

THE PROPAGATOR

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Priceless.

EDITORIAL

The pursuit of excellence is a curious yet compelling thing. There are so many fields of endeavour in which it can be pursued. Excellence may be achieved in something as public as the world sporting stage through, say, Olympic competition or more privately by the lone inventor in a basement workshop.

Excellence encompasses a multitude of qualities; diligence, persistence, application, honesty, integrity, patience, inspiration and frequently, perspiration - the latter often in some quantity! There was a time when one automatically assumed people would pursue excellence as a matter of principle. Products would be well-made and capable of carrying out their intended functions for a long time. Tradesmen likewise would do their work diligently because their pride would be reflected in the quality of the work they did. Academics would do honest research and report in an unbiased manner. Politicians would genuinely serve the interest of the nation well before they served their own interests. There was a time when this was so, but is it still the case?

Excellence now seems neither required or officially encouraged. The egalitarian philosophy which crept in surrepti-

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Coming Events:-...

☺ A significant anniversary is looming on the horizon for the IARS. The 5th of July 1998 is the 50th anniversary of the first logged voice transmission of the Wollongong Amateur Radio Club. The station worked was VK2WV.

☺ Later in the year we celebrate a second 50th anniversary. On December 3rd 1948 the club callsign VK2AMW was issued. To the best of our knowledge it has never lapsed. Because the 50th anniversary of this occurs close to when we'd expect to hold our annual Christmas get-together, the committee will give some thought to an appropriate celebration. Whatever is decided, you'll read it here first!

☺ Finally, one of our oldest members, Howard Booth (VK2AMD) turned 90 on March 6th this year. By the time you read this it will be a past event rather than a coming event, but we can report that the club organised a gift for Howard and representatives of the club attended a small party at his home to properly mark the event. Howard's health is excellent (he was a weightlifter in his earlier days and still exercises daily) so will he become the Illawarra's first century-old callsign-holder? Let's hope so!

tiously during the late sixties and early seventies has so enslaved us our society is now tailored for the lowest common denominator - everyone will meet a common level of achievement and the level is parlously low. Decades ago we Australians were very good at the business of excellence. Now it almost seems officially discouraged. But excellence, like truth, is hard to destroy. Little pockets of it continue to exist, squirrelled away where the politically-correct thought-police and control-freaks can't find it. Amateur radio is one such quiet backwater.

As amateurs we have always prided ourselves on our own personal pursuit of excellence. We maintain high standards of operating procedures. We maintain our stations to high standards of serviceability. Through WICEN, our most dedicated members render valuable community service at a time when such services are in short supply and most urgently required. At a club level our repeater committee maintains a network of repeaters which is the envy of many. Another shining example (excuse the imminent pun) is the EME project which has deservedly placed one of our Life Members in the record books.

Those who have participated in these various activities throughout the years can truly say they have pursued excellence, even if their individual contribution seemed small. It is no coincidence our Life Members have devoted significant portions of their lives to the pursuit of excellence in diverse fields, yet still sharing the common thread of amateur radio. One of the intriguing things about our hobby is there are still discoveries to be made, techniques to be pioneered. The advent of digital communications modes merely extends the scope. Anyone who thinks there is nothing left to be developed, invented, discovered or pioneered has fallen into the same trap which snared the British Patent Office early this century. They seriously considered closing because they believed everything had already been invented! There was precious little excellence in that line of thinking.

Excellence doesn't just happen - someone has to have a feeling for what constitutes it, a clear vision of how it can be achieved and the conviction and dedication to pursue it uncompromisingly. Amateur radio, with its great diversity of activities and areas of specialisation, allows and encourages the pursuit of excellence. It is one of increasingly few activities with this peculiar yet delightful quality.

Perhaps the most curious thing about excellence is it manifests itself best at the level of the individual. It's as if there was only so much in the world at any one time and attempting to spread it over a large group of people just results in the excellence being diluted with mediocrity until it is totally undetectable. If indeed there is a finite quantity of excellence then we are lucky so little ever finds its way into what passes for public administration - it leaves all the more for talented individuals in whatever field they toil.

The word talented is particularly important in that last sentence. Excellence requires all those things I mentioned in the first paragraph plus one additional thing - talent. When talent is added to all the qualities listed above, excellence is highly probable. However, it is not inevitable. "Nothing impedes the progress of science more than the right idea at the wrong time". Although it seems to be a contradiction, there are many examples of the truth in it. Philosophically, if the right idea is prematurely introduced and shown to be unachievable due to technological inadequacies, financial constraints or some other reason, then that idea may be forever afterwards tainted and not recognised as achievable when the constraints no longer exist. If you think about it you can probably recall several examples.

Why write an editorial about excellence? Those of you who have waded through the editorials in this current series of Propagators will discern a common thread. Stated in its simplest form, it is concern about the steady deterioration of standards within our society, our community, and possibly even within ourselves. We are perhaps a little too tolerant in some areas and because of this we accept the slow erosion of what we once held to be acceptable and what was otherwise. (continued overleaf...)

This is not an appeal for intolerance. It is a reminder that our society reflects our own contribution to it as well as the results of policies and regulations imposed by various levels of government. A typical response to a situation is a call for "the government to do something about it". Rarely, if ever, does anyone say "*we should do something about it*". Time and time again we have seen governments demonstrate their complete inability to do anything except make bad situations worse, or ignore them completely in the hope they will go away. Incidentally, both sides of politics have a vested interest in preserving this situation because when government changes hands the incoming administration can always blame their predecessors. Forget the government. *We* should do something about it - whatever "it" happens to be at any given time - because *we* are the only people who can.

Let me give you an example very close to home. We pursued the government option in the matter of pager interference to our repeaters. All we really achieved was to ensure the employment of a couple of clerks in the correspondence section of a government department. However, this was the established procedure and because we were dealing with a bureaucracy we had to abide by it. It keeps them satisfied and creates the illusion they are somehow important. In reality, bureaucracies exhibit a highly reactive impedance to just about everything which appears at their inputs.

Faced with what seemed to be an impasse we then adopted an alternative approach. Our methodology was simple and sound - we relocated machines to sites less prone to interference. This gave a bonus of allowing us to rationalise the number of repeater sites and bring other players in for the mutual benefit of all. This wasn't convenient - quite the opposite in fact - and it involved a lot of negotiation and hard work on the part of the various members of the repeater committee and its assistants who generously gave their time and talents towards the project. Nonetheless it was the best option.

Pager interference will continue to plague the amateur service until such time as pagers are replaced by a superior technology - with its own problems, be it noted. However, we have minimised the current problem to the best of our ability; we did something about it because "the government" couldn't, wouldn't and didn't. Perhaps we didn't exactly achieve excellence in every aspect of our pager interference problem this time, but we improved a bad situation. Our repeater system boasts impressive geographic coverage as well as engineering to a very high standard. There is excellence in that and we should be proud of it.

There was a side benefit as well. We now have the measure of the bureaucracies - both within our ranks and external to them - which administer the electromagnetic spectrum, and we will be far more adept in our future dealings with them. It's all part of striving for excellence. More than ever before we need to pursue it relentlessly.

The Other Side(band)...



THE IONOSPHERE.

The earth's atmosphere varies in density and composition as the altitude increases and at the top the ionosphere forms. Simple, isn't it? Well, put as prosaically as that, yes it is, but there is rather more to it than that. Just as well, or this article would be really short!

The lowest portion of the atmosphere is the *troposphere* which extends from the surface up to about 10Km. Jet pilots know it well - it is the region in which all weather is confined and through which they have to climb to reach the smooth air that lies above in which their aircraft engines and wings operate most efficiently. The troposphere contains 90% of the world's atmosphere and 99% of airborne water vapour - which is why weather develops there in the first place. All our mountains are within the troposphere and all our normal daily activities occur there.

The gases within the troposphere are predominantly molecular oxygen and nitrogen. At the surface of the earth they occur in the approximate proportions of 21% oxygen and 79% nitrogen. Small amounts of other gases are also present; carbon dioxide, methane, some oxides of nitrogen and the rare or noble gases argon, neon, xenon and radon, these latter in extremely small quantities. This is the atmosphere we are familiar with. We all know as one ascends the partial pressures of each gas decreases so the atmosphere gets thinner with height. Because air is compressible, the bulk of our atmosphere lies in the first ten thousand feet above the surface. The temperature also decreases steadily with increasing height in this region, at a rate of about 2 degrees Celsius per thousand feet - the Dry Adiabatic Lapse Rate so familiar to meteorologists.

At the top of the troposphere is the *tropopause*, just beneath which the jet stream is to be found. Above this lies the *stratosphere*. The gases are still dense enough for jet aircraft to fly (necessarily at high speed), for hot-air balloons to ascend to heights of 15-20Km and helium-filled balloons to attain heights of about 35Km. However, in the stratosphere the air thins rapidly and the composition changes slightly as the altitude decreases.

Within the stratosphere incoming solar radiation during daylight hours is able to break up molecular oxygen into individual atoms which can then combine with molecular oxygen to form ozone - three atoms of oxygen bonded together. Ozone reaches a peak density of a few parts per million at about 25Km above the earth's surface. It has the highly desirable property of shielding us from incoming ultraviolet radiation and is a somewhat controversial gas these days. There is little actual ionisation however at this height.

As height increases further the rate of cooling decreases and a curious phenomenon occurs. The thin atmosphere permits solar radiation to dislodge electrons from gaseous atoms and they remain free for a short time before being captured by a positively-charged gaseous ion and recombining. The presence of these free electrons marks the beginning of the *ionosphere*, a region having properties of both a gas and a plasma and one which every radio enthusiast comes to know, love and hate simultaneously.

At the outer reaches of the earth's environment, solar radiation strikes the atmosphere with a power density of 1.37KW per square metre, or 0.137W per square centimetre. This is known as the "Solar Constant". This rather intense radiation is spread over a very broad range of frequencies, from infrared right through visible light to X-rays. No spectrum management up here, it's a real sunburn free-for-all! The ionising components of this radiation are the ultraviolet and shorter wavelengths - photons of energy at these levels are quite capable of knocking electrons off gaseous atoms or molecules, leaving free electrons and positively charged ions (which are heavier). The low density of the atmosphere means these ions and electrons can exist for extended periods of time before recombination occurs but necessarily means ionisation is relatively weak due to the lack of gaseous atoms and molecules.

Recombination tends to balance out the effects of ionisation, but again the process is altitude-dependent. As the density increases with decreasing altitude, recombination accelerates because gaseous molecules and free ions are closer together. As in all natural systems, a state of equilibrium will be attained and at this point the degree of ionisation will be the nett result of the two processes. They exist in a state of dynamic, rather than static, equilibrium because as altitude decreases, gaseous atoms and molecules increase in numbers, giving a greater chance of absorption of energy from an incident photon of UV radiation, this being balanced by the decreased intensity of this radiation due to partial energy absorption in the higher levels.

This leads to the formation of ionisation peaks or layers, called "Heaviside Layers" after the scientist who first proposed their existence. Several different layers arise due to the differing composition of the atmosphere with height. They have been assigned alphabetical designations which are familiar to amateurs the world over - the D, E, and F layers. Without them, radio transmission and reception would be a very different affair compared to the situation as we know it.

Since daily temperature (and pressure) variations occur within our atmosphere, similar variations occur in the nature and altitudes of these layers. The E-layer is the lowest useful layer of the ionosphere but due to rapid recombination it can only exist when exposed to continuous sunlight, making it a daylight phenomenon. At dusk it practically disappears, often in a matter of minutes after sunset. At its maximum state of ionisation the E-layer exists at an average height of about 70 miles - usually at local noon.

Below the E-layer the D-layer is located, in which ionisation is proportional to the height of the sun above the horizon. The D-layer almost completely absorbs radiation in the two lowest amateur bands (1.8 and 3.5Mhz). Very high angle radiation can penetrate, to be reflected by the E-layer above. This limits distances attainable on the lower bands during the day. Within those constraints, communications on these bands during daylight hours are reliable and free from extraneous long-distance interference.

Above the E-layer is the F-layer and this is responsible for the majority of long-distance communications. At night it is a single layer which exists at a height of about 175 miles. The air is very thin and recombination takes place very slowly. Ionisation decreases only slowly after sunset, reaching its minimum just prior to sunrise. The effect of these variations is the disappearance earliest of the highest frequency usable that day, followed by the disappearance of signals on progressively lower frequencies during the night. During daylight hours the F-layer actually separates into two identifiable components known as the F1 and F2 layers. These layers result in skip or DX by reflecting radio waves back towards the earth where they either return to the surface (single-hop propagation) or are reflected back upwards to make another cycle or even repeat the process a number of times before returning to the surface (multiple-hop propagation).

Seasonally, scattered patches of relatively intense ionisation develop at E-layer height. The term Sporadic-E has been coined for this phenomenon which is most active in equatorial latitudes but also occurs commonly in mid-latitudes in late spring and early summer as well as early winter, although to a lesser degree. Sporadic-E really stands out from other ionospheric effects above 21Mhz and its effects (weakening as frequency increases) have been observed up to 150Mhz. The upper limit for the effect is unknown. The best times for Sporadic-E are mid-morning and early evening but at times it can extend almost around the clock.

That's about it for this simple treatment of the ionosphere - at least it should have refreshed a few memories. Without these complex interactions, propagation as we understand it would not exist and our hobby would be significantly different. Our small blue-green planet at the unfashionable end of the spiral arm of the galaxy owes much to the veil-thin envelope of gases which surrounds it.

STANDARD PIPE SPECIFICATIONS.

1. All pipe must be made of a long hole, surrounded by metal or plastic centred around the said hole.
2. All pipe is to be hollow throughout the entire length. It is forbidden to use holes of a different length to the length of the pipe.
3. The I.D. (inside diameter) of all pipe must NOT exceed the O.D. (outside diameter) otherwise the hole will be on the outside. This is MOST important.
4. All pipe is to be supplied with nothing in the hole so that water, steam and other stuff can be put inside at a later date.
5. All pipe should be supplied WITHOUT rust since this can be more readily applied at the job site. N.B. Some vendors are able to supply only pre-rusted pipe, if this is the case it may be used as supplied.
6. All pipe over 150 meters in length should have the words "long pipe" clearly painted on each end so the contractor will know it is a LONG pipe.
7. All pipe over 300 metres long MUST have the words "long pipe" painted in the middle so that the contractor will NOT have to walk the entire length of the pipe to determine whether it is a long pipe.
8. All pipe over 150mm in diameter MUST have the words "large pipe" painted on it so the contractor will NOT mistake it for a small pipe.
9. It's VERY important that you specify whether you want level, uphill, or downhill pipe. If you use downhill pipe for water going uphill, the water (or whatever) will flow the wrong way. *(Unless water from the opposite hemisphere of the world is used - Ed.)*

(Taken from q.t.c. nzart branch 28 newsletter without their permission.)

When Small Is Small Enough...

(This story may well be apocryphal, but it has a certain charm all of its own. Accordingly we offer it here although it is not directly connected with amateur radio...)

When micro-miniaturisation of electronic components began a few decades ago, two rival companies vied with each other to produce ever finer metal extrusions, both as solid wires for electronic applications and also as hypodermic needles for the developing field of micro-surgery.

One company was Swiss, the other British. As each managed to produce the necessary dies to draw ever thinner and more uniform wires (and needles) they would send a sample to their rival on a "see if you can top this?" basis. Competition was intense - potentially there was a lot of money at stake.

The British company eventually sent their thinnest hypodermic needle to their Swiss counterparts. It was so fine it had to be inspected under an optical microscope. As a technological achievement it was impressive - very impressive. It was so thin a sneeze could blow it away - forever!

The Swiss are a proud people. Their technicians rose to the occasion magnificently. A sample of their latest needle arrived at the British firm's head office a week later. It was thinner than a hair.

The British were very impressed but far from out of the race, as events would prove.

A few days later the Swiss company received the usual small package. Under the microscope they saw the very same needle they had sent to the British. Puzzled, they phoned England. "Why do you send us back our own needle?" they asked.

"Look down the hole", came the reply. They did. The British had cut rifling grooves, making it into the world's smallest rifle barrel. The Swiss didn't bother trying to make ammunition for it.

AT&T and Ham Radio

It's a lot more than a big autopatch; American Telephone and Telegraph has decided to pour a lot of money into ham radio in Northern Tennessee as a way of providing better emergency communications to the region.

AT&T has agreed to spend \$100,000 to set up VHF & UHF repeaters and antenna systems. It will also provide Kentucky amateurs an operating area at one of its cellular telephone sites. Other cell sites will be equipped with receivers and linked back to the repeaters.

The beneficiary in all this is the Northern Kentucky Amateur Radio Club. Amateur radio provided the only communications during the first four days of "The Great Flood of '97". The efforts of hams during this disaster gained the attention and respect of local government officials as well as that of AT&T.

AT&T had been looking at possible cellular telephone sites that were previously not available. Based on its new marriage with amateur radio, AT&T was granted an emergency communications status and was permitted to build the sites.

In addition to its agreement with the Northern California Amateur Radio Club, AT&T hopes to set up other amateur radio systems in Southwest Ohio. It also suffered major flooding this year.

It is estimated that the total investment in the complete amateur radio and cellular telephone marriage by AT&T will top \$300,000.

The result will be better emergency communications coverage in northern Kentucky, southern Ohio and southeastern Indiana.

(from Amateur Radio Newsline #1059 28th Nov 1997)

Web Page is at: www.arnewsline.org

(submitted by Tony Farrow VK2TJF)

THREDBO LANDSLIP

160 personnel from 27 VRA affiliates participated in the rescue and recovery operations following the Thredbo landslip. The landslip occurred at 11.37pm on Wednesday 30th July 1997. Approximately 2000 cubic metres of liquified soil broke away from just below the Alpine Way, sweeping Carinya Lodge across Bobuck Lane and crashing into Bimbadeen Lodge. When the landslip stopped both lodges were totally destroyed and covered in a mass of mud and debris.

The rescue and emergency response operation that followed was one of the largest in Australia's history. The response, particularly the rescue operation, was characterised by a high level of cooperation and understanding between the services. Nineteen persons were in the lodges at the time. Only one survived.

Five hours after the landslip, the VRA President, Mr Ray Gill, received a telephone call from the NSW Police Service Emergency Management Branch requesting assistance with the operation of the Disaster Victim Registration System at the Sydney Police Centre. VRA personnel who have been trained in this role commenced duty at 6.30am on July 31st. The personnel were from WICEN, Cave Rescue Squad and Volunteer Air Patrol.

Commencing immediately after the landslip, a major response of equipment and personnel was initiated by many services and agencies, with the result that there was a massive over-response - more persons than could be utilised. The sight of many emergency services personnel standing idle led to

criticism in the press that the operation was not progressing as well as it could. The fact was that site instability severely limited the tasks which could be undertaken at this stage.

The VRA recognised that search and rescue operations would extend over many days. VRA Director of Operations (Country), Mr Harvey Black, was sent to Jindabyne and subsequently to the site to liaise with the Rescue Coordinator, Inspector Gary Smith. In view of the large number of personnel on site, it was agreed at that stage the VRA would not send rescue personnel until Sunday 3rd August.

The Rescue Coordinator, aware of the VRA Director's rigging qualifications and experience, asked Mr Black to supervise rigging operations. The VRA has considerable expertise and regularly trains in heavy rigging. In fact only three weeks before the landslip a rescue rigging course was held in Narrabri and attended by representatives of the State Rescue Board.

From Sunday 3rd August, VRA personnel were involved in specific tasks directly related to their skills, training and experience. These being rigging to secure and/or remove dangerous boulders and debris, site safety (monitoring site movement) and utilising experienced registered rescue operators in the body retrieval teams (multi-service teams - Ambulance, Fire Brigade, Police and VRA). The VRA also assisted with general debris removal and property recovery which extended for weeks after the last body was removed. The VRA achieved its aim to make available highly effective teams which would make a significant contribution without taxing support arrangements.

The NSW State Government recognised the contribution made by the VRA to the Thredbo Rescue and Recovery Operation by presenting a Meritorious Service Award to the Association, plaques to the regions and certificates to the individuals which have been completed and are presently being mailed to squads.

(extracted from the VRA Newsletter - December 1997.)

NRMA CAREFLIGHT AT SPENCER - NSW

During the Hawkesbury Classic Paddles this year, early Sunday morning, when the bulk of paddlers pass Spencer (with its floating checkpoint Oscar), it turned very cold. Consequently, Spencer ended up with five or six cases of hypothermia in its Red Cross tent. The following is a chronology of events written without the benefit of notes taken at the time. These notes were submitted to HCP officials.

All but one of these competitors had their body temperatures stabilised by the copious use of space blankets, sleeping bags and warm tea with loads of sugar. One case was, however, really bad and the Red Cross team couldn't raise his body temperature to normal levels. You see, we didn't have a Core Warmer at Spencer and even if we did have one, the Red Cross teams weren't allowed to use it because they weren't certified to do so. They didn't have a Core Warmer because it wasn't part of their regulation equipment.

One of the Land Crews included a doctor. She (very professionally) visited the Red Cross tent to see how things were going. When the Red Cross team asked her about the above problem, she judged the paddler needed to be put on a drip rather quickly. She confirmed an ambulance should be summoned ASAP.

The Checkpoint Coordinator, Lesley Harvey, was advised and came down to the RVCP caravan where WICEN was stationed and asked that we contact an ambulance. This was around 0500 Sunday. Now, forgetting amateur stuff, we had an analogue Telstra-connected Motorola "bag phone" set up. Digital coverage from Spencer was about as much use as an ashtray on a motorcycle.

I rang 000 and asked for an ambulance, then passed the phone over to Lesley who explained the problem. As in the previous year, when we needed an ambulance in a futile attempt to save a Spencer

local's life. Lesley spent some time explaining where Spencer was and suggested the operator contact Brooklyn or Gosford stations. The operator took our mobile phone number and said they would ring back within five minutes.

Within the five minutes we received a call from the Supervisor of the ambulance section at 000 and we again explained the problem and where Spencer was. The supervisor said he would contact NRMA Careflight at Westmead Hospital and ring us back.

Some time later we received a phone call from the pilot of the Careflight chopper saying he was just taking off from Westmead, knew where Spencer was and would be about 10-12 minutes.

I judged the only landing area in Spencer was in the middle of the caravan park where everyone was - and it was really close to where everyone was.

Quickly I grabbed four RVCP guys who were in their orange uniforms, told them of the impending landing and asked them to do the following:-

- i) let everyone know what was going to happen,
- ii) get anyone who had tents and stuff in the vicinity to batten things down,
- iii) stand at the four extremities of the landing area and keep everyone away from it.

On time we heard the chopper coming over the ridge-line on the other side of the river. The chopper circled Spencer and the area we had pegged out for the landing. From talking to the pilot later, he also saw some reclaimed swampland on the extremity of the caravan park and decided it was a better bet as he had 5 tonnes of chopper, which displaces 5 tonnes of air, to land. He reckoned he would have blown the caravan park to bits if he had landed in the middle of it.

Anyway, I think the pilot has been around for a while as he dropped the chopper vertically, between all sorts of things like sheds and power-lines, onto the reclaimed swampland. He got out of the chopper and asked where the patient was and, seeing the Berowra Lions Club Sausage Sizzle, decided he would get something to eat whilst his medical crew attended to the problem as he hadn't had any breakfast. He went back and powered the chopper down. I asked him if he wanted someone to guard it and he replied it wasn't necessary as they usually don't get stolen.

Whilst all this was going on an ambulance pulled into the caravan park. The pilot said he had been in contact with the ambulance and he knew it would arrive around the same time as he did. Anyway, the hypothermic paddler now had both the ambulance paramedics and the NRMA Careflight paramedics all fussing around him and sticking a drip into him so we all breathed a sigh of relief that he would be OK.

I asked the pilot what happens now. Do they flip a coin for the patient or what? He said it depended on whether the patient wanted a cold trip in the chopper or a warm trip in the ambulance and we joked about what medical fund the guy was in. Further, whilst the pilot and I were standing around the chopper after the paramedics and I had carried the litter and patient from the Red Cross tent to the chopper and they were strapping things down, I asked why the chopper has lambs-wool seat-covers and the ambulance didn't. That question nearly started a civil war. By the way, the plastic stretcher things they carry in choppers leave groove-marks in your hands when you carry them.

Now it was time to get 5 tonnes of chopper into the air. The pilot warmed it up, throttled it, throttled it some more then revved it up to banshee-scream pitch. It rose straight up, just like a flying saucer, and was gone.

From where I was standing, two things were happening. First, there were a whole lot of people with dust and dirt in their eyes trying to focus cameras on the chopper, and secondly, there was a whole lot of dust and dirt that didn't get in people's eyes going everywhere else in Spencer.

Reflecting on things, I've got to add that the actions and reactions of Lesley Harvey from HCP, the RVCP people, the Red Cross team, WICEN, the crew at 000 and the ambulance and Careflight squads were coordinated and exemplarary. From now on, I'm going to donate to NRMA Careflight each year and I'm going to continue to subscribe to Telstra's analogue network until it dies a peaceful death in the year 2000 (but I hope Telstra sees sense and keeps it going).

Phil Higgerson VK2OX , WICEN at Spencer, Sunday October 19th 1997.

(WICEN is still looking for new members and the above blow-by-blow description of an actual WICEN exercise gives you an idea as to what goes on. It's not all doom and gloom - there is a special bonding with other members of different groups. If you are interested please contact the State Secretary at PO box 123, St Leonards, NSW 2065 who will send out a New Member's kit to you.)

Taken from DRAGNET Newsletter of the St George Amateur Radio Club, Dec '97.

The 10 Commandments of Electronic Safety.

1. Be aware of the lightning that lurks in an undischarged capacitor lest it cause thee to be bounded upon thy backside in a most ungentlemanly manner.
2. Cause thou the switch that supplies large quantities of juice to be opened and thus tagged, so that thy days may be long on earth.
3. Prove to thyself that all circuits that radiate and upon which thou workest are grounded, lest they lift thee to a higher-frequency potential and cause thee to radiate also.
4. Take care that thou use the proper method when thou take the measure of high voltage, that it not incinerate both thee and thy meter, for though thou hast no account number and canst be easily replaced, the meter doth have such and shall bring great woe and travail upon the supply department.
5. Tarry not amongst those who engage in intentional shocks, for they are surely non-believers and not long for this world.
6. Take care thou tamper not with interlocks and safety devices, for this shall incur the wrath of thy seniors, and unleash the fury of the Safety Officer upon thy head and shoulders.
7. Work not with energised equipment; for if thou dost, thy buddies will surely be buying beers without thee, and thy space at the bar will be filled by another.
8. Verily, verily I say unto thee; never service high-voltage equipment alone for electric cooking is a slothful process and thou might sizzle in thy own fat for hours before thy Maker seeth fit to end thy misery and draw thee into his fold.
9. Trifle not with radioactive tubes and substances, lest thou commence to glow in the darkness like unto a lightning-bug.
10. Commit thou to memory the words of the prophets, which are written in the Instruction Books; they give thee the straight dope and steer thee away from error.

(taken from Electronics Australia, August 1969.)

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Thought For The Moment: You only live once - but if you do it right, once is enough!

THE KEY ISSUES...



The Illawarra Amateur Radio Society Inc.

PO Box 1838 WOLLONGONG NSW 2500

REPEATERS:-

Callsign	Freq	Mode	Location	Linked to:
VK2RMP	146.850	Voice	Maddens Plains	VK2RMU
VK2RMP	438.725	Voice	Maddens Plains	
VK2RIS	146.975	Voice	Saddleback Mtn	
VK2RUW	438.225	Voice	Knights Hill	VK2RGN, VK1RGI
VK2RUW	29.620	Voice	Wollongong (on test linked to VK2RMP)	
VK2AMW-7	147.575	Packet	Mt Murray	Netrom
VK2AMW-1	144.625	Packet	Woll. University	
VK2XGJ	144.700	Packet	Dapto (& 147.575)	
VK2XGJ	439.075	Packet	Dapto	
VK2AMW-9	144.700	Packet	Maddens Plains	Netrom

Membership:- \$20.00 per annum. \$15.00 concession (enquiries to the Treasurer). Memberships expire immediately after the AGM in August.

OFFICE-BEARERS & COMMITTEE:

PRESIDENT:	VK2XQX	Simon Ferrie (02) 42836107
VICE PRES:	VK2UBF	Brian Farrar (02) 42672296
SECRETARY:	VK2MT	Rob McKnight
TREASURER:	VK2TNK	Rob Skelcher
COMMITTEE:	VK2ZLJ - John Lodding (02) 42941690, VK2AGV - Ned McIntosh VK2ZWG - Jim Beaver (02) 42848634, VK2TPH - Phil Howchin	

REPEATER COMMITTEE: VK2MT - Rob McKnight, VK2BIT - Peter Woods

VK2ZLJ - John Lodding, VK2TKE - Ken Goodhew

PUBLICITY:	VK2UBF - Brian Farrar
BROADCAST:	VK2UBF - Brian Farrar (146.850Mhz), Rob McKnight (438.225Mhz), Simon Ferrie (438.225Mhz)
EDITOR:	VK2AGV - Ned McIntosh (0418) 420310, (018) 420310
PRINTER:	VK2MT - Rob McKnight
CANTEEN:	VK2KVH - Vic Hee

LIFE MEMBERS:

VK2CAG - Graeme Dowse, VK2OB - Keith Curle, VK2ALU - Lyle Patison

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