THE PROPAGATOR

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY

PO BOX 1838 WOLLONGONG NSW 2500

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MEETINGS ARE HELD ON THE SECOND MONDAY OF EACH MONTH (EXCEPT JANUARY) AT 7.30 P.M. IN THE CONGREGATIONAL HALL, CORNER OF COOMBE AND MARKET STREETS, WOLLONGONG. VISITORS ARE WELCOME TO ATTEND MEETINGS.

NOTICE OF MEETING.

This month's meeting will be held on Monday, March 14th, at the above location, and will be the occasion of the ANNUAL GENERAL MEETING of the Illawarra Amateur Radio Society, with election of officers for 1983.

Have YOU considered nominating for a position?

You will find the positions to be declared vacant on the back cover of this 'Propagator'.

LAST MONTH'S MEETING.

The February meeting of the I.A.R.S. was held on February 14th in the Congregational Hall, Wollongong, and was attended by some 50 members.

President Keith VK2OB opened the meeting with 'good luck' wishes to those taking the exam next day, and then asked anyone who would like to see particular items in the Club Store to contact Paul VK2DZJ.

The new repeater for Sublime Point which was on view had been home-brewed by Graeme VK2CAG, and in drawing our attention to the high quality workmanship, Keith told us that Graeme had won the NSW W.I.A. homebrew contest.

Congratulations Graeme!

Denis VK2DMR brought the attention of the meeting to the Novice and Full Call tech. classes now running, and mentioned the 'Construction' class Wednesday nights. Lyle VK2ALU said that this is the '2-Way Users' Radio Course' and that although short of staff, the uni has a good workshop. He told us of the need for exhaust fans for the Moonbounce Project - anyone who can help please see Lyle.

The Raffle Prize of a Kambrook Light and Power Reel was won by Fred VK2YSB.

After a period spent 'ragchewing' the meeting closed with the usual tea, coffee and biscuits.

CREDIT WHERE CREDIT IS DUE:

We are indebted to Ian Eddy VK2DGA of A.N.A.R.T.S. for the contribution 'LOOP POWER SUPPLIES FOR RTTY' published in the February 'Propagator'.

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REPEATER REPORT FROM GRAEME VK2CAG

THE LAST 12 MONTHS SAW A TREMENDOUS AMOUNT OF ACTIVITY IN REPEATERS IN THIS AREA. THIS TIME LAST YEAR WE HAD ONE LICENCED REPEATER IN OPERATION (CHANNEL 6850 AT MT. MURRAY) , AND ONE UHF 70CM. REPEATER OPERATING ON TEST AT A TEMPORARY LOCATION.

DURING THE YEAR WE HAVE UP-GRADED THE 6850 REPEATER TO GIVE BETTER COVERAGE AND TO BE MUCH MORE RELIABLE. ALSO THE 70CM REPEATER CHANNEL 8225 WAS MOVED TO ITS PERMANENT LOCATION AND THE 70CM ACTIVITY HAS INCREASED GREATLY IN THIS AREA.

WE CONDUCTED A SURVEY TO SEE WHAT THE MAJORITY OF THE MEMBERS WANTED IN THE WAY OF REPEATERS AND THE RESULT WAS THAT A SECOND 2 METRE AND 70CM REPEATER WERE DESIRABLE TO GIVE A BETTER SIGNAL ON THE COAST, AND IN PARTICULAR IN THE NORTHERN SUBURBS OF WOLLONGONG THE SECOND 70CM REPEATER WAS NOT CONSIDERED NECESSARY AT THIS STAGE, BUT LOOKING AT THE RATE OF FREQUENCY ALLOCATIONS BEING ALLOCATED TO OTHER CLUBS, WE THOUGHT IT WOULD BE WISE TO APPLY FOR ONE WHILE THERE IS STILL A CHANCE TO GET ONE.

WE NEGOTIATED WITH THE BULLI PARK TRUST, AND GOT PERMISSION TO USE THE FIRE TOWER AT SUBLIME POINT FOR THE NEW REPEATERS. HOWEVER, THE FIRE TOWER WAS NOT READY FOR OUR OCCUPATION BY THE TIME THE LICENCES FOR THE REPEATERS CAME THROUGH. WE FURTHER NEGOTIATED AND CAME UP WITH AN ALTERNATIVE SITE CLOSE TO THE FIRE TOWER, BUT MORE ACCESSIBLE AND CLOSER TO 240 VOLT POWER.

AT THIS STAGE, THE 2 METRE REPEATER IS BUILT AND READY TO GO AND THE 70CM REPEATER (A PHILIPS SC9) HAS BEEN FITTED WITH CRYSTALS AND REQUIRES ONLY AN IDENT BOARD TO MAKE IT FULLY OPERATIONAL.

THE REPEATER CUBICLE AND BATTERY BOX HAVE BEEN MOUNTED AND THE 240 VOLT POWER IS CONNECTED. ALL THAT REMAINS TO BE DONE IS TO MAKE UP AND MOUNT A 40 FT. MAST ONTO THE EXISTING MAST WHICH CARRIES THE ANTENNA FOR A COMMERCIAL VHF SERVICE.

THE INSTALLATION OF THE CUBICLE AND CONNECTION OF POWER WAS DONE ON SATURDAY FEB. 26, AND A BAR-B-Q WAS HELD AFTERWARDS AND WAS ATTENDED BY VK2CAG + XYL AND HARMONIC, VK2EXN + XYL, VK2KJH AND VK2EMV.

THE NEW 2 METRE REPEATER SHOULD BE ON AIR VERY SOON --- BY THE TIME THIS PROPAGATOR REACHES YOU.

THE NEW 70CM REPEATER IS AT THE BOTTOM OF THE LIST OF PRIORITIES, AND IT WILL BE PUT INTO OPERATION WHEN THE 2 METRE INSTALLATION IS FULLY OPERATIONAL AND FREE OF 'BUGS'.

THE NEW 2 METRE REPEATER (CHANNEL 7275) WILL WORK THE SAME AS THE 6850 REPEATER WITH A TIME-OUT PERIOD OF 4 MINUTES. THE ONLY NOTICEABLE DIFFERENCE IS THAT THERE WILL BE A LOW PITCHED 'BEEP' AT THE END OF 4 MINUTES OF CONTINUOUS TRANSMISSION TO INDICATE TO THE LISTENER THAT THE PERSON TALKING IS ABOUT TO TIME OUT.

WE WERE SUCESSFUL IN GETTING THE SAME CALLSIGN FOR BOTH THE 2 METRE AND 70CM REPEATERS, VK2RIL. HOPEFULLY THIS WILL ATTRACT A SINGLE LICENCE FEE AND WILL SAVE US A BIT WHEN IT COMES TO RENEWING THE LICENCES. THIS PRIVILEDGE IS ONLY AVAILABLE TO CO-SITED REPEATERS

THE NEW REPEATERS ARE SET UP SO THAT THEY CAN EASILY BE CONNECTED TO A MICROPROCESSOR CONTROLLER WHICH WILL ENABLE THE REGENERATION OF RTTY TONES AND GIVE THE USER ACCESS TO MESSAGE STORAGE, TEST MESSAGES, CLUB NOTES, GENERAL REPEATER INFORMATION, AND MORE AS WE CAN THINK OF THEM. MORE ON THIS LATER ON AS WE GET CLOSER TO GETTING THE CONTROLLER GOING. BOTH NEW REPEATERS ARE DESIGNATED AS -'RTTY COMPATIBLE'- THAT IS, THE OUTPUT MODE WILL BE THE SAME AS THE INPUT --- WHILE IN RTTY MODE IT WILL IGNORE VOICE , BUT IT WILL AUTOMATICALLY SWITCH BACK TO VOICE MODE IN THE ABSENCE OF A SIGNAL. IN RTTY MODE THE TIMER IS EXTENDED TO 10 MINUTES.

WELL, THATS WHERE WE ARE UP TO AT THE MOMENT.
SINCE ERIC VK2YVF WENT TO NEW GUINEA. DAVE COLLESS VK2EZY, OF MOUNT MURRAY HAS JOINED THE COMMITTEE, AND LIVING JUST A STONES THROW FROM THE 6850 REPEATER SURE MAKES IT EASIER ON THE REST OF US WHEN MAINTENANCE HAS TO BE DONE ON IT.
FINALLY, I WISH TO THANK ALL OF THE CLUB MEMBERS WHO HAVE HELPED OUT DURING THE YEAR. NO MATTER HOW SMALL THE CONTRIBUTION MAY HAVE BEEN, WITHOUT THE HELP OF ALL THESE PEOPLE WE WOULD NOT HAVE BEEN AS FAR ADVANCED WITH THE REPEATER PROGRAM AS WE ARE.
THANKS TO:- VK2FE VK2OB VK2YKQ VK2KEY VK2EMV VK2KFI VK2VXS VK2EXN VK2YVF VK2DMR VK2BHO VK2JT VK2DZJ VK2EZY VK2KSS VK2KJH VK2DJ

73 FROM GRAEME VK2CAG

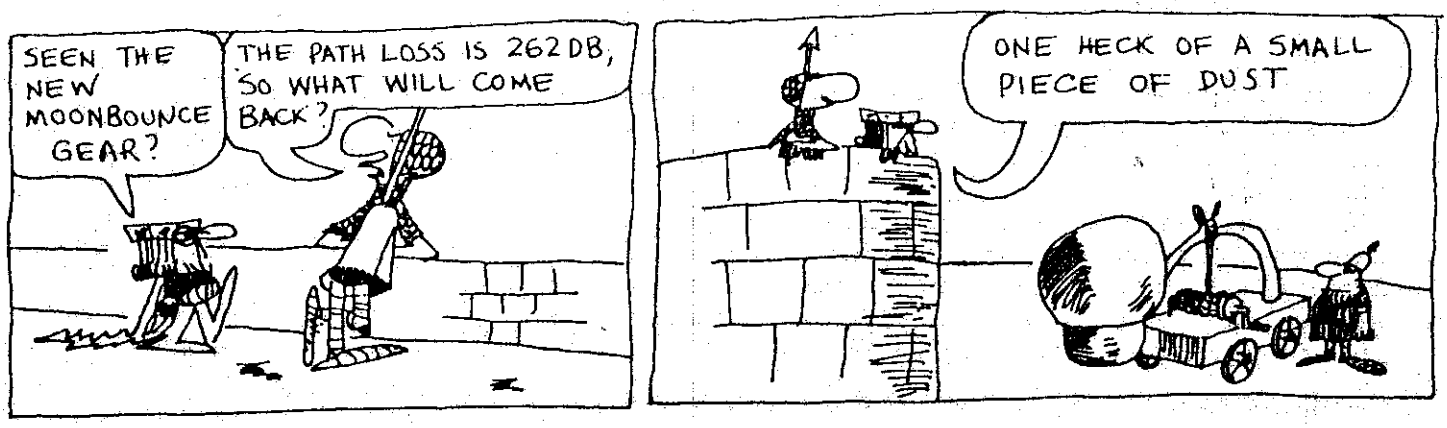
LATE FINAL EXTRA

ITS OFFICIAL

The licence has now been recieved for both of the repeater systems for Sublime Point.Both of the repeaters will have the callsign VK2RIL

AUCTION

THE 80 WATT 2 METRE AMPLIFIER THAT WAS USED IN THE CHANNEL 5 REPEATER WILL BE AUCTIONED AT THE MEETING. THIS AMPLIFIER GIVES OUTPUT OF 80 WATTS WITH A DRIVE OF 3 TO 7 WATTS. IT USES A QQE06/40 VALVE, IT HAS A BUILT IN FAN AND IS SELF-CONTAINED WITH ITS OWN 240 VOLT POWER SUPPLY. IT HAS 2 CO-AX RELAYS FOR THE INPUT AND OUTPUT SWITCHING. METERING FACILITIES ARE FOR DRIVE, ANODE CURRENT AND RELATIVE RF OUTPUT. RF SENSING OPERATES THE RELAYS AND SWITCHES THE AMPLIFIER INTO CIRCUIT WHEN INPUT DRIVE IS PRESENT. WHEN THE DRIVE CEASES, THE RELAYS DROP OUT AND IT CONNECTS THE ANTENNA STRAIGHT THROUGH TO THE RIG FOR RECEIVING. THE UNIT IS CONTINUOUSLY RATED AT FULL OUTPUT SO IT IS GOOD FOR RTTY.
THE PROCEEDS WILL BE SPENT ON THE ODDS AND ENDS OF HARDWARE AND FITTINGS NEEDED FOR THE ANTENNA INSTALLATION AT SUBLIME POINT.



Predictions and comments

SMITHSONIAN INSTITUTION

I am tired of all this thing called science here. . . . We have spent millions in that sort of thing for the last few years, and it is time it should be stopped.

Senator Simon Cameron (1901)

AIRCRAFT

We hope that Professor Langley will not put his substantial greatness as a scientist in further peril by continuing to waste his time, and the money involved, in further airship experiments. Life is too short, and he is capable of services to humanity incomparably greater than can be expected to result from trying to fly. . . . For students and investigators of the Langley type there are more useful employments.

New York Times, December 10, 1903, editorial page

The demonstration that no possible combination of known substances, known forms of machinery and known forms of force, can be united in a practical machine by which man shall fly long distances through the air, seems to the writer as complete as it is possible for the demonstration of any physical fact to be.

Simon Newcomb (1835–1909)

ALTERNATING CURRENT

There is no plea which will justify the use of high-tension and alternating currents, either in a scientific or a commercial sense. They are employed solely to reduce investment in copper wire and real estate.

My personal desire would be to prohibit entirely the use of alternating currents. They are unnecessary as they are dangerous. . . . I can therefore see no justification for the introduction of a system which has no element of permanency and every element of danger to life and property.'

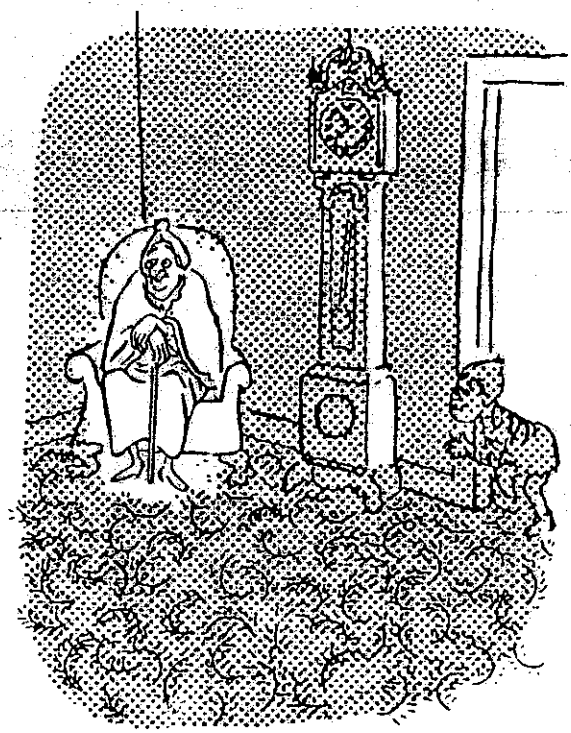
I have always consistently opposed high-tension and alternating systems of electric lighting, not only on account of danger, but because of their general unreliability and unsuitability for any general system of distribution.

Thomas A Edison 1889

RADIO

In 1913 Lee de Forest, inventor of the audion tube, was brought to trial on charges of fraudulently using the US mails to sell the public stock in the Radio Telephone Company. The District Attorney charged that

'De Forest has said in many newspapers and over his signature that it would be possible to transmit the human voice across the Atlantic before many years. Based on these absurd and deliberately misleading statements, the misguided public . . . has been persuaded to purchase stock in his company.'



Little Willie, full of glee,
Put radium in Grandma's tea.
Now he thinks it quite a lark
To see her shining in the dark.

Moonbounce Report - March 1983

Further terminations have been made for the dish drive motor supply cables and the declination drive junction box has been replaced, ready for final wiring connections to the motors. Coaxial cables have been run between the operating room and the dish cubicles.

The equipment shelving units have still to be cleaned up and repainted.

The feed tripod apex plate and plugs are being made up by Ian VK2EXN and his assistants.

The teflon based circuit board has been produced for the low noise receiver preamplifier, but some of the components are still awaited.

The transmitter is now giving 90 watts output on 1296MHz as a result of replacementof the two origional tubes in the power amplifier by those received from Chris VK5MC. The two tubes are thus approaching the limit of their rating but it is hoped to get about 120 watts output eventually, by the addition of a transistor amplifier stage between the transverter output and the present tube type driver stage. Some detuning is occouring in the plate circuit of the power amplifier due to the heat generated, which is commonly experienced in coaxial amplifiers at these power levels and frequencies.

Thanks to Geoff VK2BQ, two small motor driven units have been obtained which, with a slight amount of modification, will provide remote tuning for the power amplifier anode circuit. This will allow the transmitter output to be maintained at maximum by retuning from the operating room even though the power amplifier is located up on the dish to get maximum power to the antenna feed by the reduction of feedline losses.

The digital callsign keyer boards and some components have been received from Peter Z25JJ. This unit will provide automatic transmission of 'CQ de VK2AMW' which will provide a 'breather' between contacts and/or allow us to adjust equipment while making our presence known to other stations.

The gears are now on hand for the new declination selsyns and readout, but some will need modification in the University workshop before they can be installed.

It is hoped to have the next working day on the 5th March.

Lyle VK2ALU.

DOI DOINGS - (and an appeal for help!)

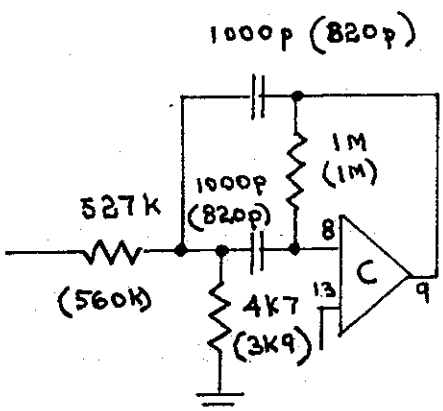
Like many of you, I acquired a Siemens teleprinter when they became available at low prices locally last year, altnough at that time I had only a vague idea what I would use it for. By following the instructions given in the October issue of the Propagator I was able to get it going successfully in local loop but later articles describing how to connect it up to a modulator were, it seemed to me, putting the cart before the horse. What I wanted first was to get the machine operating in receive before I worried about modulators, and for this I needed information on a demodulator.

In the A.N.A.R.T.S. magazine "Arewise" the DT600 demodulator kit is described and available, but I thought I'd like to play around a bit first with the 'Simple Solid State RTTY Demodulator' in E.A. for March 1977, and learn a bit as I went. I already had most of the bits anyway.

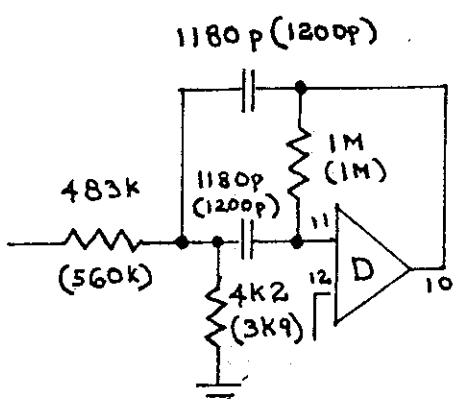
This demodulator contains an LM3900 Norton quad amp i.c., a 741 op amp and three transistors. The article claims that "Our new terminal unit will cope with 45 and 50 baud transmissions, and with frequency shifts in the range 50 to 1000Hz. Normal shifts are 170 or 850Hz". However, the unit appears to be designed for 850Hz shift, whereas standard amateur shift is 170Hz.

Amplifier A is a bandpass filter with a centre frequency of 2.5kHz, amplifiers C and D being bandpass filters with centre frequencies of 3kHz and 2kHz respectively, and these I decided needed slight modifications. The rest of the demodulator could stand. To pass both mark and space tones, filter A needed to have a centre frequency of 2210Hz, filters C and D needing centre frequencies of 2295 and 2125 Hz. Now the ARRL Handbook gives design equations for such active bandpass filters and using these on the E.A. circuit I got a Q value of 7.6 at unity gain. I then calculated values of components for the new centre frequencies for these parameters.

Filter A needed only a slight modification; according to my calculations changing the 470k resistor to 560k would bring the centre frequency down sufficiently. The other two filters required slightly more component value changes. After some experimentation I settled for the following component changes, the original values being shown in brackets. The 1180pF capacitors are made up from parallel combinations of 1000 and 180pF, and all these frequency determining capacitors are polystyrene for stability. The 483k and 527k resistors are both made from two parallel 1 meg resistors, and I selected lower-reading values for the 483k pair.



2295 Hz (3KHz)



2125 Hz (2KHz)

Now for the required help. According to theory the demodulator should operate at the correct frequencies for mark and space, but tests I have done are inconclusive. Could somebody who has already a RTTY terminal unit up and running check this out for me and see if it does what it's supposed to do, or which stage is not correct. I will be glad of any offers of assistance to help me with this .

Ken VK2DOI

LOCAL ABC FM ANTENNA

VK2DOI

The TV Tower at Knight's Hill, near Robertson, now carries an FM antenna array on its North West leg, consisting of six helical units stacked one above the other. Each resembles one turn of open coil spring about one foot diameter, or a large key-ring with the overlapping ends forced apart, and can be thought of as a half-wave dipole with the arms curving together and overlapping. This arrangement gives an essentially omni-directional horizontal radiation pattern, the polarization being right hand circular.

Total length of each helix is half-wave at the factory-set resonant frequency of 107.9 MHz, and each helix is mounted at a voltage zero point and earthed by the outer of the coax feeder. The coax inner is connected off this zero voltage point, the exact position apparently determining the tuning of the helix.

Gain is 5dB(d), impedance 50 ohm unbalanced, return loss -20dB.

The antenna array, which was supplied by Antenna Engineering (Australia) Pty. Ltd., and erected by Telecom Line staff, results in minimum extra wind loading on the tower.

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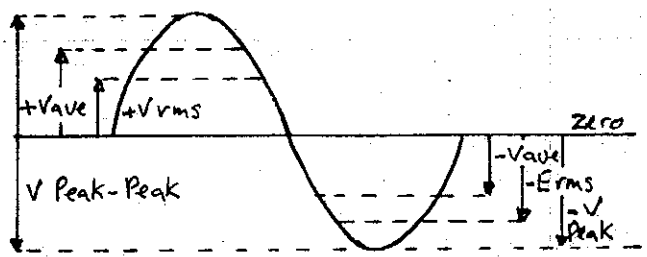
RELATION OF CONSTANTS FOR A SINEWAVE



To derive these

Multiply these	Ave	Peak	Pk-Pk	rms
Ave	1·000	1·571	3·142	1·111
Peak	0·637	1·000	2·000	0·707
Pk-Pk	0·318	0·500	1·000	0·354
rms	0·900	1·414	2·828	1·000

From: The Welding Institute Research Bulletin.
Contributed by Ian, VK2DKS

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A "SPACE DXPEDITION" IS ALMOST CERTAIN FOR NEXT YEAR, when astronaut Owen Garriott, W5LFL, will fly the space shuttle Columbia's ninth mission. After lengthy negotiations, NASA Houston agreed to let him take a specially reworked 2-meter handheld along, to operate when possible with a ground plane in the cargo bay. Only final approval from Washington is still needed for the October, 1983, operation, which would last seven days.

Ham Radio, December 1982.

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THE "ASH" SNIFFER

Once you get into the general area of the hidden transmitter, your going to need a good sniffer for that last part of the hunt.

The design shown here is a modification of a previously published circuit. The original circuit is of the form shown in Figure 1 and although effective, suffers certain disadvantages. With no signal present, a leakage current flows from the collector to base and then divides between the base-emitter path and the high reverse resistance presented by D1. The portion in the base-emitter circuit is amplified resulting in a voltage drop across Rx. If Rx is adjusted so that this drop equals that across Ra then balance is obtained and a meter connected across points A and B passes no current. When a signal is detected this balance is upset and the meter reads this result. It can be seen that the balance will be dependent on the leakage current of TS1 and the reverse resistance of D1. Both of these factors vary dramatically with temperature and voltage such that one is forever adjusting Rx for balance.

A further disadvantage is that of overload under strong signal conditions. Both of these problems have been successfully tackled resulting in the circuit of figure 2.

D1 and TS2 perform in the same way as their counterparts in figure 1, however Rb has been replaced by the combination of TS3 and D2 which form a DC equivalent of TS2 and D1. If the transistors and diodes are well matched, any variations in supply voltage or temperature will effect both sides of the bridge equally thus maintaining balance.

Tests over a supply range of 6-12 volts and ambient temperature of 0-40°c, showed that the unbalance was reduced from over 300 µA in figure 1 to less than 8µA for figure 2. The transistors would best be fitted with flag heatsinks bolted together, and the diodes closely coupled and joined together for heat conduction by silicon grease. I point out however that in my prototype this was not the case and the results mentioned above were obtained.

If you get good matching, you can do away with the 4K7 trimpot and adjust either R, or R2 for initial balance and then forget it.

The other problem of overload provided quite a problem since it is necessary to produce an R.F. gain control without changing bridge balance or input tuning. Many methods were tried and eventually the arrangement using TS1 was chosen. It won't provide a wide range control but is quite adequate.

For those who wish to match their own components the circuits of Figure 3 (a) and (b) can be used.

Transistors should be matched for Vce with the base open circuit and grounded through 68K. The diodes are matched for reverse voltage reading in the circuit shown. Other transistors and diodes will work but the AC188 has a good low Vbe and the OA90 far out performed all other diodes tried.

If you can't match your components accurately then don't dispair as it may be good enough, but either R, or R2 may have to be juggled to obtain initial balance.

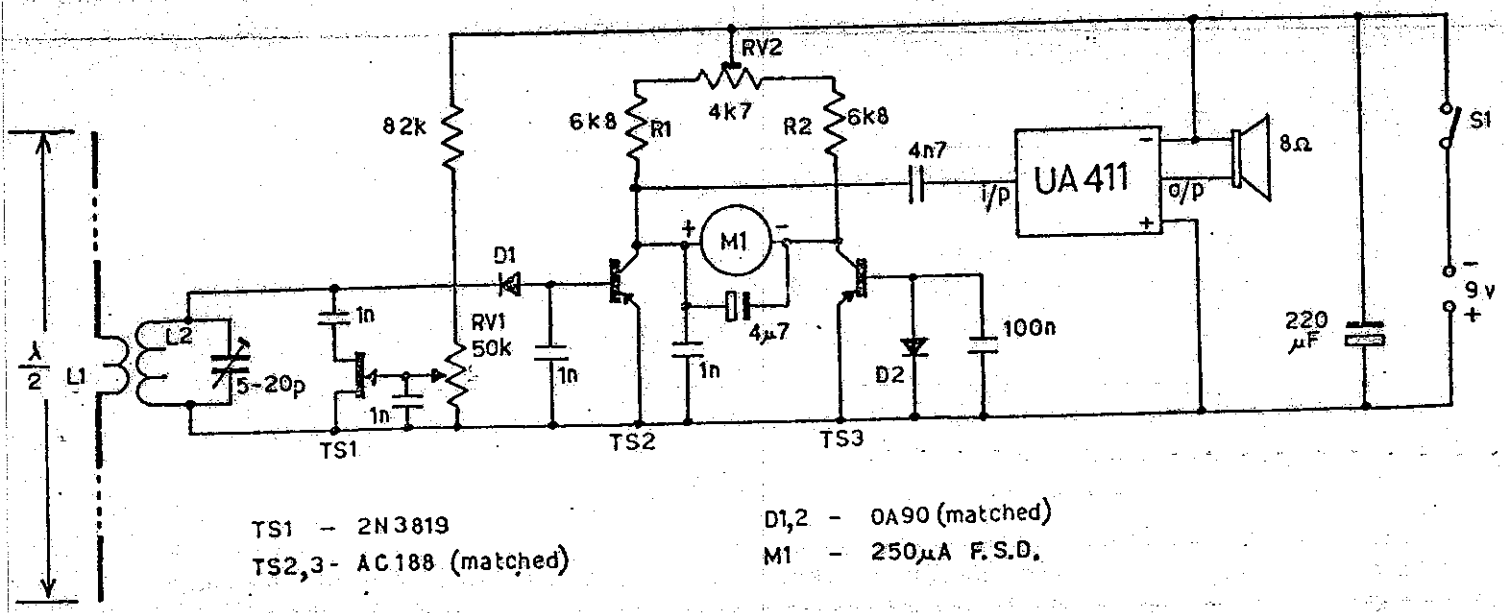
I used a Philips UA411 module for the audio amplifier but any high gain amplifier will work.

The capacitor across the meter stops possible oscillation due to feedback from the loudspeaker.

Field tests on the sniffer with the aid of Glenn VK3 and his IC202, working into a Halo on the car, gave 10% FSD at about 100 metres and audible signal at 500 metres or more.

P.S. I have a few pairs of AC188's (matched) free for the taking. First come, first served. I also have a number of suitable meters at $1.50 and UA411 modules at $2.00.

73's Mike VK3ASH



TS1 - 2N3819
TS2,3 - AC188 (matched)

D1,2 - OA90 (matched)
M1 - 250µA F.S.D.

L1 - 2 Turns 20 B&S 8.0 mm dia. 3.0 mm long.
L2 - 3 " 18 " " " 10.0 mm "

FIG. 2

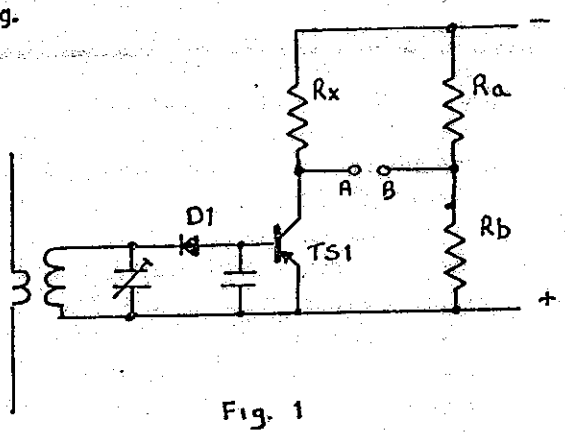


Fig. 1

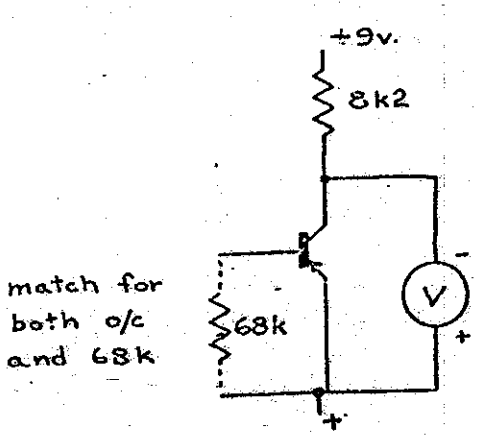


Fig. 3 (a)

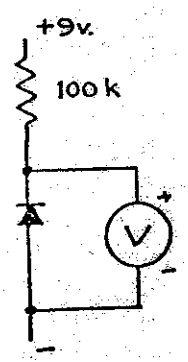


Fig. 3 (b)

—— VNG ——

Most amateurs will be familiar with the announcement: "This is VNG, Lyndhurst, Victoria, Australia on 4.5, 7.5 or 12 Meganertz. VNG is a standard frequency and time signal service of the Australian Telecommunications Commission. This is VNG, Lyndhurst, Victoria on 4.5, 7.5 or 12 megahertz." These time signals are much more easily and reliably received in Australia than the well-known American service WWV, both services transmitting precise time signals widely used by surveyors, navigators and scientists etc. for astro-navigation, position fixing, precision timing and reference frequency applications. The time signal service from VNG was inaugurated by the Australian Post Office on 21st September 1964 using transmitters located at Lyndhurst which is approximately 37 km south-east of Melbourne. Two transmitters feed half wave dipoles to give a carrier power of 10 kW., double sideband amplitude modulated.

SCHEDULE OF FREQUENCIES

TIMES OF EMISSION			FREQUENCY
UTC	AEST	AEDT	kHz
0945-2130	1945-0730	2045-0830	4 500
2245-2230	0845-0830	0945-0930	7 500
2145-0930	0745-1930	0845-2030	12 000

UTC : Co-ordinated Universal Time. (UTC plus 10 hours gives AEST.)
AEST: Australian Eastern Standard Time.
AEDT: Australian Eastern Daylight (Summer) Time.

UTC was internationally agreed to in 1972, and is a time scale based on atomic time chosen to relate to an astronomically derived second of universal time of the year 1900, known as the ephemeris second. The caesium beam standards at the Telecom Australia Research Laboratories in Melbourne generate a time interval which is very close to the definition, and the Bureau International de l'Heure in Paris acts as an international co-ordinating body for timekeeping services. VNG time signals are maintained to within 50 microseconds of Co-ordinated Universal Time (UTC). Occasional step adjustments of precisely one second (known as leap seconds) are inserted into the UTC time scale to keep the time signals within 0.9 seconds of astronomical time (UT 1). This is because UT 1, which is equivalent to GMT, is derived from astronomical observations and is not as regular as atomic time because of irregularities in the rotation of the earth, but for applications such as navigation and satellite tracking which must be referenced to the rotation of the earth, the UT 1 time scale, which varies with this rotation rate, must be used. Signals are inserted into the VNG time signals to indicate the lag or lead of UT 1 over UTC up to a maximum of 0.9 seconds, being known as the DUT 1 code. This is done by two-tone markers (called emphasised seconds), during the first 15 seconds of each minute, representing 0.1 second each and indicating a positive value for DUT 1 when the first emphasised second is the marker following a minute marker, and a negative value for DUT 1 when the first emphasised second is seconds marker 9. The magnitude of UT 1 variation from UTC is obtained by counting the number of emphasised seconds, their position giving the positive or negative sign. Accuracy is plus or minus 50 milliseconds.

TIME CODE

Seconds markers are normally 50 milliseconds of 1000 Hz. Seconds markers 55 to 58 are 5 milliseconds of 1000 Hz. Seconds marker 59 is omitted. Minute marker, (seconds marker 60) is 500 milliseconds of 1000 Hz. During the 5th, 10th, 15th, etc., minutes, seconds markers 50 to 58 are 5 milliseconds of 1000 Hz. During the 15th, 30th, 45th and 60th minutes a station identification is given. This is "notched" to allow the second markers to continue and has spectral components around 1000 Hz reduced to avoid erroneous operation of tuned-relay time signal receivers.

- VK2DOI -

A LOVE LETTER TO A 65 YEAR OLD HUSBAND WHO HAS JUST RETIRED. My Beloved George, I welcome you home with pride and with pleasure. There may have been pleasure in it 30 years ago but there would never have been more pride. And I welcome you with a re-assertion of the vow I made to you 43 years ago. I still take you for better or worse. My pride lies in the fact that you have made it to retirement. This is a great achievement you know, as many are not so fortunate. Since you first went to work you have manoeuvred your way past some formidable dangers... a couple of wars, cancer, heart attacks, automobile accidents, mental breakdowns, and lightning. A man who has survived the perils of the last 50 years is a hero by just staying alive. I'll want you to have a nap every afternoon because it will be good for you and because you deserve the luxury. I'll want you to sit up on week nights to your heart's content and see all the late night movies you want. I'll want you to go to the doctor every six months for a check-up. I'll want you to come and go as you wish, fish, hunt, or play with your pals as long as you wish. I'd like you to think about enlarging your shack and would like you to spend untold happy hours ragchewing with your cronies. I want you to take $400 out of savings and buy yourself some casual clothes for this great new adventure of your life.... Now for your instructions!... Stay out of my kitchen!! ... Prepare a chart showing which of the household chores you intend to take over ... Start by cleaning up your ashtray and any other mess you make during the day. I'll still take care of your evening and weekend messes, except in the shack ... Prepare to give me two free afternoons a week to be with my friends ... Have your eyes checked, then subscribe to a second newspaper, because we are going to have a lot of time on our hands, and news-reading will help to fill it ... Set up in the bank, in your investments, or somewhere, an adequate sum of money in my name so I can get it in a hurry if I have an emergency to face alone ... Read your life insurance policies and let me know what in the world they mean ... Then go and make a will - that is if you want your meals on time! ... Be informed that when "retirement let-down" hits you in about a month, you will have ten days - no more - to feel sorry for yourself. After which you'll have to smarten up and get on with your new life. I'm so glad, my dear, that you have come home in retirement. As soon as we have become acquainted with each other, we are going to have a splendid time! Your loving and devoted wife, Jean (XYL VK2GT)

"The Lyrebird"

NOTE: To avoid misunderstanding, Jean has since advised in 'Amateur Radio' that the above is not a real letter from her to her husband, who does not even smoke. It was published in the Lyrebird merely for readers' amusement.

- VK2DOI -

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"The honeymoon is over when he rings to say he'll be late home for dinner and she has already written a note to say his dinner is in the oven."

"Lake Times"

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FOR SALE

Cushcraft ARX-2. 2m Vertical Antenna. Brand new, still in original box.

$40 ONO

SBE. 10m converted CB covers 28.340 Mhz to 28.630 Mhz usb/lsb/cw.

$70 ONO

Phone JIM VK2EBY 321129

Meetings: Second monday of every month except January at 7.30 P.M. in the Congregational Church Hall, Coombe Street, Wollongong. Committee meet 3 rd tuesday of each month S.E.S. building Auburn Street, Wollongong at 7.30 P.M.

Repeaters: VK2RAW - 6850 VHF Mount Murray. VK2RIL - 7275 VHF Sublime Point. VK2RUW - 8225 UHF Hill 60 Port Kembla. VK2RIN - 8725 UHF Sublime Point.

Broadcasts: Club news - RTTY on 6850 VHF repeater at 7.00 P.M.; Voice on 6850 VHF, 8225 UHF and by relay on 3562 Khz and 28460 Khz at 7.15 P.M. on sunday night prior to Club meeting. Call backs after the W.I.A. relay at 7.30 P.M.

W.I.A. relays - on 6850 VHF at 11.00 A.M. and 7.30 P.M. weekly on sunday.

Club Nets: 3562 Khz SSB on sundays at 8.00 P.M. and slow morse net on 3562 Khz on tuesdays at 8.00 P.M.

Newsletter: "The Propogator", published monthly to reach financial members in week prior to meeting. All articles, ads etc to the editor, Leo Kleeborn, VK2YJK at 33 Lombard Avenue, Fairy Meadow 2519. Telephone 84 97 51. Copy deadline 3 rd tuesday each month.

Membership: The Secretary, I.A.R.S. P. O. Box 1838, Wollongong 2500. Full membership is $ 7.00 per annum; students and pensioner concessional members $ 4.00 per annum.

QSL's : For financial members who are also financial members of the W.I.A. ONLY.

Inwards: Mike Keech VK2VXS, QTHR ; Outwards: Ian Callcott VK2EXN QTHR.

Awards: The award of the I.A.R.S. 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 or contact with the Club station VK2AMW is sufficient in itself for the award. Send details - time, day, date, frequency, station worked + $ 2.00 or 4 I.R.C.'s to Awards Manager, I.A.R.S., P. O. Box 1838, Wollongong 2500. No QSL cards required.

Store: The Club store operates at each Club meeting. Storeman Paul Ferguson VK2DZJ QTHR.

Committee: President - Keith Curle, 24 Beach Drive, Woonona 2517 VK2OB.

Vice President - Denis McKay, 17 Doncaster St., Corrimal 2518 VK2DMR.

Secretary - Dave Myers, P. O. Box 1838, Wollongong 2500 VK2PBP.

Treasurer - Geoff Cuthbert, 2 Nioka Avenue, Keiraville 2500 VK2ZHU.

Repeater Chairman - Graeme Dowse, VK2CAG. Repeater Committee - Pat Jordan VK2KEY, Denis McKay VK2DMR, Mike Keech VK2DMR, Eric Fien VK2YVF, Dave Collis VK2EZY.

Broadcast officer - Eric Fien, 331 Cordeaux Road, Mount Kembla 2526. VK2YVF.

QSL's - Mike Keech VK2VXS & Ian Callcott VK2EXN.

Propogator Editor & staff: Leo Kleeborn, Editor VK2YJK, Ken Frost VK2DOI, cartoonist Brian Wade VK2AXI.

Storeman - Paul Ferguson VK2DZJ. Publicity - Dave Henderson VK2YKQ.

General committees:- Jock Taylor, VK2JT ; Ray Ball VK2XEC ; Morry Van de Vorstenbosch VK2EMV & Jim Mead VK2EJM.

Life Member: Graeme Dowse VK2CAG elected 1982.