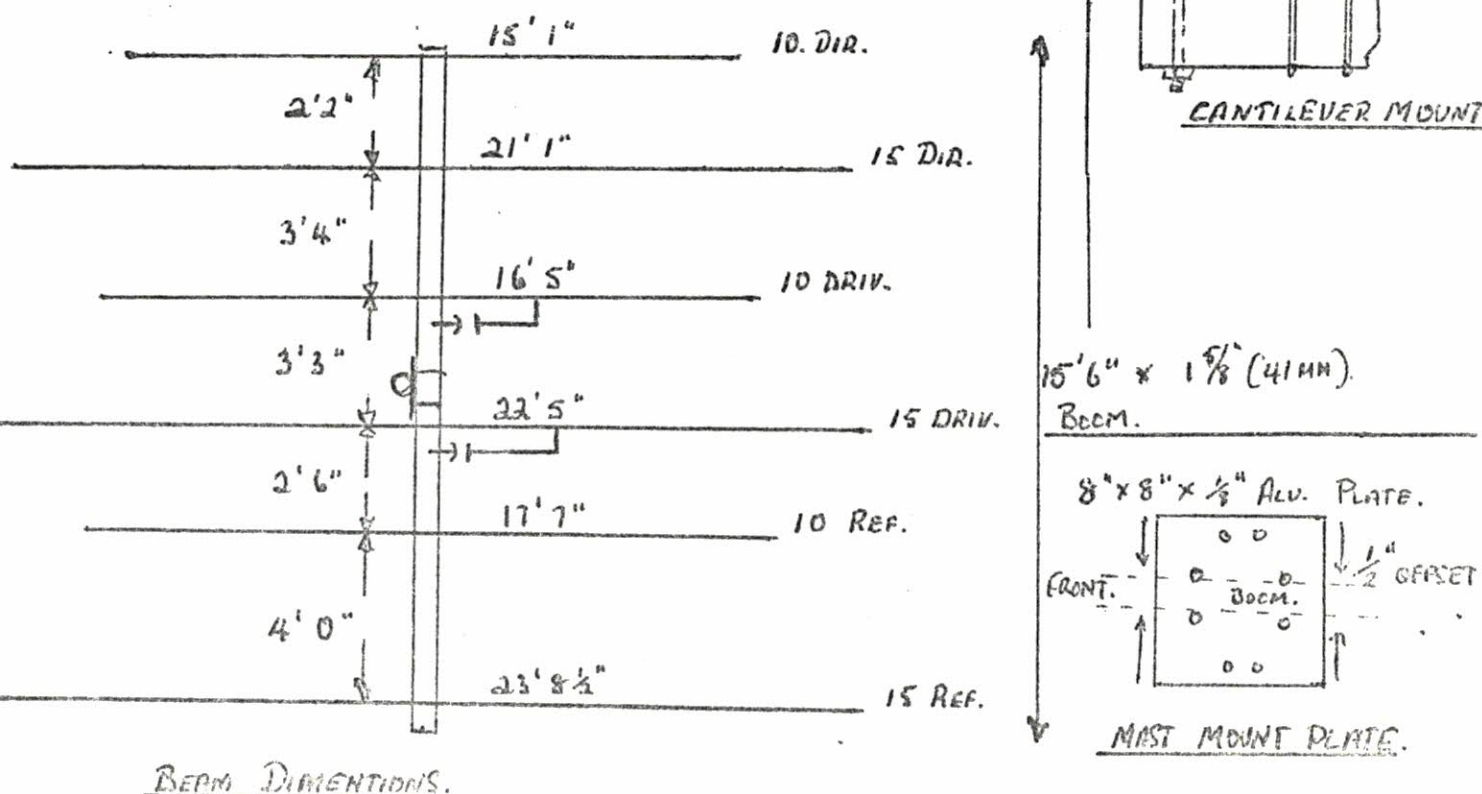
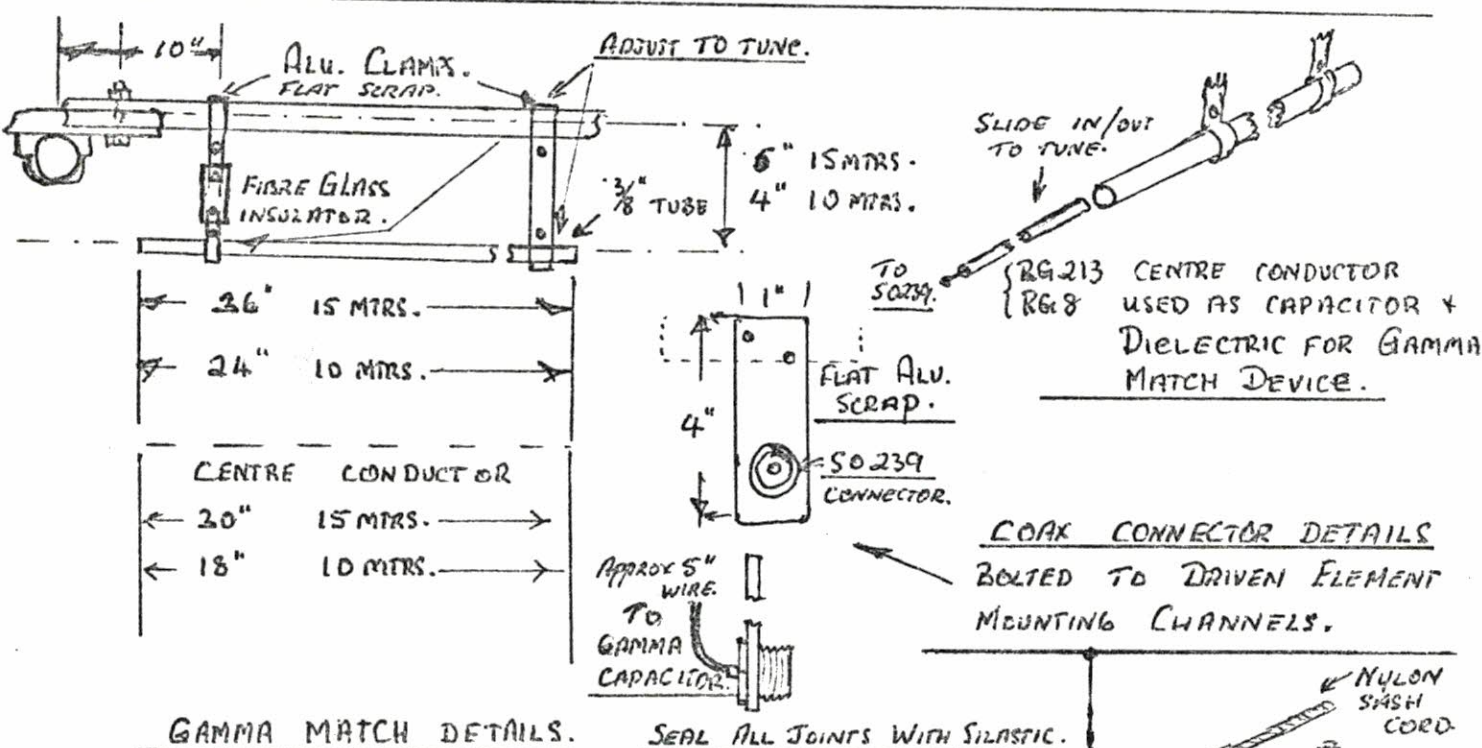
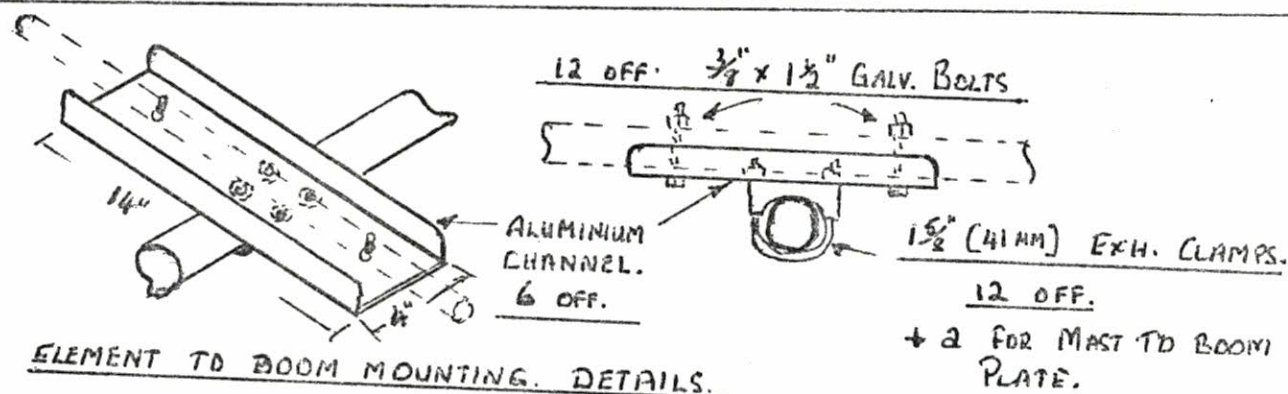
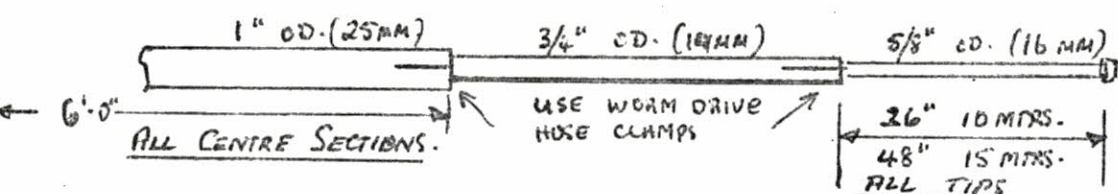
As good as usual but a lot of very strong J stations. South America from about 0400Z. Quite a few Pacific Islands also. Listen out for CE1AA on Easter Island working J's... Pick up a J and get him to let CE1AA know that you are working QRP VK and would like to work him. Lots of Europe - G, F, UK, B, DL, F, and PA stations, also Korean stations are very strong at the moment and lots of DU and YC stations also. One interesting one is A35JL Tonga on 21.180 approximately 0630Z most weekends; also at this time YS1ECB El Salvador on 21.160. Listen out for 3A2EE Monaco 1200Z on 21.155 and YK1AO Syria 1300Z on 21.180 plus or minus.

Well that's all for now. More next month - Dave VK2PBP.

LATE NEWS: At the February meeting, the club's current call-books (two volumes - U.S.A. and Foreign - will be auctioned... proceeds go to getting new callbooks. March Meeting will be the annual general meeting, with election of officers.

10-15 METRE DUO BAND YAGI CONSTRUCTION.

DAVE MYERS
VK2PBP.
JAN. 1981.



DRAFT FREQUENCY ALLOCATIONS:

Comments are requested on the draft table of frequency allocations by 16th February 1981. Details should appear in February "Amateur Radio", which may not leave much time for thought.

The following information was provided by the VK2TTY broadcast on 11th January:

THE MINISTER FOR COMMUNICATIONS HAS NOW RELEASED A DRAFT FOR PUBLIC COMMENT OF THE AUSTRALIAN TABLE OF FREQUENCY ALLOCATIONS. THESE PROPOSALS FOR THE NEW AUSTRALIAN TABLE ARE VITAL INTEREST TO AMATEURS AS THAT TABLE WILL FINALLY DETERMINE THE SPECTRUM AVAILABLE TO AMATEURS IN THIS COUNTRY. THE FINAL DATE FOR COMMENT IS THE 16 TH FEBRUARY, 1981 AND AMATEURS ARE URGED TO COMMENT, NOT ONLY TO CRITISE PROPOSALS THAT ARE NOT LIKED, BUT ALSO, AND EQUALLY IMPORTANTLY TO SUPPORT PROPOSALS THAT ARE ATTRACTIVE. NO CHANGES ARE PROPOSED TO THE EXISTING 30,20,15 AND 10 METERS, THOUGH IT IS SUGGESTED THAT A SMALL SEGMENT AROUND 3.8 MHZ WOULD BE DESIREABLE AND PRACTICAL. CHANGES ARE PROPOSED TO THE 160 METER BAND. IT IS PROPOSED THAT THE BAND 1800-1825KHZ BE ALLOCATED EXCLUSIVELY TO AMATEURS IN AUSTRALIA AND THE BAND 1825-1875 KHZ BE ALLOCATED TO AMATEURS AS A SECONDARY TO RADIONAVIGATION. THE PRESENT ALLOCATION AT 40 METERS REMAINS BUT WITH AN INCREASE FROM 7150-7300 KHZ WITH THE LATTER SEGMENT BEING ON THE BASIS OF NON-INTERFERENCE. THE NEW BANDS AT 10.1-10.150 MHZ, 13.063-13.163 MHZ AND 24.890-24.990 MHZ ARE PROVIDED FOR IN THE NEW TABLE. THE INSTITUTE BELIEVES THAT EACH OF THE BANDS SHOULD BE MADE AVAILABLE AS FROM 1ST JANUARY 1982. BUT NOT LATER THAN 1ST JULY 1984 IN ANY EVENT. A SIGNIFICANT PROPOSAL FOR THE 6 METER BAND IS THAT THE BAND 50-52 MHZ BE ALLOCATED PRIMARY TO BROADCASTING SECONDARY TO AMATEUR WITH THE 52-54 MHZ REMAINING EXCLUSIVELY AMATEUR. IT WILL, IN PARTICULAR, ALLOW AMATEURS TO OPERATE OUTSIDE TELEVISION HOURS ON THE 50-52 MHZ. NO CHANGES ARE PROPOSED TO THE 2 METER AND 70 CENTIMETRE AMATEUR BANDS. SUBMISSIONS SHOULD BE FORWARDED TO THE DEPARTMENT OF COMMUNICATIONS, G.P.O. BOX 541200, MELBOURNE, AND MARKED TO THE ATTENTION OF THE CHAIRMAN, AUSTRALIAN TABLE OF FREQUENCIES ALLOCATION COMMITTEE. THIS IS A BRIEF OUTLINE OF THE FEDERAL TAPE FOR THIS WEEK, FULL INFORMATION MAY BE HEARD ON YOUR LOCAL W.I.A. BROADCAST.

THE "PRACTICAL WIRELESS" HELFORD TRANSCEIVER:

I would be interested in exchanging ideas and experiences with anyone who has commenced to build or intends to build this transceiver, or has built the previous Plessey design.

The first article describing the "G4CLF Board" appeared in P.W. for November 1980 which I obtained then, so I may have had more time to look into the parts supply problem. I have already made a start on the project.

I live at 24 Oak Street, Albion Park Rail and my phone number is 562323.

Ken Frost, VK2DOI.

EXTRA MORSE PRACTICE:

For the benefit of those sitting for morse examinations in February, the Coffs Harbour and District Amateur Radio Club will conduct additional slow morse practice sessions every morning except Sunday, from 0600 to 0730 local time on 3.550 MHz, between 12th January and the February examination date.

MOONBOUNCE REPORT, FEBRUARY 1981

Corroded steelwork has been cut out from the dish and access platform and has been replaced by welding in new tubular sections. Foundations for the dish and operating room construction is held up until the people concerned are free from other projects.

The 1296 MHz disc feed has been adjusted to obtain a satisfactory SWR on transmit and has been used in a small dish to recheck sun noise.

During a recent holiday in VK5, a visit was made to VK5MC near Mt. Gambier. Chris's antenna farm has to be seen to be believed - including high-frequency quad, two metre EME rhombic which covers lots of ground, twenty foot diameter dish for 432 and 1296 MHz EME, etc. etc. He is now building gear for 2304 MHz!

TRANS-TASMAN VHF AND UHF PROPAGATION

Checks for reception of 70 cm beacons in ZL have been made over recent weeks here at VK2ALU, when weather patterns seemed at all likely to support propagation across the Tasman.

The ZL2VHP beacon at Palmerston North on 433.25 MHz was heard for approximately 1½ hours from 0420Z on Saturday 10th January 1981 at up to approximately 2 S-points above noise, with slow QSB.

A subsequent check of weather maps for Friday and Saturday indicated that a ridge of high pressure may have supported Trans-Tasman propagation from early morning on the Saturday 10/1/81.

No other ZL 70 cm beacons were heard, nor any other signals on this band, and calls on the ZL calling frequency of 432.2 MHz got no response.

A phone call to ZL1THG was unsuccessful because he was at work. VK2BDN was then phoned, to activate any possible Sydney stations with suitable capability, but as far as is known, no contacts were made. A quick check of the two metre band showed it to be relatively lively but with no sign of ZL signals.

ZL1THG has since advised that ZL2TAL identified two VK2 repeaters on 146.7 and 146.9 MHz between 0900Z and 1100Z on 10/1/81, and he states also that VK's have been heard spasmodically on two metres over recent times.

It seems rather a coincidence that the first known 70 cm opening between VK and ZL occurred on 9/1/79, almost two years to the day before the latest opening.

A difference was however that the isobaric weather pattern was not nearly as complex during the recent opening, which leads one to suspect that openings may occur more regularly than is realised, when ducts form which support 70 cm signals but not 2 metre signals. Accordingly a more effective check has now been started at VK2ALU, using a slow speed chart recorder to monitor 433.25 MHz with antenna pointed towards ZL when the weather map looks promising.

It is known that VK2ZQT is getting set up with stacked Yagi antennas on 70 cm pointing towards New Zealand, and hopes to be able to start similar checks. VK2ZLX near Nowra is also looking across the Tasman on two metres with a good antenna system and adequate transmit power.

MICROWAVE NEWS

Activity on 10GHz is spreading in the Wollongong area. It is understood that VK2YKQ, VK2BOU, VK2ZVX and one other amateur in the area are getting gear going on the 10GHz band. At this time they are using klystron oscillators but plans are afoot for Gunn diodes to be used in the future.

A combined effort by those interested in 10GHz should see some very interesting experiments take place in the near future.

SATELLITE NEWS

1. The latest AMSAT information is that they hope to be able to construct two sets of Phase III hardware in parallel in order to meet both - a launch date scheduled for 24/2/82 for a phase IIIB satellite and also a phase IIIC launch in 1983 - if enough finance is forthcoming.
2. The UOSAT being constructed at the University of Surrey in the U.K. is scheduled for launch in September 1981. This is an experimental satellite for use by amateurs and is not basically a communications satellite.

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Satellite News... contd.

3. Planning is in hand by the Canadian AMSAT team, assisted by a new Californian U.S.A. team for a geostationary satellite in 1984.
4. The French group RACE is planning phase III type launches in 1984/85.
5. AMSAT teams in Japan, Italy, West Germany, Canada, and U.S.A. are at work on new concepts for missions later in the decade - the expectation is for microwave and digital transponders as well as linked satellite communication systems.
6. AMSAT finances are in urgent need of assistance NOW - get with progress in amateur radio - become a member of AMSAT - see me at the next club meeting if you have been meaning to join but have not got round to it - your financial assistance will get the "spadework" done.

P.S. - You want to give that new microcomputer which you have - or hope to have - some real work to do in the years to come - help now to get the satellites up which can include sophisticated communications systems to match the computer's capabilities.

P.P.S. - You want to work phone DX when the sunspot minimum is at hand? Join AMSAT and find out another way to get it!

Lyle VK2ALU.

VAV DOES IT AGAIN!

To top his effort on 10 metres with 5 watts, Dave VK2VAV with digital coupling whipped up a "Cavion Special" transverter to take his 5 watt 28 MHz converted CB down to 21 MHz. The transverter, using a 7 MHz rock and a few tuned circuits produced 500 milliwatts straight out of the mixer, which was coupled into the antenna. Power was calculated by measuring output voltage across a 50 ohm load with an RF probe and multimeter, which indicated 500 mW PEP.

Using this equipment on 10th January 1981, in the presence of Denis VK2DMR and a few other local personalities (reliable witnesses all), Dave worked the following stations (the signal reports he received are in brackets):

JR6FYS (5/3)
 VK3VFR mobile Warnumbool (5/4)
 VK3VSD Noble Park, Melbourne (5/9)
 VK3VKL Sunbury (5/9)
 VK3PDC (5/5)

JA4HZQ had some difficulty understanding how Dave could be producing a 5/5 signal with only $\frac{1}{2}$ watt! When copy started getting scratchy (with signal report falling to 5/4), Dave wired up a linear amplifier to punch out a massive 2 watts, and restored communications.

It won't be long, at this rate, before Dave needs an electron counter instead of a Kilowatt-Hour Meter to monitor power consumption in his shack.

SHACK CLEAROUT

Rick Hill VK2DAP and family will shortly be moving to New Zealand, so Rick is selling out the whole of his shack. Items include:

TL120 Linear, suits the Kenwood 120V - \$150. Philips 10MHz dual beam CRO - \$100. FU400 rotator including cable - \$120. 13.8 volt 4 amp power supply - \$30. 5 to 15 volt 10 amp supply - \$50. RF550 speech processor with Shure 444 microphone - \$70. Also an 11 metre high tower, various power supplies, car battery, digital clock, and lots of other bits and pieces.

See Rick at the February meeting or at his callbook address.

LATE NEWS: Gio VK2VPD is moving to VK7 for two years doing a radio course... Good luck, Gio... hope to hear you on the 80 metre net... and thanks for the power supply article in this Propagator.

NEW CALLS

Congratulations to all those who were successful at the November Novice Examinations - and special thanks to Keith VK2OB and Denis VK2DMR who have provided terrific encouragement and coaching through the tech. college classes, morse classes, and the 160 metre slow morse session. New callsigns known at the time of printing are -

Doug VK2PFI, Kevin VK2PGP, David VK2PGV, Bill VK2PGO, Allan VK2PGB, Ray VK2PHD, Phil VK2PGL, and Paul VK2PFJ.

Best wishes, and good DX!

PARKES RADIOTELESCOPE

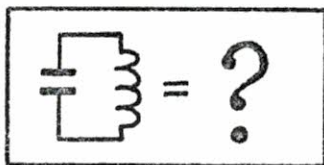
Nineteen years after it was built, the Parkes 64-metre radio telescope remains one of the most impressive feats of engineering undertaken in this country. The dish itself weighs 300 tonnes, and has a surface area of 0.36 hectares (1 acre). It is a paraboloidal reflector with a diameter of 64 metres, which focuses the radio waves it collects at a point 26.2 metres above its surface.

Signals are amplified by equipment in the cabin at the dish's focal point, then conveyed by cables into the central supporting tower where they are further amplified before being processed by computer.

The telescope was originally required to operate at a wavelength of 21 cm, with the hope that it could be used at wavelengths as low as 10 cm. When CSIRO scientists wanted to monitor even shorter wavelengths in the search for molecules in space they made extensive surveys of the structure and reflecting surface, and found that the dish was of such strength and rigidity that its potential for shorter-wavelength studies was much greater than anybody had hoped. The original panels were replaced by more accurate aluminium ones out to a diameter of 37 metres, extending the observational limit of this area down to 1 cm wavelengths.

In a subsequent project, the central 17 metres of the dish were resurfaced with solid aluminium panels which now permit studies down to wavelengths of about 3 mm.

- "The Southern Sky", July 1980.



FIND - A - FRE Q

WATCH FOR IT SOON

GET READY TO ROLL! PAUL -
GOT A HOT
EXCLUSIVE!

PROPAGATOR
PRINTERY

VK2AMD HAS
JUST WORKED
A JA!!

SO WHAT? HOW
COME JA'S EXCLUSIVE?

IT WAS ON THE
RHOMBIC WITH THE
BUILT-IN JA FILTER!

ILLAWARRA AMATEUR RADIO SOCIETY - INFORMATION

MONTHLY MEETINGS:

Second Monday of each month (except January) at 7.30 p.m., in the Congregational Hall, corner of Coombe and Market Streets, Wollongong.

MONTHLY BROADCAST:

7.15 p.m. on the Sunday night before the monthly meeting, on VHF repeater 5, UHF repeater 9, 28.46 MHz, and 3.565 MHz. Broadcast Officer Denis McKay VK2DMR is looking for news items and can be phoned at (042) 847786.

SLOW MORSE BROADCAST:

From VK2AMW on Monday nights (except meeting nights), 7-8 p.m., on 1.805 MHz, in the 160 metre band.

W.I.A. BROADCAST RELAYS:

Sundays at 11 a.m. and 7.30 p.m. through VHF repeater 5.

MONTHLY NEWSLETTER:

The Propagator is usually posted to reach members during the week before the monthly meetings. Technical, news, and humorous items are always wanted. "For Sale" and "Wanted" advertisements are published free for members. Send all material to the editor, Brian Wade VK2AXI, at 72 Murray Road, Corrimal, Phone (042) 841381, or in person at meetings.

AMATEUR RADIO CLASSES:

These provide all the theory, regulations, and morse tuition needed to obtain the Amateur Novice, Limited, and Full licences. Classes are held on Fridays, 6-9 p.m. during term time. For further information, contact Keith Curle VK2OB or Denis McKay VK2DMR.

CLUB NETS:

Phone nets are held on 52.525 MHz FM, 8.30 a.m. on Sundays, and on 3.565 MHz, 8.00 pm. on Sundays. An informal morse net is held on 28.46 MHz, 8.00 p.m. on Tuesdays - nervous newcomers to CW are especially welcome on this net.

VHF REPEATER: VK2RAW, Channel 5 (146.25 MHz in, 146.85 MHz out).

UHF REPEATER: VK2RUW, Channel 9 (433.225 MHz in, 438.225 MHz out).

QSL SERVICE: For Illawarra members who are also W.I.A. members, see Rick Hill, VK2DAP at meetings, for inwards and outwards cards.

MEMBERSHIP ENQUIRIES:

For information about W.I.A. membership, and Illawarra Amateur Radio Society membership, see Geoff Cuthbert, VK2ZHU at meetings.

To join the Illawarra Amateur Radio Society, send your \$5 annual subscription to the Treasurer, I.A.R.S., P.O. Box 1838, Wollongong, N.S.W., 2500.

GENERAL ENQUIRIES AND CORRESPONDENCE:

Write to The Secretary, I.A.R.S., P.O. Box 1838, Wollongong. N.S.W.

SOCIETY PRESIDENT: Keith Curle, VK2OB, 24 Beach Drive, Woonona, 2517.

VICE-PRESIDENT: Denis McKay, VK2DMR, 17 Doncaster St, Corrimal, 2518.

SECRETARY: John Doherty, VK2NHA, 7 Risley Road, Figtree, 2525.

TREASURER: Geoff Cuthbert, VK2ZHU.

COMMITTEE: Gio Donk VK2VPD; Ron Dorin VK2VOE; Dave Meyers VK2PEP, Les Kirchmajer VK2ALK; Ian Squires VK2DKS; Kieran Kennedy VK2DAN, Brian Wade VK2AXI.