THE PROPAGATOR

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY

PO BOX 1838 WOLLONGONG NSW 2500

VOLUME 81, NUMBER 9 NOVEMBER 1981

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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.

NOVEMBER MEETING:

The November meeting of the Illawarra Amateur Radio Society will be held on Monday 9th November at 7.30 p.m., in the Congregational Hall, Coombe Street, Wollongong.

Raffle prize at the meeting will be a Husky 4 amp battery charger, which has been donated by Ferguson Electric Transformers of Chatswood.

The store will have on sale more Collins plate transformers - 230 volt primary, and 2250 volt centre-tapped secondary rated at 0.5 amps.

Tea, coffee and biscuits will be served at the conclusion of the meeting.

DECEMBER MEETING:

Special feature of the meeting on Monday 14th December will be a talk and film by the State Emergency Services, whose Illawarra Divisional Headquarters in Auburn Street will be open for inspection by club members prior to the usual meeting time.

LAST MONTH'S MEETING:

Attendance was around the sixty mark. Dick, P29NNL was a welcome visitor at the meeting. Following a ten-minute business session, the raffle for a morse keyer was drawn. Winner was Brian VK2AXI, who has since been practising with a touch-operated paddle made from pieces of PC board (details should be in next month's Propagator). The store did a very brisk trade in 1981 call books and Collins 2250 volt transformers.

John VK2BHO is to be congratulated on his WA VK CA VHF 52MHz certificate (Worked All Australian Call Areas on 52 MHz). Very few people have qualified for the certificate (John's is the fourteenth issued). Australian call areas include Antarctica (VK0) and Australian islands in the Indian or Pacific Oceans (VK9)... rare enough on any band, but more so on six metres. Well done, John.

CLUB AUCTION:

Members, friends, etc are reminded that the club annual auction sale will be held on Saturday November 14th, 1981.

The venue will be the premises of Fernhill Auctions, Princes Highway Fernhill (just north of the Towradgi Road traffic lights). Auction begins at 1.30 p.m. Licenced Auctioneer will be Denis VK2DMR.

All lots for auction should be delivered to the Auction rooms no later than 11 a.m. to enable all items to be lotted.

All goods will be open for inspection from 9 a.m. on the day of the sale.

Goods can be delivered up to two weeks prior to auction day.

A 10% commission on all lots sold will be charged to all vendors to the account of the Illawarra Amateur Radio Society.

CONFERENCE OF CLUBS

The Illawarra Amateur Radio Society welcomes to Wollongong the delegates, observers and visitors to the fifth Conference of Clubs, on Sunday 1st November.

FROM VK2TTY RTTY BROADCAST, Sunday October 11th:

UOSAT, Great Britains first Amateur Radio Satellite, was successfully launched at 1127 UTC on October 6. Preliminary orbital parameters are period 95.45 minutes, inclination 97.47 degrees, increment 23.89 degrees and height 550 km. Beacon frequencies are 145.825 and 435.025 MHz FM. Several weeks of engineering testing of UOSAT OSCAR 9 satellite performance will take place before any schedules are announced. Presently the University of Surrey has commanded Oscar 9 to transmit 300 baud ASCII on 145.825 NBFM. This is telemetry information to determine spacecraft performance. Other beacons and experiments will be added as engineering data are analyzed. November QST will list a full month of Oscar 9 orbital information.

Amateur statistics: As at 30/6/1981 Australian licence numbers were as follows:

Combined Limited/Novice	338
Full privilege amateurs	7086
Limited amateurs	3266
Novice amateurs	3879
Total in Australia:	14569

Total CBRS licences, 59,894. Total radiocom services in Australia 350,462.

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.

CLUB NETS: Phone nets are held on six metres (52.525 MHz FM, 8.30 a.m. Sundays), and on eighty metres (3.565 MHz, 8.00 p.m. Sundays). An informal morse net is held on 28.44 MHz, at 8.00 p.m. on Tuesdays - nervous newcomers to CW are expecially welcome on this net.

MONTHLY NEWSLETTER: The Propagator is usually posted to reach members during the week before the monthly meetings. Technical, news, and humerous items are always wanted. "For Sale" and "Wanted" advertisements are free for members. Give your material to the Editor, or any Committee Member, at meetings or during the month. Copy deadline is the last Tuesday of each month.

MONTHLY BROADCAST: 7.15 p.m. on the Sunday night before the monthly meeting, on VHF repeater 6850 (Ch 5), UHF repeater 8225 (Ch 9), 28.46 MHz, and 3.565 MHz. The broadcast officer is always looking for news items, and would appreciate any contributions.

SLOW MORSE BROADCAST: From VK2AMW on Monday nights (except meeting nights), 7 to 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 6850 (Ch 5). The 11 a.m. broadcast can also be heard on 7.146 MHz A.M.

AMATEUR RADIO CLASSES: 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. Contact any committee member for further information.

VHF REPEATER: VK2RAW, Channel 6850 (old Ch 5) - 146.25 MHz in, 146.85 MHz out.

UHF REPEATER: VK2RUW, Channel 8225 (old Ch 9) - 433.225 MHz in, 438.225 MHz out .

QSL SERVICE: Club members who are also W.I.A. members can deliver and collect their QSL cards at club meetings.

LAWRENCE HARGRAVE AWARD: - the award of the I.A.R.S. - Stations in VK must work 10 members of I.A.R.S. Stations outside VK must work 5 members of I.A.R.S. Club station VK2AMW is worth the award by itself for any amateur. Cost is $2 or 4 I.R.C.s (within Illawarra only, cost is $1 and award must be collected personally from a club meeting). QSL cards are not needed for verification - send callsigns, frequencies, GMT, and payment to Box 1838, Wollongong, 2500.

MEMBERSHIP ENQUIRIES: For information about W.I.A. or I.A.R.S. membership, see Geoff Cuthbert VK2ZHU at club meetings. To join the I.A.R.S. by post, send your $5 annual subscription to the Treasurer, I.A.R.S., P.O. Box 1838, Wollongong, N.S.W., 2500. For general enquires, write to the Secretary at the same address.

SOCIETY PRESIDENT: Keith Curle, VK2OB, 24 Beach Drive, Woonona, 2517.
VICE PRESIDENT: Ron Dorin, VK2VOE. SECRETARY: Dave Meyers, VK2PBP
TREASURER: Geoff Cuthbert VK2ZHU. COMMITTEE: Mike Keech VK2VXS, Jock Taylor VK2JT, Eric Fien VK2YVF, Paul Engbo VK2DTZ, Denis McKay VK2DMR, Brian Wade VK2AXI.
QSL ENQUIRIES TO: Mike Keech VK2VXS and Paul Engbo VK2DTZ.
LAWRENCE HARGRAVE AWARD MANAGER: Mike Keech VK2VXS.
BROADCAST OFFICER: Denis McKay VK2DMR (phone (042)847786).
PROPAGATOR EDITOR: Brian Wade VK2AXI, 72 Murray Road Corrimal 2518, phone (042)841381.

POST OFFICE LOOKS FOR A NEW BIT

An awkward problem for Post Office safety engineers who have to check that street telephone poles are not about to fall over is reported in a recent issue of the Post Office's "Engineering Safety" magazine. In order to check the quality of the wood a special tool known in Post Office inverted language as Bits Pole Testing, has to be be drilled into the wood. If the pole is faulty, it has to be replaced.

But the vital Bits Pole Testing were apparently only available "hand-made, by an old craftsman in a particular firm". The old craftsman has since demised, and Post Office engineers have found to their discomfort that no-one else can make the tools in the same way. And despite appeals, pole testers have found that a 5/16" zip bit just won't do the job right.

- New Scientist, July 1976

HERE IS THE SECOND AND FINAL PART OF THE ARTICLE FROM NED VK2AGV/7. THE FIRST PART, IN THE OCTOBER PROPAGATOR, DESCRIBED THE ACCUKEYER. THIS PART DESCRIBES THE ACCUMEMORY. NED'S ADDRESS IS AUSTRALIAN MARITIME COLLEGE, PO BOX 733 LAUNCESTON, TAS 7250.

THE ACCUMEMORY.

This circuit has only appeared in TTL form as far as I know, and is designed to be constructed from 7400 series logic only. Garrett specifically advises against substitution of 74S-L-H logic due to the critical nature of the timing circuits.

The builder has the option of either two or four memories, and as the memory chips (2102's or 2602's) are cheap, I chose four memories. I often wish it had eight!

The layout for the memory board appeared in the August 1975 issue of QST (which no-one probably has, anyway) and unfortunately the memory board in my unit is nested between two other boards, and inaccessible for drawing purposes...unless I gut the whole keyer!

So, my advice is to proceed as follows:-
Carefully establish the identity and orientation of the 15 IC's on the memory board, using such things as Vcc and GND pins etc. It is not as hard as it seems at first, and is a useful exercise in tracing the tracks around as well. A patch of white typists correction fluid between the rows of holes for the IC's will allow the builder to note the type and orientation of each IC. The various holes in the boards for the jumper and interconnection wires can be similarly identified. When you think you have found them all and got them all correctly orientated, DOUBLE CHECK YOUR WORK. This is when you want to find errors...not when you turn the finished article on and fry

some IC's. Although all the IC's are common and easy to get, the circuit board pads do not take kindly to continual reworking with the soldering iron, so if in doubt, take the extra time and be sure!

Satisfied that you have everything identified, place the chips into the holes, and solder only the Vcc and GND pins to start with. That way, if you have made an undetected error, the IC will be easy to remove. DON'T put the memory chips in yet...just solder good 16 pin low-profile sockets in for them, and put them in last of all, just before you put the whole project in the case and fire it up.

There are quite a few jumper wires on the memory board, plus wires leading off to the other boards. The wires are all numbered (or lettered in some cases) in the table of wiring given in the ARRL Handbook, so follow it closely. I found the 12 conductor ribbon cable was excellent as it resists premature breakage due to undue flexing at the point where the wire enters the hole in the board. Also, the colour code assists in ident ifying which wires are which. Write the colours against the wiring table to be on the safe side, and be aware of the fact that you will have to double up on wire colours as there are many more than 12 interconnecting wires.

Since the design of the memory board, several changes have occured in the circuit, mostly concerned with allowing the keyer clock oscillator to free-run when the keyer is in "Load" mode. Some diodes and resistors have been removed, and some have been added, but have to be soldered to pins underneath the board. So if you find a number of holes which have no wires or components, and end up with a thing looking like a dogs dinner, it is probably all right. Just re-check all the connections, and make sure you have soldered every pin on all the IC's...there are so many pins it is easy to forget one!

The readout driver board is much much easier to figure out than the memory board. Note that there is a sidetone oscillator incorporated in this board if you want to use it. Also note that the current limiting resistors (330 ohms) for the message bit number displays are mounted on this board...they should all end up in a neat line, like a bunch of piglets at a trough.

The connection between the output of the 7447 display drivers and the displays themselves may prove troublesome. I got round this by using the Molex socket pins as "plugs" on the end of each segment wire and for a socket I simply sawed a 14 pin DIL socket in half, giving two miniature 7 pin sockets for the molex plugs to go into. Each alternate molex "plug" was insulated from its neighbours with small heat-shrink tubing, and the result is very effective indeed. Note that the 7447 that drives the memory number display is not on the readout driver board, but is actually on the memory board, and be very careful to get the wires from its outputs in the correct sequence to preserve the continuity of colour-coding from the displays themselves. Use the ribbon cable from the displays to the three 7447's on the readout boards, and note that no wires cross...all connections are "in a straight line". But the same sequence does not hold for the 7447 on the memory board, so check your output wire colours very carefully.

As far as push buttons go, I found the small push buttons from Dick Smith (S-1200) excellent. They will fit Veroboard, or you can make up a small board to mount them on. They have a very light, but positive feel, and add a professional touch to the project.

Choosing a Suitable Case to Put the Keyer/Memory In: You have probably seen the commercial memory keyers, resplendent in their neat

enamelled cases, all decked out with neat lettering. Well, this circuit requires a fair bit of room, because you are fitting in a transformer, filter capacitor, several jacks, probably four or five boards (maybe more), switches, pots and so on. You can produce a neat, professional looking job, but unless you are very clever, there is just no way you're going to fit it all inside anything smaller than a case measuring 200mm by 130mm by 60mm. That is the size of the case I used, and it's aweful crowded in there!

The case needs ventilation slots, and plenty of them, because the unit produces quite a lot of heat, especially from the transformer, the 7447 display drivers, and the voltage regulator. As mentioned before, I mounted the regulator on an external heatsink, but later I drilled a grid of holes at either end of the case, to get some convective cooling. Even better would be cooling slots in the top of the case and some entry holes in the bottom. (By now the CMOS boys are probably lying on the floor, doubled up with laughter, but it's all true!)

I used a case manufactured by Ballarat Electronic Supplies, and marketed under the name K & W cases. These were advertised recently in the June 1981 edition of E.T.I. and are worthy of investigation. They make a couple of larger cases...and these already have cooling slots in them, so my next memory keyer (yes, I can't stop at one!) will go in another of their cases, and may even incorporate a small cooling fan, after I have added another few modifications I'm working on. You may say "where does all this heat come from in the first place" and the answer is that as the memories are volatile, I leave this beast on 24 hours a day. Remember, we are using TTL, and we get plenty of current consumption, and plenty of heat. Clearly this keyer is not for the faint-hearted, or weak-walleted when it comes to the power bill.

The hardest part of the whole exercise is undoubtedly the chassis bashing. Take care to see that holes for banks of switches, pots etc are neatly drilled or cut, and run parallel to sides or edges. The K & W cases have aluminium front panels and chassis, so watch out for the sharp edges of drill shards etc...they will cut your fingers to ribbons very easily. When you have all the holes etc cut, you can give the panel a satin finish by sanding it under running water with emery paper. The fine dust remaining can be removed with a wash in soapy water afterwards. Although the cases have a sandblasted front panel, it may require such treatment because of tool marks left by hole-nibblers etc.

Depending upon the volume of the case you use, you may have to nest boards horizontally, or mount them vertically on their sides, or whatever best suits your needs. Remember that you may have to do a bit of elementary fault-finding on it whilst it's inside the case, so a logic probe tip should be able to reach most of the pins...one way or another! Look for the obvious first...that continuous series of dots may be due to the input jack shorting to the transformer frame rather than due to a circuit problem. If it's any help, I had to put the circuit in and out of the case no less than four times before it all went right, so make sure you can remove the boards without destroying the whole project... try to use some sort of connectors for connections to pots, switches etc.

Use of the Accumemory: To load a message into the memory, proceed as follows:

i) Place the "Load/Send" switch to the "Load" position.

ii) Press the "reset" button for the appropriate memory. The memory number will indicate which memory you are loading into, and the message bit number displays will reset to "000".

iii) Key in the message with your paddle. As you do so, the message bit number display will count as you fill up the storage. You can load

at a slow speed if it helps you get it right. If you make an error, press the "reset" switch again...and start again.

iv) When you have finished loading the memory or memories, place the "Load/Send" switch to the "Send" position.

v) If you exceed the storage capacity of a memory, overflow into the next memory is automatic, in both Load and Send modes. Overflow from memory 4 goes into memory 1, and preexisting data in memory 1 is written over and lost.

vi) To program a pause, load the message until you wish the memory to pause, then stop sending. Wait until the count stops advancing. Press the "Run" button once...the message bit number count now advances by ten digits, then stops again. Now, continue loading the second part of the message. (In "Send" mode, the memory will send the first part of the message, then stop, allowing you to insert extra data, such as a signal report etc. To continue the second part of the message, press the "Run" button again.)

To send a message from a memory, proceed as follows:

i) Place the Load/Send switch in the Send position.

ii) Press the appropriate "Reset" button. The message stored in that memory will now be sent, at whatever speed setting you desire.

iii) To stop the message at any time, press the "Stop" button. The message halts at the moment of pressing this button, and does not reset. Thus, pressing the "Run" button carries on from the point where the message stopped. To begin again, just press the "Reset" button, and the message will start from the beginning again.

Note: It is not possible with the present circuit to address a particular location in the memory to send from somewhere within the message rather than the start. Hot digital men might like to add the extra logic to do this, perhaps using BCD thumbwheel switches for addressing.

Memory Capacity: Each memory has 512 bits of storage, but that does not equal 512 characters in morse. To give an idea of the capacity of one memory, the following message uses 506 out of the 512 available bits of storage:-

CQ CQ DE VK2AGV/7 VK2AGV/7 QRZ? DE VK2AGV/7 K

If you send that on a hand key you can see that there is really quite a bit of storage in each memory...and there are four such memories of equal capacity in my unit. But I could still use another four!

Where to From Here?: The logical (excuse the pun) next step would be to interface the keyer and memory combination to a keyboard, probably using diode matrix encoding, parallel to serial converters and buffering or a UART to keep things steady at any given speed. Providing that the interfacing allowed the keyer to be used via the paddle, hand key and keyboard, then a very useful piece of station equipment would result, and at a very reasonable cost. I am currently investigating just such a possibility.

Conclusion: The Accukeyer/Accumemory (and modifications) offer a low cost, high performance means of making CW on the bands which is a pleasure to send, and to listen to. The IC's are readily available, and the construction is straightforward. Commercially made circuit boards can be obtained, and the 1980 ARRL Handbook has the latest and most up-to-date circuit information. Relay keying makes the unit almost universal, and is recommended. Construction of the keyer/memory will afford useful insight into digital electronics, and result in a unique and useful station accessory (I know of no other keyer with a memory that has a digital display with it.) Using the keyer/memory is very easy, and adds extra fun to CW. I commend this project to CW

and homebrew enthusiasts everywhere.

Information, References, Sources of Supply etc.:

ARRL Handbook 1980 edition, Chapter entitled "Code Transmission", commencing page 11-7, "a Deluxe Keyer With Memory"

K&W Cases are made by:-

Ballarat Electronic Supplies,
5 Ripon Street
BALLARAT VICTORIA 3350

to whom enquiries re sizes etc of cases might be addressed. (see also June 1981 Edition of E.T.I.)

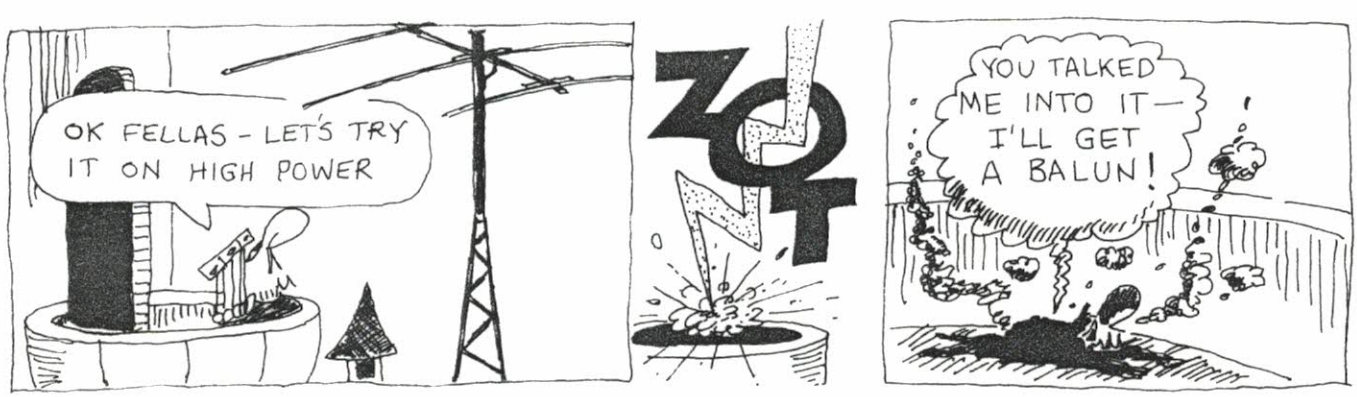
Most electronics suppliers will have the IC's etc. Tandy Electronics sell 2N2222 transistors in packs of 12, and have the 2N2907 available as single units. Dick Smith electronics have the 2102 memory chips, and just about everything else necessary to complete such a project. Many other well known suppliers also should have the necessary components.

For those who don't have the 1980 ARRL Handbook, but want to get things under way before the enthusiasm wears off, the address for James Garrett, WB4VVF, is as follows:-

James Garrett-WB4VVF
126 w. Buchanon Ave.,
Orlando, FLORIDA 32809
USA

The memory, Readout and Driver boards are $US12 as a set, and the Memory board on its own is $US6. He requests a S.A.S.E with all enquiries, and I advise adding $US3 to cover airmail expenses. He seems to process orders in batches, so be patient.

Note: Digital purists may find my use of two inverters in series in the "Tune" input circuit of the "Accutune" modification to be technically redundant...and they are quite correct. However, it does allow all the unused gates to be used, rather than leaving unused gate inputs which by rights should be disabled to either Vcc or ground. As long as the duration of the triggering pulse to the 555 (i.e. the logic "0" applied to pin 2 of the 555) is less than the duration of the output pulse there will be no problems. In practical operation this will always be the case.



REPEATER LINKING

Bureaucracy still stands in the way of technically innovative amateur operators who would like to experiment, under suitable conditions, with repeater linking. (It stands in the way of plenty of other modest technical innovations, too - but let's consider one thing at a time!)

If two VHF or UHF repeaters are linked, it becomes possible for an amateur within the coverage area of one repeater to communicate with amateurs within the coverage area of another repeater. In an area divided by mountains (such as the Illawarra) or in a sparsely settled area (such as western New South Wales), linked repeaters may provide the only way for amateurs within the same general geographical area to communicate with each other on the VHF bands and higher. At times, such a link may be the only way of communicating on any band - consider a path of, say, 100 miles on a summer night when 80 metres is made useless by static, 40 metres is full of commercials (and noisy also) and, of course, the higher HF bands are no good.

One of the general outcomes of WARC 79 appeared to be that the more developed countries were prepared to move towards the higher frequencies (VHF, UHF, and satellite relays) in order to leave more room for less developed countries on the HF bands, which require generally simpler and cheaper equipment. In view of this, it is disappointing to find the Australian administration preventing its own Amateur Service from developing techniques which will open up the VHF and higher bands for reliable long-distance work, amongst other things.

It is also in the long-term interest of the Amateur Service to develop alternatives to 80 metres for night-time medium-distance contacts. Otherwise, congestion will increase to the point where it will only be useable for short-distance contacts anyway.

Repeater linking is now permitted in some very restricted situations - for the relay of WIA broadcasts, and for approved WICEN exercises. No benefits are available on a day-to-day basis for the average amateur.

It is surprising that the P and T department has not provided positive encouragement to amateurs to move towards the higher frequencies in conjunction with major repeater developments in order to make their own jobs easier. After all, the average amateur on VHF or UHF tends to regard 10 watts of transmitter output as high power and is unlikely to cause interference of any kind to nearby TV receivers. Repeaters themselves have modest output powers, and are usually remote from domestic receivers. In other words, VHF/UHF operation using FM and low power - with modest antennas - is more compatible with a situation of crowded suburban dwelling than is high-power SSB operation at HF.

Of course, HF will never be replaced by VHF/UHF and relay systems. On HF - especially with CW - an amateur can derive tremendous satisfaction from long distance contacts with very simple equipment. But in the long term, major development at VHF/UHF will be needed to provide a service parallel to some of the existing HF services; otherwise the HF operator will be drowned in a sea of QRM. - VK2AXI.

ROADHOGS

The first roadhog on record was picked up by the Kent Constabulary as he hurtled through Paddock Wood in January 1896. He flashed past the village bobby's window just as the law was sitting down to devour his dinner. Dropping his eating-irons, the constable mounted his official bicycle and managed to overtake the hot-rod horseless carriage after a five-mile pursuit. When the defendant duly appeared before Tonbridge Police Court he was accused of "proceeding at about eight miles an hour" and was fined a shilling and costs. Including perhaps, payment for one hot dinner outstanding to the fast-pedalling policeman of Paddock Wood.

- New Scientist, November 1976.

WET ARMS & NO FISH

(JOTA 1981)

Again the forces of the Illawarra Amateur Radio Society were marshalled for the October happening (JOTA). Two sites were used, Bass Point (mainly Scouts) and Mount Keira (mainly Guides).

Ron VK2DXQ (ex VOE) was the Guide liaison (he's always been a top man with the ladies) and had set up his station at the Mt. Keira Guide camp. (Ron's no fool - the buildings keep you dry.) Reports after the event (and from band useage during the event) indicate that Ron and the boys thoroughly enjoyed themselves and many Guides, Brownies and Rangers - plus the odd Brown Owl (only some Brown Owls are odd) - had the opportunity to contact members of both Scout and Guide Groups from many different areas nationally and Internationally.

The Bass Point site was manned by two groups and both groups camped out. In addition many local Scout and Venturer groups took the opportunity to camp for the weekend. Most sections were from south of Wollongong with some visitors from the Northern Suburbs.

The major problem was the weather. One group (VK2PBP and VK2DMR) cut the weekend short due to very poor camping standards. A thoroughly drenched campsite in the middle of Saturday night sent Denis and Dave home to warmth and security of their homes. CHICKEN!!!!

Notwithstanding the poor weather, many contacts were had on all bands from 80 metres to 70 cm. Paul (VK2DTZ), Andrew (VK2DVB), Walter (VK2YWJ) and Ed (VK2PCK) stayed the distance and were hosts to a multitude of grubby (and not so grubby) faces during the weekend.

A welcome guest at Bass Point was Bob VK7RD who is radio op on the ANL vessel "Lake Hume". Hope to see your smiling face again, Bob. (Bob is now a member of IARS).

Finally, thanks to all operators who participated in JOTA 1981, and hope you all enjoyed yourselves. See you next JOTA.

REPEATER COMMITTEE REPORT

The repeater committee reports good progress with updating of our repeater facilities. Following the Propagator referendum it was decided to install a second 2 metre and a second 70 cm repeater and initial planning of both systems has begun.

The site for the new repeaters will be on the escarpment north of Bulli Pass. The WIA repeater committee have allocated frequencies and it is expected that D.O.C. will shortly licence both repeaters and the callsigns are expected to be VK2RIL and VK2RIN respectively. VK2RIL will be input on 147.875 and output on 147.275. VK2RIN will be input on 433.725 MHz and output on 438.725 MHz.

The design and construction of the repeater facility is very much a cooperative effort involving many club members. Among these are VK2's CAG, Graeme; YVF Eric; NTD Mark; VXS Mike; YKQ/VAV David; DMR Denis; FE Barry; KEY Pat; DJ Bill; and many others.

It is expected that many new facilities will be included in the new system including multi-channel remote control.

Our present repeaters are also not being neglected. VK2RUW will soon be moved to its permanent home on Hill 60 courtesy of the Illawarra Volunteer Coast Guard. VK2RAW is in the throes of undergoing a facelift. Included in this project is the resiting of both receiver and transmitter to the one site (obviating the need for our current land-line), improved security to site (necessary due to the expanding population in the area) and installation of an 8-cavity duplexer instead of the present system of antenna separation. This last project should enable the transmit and receive coverage areas to coincide, and will certainly enable better coverage to the west and south-west of the site.

CONSUMER REPORT

VOCOM 5/8 2M HAND HELD ANTENNA

- Denis VK2DMR

Twelve months ago I noticed a rave report on a 5/8 antenna for 2M hand-helds in "73" magazine. Like many of these reports I treated the raptures of the author with the customary grain of salt - until I tried it myself.

During a recent business trip to the U.S. I had the opportunity to try the antenna on my IC-2A. I always carry my IC-2A in my brief-case with its as-supplied "rubber ducky", and have found it excellent - in strange cities its very nice to meet other amateurs and shoot the breeze. However access to repeaters is marginal from many hotel rooms in many cities (with the obvious exception of Los Angeles and San Francisco). Not so with this antenna. I was able to use many repeaters which previously I could not even hear with the "rubber duck".

Since returning home I have had the opportunity to run some tests with the antenna and both the writer and many other local amateurs have been astonished at its performance.

Tests on Hill 60 were carried out and it was possible to trigger (and use) nine different repeaters including the Mid South Coast repeater at Ulladulla. Many of these repeaters could not even be heard much less used with the original antenna.

From my QTH access to the repeater is marginal at best but full quieting can be achieved with the 5/8.

So much for the trials - the antenna comes with a BNC connector ready for use. Technically it is the usual combination of a base loading coil with a 5/8 wave radiator. The radiator is collapsible and when collapsed is only marginally longer than my rubber duck. Extended the antenna is a little unwieldy in a confined space (it's certainly almost impossible to use inside a vehicle) but the loading coil is reasonably flexible so that if you do catch the antenna in the surroundings no damage will result.

Finally, WHEREDOYAGETIT.

It is proposed that the club store will purchase a commercial lot of 15 antennae for purchase by club members. An indication of demand would be appreciated. Let Geoff know if you're interested. The price as yet is not finalised - see the next Propagator.

WANTED - Articles for the Bumper Christmas Issue of the Propagator... articles in hand are shaping up quite nicely, but we still need more. Make the most of your annual club subscription by submitting material and getting a giant-sized newsletter in return! Early submission (at the November meeting) would be appreciated, but material can usually be accepted up till the last Tuesday of the month. Give your article to a committee member, or the editor, Brian VK2AXI.

NEW CALLSIGNS: Congratulations to Richard VK2ERF, Jim VK2KAZ, and Kerry VK2YZV on their new callsigns. Richard has been making big noises on 20 metres, while Jim and Kerry might be heard on 2 metres before long. Congratulations also to Ron VK2KCR, who is also getting organised on 2 metres.

FOR SALE: One set of new H.F. helical mobile antennaes, 80M, 40M, 20M, 15M, 10M, made by "Lepstick" - $100-00. One BC348 communications receiver including power supply and external speaker, has following bands: 200-500Kcs, 1.5-3.5Mcs, 3.5-6.00Mcs, 6.00-9.5Mcs, 9.5-13.5Mcs, 13.5-18Mcs. Has B.F.O. for SSB and CW reception - $50-00. One Model 15 Teletype Teleprinter - $50-00. One alpha-77 regulated power supply, 13.8 volts, 1.5 amps (CB type) - $20-00.

Les VK2ALK, QTHR, telephone 042-563174 evenings, 042-280408 business hours.

FOR SALE: FTDX401 with matching speaker, VFO and 5 element 10 metre beam - $525. Alex, telephone 360395.

BIRTH: To XYL Carole and OM Brian VK2AXI, on October 4, a FB third YL harmonic. Both RST 599.

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P.O. Box 22 Woonona 2517. Phone (042) 84 1117 or (042) 67 2550.

APPLE: Apple 2 with 48K - $1525
with 32K - $1478
with 16K - $1420
Disc drives (with controller) - $685
Extra drives (without controller) - $594

COMMODORE: 4008 (8K) $900; 4016 (16K) $999; 4032 (32K) $2000.
Disc drives: 4040 $2000; 8050 $2940
Printers: 4022 $1245; 8024 $2460
C2N Cassette Player - $115. VIC full colour full size keyboard 5K expandable to 32K - P.O.A.

Communications packs for morse, RTTY, and SSTV available, Inquiries accepted for Ohio, Sinclair, and APF. Also Commodore Pets for hire. Free delivery Kiama, Roberston, Appin, Camden and Illawarra area.

SPECIAL: Green Corp disks $35 plus post and pack.

Ring for special deals. Contact Ian Piper VK2VGP on (042) 84 1117 or (042)67 2550. Prices subject to change without notice.

WIA MEMBERSHIP CAMPAIGN

As part of a National recuitment drive, all Australian amateurs will receive a copy of "Amateur Radio" in November - whether they are a member of the WIA or not. You can assist this membership drive.

Do you know personally non-members? Of course you do! Why not discuss the benefits of WIA membership with them. The November copy of Amateur Radio and the enclosed recruitment supplement are excellent talking points.

This National Membership Drive will be the biggest drive yet by the WIA to increase its representation of Australian amateurs. The campaign deserves the positive support of ALL members and clubs.

LATE NEWS: CONFERENCE OF CLUBS

The conference held at Wollongong on 1st November 1981 had insufficient delegates to form a quorum; the conference became a meeting, with the minutes to be ratified by a subsequent conference.

Included amongst motions carried by the meeting were that consideration be given to permitting N.A.O.C.P. examinations to be administered by a J.P. or similar person; that phone patch and autopatch be added to amateur operating privileges; that cross-linking of repeaters be permitted; and that the WIA publish a list of new regulations pertaining to the amateur service in the callbook each year.

There was considerable discussion concerning the transmission modes, digital codes, and other techniques which amateurs are permitted to use within their own frequency allocations; Roger Harrison put the case that, provided amateurs stayed within their own bands, they should be free to experiment with any transmission mode within reason, and not be restricted to the few well-known techniques specifically set out on the amateur licence.

The Dick Smith Educator of the Year award went to Kim VK2ASY of the Orange club, and a UHF repeater unit was presented to Goulburn club for the greatest percentage increase in WIA membership since the Fourth Conference of Clubs.

The next conference of clubs was set for Sunday May 23rd in Sydney, to be hosted by the Liverpool club.

LATE NEWS: SPECIAL SPEAKER AT FEBRUARY MEETING:

Guest speaker at the the first I.A.R.S. meeting for 1982, to be held on the second Monday in February, will be Roger Harrison VK2ZTB, editor of "Electronics Today International". Roger's topic will be "The Amateur Experimenter is Dead".

Should be a lively meeting!

NEWS FROM VK2TTY BULLETIN, Sunday November 1st.

Antarctic Expedition:

There is a vacancy for an amateur radio operator on a three month's long expedition, led by Doctor David Lews of the Oceanic Research Foundation Ltd. It you are interested please contact Dr. Lewis, Oceanic Research Foundation Ltd., Dangar Island, N.S.W. The project is being sponsored by John Fairfax and Son Ltd. and D.S.E. VK2APQ, Pierce Healy, plans to maintain regular contact with the expedition. Informal information may be obtained from VK2APQ, at his home QTH or by telephoning 02 7056125. The expedition leaves Sydney on December 15th 1981.

AX Calls:

For the Commonwealth Games in 1982 the Department of Communications has given permission for the AX series of callsigns for Australian amateurs to be used between the period 15/8/82 and 15/10/82 inclusive.

Coming events;

November 14	Illawarra ARC Auction
November 15	Blue Mountains Field Day
November 17	Novice Amateur Examination
November 22	Czechoslovakian phone/CW contest
November 28/29	CQ WWDX CW contest
December 4	A.N.A.R.T.S. Monthly meeting, W.I.C., 8 p.m.

STORE SPECIAL: BOXES GALORE! The store has acquired a large number of boxes and instrument cases in a wide range of sizes. For example, a 9cm x 3cm x 12cm steel box with black mesh cover is $2; a 20cm x 6 cm x 13cm complete box is also $2. A fraction of normal price! November meeting!