

BICENTENNIAL.



THE PROPAGATOR

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ILLAWARRA AMATEUR RADIO.SOC.INC.

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO. SOC. INC.
 VOLUME - 88, NUMBER : 7.
 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.

AGM WITH JULY MEETING

The July meeting was our A.G.M. and 38 members and guests were present. Changes to the main positions in the Club are Phil VK2TPH is now Club secretary and Denis VK2DMR is now treasurer while a new committee member is Peter VK2FPN.

Denis stood in for President Bill VK2DYU and thanked all the members involved in the Clubs activities over the past year for their efforts.

Denis urged all members to consider participating in the various subcommittees

which make the Club work.

Dave VK2VAV/YKB the retiring treasurer gave a financial statement showing a healthy years operations and stated the current fund raising LOTTO.4. was fully subscribed and is now nearly completed.

The FRL< 5 > LOTTO will be kicked off at the next Club meeting, so if you wish to participate in FRL.5. please get your name down by "hook or by crook." at the next meeting. DON'T MISS OUT.

Among the Visitors present was Stuart Riedel VK2TND. After the business was completed Brian Wade VK2AXI gave a very interesting talk and demonstration of SLOW SCAN T.V.

The talk commenced with a video tape explanation of FAST SCAN T.V. and S.S.T.V. This tape featured an AXI harmonic presenting a series of placards in an entertaining and educational sequence.

WANTED DEAD OR ALIVE

A Reward is offered for information leading to the arrest of Eddy Current, charged with the induction of an 18 year old coil called Milli Henry found half-choked, and robbed of valuable joules.

The unrectified criminal, armed with a carbon rod, escaped from Western Primary Cell, where he had been dropped in irons. The escape was planned in three phases.

First he refused the electro-lytes, then

he climbed through a grid despite the impedance of wardens, and finally went to earth in a magnetic field. He has been missing since Faraday. What seems most likely is that he stole an A.C. motor.

This is of low capacity and he is expected to try and change it for a megacycle, and to return ohm by a short circuit. He may offer series resistance, and he is a potential killer.

taken from I.M.A.C.

CONTINUED PAGE 6

VHF PACKET STOPPED ! ! ! !

FROM: AX4BBS 23-Jun-1988
VHF Packet Stopped !!!!!
Bulletin ID: 2230_AX4BBS
From: AX4BBS@AX4BBS

Well not Quite but VHF packet BBS may well be empty when you access them soon for whilst Packet on VHF is far superior to HF packet we all agree But with out HF forwarding between one country or one area and another There will be no interstate or Inter country forwarding.

This will happen if we HF BBS stations do not have a common frequency on ALL HF Bands but particularly on 20m You no doubt would have read all the bulletins going round regarding the 20m problem well you maynot be aware that this also effects you the VHF packet operator for without the HF Interstate and International HF Forwarding on 20m Packet as we know it today may die.

Stop and think about this for a moment and get your submissions in to the WIA FTAC urgently now before it is too late...

VHF operators the loss of 20m forwarding affects you as much as anyone else..

Rgds Brian VK4AHD AX4BBS
AsiaNet Brisbane

ON THE NET

17th July 1988.
VK2EMV-MORRY Coordinator
VK4KJS-PAUL.SUTTERS
VK2 EBI-KEVIN, VK2BIT-PETER,
VK2KGI-DAVE,
AX2DFL-DAVE, VK2PHD-RAY.

24th July 1988.
VK2PHD-RAY, Co-ordinator,
VK2EMV-MORRY, VK2EBI-KEVIN,
VK2NNJ-JOHN,
AX2DFL-DAVE, VK2BIT-PETER.

F.R.L.4 WINNERS

F.R.L.4. WINNERS
Week No: 21 D. CAPON
Week No: 22 W. KNOBEL
Week No: 23 P. HORNING
Week No: 24 P. HORNING

BE IN IT TO WIN IT

The current FRL.4 has now concluded. Please claim your existing number as soon as possible where desired so that we can get FRL.5. under way.

WOLLONGONG ALUMINIUM CENTRE

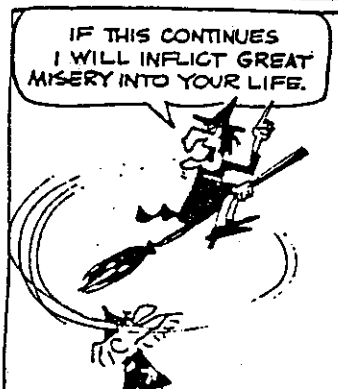
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TAKE FIVE

Here is that major constructional article that the Propagator Editor has been asking for. "TAKE FIVE" that is 2 transistors 2 resistors and 1 capacitor and what am I ?

A nicad battery charger of course. Nicle Iron Rechargeable Batteries. In todays modern world, most of us have several of these portable power units which need to be charged from time to time. Being in possession of a somewhat large varied junk box.

I decided that I would not buy a commercial nicad battery charger, but instead I would subject myself to the rigors of design and construction of a suitable device to do the required task.

Firstly I already had a 12 Volt supply so that solved the first design problem, I only now needed a way to regulate the charge current.

Buried away in the ARRL Handbook in the chapter solid state fundamentals is a simple constant current regulating circuit with 2 transistors and 2 resistors, all that is needed so they say. Bits and pieces were then assembled, soldered up according to the diagram, and connected up for test, you guessed it another homebrew circuit that did not work, it had a bug, the output current was erratic, just how could this be with this so highly complex

circuit designed from the ARRL handbook ?. Must be a wiring fault --- checked that out and found all to be correct, must be a component fault ? --- not likely I had checked them all before assembly (been caught before hi). So then what to do ?.

Big idea when in doubt fit a capacitor or diode or both -- this known as time proven method of fixing designers errors. Made my day it worked first try, a capacitor was fitted accross the

CONTINUED NEXT PAGE

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TAKE FIVE CONTINUED

base - emitter junction of the pass transistor and the output was immediately stable and constant, just what it had been designed to do.

Some trimming of the value of R_2 was required to obtain the 50 ma constant current, when this was completed test proved that this little wonder device would provide constant 50 ma output for 12 Volts input for a load from short circuit up. Notice I said 12 Volts in and 50 ma out, known the habits of the creature you deal with, the voltage across the load varies as the load impedance varies but the current remains the same hence the name constant current regulator.

Don't take my word for this get a meter and a few different loads and prove it to

yourself. The next step was to charge the flat nicad batteries in my case four AA type cells were series connected in series with the regulator and the cell voltages measured at approximately 1.0 Volts with a series current of 50 ma and after 12 hours the cells were approximately 1.3 Volts and the current 50 ma. No it wasn't a fluke.

I test discharged the batteries and repeated the charge and

discharge cycle twice then declared that success was mine after all these years I had a home constructed project that worked as designed. Over the past couple of years these knocked together junk regulators have worked perfectly so that now I have one for each of the battery types that I have namely 6 ma, 50 ma, 120 ma. All from the junk box at next to no cost, they are not trophy winning exhibits for the home constructors award but they do work well, and how else could I write so much from so little unless it was true. For those of you who don't think that this article was held over from the April issue here are a few tips.

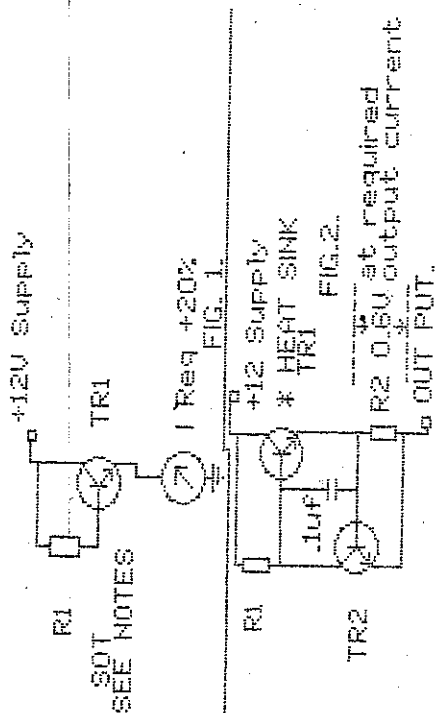
Select R_1 so that TR 1 will pass the required current plus 20%, fit a heatsink to TR 1 because under some conditions when the load is of low value almost all the supply rail at the output current is dissipated across TR 1. Use the temporary circuit in fig 1 to determine the value of R_1 , in some modern day equipment handbooks you see the value "SOT" for a component value, that is exactly the same method that many amateurs and experimenters use, called "SELECTED ON TEST", it is a fancy way of saying bung a value in and see what you get and change it till you get it right. Fig 2 shows the highly complex final circuit of the regulator...

By John VK2BHD July 1988

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VK2KWN



AGM CONTINUED

Brian then showed pictures and test patterns stored on audio cassettes and explained how the SSTV signal can be sent on amateur equipment.

Tones can be fed into the mic input and taken from the speaker output. Brian explained how computer memory chips in a converter accept a fast scan picture from a normal TV. Camera or V.C.R, convert it to digital form for storage in a memory.

This memory can then be scanned at the SSTV rate to give a slow scan signal.

The reverse happens for an SSTV monitor where the converter digitises a slow scan picture then scans the memory at a normal TV rate. The output can then be displayed on a domestic T.V. set.

Brian used the converter to demonstrate live pictures from a video camera being converted to SSTV then converted to a display on a normal TV with the image being replaced every eight seconds.

The definition of the SSTV pictures was surprisingly good and the talk was well received by all present. Many thanks to Brian for going to so much trouble to bring us an interesting talk and demonstration. Brian estimated the cost of building up a converter for SSTV at about \$200.

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To all our Club Members.

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SSB in working
order please
contact Jeff
VK2EWJ
or see me at
the meeting.

WANTED

To borrow the
service manual
for Yasu FRG7
Receiver please
contact VK2BLR
Mike Burton on
Ph: (042) 95-1175
Tnx Mike....

JULY COMMITTEE MEETING

John VK2XGJ, reported that work was continuing on Mount Murray and that batteries would need replacing soon. The problem which crunching noises on 146.850 appears to be due to rectification caused by corrosion on the stay fastenings.

Any member knowing a source of stainless steel bolts about 1/2" in diameter and 1.5 to 2 inches long to replace the rusty ones please contact John. or leave a message on the BBS on packet on 147.575.

Also any members wishing to help with a display on Fathers Day at the Truck Show would be welcomed by John.

Dave VK2KGI and Morry VK2EMV and Mike VK2DFK have agreed to continue their editing collating and printing of the PROPAGATOR for this year but want new blood to take over next year due to other calls on their time.

A broadcast officer is still needed for the Club and Tony AX2ENX said assistance with R.T.T.Y. gear could be possible. Tony reported on progress with VIBNSW and other matters included antenna work at SES and demo for SES by Club members. Printing supplies and labels for the newsletter were also organised.

SEMI CONDUCTOR

THEORY PART 3

Last month we looked at the IV characteristics of a diode, this month we begin by trying to analyse some diode circuits.

In our analysis of diodes, we will take an idealistic approach and consider the diode to be a perfect switch.

HALF WAVE RECTIFIER.

The circuit in fig 3 has an AC voltage E_{ac} applied to the diode in series with the load resistor R_L . When the positive half cycle of E_{ac} is applied to the P side of the diode, the diode is forward biased and conducts allowing current to flow in the circuit.

The voltage across R_L is equal to the product of the current flowing through R_L and it's resistance. I.E. The source voltage. When the negative half cycle of E_{ac} is applied to the P side of the diode, the diode is reverse biased and cannot conduct, therefore, no voltage will appear across R_L . The appropriate waveform can be seen in fig 4.

We can consider the diode as a one way switch that closes when E_{ac} is positive with respect to the P type material, and opens when E_{ac} is negative.

Although not a steady DC value, the

fluctuating voltage across R_L is a DC voltage because it only has one polarity. This fluctuating component is the AC ripple in the DC output. For half wave rectifiers the AC ripple frequency is the same frequency as the ac input.

POSITIVE CLIPPER.

Now let us find the waveform of voltage across the diode in fig 5. During each positive half cycle to the P type material, the diode is shorted out and current is flowing. The voltage across the short regardless of how much current is flowing must be zero as all the source voltage is dropped across the resistor.

Therefore throughout each positive half cycle the voltage across the diode is zero. During each negative half cycle, the diode is reverse biased and therefore open. With an open diode there can be no current flowing through the resistor, and hence there can be no voltage drop across the resistor.

With no voltage across the resistor, all of the source voltage appears across the diode. The resultant waveform can be seen in fig 6.

This circuit is called a positive clipper because it removes all of the positive

parts of the input signal. The circuit can be made into a negative clipper by reversing the direction of the diode.

More next month. 73's
PETER, VK2KHE.

fig 3

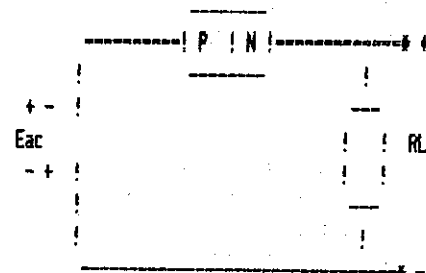


fig 4

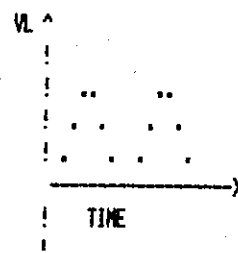


fig 5

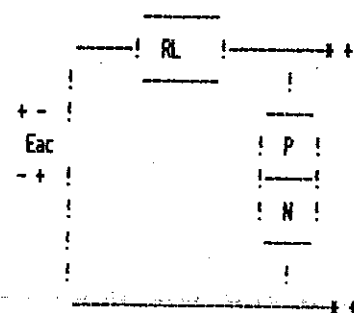
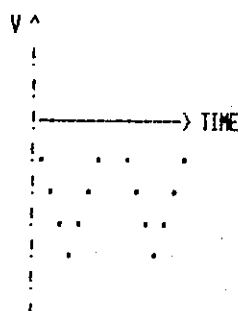


fig 6



NEXT MEETING 9TH AUGUST
GUEST SPEAKER JIM LYON S.E.S.

CATCHING SHEEP WITH A COMPUTER

A computer-controlled sheep catching system which prepares the sheep for automated shearing has been demonstrated for the first time at the MUSHEEP (Melbourne University Sheep Handling Engineering and Experimental Program) lab at Werribee, Victoria.

Paul Burrow, research fellow in agricultural engineering at the University of Melbourne, designed the system and described it in a paper at the Australian Wool Harvesting Conference, 1981 in Sydney.

Since then the system has been improved and the sheep-handling rate increased to about one sheep a minute. Burrow is aiming at a rate of four sheep a minute.

The system's main components are the catching box with sheep grab, the leg separator, the cradle and the head holder.

The sheep walks up a ramp to the catching box where the grab holds it and carries it forward to the leg operator.

The separator runs along the underside of the sheep, separating the right legs from the left and guiding them into grooves to eliminate transverse foot movement.

The cradle moves on tracks toward the separator until it is under the sheep. When the optically triggered foot clamps on the cradle sense feet within range, they close on

them preventing longitudinal movement.

To remove the sheep from the leg separator, the cradle has a hydraulically operated belly support.

It lifts the sheep off the separator, applying tension to the legs as the feet remain lower down in the fixed foot clamps.

Except for the head, the sheep is then restrained, and the sheep grab moves back to the starting position.

The cradle moves the sheep forward to the head holder which pulls the head down to a chine support by applying force behind the animal's ears.

An Exidy Sorcerer computer provides programmable control for the system.

"Although the sequence is not compli-

cated, it requires a certain number of logical decisions during each cycle."

"In particular some capacity to reverse is needed for the occasional sheep whose feet cannot be caught. In this case the animal is returned to the catching box and 'recycled'," he said.

According to Burrow, the apparatus build at Werribee "from bits and pieces" has demonstrated techniques which can be incorporated into a "test bed" in its present form.

The machinery should be redesigned as an integral part of a system, but careful thought should be given

CONTINUED NEXT PAGE

KEPLERIAN ELEMENTS FOR OSCAR 13

CATALOG NUMBER	19216
EPOCH TIME	88193.90000000
	MON JULY 11 21R36R00.00 1988 UTC
INCLINATION	57.6540
RA OF NODE	247.5388
ECCENTRICITY	0.6538919
ARG OF PERIGEE	187.2210
MEAN ANOMALY	357.2170
MEAN MOTION	2.89697960
DECAY RATE	0
EPOCH REV	57
SEMI MAJOR AXIS	25783.070
ANOM PERIOD	686.701959
APOGEE	36264.587
PERIGEE	2545.826
REF PERIGEE	3844.98368652
	MON JULY 11 21R41R18.5515

GENERAL INFORMATION ABOUT OSCARS AND SPECIFICALLY ABOUT OPERATING AD13 AND SUITABLE GROUND STATION EQUIPMENT MAY BE FOUND IN AN ARTICLE IN JUNE OST.

TAKEN FROM A.N.A.R.T.S.

FOR MOBILE OPERATORS

If you have Amateur Equipment in your car be very careful as to how you handle your insurance. After an incident in which one of my sons was involved and found his car (the middle of a sandwich) written off, he tried to recover some expensive audio equipment from the vehicle and was told it belonged to the insurance company.

Wondering how this would apply to an Amateur and his radio gear I fronted the NRMA (my insurers) and was told if my vehicle was written off the radio gear belonged to them. As I was not impressed with this answer I wrote them a letter so that I could at least have the proof of what they had told me in writing.

The last thing most Amateurs want is some clown in a wrecking yard playing Batman and Robin on the transmitting gear that has been left in his vehicle in the event it is a total loss after a smash. I feel that the DOC would also take a rather dim view of this.

After several weeks the Wollongong Office of the NRMA received word from Sydney that provided the equipment was noted on the insurance and the vehicle insured for its full value plus the

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value of the equipment the following procedures could take place if the vehicle was ever "written off".

1. I could apply to the claims manager to buy the gear back at a price to be negotiated at the time.
2. If I didn't want the equipment they could sell it to a licenced operator or.
3. They could destroy it. (In the meantime they had contacted DOC and were given the message on unlicenced operators).

CATCHING SHEEP WITH A COMPUTER CONTINUED

to the desirable level of automation, he said.

"Intermediate stages of mechanisation using varying amounts of labor are possible alternatives to the high level technology of fully automated shearing", he said.

"The complexity of the catching system can be reduced significantly by using a man to load the foot clamps and head holder. The two tasks take no longer than 10 seconds a sheep, and this will improve the catching rate because no sheep will need recycling".

He suggests a semi-automatic wool harvesting system where most of the catching, shearing, wool-handling and unloading are done by machine, with people carrying out the tasks requiring visual and manual co-ordination.

taken from T.S.News.

Far be it from me to cause you any falling out with your favourite insurance company but be warned - they have a very unbending set of rules when it comes to what is bolted into an insured vehicle. For your own benefit clarify the situation with them or you could be facing the daunting task of trying to get your gear back and they wont part with it.

Keith VK2OB.

HOW TO USE

A REPEATER

With novice licensees just starting to arrive on the two metre band now would be a good time for a bit of quick instruction - and a few timely reminders for the 'old hands' - on correct repeater usage.

Most of us know what a repeater is - a transceiver on a remote mountain-top which directly retransmits its input on a slightly different frequency. Obviously, it's a good way to increase your operational range - particularly if you're using hand-held equipment or compact antennas.

However, even many regular repeater users have a number of bad habits which it's good practice to avoid.

DON'T HOG IT!

There's nothing worse than a couple of stations getting onto a repeater and waffling endlessly. A good rule of thumb - particularly in the larger cities - is to keep your QSO to a maximum length of about 10 minutes.

Where there's a large group don't forget there's doubtless plenty of other people patiently waiting their turn.

KEEP YOUR OVERTS SHORT.

It's a pretty safe bet the repeater timers have never had it so good since a few new arrivals a fortnight ago! DOTC regulations

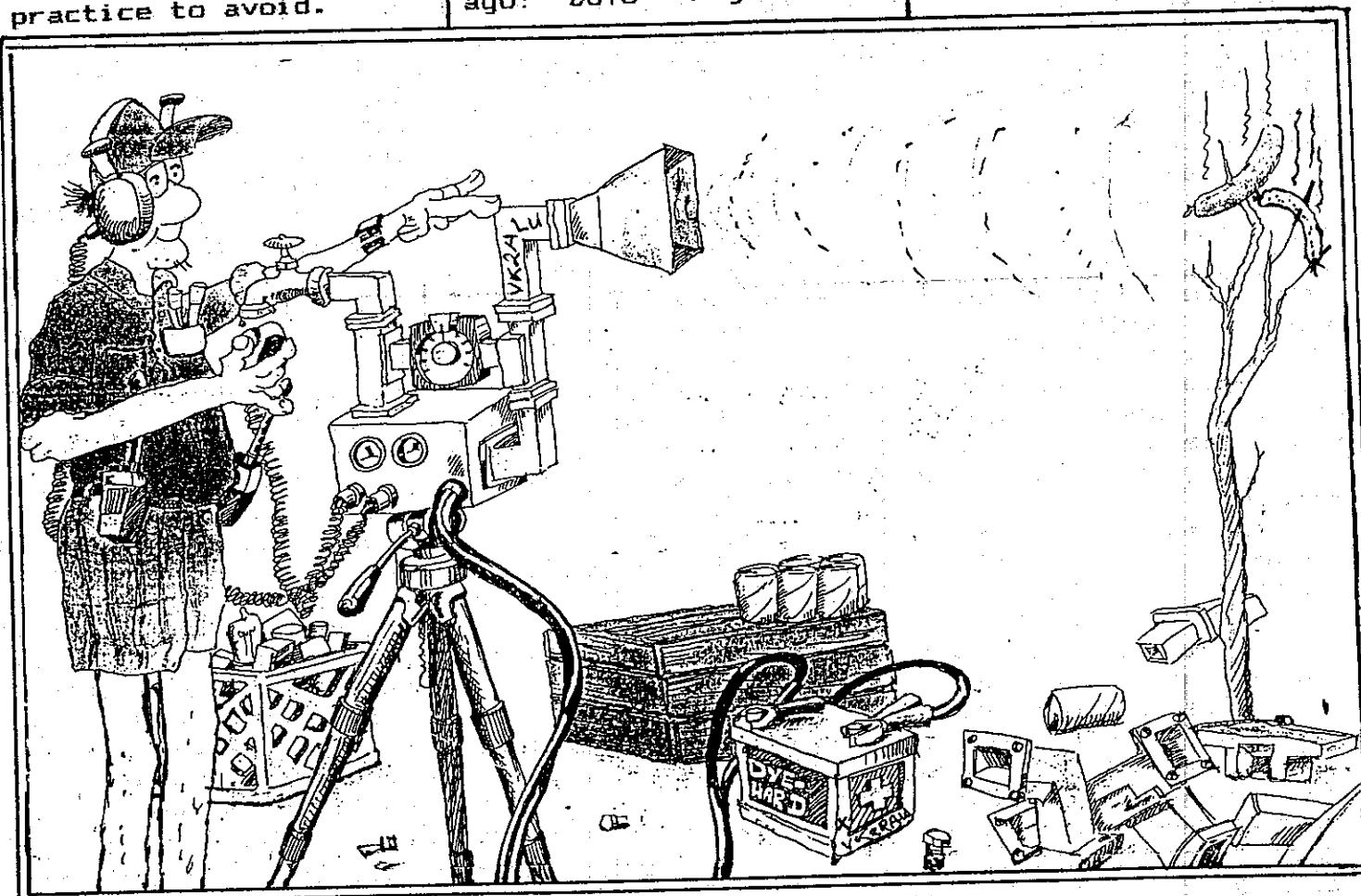
stipulate the fitment of a timer to insure the devices do not put endless unwanted carrier to air.

The timers are set for widely varying times often as short as 2.5 minutes, but sometimes as long as 10 minutes in remote centres, and simply cut the carrier if not reset. The best way to make sure you don't fall foul of the timers is to make sure the repeater output signal closes down before you commence your transmission. Although some of the more recent repeaters have a short tone signal during a long 'tail' to indicate timer reset.

DON'T GIVE YOUR CALLSIGN EVERY 10 SECONDS!

Sometimes you'll hear conversations bordering on the absurd... "VK2...,

CONTINUED NEXT PAGE



HOW TO USE A REPEATER CONTINUED

this is VK2... Have you got there yet? VK2... from VK2..." and the equally silly reply "VK2... No. VK2...,this is VK2... by." The cycle repeats umpteen times until the defenceless listeners are ready to grab the rig and chuck it straight out the nearest window!

Remember you do not need to identify your station every ten seconds, so there's little point wasting time with unnecessary IDs. Things move more quickly on the densely populated repeaters particularly during rush hour!

LET THE BREAKERS GO AHEAD.

Emergencies can and do happen as we're driving around, and there's nothing quite as convenient in an emergency as a microphone to pick up.

If you're having a QSO on a repeater and you hear a breaking station come up between overs let that station proceed immediately. It may be life and death.

Remember you're not on an HF band where you can tune at will with pretty much the same results.

Breakers must always be given priority! But please.... if you are going to break in on another station's contact, thank the stations, make your call, then get out of the way! It's just a little naughty to take a channel over for a chat

with someone if it's on a quick break.

WHEREVER POSSIBLE, QSY!

Once you've made contact see if there's a reasonable path direct to the station you're working and QSY off the repeater frequency. Don't forget these devices are the VHF equivalent of the most popular calling channels, and shouldn't really need to be tied up by two stations within easy simplex range. You'll be surprised just how far you can get with even a modest 10 watts and a good antenna on two metres.

LISTEN BEFORE YOU TRANSMIT!

Not just a two metre rule, this, but you'd be surprised at the number of operators who don't think to listen on the channel before hitting the PTT.

Better by far to put the brain in gear before selecting 'drive' with the mouth..

Using a repeater is largely a matter of commonsense added to a fair amount of courtesy. You can have a ball on the repeaters, but people will quickly tire of you spend half your waking hours jabbering through a repeater.

But above all, have fun, two metres is nothing like 80, 15 or 10, so you've got a whole new world waiting out there!

Take note... ED.
Taken from A.R.A.

ANTENNA TUNER

Rohde & Schwarz has developed three fully automatic antenna Tuning Units for its radio equipment family HF 850, the compact model FK 852 C1 for general purpose use, the naval version FK 852 C3 for use under harsh conditions, and the extremely fast FK 852 H2 for frequency hopping and with learn capability.

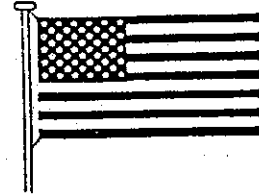
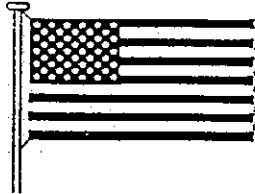
These antenna tuners are used to match any type of electrically short antenna (eg whip, rod, long wire, broadband) to the transmitter or transceiver output stage delivering an output power up to 150W PEP in the range from 1.5 to 30 MHz. Features common to all three models of the FK 852 series are fast and fully automatic, typical within one second, due to a digital control and tuning concept, low probability of intercept (LPI) thanks to silent tuning within less than 20ms in 100 preset channels.

The FK 852 H2 is a fast antenna tuner, as required for frequency hopping within the entire shortwave range from 1.5 to 30 MHz. The unit also has a learn facility, i.e. the tuning data (equipment settings) are stored in a memory after each completed tuning under the corresponding frequency and are recalled again when the respective frequency is called up a new.

TAKEN FROM BBS

NOWRA BRIDGE - THE AMERICAN CONNECTION

For well over 25 years after the establishment of a village at Nowra in the mid 1800's, the only means of crossing the Shoalhaven River was by punt. In 1876 it was planned to build a timber bridge at a cost of 12,000 pounds. However, in 1878 an additional sum was allocated and designs invited for an iron structure. The bridge, built in 20 months in 1879-80, is 340 m long and 5.8 m wide between kerbs, and was the longest then built for the NSW Department of Public Works.



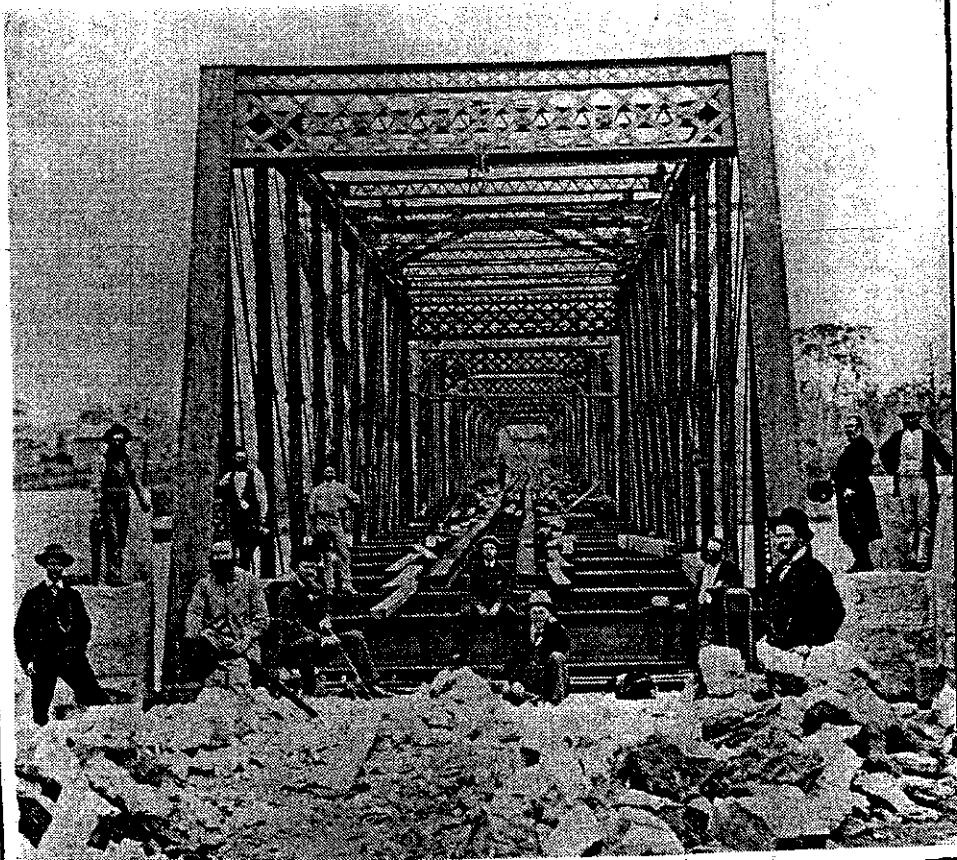
The American connection is that it was designed and constructed by Edgemoor Iron Company of Wilmington, Delaware, USA.

The "Illustrated Sydney News" of 4 September, 1880 reported that: "The first span of the superstructure...has just been swung into position...It was put together and swung into position by fifteen men in six days." A later description in the "Australian Graphic" of 25 May 1889 said: "The eight long spans are of American manufacture, being supplied by the Edgemoor Iron Company, Delaware, USA. The 50-foot span is of Sydney manufacture. The bridge is carried on nine piers and a stone abutment; each pier consists of two columns of cast-iron cylinders braced together with wrought-iron bracing, the cylinders being sunk to a firm bed and filled with concrete. The cylinders are colonial work, having been cast at the Atlas Foundry, Sydney, and are quite equal to any received from foreign countries..."

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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 Transmitted on 147.275.VHF, and relay on 3.562.Mhz. +/- QRM. Callbacks taken immediately afterwards. The voice broadcast will be held straight after the WIA Broadcast on 146.850.Mhz < VK2RAW > and 3.562.Mhz +/- QRM.

W.I.A. RELAY: On 146.850. at 10.45.am. and at 7.15.p.m. each Sunday.

CLUB - NETS: On 3.562.Mhz. SSB +/- QRM on Sunday at 8.30.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 \$12 per annum; students & pensioners concessional members \$ 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: VK2TPH- PHILL HOWCHIN. 12. Mawarra Ave, Dapto.
TREASURER: VK2DMR- DENIS MCKAY. 17 Doncaster street Corrimal.

GENERAL-COMMITTEE: VK2BIT - Peter Woods, VK2XCC - Ray Ball, VK2FPN - Peter. (?)

REPEATER - CHAIRMAN: VK2XGJ - JOHN SIMON.

REPEATER - COMMITTEE: VK2CAG - GRAEME DOWSE, *VK2EXN - IAN CALLCOTT, VK2KHE - Peter Tomlin, VK2FPN - Peter, *VK2EMV - MORRY v.d. VORSTENBOSCH, VK2MT-ROB-McKNIGHT, VK2BIT-PETER WOODS, VK2FCP-FRED BROWN.

QSL-CARD'S OUT : vacant (?)

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

PUBLICITY - OFFICER: vacant (?)

BROADCAST - OFFICER: VK2ENX - TONY MOWBRAY. vacant.... (?)

CARTOONIST : VK2AXI - BRIAN WADE.

PROPAGATOR-EDITORS : VK2JT - JOCK TAYLOR, VK2EMV - MORRY.v.d.VORSTENBOSCH, VK2KGI - 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: STARTING AT 8.30.p.m.

8.30.p.m.	FIRST SUNDAY OF THE MONTH :	VK2MT - ROB McKNIGHT. (?)
	2 nd SUNDAY OF THE MONTH :	VK2ENX - TONY MOWBRAY. (?)
	3 rd SUNDAY OF THE MONTH :	VK2KGI - 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. (?)