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# The WA7VE

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## ONE WAY TO GROW HAM RADIO

We all know the ham radio hobby has a lot of aging participants. We also know we need to reach out to young people in order to expand our hobby. The story below is one way that can happen. There are many others. Boy Scouts, Girl Scouts, Demonstrations in the park, at the library or in our public schools are alternative ways of expanding our hobby and a great way to attract more young people to STEM (Science, Technology, Engineering and Math). Enjoy this story. It is how great things start, one person at a time.

Nan Poterfield, a non-ham at the time, came to visit her friend Terry Williams (KE7QFR) in Seaside, Oregon in 2008. Terry shared her experiences with amateur radio and the Seaside Tsunami Amateur Radio Society. The conversations sparked an interest in amateur radio for Nan. She attended the local clubs "Hams and Eggs" weekly breakfast during her visit and made several friends. As luck would have it, a weekend Technician class was being held during her visit. Nan attended and passed her license test on the first try. Her call is KE5VQB.

When her visit to the Seaside area ended she returned to New Mexico and her teaching assignment at the Rio Rancho Cyber Academy which is a public, alternative high school. She subsequently attended the four day ARRL Teachers Institute. After enlisting the Principal of her school and her husband as hams, she contacted the local Rio Rancho, New Mexico club about starting an amateur radio club at her school.

The Rio Rancho club enthusiastically leaped at the opportunity to help. Two rigs were donated along with two antenna and feedline to the school club. The antennas and feedline were installed by the Sound & Signal Company. The club took the school club under its wings and they meet together.

This amateur radio seed has flowered and produced more than 15 club members. One has attained his General license and numerous others have earned their Technician class licenses. Another ham class will be run in the fall. Check out the various links from this story.

Seaside, OR . STARS ham radio club http://www.wa7ve.org

Rio Rancho Cyber Academy http://cyberacademy.rrps.net/

Sound & Signal of N.M. http://www.soundandsignalnm.com/

Rio Rancho ARC http://www.arrl-nm.org/wp/clubs/abq-rr-area/mid-rio-grand-arc

ARRL Teachers Institute http://www.arrl.org/teachers-institute-on-wireless-technology

If you have any great ideas about how we can grow our hobby, or if you are willing to help with someone else's idea, please email us as at: wa7ve@wa7ve.org and let us know..

# HELPING TO BUILD A FAST AND FREE NTERNET

San Francisco hackerspace, Noisebridge, is working on a project using commodity Wi-Fi equipment that's been modified to work under amateur radio frequencies

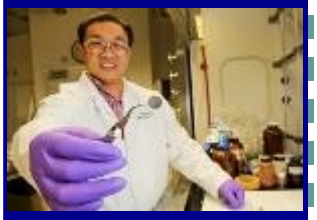
The FCC grants experimenters spectrum space to build high power, long range radio systems. Through this provision, Noisebridge has begun building the HInternet (a combination of "Ham Radio" and "Internet").

Read the Quest article by Laura Khalil at:
http://science.kqed.org/quest/2010/09/21/ham-radio-helping-to-build-a-fast-and-free-internet/

Noisebridge Hackerspace Hinternet project can be found at:
https://www.noisebridge.net/wiki/HInternet

# SULFUR BASED BATTERY OUTPERFORMS LITHIUM ION

A new all-solid lithium-sulfur battery has been developed by an Oak Ridge National Laboratory team led by Chengdu Liang has the potential to reduce cost, increase performance and improve safety compared with existing designs. A new all-solid lithium-sulfur battery developed by an Oak Ridge National Laboratory team led by Chengdu Liang has the potential to reduce cost, increase performance and improve safety compared with existing designs.



OAK RIDGE, Tenn., June 5, 2013 — Scientists at the Department of Energy's Oak Ridge National Laboratory have designed and tested an all-solid lithium-sulfur battery with approximately four times the energy density of conventional lithium-ion technologies that power today's electronics.

The ORNL battery design, which uses abundant low-cost elemental sulfur, also addresses flammability concerns experienced by other chemistries.

"Our approach is a complete change from the current battery concept of two electrodes joined by a liquid electrolyte, which has been used over the last 150 to 200 years," said Chengdu Liang, lead author on the ORNL study published this week in Angewandte Chemie International Edition.

Scientists have been excited about the potential of lithium-sulfur batteries for decades, but long-lasting, large-scale versions for commercial applications have proven elusive. Researchers were stuck with a catch-22 created by the battery's use of liquid electrolytes: On one hand, the liquid helped conduct ions through the battery by allowing lithium polysulfide compounds to dissolve. The downside, however, was that the same dissolution process caused the battery to prematurely break down.

Article continues on Page 3

# SULFUR BATTERY, CONT'D

The ORNL team overcame these barriers by first synthesizing a never-before-seen class of sulfur-rich materials that conduct ions as well as the lithium metal oxides conventionally used in the battery's cathode. Liang's team then combined the new sulfur-rich cathode and a lithium anode with a solid electrolyte material, also developed at ORNL, to create an energy-dense, all-solid battery.

"This game-changing shift from liquid to solid electrolytes eliminates the problem of sulfur dissolution and enables us to deliver on the promise of lithium-sulfur batteries," Liang said. "Our battery design has real potential to reduce cost, increase energy density and improve safety compared with existing lithium-ion technologies."

The new ionically-conductive cathode enabled the ORNL battery to maintain a capacity of 1200 milliamp-hours (mAh) per gram after 300 charge-discharge cycles at 60 degrees Celsius. For comparison, a traditional lithium-ion battery cathode has an average capacity between 140-170 mAh/g. Because lithium-sulfur batteries deliver about half the voltage of lithium-ion versions, this eight-fold increase in capacity demonstrated in the ORNL battery cathode translates into four times the gravimetric energy density of lithium-ion technologies, explained Liang.

The team's all-solid design also increases battery safety by eliminating flammable liquid electrolytes that can react with lithium metal. Chief among the ORNL battery's other advantages is its use of elemental sulfur, a plentiful industrial byproduct of petroleum processing.

"Sulfur is practically free," Liang said. "Not only does sulfur store much more energy than the transition metal compounds used in lithium-ion battery cathodes, but a lithium-sulfur device could help recycle a waste product into a useful technology."

Although the team's new battery is still in the demonstration stage, Liang and his colleagues hope to see their research move quickly from the laboratory into commercial applications. A patent on the team's design is pending.

"This project represents a synergy between basic science and applied research," Liang said. "We used fundamental research to understand a scientific phenomenon, identified the problem and then created the right material to solve that problem, which led to the success of a device with real-world applications."

The study is published as "Lithium Polysulfidophosphates: A Family of Lithium-Conducting Sulfur-Rich Compounds for Lithium-Sulfur Batteries," and is available online at http://dx.doi.org/10.1002/anie.201300680 . In addition to Liang, coauthors are ORNL's Zhan Lin, Zengcai Liu, Wujun Fu and Nancy Dudney.

The research was sponsored by the U.S. Department of Energy, through the Office of Energy Efficiency and Renewable Energy's Vehicle Technologies Office. The investigation of the ionic conductivity of the new compounds was supported by the Department's Office of Science.

The synthesis and characterization was conducted at the Center for Nanophase Materials Sciences at ORNL. CNMS is one of the five DOE Nanoscale Science Research Centers supported by the DOE Office of Science, premier national user facilities for interdisciplinary research at the nanoscale. Together the NSRCs comprise a suite of complementary facilities that provide researchers with state-of-the-art capabilities to fabricate, process, characterize and model nanoscale materials, and constitute the largest infrastructure investment of the National Nanotechnology Initiative. The NSRCs are located at DOE's Argonne, Brookhaven, Lawrence Berkeley, Oak Ridge and Sandia and Los Alamos national laboratories. For more information about the DOE NSRCs, please visit http://science.energy.gov/bes/suf/user-facilities/nanoscale-science-research-centers .

See more at: http://www.ornl.gov/ornl/news/news-releases/2013/new-all-solid-sulfur-based-battery-outperforms-lithium-ion-technology#sthash.dG02sfvl.dpuf

# WHAT IS AN AMATEUR?

Over the years there are similar common questions asked by new amateur radio operators. In the reprinted edition of the 1926 Radio Amateur's Handbook, Chapter 1, What Is An Amateur ?, are two paragraphs that may provide some answers.

"In many places it is possible to join a radio club and to enjoy active membership. The exchange of information between club members is valuable. By talks and demonstrations the club provides interesting winter activities. Through code classes, beginners are helped in getting started as "good" operators. A club library containing the books best suited to the members is an additional asset to the radio enthusiast who does not have too much money to spend on his hobby. In the summer, social activities of a different nature keep the members together for some enjoyable times. Picnics, demonstrations with portable equipment, and athletic contests keep up the interest then. Many such clubs are affiliated with the League and receive monthly bulletins from the League. On request, information on organizing a club and becoming affiliated is supplied from League Headquarters."

"Amateur radio offers the only means of free communication with our fellows who are outside the range of the human voice. When we have become familiar with some of the simple facts about this fascinating hobby we will want to get on the air and talk by wireless with other men who have stations similar to ours. This we can do just as soon as our station is in actual operation. Cards will be received from many places where our signals have been heard. Correspondence with folks we have met by radio will result. New friendships will be made. We will take pride in our station and its records."

Those two paragraphs are similar today. In earlier times, amateur radio was obviously a hobby for mostly technical persons. Since that time, amateur radio has changed into a family hobby with wives and children obtaining higher classes of license. Also stated is the purpose of radio clubs and activity throughout the year. One common word then and now is picnics and social activities. Do you suppose their picnic was like our field day?

Club member participation in events, (all age groups and classes of license), will keep the radio club healthy. Amateur radio today has more modes of operation and choices. There are now more groups within the club that have various radio-related interests. It takes time for new members to learn the various subjects and decide their area of interest. It may take a year or two to understand club operations. Notice the word "library" in 1926. Then, and now, books are a great way to learn.

***73 DE MIKE (WA8MKH)***

# AN EDITORIAL COMMENT

A man approached my booth at the Yuma Hamfest earlier this year and struck up a conversation. He had observed that I was studying a W5YI GROL/Radar license book. He asked if I was intent on becoming a professional in the radio business.

He went on to ask if I had studied classical language arts in college. I told him French and Farsi for work was as far as I got, no Latin or Greek. My visitor informed me the word "amateur" comes from the Latin root "ami", for "love". Amateurs do what they do out of love, not because they seek wealth or acclaim. He went on to remind me that The Ark of Bible was built by amateurs and The Hindenburg was constructed by professionals. Hmmmmm….

# SDR RESOURCE SITE

Mark Abraham (NI0Z) has started a new web site for those interested in ham radio Software Defined Radio (SDR). The intention is to provide forums, reviews and user blogs relating to ANY type of SDR. This is a site for SDR enthusiasts and those interested in SDR, it is not for the knockers, whiners, and lids who plague other SDR forums. The site looks great! get behind it! https://sdrzone.com/index.php/easyblog/latest

# FIRST STEP ACHIEVED IN HIGHER TOWERS FOR RIDGECREST CA HAMS

Some good news for hams in the city of Ridgecrest, California. By a 4 to 0 vote preliminary approval of an ordinance has signaled a small step forward for amateur radio operators in that community. This in the area of installing towers and antennas that exceed the current city limit.

At a City Council meeting on Wednesday's August 21st Ridgecrest California City Planner Matthew Alexander presented a request by the city staff to amend municipal code. This, to allow towers higher than 35 feet to be built in residential parts of the city on a conditional basis.

Alexander provided background to the council, indicating that in late 2012 that Steven Rainey, N6MVX, had requested to build a 55-foot tower, with an additional 15-foot antenna attached. Under the current municipal code, residents cannot install structures larger than 35 feet in residential areas.

Alexander said the zoning changes will apply to single-family residential areas, estate-zoned areas and the city's agriculture-zoned areas. He added that the language should be modified to include just the word tower, instead of signaling out any other particular type of structure. He also said that it has been suggested the council consider a lower fee for the permit process to reflect actual costs based on the time it takes to review, research and process applications. Currently the coat is $1200.

In his presentation, Alexander conceded that the structure that Rainey proposed would tower over most single-story homes in Ridgecrest. However, Alexander added that ham radio operators provided a great service to the community, especially during emergencies. He went on to say that the city does not don't want to discourage them and if newer towers are higher, we want to be able to let them to move forward and allow them to be built.

Vice Mayor Chip Holloway appeared supportive of the idea of waiving or reducing fees. He noted that he would actually want to encourage more ham radio operator in Ridgecrest after experiencing Hurricane Katrina, and knowing how effective and prevalent such towers are in the South where he grew up. Holloway added that knowing the city's isolation, the state we live in and the lack of resources we already have, if we get into trouble we are going to need ham operators to be available.

Currently the way Ridgecrest handles such structures is with the issuance of a conditional use permit. Alexander explained that this process requires applicants to notify neighbors within 300 feet of the residence, to pay for costs of mailers and of a public notice in the newspapers in addition to the $1200 conditional use application fee. You can read more on this story at http://tinyurl.com/ridgecrest-ham-towers.

# HAM RADIO: A NATIONAL RESOURCE

The Merced Sun-Star reports that radio amateurs provided the foundation of modern telecommunications.

Read the article Ham radio -- a pastime not just in the past.
http://www.mercedsunstar.com/2013/07/20/3118847/debbie-croft-ham-radio-a-pastime.html

# 80M USED FOR WIDEBAND VIDEO & DATA

Trials in the UK have used 3.613 MHz for 24 kHz bandwidth high-speed data and video transmissions

In recent years there has been increasing military interest in high-speed data on HF.

By using modern modulation techniques a SSB channel can support a raw data rate of 12800 bps and wider transmissions can support proportionally faster data rates. Trials have shown that color video at 15 frames per second can be streamed on HF in a bandwidth of just 18 kHz. That is the type of bandwidth that may be accommodated in the amateur radio 29 MHz band.

In the UK HF trials have taken place between Blandford and Portsmouth (Portsdown), and Arbroath and Portsmouth. They used frequencies, licensed by Ofcom, of 3.613, 6.390, 7.975 and 13.047 MHz with bandwidths up to 24 kHz and power up to 400 watts.
Information on these trials can be seen at:
http://www.hfindustry.com/meetings_presentations/presentation_materials/2012_sept_hfia/presentations/RC_WBHF_UK_Trial_2012.pdf

**USA trials of video streaming over a 1320 km HF path**
http://hfindustry.com/meetings_presentations/presentation_materials/2011_sept_hfia/presentations/3_Rockwell_WBHF_High_Order_QAM_OTA_Results.pdf

Military Aerospace reports that short wave radio (HF) is being considered as an alternative to Satellite communications (SATCOM)
http://www.militaryaerospace.com/blogs/aerospace-defense-blog/2013/07/are-costs-and-vulnerabilities-making-military-leaders-nervous-about-satellite-communications.html

That is especially good timing considering the recent launch of Chinese killer satellites

# CITY SUPPORTS HAM TOWER EXEMPTION

NO, not Seaside—YET. The Star Pheonix reports that Saskatoon, in Saskatchewan, Canada, is proposing to exempt amateur antennas from planning restrictions. The newspaper reports: Garry Schwartz (VE5SG), president of the Saskatoon Amateur Radio Club, is happy that the city seems prepared to relax restrictions for amateur radio towers despite more restrictive rules pending for new commercial antenna towers.

"I'm pleased with the results," Schwartz said Tuesday after a meeting of the city's planning and operations committee. Schwartz said his antenna has been in place for 40 years. The proposed exemptions for amateur antennas include excluding antennas under 15 meters tall and limiting the cost, submission and consultation requirements for antennas higher than 15 meters.

Read the full story at:
http://www.thestarphoenix.com/City+supports+exemptions+towers+used+amateur+radio+operators/8786159/story.html

# "CROWDED SOURCE SCIENCE" VIA HAM RADIO

EDN magazine interviews Jasper Wolfe about the new Phonesats which will carry amateur radio payloads. The Phonesats were developed by young engineers (average age 23) at the NASA-Ames Research Center. The EDN article by Steve Taranovich says:

Wolfe told us that NASA's next generation PhoneSat satellites to be launched on November 6 and December 6, will emit packets over the amateur radio band at 437.425 MHz. Satellites transmit using AFSK (1200 bps) modulation, AX.25 packet coding and have vertical linear polarization. As in the first launch, hence the term "Crowd-sourced science" coined by mentor Jim Cockrell.

The two PhoneSat 2 and 3 satellites will transmit with a periodicity of respectively 28 seconds and 30 seconds. The PhoneSat 2.0 beta satellite, Alexander, transmits with a periodicity of 25 seconds. One satellite will be up there for two years and the other for three months.

Read the EDN article at:
http://www.edn.com/electronics-blogs/anablog/4419778/NASA-PhoneSat---Crowd-sourced-science--via-ham-radio

# OPUSAT TO TEST LITHIUM-ION CAPACITORS FOR POWER

The OPUSAT CubeSat, built by students at the Osaka Prefecture University Small Spacecraft Systems Research Center (SSSRC), will test Lithium-Ion Capacitors in space. Lithium-Ion Capacitors have a high energy density (reportedly 14 Wh/kg) and so could potentially be of use in small satellites such as CubeSats where space and mass are at a premium.

OPUSAT will have deployable solar panels and Maximum Power Point Tracking (MPPT). The downlink on 437.150 MHz will be CW, 1200 bps AFSK or 9k6 GMSK telemetry. A launch is planned on the JAXA H-2A-202 rocket in Spring 2014 into a 400 km circular 65 deg orbit along with the primary payload Global Precipitation Measurement (GPM) Dual-Frequency Precipitation Radar (DPR).

There should be a number of other satellites carrying amateur radio payloads on the launch, including:
- STARS-2 – Kagawa University
- TeikyoSat-3 – Teikyo University
- ShindaiSat – Shinshu University
- INVADER – Tama Art University
- ITF-1 – University of Tsukuba

OPUSAT website in Google English http://tinyurl.com/OPUSAT

The satellite has attracted the attention of the press.
Read one Japanese newspaper story in Google English at: http://tinyurl.com/Nikkan-OPUSAT-130815

# DX NEWS

TU5DF will be on the air from the Ivory Coast until sometime in October. His operation is 40 through 6 meters using CW with some SSB and PSK31. QSL via F5SWB

DL1AL is now active as 5A1AL from near Tripoli, Libya. His operation so far has been on 40, 30, 20 and 6 meters using CW. He recently told the Ohio Penn DX Newsletter that he will eventually be active on the H-F bands and 6 meters using CW and SSB. He also plans to try PSK but at this time the modem does not work. No matter. Whichever way you make contact please QSL via DL1AL.

HB9ARY is currently operating stroke 3B8 from Mauritius Island. He is reportedly active on all of the High Frequency bands. QSL to his home callsign.

DL7BC will be on the air stroke F H from Mayotte between March 21st and April 4th, of 2014. Operations will be on 20-10 meters with 40 meters also a possibility. He also plans to participate in the 2014 CQ World Wide WPX SSB Contest signing TO7BC. QSL via his home callsign, direct or by the Bureau.

YT7AW and YT4RA will be active stroke 4 Oh from Montenegro through August 15th. Their operation will begin in Durmitor National Park followed by a seaside stopover and ending with a possible stop on Crna Gora. QSL's go via their home callsigns as shown on QRZ.com.

Bill Moore (NC1L), at the ARRL Awards Desk reports that the 2013 T5TC operation from Somalia has been approved for DXCC credit. If you've had this rejected in a prior application, send a note to bmoore (at) arrl (dot) org to be placed on the list for an update to your record.

DL7VOA will be active stroke EA8 from the Canary Islands through August 17th. His is holiday style using CW and mainly during his evening night. QSL to DL7VOA direct or by the Bureau.

IK2OHG will be active as HC2IOH from Ecuador between August 10th and September 12th. This operation will be holiday style on 40 through 10 meters using CW, SSB and RTTY. QSL via his home callsign, direct, via the Bureau or electronically using Logbook of the World.

KF8UN is on the air from Tanzania as 5H3BB through August 20th. He is there on a safari with his fife K8FUN. Activity is possible on 40 through 15 meters, but mostly 20 meters using SSB with some CW. QSL via his home callsign direct.

SQ9KWW will be active portable HL3 from South Korea through September 2nd. He plans to operate on the various High Frequency bands during his stay. QSL via his home call direct or electronically using eQSL.

SP2EBG and five other SP prefix operators will be operational as J88HL from Saint Vincent and Grenadines between November 17th and the 29th. Their activity will be on 160 through 6 meters. More information including QSL routing should be available in the near future.

W7JVN will be working at a church mission in Ghana for the next 16 months. He has been issued with the callsign 9G5AC and will operate 100W to a dipole on 20 and 15 meter SSB when time and conditions permit. QSL as directed by the operator.

# CALLING ALL DXERS

DL2SBE is spending his holiday on Lolland which is the fourth largest island of Denmark. He will be there until August 24th and is reported to be operating holiday style signing stroke OZ. Modes he's using are SSB, PSK, and RTTY. QSL via DL2SBE both direct and via the bureau.

DL2JRM and DO6XX will be operational stroke JW from Svalbard Islands from September 20th to the 23rd. They will be active also in the SAC CW Contest. If you work them, please QSL via each stations home call.

VK6DXI will be active as 9M8DX/2 fom Kuala Lumpur between through September 3rd. His operation will be limited since this is a business trip, but he will operate some CW during his local evening hours. QSL via SP5UAF.

E78A is currently operational from Jordan as JY9FC. He is reported to be active on all of the High Frequency bands. QSL to E73Y.

DL1AL who is now active as 5A1AL near Tripoli has told the Ohio Penn DX Newsletter that his stay in Libya will depend on a holiday and his business. He's recently been heard on 40, 30, 20 and 6 meters CW and 20 meters using SSB. QSL via DL1AL.

N6TJ will be on the air from Ascension Island in September operating with the call sign ZD8Z. He will be active on High frequency bands though no specific modes have been mentioned. If you work him please QSL via AI4U

An international team will be active as C82DX from Mozambique between October 15th to the 22nd. Their operation will be on 160 through 10 meters using CW, SSB and RTTY. QSL and other information is on the web at c82dx.com

WB9FMC will be in Minnesota from August 25th to the 31st and will attempt to qualify a United States island for the US Islands on the Air award. His two possible choices are Cedar Island in grid square MN012 and possibly Star Island in grid MN014. This operation requires 25 contacts, 2 of which must be different DXCC entities. Listen out for him on the 40 and 20 meter CW QRP frequencies. He says that more about the United States Islands on the Air program can be found at usislands.org

CE0ZOL is active from Juan Fernandez Island. He will be on there for about six months in the role of manager of the local airport. Activity will take place mainly on weekends. QSL as directed on the air.

HB9IQB is reported to have begun his Palestine as E44PM on August the 18th . He is using 100 watts and vertical antennas. QSL to HB9IQB using Logbook to the World.

R100RQA continues to celebrate the beginnings of professional radio operations 100 years ago in the region Arkhangelsk, Russia. He will be on through November 15th. QSL via RN1ON direct or electronically using Logbook to the World.

PA1FJ will be active from Chios Island through September 9 operating portable SV8. He will operate 40 through 6 meters using QRP level SSB. QSL via his home call.

JJ8DEN will be operational from Reao Atoll from September 18th to the 25th signing F Oh slash K-H-Zero-P-R. Listen out for him using CW, SSB, PSK31 and JT65A on 80 through 10 meters and QSL via JJ8DEN

# YEP, MORE DX


## NICARAGUA DXPEDITION UPDATE

Members from the Spanish Aitana DX Group (ADXG) will be active as H7H from Octavio, YN2N, radio shack in Nicaragua between October 1-16th.
Operators mentioned are Javi (EA5KM) CW, Fer (EA5FX) CW, Eugen (EA5HPX) CW, Fran (EA7FTR) SSB/RTTY, Jose (EA1ACP) SSB/RTTY and Carlos (EA1DVY) SSB/RTTY. Pilot station named is Ismael/EA1AZ.
Activity will be on 160-6 meters using CW, SSB and RTTY.
QSL via EB7DX, direct or by the Bureau. An OQRS will be available for direct and Bureau QSLs. All QSOs will be confirmed via LoTW.
For more details and updates, visit: http://nicaragua2013.com


## MELLISH REEF DXPEDITION

After their successful operation from Campbell Island in December 2012, six members of the ZL9HR team and additional operators have announced their intention to activate Mellish Reef in early 2014. Mellish Reef is located in the Coral Sea, approximately 1,100 kilometers (683 miles) northeast of Brisbane, Australia. Currently number 24 on ClubLog's Most Wanted List, Mellish Reef was last activated in 2009. An international team will operate for 12 days, using 6 stations with linear amplifiers and vertical antennas.

Discussions are underway with the appropriate authorities and potential transport suppliers. Additional information will be available on the team's
soon to be activated web site after the documentation is finalized. Currently signed up for the project are: Pista (HA5AO), Dave (K3EL), Glenn (KE4KY), Jacky (ZL3CW), George (HA5UK), Gene (K5GS) and Les (W2LK). As the project progresses we will announce additional operators and details. Please direct questions to: Mellish2014@gmail.com


## SPECIAL EVENT MEXICO

Members of the La Federacion Mexicana de Radioexperimentadores, A.C. (Mexican Federation of Radio Experimenters FMRE) will be on the air from Cancun, Mexico, with the special callsign XE3FMRE celebrating the National Convention FMRE 2013.
Activity will take place between October 2-7th, and operations will be on 80-6 meters using CW, SSB, RTTY, PSK31 and may be WSJT (Grid SQ. EL61). QSL via XE1LM

## BOTSWANA DXPEDITION

After a very successful 7P8D DXpedition to Lesotho in 2012, Donovan (ZS2DL) will lead a team of operators in April of 2014 to Botswana and be active as A22D (license was just issued on July 8th).
Activity will be on 160-10 meters using CW, SSB and RTTY.
Botswana is high on the most wanted lists for both CW and RTTY.
They are looking for CW operators and sponsors for this operation.
QSL via ZS2DL direct. Log will be posted on ClubLog, so a OQRS will be available. Look for QSOs to be uploaded to LoTW about 6 months after the DXpedition.
Look for more details to be forthcoming.
Also, watch the Web site at: http://www.a22d.net

# MORE AND MORE DX

## MOZAMBIQUE DXPEDITION

The following press release was sent out on July 16th:
"This has been a busy month for the C82DX team. With only 90 days before we are QRV we have filled the remaining operating positions and added several individuals to our off site support team.

"Joining us are such well known DXers as Bill (K1MM), Bruce (W6OSP), Charlie (NF4A) and Wild Bill (N2WB). Our South African contingent now includes Pierre/ZS6PJH Chairman of the Pretoria ARC.

"We now have secured the vehicles and trailers that will take us overland from Pretoria to Xai Xai, Mozambique. South African members of our team have traveled to Xai Xai to map the operating site and make a deposit on our rented compound. Coax, laptops, and extra linears have been sourced. In addition to our team license, our team members have all received personalized C92 callsigns.

"Low Band operations remain the primary objective and we have secured both Titanex and Battle Creek Special verticals. We have also obtained the sponsorship of Array Solutions with one of their new shared apex loop array RX systems and W3YY FSK/CW interfaces. They join ICOM (our main equipment supplier with IC7600s) and SteppIR (CrankIRs) as our major donors to our DXpedition.

"During the day we will operate all HF bands including 6 meters. Our website has been expanded by our webmaster, K6MM. If you haven't been there lately, please visit www.c82dx.com, where you can learn more about our plans.

Tom, N4XP and Don, N1DG
DXpedition Co-leaders"

## AUSRTAL ISLKANDS NEWS

Operators Grant KZ1W and Rob N7QT will be operating as TX5D from Raivavae Island (OC-114) on an Elecraft/SteppIR/WWDXC sponsored DXpedition between October 2-14th.

They will be using the new CrankIR portable antenna system from SteppIR, as well as Elecraft K3 transceivers and KPA500 amplifiers.Their operational base will be two bungalows located on the north side of Raivavae Island, and less than 20 feet from the Pacific Ocean. Activity will be on 80-10 meters using CW, SSB, RTTY and PSK. Log will be updated daily to Clublog www.clublog.org with QSOs data/history; internet bandwidth permitting.
QSL available via LoTW, eQSL, by the Bureau, or direct (SASE + IRC).

## HAM COUPLE IN GHANA

Jeff (W7JVN) along with his wife Beverly (WB7NLY) have been called to a church mission in Ghana, West Africa and will be active as 9G5AC. Jeff thought it would be nice to be on a DX expedition here so he brought his FT-857 and have set up a humble little station at their house. He has a 20 meter inverted V dipole antenna mounted on a 30 foot bamboo pole. He will use a 12 volt battery off his generator for power for the radio. Jeff will get on 20 and 15 meter SSB whenever he gets a chance and when the bands are open. Jeff and his wife will be located in Asamankese, Ghana, (which is in the bush) for about 16 months.
QSL via K7JH

# MORE AND MORE AND MORE DX

## AFRICAN TOUR

Nick, G3RWF, has announced that he will once again be active as 5X1NH from the University of the Mountains of the Moon (MMU) in Fort Portal, Western Uganda and (occasionally) the capital, Kampala, between September 24th and November 16th.

He is expected to join/meet with Alan, G3XAQ/5X1XA, later and both operators will travel to Rwanda to be active as 9X0NH between November 19-29th.

The duo plan to participate in the CQ WW DX CW Contest (November 23-24th) from Rwanda.

QSL 5X1NH and 9X0NH via G3RWF.
QSL 5X1XA via G3SWH.

## BIG DX DO'INS IN CHINA

425 DX NEWS reports that CAMSAT (AMSAT China) will hold 'a big DX party' from the outskirts of the city of Dunhuang in northwestern China (Zone 23, WW Loc. NM79aw) between October 19-28th.

Alan, BA1DU, and a very large group of operators coming from all over the country will be active with four well equipped stations: one for 2 and 6 meters, one for 70 centimeters and two for 160-10 meters.

Meteor Scatter and EME activity will be emphasized (this will include participation in the ARRL EME Contest), as well activity on the low bands.

Special callsign BJ9TA will be used for operating above 50 MHz and on the low bands, while BY9GA/9 will be used for the other bands and for participation in the CQ WW SSB Contest.

QSL via BA1DU

## JOVICA IN JORDAN


Jovica, E78A (ex-6W1SJ, 9K2/T94FC, ST0RM, ST2A, T94FC, T98A, TT8JT) is now active as JY9FC from Amman.

Jovica has been working in Amman for the UNHCR (United Nations High Commissioner for Refugees) for almost two years but just received his license. Most likely he will stay there for another three years.

As during his previous activities, activity will be during his free time, mostly on CW with some SSB and Digital operations.

QSL via E73Y:
Boris Knezovic, P.O. Box 59, 71000 — Sarajevo, Bosnia and Herzegovina, or via E7 bureau.

Clublog OQRS will be activated after first logs are received from Jovica.

# DX - THE END..... FOR NOW

## THE RED STAR LINE

Between 1873 and 1934 the Ocean liners from the Red Star Line sailed to the United States with more than two million adventurers and fortune-hunters on board. Special callsign ON70REDSTAR will be aired in SSB on short-wave ham bands from 21 September till 21 October 2013 to commemorate the Red Star Line and to celebrate the opening of the Red Star Line Museum in Antwerp on 28 September. QSL via the information on QRZ.com (www.qrz.com/db/ON70REDSTAR).
See also www.redstarline.be/

## AMSTERDAN ISLAND UPDATE

Ralph (K0IR), updated the Web page this past week with details (as well as pictures) of the landing and operating sites for the FT5ZM DXpedition on Amsterdam Island.

He states, "We have been assigned two operating sites on the north end of the island. One site, a shelter called Mataf, is located just northeast of the base. It is over 400 feet from the sea and the beach area has small cliffs, is rugged and rocky, and is exposed to the high sea. Having antennas at the water's edge is not really an option.

"The slope downward and to the north favors propagation to most major population areas. We will use verticals for the low bands and 3-element Yagis for the high bands."

Check out the complete press release (with pictures) at: http://www.amsterdamdx.org/ft5zm-operating-sites

## MOROCCO FORCES CANCELLATION OF 5C0CE DXPEDITION

The Council of Europe Radio Amateur Club says that the long planned 5C0CE operation from Morocco has been shut down before it even got started. This because of what appears to be either a policy decision or some form of bureaucratic red tape.

Francis Kremer (VF6FQK), is a founder and member of the Council of Europe Radio Amateur Club charged with Public Relations. Kremer said that the operation sponsored by the Council and slated for August 20th and 21st had been cancelled only 16 hours before the team was depart to Morocco. This due to what he termed as a last minute blockage by the President of the Royal Association of Radio Amateurs of Morocco. Kremer's e-mail went on to state that the DXpedition team had received their Moroccan licenses several months ago. Also that hams in Morocco have been preparing to assist with this operation since last year.

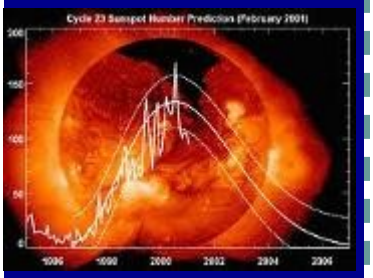
F6FQK's e-mail said that the notice from the Moroccan national society leader gave no reason for the decision to block the operation from taking place. He notes that each member of the Council's DXpedition team had paid his own expenses and when news came of the forced cancellation it was to late to recover those monies.

Kremer called the incident very damaging to the ham radio community.

## OP'S NEEDED FOR MAJOR IOTA DXPEDITION

Operators Fred (IK7JWX), Team leader and Antonio (IK8VRH) Logistics are looking for operators to participate in a major IOTA DXpedition to either Tanzania or Kenya in April of 2014. Islands mentioned in Tanzania are Zanzibar City [or Unguja] (AF-032 - 55%), Pemba Island (AF-063 - 30.3%) or Mafia Island (AF-054— 30.0%).
Island mentioned in Kenya is Lamu Island (AF-040 - 35.8%).
If interested, contact Fred at: ik7jwx2003<at>yahoo.it

# NASA SAYS SUN TO FLIP


In an event that occurs once every 11 years, the magnetic field of the sun will change its polarity in a matter of months, according new observations by NASA-supported observatories.

The flipping of the sun's magnetic field marks the peak of the star's 11-year solar cycle and the halfway point in the sun's "solar maximum" — the peak of its solar weather cycle. NASA released a new video describing the sun's magnetic flip on Monday (Aug. 5).

"It looks like we're no more than three to four months away from a complete field reversal," Todd Hoeksema, the director of Stanford University's Wilcox Solar Observatory, said in a statement. "This change will have ripple effects throughout the solar system."

As the field shifts, the "current sheet" — a surface that radiates billions of kilometers outward from the sun's equator — becomes very wavy, NASA officials said. Earth orbits the sun, dipping in and out of the waves of the current sheet. The transition from a wave to a dip can create stormy space weather around Earth, NASA officials said.

"The sun's polar magnetic fields weaken, go to zero, and then emerge again with the opposite polarity," Stanford solar physicist Phil Scherrer said in a statement. "This is a regular part of the solar cycle."

While the polarity shift can stir up some stormy weather, it also provides extra shielding from dangerous cosmic rays. These high-energy particles, which are accelerated by events like supernova explosions, zip through the universe at nearly the speed of light. They can harm satellites and astronauts in space, and the wrinkled current sheet better protects the planet from these particles.

The effects of the rippled sheet can also be felt throughout the solar system, far beyond Pluto and even touching the Voyager probes near the barrier of interstellar space.

"The sun's north pole has already changed sign, while the south pole is racing to catch up," Scherrer said. "Soon, however, both poles will be reversed, and the second half of solar max will be underway."

The current solar maximum is the weakest in 100 years, experts have said. Usually, at the height of a solar cycle, sunspot activity increases. These dark regions on the sun's surface can give birth to solar flares and ejections, but there have been fewer observed sunspots this year than in the maximums of previous cycles.

Read the full story at:

http://science.nasa.gov/science-news/science-at-nasa/2013/05aug_fieldflip/

# SIGNIFICANT SOLAR EVENTS IN HISTORY

**1859: The Carrington Event**

Credit: Royal Astronomical Society/Richard Carrington via NASA The Carrington Event of 1859 was the first documented event of a solar flare impacting Earth. The event occurred at 11:18 a.m. EDT on Sept. 1 and is named after Richard Carrington, the solar astronomer who witnessed the event through his private observatory telescope and sketched the sun's sunspots at the time. The flare was the largest documented solar storm in the last 500 years, NASA scientists have said. According to NOAA, the Carrington solar storm event sparked major aurora displays that were visible as far south as the Caribbean. It also caused severe interruptions in global telegraph communications, even shocking some telegraph operators and sparking fires when discharges from the lines ignited telegraph paper, according to a NASA description.

**1972: Solar Flare vs. AT&T**

Credit: NASAThe major solar flare that erupted on Aug. 4, 1972 knocked out long-distance phone communication across some states, including Illinois, according to a NASA account.

"That event, in fact, caused AT&T to redesign its power system for transatlantic cables," NASA wrote in the account.

**1989: Major Power Failures From Solar Flare**

Credit: NASA/PSE&G In March 1989, a powerful solar flare set off a major March 13 power blackout in Canada that left six million people without electricity for nine hours.

According to NASA, the flare disrupted electric power transmission from the Hydro Québec generating station and even melted some power transformers in New Jersey. This solar flare was nowhere near the same scale as the Carrington event, NASA scientists said.

**2000: The Bastille Day Event**

Credit: NASA/TRACEThe Bastille Day event takes its name from the French national holiday since it occurred the same day on July 14, 2000. This was a major solar eruption that registered an X5 on the scale of solar flares.

The Bastille Day event caused some satellites to short-circuit and led to some radio blackouts. It remains one of the most highly observed solar storm events and was the most powerful flare since 1989.

**2003: The Ultra-Powerful Halloween Sun Storm**

Credit: NASA/SOHOOn Oct. 28, 2003, the sun unleashed a whopper of a solar flare. The intense sun storm was so strong it overwhelmed the spacecraft sensor measuring it. The sensor topped out at X28, already a massive flare), but later analysis found that the flare reached a peak strength of about X45, NASA has said.

The solar storm was part of a string of at least nine major flares over a two-week period.

**2006: X-Ray Sun Flare for Xmas**

Credit: NOAA's Space Weather Prediction Center. When a major X-class solar flare erupted on the sun on Dec. 5, 2006, it registered a powerful X9 on the space weather scale. This storm from the sun "disrupted satellite-to-ground communications and Global Positioning System (GPS) navigation signals for about 10 minutes," according to a NASA description. The sun storm was so powerful it actually damaged the solar X-ray imager instrument on the GOES 13 satellite that snapped its picture, NOAA officials said.

# REAL-FOR-FAKE CHARGER EXCHANGE

Apple has begun a worldwide program to replace third-party and counterfeit USB chargers for use with its iPhone, iPad, and iPod products. This after reports that a woman in China was electrocuted by a non-Apple charger.

Apple said it would swap third-party chargers for an official replacement on payment of $10 or the equivalent fee in local currency. The exchange program begins on August 16th and will run until October 18th.

In mid-July, Apple said it was investigating reports that Ma Ailun was killed when she answered her iPhone 5 while it was plugged into a wall charger. Investigators later said that her death was caused by a fake third party non-Apple charger.

No mention was made of the woman's death in the announcement of the trade-in program but Apple did say that the initiative was prompted by safety issues. Apple also said that the third-party and fake chargers would be disposed of in an environmentally friendly way. You can read one of the many detailed stories on this Apple initiated safety program at tinyurl.com/apple-charger-exchange.

It is my understanding that Apple recommends that chargers be unplugged from the AC outlet when not in use.

# HAM CLUB REACHES OUT TO YOUNG FOLKS

SurfKY reports that the Owensboro Amateur Radio Club in Kentucky, is trying to attract younger members.

The club hosts a children's program at the Owensboro Museum of Science and History where kids can learn the Phonetic Alphabet while making crafts.

"We are trying to get younger folks interested," Walt Shipman (KI4OYH) said Thursday. "It's where it starts."

The Owensboro Amateur Radio Club Vice President, Bob Spears, agreed, saying that the club's members are getting older and might need younger people to take their places some day.

Read the full story at:
http://surfky.com/index.php/communities/77-owensboro-news/35465-owensboro-amateur-radio-club-reaches-out-to-younger-audience

Owensboro Amateur Radio Club
http://www.k4hy.net/

https://www.facebook.com/OARCK4HY

# UNLICENSED USE OF HT'S BRINGS $30,000 FINE

The FCC has issued a $30,000 Notice of Apparent liability to Remel, Inc. and its corporate parent, Thermo Fisher Scientific, Inc. This for allegedly unlawful operation of radio frequency devices on a General Mobile Radio Service frequency for more than nine years without Commission authority.

On June 21, 2012, Thermo Fisher filed an application for a new Public Land Mobile Radio Service license with the Commission's Wireless Telecommunications Bureau. A few weeks later July 2, 2012, Thermo Fisher filed a request for Special Temporary Authority to permit the operation of certain handheld radio transmitting equipment pending the grant of its Public Land Mobile Radio Service. In its S-T-A Request, Thermo Fisher indicated that its handheld radios were used in connection with manufacturing certain products used by the Center for Disease Control and other health care facilities. It also stated that the radios were "an essential communications link" for its factory operations and for the safety and security of its personnel. At the time, Thermo Fisher further indicated that it had operated the handheld radio transmitters for a number of years and that it discontinued their operation on June 14th, 2012, as soon as it became aware that the radios were not properly licensed.

The STA was granted on July 9, 2012 under call sign WQPN622. Thermo Fisher's application for a new Public Land Mobile Radio Service license was granted on August 30, 2012 under call sign WQPW523.

Because it appeared that Thermo Fisher had operated its handheld radio transmitting equipment without authorization, the Wireless Bureau referred this matter to the Enforcement Bureau for investigation and possible enforcement action. On January 30, 2013, the Enforcement Bureau's Spectrum Enforcement Division issued a letter of inquiry to Thermo Fisher, directing the company to submit a response to a series of questions relating to the unauthorized operation of the radio transmitting equipment. Thermo Fisher responded on February 27, 2013 and indicated that Remel began operating the radio transmitting equipment in approximately October 2002.

In issuing the $30,000 NAL, the FCC noted that the companies admit that they operated their radio transmitting equipment without Commission authorization since approximately October 2002 and continued for more than nine years, until June 14, 2012. As such the Commission finds that the companies apparently violated Section 301 of the Communications Act and Sections 1.903(a) and 95.3 of the agency's Rules by failing to obtain Commission authority to operate their radio transmitting equipment. Therefore based on the information before it the agency says that a $30,000 fine is warranted in this case.

Remel, Inc. and Thermo Fisher Scientific were given the customary thirty days to pay the proposed fine or to file an appeal.

# PHYSICISTS DETECT RADIO WAVES WITH LIGHT

Here's an interesting article - the first paragraph of which reads:

"The detection of weak radio signals is a ubiquitous problem in the modern world. Everything from NMR imaging and radio astronomy to navigation and communication depends on picking up faint radio signals that would have been undetectable just a few decades ago. That's why many groups are racing to find better ways to spot these signals and to process them using state-of-the-art techniques."

Read the complete article at: http://www.technologyreview.com/view/517336/physicists-detect-radio-waves-with-light/

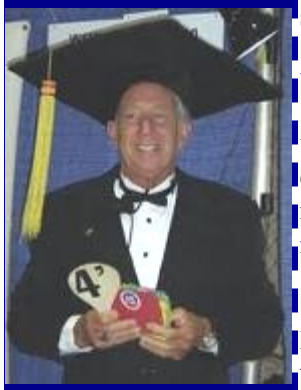
# GORDON WEST TO TRAIN THE TRAINERS

The man who is possibly the worlds best known ham radio instructor says that he is not going to retire after all.

WB6NOA: "That's right; Gordo is not retiring from teaching but rather I will be teaching `Elmers' and instructors and Scout Merit Badge leaders how to do ham radio classes similar to the classes that I have done for the past 44 years."

Of coarse that's Gordon West (WB6NOA) who earlier this year had hinted that a change was coming in his life that many saw as a hint that he would be pulling the plug. But West says that he feels that it's time to take his years of accumulated knowledge and pass it on to the next generation of instructors who will be the people bringing new operators into the hobby over the next several decades. And from this came the idea of rounding out his career by teaching the teachers:

WB6NOA: "Teaching the teachers was a decision that I made when I saw that class sizes were continuing to remain strong and I had other `Elmers' come over and monitor. So I thought `why not teach the teachers and get more classes going throughout the local area here in Southern California as well as well as when I travel throughout the country going with some of the techniques I use.' So beginning officially now, I'm going to be training the trainers rather than actually presenting classes for students."



West says that he plans to get this new educational project underway in just a couple of weeks:

WB6NOA: "We are going to hold our first Instructors Class on October 5th here in Orange County (California) and we already have about 25 signed up. And these are not necessarily ham radio instructors but rather `Elmers' wanting to representing their club and wanting to teach ham radio classes like mine.

"Then Ill take this same technique and this same seminar, make it shorter and present sessions at Pacificon coming up in October, the Midwest Convention in November and other ham shows throughout the country where Ill put on an hour or so on training the traines."

The exact location of this first "Train the Trainers" session will be the Muth Interpretive Center, 2301 University Drive in Newport Beach California. The class will begin at 8 a.m. and end at 5 p.m. Pacific Daylight Time. Each instructor will receive the forty page INSTRUCTOR TEACHING GUIDE that gives step-by-step directions on teaching the new Technician class materials.

Those planning to attend are encouraged to download this free guide ahead of time at www.haminstructor.com.

GORDON WEST RADIO SCHOOL

More information on Gordon West's plans to train the next generation of ham radio educators can be found on his website at www.gordonwestradioschool.com. Just click on the tab marked `Ham Instructors.

# HOW TO DISAGREE WITHOUT BEING DISAGREEABLE

Disagreements are not only inevitable but a natural dynamic between people. Left unresolved, they can waste time and energy and negatively impact productivity. Many people try to avoid disagreements, yet we can learn so much from those with whom we disagree if we learn how to engage without triggering hot buttons or rushing to defend our point of view.

1.
Give others the benefit of the doubt. You may disagree strongly about some point, but always ask yourself: What do I know about the individual both in an historical and situational perspective that might justly explain why they act the way they do? What is preventing me from giving him/her the benefit of the doubt? These simple questions can help you open your mind to what's underneath the other person's idea, and help you find a resolution.

2.
Avoid using these words: "but", "however" and "nevertheless". If you acknowledge the other individual's point of view and follow it what one of these words, you have completely erased the acknowledgement.

3.
Use empathy to cushion your response. Never attack another person's idea head-on. If you disagree, acknowledge that you have heard their opinion, and follow it with a empathetic comment. ("I can understand why you are bringing that because of XYZ") With this statement of empathy, you don't need to agree or disagree, but rather simply demonstrate your understanding for their "side." From this point of commonality, you can then move on to illustrate your own feelings on the subject.

4.
If you are interacting via email, consider saving your disagreement until you can interact on the phone or face to face, since tone can be very easily misread. If this is impossible, it's doubly important to set up your statement with empathy and understanding. Always offer continue the conversation in person to resolve questions.

# FLORIDA MAN ELECTROCUTED INSTALLING ANTENNA FOR UNLICENSED RADIO STATION

An Oakland Park, Florida man was electrocuted on July 29th while trying to install an antenna for an unlicensed radio station antenna on the roof of a strip mall. According to the Broward Sheriff's Office forty-two year old Jean Roselet Adelphonse was reportedly climbing a tree to install an antenna at about 10:40P.M.

(IF I AM NOT MISTAKEN THAT IS AFTER DARK N FLORIDA!!!) When the 30-foot antenna came into contact a high voltage power line, his friend, Clebert Durand, who was helping him install the antenna, called 911.

Officials said Adelphonse was trying to start a Creole-language pirate station and that they found more broadcasting equipment in his vehicle.

Let's be careful out there people!

# NAVY USES UAV'S TO STUDY PROPAGATION

Radio has come a long way since Marconi bashed a telegraph key and radar was just a squiggle on a cathode tube, but despite a century of advances, they're still prone to the same problems as the first pioneers encountered. For five days in July, the Office of Naval Research's (ONR) Research Vessel (R/V) Knorr made a survey in the waters off Virginia Beach, Virginia using ScanEagle UAVs to study the effects of oceanic and atmospheric changes on radar and radio waves with the aim of producing more secure military communications and improving the ability of radar to detect hostile craft.

Radio wave propagation is a very basic phenomenon of broadcasting. If you were to set up a radio broadcasting station on the Moon, the radio waves would broadcast out like light from a bulb. That means that the signal sent out would be almost entirely by line of sight and any object opaque to radio waves would shadow it almost entirely.

On Earth, this doesn't happen quite as often. You can be out of sight of the transmitting antenna or even on the other side of the planet and still be able to receive a broadcast. As radio waves spread out, they interact with the atmosphere, so that instead of simply moving in a straight line, they are bent or bounced back depending on their wavelength. It's what allows you to pick up broadcasts even though the transmitter's antenna may be obscured or even below the horizon. It makes local broadcasting practical and makes it possible for a yachtsman in the South Pacific to talk to someone in New York.

This phenomenon is one that broadcasters rely upon, but it also causes a lot of problems. Since the propagation of radio waves is dependent upon the atmosphere, this propagation changes according to time of day as the Sun heats the atmosphere and radiation from space charges the upper layers.

An example of this change was the way that British teenagers in the 1960s would stay up late waiting for the right conditions to pick up broadcasts of pop music from Radio Luxembourg on the Continent. A more prosaic annoyance is how broadcasts from other regions could suddenly interfere with ones close by. It's one of the reasons why ham radio operators were given high frequency bands in order to avoid interfering with long and medium wave broadcasts reserved for state and commercial broadcasters.

Such problems are also the reason why the military, and hence the ONR, are interested in studying these effects. What interferes with civilian broadcasts does the same to military ones as well, potentially leading to signals intended for friendly ears reaching hostile ones as well.
A ScanEagle and recovery sling

Worse, since radar is a form of radio, this is affected as well. Beams intended to catch an approaching enemy can be sent shooting into space instead of heading for their target. Because the military must act in all terrains, at all times of day, in all parts of the world, it needs a comprehensive understanding of what is going on.

Radio propagation varies according to the nature of the atmosphere and how it interacts with the surface of the Earth over land or sea. It's a complex phenomenon that involves many interacting factors to produce the reflection and refraction, which are called "ducting."

Article continues on page 21.

# NAVY UAV STORY, CONT'D

"We need to understand where we are in relation to this ducting environment and understand the energy we're emitting and the energy an adversary is emitting," says Dr. Dan Eleuterio, program officer for ONR's Ocean Battlespace Sensing Department. "If we don't know these things, it's like rolling the dice. If we do know them, it can give us a tactical advantage."

The study of radio propagation requires real-time data telemetry to collect the needed data. Previously, this would be done from the ground or using balloons. Ground observations are limited and balloons can't be steered and are difficult to use at low altitudes. The ONR survey was carried out by ScanEagles and unmanned submersibles and surface craft, which can be placed in a specific area and remain there for long periods collecting data, especially at low altitudes.

According to ONR, the ScanEagles carried sensor packs developed by the Marine Physical Laboratory at Scripps Institution of Oceanography that measured environmental factors such as surface waves, wind speed and direction, humidity and temperature, which were transmitted to a nearby destroyer or an amphibious assault ship.

"In the old days, we launched weather balloons to give us the best data on the real environment, but that only happened in one place and at one time of day," says Cmdr. Rob Witzleb, head of capabilities and requirements on the staff of the Oceanographer of the Navy. "Many miles and hours later, we were often left looking for answers when weapon systems didn't perform the way we thought they would. Using UAVs is giant leap forward in that they can give us near-continuous data, across multiple parameters where the atmosphere is the most unpredictable.

By David Szondy

# PROPOSED FCC RF EXPOSURE STANDARDS ELIMINATE HAM RADIO EXEMPTION

Amateur radio operators in the United States who live in developments where they want to keep their anonymity may soon find it hard if not impossible to do so. This is because of proposed new rules on RF exposure from the FCC that would remove the blanket exemption that currently keeps hams from having to conduct RF radiation studies.

Under the proposed new regulations, households where amateur stations operate should be considered to operate under occupational exposure standards. According to the FCC, this could eventually require education for household members and the posting of signs warning of the possibility of exposure to RF.

While not the law yet, more about the plans by the FCC to increase the scope of its overall RF exposure standards in all areas of its oversight can be read in an article by noted author Scott Fybush and published in the trade publication Radio World. You can find it on-line at http://tinyurl.com/living-with-rf.

This could be REALLY significant if you live in an apartment building, condo or your antenna is near your neighbor..

# YOUNGSTERS TRY HAM RADIO

Florida's North Okaloosa Amateur Radio Club gave young people the opportunity to find out more about ham radio.

They gave a presentation on the hobby at the Crestview Public Library during which the youngsters were able to make contacts with the amateur radio equipment.

There was also a demonstration of an amateur satellite contact.

Read the Crestview News story
http://www.crestviewbulletin.com/news/community/crestview-residents-get-to-be-ham-operators-for-a-day-video-1.184661

North Okaloosa Amateur Radio Club
http://w4aaz.org/

# HAM'S & ARES ARE ESSENTIAL

The Tampa Bay Times reports amateur radio operators are essential during emergencies

They say:
With most of the world now just a text message or phone call away, it's easy to assume radio operators have become obsolete.

Not true.

"If ever there's a hurricane, the only thing you have left is us," said Albert Clark (KJ4FUH), the president of the Sun City Center Amateur Radio Club.

Even with today's technology, communication systems may go down, Clark said. That could mean no phone calls, no Internet, and at times, usually reliable text messaging may fail.

That's when amateur radio operators get to work. It happened during Hurricanes Katrina and Sandy, and more recently during the Boston Marathon bombing and in tornado-ravaged Oklahoma.

Read the full story at:
http://www.tampabay.com/news/humaninterest/amateur-radio-operators-essential-during-emergencies/2135663

Sun City Center Amateur Radio Club
http://www.sccarc.info/about.html

Are you active in ARES?? If not, why not?

# HAM RADIO IS ILLEGAL IN THIS TOWN

Shhh! The scientists are listening to space!

Green Bank, W. Va, is a tech-savvy persons nightmare. In this tiny town in Pocahontas County — population 143 — wireless signals are illegal. No cell phones. No WiFi. No radio. No Bluetooth. No electronic transmitters at all. You're not even allowed to cozy up to an electric blanket.

The remote town is smack in the center of the National Radio Quiet Zone, a 13,000 square mile stretch of land designated by the Federal Communications Commission to protect two government radio telescopes from man-made interference. The rules, though, are most strict in Green Bank's neck of the woods. So strict, actually, that a policeman roves the streets listening for verboten wireless signals.

It's necessary, though. The town is home to the Green Bank Telescope, the largest steerable radio telescope in the world — and arguably our most powerful link to the cosmos. Scientists there listen to radio energy that has journeyed light years, unlocking secrets about how the stars and galaxies formed. A rogue radio signal could prevent potential discoveries, discoveries that could answer big questions about how the universe ticks.

Green Bank, WV: A Visitors Guide

Don't even try using your cell phone in Green Bank. Finding service is the only thing harder than finding another human. A flip of the radio dial won't reward you either — it's all a steady whoosh of white noise. If you're lucky, though, you may catch a faint flicker of the only AM station around, hosted by the Allegheny Mountain Radio Network.

First responders are the only residents allowed to use communication radios, although they're limited to short-distance CB radios. If you get lost, one pay phone is there to rescue you — a pay phone, mind you, that people actually use. And you can search the web there, too, but you'll have to get used to the grating ping of a dial-up modem again.

Surprisingly, a ban on all things wireless hasn't driven residents away. It's actually drawn people from all across the United States to settle down. Sufferers of electromagnetic hypersensitivity — a disease supposedly caused by wireless signals, but dismissed by the scientific community — have moved into the electronic dead space.

Mental Floss By Lucas Reilly | Mental Floss – Thu, Aug 15, 2013 3:19 PM EDT

# TEACHER HELPING STUDENTS BECOME LICENSED

Petal High School Information Technology teacher Brad Amacker N5MZ helped his students earn amateur radio licenses thanks to a grant he received during the 2012-13 school year

The Hattiesburg American reports that Amacker used the grant for a project involving a digital mode of Amateur Radio called D-STAR, Digital Smart Technologies for Amateur Radio.

His IT classes studied Amateur Radio and FCC Rules during the fall semester and seventeen students earned FCC Amateur Radio licenses.

# WA7VE

**Seaside Tsunami Amateur Radio Society, Inc.**
**P.O. Box 128**
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**Email: wa7ve@wa7ve.org**

**President - Pat Love (KE7RBM)**

**V.P. - Terry Williams (KE7QFR)**

**Secretary - Carolyn Lee (KE7OXP)**

**Treasurer - Kelly Larkins (N7IXI)**

**Trustee - Hal Denison (WA7FIV)**

Our membership meetings are held at 5:00 PM on the second Saturday of each month at the Seaside campus of Clatsop Community College. We will be upstairs. The Board meeting begins at 4:30 PM. All are welcome.

Please visit our website for updates and information.

# SEE A TOUR OF WLW A 500,000 WATT RADIO STATION

While in Dayton Ohio at Hamvention 2013 I attended a tour of the WLW AM broadcast transmitter facility located in Mason Ohio. WLW has kept a major piece of broadcasting history alive by keeping much of the old high power transmitter intact.

Back in 1932 WLW increased their power from 50,000 watts to 500,000 watts. They were the only AM broadcasting station in America ever to operate at 500,000 watts. Much of the old transmitter still exists.

It is really a high power amplifier with a high level modulator (360,000 watts). The amplifier was driven from their existing 50,000 watt Western Electric transmitter. The system used 20 100,000 watts tubes ($1,600 each in 1932) that required water cooling that used a cooling pond located outside the station. Tons, and tons, of hardware was required to achieve the 10 dB gain.

Before the 500 KW went on the air, WLW installed a Blaw Knox vertical radiator, or as we say today a vertical antenna. Back in those days a horizontal wire flat top antenna supported by two towers was common. Photos in the video show the impressive antenna farm at WLW.

The engineering was state of the art pushing the 1930s technology to achieve 500,000 watts. Operating the transmitter required a team of many engineers to bring it to life and control it while it was on the air. A simple ON-OFF switch did not exist!

Enjoy the tour of the facility and the history of this high power station. Thanks to Jay, Geoff, and Ted of WLW for hosting the tour.

View this 30 minute video at: http://youtu.be/CbHjcwIoTiY

**It is well worth your investment of time.**