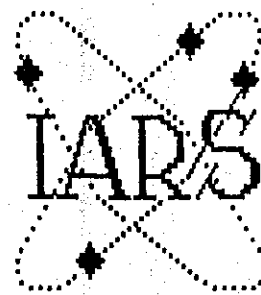


THE PROPAGATOR



ILLAWARRA AMATEUR RADIO SOCIETY

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY .
VOLUME - 86 , NUMBER : 7 AUGUST 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 .

GENEROUS DONATION TO CLUB.

The Repeater at Mt Murray has for quite a while been the centre of controversy , this has been caused mainly by the Club having to conserve ENERGY etc.

Well at last, through a DONATION to the I.A.R.S. by ERIC FIEN in the shape of a new solar panel , the power problem should now be a thing of the past.

ERIC used to live at Mount Kembla , and was an active member of the I.A.R.S. having served on the Repeater committee as well as the General committee.

ERIC'S callsign at that time was VK2YVF but since going to Papua New Guinea some time ago, (abt 3 years), obtained a new callsign P29ZEF while in New Guinea, and also a VK4ZEF while in Australia .

Although he is president of the Papua New Guinea Radio Club, ERIC has kept in constant touch with his old Club and often makes a call/back, (by the land-

line), after listening to the Monthly Broadcast, VK2AMW/P .

He also keeps up with the local Club News via the "PROPAGATOR".

In making the DONATION of the Solar-panel to the Club, ERIC asked that it be made in REMEMBRANCE to a PAST

Club Mate JIM.MEAD,VK2EJM/NYY and I beleive that all Club Members would agree that this GENEROUS-DONATION could not have been made in REMEMBRANCE to a nicer and more deserving Man.

We all thank you sincerely ERIC for this gesture, and at the Committee meeting it was decided to have a plaque inscribed and fitted on the Mt Murray Repeater site

DEMONSTRATION AT MEETING

At the Illawarra Amateur Radio Societies monthly meeting , 40 people including 2 xyl's heard a very interesting talk and demonstration given by DR.IAN BOWMAKER VK2ASN.

The demonstration supported with video tapes ,gave a very easy to understand ways to administer FIRST AID and emergency services to a person who has recieved an electric shock.

Although it was anticipated that a larger number of ladies would be at the meeting , those that did

attend vouched that it was well worth the effort so they at least will have an idea what to do if an emergency does arise.

The evening was rounded off with the usual tea & biscuits.

The committee would like to thank DR.BOWMAKER VK2ASN for finding some of his valuable time in trying to assist members and helping to make their hobby just that much safer.

Also a thank you to Mike VK2DFK for supplying the video and T.V.for the occassion.

EDITORIAL

In a world that at present is full of greed, hate and killings to his fellow man, it would be nice to hear of someone who did not have these attributes. Who could talk to, and be admired by, all classes & creeds of people from different Countries around the world.

We in the I.A.R.S. once new such a Man. His name, Jim Mead.

The Jim Mead story goes way back to the year 1929 when in the city of Oxford in England Jim came into this world and from an early age it became apparent to his parents that not only had they a Son but a perfectionist as well.

Later on in life Jim married a girl from LONDON and settled down to becoming a family Man. Jim & Tina had three Daughters Karen, Teresa, and Rebecca.

In 1956 Jim decided to try his luck in Australia and landed on Australian soil in January 1957. Within a couple of days of being here the Mead Family made a trip "Down South" and finished up at Windang. Liking the area they decided to stay and have lived in the Windang-Primbee area ever since.

Whilst in the Illawarra area Jim decided in 1974 to get into Radio, and being still a perfectionist studied hard until he "Got it right".

Whilst in the Illawarra he joined the Masons Lodge and again wasn't satisfied until he was made a Master Mason.

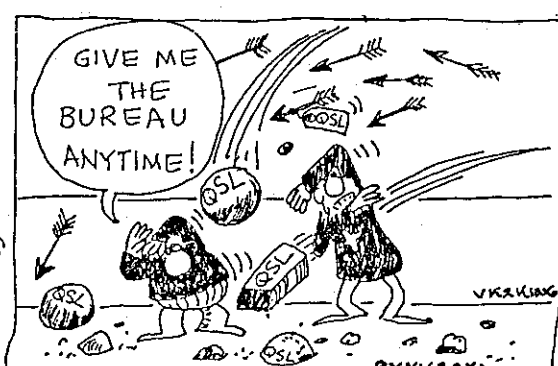
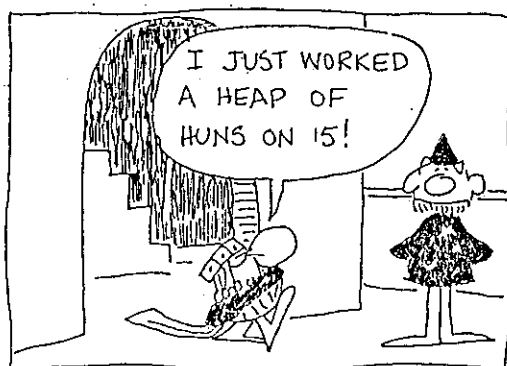
Now that he had his Callsign he soon joined the I.A.R.S. and didn't take long to get "ON AIR". In no time at all he was soon talking around the world as well as around Australia.

His reputation for Honesty, Humour and Integrity plus his "GIFT OF THE GAB" talking, soon earned him the nickname "NATURAL YACKETY YACK". Jim seemed to have an endless Vocabulary of subjects (plus cups of tea) to keep the other Amateurs ears glued to their radio for hours on end. The name "NATURAL YACKETY YACK" became a household word in shacks around the world.

But alas NATURAL YACKETY YACK was given a silent number on the 16th of September 1985 for Jim had passed away.

So to Jim's Wife Tina and Family, please except this tribute from his Club Mates to let you know that although JIM VK2NYY/EJM has gone, he is not forgotten.

VK2PZY Dave (ED).



Treasurer's Report for July 1986

The club has been mailing Propagators out to all members until last month. Last month a letter was mailed out to all unfinancial members instead of their July Propagator, an extract of this letter appears below:

"Dear OM,

As we mentioned in the last issue of the Propagator, it was the final issue that un-financial members would receive. Our records show us that you have not renewed your membership for the 1986 financial year.....

We thank you for your support in the past, and look forward to welcoming you back into the club should you decide to re-join the club in future....."

The letter was mailed to thirty-six unfinancial members (at a cost of \$11.88 postage) with five lost sheep returning to the fold (i.e. the exercise paid for itself). As of this date, the club's membership is as follows:

| <u>Members</u> | <u>Number</u> | <u>Subs</u> | <u>Annual Income</u> |
|----------------|---------------|-------------|----------------------|
| Pensioner | 16 | \$ 5 | \$ 80.00 |
| Normal | 88 | 10 | 880.00 |
| Overseas | 2 | 20 | 40.00 |
| Life | 3 | 0 | 0.00 |
| | --- | | ----- |
| Totals | 109 | | \$ 1000.00 |

Compare the annual income from members subscriptions with the costs involved in producing the Propagator (over) and you will see that we are not covering our costs. Members who pay \$10 annually, aren't even covering the costs of producing the Propagator, let alone have anything left over for improving things like repeater services, stocking the store, buying the tea and pickies for meeting nights, etc. The current Lotto programme is being used to cover the Photocopier component of the costs, when it should theoretically go towards club projects - those things which are not essential for the day-to-day running of the club (repeaters and moonbounce to name but a few). It's time the members subscriptions were brought more into line with costs.

SUCCESSFUL VK2AMW FIELD WEEKEND.

Field Operating Weekend -
VK2AMW...28/6 -> 29/6/1986.
Permission had been obtained
from MWS+DB to have a
limited number of persons to
camp overnight at the EME
site behind Mt Keira.

I arrived around
6.40.am. on Saturday &
proceeded to erect the tent.
Several others joined in
during the next half hour &
soon a tent, along with the
dish maintenance tower acting
as an antenna tower
supporting 3 antennas, were
in position.

The antennas were 5/8
ground plane antennas for 2
metre and 70 cm at about 28
feet, and an 80 metre dipole
fed with 300 ohms TV ribbon.

On the roof of the
E.M.E. operating room was a
multiband vertical H.F.
antenna. The E.M.E. antenna
was the usual 30 foot
parabolic dish with its high
gain!!

Later in the day a 100
metre roll of building wire
was stretched from the tower
to several trees in a NE
direction.

The radios were
commissioned around 10 am
local time. Contacts were a
little slow due to band
conditions being up the
creek. However 2 stations
were worked on 1296 E.M.E.
being, OK1KIR and OE9XXI
before moonset occurred.

The afternoon was quiet
on the bands until around
5pm, local time. Most of the
contacts up until this time
were on 2 metre & 70 cm
through repeaters. However a
couple of nice contacts
were heard with Ross VK2DVZ
at Waverton (Sydney) on 2m
SSB & 70 cm SSB signal
strengths were 0 either end
but readability was 5.

After we had eaten, &
night had fallen (along with
the temperature), 80 m was
used to enable quite a few
stations to work AMW for the
award. For three hours
contacts were continuously
made with a queue of patient
operators, and many awards
were qualified that evening.

Lyle returned to the
site around 9 pm to prepare
for the moon path into North
America. (more details on
Moon bounce in the
E.M.E. report).

Band conditions petered
out around midnight, and with
a touch of bad luck on
E.M.E., some people went to
sleep. Around dawn on
Sunday, someone triggered Mt
Murray repeaters ident and
woke up all those sleeping
in the tent, (it was me).

More successful contacts
were had that morning via
EME, plus a few contacts on
the rest of the bands.

Lunchtime on Sunday was

time for a BBQ, and several
people including families
stayed for lunch & had quite
a good time.

STATIONS WORKED 28/6/86.

80 M: VK3CPR, VK2NH, VK2DXP,
VK3BHT, VK3PGQ, VK2DFL,
VK4KCF, VK7NCH, VK3PHK,
VK2VPW, VK2MMP, VK2NFO,
VK2BEE, VK2CJH, VK2SP,
VK2DRW, VK2NEQ, VK2PVK,
VK2DJJ, VK3NGE, VK2DET,
VK2PLN.

40 M: VK5GF, VK5FLE, VK3ACA,
VK7JH, JH1EVE, W5FUR, VK3JR,
VK3DYZ, VK3BHT, VK4ES,
VK4BAG, VK2ARQ.

2 M: VK2EST, VK2OG,
VK2YYJ, VK2NH/Mobile,
VK2ALU/Mobile, VK2CAG,
VK2EJH, VK2KLS, VK2CJH,
VK2EXN/Mobile, VK2ON, VK2SJ,
VK2ZZV, VK2FRM, VK2IU,
VK2KBL, VK2KFA, VK2ABV,
VK2CDD, VK2DRW, VK2DJJ,
VK1KRM, VK2TN, VK2DVZ.
70 CM: VK2EMV, VK2KLS,
VK2EXN, VK2DVZ, VK2ZNS.

23CM: OK1KIR, OE9XXI.

STATIONS WORKED 29/6/86.

80 M: VK2PZY.

40 M: VK4WIC, VK5GT, VK5AAR,
VK2DPG, VK3ATF, VK3BCH/4,
VK4ES.

20 M: JQ1MQZ, VK2ALK.

2 M: VK2DYU, VK2XCI,
VK2CNL/WB6IBV.

23 CM: HB9RM.

After lunch all chipped
in to disassemble the camp
which was achieved in good
time, then we were all away
by around 2-30pm. I feel
sure every body who
participated enjoyed them
selves.

Thanks go to many
people from the planning
stages through to operators
over the weekend, and
especially all the visitors
who helped out for any time
they could.

73's for now TONY VK2ENX.

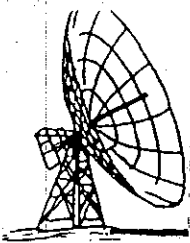
COAST-WIDE COMMUNICATIONS

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.

VK2KWN WAYNE NEWPORT



E.M.E. REPORT BY LYLE VK2ALU

Moonbounce Report - August 1986.

The operation of VK2AMW on 1296MHz EME over the 'field weekend' of 28th and 29th June resulted in some successes and some disappointments, as perhaps might be expected after a period of some 11 months out of action and 14 months since our last EME contact.

I had the gear at the EME site by 8am on the Saturday and it was set up with the assistance of Tony VK2ENX and the three other Club members who were already there. Ian VK2EXN arrived before 9am to act as 2nd Op. and we were "ready for business".

The moon could not be seen because of cloud cover so we used sun noise and "dead reckoning" in order to determine its position, as the dish pointing computer had decided to go u/s. Our echos were heard at approx. 3 to 4dB (average) above noise and the first European window was opening so we commenced calling CQ on the arranged frequency of 1296.015MHz. Weak signals were heard after a while and these eventually proved to be OK1KIR, who was sending us 'O' grade reports. We replied with 'M' reports and the contact was completed by 0053Z. We were then immediately called by OE9XXI, with 539 report, but we could only give him a 'M' report as his signals were not much stronger than those of OK1KIR, however this contact did not take nearly as long as our first one, being finished by 0107Z. Our European window was then nearly over.

At about 1130pm local time, just before the North American window and while testing the transmitter, we developed a problem in the high voltage power supply which required the exciter chassis to be removed from its cubicle. After it was replaced and fired up we found that drive had been lost to the PA. This was traced to "loss of contact" between the centre pin of the coax. connector and chassis mounted connector at the output of the exciter unit which caused the 2C39 driver tube to operate into an open circuit for the 30 seconds or so before we were able to drop off supply volts, enough for the tube to go low in output. As there was no spare tube on site, I had to journey home at 1.30am to pick up a tube and test equipment necessary to get back in operation (a 1½ hour round trip). It was nearly 6am before we were "back on air". Tony VK2ENX and I did not get any sleep that night!! However we fortified ourselves with a hot breakfast and were ready for any VKs or ZLs who might call us prior to the second European window starting at 9.30am local time.

None was heard but a weak signal at 0020Z proved to be HB9RM, who was sending 'O' reports. The moon was clearly visible and our dish pointing was "spot on". As our echos were still averaging approx. 4dB above noise, we decided that we must have been also "on the moon" the previous day, which vindicated our calculations for dish pointing when the moon was not visible.

We gave HB9RM 'M' reports and the complete contact procedure was carried out by 0114Z, to give VK2AMW our first contact with him (and as indicated on his 2SL card subsequently received by Air Mail, his first EME contact with Australia). Other weak signals were then heard but could not be resolved prior to closure of the Moon Window.

We had at least got back into the EME business for 1986 but results were not up to expectations. The Moon was near its furthest distance from the Earth over that weekend, which did not help. Tape recordings were made of our echos and of received signals and these will be discussed with other EME operators.

('M' report=copied with some difficulty)
('O' report=copied with ease)

Lyle VK2ALU.

HOW TO RECOGNIZE—AND SURVIVE—A HEART ATTACK

CALL this a crash programme in practical cardiology. Granted, it won't tell you much about how the heart functions, or about the many kinds of heart diseases and how to treat them. But it will tell you how you can have a heart attack and live.

The key to saving your life is knowing the Early Warning Signs (EWS) of heart attack. These are the patterns of discomfort and distress that appear in your body minutes, hours, days or even weeks before a heart attack develops. They tell you clearly, "This may be a heart attack. Get to a doctor or hospital now."

But, as a National Heart Foundation survey shows, three out of ten heart-attack sufferers take longer than four hours to seek medical aid—and the average time lapse is a dangerous eight hours. Only 40 per cent recognized the symptoms of a heart attack; 15 per cent of the others

thought they had indigestion; and seven per cent blamed general chest troubles.

What to Do if You Feel Early Warning Signs of Heart Attack

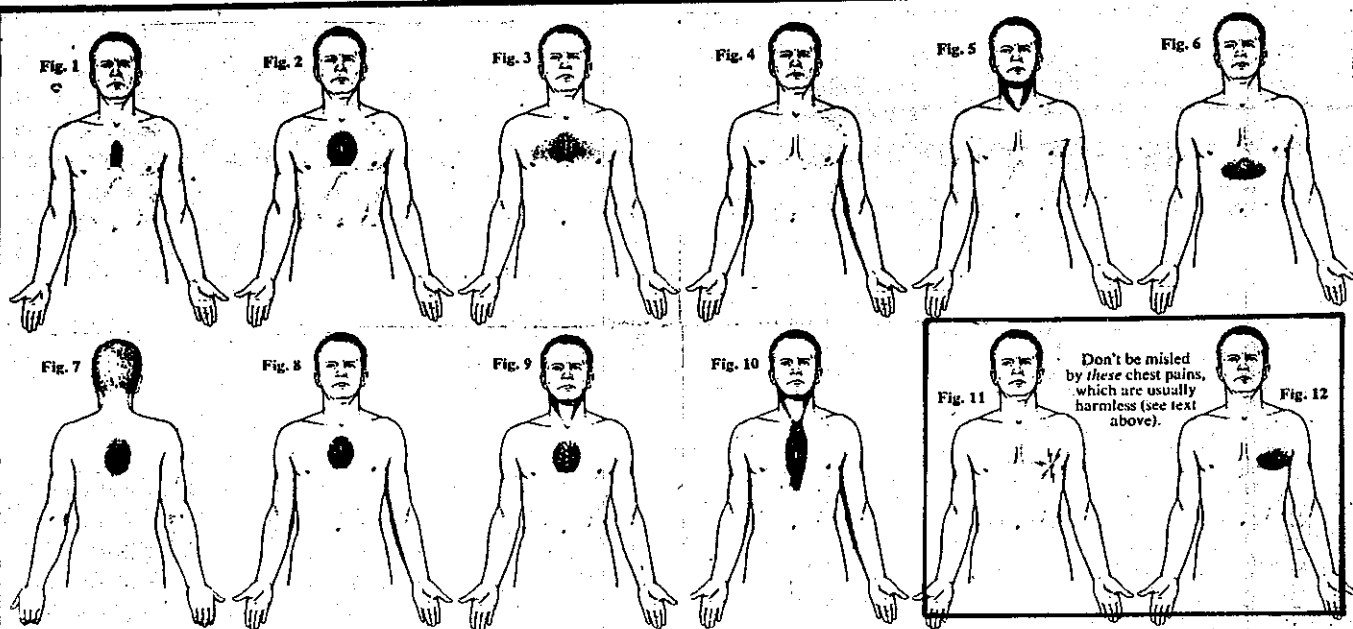
- Call your doctor immediately. If he is not available at once, get to the closest hospital. Calling the doctor first can save time: he may be able to determine over the phone whether you are having a heart attack. If you are, he can arrange for speedy admission to the hospital and summon an ambulance, if necessary. In calling either doctor or hospital, emphasize that this is a heart emergency, requiring instant care; don't be put off by administrative red tape.
- When you reach the hospital, insist upon prompt care, either in the casualty ward or in the coronary-care unit.
- Use the fastest transportation you can get. If you must wait even

ten or 15 minutes for an ambulance, and a car is available immediately, take the car. Don't be too concerned about bumps along the way; a moderately rough ride will not worsen your condition, but delay could be fatal. Try to get someone to drive you, and someone else to care for you on the way; but if no one is available, drive yourself, since this is less risky than remaining home alone.

• While travelling to the hospital, sit upright unless you feel very faint. Heart pain is usually worse when one lies down.

• If nitro-glycerin tablets are handy, place one under your tongue—it may ease pain and stress within a minute or two. This is one of the rare instances in which self-medication is justified.

• If you are transporting the patient, watch him carefully. If he loses consciousness, and especially if his heart cannot be heard when someone holds an ear to his chest, stop the car immediately, place the patient on a hard surface outside the car, and apply cardiopulmonary resuscitation (CPR) to restore blood flow and breathing.* Perform these vital functions for the patient until he recovers or until an ambulance arrives. Failure to apply CPR within four minutes can cause permanent brain damage or death.



The Early Warning Signs of Heart Attack

Figs. 1, 2, 3) The heart is in the centre of the chest, not on the left, as many believe. The most common sign of heart attack is discomfort here in the centre, just "under the tie." This is usually not a sharp, jabbing pain, but a sensation of pressure, fullness, squeezing or aching. It is caused by a lack of oxygen in the heart muscle, and may be mild, moderate or severe in intensity. The discomfort may affect only the centre of the chest or may radiate through the whole chest. It may subside in a few minutes or a few hours, only to return hours, days or weeks later. Don't be falsely reassured by temporary stopping of the pain; many patients have had repeated warnings of this type, but have delayed taking action until a damaging or fatal attack occurred. Fig. 4) Distress may extend from the chest into one or both arms or may appear in the arms alone. It may be mistaken for arthritis, bursitis or muscle strain. To tell the difference, raise your arms above your head; pain due to arthritis or bursitis will be aggravated by this manoeuvre, heart pain will not. Fig. 5) Discomfort may radiate into the neck and jaws, on one or both sides, and in front or back. It may be mistaken for toothache, arthritis or "stiff neck." To test, turn your head or bend your neck; heart pain will not be aggravated, whereas most pain originating in the neck will be. Differentiation of toothache from heart attack may be more difficult; check with a doctor in

case of any doubt. Fig. 6) Pain—usually pressure, fullness, squeezing or aching—may appear in the upper abdomen, where it is often mistaken for indigestion. Usually it is not confined strictly to the abdomen, but overlaps the lower chest at the fork of the ribs. Nausea or vomiting may occur with this pain. Fig. 7) Back pain may be the only sign of heart attack. Usually this is located between the shoulder blades, and is similar to the "tired hurt" experienced after tedious work involving protracted use of the arms and hands, and stooping of the shoulders. Figs. 8, 9, 10) Heart pain often occurs in a combination of patterns. The most common combinations are chest and arm pain, chest and neck and jaws, or pain in all these areas. Not infrequently, pain in the neck and jaws, abdomen, arms and back may be even more severe than that in the chest. Shortness of breath, nausea or vomiting, and heavy, cold sweating may occur with any of these combinations. Unexplained sweating, particularly if associated with pain in any of the areas just described, should always be considered a possible sign of heart attack. Figs. 11, 12) Pain in the left chest wall, centring on the left nipple, is almost never a sign of heart attack. This pain may be a sharp, jabbing sensation lasting a second or two, a dull soreness lasting for minutes or hours, or a combination of the two. Many tense individuals experience this pain often, and mistake it for an indication of heart disease, which it is not. It should, of course, be checked by a doctor if it persists.

FOR • SALE

WIND
GENERATOR IN
Good condition
PRICE: **\$350**

FOR FURTHER INFORMATION
Please contact the
ILLAWARRA AMATEUR RADIO
SOCIETY, P.O.Box.1838.
WOLLONGONG. 2500. N.S.W.

FOR • SALE

- 1. - Power supply,
16. Amp continuous
 - 1. - 1 To 1 balun,
 - 1. - T.U.L. Filter,
 - 1. - Coax switch,
- Any reasonable offer
accepted on any or all of
the above : PH. 67-3836.
MARTIN (VK2BMH) .

WANTED TO BUY

WANTED URGENTLEY !
1. MEDIUM DUTY
ROTATOR
COMPLETE WITH REMOTE
CONTROL POSITION
READOUT.
PLEASE CONTACT: LYLE
VK2ALU ON 042-29-6984

FOR • SALE

TS.530s. Kenwood
tranceiver with handbook
spare set of finals -and
original mike.
All in excellent condition
PRICE **\$800.**
For further information
please contact FRED .
VK2PYX Phone 56-1060.

FOR • SALE

1STEEL TOWER
PRICE: **\$50.**
PLEASE CONTACT:
VK2PZY OR VK2EMU ON
84-9872 OR 83-1219.

WANTED

DUAL METER OUT OF
AN "EARLY" AIRCRAFT.
IT WOULD PROBABLY BE
A "LEFT/RIGHT BANK
INDICATOR". EACH METER
HAS A SENSITIVITY OF
30µA FSD.
TONY VK2ENX.
Phone: 285296.

FOR • SALE

Commercial
(311) I.C.
APPLY
TO
I. A. R. S.

VK2AMW/P CALL-BACKS

Call/back from the
I.A.R.S. Monthly Broadcast
on 2 metre were:-
VK2BOZ-Charlie, VK2XDB-Dave,
VK2EXN-Ian, VK2ASN-Ian,
VK2YKQ-Dave, VK2EMV-Morry.
On 80 metre were:-
VK2DFL-Dave, VK2EBI-Kevin,
VK2AXI-Brian Wade.VK2KING..

It was good to see that
the broad cast went over in
good style, and also thank
you Brian for the print out
of the R.T.T.Y.Broadcast,
Tony and my self were very
pleased with the results tnx
I would like to thank all
Stations for coming up on
the call-back, and hope to
hear from you again next
Month on the usual freq:-
147.275 and on 3.562.0 plus
or minus , from your
Broadcast Officer VK2KAJ-
Tony and VK2EMV-Morry (ED).

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.

ON THE NET

29th June

VK2MT- Rob (co-ordinator)
VK2JNC/4-Neil, VK2DFK-Mike,
VK2EBI-Kevin, VK4VKC-John,
VK2EXN-Ian, VK2IU-Ralph,
VK4NHF-Mike, VK2PYX-Fred,
VK2CWS-Casey, VK2DFL-Dave,
VK2DTZ-Paul, VK2EMV-Morry.

6th July

VK2MT-Rob (co-ordinator),
VK2DFK-Mike, VK4NHF-Mike,
VK2IU-Ralph, VK2JAM-Peter,
VK2PZY-Dave, VK2PYX-Fred,
VK2EBI-Kevin, VK6NDE-John,
VK2EMV-Morry.

13th July

VK2ENX-Tony (co-ordinator)
VK2IU-Ralph, VK2MT-Rob,
VK2DFK-Mike, VK2DFL-Dave,
VK2HQ-Frank, VK2PZY-Dave,
VK4NHF-Mike QLD, VK2JAM-Peter

20th July

VK2PZY-Dave (co-ordinator),
VK2IU-Ralph, VK2EMV-Morry,
VK2KFW-Fred, VK2DDP-Derek,
VK2ENX-Tony,
GOOD ON
CONGRATULATIONS to
FRED with the new callsign,
VK2KFW

SATELITE NOTES BY LYLE VK2ALU

Stop Press (Monday 21/7)

OSCAR 10

Good news! Last night's Amsat Australia Net provided details of the successful reload of data into the onboard computer memory of Oscar 10 on 13/7.

Some 400 errors were found to have occurred in various memory locations. These locations were bypassed in the reprogramming exercise, but this inevitably resulted in some reduction in functions, including the loss of the very useful facility which provided the regular half hourly CW and RTTY bulletins on the Mode B and Mode L beacons. These beacons will, of course, continue to operate - sending digital data, with some omitted, due to the reduced memory available. All the vital functions can still be performed but continuing damage must be expected from impact by charged particles.

The attitude of the satellite is being progressively changed to a target value of Lon 180 deg. and Lat 0 deg. which should be achieved within the next few days. It had reached Lon 158 and Lat +4 deg. by 19/7.

The battery condition is lower than desirable as a result of the 'out-of-control' period. Thus, for the time being at least, it is ESSENTIAL that ALL stations using Oscar 10 transmit with QRP only. 10 watts into a 'large' antenna and no more than 20 watts into a 'small' antenna are the absolute limits. Experience over the last few days has shown that, provided ALL stations stick to these limits then AGC action on the satellite is minimised anyway, and downlink signal level is quite adequate. If the rules are broken then operating periods will just have to be reduced.

The latest operating schedule is (as from 19/7)

Mode B MA 75 to 119
Mode L MA 120 to 136
Off MA 137 to 074

JAS 1 (the first Japanese Amateur Satellite)

Launch date has been delayed to either 4th, 5th or 6th August, and may in fact, be as late as 7th or 8th August. Launch time is still to be 2030Z.

Amateur Satellite Report.

AMSAT has decided that publication of the Satellite Journal (which took the place of Orbit) cease and that all Amsat members should get the Amateur Satellite Report, which is published far more frequently than the others were, but which, in the past, was sent only to those members who subscribed to it as well.

In addition, arrangements have been made for each issue of ASR to be sent in bulk by Airmail from USA to VK5AGR (the Amsat Australia Coordinator). He will then post individual copies to all the Amsat members in Australia. We should thus be kept much more up to date with satellite news from USA.

Graham VK5AGR asks that any AMSAT (not Amsat Australia) member who has not received his first copy of ASR by the time that you receive this, advise him so that he can follow the matter up with AMSAT.

Lyle

VK2ALU.

REPEATER REPORT GRAEME VK2CAG

The last month has seen several changes to both of the two metre repeaters. Everything has happened at once, because of two long standing projects being completed within the same week, and because of the very much appreciated donation from Eric which enabled us to purchase another solar panel.

The first project to be finished was the hi-lo power switching unit for Mt. Murray. This project was originally started with the idea of reducing repeater power consumption by lowering its power output when its battery was low instead of reducing the time-out period. The shortened time-out system came in for much criticism, but it was technically the only practical solution to the problem at the time. It was meant to be an interim measure only, until our club was in a position financially to fit another solar panel. Since the device was 99% completed when Eric's donation came along, it made sense to finish it off and fit it to the repeater anyway.

On Saturday 12/7/86 Ian, Peter, Rob and myself spent most of the day on site. We removed the wind generator and fitted the new solar panel. The repeater is now fully solar powered by two full-sized panels and one half-sized panel. Charging current at midday in winter is about 3.5 Amps in sun, and an amp or so in cloudy conditions. Summer conditions should produce 5 Amps! Also the power switching unit was installed. Connecting this device to the repeater involved modifications to the control unit, the charging regulator (which incorporates the ident tone switching), and remote control decoder box. All in all quite a job. It took several days to plan the exercise beforehand with every step planned and documented, all components, cables etc. packaged up in kit form and such things as the right size hole cutters, drills, soldering gear, test equipment etc. loaded into the toolbox. Remember that there is no 240 volt power on site, so the work had to be completed using battery power alone. Happily everything went as planned. Obviously Murphy didn't know what was going on!

We also discarded the old truck batteries and replaced them with a couple of 6 volt 90 Amp-hour glass type ex-telephone exchange batteries. The total battery capacity on line now is 135 Amp-hours. Large battery capacity is no longer necessary, since there will be some guaranteed input every day, unlike the wind power, we do not have to wait for unspecified periods of time between charges.

The hi-lo power switching device does a number of things:-

1. It senses the battery voltage at the ident tone switching circuit, and switches the repeater to low power when the ident tone goes from no.3 down to no.2, representing a voltage drop from above 12 volts to just below 12 volts. It switches the repeater back to high power when the ident tone goes up from no.4 to no.5, representing a rise in voltage to above 13. Once low power is invoked, the battery must become almost fully charged again before high power is enabled. This forces the battery to fully cycle between low and high levels of charge, prolonging battery life.
2. It allows remote control commands to override the automatic power change if necessary, for diagnostic or emergency purposes.

REPEATER REPORT GRAEME VK2CAG

3. It generates a 'beep' tone which appends each transmission if the repeater is on low power. A 45 second inhibit timer is incorporated to prevent the 'beep' from occurring more frequently than 45 second intervals. Button pushers are bad enough, but can you imagine a 'beep' each time as well! The 'beep' is an indicator only, and is there to indicate that the repeater is on low power which is helpful to know if the signal strength is down. It is not intended to serve as a warning not to use the repeater. When on low power (5 watts) current consumption is about one Amp, so there is more going into the battery than is coming out (during daytime), even while the repeater is in use.
4. Other tones are generated which give status information about the various repeater circuits to those who are involved with repeater maintenance.
5. The device itself draws less than one microamp... yes, thats right...less than one microamp... except for when it is actually sending tones or if its switching solenoid is actually in motion (power switching takes less than half a second & current drain is 5 Amps for this period).

All this results in restrictions being completely removed from the use of this repeater. If the worst happens, and we use more energy than what is available, the repeater will switch down from 25 watts to 5 watts and give a 'beep' tone every 45 seconds or so at the end of a transmission. This will hardly be noticed locally, and the the ones affected will be those who are located in marginal areas for the repeater's signal. Recovery to full power takes a few hours of sunshine, and even when in continuous use on low power, the solar panels are producing more energy than the repeater uses, so recovery is inevitable.

The club committee and the repeater committee are of the opinion that the above solution to our energy problem is far preferable to the alternatives tried in the past. Thank you to all who have been patient while we have working on this project. Countless hours have been spent over the months with seemingly no result until now. More response to our requests for assistance would have had it done long ago.

Sublime Point 7275 is now fully duplexed. Yes, at last! The cavities have been polished, assembled & interconnecting cables made up & the whole thing aligned. Installation on site was accomplished in about 10 minutes. This was done on 14/7/86. Once again Murphy couldn't have known, because everything went like clockwork. The cavities were connected up, the repeater switched on, a sensitivity check done using a weak signal source, and, eureka! (thats not quite the word used at the time!) no de-sense. VSWR into the device was 1.1:1 and power loss less than 2dB. Receiver sensitivity was not affected by the transmitter being switched on and off. It was very gratifying indeed to get such swift results after the years it took to build it.

Not a great deal of improvement is expected from the addition of the duplexer, but now that the repeater is running on one aerial (the highest one, of course) the way is opened in the future to fit a better antenna, and this will bring about a change... hopefully a similar degree of improvement to that at Mt. Murray.

BALUNS

Most transmitters have an unbalanced output connection intended for use with a coaxial cable whereas the majority of antennas are balanced, so that conversion from an unbalanced to a balanced system has to take place at one end or the other of the feedline. There are many ways of carrying out this process but, ignoring such commonly-used devices as the gamma match which is inherently unbalanced and a lot of other arrangements which are unattractive for various reasons, one is left with the trifilar and bifilar wound auto-transformers shown in Fig 4.27.

These devices, contrary to much that has been written about them, are highly efficient as well as extremely simple both in theory and practice. All one needs to do is take two or three lengths of enamelled copper wire about 10in (25cm) long, twist or bind them *very tightly* together (this is the vital part of the process), wind them onto any odd bit of ferrite rod (Fig 4.28) that happens to be lying around, and connect them as shown. For a 3-30MHz balun the theory states merely that the inductance must be large enough not to shunt the line significantly at 3MHz and the *leakage reactance* which appears in series with the output must be negligible at 30MHz. This is a very small amount and failure to realize the crucial nature of this requirement may be responsible for the difficulties which have frequently been reported.

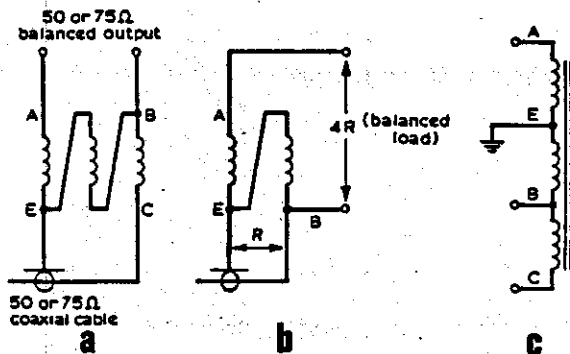


Fig 4.27. (a) Trifilar balun, 1:1 impedance ratio but can also provide 1:9 ratio (balanced or unbalanced) or 4:1 unbalanced on both sides. (b) Bifilar balun, 4:1 ratio. (c) Trifilar balun redrawn as auto-transformer to illustrate the principle of operation. The three (or two) windings are wound as one, with the least possible spacing between wires, though individual turns may be spaced out along the core as shown in Fig 4.28

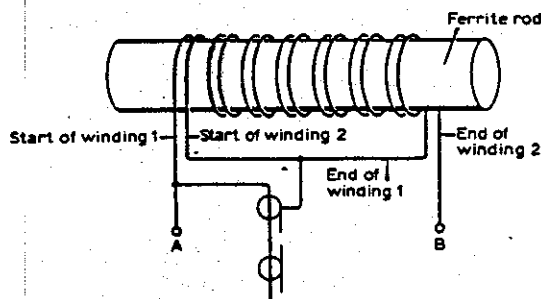


Fig 4.28. Construction of bifilar (4:1) balun. Although the wires must be bound tightly together spacing between turns is not critical unless impedances are very low, in which case leads must be as short as possible. Terminals AB provide a balanced output of 200-300Ω

Readers familiar with the large amount of recent literature on this topic may find it hard to believe that it can be simplified to this extent. Nevertheless, using these rules the author has constructed large numbers of baluns of many shapes and sizes. In one test no less than six ill-assorted small and large baluns in pairs, back-to-back, were inserted between a 400W p.e.p. transmitter and the antenna with an overall loss of only about 0.5dB and no untoward effects except that one very small one got too hot to touch!

Ferrite rings are less convenient than rods and there is a possibility of cross-modulation at high power levels due to saturation of the core [9]. The risk of this should be much less with rods, due to the greater reluctance of the magnetic circuit which is mostly "air gap". Balun transformers are so efficient that rods of less than 0.5in (13mm) diameter and a length of 2in (51mm) or less can be used for powers up to the legal limit (400W p.e.p.) in the UK. A 1:1 balun using 17 turns on a powder core 0.69in (18mm) diameter (Amidon toroid type T-68-6) had measured losses averaging less than 0.1dB, an swr better than 1.35 over the range 3-5-28-5MHz without compensation, and handled a power of 20W cw with only a modest temperature rise.

It is important to note with all types however that under some conditions of severe mismatch high temperatures can develop, and even for normal operation some means of escape for heat should be provided. Failure was experienced in the case of a balun encapsulated in Araldite for weather protection, and attributed to a combination of several factors: the Araldite, a bad mismatch and operation for too long under key-down conditions. Other failures have been attributed to the use of enamelled wire from an old mains transformer, the enamel having a tendency to chip off. Cotton covering, though perhaps obviously unsuitable, was once used in an emergency thereby merely creating a further emergency!

Construction

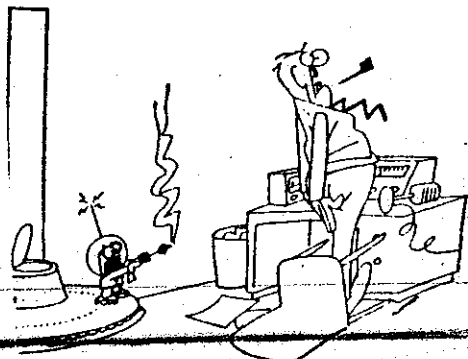
Twisting of the wires is satisfactory, avoiding the extremes of too tight a spiral or enough slack for daylight to be visible between the wires. It is probably better however to use straight wires side by side and bind them together as tightly as possible with insulating tape. The wire diameter should ideally be as large as will conveniently fit on to the core, but it is not critical. Some commercial baluns use a single-layer trifilar winding but, though reasonably satisfactory, this results in a slightly worse specification.

Starting from scratch with a ferrite core of unknown properties, six or seven turns (which need not be closely spaced) provide a good starting point, the completed balun being tested at low power on all bands with an swr meter and a dummy load consisting of, say, two 5W 100Ω carbon resistors in parallel. If the inductance is just right there will be a just-perceptible increase in swr at the lowest frequency. If the balun is to be used, say, for a triband beam covering 14-28MHz the swr may be allowed to rise from a typical value of 1-1.15 at 14MHz to 1.3-1.4 at 7MHz.

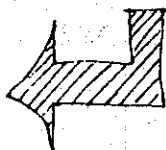
A good test procedure is to construct two identical baluns, connect them back to back, and insert them in the feeder, first on one and then on the other side of the swr meter. On the antenna side they should have little effect on the swr reading, whereas placing them on the transmitting side of the meter provides an indication of the total insertion loss (if any) for the two baluns.

For weather protection many types of plastic container may be pressed into service, using for example ordinary screw-type terminals with appropriate washers to ensure an adequate seal. Immersion of a completely unprotected transformer with twisted windings in a bucket of water produced an immediate loss of several decibels, some of which persisted after removal, but a "temporary" arrangement with taped windings and no other protection was used for several months in all weathers with little or no variation in relative signal reports. Nevertheless adequate protection is essential if the transformer is to be used in an inaccessible position.

- From "HF Antennas for all locations", by L.A. Maxon, G6XN.



TIMED OUT THE
REPEATER LATELY?



F.R.L.I. WINNERS

OVERHEARD: "I'd say I was pretty fit for a man of sixty. First thing in the morning I bend down and touch my slippers fifty times. Then, if I feel like it, I get out of bed and put them on."

| | | |
|------|---------|-------------|
| Week | No : 12 | F. Brown. |
| Week | No : 13 | D. Samways |
| Week | No : 14 | P. Howchin |
| Week | No : 15 | M. v. d. V. |

Letters to Editor

Bow wow

Everybody who has a dog calls him "Rover" or "Boy". I called mine "Sex".

Now Sex has been very embarrassing to me. When I went to the council to renew his dog licence, I told the clerk I would like to

have a licence for Sex. He said "I'd like to have one too." Then I said, "But this is a dog." He said he didn't care what she looked like. Then I said "You don't understand — I've had Sex since I was nine years old." He said that I must have been quite a kid!

When I got married and went on my honeymoon, I took the dog with me. I told the hotel clerk that I wanted a room for my wife and I wanted a special room for Sex. He said every room in the house was for sex. I said, "But you don't understand."

Sex keeps me awake at night." The clerk said it puts him to sleep!

One day I entered Sex into a contest, but before the competition started, the dog ran away. Another contestant asked me what I was doing. I told him I planned to have Sex in the contest. He told me I should have sold tickets of my own. "But you don't understand," I said. "I'd hoped to

have Sex on TV." He called me a show-off.

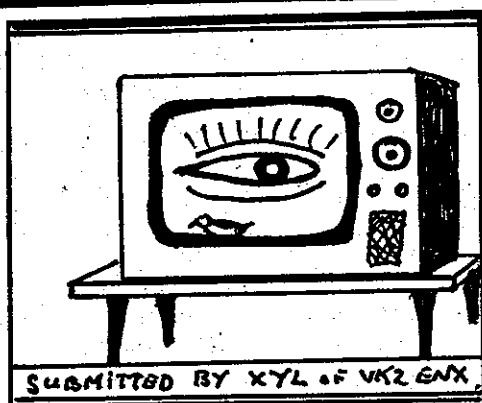
When my wife and I separated, we went to court to fight for custody of the dog. I said, "Your Honour, I had Sex before we were married." The judge said, "You're lucky."

When I told him that after we had married, Sex had left me, he said, "Yes, it does often happen."

Last night Sex ran away again. I spent hours looking for him around town. A cop came over to me and asked me what I was doing? I said, "I am looking for Sex."

My case comes up Friday.

DOG LOVER



TOM:
THAT'S NOT QUITE
WHAT IS MEANT
BY
VERTICAL
POLARISATION



SUBMITTED BY
PETER VK2 XAN.

SO THE STORY GOES.

The Butcher Dance

A young Australian dancer prided himself on being able to perform any dance in the world.

He was on holiday in Africa when he heard of a routine known as the "Butcher Dance". It was practised in the jungle by a remote tribe and the young man was at once frantically keen to find out what this dance was.

He hired guides and after 30 days trekking he finally found the tribe. However, to his despair he discovered that the dance was only performed once a year and he had just missed it by a week.

Nevertheless, he was so intrigued and eager to see this dance that he decided to stay on with the tribe, and for a year he lived in the squalid tribal conditions.

Eventually, the night of the annual Butcher

Dance arrived and the young man, half starved, dirty and unshaven, dragged his emaciated body across to where the dance was to take place.

The natives formed themselves into a circle and began to sing. "You butcher left foot in, You butcher left foot out...!"



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 pm. 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 pm. R.T.T.Y. Mode, and at 7.15 pm. 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 pm. each Sunday.

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

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. VK2ENX- 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: VK2ENX - 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 | : | VK2ENX- 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. |