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SPURIOUS EMISSIONS

SEPTEMBER, 2016

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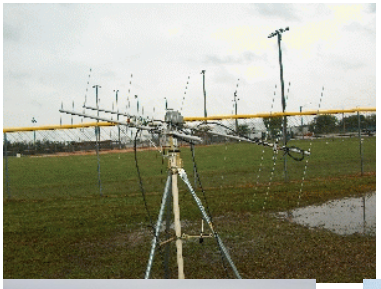
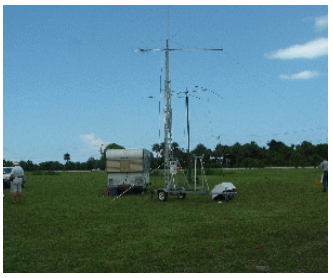
CLUB MINUTES

The September IRARC meeting was cancelled due to tropical storm Hermine. In lieu of minutes we will take a brief stroll through the club's picture archive.



Satellite & Spagetti 2005

Field Day 2001



Field Day 2005

HAPPENINGS

" Magnetic Loop Antennas" is the topic of the last episode of the ARRL The Doctor is In and "SWR" is the topic of the current episode Listen...and learn! http://www.arrl.org/doctor

Hurricane Emergency Frequencies

USA Hurricane Watch Net: 14.325 MHz

For the remainder of the Atlantic hurricane season, Radio Amateurs are reminded of the following frequencies which have been notified from previous seasons:

Caribbean Emergency & Weather Nets: 7.162 & 3.815 MHz Eastern Caribbean Narrow Band Emergency System Net: 7.036 MHz USB (Olivia & MT63) Caribbean Emergency: 14.185 MHz Republica Dominicana: 7.065 & 3.780 MHz Cuba: 7.045, 7.080, 7.110, and 3.740 MHz Central America: 7.090 & 3.750 MHz Nicaragua: 7.098 MHz Panama: 7.085 MHz

USA: Maritime Mobile Service Net: 14.300 MHz Salvation Army Team Emergency Radio Network (SATERN): 14.265 MHz

Other local emergency communications groups may also activate if a hurricane approaches their area and those frequencies would be announced at the time.

Noise Floor Study

In anticipation of an FCC Technological Advisory Council (TAC) investigation into changes and trends to the radio spectrum

HAPPENINGS

noise floor to determine if there is an increasing noise problem, ARRL asserted that such a study is long overdue. The FCC Office of Engineering and Technology (OET) announced plans for the TAC study in mid-June and invited comments and answers to questions that the TAC posed concerning the methodologies for such a study. The League's comments also praised the TAC — an advisory group to the FCC — for tackling the issue and expressed the hope that the noise study might, for the first time, provide a useful, objective basis for spectrum overlays and other future allocation decisions. ARRL allowed that while a noise floor problem exists, "The magnitude of this problem and the extent of it in the 21st century is virtually unknown."

For full article go to link below:

http://www.arrl.org/news/arrl-encourages-comprehensive-noise-floor-study

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Popular ARRL Webinars Now Archived, Ready for Review

The following ARRL webinars garnered great interest and support from participants, and are now posted online. Don't miss them!

2016 ARRL Hurricane Preparedness Webinar, hosted by ARRL Emergency Preparedness Manager Mike Corey, KI1U

https://www.youtube.com/watch?v=VsJfG68YNushttps://www.youtube.com/watch?v=VsJfG68YNus

Contesting as Public Service/ Disaster Communications Training, with Ward Silver, N0AX, hosting.

https://www.youtube.com/watch?v=b00yUN7qQEs

Prosign - Accepted as short for "**Pro**cedural **Sig**nal": In CW, a sequence of dots and dashes that are used to convey a particular meaning about the communication itself, such as end of transmission, "**SK**", over, "**K**", or wait, "**AS**". They are written as the concatenation of one or more regular characters, sent or received with no intervening spaces.

The winners of the Joe Rubino WA4MMD Scholarship this year:

Johan M Elrubaie KM4HKP (WA1DO)from Fort Myers, Florida who holds an Amateur Extra license and **John J Light** KM4ICZ from Englewood, Florida who holds a Technician license.

ON THE AIR

MOZAMBIQUE, C9. Johannes, PD0JBH is QRV as C91PA from Maputo and plans to be here until March 2017. Activity of late has been on 40 and 20 meters using SSB. QSL via operator's instructions.

MALI, TZ. Laurent, F5IXR is QRV as TZ5XR from Kidal City until February 2017. Activity is on the HF bands using CW and SSB. QSL via F5MXH.

BULGARIA, LZ. Special event station LZ18ARDF is QRV until September 30 during the context of the 18th World ARDF Championships in Albena, being held September 3 to 9. Activity is on the HF bands using CW, SSB and various digital modes. QSL via bureau.

VANUATU, YJ. Tom, KC0W is QRV as YJ0COW until September 21. Activity is on the various HF bands using only CW. QSL direct to home call.

Cervantes Award: 14 special call Spanish stations using the prefix AN400 will be active from September 19-October 9 to commemorate the 400th anniversary of the death of the Spanish writer.

Details at http://dxnews.com/cervantes/

Stu, K4MIL will be active again from Guantanamo Bay, IOTA NA - 015, 13 - 26 September 2016 as KG4SS.

Leszek Lechkowicz, NI1L will be active again from Lord Howe Island 20 - 27 September 2016 as VK9LN.

SV8/IZ4JMA Aigina Island. Max, IZ4JMA will be active from Aegina Island, IOTA EU - 075, 12 - 17 September 2016 as SV8/I

Z4JMA.PR2GU Guarau Island. PY2DS, PY2VOX, PY2AE, PU2POP will be active from Guarau Island, IOTA SA - 071, 24 - 25 September 2016 as PR2GU.

Low Frequency Amateur Communications by Armando Delgado, KN4JN

When the first Radio Law passed Congress in 1912, it restricted amateur radio operators to wavelengths shorter than 200 meters, that is, frequencies above 1500 KHz. The rationale at the time was that those frequencies were useless for radio communications and that amateurs would not be able to interfere with commercial and naval radio operations. Thus, when commercial broadcast radio came into being in the 1920's, commercial stations transmitted in those preferred frequencies below the amateur band. The first licensed commercial broadcasting station was KDKA in Philadelphia and its first broadcast was the election returns on November 2, 1920. It made the transmission on 330 m, or 900 KHz. In the following years, as more commercial broadcasters took to the air, they all remained in the 330-600 m wavelength range, or 500 KHz-900KHz. Radio receiver manufacturers quickly began to produce radios that could receive those transmissions. So in a short time, between government regulations and public commitment to certain frequencies, the commercial broadcasters' frequencies were set and immutable.

The frequencies below 500 KHz, wavelengths longer than 600 m, required bigger antennas and more power, so commercial broadcasters did not venture there and eventually lost the opportunity of using those frequencies. In time, the frequencies below the broadcast band were delegated to maritime and navigational services; hams, along with every one else, were excluded from them.

Low Frequency Amateur Communications

Years later, with the implementation of satellite navigation, maritime and other navigational systems abandoned the old ground-based guidance for the new, more accurate, satellite based systems. This change freed many frequencies in the low bands and allowed the FCC to consider other users.

In 2007 the World Radiotelegraph Council allotted the 135.7 KHz-137.8 KHz (2200m) segment of the radio spectrum to amateur radio, and a number of European nations implemented that allocation; however, the FCC had reservations about possible interference to other services and did not allow American hams access to those frequencies until April, 2015. The ARRL petitioned the FCC years ago and were finally granted the opportunity for hams to operate as experimental stations in the 135.7-137.8 KHz segment of the LF band. This privilege was granted as secondary users, and stations are limited to 1 W EIRP (effective isotropic radiated power). This allocation is only 2.1 kHz wide, which restricts the transmission modes that can be used. Because of the narrow spectrum and the weak signals that are generated from the very inefficient antennas that can be used at these wavelengths, most operators in these frequencies use a form of CW called slow CW, or QRSS. These are computer-generated dots and dashes that last several seconds and require a computer program to interpret them. More recently, weak signal digital modes like WSPR have gained popularity in this part of the spectrum. In September, 2015, the FCC also proposed a new segment of the LF spectrum at 630 m, 472 kHz-479 kHz, for use by amateurs on a secondary basis. Operations in these frequencies would be limited to 5 W EIRP. Advantages of this frequency range are that it is wide enough to allow for regular CW and possibly SSB transmissions and that most modern transceivers can receive in those frequencies.

One other LF band exists in the US, but it's not an Amateur Radio allocation. A lot of "lowfer" (Low Frequency Experimental Radio) activity occurs in the 160 to 190kHz region--the so-called 1750-meter band, authorized under Part 5, Experimental Radio Service of the FCC regulations. Right now, there is no license requirement to operate on 1750 meters, but there are severe legal restrictions on what can be put on the air in that band. For starters, power is limited to no more than 1 W input to the transmitter's final stage, and the entire length of the transmission line and antenna combined cannot exceed 15 meters (approximately 50 feet). That's not much antenna for a band where a half-wavelength antenna would be more than one-half mile long! Hams that operate on 1750 meters sometimes use just their call sign suffix as an ID.

Right now, a few hundred experimenters occupy the band in the US, and several of them have set up CW beacons on 1750 meters (many between 180 and 190 kHz), so you might take a listen if you have a receiver that tunes those nether regions. A lot of equipment for the band is home-brew, but commercial equipment is becoming more available.

One unique advantage of VLF radio is that propagation in these low frequencies follows a waveguide mode between ground and the ionosphere that permits signals to travel hundreds of miles without suffering the absorption phenomenon of signals at shorter wavelengths.

Web Pages for the LF Experimenter

These Web pages offer a wealth of additional information about Amateur Radio LF experiments, hardware, soft ware and propagation:

Argo Software

www.weaksignals.com

CT1DRP Web site

homepage.esoterica.pt/~brian/

G3YXM LF News

www.wireless.org.uk

G3NYK Web site

www.alan.melia.btinternet.co.uk

KL1X Web site

myweb.cableone.net/flow/

Long Wave Club of America
www.lwca.org

NOAA Space Environment Center www.sec.noaa.gov

ON7YD Web site

www.qsl.net/~on7yd/

VE7SL Web site imagenisp.ca/ jsm/ INDEX.html

W1TAG Web site
www.w1tag.com

W3EEE Web site
www.w3eee.com

W4DEX Web site
www.w4dex.com

The low frequency spectrum is organized as follows:

BAND	FREQUENCY RANGE	WAVELENGTH RANGE
VLF	3KHz-30KHz	100000m-10000m
LF	30KHz-300KHz	10000m-1000m
MF	300KHz-3000KHz	1000m-100m

W1AW CW PRACTICE TRANSMISSIONS

7 PM EST Slow CW : 5-15 WPM Mon, Wed, Fri

7 PM EST Fast CW: 35-10 WPM Tue, Thu

FREQUENCIES: 1.8025, 3.5815, 7.0475, 14.0475, 18.0975, 21.0675, 28.0675, 147.555

Editor's Note:

Send comments about the Newsletter or to contribute information or articles to the Editor's email address:

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