MEETINGS, NETS and SERVICES

Club Station: VK4WIS

Club Repeaters:

Maleny: VK4RSC on 146.850 MHz & 438.075 MHz.
Peregian Beach: VK4RMB on 146.825 MHz & 438.175 MHz.
Gympie: VK4RGY on 146.625 MHz & 438.825 MHz.
Bli Bli: VK4RSN on 53.700 MHz

General Meeting: Monthly on the first Tuesday at 7:30 pm in the Club House, old Toll Plaza building, 85 Godfreys Road, Bli Bli. Visitors are welcome to attend.

Weekday Meeting: Weekly at 10:00 am on Wednesday.

Good Morning Net: Daily at 8.15 am at VK4RSC on 146.850 MHz. Conducted by various club members.

Tech Net: Weekly at 8:30 pm Sunday at VK4RSC on 146.850 MHz. Check in, raise topics and ask your technical questions.

80 m Net: Weekly at 7:30 pm Thursday on 3660 kHz.

10 m Net: Weekly at 8:15 pm Wednesday on 28.470 MHz.

6 m Net: Weekly at 7.30 pm Friday at VK4RSN on 53.700 MHz.

2 m Net: Weekly at 7:30 pm Sunday on 144.300 MHz SSB. Conducted by club station VK4WIS.

QNEWS: Relayed Sunday at 9:00 am at VK4RSC on 146.850 MHz. After the broadcast a callback is conducted by VK4WIS.

Internet: www.vk4wis.org
This website provides previous issues of Pelican Droppings in full colour in pdf format which can be downloaded. The current issue can be had by subscribing to the email edition in pdf format. Apply to SCARC.

EchoLink: Available on VK4RSC 146.850 MHz. The Internet station is VK4AKA-R and the node is #195107.

NEXT ISSUE This issue is a bit late, but I'm catching up The next issue should be ready for the August GM. Ed.

SCARC Inc. Office Bearers AGM Feb 2006

President	Ray Stuart VK4YRS
Vice-President	Noel Des Jardins VK4NL
Secretary	Gordon Taylor VK4VP
Treasurer	Keith Noll VK4AKA
Committee	Harvey Wickes VK4AHW; Frank Winter VK4BLF; Mike Little VK4YFL; Richard Philp VK4YRP

Copy deadline: 2nd Tuesday of the month preceding GM issue.
Email editor: geoffcom@powerup.com.au

Pelican Droppings

Newsletter of the Sunshine Coast Amateur Radio Club Inc.

Issue No.84 June-July 2006

The HF station is back in action—see page 2

INSIDE

Address: The Secretary, Sunshine Coast Amateur Radio Club Inc.
85 Godfreys Road Bli Bli Qld 4560

Presidential Preamble

Welcome to this month's Pelican Droppings. The winter is with us again so we need to look after ourselves. To those on our sick list we all hope that they improve daily.

Speaker sub committee: VH4BLF Frank requires speakers for each monthly meeting from August to November. Can YOU give us an interesting talk for 20 minutes, please contact Frank. VK4MRC Rod was last month's speaker and it was very interesting hear about running a remote hospital in New Guinea.

Wicen sub committee: Volunteers are required for Trial Bike Rides which will be held on 5th and 6th August plus 26th and 27th August. Please contact the writer or VK4XZ Bill for details.

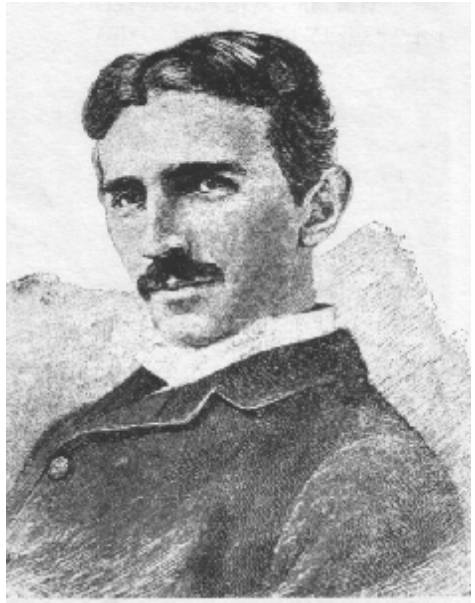
Vin, our caravan project coordinator, requires members to assist with the restoration. Please contact Vin or Richard VK4YRP if you wish to assist. The caravan should be at Vin's residence, Dulong when you read this article. Vin's records show that over 336 man-hours have gone into the caravan at the Clubrooms. Thanks to all those who have assisted so far.

Repeaters: The 70cm repeater (438.175 MHz) is now on test in Gympie township. Contact VK4NL Noel with coverage reports. Thanks to Paul VK4YPM for the site.

Exams: Two people sat for and passed their Foundation Licence exams on Monday 12 June. We hope to hear them on air soon. VK4VP Gordon is unable to continue as our exam team leader and we need someone to take over from him. Please contact the writer or Gordon VK4VP if you can assist.

Education: Harvey VK4AHW conducts classes for the new Founda-

Front cover photograph
With the demise of the FT-757 radio the Green Room was deprived of its HF capability. Fortuitously a FT-7B 100 W was donated by a visitor to the club. This came with a digital display and SWR meter. The donor was Grilhaut (Gaby) des Fontaines who has retired from the hobby. He formerly operated the station YJ8GG in the New Hebrides.



nant frequency of the earth. He built and tested a wireless power system that transmitted 10 kilowatts over a distance of 42 km and patented it on 20 March 1900. Both Westinghouse and Edison were seriously worried by this invention, as they would lose all their investments if Tesla came up with a better system. They went about discrediting him, helped by Tesla himself – his mind had begun working in strange ways and he began writing and publishing very weird articles. By this time he had spent all his money and earned none and had been evicted from several hotels for not paying his bill.

On 5 January 1943, Tesla phoned the US war department to offer them the design of his "Teleforce Weapon" which could form a barrier around the United States and knock any plane out of the sky if it tried to cross it. The Colonel to whom he spoke assumed he was a madman and forgot about him. That evening he died in his bed of heart failure, but his body was only discovered three days later. So ends the story of a brilliant though eccentric man. He wrote of himself, "I continually experience an inexpressible satisfaction from the knowledge that my polyphase system is used throughout the world to lighten the burdens of mankind and that my wireless system is employed to render a service to bring pleasure to people in all parts of the world." End

Famous Personalities : Nikola Tesla

By Tony Thorrold VK4KKY

Tesla was born in a little village called Smiljan in Croatia on the stroke of midnight 10/11 July 1856 during a raging thunderstorm. He went to school in Carlstadt, Croatia and then to University in Prague where he studied engineering. He studied so hard that his professors asked his father to tell him to slow down a bit, but it was a characteristic that remained with him all his life. Tesla was fascinated by an electrical motor/dynamo which the professor of physics brought from Paris, but noticing the arcing and sparking at the commutator, he had the idea to use AC to drive a much more efficient motor.

No one had ever made an AC motor before – this was brand new territory and he drove himself so hard working on his idea that he had a mental breakdown. Eventually he solved the problems and designed the first two-phase motor. Over the next few months he thought up and designed a complete three-phase AC system – generators, motors and transformers. Unfortunately, then and for the rest of his life, he refused to write down his designs or make any drawings, but used only his brain and his memory. This and his total lack of business sense caused him enormous problems. He emigrated to America where, for 1 million dollars, he sold his patents to George Westinghouse who wanted to make and sell AC distribution systems in opposition to Edison's well-established DC equipment.

Tesla then built himself a well-equipped laboratory to investigate his next interest- resonance. He built tuned circuits which could generate very high frequencies and high voltages, eventually reaching 100 million volts and several megacycles per second. He managed to generate x-rays and took photos of the bones in his hand many years before Roentgen made the same invention and published the results, but of course, Tesla had not written anything down and was never credited with the invention. He built tuned circuits, the cathode ray tube and the electron microscope, but once again wrote nothing down. We know about these inventions only because they were discovered with his possessions after his death. He spent lavishly on his experiments, lived in a grand hotel and ate at expensive restaurants every night.

He built a practical, operating radio transmitter and receiver, three years before Marconi and then became obsessed with the idea of transmitting free power to everyone in the world using the reso-

tion Licence plus Standard and Advanced Licences. Speak to him if you are interested in attending.

Clubroom happenings. VK4SY Joe is now back in action in the South Yarra store. Ask Joe for any bits that you may need for a project. Vicki, wife of Harry VK4TK, is our librarian and she could use help. Any donations for the library should be given to Vicki. The first new magazine for the library Practical Wireless has been received. The Green Room improvement is continuing thanks to Bill VK4XZ and crew. Soon we will have radios for almost all bands that can be used in an emergency. Our July 2006 night meeting is on Tuesday 4th at 7:30pm at the clubrooms and our July Sunday meeting will be held on the 16th starting at 9:00am. BYO BBQ. Remember the club nets they are held for you so please join them. VK4NL Noel requires net controllers and he won't sleep until he has enough operators. Check the SCARC web site www.vk4wis.org for information updates.

That's enough from me. 73 all, Ray

Vale John Purdon VK4PU

On 26th May, 2006, we lost John Purdon, VK4PU, who passed away at the age of 85. John was a keen 6 meter operator and one of the founding members of SCARC, having served as our first president. I got to know John on air, back in the early 70's, when he would be 'working the world' on 6 Meter DX and usually doing better than all of the rest of us put together. We would occasionally meet up at Ham Fests, but it was not until I moved to the Sunshine Coast six years ago that I really got to know him as a personal friend. Whenever I popped in for a visit, he and his XYL Mavis would make me welcome. John was always ready to show me his latest home brew gear and his most recent 6 meter QSL cards from places I had never even heard of.

He invariably kept a low profile on the band, but he did a lot of careful listening. In the middle of a good opening to Japan, John was always the guy who picked out the Korean, Russian or Chinese stations amongst the QRM, and of course, he worked them all, frequently on CW. In latter years he had worked just about all there was to work on the

Continued page 13

WICEN Caravan - Its conception

As those who have visited the club recently in daylight hours will know, the club is currently engaged in the restoration and fitting out of a caravan. Its prime use will be as a transportable radio station during an emergency. A view of the caravan is shown in the recent photo below. Although the project is only a couple of months old and is already well underway. This story is about how the project was conceived and what has happened since to thrust it forward into real construction with such gusto. The steps taken were something like this:

1. At a club meeting the subject of radio services for WICEN was discussed, not for the first time.
2. The committee decided to co-opt Tony Cross VK4FAAA to head a sub-committee to look at what was needed for WICEN and for the role it might play in Sunshine Coast emergency services. Tony was a logical choice because of his on-going involvement in counter-disaster matters, particularly in relation to the Councils and SES.
3. In view of the flood-prone nature of the club site, Tony suggested that a trailer be provided so that a radio station could be made trans-

The WICEN caravan—Photographed on Wednesday 24th May

To get back to our definition, of Eq. 1, we may know that the input to an amplifier is 2 watts and the output of the amplifier is 40 watts. The power gain is then,

$$Gain = 10 \log[P_1/P_2] = 10 \log[40/2] = 10 \log 20 = 10 \times 1.3 = 13dB$$

So the amplifier has a gain of 13 dB. A negative gain means a loss, e.g. an attenuator may have a gain of –10 dB.

Here are some ratios for common dB differences:

dB Gain	**Approx power ratio**
-10 dB	divide by 10
-3 dB	divide by 2
+3 dB	2 times
+10 dB	10 times
+20 dB	100 times
+30 dB	1000 times

End

Continued from page 3

'Magic Band', so he set about doing it all over again, this time on SSTV. He was justifiably proud of his large photograph album, displaying all his exotic SSTV 6m QSL cards, often accompanied by the actual received signal printed from the video capture during the QSO.

John was always a cheerful character, with a great sense of humour, a glint in his eye and a quiet chuckle. He was generous too. I recall on one occasion I was discussing my problems finding some 600 ohm ladder line for a new G5RV antenna project. Without a moment's hesitation he dashed outside and dismantled one of his HF antennas, insisting that I take its feed-line home with me. He assured me that he had plenty more lying around somewhere.

John had been in precarious health for the last few years and didn't get about much. However, he always seemed to get along to our Sunfest activities each year. Last year I met him there, and he confided that only a few hours before, he had had a dizzy turn, and passed out on the floor of his home. However, there he was, a grin on his face, sifting through all the tables of goodies. It took more than that to dampen his enthusiasm.

Many of John's old friends from SCARC were amongst the large congregation attending his funeral service. To Mavis and the family we extend our deepest sympathy. We will all miss the cheerful tones of VK4 Prickly Underware (or Porcelain Utensil) on 6 meters. However, on a happier note, John junior is planning to take out a license soon, so that the call will be re-activated and kept in the family.

Harvey Wickes VK4AHW End

Logarithms and decibels - What does "20 dB over 9"'mean ?

By Tony Thorrold VK4KKY

For radio amateurs the Bel is an important ratio for comparing powers. The practical unit is the deci-Bel (dB) which is one tenth of a Bel. It is a logarithmic ratio so it covers a very large range without using big numbers. A decibel is the smallest change in loudness that a human ear can hear and it is defined as: $dB = 10 \log[P_1/P_2]$ ……..Eq. 1

where log = common logarithm ($\log_{10}$ which may be obtained from most calculators), P_1 = reference power and P_2 = new power.

We saw above that the Bel is a logarithmic ratio and the formula contains the term "log". What does this actually mean? Logarithms are used in many applications other than radio – a very interesting one at present is the Richter Scale which measures the strength of earthquakes; this is a logarithmic scale too.

The definition of a logarithm sounds a bit confusing, but it is actually quite simple when you stop and think about it. "A logarithm is the exponent to which a fixed number (called the base) must be raised in order to produce a given number".

Think of the little equation $10^3 = 1000$, ten to the power of three equals one thousand or 10 x 10 x 10 = 1000. The exponent is the little 3 above the 10. So the exponent to which 10 must be raised to produce 1000 is 3. 3 is the logarithm of 1000 to the base 10. This is written $\log_{10} 1000 = 3$.

Because we normally count in tens, common logarithms use the base 10, but other bases are frequently used in mathematics and science. If there is no number written beneath the word "log" then we take it as read that the common logarithm is being used and just pretend there is a little 10 written there.

We saw above that logarithms allow us to cover a very large range without using big numbers. You have just seen how 3 is the logarithm of 1000 – instead of saying 1000, you could say log 3. Well that's how decibels work! 3 Bels is the same as 1000 times. A decibel is one tenth of a Bel, so instead of saying 3 Bels, we say 30 decibels – this still means 1000 times.

So if you tell me on the Thursday night 80 metre net that my signal is 30 dB over S9, this means that my signal is 1000 times stronger than someone who is "only" S9. Its much easier to say, "You are 25 dB over" than to say, "Your signal is 316.2 times stronger than S9". ($\log_{10} 316.2 = 2.5$)

Amplifiers and attenuators are also quantified in dB.

portable.

4. Ray Stuart VK4YRS (amongst others) suggested that a caravan would be better than a trailer (sounds a good idea), and the desires on subject were relayed to club members in the formal way at a monthly General Meeting and in the informal way at the weekly Wednesday club gatherings..

5. Soon after hearing of this embryo project Vin Childs VK4? saw an old caravan in the Maroochy Shire Council yard. Following this up he discovered that the van was to be given away and that there were several interested receivers. Using his communicating skills he obtained first option on the caravan. This was the initial and important coup-de-grace.

6. Recognising Vin Childs' experience as a former engineering project manager the WICEN sub- committee appointed him to take charge of the restoration of the caravan. The club committee allocated an initial float of $300 towards meeting costs.

7. Vin Childs organised a payment of $4000 by Maroochy Shire Council to bring the caravan to a roadworthy state for handover to the club, on the understanding that it would be converted to a radio control centre for WICEN and emergency services duties. This was the second vital and remarkable coup-de-grace. 9. Project timetable: Sep 06 -Ready for the road (for display at Sunfest).

Apr 07—Essentially complete, depending on funding. End

Progress with restoration of the WICEN caravan

This work has been carried out by a small group of club members under the stewardship of Vin Childs, and has been gratefully supported by those suppliers and contractors who have provided goods and services at reduced prices. The objective is to restore the body to achieve towing status before starting work on the interior.

1. Undercarriage sand-blasted, primed and finished-painted at a cost of $1600.
2. The hand brake re-conditioned with new stainless steel cable.
3. Axles and springs removed and re-furbished.
4. A-frame towing structure re-inforced with welded plate steel, then painted.

5. New electric brake magnets fitted and re-wired.
6. New chequered side plates fitted.
7. New bumper bar and brackets for mounting antennas and the spare wheel.
8. New Light Truck tyres, balance and fitted at a cost of $60 each by Johnson Tyres.
9. Replacement glazing throughout, including one new Perspex front window.

A recent photograph of the gutted interior is shown below. End

The partly-gutted interior of the WICEN caravan

Suppliers of goods and services for the WICEN caravan

Suncoast Sandblasting of Nambour (undercarriage)

Suncoast Caravan Service (light fittings at cost)
17 Fishermans Rd, Maroochydore 4558 Ph 5443 1036

The Crystal Set Revisited

as told to Pelican Droppings by Rod Cardell VK4MRC

After retiring from a multi-faceted career as an aviator (Convair, DC3), a medical practitioner and author of a book about Townsville during WW2, Rod decided to engage his mind with our wonderful hobby - amateur radio. Being a beginner in radio and with a desire to build something he started with the basic crystal set. Using parts gleaned from the SCARC store he has built five crystal sets. All use germanium diodes as detectors and are un-powered as usual. Two of these sets are illustrated in the photo below.

Early models, as pictured, required 50-year old high-impedance headphones. Later he used low-impedance headphones fed via a transformer. Later still the sets were bolstered with a RF pre-amp and an audio amplifier and loudspeaker, both of which required 9 V batteries to operate. End

Two basic un-powered crystal sets built by Rod VK4MRC

SCARC Library

Librarian Vicky Ameerbeg, who is the successor to Max VK4VZ, has been looking at gaps in the several magazines kept.
Issues are missing in *Amateur Radio* in the years 1948-60.

Relay Operating Circuits

By Tony Thorrold VK4KKY

Transistors can be used to modify the characteristics of relays, increasing their current or voltage sensitivities.

Fig 1 shows a simple circuit in which T1 is wired as an emitter follower and uses a relay as its emitter load. This effectively increases the relay's current sensitivity by about 50 times.

R1 limits the base current to a safe value. R2 should have a value about 100 times the relay's coil resistance. D1 prevents any back emf from damaging the circuit as the relay switches off. The relay may be any type with an operating current < 50 mA and an operating voltage < 15 volts. The circuit supply rail should be about 3 volts greater than the rated relay voltage. T1 may be any small npn transistor, e.g. BC109 or BC 547.

If an increase in both the voltage and current sensitivity of the relay is required, the circuit of Fig.2 may be used. Both T1 and T2 are wired as common emitter amplifiers. With no input, T1 is held cut-off by R2 and T2 is held cut-off by R3, so the relay does not operate. When an input is connected to T1 base, both T1 and T2 are driven to saturation and the relay operates. An input of roughly 700 mV at 40 µA is needed to drive the relay on. End

Fig. 1

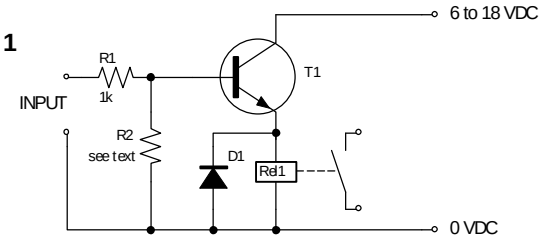
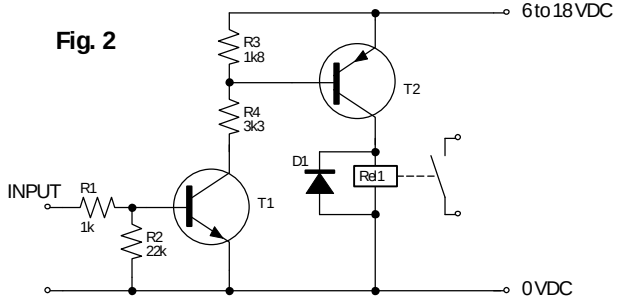


Fig. 2



Computer Tip 6

Here are a few tips to help you find what you are looking for when using a search engine like Google on the internet:

1. Get specific by using more words – Google will let you use up to 30 words, other search engines ten or so.
2. If you are not sure of how to spell something, use the wildcard "*". E.g. you remember reading in Pelican Droppings about the inventor of TV but can't spell Zworykin, you could try "television Z*"
3. Use + or – in front of words. + means a response must include that word, while – in front of a word means the response must not contain the word. Eg "radio transceiver +icom -kenwood"
4. To find websites with a specific word in their names, use "inurl:", eg to find websites with names containing "Yaesu", type "inurl:yaesu"
5. To search for items in a specific number range, eg headphones manufactured between 1940 and 1965, type "headphones 1940..1965"
6. To find results containing items of a similar nature but not specifically containing your word, use "~", eg "~morse~" might also show results for Baudot, secret codes, digital modes, etc. End

Kenwood Power Supplies

as told to Pelican Droppings by Harvey Wickes VK4AHW

A couple of months ago the club obtained through disposals a large number of Kenwood 20 A power supplies. None were in working order, the prime cause of which was failed pass transistors. Harvey VK4AHW took on the task of serviceman, a role familiar to him. A search located the correct replacement pass transistors and a sufficient number were purchased and duly installed.

As the intention was to sell the transistors to members, with the proceeds of sales going into club coffers, it was necessary to prove each power supply. Among other things this required a high current resistive load. Harvey constructed a 16 A load one in 16 minutes (= one amp per minute) using components from personal and SCARC storage. The result is shown in the photo of Fig.1. The resistive load is a combination of high power resistors and an incandescent lamp, with the capacity of the minimalist heat sink bolstered with a cooling air fan. The collection of power supplies with one under load test is

Fig.1 16 A resistive load for Kenwood power supplies

Fig.2 Kenwood power supplies, one being tested

shown in the photo of Fig.2.

A number of the power supplies were retained for use in club repeaters, and the remaining offered for sale to club members. As there were more takers than power supplies after a reasonable period of notice, a ballot was conducted to decide the successful buyers.

This exercise is another example of the enterprise and application of past skills and experience of and by club members. It is a capacity in which the club seems to be richly endowed. (but then, perhaps it always has been). End