Seaside Tsunami Amateur Radio Society

The WA7VE

www.freewebs.com/wa7ve_stars 1300 2nd Avenue #12 Seaside, OR. 97138 503-717-3484

March 2011
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General License Class
April 15-Fri.-5:30 to 9:30
April 16, 17—9:00 to 4:00
At the Clatsop Community. College Seaside Campus. Contact ab7ho@charter.net to hold a spot in the class.

Hams & Eggs in Seaside meets at 8:00 AM every Thursday at McKeown's restaurant. The first Thur. of each month we will meet at a different restaurant. The location will be announced the night before on the STARS Net.

- **The STARS ARES net operates** on the WA7VE repeater at 145.490 Mhz. at 7:00 PM Wednesday evening.

- ***The monthly STARS Meeting*** is scheduled for Sat. Apr. 9th @ 5pm at the Clatsop Community College Seaside campus at 1455 N. Roosevelt.

STARS Officers & Board of Directors

Trustee	Hal Denison
President	Robin Knoll
Vice-President	Pat Haggard
Secretary	Pat Tanner
Treasurer	Vianne Patterson
ARES-EC	Jeff Holwedge

Tsunami Warning !! 03/11/11

In Seaside, the tsunami warning was a non event except for a few things. First, it alerted us to deficiencies in our personal planning. Second, it demonstrated just how effective our emergency net practices have been. Third, by observing the ongoing suffering of the people of Japan it should bring the sobering reality of the dangers of a tsunami home to each of us. Fourth, it appears that many citizens and visitors thought of this as a false alarm. We must continue or efforts at educating ourselves and others to the risk.

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Fox Hunt!!

We will meet on Saturday, April 2nd at 3:30 at the West parking lot of the high school to learn how to hunt a fox. At 4:00 the hunt will begin. We will "skin the fox" at Cartwight Park at 5PM during our potluck dinner. Our apologies to PETA for the "skin the fox" metaphor.

April 7 Hams & Eggs

We will meet at Phannie Phatts dakine (Hawaiian food) restaurant located at 748 1st Avenue in Seaside. The food is delicious and they are opening just to serve us! Please do your best to attend and reward their efforts.

ARES Check-Ins for March

Last month we had five different net controls and 103 check ins. Yes, you read that right. 103 check ins. Fabulous!

Field Day Planning Continues

ARRL Field Day

Northgate Park in Seaside, OR.

June 25-26th 2011

Several committee's have been established to divide the work so no one person will be overwhelmed with the task of setting up and operating a successful Field Day. We need as many volunteers as possible to make this work. The committee's will have their first meeting at 7:00 PM, March 31st at the Clatsop Community College South County Center.

We have committee's for Antennas, Food, Logistics, Equipment and Publicity. If you have expertise or interest in any of these areas, or you would just like to learn a new skill, please come by and meet with us.

SEAPAC

The club decided to raffle off a Kenwood TH-F6A (a tri-band handheld) with all the goodies as a fund raiser for this year. We will have a table at SEAPAC. If you would like to sell tickets and/or work at the STARS table during SEAPAC please contact the club.

CCC Amateur Radio Society to Collaborate With STARS

Jeff Holwedge, advisor to the CCCARS, has received a Hewlett Packard notebook computer from Clatsop Community College for use by the club. STARS will join forces with the CCCARS to utilize the computer for joint digital radio projects. More stories will be forthcoming on this exciting opportunity. Thank you Clatsop Community College and Greg Riehl, Director of Computer Services, for the use of the computer.

STARS March Meeting

25 members attended or our meeting. A good time was had by all. Invite your interested friends to our April meeting.

Coming Soon!! http://www.wa7ve.org

Bob Lundy (KE7TAI) of Canon Beach has graciously offered to assist us in porting our web site at free-webs.com to our very own domain of wa7ve,org. There will be more to come on this exciting news!

Classified Ad's

If you have something to sell or trade, that relates to ham radio or its activities, email the information to wa7ve@charter.net. It will appear in the next newsletter. No charge, of course, but since we operate on dues and donations any donation from the sale would be greatly appreciated.

For Sale — MFJ-290MY mic for newer Yaesu HF rig. Has 8 pin modular plug. New in unopened box. Contact Cache, KF7IRU 717-3207

Wanted — A "patio" tent, open on the sides. For use for Field Day. Contact Pat, KE7DOX 717-3484

STARS Contacts

If you need to contact the club you may phone, snail mail or email.

Seaside Tsunami Amateur Radio Society c/o
Hal Denison
1300 Second Avenue
#12
Seaside, OR. 97138

Email: wa7ve@charter.net

Phone: Pat Haggard (KE7DOX) 503-717-3484.

Equipment Available For Loan to Members

Contact Hal Denison WA7FIV for access.

1. MFJ-269 Antenna Analyzer

Why waste your ink cartridges? We have copies of the manual in report covers available for a small voluntary donation to the equipment fund. More gear will be ordered as you, the members, decide what the Equipment Fund should purchase. Thanks to everyone that donates a few dollars to the fund. Our educational opportunities & all of our ham experiences will be improved by your generous donations.

Help us Grow The Club

It is our goal to reach a membership of 100 this year. We cannot do it without the help of all our current members. Please contact a ham that you know and ask them to join our club. Discuss emergency communications and disaster preparation with your friends and acquaintances. We are building a great circle of friends as well as learning more about amateur radio and how to provide more versatile and effective communications during emergencies.

ICS Training

If you need ICS-100, ICS-200 or ICS-700 training for Clatsop County ARES please email Jeff Holwedge (Clatsop County ARES EC) at ab7dn@charter.net. The County will be putting on the training. Jeff needs to know how many seats will be required for each class.

Emergency Preparation Fair

Our Jeff (AB7DN) and Roxann (AB7HO) Holwedge had a booth at the Emergency Preparation Fair held on Saturday, March 12th. At the Seaside LDS church. You could not have better advertising than a tsunami warning the day before! They demonstrated ham radio equipment and discussed the topic with numerous attendee's. There were booths on electrical safety, 72 hour kit building, document storage as well as food storage, etc. Jeff received several inquiries regarding ham classes. Congratulations to Jeff and Roxann for their tireless efforts.

1964 Seaside Tsunami

The above photograph is from the 1964 Seaside tsunami that occurred on Good Friday. A USC study reports the following: "Oregon was also hit hard by the tsunami, which killed four people and caused an estimated 750,000 to one million dollars in damage to bridges, houses, car, boats, and sea walls. The greatest tsunami damage in Oregon did not occur not along the ocean front as one might expect, but in the estuary channels located further inland, where those with the correct bathymetry actually amplified the wave tsunami wave heights. Of the communities effected, Seaside, struck by a 10-foot wave, was the hardest hit. Tsunami wave heights reached 10 to 11.5 feet in the Nehalem River, 10 to 11.5 feet at Depoe Bay, 11.5 feet at Newport, 10 to 11 feet at Florence, 11 feet at Reedsport, 11 feet at Brookings, and 14 feet at Coos Bay".

I have a rather sobering video for you to view. It is the tsunami simulation test in the wave table at Oregon State University. To view this video, cut and paste the link below into your favorite browser and watch the UTube video. If you are still having a problem visualizing a tsunami in our fair city this video should bring home the reality.

Here is the link to the video.

http://www.youtube.com/watch?v=nj98sHcTGOo

Tsunami Warning !! 03/11/11

Continued…

In an Associated Press story by Jeff Barnard and Jaymes Song, a Seaside resident and ham operator, Albert Wood (KE7OUE) reported "numerous cars lining up in the hills to drive West, into the lowlands adjacent to the shore", just a short time after the first wave was scheduled to arrive. There were also several reports of people on the beach watching for the arrival of the wave and numerous others heading for the beach. There is still much to do in educating both residents and visitors to the danger.

In an Oregonian article by Lynne Terry, Ian Madin who is the chief scientist for the Oregon Geology department stated "You just don't get one wave. You get a series of waves. It's like dropping a pebble into a glass of water. With a tsunami the second or third wave could be the largest".

In a 2006 USGS report, compiled from data collected in the 1990's, described a history of five tsunami's in the Seaside area over the last 2000 years. It stated that deposits of sand and gravel were found primarily along the Necanicum River and Neawanna Creek where flows ran between 5 to 10 meters (16.4 to 32.8 feet) in height. Deposits from the 1700 tsunami have been found up to 2 km (1.24 miles) inland near the base of the hills on the east side of town. The 1700 tsunami also overtopped the ridge east of the Neawanna Creek. The report goes on to state "The Seaside area has been inundated by large tsunamis many times in the past". The same USGS report described the 1964 earthquake/tsunami delivering a 10' wave that struck Seaside with a 10 to 11.5 foot wave on the Nehalem River.

At this point you must ask yourself one question. Do I feel lucky? Even if you feel lucky and <u>are</u> lucky you should prepare and plan. Need some help? Here are a few links.

http://www.beavertonoregon.gov/departments/neighborhoods/NAC/docs/Emergency_Prep_Slides.pdf

http://www.oregon.gov/OMD/OEM/National_Prep.shtml

http://www.oregongeology.org/sub/quarpub/CascadiaWinter2010.pdf

http://www.fema.gov/areyouready/

http://www.ready.gov/

http://www.redcross.org/

http://preparedness.com/

http://www.fema.gov/plan/index.shtm

http://www.srfd.us/documents/disasterprep.pdf

Why is determining RF safety standards based on scientific studies such a difficult task?

After a thorough review of the scientific literature dating from 1974, I can inform you the scientific tests are somewhat of a mixed bag of results. There are differing expert opinions regarding the extrapolation of animal test results to human physiology. There have been a number of human studies performed over the years and the scientists have come to a general consensus as to standards for radiation protection. These standards are published under the auspices of the ICNIRP (International Commission on Non-Ionizing Radiation Protection) and the WHO (World Health Organization)..

FYI – The FCC presumes that certain stations do not need an MPE (Maximum Permissible Exposure) evaluation. These are ham stations operating at less than 50 watts of power, and mobile or portable stations with a push-to-talk microphone. An SAR (Specific Absorption Rate) of 4 watts per Kg of body weight is the final standard as of today. However, different parts of the body are more sensitive to RF than others and you are in greater danger if the frequency matches your body's resonant frequency which is typically between 30 and 70 Mhz when ungrounded. Surprise, surprise! the taller you are, the higher the resonant frequency you have. The Safety Committee has set a factor of 15 for uncontrolled (the publics) exposure to RF. With that in mind you have a SAR of 0.08 watts per kilogram. Bear in mind that if you have a cardiac pacemaker, a metal hip or knee or just some old shrapnel in your body, these numbers are even lower. If you have a cardiac pacemaker you should exercise extreme caution when entering an RF field. Older pacemakers have been shown in some studies to be impacted by even a low power cell phone within ~ 8 inches of the patient's chest. That is not the end of the important stuff so please read on.

In last months article you were reminded that *non-ionizing* radiation differs from *ionizing* radiation in that the latter is associated with X-Ray devices and nuclear power plants. Ionizing radiation is also different because it can have a cumulative effect on the human body. Normally non-ionizing radiation is not cumulative until it reaches the level where permanent damage is done.

An increase in body temperature of 2 degrees Celsius (36 degrees Fahrenheit) can cause temporary sterility in men. An increase in body temperature of 10 degrees Celsius (50 degrees Fahrenheit) can cause cataracts to form in the eyes. This damage is permanent. High temperatures in the human body will cause it to cook from the inside out. Think about how a microwave oven cooks by agitating water molecules in our food. Excessive heat can cause heat stroke and death in infants, children, the elderly and those taking certain medications that compromise the body's thermal system. Evan a completely healthy person can be killed if exposed to sufficient RF to cause excessive heating of the body.

There are a number of factors that are active in the calculus to determine what frequency, and at what power level, at what distance, will cause harm in the human body. Obviously if you touch the antenna of a transmitting ham station operating at 1500 watts PEP you are in big trouble. Electric currents will be induced into your body and you will receive a serious, if not deadly, electrical shock.

Let's bypass the Specific Absorption Rates, magnetic flux density, field density, in-vitro and in-vivo effect studies, afferent signals and all the other techno-gibberish and get right down to some specifics.

From the 160 meter band to the 10 meter ham band, *near field radiation* (that is radiation near the antenna) will pass right through your body with little effect. Only a miniscule amount of the energy will be converted to heat. You would need to stand roughly three feet away from an antenna pumping out 500 watts of power at 8 Mhz to approximate the body temperature of a high fever.

At 2 meters (144 Mhz) RF energy is absorbed more readily than HF energy and will cause rapid heating at even moderate power.

At 70 centimeters (430 Mhz) roughly 50% of the RF energy is converted to heat in the human body. 70 cm is the danger point of RF.

From 1 to 3 Ghz (1,000 – 3,000 Mhz) the RF energy closely mimics the action of a microwave oven where virtually 100% of the RF is converted to heat.

At 10 Ghz (10,000 Mhz) about 50% of the energy is converted to heat. At even higher frequencies the body actually reflects the energy. At these frequencies the skins nerve endings will be excited by the RF and you will feel heat on your skin.

On the 10 meter band (~28 Mhz), operating with one kilowatt of power, a ham operating at a distance of 10 meters (~33 feet) from the antenna would have a power level of 0.8 Mw per centimeter squared impressed on his or her body. That is a safe level, provided there are no RF leaks from poor shielding of cables or leads that have not been appropriately bypassed. You can then extrapolate that a lower power setting will have a smaller distance as the safety zone area.

On the 20 meter band (~14 Mhz) with 1 kilowatt of power into, a dipole antenna, you MUST be at least 29 feet away from the antenna to be in a safe zone.

On the 40 meter band (~7 Mhz) with 1.5 kilowatt of power into a dipole antenna an average 5' 10" adult would need to stand approximately 9 feet away from the antenna to be safe

On the 2 meter band (144 Mhz) and higher the RF picture is very, very different. Roughly 50% of the power is converted to heat and a mobile antenna is just a few feet from your head. Using an HT with a built-in microphone places the antenna inches from your head.

If your antenna was mounted on the left front fender and you were operating with only 10 watts you begin to get into a problem area (10 Mw per centimeter squared) with RF if you have long conversations. Using an HT like the one described and only one measly watt of power the power density will be three times as great as in the previous scenario. If your mobile rig is running at a power level of 50 watts and your antenna is on the left front fender, well you can figure that one out fairly easily.

Here Are Some RF Heating Preventive Measures

Do not sit or stand close to your power supplies or linear amplifiers while operating.

Stay 24 inches or more away from power transformers, electrical fans or other high level 60 Hz magnetic field.

Never power up or tune a linear amplifier with the covers and/or shielding out of place.

Run transmission lines away from the area where people might sit in your ham shack.

Use properly terminated, coaxial cable whenever possible instead of open-wire or end fed long wire antenna.

Use some uncommon, common sense and stay well away from the near field of any antenna. That is especially true for VHF and UHF operation.

Never allow any person to be near any transmitting antenna while it is in operation. If you think you need an indoor antenna, think again!

Use the least amount of power necessary to make that QSO. *That is particularly true if the antenna is less than 35 feet away.*

Use HT's (hand held radio's) on there lowest power setting when possible and add a remote speaker/ microphone combination if you can. Keep that HT as far away from your head as you can and keep your transmissions short.

If your mobile VHF rig is going to operate at more than 50 watts of power please perform power density measurements before allowing passengers in the back seat if you have a rear deck mounted an tenna. Put that antenna on the center of your roof if at all possible.

If you have questions about this article please email wa7ve@charter.net.