Ham RADIO News

Newsletter of The Amateur Radio Society of India (Member of IARU)
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President's message

Dear members

I had mentioned that ARSI planned a number of interesting contests during the year to keep activity alive. The first such contest was held and the results are being computed as logs are still coming in. We hope that many more stations will participate for the other contests

In this issue reports appear on activity from several areas and it is heartening to see that promotion of amateur radio is going well. We expect several new licensees to be heard on the airways soon

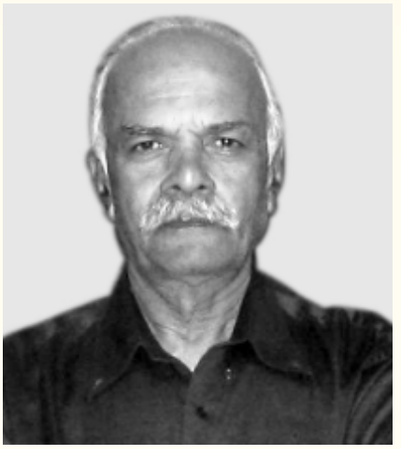
The Triennial Conference of IARU Region 3 is fast approaching and hopefully many hams from India will attend- it is in Ho Chi Minh City in Vietnam from 5th to 9th November 2012 and details are available from the IARU Region 3 webpage http://www.iaru-r3.org/15r3c/15r3c.htm

The Seanet convention will also take place in Kuala Lumpur between 23rd and 27th November 2012

By the time this issue goes to press the IARU HF contest would have taken place and many stations will be active as ARSI HQ stations. We wish our members all success in the contest and also hope that propagation will be good as recently it has not been too good.

Gopal Madhavan VU2GMN

From the Editor's desk



Band conditions were slowly improving over the past few months when again the Sun went into a 'quiet phase' for a week. As I am writing this, big sunspots are showing up again increasing chances of geomagnetic storms in the coming weeks. The HF bands are fairly active during the night with only 15 meters and above active during the day.

The *Amateur Radio Emergency Services* of Thane, Maharashtra was in the news after the members actively participated by providing excellent and timely communications during the rescue work at a major fire in Thane during the last week of June. I have included a full report in this issue.

As usual, I request members to forward articles, news and photos for publication.

73

Ganesh VU2TS

Editor

WORLD AMATEUR RADIO DAY 2012

Gwalior HAMs celebrated World Amateur Radio day on 18 April, Wednesday, 9.00 a.m. at Delhi Public School, Gwalior. More than 100 students attended the program. Jayu VU2AU accompanied by AniketAshtikar VU2LOL conducted the program. A presentation on HAM Radio, Movie and few clippings on Amateur Radio were shown and explained to students.

Staff members took keen interest and shown their inclination towards HAM Radio. Principal Mr. Sunil Bhalla was very much interested in starting a HAM station and its activity in the school. Program was successful as shown by the staff of the school.

Demonstration of HAM Radio in JHANSI

A program on HAM Radio was organized in Diamond Cement Jhansi for the staff and children on 29 April 2012 by JayuS.Bhide VU2JAU and AniketAshtikar VU2LOL. It was good success A live demo of Station operation was also given on VHF and HF. Om Vikas VU2WWP helped a lot there. In the photo jayu VU2JAU operating HF station. Technical staff of the company and young children were present in the program.

Jayu VU2JAU along with AniketAshtikar VU2LOL went all the way from Gwalior about 130 kmsto Jhansi, where omVikas VU2WWP was waiting. After reaching Dimond Cement, Transceivers were checked and then a dipole antenna was erected which Jayu took with him for omVikas VU2WWP. SSB Signals were copied very strong on 20 mtrs. Everyone was happy to see how QSOs were made on ham radio. Demo on VHF was also given to all.

The program was very successful everyone enjoyed it.

The picture shows OMJayu VU2JAU operating the station and explaining amateur radio to the audience.

India activates ARES for fire

Members of Amateur Radio Emergency Service were activated by the Thane Disaster Management Authority for communications at a fire at Mantralaya, India, in which two people died.

The blaze broke out on the fourth floor of the Mantralaya building which houses the state secretariat in south Mumbai on 22 June, also injuring 16 people.

The drama began with a call to MilindKorde VU2IZO requesting team members to assemble at Thane Emergency Operations Center (EOC).

Emergency communications were established between EOC and the fire by MilindKorde VU2IZO and ParinGangar VU2PIC.

The following team members confirmed they were available at their home qth on standby with radio support were Jaiprakash VU2JPN, SatheeshMenon VU2WSM, PrahladBodke VU2TBV.

RohitPurohit VU2TOO and NitinAinapure VU2CAN attended the Thane EOC and activated the Emergency Station on Mumbai and Matheran Repeaters.

The station was shut down after 10 hours when the fire was nearly extinguished.

Jim Linton VK3PC,

Chairman IARU Region 3 Disaster Communications Committee,

and

JayantBhide VU2JAU,

National Co-ordinator for Disaster Communications in India.

TARA

This is the report of activity at FIRE SITE - MANTRALAY, MUMBAI, on 21st JUNE, 2012 as reported by VU2IZO MilindKorde.

Onsite Team	**Stand-by Team**
MilindKorde – VU2IZO	Jaiprakash – VU2JPN
ParinGangar – VU2PIC	PrahladBodke – VU2TBV
RohitPurohit – VU2TOO	
NitinAinapure – VU2CAN	

Chronology of Events:

Time	Event
17:00 hours	Thane Disaster Management Authority activates Amateur Radio Emergency Services (by contacting MilindKorde – VU2IZO) requesting team members to assemble at Thane Emergency Operations Center (EOC).

Contd.

Time	Event
17:10 hours	MilindKorde (VU2IZO) sends SOS message to following ARES Team Members – VU2PIC – ParinGangar VU2JPN – Jaiprakash VU2CAN – NitinAinapure VU2TOO – RohitPurohit SWL – Bijoy Phillip VU2TBV – PrahladBodke VU2UBQ – Jayant Kale
17:15 hours	MilindKorde received confirmations from following ARES Team Members – MilindKorde – VU2IZO ParinGangar – VU2PIC RohitPurohit – VU2TOO NitinAinapure – VU2CAN Jaiprakash – VU2JPN PrahladBodke – VU2TBV
18:30 hours	**Following team members assemble at Thane EOC –** MilindKorde – VU2IZO ParinGangar – VU2PIC **Following team members confirm they are available at their home qth on standby with radio support –** Jaiprakash – VU2JPN SatheeshMenon – VU2WSM PrahladBodke – VU2TBV
19:00 hours	Thane EOC dispatches following team members to Mantralaya (Site of Incident) to establish a communication link between Mantralaya and Thane EOC: MilindKorde – VU2IZO ParinGangar – VU2PIC
20:00 hours	RohitPurohit – VU2TOO – and NitinAinapure – VU2CAN - reach Thane EOC and activate Emergency Station on Mumbai and Matheran Repeaters.
21:00 hours	MilindKorde – VU2IZO and ParinGangar – VU2PIC – reach Mantralaya and establish contact with Thane EOC via Mumbai Repeater.
21:30 hours	ParinGangar – VU2PIC – interrupts regular traffic on Mumbai Repeater and requests fellow hams to allow the Repeater usage for Emergency Activities.
22:30 hours	Thane EOC directs the Onsite Team to shut the station since the fire was almost extinguished and no more support was needed.
23:00 hours	RohitPurohit – VU2TOO goes QRT from Thane EOC.
23:45 hours	MilindKorde – VU2IZO and ParinGangar – VU2PIC reach Thane EOC, checks that Amateur Radio set is in operational condition at Thane EOC, and leaves for home QTH.

FIELD DAY AT MANUPATTI – VU2SEJ

Coimbatore Amateur Radio Club members conducted the National Field Day on 2nd & 3rd June, 2012 at Manupatti Village about 15 kms from Udumalpet. Around 23 Ham's and 4 SWL's have participated. On the National Field Day we have installed HF and VHF gear under call signVU2SEJ and had contacts on both HF and VHF throughout our stay. We also had few DX contacts (European stations).

During the meeting the importance of being an ARSI Life member was stressed upon. ARSI's initiative were discussed including future VHF Hill top day on

25th and 26th August 2012.All the members agreed upon the need for such meaningful meetings and the need to bring in new members towards which everyone agreed to work together. Possibility of regular workshops was also addressed.

The meeting concluded on Sunday 3rd June 2012 afternoon on a joyous note in the Ham spirit.

VU2GVG Venkatesulu

Raja VU2KSJ sorting out the W5GI multiband antenna

The HF and VHF antennas at the field day site

VU2SEJ QRV

Now here's something different. Something unique!

Radio Amateur's Honeymoon Adventure

Helen Woolnough and Neil Melville PA9N are setting off on a honeymoon with a difference, and they aim to make a difference by raising money for charity.

They are taking part in the Mongol Rally where participants drive, in no more than six weeks, from the UK to Ulaanbaatar in Mongolia, using a thoroughly unsuitable car of 1200cc or less.

Helen and Neil's entry is called The Uncertainty Principle. They will be driving a 9 year old 1100cc Fiat Panda on their epic journey which starts July 14.

The challenging route will take them through the Gobi desert and over the Pamir Highway (the second highest road in the world). They aim to cover more than 10,000 miles through 19 countries, with no support, no mechanic, and no clue.

They'll be raising money for the Lotus Children's Centre Charitable Trust and UNICEF. All the best to the couple!!

https://www.facebook.com/Uncertainty.Principle.2012

OFFICE BEARERS

Amateur Radio TV and CW beacons for ISS

ARISS are hoping to establish an amateur radio 2.4 GHz TV beacon and a CW beacon on the International Space Station.

Gaston, ON4WF said the HamTV project is progressing. There have been discussions with ESA about the possibility of adding extra units to the HamTV transmitter that is being developed by Kaiser Italia. This is acceptable in as far as the KI unit under construction does not need to be modified.

A so called "Video Beacon" will be added externally to the HamTV unit. This beacon will allow automated DATV transmissions more or less permanently. The content of these DATV transmissions will be uploaded from the ground through existing channels and transferred to the Video Beacon on request. This function will also be used for educational purposes. Moreover, astronauts could record footage and load it into the Video Beacon for automated transmission.

Another additional unit will be a CW beacon transmitter delivering a small band low power signal (100 mW) on a frequency nearby the HamTV frequency. This beacon will transmit permanently and use the second ARISS L/S-band antenna. This offers ground stations signal reception with large S/N margins, facilitating antenna tracking and signal acquisition, especially at the beginning of a pass. The CW Beacon will transmit telegraphy signals, alternating its identification (call sign), a continuous carrier and possibly some telemetry comprizing onboard parameters (temperature, pressure, humidity, ambient sound level, etc.).

Lou W5DID suggested that we may be able to power it from the packet module already on the ISS, making it simple to operate.

ESA is being asked to address the cost of the Safety Package and testing such as EMI tests and outgassing tests for these additional units, but development and manufacturing will be supported by ARISS. A cost estimate is being developed for our team to build the units. A funding campaign will be set up to collect donations to cover the cost.

Regarding the amateur radio station in the Russian Service module the minutes say:

Kenneth N5VHO reported that an onboard power issue somewhat impacted ARISS radio operations. The air purifier for the ATV [Automated Transfer Vehicle] has needed to be plugged in, recently, in the Service Module (SM). The ARISS radio in the SM was turned off while the purifier was being used. The radio is turned on by the crew for school contacts and when the crew gets on the air for random contacts, as Astronaut Kuipers has done in the past few weeks. The ATV will be docked at the ISS until late September.

[Tnx: Southgate ARC]

Students build Supercapacitor battery for next ARISSat

Penn State students have built a state-of-the-art supercapacitor battery for the next amateur radio **ARISSat** satellite.

On Feb. 3, 2006, astronauts tossed an old spacesuit off the International Space Station. Inside was an amateur radio transmitter, a temperature sensor and some batteries.

The suit was a DIY satellite. It circled the Earth twice, repeating a greeting recorded in multiple languages; ham radio operators listened in as it passed overhead. Then the batteries died.

The Radio Amateur Satellite Corporation, or AMSAT, tried again in 2011. The battery in that satellite, a more traditional box design, also failed.

For the next model, AMSAT, a volunteer group, turned to the School of Engineering at Penn State Erie, The Behrend College. Three students designed a brand-new battery: a 1.8 kg cube powered by 15 supercapacitors,

Contd.

Students build Supercapacitor battery for next ARISSat

each roughly the size of a film canister.

The battery was built to handle 16 charge cycles in a 24-hour period. That will power the satellite in dark orbits, when the solar panels are not facing the sun.

To activate the battery before those solar panels charge, the students – David Jesberger, of St. Marys; Kathleen Nicholas, of Pittsburgh; and Jacob Sherk, of Elizabethtown – added four 9-volt Duracells.

AMSAT hopes to fit the satellite into a rocket payload and onto the International Space Station sometime in 2013. The astronauts won't have to do much with it.

"It's simple by design. They flip a switch, and they throw it out," said Dakshina Murthy Bellur, an assistant professor of electrical and computer engineering at Penn State Behrend. He supervised the battery work, which counted as the students' senior capstone project.

All three students have since graduated. All three have jobs: Nicholas and Jesberger signed on with defense contractors, and Sherk works at the Three Mile Island nuclear power plant.

They continue to track the AMSAT project. They want to know when their battery, upon which they laser-etched with their names and a Nittany Lion paw print, gets a launch date.

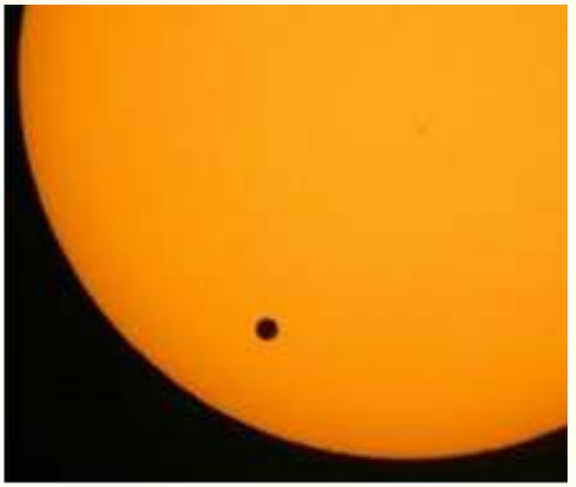
"That's going to be cool," Jesberger said. "We'll have our signatures in space."

Source Pennsylvania State University http://live.psu.edu/story/60125

ARISSathttp://www.arissat.org/

Indian Radio Hams QRV during Venus Transit

The **2012 transit of Venus**, when the planet Venus appeared as a small, dark disk moving across the face of the Sun began at 22:09 UTC on 5 June 2012, and finished at 04:49 UTC on 6 June.



Radio amateurs in Tambaram, near Chennai took part in therarest of rare event.

The *Deccan Chronicle* newspaper carried this report:

For the first time, about 1,000 children and their parents in suburban Tambaram had the opportunity to view the Venus transit in their neighbourhood with live updates by amateur radio operators from various parts of the city.

In the past, astronomy enthusiasts had to go to Birla planetarium in Kotturpuram to watch any celestial event and with thousands of people in city congregating there it became difficult for them to enjoy any event, BaluSaravanaSarma, coordinator of Tambaram astronomy club said on Wednesday.

"Keeping this in mind, we had organised the event in Tambaram. We have spent lakhs of rupees to buy a few telescopes and astronomical goggles for people to see the sun with utmost safety," he said.

More than 20 ham radio operators in the city were busy updating people about the event through the Chennai ham radio repeater (145.675 MHz frequency).

"I have to travel about 20 km to the planetarium, which makes it difficult for me to go on a regular basis," said K. Shruthi, a Class VI student who was busy witnessing the Venus transit.

"I will be happy if astronomical clubs in the city make such arrangements during such events. It will be of great help to youngsters like me to develop a passion for astronomy," said C. Satish, another young astronomy enthusiast.

Italian HF special event commemorates Apollo space program

ARI, the AssociazioneRadioamatoriItaliani, and their club station IQ1TW have announced a special operating award 'Apollo Space Program – From the Earth to the Moon' for contacts between July 1 – July 31, 2012.

This is to commemorate and keep alive the memory of the space program which has revolutionized the life of humankind.

To qualify for the award you need to have confirmed contacts with the ARI Headquarters Station IQ1TW and any three stations from this list: IZ1UMD, IZ1RFU, IZ1XBB, IZ1WVX, IZ1LBH, IK1WGZ, IZ1RGY, IZ2SMV, I1MXI.

On July 20, the anniversary of the first moon landing, a confirmed contact with IQ1TW (without the necessity of the other 3 contacts) will qualify you for the award.

The special event stations will operate with 200 watts using dipole and vertical antennas.

Full details, including a list of the planned HF operating frequencies and modes, log and confirmation information, rules, and application instructions are posted on the ARI web pages:

http://aritortona.xoom.it/

New OSCAR-7 DX record

Wyatt AC0RA and Bill OM3BD have broken the AMSAT-OSCAR 7 (AO-7) long distance (DX) record set in 2010.

Their GPS-measured 7849km QSO between grid squares EN31vx and JN88mf surpassed the prior 7843km record set by PY5LF and K3SZH in 2010.

Bill says that Wyatt did all the hard work by waking up at 3am, driving to a hill an hour away from his home, setting up his station, and working Bill before sunrise at 0955 UT on July 2.

It appears that an even longer distance is attainable, and Wyatt is looking for a suitable place from which they can try before Bill leaves Slovakia in mid-July.

Bill was running an FT847, a 2 x 10 element yagi on 2m with SP2000 preamp, and an 8 element yagi for 70cm while Wyatt had an FT-847, a 7 element yagi on 2 meters and a 12 element yagi on 70cm.

Further information, pictures and recordings of the contact at http://www.qsl.net/nz5n/AO7record.htm

Will My Mast Fail?

By Jim Elkins, W4GFX

"More antennas are better" seems a modus operandi for amateur radio operators. This M.O. results in a mast stacked with a multiple antennas. Just how much load the mast can carry is not calculated, only learned on failure. Fortunately, a steel mast bends in failure and rarely breaks. However, removing the antennas, and a bent mast, from the top of a tower are problems no one wants.

The Math

A mast has a section modulus S (resistance to permanent deformation), for tubing of diameter D and a wall thickness t, defined as (*for those of you who hate math, skip down to find the mast materials and easy computer program that will do these calculations)

$S = \frac{(D^4 - d^4)}{32D}$ = the section modulus.

The maximum moment for a mast is $M_{max} = S_{max}$, where $_{max}$ is the yield strength of the mast material.

The wind force on the mast is $F_{mast} = c_d p A_{mast}$, where

$c_d = 0.67$ =drag coefficient for a round tube

$p = p_o v^2$ = wind pressure

A_{mast} = area (D, diameter, times L, length, of the mast)

Wind force operates at the midpoint of a mast, so the bending moment on the mast is

$$M_{mast} = \frac{L F_{mast}}{2} = \frac{c_d p L^2 D}{2}$$

To this we add the bending moment of the antenna (I will use just one to keep it simple). The bending moment M_{ant} from an antenna of A_{eff} at a distance L from the base of the mast is given by

$M_{ant} = c_d p L A = p L A_{eff}$

Enough Already!

Mast Materials and Waterpipe

Waterpipe is not made to be used as a structural mast (it is made to carry fluids) and will fail at very low loads. Use waterpipe only if the antenna is mounted flush with the top of the tower (L, mast length, = 0).

Mast yield strengths (typical) run from 30,000 to 70,000 PSI. (In this note we assume the use of a fairly common A36 structural steel mast with yield strength of 33,000 PSI.) When buying a mast ask for a certificate of yield strength. If you galvanize the mast after purchase be careful the heat of galvanizing does not materially lower the yield strength. Steel strength is a child of its alloys and heat treatment.

The Easy Computer Program

Use the program in ON4UN's utilities for Low Band DXing, Yagi Design, "Mast Calculation." The utilities come with the book. Let's look at the program.

For a 12 ft^2 (flat surface equivalent) antenna (this is a large antenna) mounted at 8 feet above the tower, on a 2 inch mast with 0.25 inch walls, protruding 8 feet above the tower, we have the following:

60 mph stress on mast at entrance to tower 10,000 PSI

70 mph stress on mast at entrance to tower 13,700 PSI

80 mph stress on mast at entrance to tower 17,900 PSI

90 mph stress on mast at entrance to tower 22,600 PSI (closer!)

100 mph stress on mast at entrance to tower 27,900 PSI failure??

110 mph stress on mast at entrance to tower 33,800 PSI* failure

* exceeds the safe bending moment of 33,000 PSI, and the mast will fail. Note: this is not a high strength mast; some aluminum masts have similar yield strength. Some chrome-molly masts go to 90,000 PSI.

This antenna is mounted high on the mast. If it is instead mounted at 4 feet above the tower (a net change of 4 feet lower), the numbers change to

60 mph stress on mast at entrance to tower 4,900 PSI

70 mph stress on mast at entrance to tower 6,700 PSI

80 mph stress on mast at entrance to tower 8,800 PSI

90 mph stress on mast at entrance to tower 11,200 PSI

100 mph stress on mast at entrance to tower 13,800 PSI

110 mph stress on mast at entrance to tower 16,600 PSI

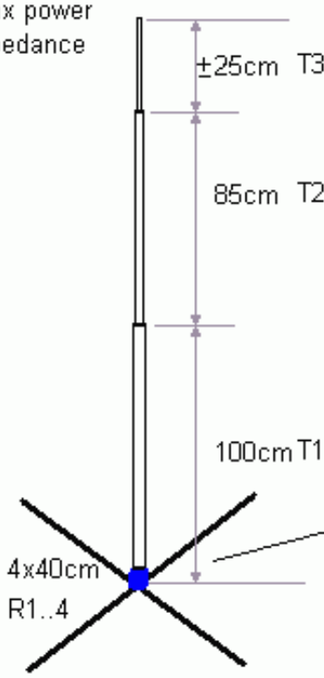
(What a difference the length of the mast-lever, L, makes. Now you have room for a boom truss. You also have a safety factor of 2X. Good engineering practice is to design for more than 2 times the expected PSI.)

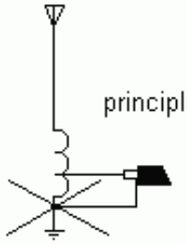
If you use this computer program with accurate data, you will have a good idea of the load and wind speed at which your selected mast will fail. You can do the calculations for 10 antennas on the mast within this program, all at the same time.

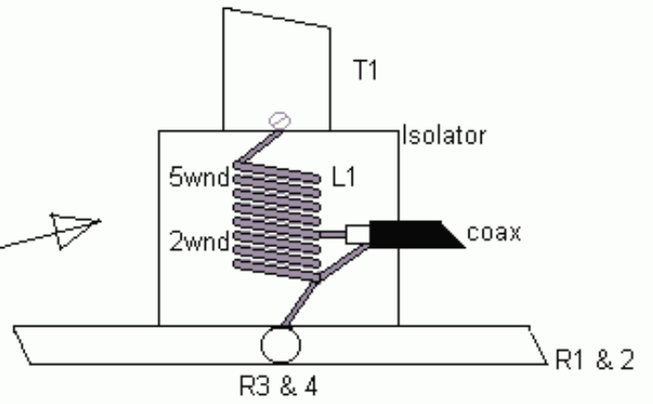
"Humpty Dumpty sat on a wall, Humpty Dumpty had a great fall ….." I hope not at the top of my tower! 73.

RE-A144V1F Full wave 2-meter VHF omnidirectional antenna *de ON6MU*

Omnidirectional VHF antenna grounded to remove static
7.5dBi gain
bandwidth more then 2 MHz at 1.5 SWR
SWR 1:1 on center frequency
250 watt max power
50 Ohm impedance

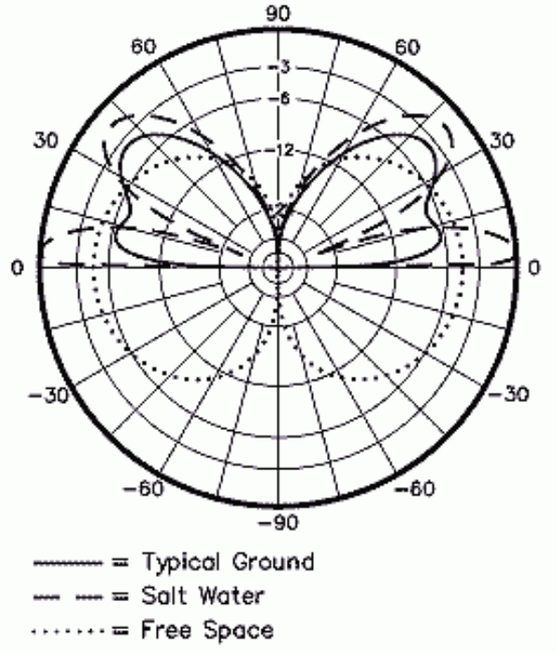






L1 = 7 wnd 1.5mm copper wire Ø 10mm
connect coax at 2 wnd from the gnd.

T3 = 8mm diameter (tune to best SWR by sliding it in or out of T2).
T2 = 10mm diameter
T1 = 15mm diameter
R1…4 = four radials of 40cm length Ø 8mm or 2 tubes of 80 cm
All alu tubes



Thanks to ON6MU for this easy to build high performance 2 meter antenna.

SimpleSat Look Down v1.0 now available

SimpleSat Look Down is a free, easy-to-use software app for satellite tracking.

Written by **Tom Doyle W9KE** it includes a satellite look down window that displays the view from the satellite looking down at the earth as it moves along.

It uses .NET 4 and runs on Windows 8, Windows 7, Vista and XP.

Tom has released a collection of videos that explain how SimpleSat Look Down works and they can be seen at http://www.uk.amsat.org/?p=8217You can download SimpleSat Look Down from http://www.tomdoyle.org/SimpleSatLookDown/SimpleSatLookDown.html

Tnx: Southgate ARC

Insurance scheme for UK Radio Amateurs

The Post Online reports that Ten Insurance has launched an insurance scheme for amateur radio enthusiasts.

The report says:

Broker network Ten Insurance has launched a new scheme for The Radio Society of Great Britain (RSGB), the not-for-profit national organisation for amateur radio enthusiasts.

The new scheme will provide specialist cover for the 24,000 licensed radio amateurs and enthusiasts in the UK.

Ten Insurance member South West Broking worked with the network to identify the right underwriter and get the scheme launched.

Julian Dent, managing director of South West Broking, said: "There are a surprising number of radio enthusiasts in the UK. It's an interest that's very much alive and well in Britain.

"I know from my contacts within the Society that the cover currently available on the market wasn't sufficient to meet the needs of all the members.

"The equipment can be very expensive, especially for radio repeaters and more specialised groups and clubs. Household policies usually aren't sufficient, so it's important that members have a standalone policy that's tailored for them."

Read the full article at:

http://www.postonline.co.uk/post/news/2184648/

insurance-launches-scheme-amateur-radio-djs

Tnx: Southgate ARC

Sri Lankan radio amateurs offer emergency communications

Sri Lanka's amateur radio operators have renewed their call to be included in communication work during national disasters, after the defence authorities relaxed rules on clearing equipment.

The report in Lanka Business says:

Popularly known as “ham radio” enthusiasts, amateur radio operators use a designated radio frequency spectrum to communicate non-commercial messages, private recreation, wireless experiments and emergency communication.

“We would like to join-up with the National Disaster Management Centre in some small way, to help them with emergency communication work,” **Radio Society of Sri Lanka** official, **Victor Goonetilleke4S7VK** said during Tuesday's public lecture on Disaster Risk Reduction, organised by LIRNE-asia, a regional ICT think-tank.

With some 200 members under its umbrella, the Radio Society of Sri Lanka is not new to disaster communications in the island.

The society played a crucial role during the 2004 Asian tsunami that claimed over 30,000 lives when giant tidal waves struck the island's shores displacing about one million people.

Read the full Lanka Business story at

http://www.lankabusinessonline.com/fullstory.php?nid=1289520459The Radio Society of Sri Lanka

http://www.rssl.lk/

-+**I received a QSL from 7K1PTT the other day, confirming our 20 meter CW QSO and I was amused to the following 'tips' printed on the reverse of the card:**

AMATEUR CODE - 7K1PTT

1) **Listen to your wife and talk with your child; only then QRV in your remaining time.**
2) **Maintain your garden and antenna look near to keep peace with your neighbours.**
3) **Practice heartwarming and smooth QSOs with consideration for your party and other listeners.**
4) **Clean up your transmitting signal and also wiring behind your rig.**
5) **Access possibility of QSO early to ensure your sleeping hours.**

FB DX! -*VU2TS*