URL: http://www.qsl.net/rssl

RSSL *NEWS!*

JUNE 2005 | **THE MONTHLY NEWSLETTER OF THE RADIO SOCIETY OF SRI LANKA**

The General Meeting for the Month of June will be held at the Seminar Room (Ground Floor) of Vidya Mandiraya, SLAAS – Sri Lanka Association for the Advancement of Science 120/10, Vidya Mawatha, Colombo 7 on Wednesday the 29th of June 2005 at 5.30 pm.

MONTHLY MEETINGS

Please note that unless otherwise notified, monthly General Meetings will be held at the SLAAS at 0530 PM on the **last Wednesday of the month.**. Please also monitor the RSSL net regularly on 145.650 MHz at 0900 P.M. for RSSL announcements. You are welcome to contact any Council member if you need to verify. Membership and ID Card applications can be obtained at the meetings. Membership renewals are also accepted by the Treasurer at the monthly meetings.

PRIME MINISTER THANKS THE RSSL

The RSSL received a letter of appreciation of its efforts in providing emergency communications during the Tsunami from the Hon. Mahinda Rajapakse, Prime Minister of the Democratic Socialist Republic of Sri Lanka. While thanking the RSSL and members who helped in the hour of nation's need, he also goes on the recognise the value of Amateur Radio. The full text of the message will be published in the next Newsletter, the RSSL Website and will be readout at the next General Meeting.

Danish Repeater at Yatiyantota

The repeater received from Denmark along with the Duplexer received from USA were installed at Yatiyantota. A team comprising Kusal, Asantha, Wije and Kamal went to Yati and installed the new repeater with the earlier Nuwara Eliya antenna. They also replaced the antenna cable and raised the height of the antenna. The new repeater operates on 145.650MHz with -600kHz Shift and requires a tone burst to activate. The courtesy tones that gave the repeater identification and carrier detection seem to have malfunctioned after a few days. The repeater and antenna that were at Yati were brought back to Colombo for repairs. A decision to install the old Yati repeater back at Yati or Nuwara Eliya will be taken after the next General Meeting.

RSSL OBITUARIES

It is with great sadness that we extend our condolences to 4S7NS Nihal whose XYL Nelun passed away last month after a long illness. We also got to know about the passing away of 4S7DP Padme's mother and also of 4S5TL Ananda's mother. Members and council members attended the funerals. The RSSL was also informed about the untimely passing away of Palitha Dayaratne 4S7ND from Boyawalana Giriulla. The RSSL was represented at all the above sad occasions.

AMATEUR RADIO ON NATIONAL TV: President RSSL Victor 4S7VK was featured in a 10 minute TV interview on Amateur Radio during the Tsunami. There have been numerous inquiries both on the phone and to the RSSL P.O. Box from all corners of the Island. An information package is under preparation to be sent to all these interested people. Special thanks go to 4S6AK Arosha for arranging this interview on ITN.

RSSL SHACK 4S7RS: At the time of going to press, the RSSL shack at Haig Road, first floor next to IE Electronics show room, is functioning unofficially. We have both HF and VHF and ADSL internet connections. 4S7VJ and KG are involved in refurbishing the RSSL tri-bander and it is hoped to be fully functional by the first week in July. An official opening of the station is planned for late July. We thank 4S5BA Bharat for making available this prime location for the RSSL shack.

JULY CONTEST INFORMATION: de 4S7NI Contest Manager

IARU HF World Championship--from 1200Z Jul 9 to 1200Z Jul 10. IARU member society HQ stations send signal report and official IARU member society abbreviation. All others send signal report and ITU zone. Contacts within your own ITU zone, as well as QSOs with any IARU-member society HQ station or IARU official (counting as the special multiplier), count one point each. Contacts with a station in the same ITU zone but on a different continent count one point. Contacts within your continent (but different ITU zone) count three points. Contacts with a different continent and IARU zone count five points. Multipliers: The total number of ITU zones plus IARU member society HQ stations worked on each band (not mode). Entries sent as attachments to email must be sent to IARUHF@iaru.org. Details at www.iaru.org/contest.html.

SEANET Contest--CW/SSB/DIGITAL, sponsored by the SEANET Convention, 1200Z Jul 16 - 1200Z Jul 17. Frequencies (MHz): CW - 3.525, 7.025, 14.025, 21.025, 28.025, SSB - 7.090, 14.220, 21.320, 28.320. Categories: SO, MS, AB, SB, Mixed and Single Mode combinations. Exchange: RS(T) and serial number. QSO Points: SEANET-SEANET--10 pts (5 pts if same country), SEANET-World - 10pts. Score: QSO points x DXCC entities for SEANET entrants, QSO points x SEANET entities for non-SEANET entrants, counted once per band and mode. For more information and list of SEANET countries: www.seanet2005.com/html/News.htm Logs due Aug 30 to vu2ur@rediffmail.com or B. L. Manohar VU2UR, MIG-6 80 Feet Road, Kengeri Upanagara, Bangalore-560060, India.

RSGB Islands-On-The-Air Contest--CW/SSB--sponsored by the RSGB from 1200Z Jul 30-1200Z Jul 31. Frequencies: 80-10 meters. Categories: SOAB and SOAB-Assisted (SSB/CW/Mixed, 12 and 24 hour entries, High/Low/QRP Power), MS. All categories Island or World (non-Island). Exchange--RS(T) and serial number, Island stations add IOTA reference number. QSO points: Contacts with own IOTA--3 pts, with other IOTA--15 pts, non-island--3 pts. Score: QSO points × IOTA refs, counted once per band and mode. For more information: www.contesting.co.uk/hfcc/iota.shtml. Logs due Sep 1 to iota.logs@rsgbhfcc.org or RSGB IOTA Contest, PO Box 9, Potters Bar, Herts EN6 3RH, England.

Date UTC	N/S	A O S UTC	L O S UTC	Pass Mins	Elev Max	Azimat Max El	(range)
29-Jun	S	4:49:37	5:02:22	13	61°	104°	(17°-185°)
29-Jun	S	6:28:36	6:35:03	7	4°	284°	(316°-254°)
29-Jun	N	15:30:29	15:36:07	6	3°	75°	(103°- 48°)
29-Jun	N	17:02:50	17:15:25	13	65°	254°	(174°-344°)
30-Jun	S	3:36:22	3:41:57	6	3°	100°	(74°-127°)
30-Jun	S	5:08:49	5:21:36	13	69°	278°	(7°-196°)
30-Jun	N	15:47:53	15:56:58	10	9°	77°	(123°- 29°)
30-Jun	N	17:22:18	17:34:23	13	33°	258°	(185°-333°)
1-Jul	S	3:53:46	4:03:00	10	9°	101°	(54°-147°)
1-Jul	S	5:28:15	5:40:35	13	36°	281°	(357°-208°)
1-Jul	N	16:06:07	16:17:04	11	18°	78°	(138°- 16°)
1-Jul	N	17:42:03	17:53:05	12	18°	259°	(198°-321°)
2-Jul	S	4:12:01	4:23:11	12	18°	101°	(40°-162°)
2-Jul	S	5:47:55	5:59:16	12	20°	282°	(346°-220°)
2-Jul	N	16:24:45	16:36:46	13	33°	79°	(151°- 5°)
2-Jul	N	18:02:13	18:11:22	10	9°	259°	(212°-307°)
3-Jul	S	4:30:42	4:42:59	13	32°	102°	(28°-174°)
3-Jul	S	6:07:56	6:17:34	10	11°	283°	(333°-234°)
3-Jul	N	16:43:42	16:56:13	13	64°	82°	(162°-354°)
3-Jul	N	18:23:12	18:28:50	6	3°	260°	(232°-287°)
4-Jul	S	4:49:39	5:02:27	13	62°	104°	(17°-185°)
4-Jul	S	6:28:36	6:35:09	7	4°	285°	(316°-253°)
4-Jul	N	15:30:34	15:36:07	6	3°	75°	(102°- 48°)
4-Jul	N	17:02:54	17:15:25	13	65°	254°	(174°-344°)
5-Jul	S	3:36:21	3:42:04	6	3°	100°	(73°-127°)
5-Jul	S	5:08:50	5:21:41	13	69°	278°	(7°-196°)
5-Jul	N	15:47:57	15:56:58	10	9°	76°	(123°- 29°)
5-Jul	N	17:22:21	17:34:23	13	33°	258°	(185°-333°)
6-Jul	S	3:53:46	4:03:05	10	9°	101°	(53°-147°)
6-Jul	S	5:28:15	5:40:39	13	36°	281°	(357°-208°)
6-Jul	N	16:06:09	16:17:02	11	18°	78°	(138°- 16°)
6-Jul	N	17:42:06	17:53:04	11	18°	259°	(198°-321°)
7-Jul	S	4:12:01	4:23:15	12	18°	101°	(39°-162°)
7-Jul	S	5:47:55	5:59:20	12	20°	282°	(346°-220°)
7-Jul	N	16:24:47	16:36:45	12	33°	79°	(151°- 5°)
7-Jul	N	18:02:15	18:11:21	10	9°	259°	(212°-307°)
8-Jul	S	4:30:41	4:43:01	13	33°	102°	(28°-174°)
8-Jul	S	6:07:55	6:17:37	10	11°	284°	(333°-234°)
8-Jul	N	16:43:43	16:56:11	13	64°	81°	(162°-354°)
8-Jul	N	18:23:15	18:28:47	6	3°	260°	(233°-287°)
9-Jul	S	4:49:38	5:02:29	13	62°	103°	(17°-185°)
9-Jul	S	6:28:33	6:35:12	7	4°	285°	(317°-253°)
9-Jul	N	15:30:35	15:36:03	6	3°	75°	(102°- 49°)
9-Jul	N	17:02:54	17:15:23	13	65°	255°	(174°-344°)
10-Jul	S	3:36:18	3:42:06	6	3°	100°	(73°-127°)
10-Jul	S	5:08:49	5:21:43	13	69°	278°	(7°-196°)
10-Jul	N	15:47:56	15:56:54	9	9°	77°	(123°- 30°)
10-Jul	N	17:22:21	17:34:21	12	33°	258°	(185°-333°)

Hamsat passes for the next 12 days are given in the table above.

Light House expedition

The annual International Light House expedition is scheduled to be held on 20-21 Weekend of August. If there are sufficient number of participants the light house expedition would be arranged. Please contact the President/Secretary if you wish to participate.

Messengers on National Television

NEWINGTON, CT, May 16, 2005-It might have been Friday the Thirteenth, but it was a lucky day for Morse code--and particularly for veteran CW contest ops Chip Margelli, K7JA, and Ken Miller, K6CTW. During a May 13 appearance on NBC's *The Tonight Show with Jay Leno*, the pair was able to pass a message using good old fashioned Morse code more rapidly than a pair of teenaged text messengers equipped with modern cell phones. The victory, which replicated a similar challenge that took place recently in Australia, has provided immense encouragement to Amateur Radio's community of CW operators, who've been ballyhooing the achievement all over the Internet. The text messaging team consisted of world text-messaging champ Ben Cook of Utah and his friend Jason. Miller said afterward in a reflector posting that the CW team won fairly handily. (Source:www.arrl.org)

The video clip (8.2MB – 3 mins playtime) of the show is available on Internet at

http://www.kkn.net/~n6tv/Text_vs_Morse_Leno_2005_05_13.wmv

The above video clip will be shown after the June General Meeting.

Working the HAMSAT from Sri Lanka, the easy way.

- 4S7AB Kamal

An article about the history of the HAMSAT project and its frequencies appeared in the previous month's RSSL newsletter. Thereafter the enthusiasm of the hams in Sri Lanka to listen and work this LEO satellite has increased. I have made nearly 40 contacts since 24th May 2005 when I made the first contact with VU2CAP Shankar. Most of them are Indian stations with one HZ1 from Saudi Arabia and one 9M6 from Malaysia. Since the satellite is new, the batteries are HOT and the power is good. So, there is a lot of activity.

The satellite is designated as a CW/SSB transponder but the operators have encouraged the hams to use FM mode while orbiting above India. This will favourably allow South Asian hams to work the satellite using already existing FM gear. The sideband radios on 2m/70cm are expensive.

The satellite always crosses the North and South poles in its orbit and travels about 600km above earth. Therefore the passes are always coming from North to South (Southbound) or South to North (Northbound). The above statement is not 100% true because of Earth's

rotation along it's axis which also lies through the North and South Poles. Therefore more correctly we can say that the satellite is travelling in a line, which is about 15 degrees slanted counter clockwise for Northbound passes. The same way, this line is about 15 degrees clockwise for Southbound passes.

Most of us use vertical polarized omni directional antennas like 5/8?, 1/4?, Slim Jim or directional antennas like yagis or quads that are also vertically polarized. These are suitable for uplink and downlink for the HAMSAT. But there is a problem. Most of our antennas if properly designed, have a vertical 3dB beam width of about 15 degrees (say) or less. Therefore when the rising HAMSAT goes above 15 degrees, the signals will fade away. You will again hear the satellite when it goes below 15 degrees when it goes down the horizon from the other side. Therefore our conventional antennas miss a large portion of the satellite's workable time. This is one problem and there is another problem. Since the satellite is rotating along its axis slowly (about 5 RPM), the polarization of the signals from and to the satellite's antennas changes slowly. This results in slow fading and rising of the signals and the theoretical value of this fading is scaring (about 30dB). But practically it is not that bad. If you have a VP antenna about 7dBi or more (~ 6el wide spaced yagi), you will observe this fading but will not loose the signals. But with VP ground plane antennas having less gain, you will loose the signals. This is annoying and should be corrected.

The eggbeater antenna

To overcome the problems discussed above and to utilize the satellite during the entire pass, a special antenna has to be used. The 'eggbeater' antenna was a favorite among the satellite operators both as an uplink antenna and a downlink antenna for a long time. K5OE has demonstrated many different versions of this antenna and the articles can be found in the Internet. I have also constructed this antenna with some modifications for weaker satellites like RS12/13 earlier. With the strong downlink of HAMSAT, it would be quite easier to work with the eggbeater antenna. The two main advantages of this antenna are;

1. It has a circular polarized radiation
2. It has the beam tilted upwards thus covering the entire pass

Therefore this is an ideal antenna for a starter. The full article with construction details can be found at **http://members.aol.com/k5oe/eggbeater.htm** . Both 2m and 70cm versions are available.

Hams for working this kind of satellites use antennas like Crossed Dipoles, Circular Polarized Helixes and many other derivatives.

A more advanced approach

To make use of each second of the satellites visibility, one needs a good antenna system. But this is not essential for maintaining good QSOs through HAMSAT. A cross-polarized 12-element yagi would be desired (about 12dBi gain) for the downlink. A similar yagi is desired for the uplink as well. A mast mount GaAsFET preamp for the downlink is required if you use a lossy feeder cable. A semi rigid Heliax ½ inch cable is preferred for both uplink and downlink since we deal with weak signals when it comes to any satellite.

Uplink power of about 10W or higher is required specially for the low elevation passes. Always use the lowest power possible.

The rig should be able to automatically adjust the uplink frequency when the downlink is selected. The rig should have the CAT facility (Computer control) so that the Doppler can be corrected using the tracking software.

The antennas should be mounted on an AZ/EL controllable rotor and the controlling can be done through the computer automatically.

The operating practice

Satellite operators require much more greater skills and polite operating practices. The Doppler shift make your signals heard on another QSO very easily. Therefore you need to know what you are doing end-to-end. Otherwise you can easily become a well-known LID among the regional ham crowd.

Operating satellites require 3 different things to be done simultaneously.

1) Antenna tracking
2) Doppler corrections
3) Maintain the QSO and logging

If you have at least a few of those automated, it is much easier. Otherwise you need lot of skills.

The HAMSAT's transponder covers from 145.870 – 145.930 MHz for downlink and 435.220 - 435.280 MHz for uplink. But to make the things a bit more complicated, this is an inverting transponder. That means, your transmitted signal at 435.280MHz (say) will be heard on 145.870MHz. In other words, the lower portion of the TX frequencies is heard in the upper portion of the RX frequency band and vice versa. Therefore it is better to prepare a lookup table of transmitting frequencies in 5Khz steps for a required downlink frequency. Otherwise, this will be too much mathematics to do during the 13-minute short window.

If you decide to transmit, you definitely should need a computer to tell you the Doppler shift. Many windows based freeware programs are available in the Internet. WinOrbit, NOVA, WxTrack, Satscape are some of them. These programs not only track the sats and displays the Doppler but also can predict the passes up to few weeks. Further you can know whether batteries or solar cells power the satellite during a particular pass. For accurate predictions, the Keplarian elements should be updated at least every two months. Keplarian elements are available free from **www.amsat.org**

The final goal is to maintain your downlink signal in a stable frequency so that you don't run into another QSO. There is a lot of good reading material for beginners available at **www.amsat.org**

GAREC – 2005

The First Global Amateur Radio Emergency Communication Conference was held on 13 & 14 June 2005. The event took place in Tampere, Finland, a town with a long tradition in emergency telecommunications and known throughout the world through the Tampere Convention, the first international treaty on the provision of telecommunications in support of disaster relief.

Participants from various countries and representatives of all three IARU Regions exchanged and discussed information on the role of radio amateurs in emergency communications.

The major topics were the cooperation between hams and the institutional emergency response providers on national level, and the exchange of experiences from recent events. The presentations made in these sessions are available on theInternet web site of the Finnish IARU member society, The Finish Amateur Radio League - SRAL **(http://www.rientola.fi/oh3ag/garec/frq.html).** The presentations showed how hams support the emergency responders, as skilled volunteer telecommunication operators for the responders' networks as well as by providing their own global networks.

The Conference also discussed ways to improve and facilitate the work of emergency communications networks. It concluded, that the establishment of a "Center of Activity Frequency" for emergency traffic would be desirable. The IARU band plans already include this type of frequencies for a number of activities. Given the fact that the dynamic allocation and use of frequencies within the amateur bands is one of the key elements of the flexibility of this service and thus of its value in disaster situations, such an arrangement appeared as most appropriate and feasible. A respective proposal was formulated, and SRAL, as the host of GAREC-2005, will forward it to IARU for consideration by the next competent regional conferences, the first of these being the Region 1 Conference in Davos, Switzerland, in September 2005.

GAREC-2005 did not make any proposals for actual center of activity frequencies. Such suggestions for actual frequencies will require the careful consideration by those most familiar with band plan matters. In order to be useful for global emergency networks, the frequencies need to be acceptable in all three IARU regions, and frequencies possibly to be considered in Region 1 already this year will need to be reviewed in all three regions. In Region 2 and Region 3 conferences to consider the issue will take place only in the following 2 years.

In a separate statement, the conference summarized the value of the amateur radio services in emergency communications. This statement will be submitted as an input document to the World Summit of the Information Society (WSIS) taking place in Tunis, Tunisia, November 2005. (News Source - IARU website).

Secretary Kusal – 4S7KE and Treasurer Asantha – 4S7AK represented Sri Lanka on behalf of RSSL at the GAREC – 2005 conference. They made a presentation on the Tsunami disaster relief communication operation done in Sri Lanka.

Yahoo Discussion Group on Ham Radio in Sri Lanka

A Yahoo discussion group on Ham radio in Sri Lanka has been created.
The website is
http://groups.yahoo.com/group/Hamradio-SriLanka/
To subscribe to the group send an email from the email account you need to include, to
Hamradio-SriLanka-subscribe@yahoogroups.com
To post a message send them to
Hamradio-SriLanka@yahoogroups.com
Members of the group will receive by email all messages posted. They can be viewed at the group website given above also. Message posting is open to all including those who are not Group members. Group membership is open to all.
To unsubscribe from the Group send an email to
Hamradio-SriLanka-unsubscribe@yahoogroups.com
Contact Kusal – 4S7KE for any clarifications.

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