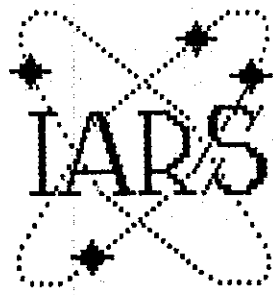


# THE PROPAGATOR



ILLAWARRA AMATEUR RADIO.SOC.INC.

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO. SOC. INC.  
VOLUME - 86 , NUMBER : 7 AUGUST 1987  
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 .

## I.A.R.S. NOW INC.

The IARS is now a new body with an incorporated structure and the changeover took place at the July monthly meeting which was also the annual general meeting.

This change is the result of much effort by Dave VK2VAV/YKQ and Jim VK2EJH, after a decision by the Club members earlier in the year.

The decision to incorporate was due to concern over personal liability of members in the event of a claim for damage or injury due to any Club activity.

### ANNUAL GENERAL MEETING.

Following a committee special meeting to arrange the nuts and bolts of the new Club form, the normal annual general meeting took place with the election of officers as shown below.

Out going President Keith thanked all committee members and helpers for the excellent year enjoyed by the Club and for making his job easy.

Keith declined re-nomination due to his new status (see cartoon) and Bill VK2DYU is our new numero UNO.

The year past has seen our finances improve, the Club copying machine has now been paid off, and our VHF & UHF repeaters are working well and providing excellent service.

Dave VK2VAV/YKQ gave a report of the years financial operation of the Club with his usual detail and clarity and showed the Club finances have a healthy balance at the years end.

### JULY COMMITTEE MEETING

At the July committee meeting Treasurer Dave reported on Club finances that a healthy balance exists but concern is felt at the slow take-off of F.R.L-3.

-\*\*\*-

Printing supplies for the Propagator were discussed and organised for this year.

-\*\*\*\*-

VK2CAG reported the availability of a donation to members. These items are a better class of unit than previous disposal items as they are going units with circuits and manuals making conversion easier.

The committee decided to auction these at the August monthly meeting on 11-8-1987.

Graeme also reported that Sublime Point is now free of QRM as the pager under test has been removed due to a licensing by DOC. All Club repeaters are now QRM free and working well.

-\*\*\*\*-

## Dont make expensive mistakes by buying blind What should you expect as a minimum when purchasing an IBM compatible?

- \* Dual speed 4.77MHz & 8MHz
- \* 8088-2 Processor
- \* Fully socketed Mother Board
- \* Socket provided for 8087 arithmetic chip
- \* Eight Expansion slots (2 should only be occupied)
- \* Extra sockets for ROM's
- \* Minimum 640K on Mother Board
- \* 135w Power Continue output
- \* Built in cooling fan
- \* Centronic parallel printer port
- \* 2 RS-232 serial Communication port ( you will probably end up with a Modem & Mouse or A/D card etc )
- \* Joystick Port
- \* Dual floppy Controller
- \* Battery backed clock/calendar
- \* Legal Bios eg. ERSO
- \* 2 Quality Floppy Japanese Disk Drives as used in Sperry, IBM, Olivetti etc .
- \* An on site Warranty & Insurance must be available from Computer Shield or Hills Industry (Nationally protected).  
If these companies dont offer maintenance on the machine you are purchasing then forget it, Companies only offer maintenance contracts on machines they believe are reliable.

### PHONE J.C.E. SOLUTION SELLERS.

We have been selling Computers since 1979 as a family run business where Personal Service is a —(PRIORITY)—

Mon - Fri 7.30 - 9.30pm. Phone: <042>61-5451.

OPEN FOR BUSINESS ALL WEEK END

Here is a clip-and-save chart that will save you lots of time while helping you to put up a variety of antennas. This article originally appeared in CQ Magazine, March 1986 and was written by George I Wagner K5KG.

In the past few years I have had several opportunities to operate from a number of DX locations. In doing so, I have learned the importance of taking along the proper collection of tools, connectors, gadgets, and reference information to be able to make a quick repair or string up a needed antenna in an unfamiliar shack. Conversely, I have also learned the agony of lugging too much along, only to find it completely unnecessary and unused at the end of the trip.

The antenna length chart, which is the subject of this article, arose out of the need to have a convenient and ready reference, other than a weighty handbook, for measuring antenna lengths. This results from a number of experiences in trying to find a calculator, or a paper and pencil (typically in the dark and late at night), inevitable debates over what constants to use in the calculations, and finally the need to convert from feet to metres when only a metre tape was available, or vice versa. On two separate occasions I have discovered 160 metre dipoles of totally wrong lengths, and on an expedition to OJ0 in 1982, OH0FJ and I spent many hours calculating, cutting, and erecting 40 and 15 metre delta loops. This chart would have been a valuable asset in those circumstances.

This chart was developed after a brief reference to the various antenna handbooks in the shack, and a quick refresher on the current amateur frequencies, especially in the new 12, 15, and 30 metre WARC bands. The formulas used in the calculations, shown at the bottom of the chart, are based upon standard assumptions for wire antennas supported by end insulators.

The chart was developed using Visicalc (a registered trademark of VisiCorp), an electronic spreadsheet program on an Apple II+ computer. However, any spreadsheet program on a personal computer could have been used to do the job.

It is not necessary to go into the details of using the spreadsheet program. I will point out, however, to those unfamiliar with such programs, that they provide a convenient way to manage rows and columns of numbers and text, and for performing rapid arithmetic calculations on the numbers. In this chart, for example, once the formulas and frequencies were input, the antenna lengths were quickly calculated for each of the eight columns. The first version of the chart did not include the new WARC bands. Once I realised this omission, it was quite easy with the spreadsheet program to insert the additional frequencies and recalculate the entire chart.

For the benefit of those new to amateur radio, the chart shows the proper wire lengths for antennas at each significant amateur frequency in the HF bands. In general, vertical antennas are  $\frac{1}{4}$  wavelength high, dipoles are  $\frac{1}{2}$  wavelength long, and loops are one full wavelength in circumference. In addition, the chart shows the  $\frac{1}{2}$  wavelength plus five percent distance. This is used to find the length of a dipole erected in an inverted-Vee fashion.

For convenience and durability, I have had a copy of the chart laminated in plastic. The chart printed in this article can similarly be cut out and laminated.

FROM AMATEUR RADIO, September 1986

CONTINUED P3

A Mother took her small son (who had just started school) into a shop to buy him a pullover.

She was about to buy him a V-neck type pullover when her son

told her he didn't want one like that.

When asked why, he said, "My teacher wears one like that and her lungs keep popping out".

# An Antenna Length Chart

## ANTENNA LENGTH CHART

FREQUENCY MHz	WAVELENGTH-FEET				WAVELENGTH-METRES			
	1/4	1/2	1/2+5%	FULL	1/4	1/2	1/2+5%	FULL
1.8	129.87	259.75	272.73	519.49	39.58	79.17	83.12	158.33
1.825	128.09	256.19	269.00	512.38	39.04	78.08	81.99	156.16
1.85	126.36	252.73	265.36	505.45	38.51	77.03	80.88	154.05
1.9	123.04	246.08	258.38	492.15	37.50	75.00	78.75	150.00
3.5	66.79	133.58	140.26	267.17	20.36	40.71	42.75	81.43
3.6	64.94	129.87	136.37	259.75	19.79	39.58	41.56	79.17
3.7	63.18	126.36	132.68	252.73	19.26	38.51	40.44	77.03
3.8	61.52	123.04	129.19	246.08	18.75	37.50	39.38	75.00
3.9	59.94	119.88	125.88	239.77	18.27	36.54	38.37	73.08
4	58.44	116.89	122.73	233.77	17.81	35.63	37.41	71.25
7	33.40	66.79	70.13	133.58	10.18	20.36	21.37	40.71
7.05	33.16	66.32	69.63	132.64	10.11	20.21	21.22	40.43
7.1	32.93	65.85	69.14	131.70	10.04	20.07	21.07	40.14
7.2	32.47	64.94	68.18	129.87	9.90	19.79	20.78	39.58
7.3	32.02	64.05	67.25	128.09	9.76	19.52	20.50	39.04
10	23.38	46.75	49.09	93.51	7.13	14.25	14.96	28.50
10.5	22.26	44.53	46.75	89.06	6.79	13.57	14.25	27.14
14	16.70	33.40	35.07	66.79	5.09	10.18	10.69	20.36
14.1	16.58	33.16	34.82	66.32	5.05	10.11	10.61	20.21
14.2	16.46	32.93	34.57	65.85	5.02	10.04	10.54	20.07
14.35	16.29	32.58	34.21	65.16	4.97	9.93	10.43	19.86
18	12.99	25.97	27.27	51.95	3.96	7.92	8.31	15.83
18.5	12.64	25.27	26.54	50.55	3.85	7.70	8.09	15.41
21	11.13	22.26	23.38	44.53	3.39	6.79	7.12	13.57
21.1	11.08	22.16	23.27	44.32	3.38	6.75	7.09	13.51
21.25	11.00	22.00	23.10	44.00	3.35	6.71	7.04	13.41
21.45	10.90	21.80	22.89	43.59	3.32	6.64	6.89	13.29
24.89	9.39	18.78	19.72	37.57	2.86	5.73	6.01	11.45
24.93	9.38	18.75	19.69	37.51	2.86	5.72	6.00	11.43
24.99	9.35	18.71	19.64	37.42	2.85	5.70	5.99	11.40
28	8.35	16.70	17.53	33.40	2.54	5.09	5.34	10.18
28.5	8.20	16.41	17.23	32.81	2.50	5.00	5.25	10.00
29	8.06	16.12	16.93	32.24	2.46	4.91	5.16	9.83

### FORMULAS USED

1 Metre = 3.281 feet

Length of 1/2 wavelength antenna in metres =

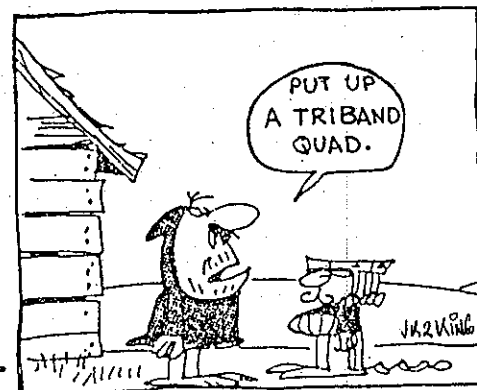
$(300 \times .95 \times .5) / \text{Frequency (MHz)} = 142.50 / \text{Frequency (MHz)}$  Length of 1/2 wavelength

antenna in feet =

$(300 \times .95 \times .5 \times 3.281 \text{m/feet}) / \text{Frequency (MHz)} = 467.54 / \text{Frequency (MHz)}$

NOTE: 1/2 wavelength + 5% is used for Inverted Vee Antennas.

Taken from A.R. Sep. 1986.



# I.A.R.S.

# FUND RAISING LIST.

## LIST NUMBER 3.

25 WEEKS COMMENCING ON THE 6th JULY 1987.

NUMBER	NAME ECT.	NUMBER	NAME ECT.
1		21	
2	N. BLANEY	22	C. VAUGHAN
3	I. NEILL	23	
4	T. MOWBRAY	24	
5		25	J. TAYLOR
6	J. SIMON	26	M. KEECH
7	J. WOODWARD	27	P. HOWCHIN
8	C. LACEY	28	
9		29	J. HAYES
10		30	K. CURLE
11	T. BROWN	31	N. KOOSADIE
12	G. PARSONS	32	D. CAPON
13	F. BROWN	33	M. McCONNELL
14	B. CHADBURN	34	M. WOODWARD
15		35	R. BALL
16		36	P. BALL
17		37	J. LAWER
18	R. Mc KNIGHT	38	G. DOWSE
19		39	P. HORNUNG
20		40	C. PROCTOR

## Go Loto! Multi-week PLAYERS COPY

1	2	3	4	5	6	X	X	3	4	5	6	1	2	X	4	5	6	1	2	3	4	5	6
7	X	9	10	11	X	7	8	9	10	11	12	X	8	9	10	11	12	X	8	9	X	11	12
13	14	15	X	17	18	13	X	15	16	X	18	13	14	15	X	17	18	13	14	15	16	17	18
19	20	X	22	23	24	X	20	21	22	23	24	19	20	21	22	23	24	X	20	21	22	23	24
25	26	27	X	29	30	X	26	27	28	29	30	25	26	X	28	29	30	25	X	27	28	29	30
31	X	33	34	35	36	31	32	33	34	35	36	31	32	33	34	X	36	31	32	X	34	35	36
37	38	39	40	1	37	38	39	40	3	37	38	X	40	5	37	38	X	40	7				

1	2	3	X	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	X	4	5	6
7	8	X	10	11	12	7	X	X	11	12	7	8	9	10	11	12	7	8	9	10	11	12	
13	14	15	16	17	18	13	14	15	16	17	18	13	14	X	16	17	X	X	14	15	X	17	18
19	20	X	22	23	24	X	20	21	22	X	24	19	20	21	22	23	24	19	20	21	22	X	X
25	X	27	28	29	30	25	26	27	28	X	30	25	26	X	28	29	30	X	26	27	28	29	30
31	32	33	X	35	X	31	32	33	34	35	36	X	X	33	34	35	X	31	32	33	34	35	36
37	38	39	40	2	37	38	39	40	4	37	38	39	40	6	37	38	39	40	8				

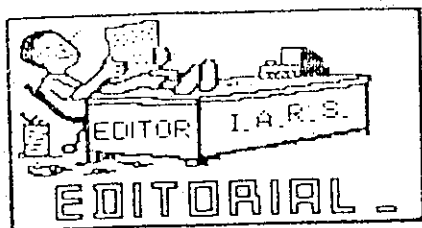
STANDARD GAME

IMPORTANT X YOUR SELECTED SYSTEM

X OUT NO OF WEEKS

AND BOX A Or B MUST BE CROSSED

BOTH MON. AND WED. DRAWS CROSS A MON. DRAW ONLY CROSS X



Officers elected were:  
 president: Bill Chadburn  
 VK2DYU. Vice President:  
 Keith Curle VK2OB.  
 Secretary: Tom Brown  
 VK2JTB. Treasurer: Dave  
 Henderson VK2VAV/YKQ.  
 Asst Treasurer: is the  
 Beast (Apple II).  
 General Committee:  
 Rob McKnight VK2MT, also  
 Peter Woods VK2BIT, and  
 Ray Ball VK2PHD/XCC.

The other Sub-committees  
 are generally as before  
 and are listed on the  
 back page of this news  
 letter. Any member able  
 to offer expertise or  
 effort in any field of  
 the Clubs activities is  
 most welcome to contact  
 the Sub-committee mem-  
 bers concerned.

Graeme VK2DUP is  
 stand-by net co-ordi-  
 nator and any net co-ord  
 person who is unable to  
 front up should contact  
 Graeme at Ph: 044-439059

Jim VK2EJH declined  
 re-nomination due to  
 pressure of a study  
 course on Club nights  
 but will be assisting  
 where possible.

### SPECIAL AUCTION

It was decided at the  
 July committee meeting  
 to hold an auction of  
 radio equipment donated  
 to the Club at the  
 August monthly meeting.

These are superseded  
 radio units in generally  
 going order and should  
 offer good possibilities  
 of conversion to Amateur  
 use. A general Club  
 auction is not intended  
 at this meeting.

## WOLLONGONG ALUMINIUM CENTRE

Available Ex Stock a Range of  
 ALUMINIUM:-

- \* Rectangular Hollows.
- \* Round Hollows.
- \* Square Hollows.
- \* Flat Bars.
- \* Channels.
- \* Cutting Service Available \*

All at COMPETITIVE WHOLESAL  
 PRICES. Suitable for building  
 your own antennas.

Situated At :-  
 79 Gipps St; WOLLONGONG  
 Located close to railway  
 crossing.  
 Phone: 299382 or 285932.

### LOTTO NEEDS A BOOST

Dave our secretary  
 reports that our FRL-3  
 is just past the break-  
 even point. This is dis-  
 appointing as we try to  
 keep LOTTO as our only  
 fund raiser but if it is  
 not fully subscribed our  
 outgoings are still much  
 the same. Since the  
 newsletter cost some 20%  
 more than the annual sub  
 for each member supplied  
 there is a need for fund  
 raising and LOTTO has so  
 far been a good single  
 method.

Members are urged  
 to take up the vacant  
 numbers or share one and  
 help keep us in the  
 black.

2. MX DX.

A Club member mobile near  
 Lithgow and Wallarawang  
 tuned on 146.850.  
 recently to hear Ray  
 VK2XCC noise free. Then  
 while at Bathurst working  
 the Orange repeater  
 caught up with VK7GO  
 (still hasn't changed it  
 to VK2) and surprisingly  
 had a contact with VK2EXN  
 Ian who was mobile at  
 Oberon at the time. After  
 the contact Gio came down  
 to Bathurst for a eyeball  
 with Morry VK2EMV and  
 family and sent 73's to  
 all his friends in IARS.  
 Gio is now back teaching  
 at Bathurst High School  
 after various adventures  
 in radio operating and  
 maintenance and taken up  
 residence in Orange. 73's  
 to Gio and YL Wendy and  
 hope to hear you on 80  
 metres soon.

Tony VK2ENX reported a  
 request for a trapped  
 vertical for Jeff VK2FEJ  
 as progress on setting up  
 a station for Jeff, a  
 white stick operator.

### SUPPORT FOR WHITE STICK OPERATORS

Tony VK2ENX is assisting  
 a local full call white  
 stick operator with his  
 station set-up. Another  
 interest arose when Peter  
 VK2XAN spoke on the  
 subject of assisting to  
 possible white stick op-  
 erators by the Club at the  
 July club meeting. Peter  
 offered to address a  
 meeting of the local  
 Blind Society on the  
 subject of Amateur Radio.

This offer was  
 excepted by the Club and  
 Peter will report  
 progress with this acti-  
 vity. Members with ideas  
 on this subject should  
 contact Peter VK2XAN on  
 2 meters. 146.850.

# SIMPLE ADD-ON TUNING INDICATOR FOR SEQTG DEMODULATOR

D C Hunter VK4ADC  
South East Queensland Teletype Group  
PO Box 184, Fortitude Valley, Qld. 4006

Since the introduction of the SEQTG TG170D demodulator PCB, in about 1980, some 300 boards have been sold throughout Australia and the Pacific. In the original design, the tuning indicator was in the form of a meter, which gave a steady indication when the receiver was correctly tuned to the incoming RTTY signal. The circuit described in this article allows the inclusion of two LEDs to make the tuning even easier.

One LED driver circuit is fed from the output of the mark channel bandpass filter in the demodulator, while another is, in turn, fed from the space channel. The audio signal from each channel is then fed to the respective peak envelope detectors and the resultant DC is used to vary the forward base bias current of the respective transistors. A LED, in series with a current limiting resistor, is then connected between the positive supply rail of the demodulator and the collector of each transistor.

No retuning of the demodulator is normally required after connection of the circuit to the final mark and space test points, however a quick tuning check is desirable. As the LED driver circuit is linear, the advantage of its level sensitivity can be utilised by reducing the mark or space audio tone level to the point where the particular channel LED is just glowing quickly.

The three bandpass trim pots can then be tuned for optimum response as indicated by the LED.

Since layout is reasonably non-critical, the construction is left to the individual, although veroboard or a PCB is recommended. Transistor types and component values can be changed to suit your spare parts supply, but within normal selection tolerances, as this design is relatively non-critical.

AR

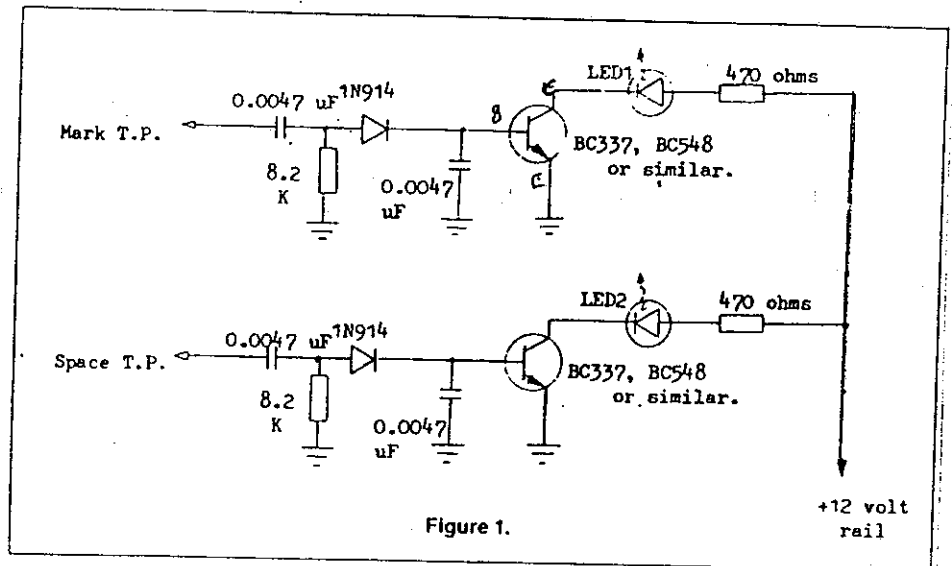


Figure 1.

TAKEN FROM AMATEUR RADIO.

## 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

### ON THE NET:

12th July 1987.

VK2ENX-Tony, Co-ordinator  
VK2BIT-Peter, VK2EBI-  
Kevin, VK2PHD-Ray.

19th July 1987.

VK2PZY-Dave, Co-ordinator  
VK2EBI-Kevin, VK2PHD-Ray  
VK2BIT-Peter, VK2ENX-Tony

26th July 1987.

VK2ENX-Tony, Co-ordinator  
VK2MT-Rob, VK2EBI-Kevin,  
VK2EMV-Morry, VK2PZY-Dave.

F.R.L-3. Winners

Week No: 1 R. McKnight.

Week No: 2 J. Woodward.

Week No: 3 J. Simons.

Week No: 4 I.A.R.S.

WHICHEVER WAY YOU LOOK AT IT  
YOU CANT GO PAST

**MARONA GARAGE**

FOR SERVICE CALL IN AND SEE

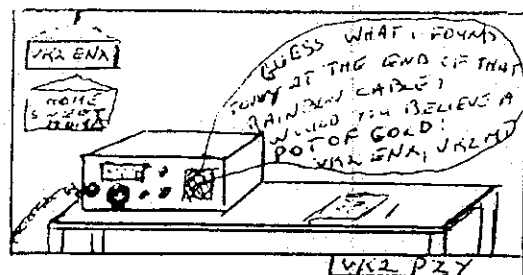
**PETER CHIECO**

For Your :-

- \* Electronic tune up \* Wheel balancing
- \* Front end alignment \* Brakes
- \* And also Rego Checks.

146 PRINCES HIGHWAY. CORRIMAL

PHONE: 84 5650



The shapely but very shy and timid secretary came into the psychiatrist's office. She stood nervously by his desk as he told her lie down on the couch.

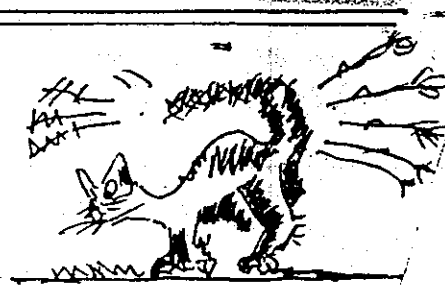
She batted her long eyelashes and said "Well, uh ..."

"Come, come my dear, how can I help you unless you lie down on the couch and submit to therapy?"

Finally she walked over to the couch, stretched out and eyed the doctor suspiciously.

"Now then," he said, "tell me how your troubles began."

She looked the medico straight in the eye. "Just like this ..."



### Mac Poostoe , the CAT .

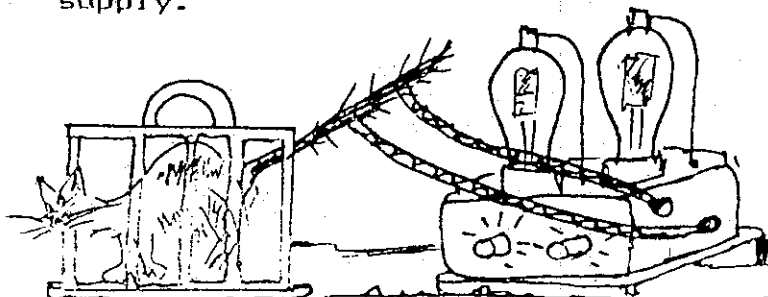
This is the tale of Mac Poostoe , the CAT , a SAGA of brave deeds and daring, it's the tale of the tail, Boys, which once saved the day, the tale of the tail he was wearing.

Now Mac Poostoe was owned by a Radio Ham, who one day just by chance on a trip, discovered his CAT had a thousand Volt drop, 'cross his tail, from the root to the tip.

Now Radio Hams , or at least so it seems, are a specialised type who I hear , are on the alert for some new source of power, to operate portable gear.

So Mac Poostoe the CAT was put in a cage, electrodes were tied on with care, and the "juice" was piped off to the Radio Shack, to fire up the tubes that were there.

But MacPoostoe's gone west now, he's with us no more, and I'll bet you are wondering why, whilst courting one night in a yard , down the block, he shorted his power supply.

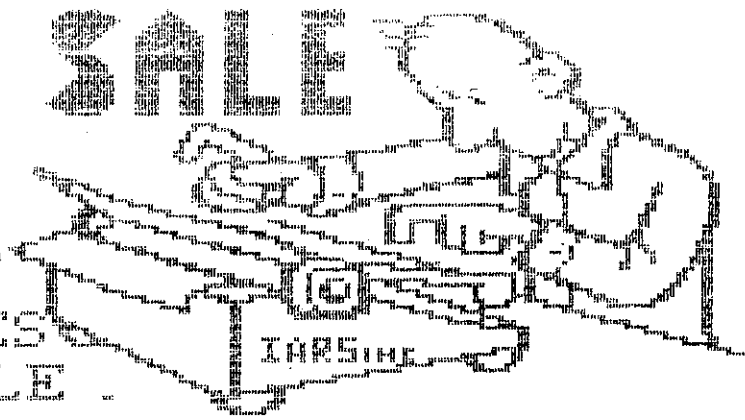


from RADIO & HOBBIES  
about 1947....  
from UK2XGJ - JOHN..

# CLEARANCE SALE

COME TO THE NEXT MEETING ON THE 11th OF AUGUST 1987 AND SEE THE GOODIES THAT ARE AVAILABLE.

ALL GOODIES WILL BE AUCTIONED OFF TO THE LUCKY BIDDER. SO BRING YOUR MONEY WITH YOU AND DON'T MISS OUT ON THE BARGAINS !!!!



## SO YOU CRACED THE BIG ONE

So, you have cracked the BIG ONE, you didn't think it could happen to you. When you woke up this morning you thought it was going to be just another ordinary Monday.

During the evening you were on your rig chatting away to anyone who wanted to have a ragchew with you. As the evening wore on you decided it would be warmer indoors sitting in your favourite old armchair.

You switch off the rig, rub your hands together and stamp your feet to try to get some circulation going then away you go to the warmth of indoors.

Settling down in your armchair you ask your XYL what is on the "Idiot Box" tonight. She tells you that the Monday night LOTTO draw is just about to be drawn, you decide to go and make a Cuppa, so away you go into the kitchen.

You ask your XYL why she screamed and fainted, she replies "we have WON a 40th share of 1st prize in your RADIO CLUB'S LOTTO, that could be about \$25,000 each, think of what we can get with our share darling".

Your XYL gets down the LOTTO COUPON that was being run by ILLAWARRA AMATEUR RADIO CLUB. She checks the numbers and suddenly your wife lets out a piercing scream.

You run into the lounge to find out what is wrong, you find your XYL laying on the floor in a faint. YOU have a moment of PANIC, then your XYL comes out of her faint, much to your relief.

You walk out of the room not saying a word. You get the suitcase down from the wardrobe and pack a few items into it. You look up your MOTHERS phone number and start to ring her up.

YOU KNOW don't you, that your going to be in the DOG HOUSE for the next few months. WHY?, because silly you forgot to get your club LOTTO subscription renewed didn't YOU. You thought you wouldn't win a large prize didn't you, well bad news chum you have to be IN IT TO WIN IT.

Do you want to be like this Amateur? if you dont then get in NOW and get your CLUB LOTTO ticket before its to late.

There are only 13 numbers left in the FRL3, so get yours now and in so doing help yourself and help YOUR CLUB to KEEP on KEEPING on.

VK2PZY(Dave)



# OLD DART REVISITED

## OLD DART REVISITED

Yours truly, recently took a trip back to the "Old Dart" and had a terrific time there.

Whilst there, I found time to make contact with the Amateur fraternity in the town of Vange.

I attended some of their meetings (held every thursday evening) and was welcomed with open arms.

I also managed to make contact with four G's and exchanged QSL Cards with them. I also visited some of their shacks, and during one Sunday whilst trying to get back into the Wollongong area (unsuccessful) made contact with a J.A. station.

This was from the shack of John G4xts. John showed me over a large sailing boat he has built in his back garden, and during the later part of this year intends sailing it over to Australia. So keep an ear open for John on maritime mobile in the future.

I took one of our clubs jumpers over with me and presented it to the Vange Club on our behalf. The jumper was auctioned off at one of their meetings for the pricey sum of 54 pounds (\$108).

The new owner intends to display his proud trophy on the wall

of his shack. So there you have it, a terrific holiday. Good sunny weather, good pints of beer (cold) and plenty of

good times. Marred only by 3 bombs found at Sydney airport, just as we were going to board the aircraft, also the long flight back (2 days) and the worst of all having to start back at work.

Could do with a months holiday to get over the other holiday. Best 73's to all club members.

VK2PZY (DAVE).

## NEWTEK-

## ELECTRONICS

WE STOCK:

ALARMS - ANTENNAS

BOOK - BOXES

COMPONENTS-COMPUTERS

HARDWARE - KITS - TOOLS

WIRE AND A LARGE RANGE

OF SEMICONDUCTORS FOR

THE PROFESSIONAL AND

HOBBYIST: 116 CORRIMAL

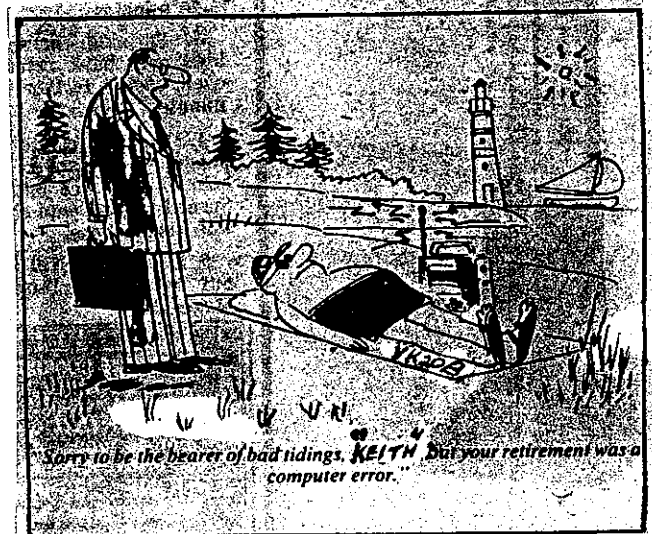
STREET. WOLLONGONG.

(JUST UP FROM THE HARP

HOTEL) PHONE: 27-1620.

## WANTED

HF trapped  
vertical for  
BLIND AMATEUR  
Please contact  
Tony, VK2ENX,  
on 28-5296.



# THE STORY OF AUSSAT

## AUSSAT - The Australian Satellite System

(Part: 3)

So far in this series of articles on AUSSAT, we've looked at the Satellites themselves, their orbital positions & the special B-MAC transmission system used. Now let's take a look at the control & the uses of these geo-stationary satellites.

The spacecraft will be monitored from Sydney & Perth and the communication traffic will be monitored by the Sydney, Perth, Brisbane & Adelaide Major City Earth Stations. AUSSAT has built eight Major City Earth Stations, one in each capital city. These will be located at carefully selected sites which provide, where possible, line-of-sight communications with central business districts & which experience low ambient microwave interference. Each Earth station will have at least one large antenna for communications traffic which will be 13 metres in diameter at all sites except for Brisbane & Darwin where they will be 18 metres to allow for the heavy rainfalls common to these two cities. The antennas will be provided with tracking to keep the satellites in view. Design features of the stations include eirp stabilisation, up-link compensation & built-in redundancy of some major components.

By far the biggest user of AUSSAT's present facilities is the ABC. It leases eight transponders on the satellites & uses satellite feeds for over 100 terrestrial TV transmitters & 36 radio transmitters. By linking the 30 watt high-power transponders to high gain antennas giving concentrated beams, isolated communities & single homesteads are provided with one ABC TV channel, one regional & two national radio programmes, (one in stereo). Due to the higher signal strength, small dish sizes of 1.2 - 1.8 metres are only needed. Also in the future, a commercial TV channel for the regional area covered by the spot beam will be provided. The ABC also leases two 12 watt transponders covering the whole of Australia for TV programme transfer between studios. SBS also distributes its "on-air" programmes to its regional transmitters by AUSSAT. Our local ABC Channel 5A, SBS Channel 59 & the ABC FM Radio Station at Knights Hill all receive their programmes thru' AUSSAT, a 72,000 klm round trip originating from the Sydney studios only 90 klms away. As can be seen the satellite path is somewhat longer than "as the crow flies", but the reliability of the satellite path is much, much greater than by the "old" terrestrial micro-wave links which by the increased number of repeater stations required to cover the necessary distance, is somewhat more prone to equipment breakdown &/or human error. (No human errors are possible in those "repeater stations" 36,000 klms above us!)

Due to the time taken by the RF signals to travel to the satellite & back, there is about a 3/4 of a second delay in our local ABC TV & Radio and SBS TV compared to their Sydney counterparts. If you have access to 2 FM radio receivers the delay can be heard if you tune one to the local ABC FM and the other to the Sydney ABC FM. (The delay sounds like an echo when listening like this.) Another "fun" example is to tune your VCR to 5A or 2 & your TV to the other channel (2 or 5A). Listen to the audio on the VCR thru' a stereo system & watch the picture on the TV. Putting the audio "in front" or "behind" the pictures provides a quite interesting effect. (Set up this system just before the XYL enters the room & then try to keep a straight face when she questions why the News Reader's voice is "slower" than his lips. Explain to her that sound waves travel slower than light waves or anything else you think she might believe!)

As well as the ABC, SBS & HACBSS there are many other users of AUSSAT. Let's have a look at some of them. The major commercial networks (Channels 7, 9 & 10) each use a single 12 watt transponder for "on-air" distribution of major programmes to their other city & country stations. (eg: Good Morning Australia, The Today Show, The Ray Martin Show, News, Willesee, TWT, Hey Hey it's Saturday, MTV, Wide World of Sports, Sounds, etc). These programmes are sent via the satellite without commercials between the segments. The local re-transmitting station inserts their own local commercials to match the "empty space" left between segments by the originating station. When not sending "on-air" programmes, the networks transponder is used to distribute news stories from here & overseas, programme promotional commercials (promos) for the network's programmes (this saves all the different stations making their own separate promos for the same shows) & to distribute the network programmes, like Sale of the Century, Perfect Match, A

# THE STORY OF AUSSAT CONTINUED

Country Practice, etc. (This saves the network stations sending out lots of copies for the same programme by courier. It also saves the tape from being damaged or lost & of course saves time.) Distribution of programmes, promos & news stories by satellite saves so much money, the hiring cost of the transponder is well & truly out-weighted. Also the satellite method of distribution is much, much cheaper than hiring microwave bearers from Telecom & the hassle of dealing with such an efficient & streamlined government department, such as Telecom is negated.

An example of this cost saving is our own local TV Station, WIN 4. During the summer period of '85 to '86 the station hired bearers from Telecom to bring the World Series Cricket and the Benson & Hedges Cricket from TCN 9 Sydney to Wollongong. The hiring cost, the many Telecom technical problems encountered with the Bearer & other numerous hassles prompted the company last Summer to investigate the feasibility of purchasing their own Satellite receiving dish & associated equipment to receive the Cricket (bypassing Telecom). The go-ahead was given & a 3.2 metre dish & equipment was installed. The results were technically & economically excellent. In fact the money from not hiring micro-wave bearers, more than paid for the cost of the satellite equipment.

Next month we'll conclude this series of articles on AUSSAT, by looking at the other users & reception problems caused by Mother Nature.

73's de VK2MT

— FOR —  
**COURTESY TO  
 AMATEURS AND  
 VALUE  
 IN  
 OUR AREA  
 NOT USUALLY  
 SEEN ELSEWHERE**

**WE RECOMMEND!!!!**

**CAVIONS**

**11. MOLLOY STREET. BULLI.  
 PHONE: 042-84-6838**

**TO ALL OUR CLUB  
 MEMBERS.**

**VK2AMW/P CALL BACKS:**

7th June 1987.  
 VK2CAG, VK2TPH, VK2KHE,  
 VK2XGJ, VK2EXN, VK2KCV,  
 VK2CX/2, VK2EWJ, VK2ENX,  
 VK2EMV. and on 80 metres  
 VK2DFL, VK2PZY, VK2FDU.

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**ON THE NET:**

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31st May 1987.  
 VK2EBI — KEVIN Co-ord:  
 VK2HQ — FRANK, VK2AXI —  
 BRIAN, VK2MT — ROB,  
 VK2PHD — RAY, VK2EMV —  
 MORRY.

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7th June 1987.  
 VK2MT — ROB Co-ordinator  
 VK2AXI — BRIAN, VK2ENX —  
 TONY, VK2FDU — PAUL,  
 VK2PZY — DAVE, VK2PHD — RAY.

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14th June 1987.  
 VK2ENX — TONY Co-ordinator  
 VK2EBI — KEVIN, VK2PZY —  
 DAVE, VK2BIT — PETER,  
 VK2PHD — RAY, VK2EMV — MORRY.

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21st June 1987.  
 VK2MT — ROB Co-ordinator,  
 VK2EBI — KEVIN, VK2PHD — RAY  
 VK2BIIT — PETER, VK2EMV —  
 MORRY.

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# THE ILLAWARRA AMATEUR RADIO SOCIETY. INC



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

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

**REPEATERS:**  
VK2RAW - 146.850. - (VOICE) VHF Mt Murray.  
VK2RAW - 147.575. - (PACKET) VHF Mt Murray.  
VK2RIL - 147.275. - (VOICE & R.T.T.Y) VHF Sublime Point.  
VK2RUW - 438.225. - (VOICE) UHF Hill 60 Port Kembla.  
VK2RIL - 438.725. - (VOICE & R.T.T.Y) UHF Sublime Point.

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

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

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

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

**MEMBERSHIP:** The Secretary, I.A.R.S. Inc, 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. Inc. 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. Inc, 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:** VK2DYU- BILL CHADBURN. 45 Beltana Ave, Dapto.

**VICE-PRESIDENT:** VK2OB - KEITH CURLE. 24. Beach Drv, Woonona.

**SECRETARY:** VK2JTB- TOM BROWN. 10. D'Keefe Cr. ALBION - PARK.

**TREASURER:** VK2VAV-YKQ-DAVE HENDERSON. 8. Gladstone st. Bellambi.

**GENERAL-COMMITTEE:** VK2MT - ROB McKNIGHT, VK2BIT - Peter Woods, VK2XCC/PHD - RAY BALL.

**REPEATER - CHAIRMAN:** VK2CAG - GRAEME DOWSE.

**REPEATER - COMMITTEE:** VK2EXN - IAN CALLCOTT, VK2EMV - MORRY .v .d. VORSTENBOSCH.

VK2DFK-MIKE KEECH, VK2MT-ROB McKNIGHT, VK2BIT-PETER WOODS, VK2TPH-PHIL HOWCHIN, VK2XGJ-JOHN SIMON, VK2FCP-FRED BROWN.

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

**QSL-CARD'S IN :** VK2BIT - PETER WOODS.

**PUBLICITY - OFFICER:** VK2VAV/YKQ - DAVE HENDERSON

**BROADCAST - OFFICER:** VK2ENX - TONY MOWBRAY. VK2ALU LYLE PATISON.

**CARTOONIST :** VK2AXI - BRIAN WADE.

**PROPAGATOR-EDITORS :** VK2JT - JOCK TAYLOR, VK2EMV - MORRY.v.d.VORSTENBOSCH, VK2PZY - DAVE CAPON.

**PRINTERS :** VK2DFK - MIKE KEECH. AND POSTED BY VK2BIT - PETER WOODS.

**SOCIAL-DIRECTOR :** VK2XCC/PHD - RAY BALL. D.O.C.LIASION VK2OB - KEITH CURLE.

**CANTEEN-MANAGER :** VK2DYU - BILL CHADBURN.

**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 : VK2PHD - RAY BALL.

5 th SUNDAY OF THE MONTH : VK2EBI - KEVIN MURPHY.

And on stand-by : VK2DUP - GRAEME PARSONS.