

OMIK TECH-TALK

DECEMBER 2016



<http://www.omikradio.org>

***An International Educational and Scientific Organization
Founded in August of 1952***

OMIK Tech-Talk is a monthly distribution of news and technical articles reviewed and chosen by our technical staff to provide you with timely ham radio-related topics collected from different sources on the Internet.

KØMIK

**OMIK Amateur Radio Association –
Net Schedule**

(NOTE: during Daylight Savings Time net times move back 1 hour)

	OMIK Nets meet on Sundays
20 Meter Phone	14.295 MHz from 16:00 - 18:00 UTC
40 Meter Phone	7.185 MHz from 12:30 to 14:00 UTC
75 Meter Phone	3.920 MHz from 12:00 - 13:00 UTC

OMIK is using Dstar reflector REF074C on Sunday mornings to assist the net controllers with check-ins. If you can't hear the net because of band conditions and you have the resources to communicate on Dstar try checking in on REF074C. You can view the reflector dashboard by typing the link below in your web browser.

<http://REF074.dstargateway.org>. If you need assistance reaching the reflector contact Frank K6fed@yahoo.com.

HAM RADIO NEWS

ARRL Issues Urgent Last Call to Press for Senate Passage of Amateur Radio Parity Act

Source: ARRL

It's now down to the wire: ARRL has issued a last call for members to urge their US Senators to support the Amateur Radio Parity Act ([H.R. 1301](#)) when it comes up during the "lame duck" session of Congress that adjourns in a couple of weeks. The House of Representatives approved the bill in September, and the Senate must follow suit if the bill is to succeed. If it fails in the Senate, the entire process will have to be repeated in the new Congress. The legislation is now in the Senate in two forms

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— as H.R. 1301 and alternately in the packaged bill S. 253

“We are on our final push for the Amateur Radio Parity Act before Congress adjourns,” said ARRL President Rick Roderick, K5UR. “The grassroots effort by the Amateur Radio community has been outstanding. Since September, over 110,000 emails have been sent to legislators in Congress. Thanks to everyone who has helped, but we can’t stop now. Please, keep the e-mails coming and also work the phones down the stretch. Call your Senators! We are almost there. Let’s get it done!”

ARRL Hudson Division Director Mike Lisenco, N2YBB, who chairs the ARRL Board’s Legislative Advocacy Committee and has been heavily involved in efforts to move H.R. 1301 forward, echoed President Roderick’s sentiments. He said the bill was just starting to build momentum in the Senate following its unanimous passage in the House, when Congress shut down for the 4 weeks prior to Election Day. He pointed out that H.R. 1301 has received broad support from both parties.

Lisenco had a special request of Florida radio amateurs. “Please write and call Sen. Bill Nelson and demand that he remove his hold on H.R. 1301 and support passage of this critical legislation.” Urging your US Senators’ support is simple: Go to our [Rally Congress](#) page, enter your

ZIP code, fill in your name and address, press enter, and e-mails will go directly to your Senators. Members may do this even if they have already contacted their US Senators for support.

There are no guarantees, Lisenco has pointed out. “In order to have a chance at overcoming political obstacles that have little or nothing to do with the legislation, we need our voices to be heard,” he said. “And we need that input today!”

President Roderick urged members to “reach out one more time to your Senators *today!* Right away Right now!” September’s victory in the US House culminated many years of effort on ARRL’s part to gain legislation that would enable radio amateurs living in deed-restricted communities to erect efficient outdoor antennas that support Amateur Radio communication. The measure calls on the FCC to amend its Part 97 rules “to prohibit the application to amateur stations of certain private land-use restrictions, and for other purposes.”

While similar bills in past years gained some traction on Capitol Hill, it was not until the overwhelming grassroots support from the Amateur Radio community for H.R. 1301, and ARRL’s relentless and strident efforts on Capitol Hill that this bill made it this far.

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FCC Special Counsel Laura Smith Says Amateur Enforcement Will Be Aggressive

Source: ARRL

FCC Special Counsel Laura Smith told a standing-room-only audience at the ARRL Pacific Division Convention (Pacificon) in October that, despite FCC cutbacks, Amateur Radio enforcement will not be compromised. Smith spoke for nearly an hour and a half on a variety of FCC issues related to Amateur Radio, and the entire presentation is available on YouTube, thanks to Bob Miller, WB6KWT, and his son Robert, KA7JKP, who recorded the forum. Smith said that with the FCC set to shut down 11 field offices across the country in January, the Enforcement Bureau has reorganized into three US regions, and she does not anticipate any significant issues for the Amateur Service as a result. “The amateur community will go forward,” she said, noting that amateurs have “an incredible ability to self-police.” In light of the field office closings, she has been working with ARRL to revamp the Official Observer (OO) program.

“We are going to redo the entire program,” she told the Pacificon forum. Given that the field office cutbacks have left the FCC short staffed, the OO program will step into the gap, with OOs serving as the first line of defense in Amateur Radio enforcement, she

explained. Working more closely with the OOs, Smith said, will get information on problems to the field staff more quickly, so they can follow up.

Smith praised the OOs for contributing their time and effort to monitor the bands and to alert licensees both to problematic and positive behavior on the air.

She also said the FCC is more aggressively policing the Amateur Radio bands, and she cited the case of an unlicensed individual in New York, who was arrested and assessed a fine for interfering with Amateur Radio repeaters as well as with public service communication systems.

“We’re aggressively going after people who are cutting into your frequencies,” Smith assured her audience. So far this year, she said, the FCC has proposed some \$60,000 in fines to Amateur Radio licensees, for various alleged infractions. She said her office continues to receive complaints about intentional interference, and, she allowed, “Sometimes...okay, maybe all the time...we don’t get to [these] as quickly as you might like.”

Smith said there are “band neighborhoods” on the bands, and, typically, offenders tend to stick together, and “you can avoid that neighborhood,” she said. “If you know a frequency is a ‘problem frequency,’ don’t go there.” Those who do engage troublemakers on the air, however, become

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part of the problem. “Spin the dial,” she advised. “Walk away. Don’t allow that ugliness to seep in. Avoid it at all costs.”

“It bothers me that we have amateurs out there who are misbehaving,” she said, “when the bulk of you are incredible people.”

Smith returned as FCC special counsel to Amateur Radio enforcement in June after being detailed to another enforcement assignment for 2 years. Her position is now in the Spectrum Enforcement Division, which, she pointed out, gives her access to field engineers as well as to attorneys, engineers, and analysts in the Division.

She noted that it is now possible to file Amateur Radio-related complaints online and said doing so expedites handling. *HamRadioNow*’s Gary Pearce, KN4AQ, used Smith’s talk as the centerpiece of his episode 281.

ARRL Seeks Nominations for Six Awards

Source: ARRL

The ARRL is inviting nominations for awards that recognize educational and technological pursuits in Amateur Radio. Nominations are also open for the League’s premier award to honor a young licensee.

The Hiram Percy Maxim

Award recognizes a radio amateur and ARRL member under age 21, whose accomplishments and contributions are of the most exemplary nature within the framework of Amateur Radio activities. Nominations for this award need to be made through your ARRL Section Manager, who will then forward the nomination to ARRL Headquarters by March 31, 2017.

The ARRL Herb S. Brier Instructor of the Year Award

honors an ARRL volunteer Amateur Radio instructor or an ARRL professional classroom teacher who uses creative instructional approaches and reflects the highest values of the Amateur Radio community. The award highlights quality of and commitment to licensing instruction. Nominations are due by March 15, 2017.

The ARRL Microwave Development

Award pays tribute to a radio amateur or group of radio amateurs who contribute to the development of the Amateur Radio microwave bands. The nomination deadline is March 31, 2017.

The ARRL Technical Service

Award recognizes a licensed radio amateur or group of radio amateurs who provide Amateur Radio technical assistance or training to others. The nomination deadline is March 31, 2017.

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The ARRL Technical Innovation

Award is granted to a radio amateur or group of radio amateurs who develop and apply new technical ideas or techniques in Amateur Radio. The nomination deadline is March 31, 2017

The Knight Distinguished Service

Award was established to recognize exceptionally notable contributions by a Section Manager to the health and vitality of the ARRL. The nomination deadline is April 30, 2017.

The ARRL Board of Directors selects all award recipients. Winners are typically announced following the Board's July meeting. More information about these awards on the ARRL website, or contact Sean Kutzko, KX9X (860-594-0328) at ARRL Headquarters.

FCC Approves New Emergency Alert System "Event Codes" for 2017 Hurricane Season

Source: ARRL

The FCC has added three new "event codes" to the Emergency Alert System (EAS) for the 2017 hurricane season. The new rules apply to EAS and NOAA

Weather Radio (NWR). Two of the EAS codes correspond to a potential Storm Surge Watch/Warning. The National Weather Service (NWS) is still developing and seeking comments on a Storm Surge Watch/Warning for operational use in 2017. The new codes are:

Extreme Wind Warning (EWW): The EWW is an existing operational warning NWS uses for advance notice of sustained surface wind speeds of 115 MPH or greater during major hurricanes. All NWS Gulf and East Coast Weather Forecast Offices (WFOs) issue the EWW.

Storm Surge Watch (SSA): The NWS may issue an SSA for the gulf and east coasts when life-threatening inundation is possible from rising water moving inland in the specified area, generally within 48 hours. Weather forecast offices could issue the SSA for tropical, subtropical, or post-tropical cyclones. A WFO may issue the watch even earlier, when conditions such as tropical storm-force winds might limit response time for evacuations or other action. A WFO may also issue the watch for locations that could be isolated by inundation in adjacent areas.

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Storm Surge Warning (SSW): WFOs may issue an SSW for the gulf and east coasts when tropical inundation is more imminent — generally within 36 hours. NWS may issue a warning when other conditions, such as the onset of tropical storm-force winds, are expected to reduce the time available to evacuate or take other actions. Like the watch, NWS may issue the warning when an area could be isolated by inundation. For all three new codes, NWS receivers that provide a limited, caption-like message display will likely show “UNKNOWN WARNING” or “UNKNOWN WATCH.” Receivers equipped with Specific Area Message Encoding (SAME) will activate with SAME alarm tones. Receivers equipped with the 1,050 Hz Warning Alarm Tone will activate a tone. The NWS Dissemination Team will work with receiver manufacturers to add the new codes to newly manufactured NWR SAME receivers.

Beginning with the 2017 hurricane season, NWS will request an EAS activation using the EWW event code. If the NWS decides to make the SSW operational in 2017, the NWS will request EAS activation for the Storm Surge Warning. In most jurisdictions, the NWS will *not* request EAS activation for the Storm Surge Watch. WFOs are now reaching out to state and local Emergency Communications Committees, state and local emergency management agencies, and broadcasters’ associations for help in

implementing the new codes. Local WFOs may issue public information statements and update WFO web pages and air public service announcements over NWR. These service changes will be further discussed at outreach events and with seasonal hurricane program briefings.

The FCC order does not require an upgrade of existing equipment already in use. The FCC “will allow EAS participants to upgrade their existing equipment to include the new event codes” on a voluntary basis; however, EAS equipment manufacturers are required to “make necessary software upgrades to EAS participants” by March 12, 2017. In most cases, broadcasters only need to obtain and implement the manufacturer-provided software update.

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Classes & VEC Testing

None scheduled

You can find an Amateur License Exam In your area at ARRL.ORG

http://www.arrl.org/exam_sessions/search

Free Amateur Radio Practice Testing is available on the Web

Practice exams are for those people who would like to study for a new US amateur radio license class. The questions contained within are provided by the

[Federal Communications Commission](http://www.fcc.gov) and are selected from the same sub-elements that would be used for an official license examination.

<http://aa9pw.com>
<http://www.qrz.com/exams>
<http://hamexam.org>
<http://www.eham.net/exams/>

Electronics Refresher

What is resistance?

Electrons move through a conductor when electric current flows. All materials impede

flow of electric current to some extent. This characteristic is called resistance.

Resistance increases with an increase of length or decrease of cross-section of a material.

The unit of measurement for resistance is ohms and its symbol is the Greek letter omega (Ω). The resistance of one ohm means a conductor allows a current of one amp to flow with a voltage of one volt. All materials are different in allowing electrons flow. Materials that allow many electrons to flow freely are called conductors such as copper, silver, aluminium, hydrochloric solution, sulphuric acid and saltwater. In contrast, materials which allow few electrons to flow are called insulators such as plastic, rubber, glass and dry paper. Another type of materials, semiconductors have characteristics of both conductors and insulators. They allow electrons to move while being able to control flow of electrons and examples are carbon, silicon and germanium, etc.

The resistance of conductor depends on two main factors as the followings:

1. Types of material
2. Temperature of material

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Safety Tip

First Aid

Just like engaging in any other hobby that involves the potential for injury, having some elementary skills in first aid is important. Have a first aid kit in your home or shack and be sure other family members know where it is and how to use it. Training in first aid and CPR is always a good idea for you and your family, regardless of your hobby.

Tech Talk

Source:

https://en.wikipedia.org/wiki/Automatic_Packet_Reporting_System

<http://hamradiostar.com/aprs-ready-handhelds/>

Automatic Packet Reporting

System (APRS) is an [amateur radio](#)-based system for real time tactical digital communications of information of immediate value in the local area. Data can include object [GPS](#) coordinates, weather station telemetry, text messages, announcements, queries, and other [telemetry](#). APRS data can be displayed on a map which can show stations, objects, tracks of moving objects, weather stations, search and rescue data, and direction finding data.

APRS data is typically transmitted on a single shared frequency (depending on country) to be repeated locally by area relay stations (digipeaters) for widespread local consumption. In addition, all such data is typically ingested into the APRS Internet System (APRS-IS) via an internet connected receiver (igate) and distributed globally for ubiquitous and immediate access.^[2] Data shared via radio or internet is collected by all users and can be combined with external map data to build a shared live view.

APRS has been developed since the late 1980s by WB4APR Bob Bruninga.

Here is a compiled list of all available APRS-ready handhelds. If you would like to try this exciting mode, then this is for you!

Kenwood TH-D72

TX: FM/NFM 5 Watts

RX: AM/FM/NFM

1000 memories with alpha tags. Built-in

1200/9600bd TNC and GPS. APRS

Echolink support. Mini-USB

Kenwood TH-D74

TX: 2 m / 1.25 m / 70 cm (USA)

RX: 0.1-253 / 255-262 / 266-271 / 275-380 / 382-412 / 415-524 MHz

TX: FM/NFM/DV (D-Star) 5 Watts

RX: AM/FM/NFM/WFM/SSB/CW/DV (D-Star)

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CTCSS/PL, DCS, Micro-SD card, Micro-USB, Bluetooth, Built-in GPS and APRS. Built-in bar antenna for 0.1-10 MHz RX. Color TFT. Audio equalizer. Hi-performance DSP.

Yaesu FT-1DR

TX: 144-148 /430-450 MHz
RX: 0.5-999 MHz
TX: FM/NFM/DV (C4FM FDMA, 9.6 Kbps)
RX: AM/FM/NFM/DV (C4FM FDMA, 9.6 Kbps)
Built-in GPS. IPX5 water spray resistant. Vibralert. Internal AM bar antenna. GSM function (Group Short Message, 80 characters). Micro SD card slot. Snapshot function/Image transfer with optional camera-microphone. Digital ARTS. USB port. Twin RX

Yaesu FT-2DR

TX: 144-148 /430-450 MHz
RX: 0.52-999 MHz
TX: FM/NFM/DV (C4FM FDMA, 9.6 Kbps) 5 Watts
RX: AM/FM/NFM/WFM/DV (C4FM FDMA, 9.6 Kbps)
Built-in GPS. IPX5 water spray resistant. Vibralert. Internal AM bar antenna. GSM function (Group Short Message, 80 characters). Micro SD card slot. Snapshot function/Image transfer with optional camera-microphone. Digital ARTS. USB port. APRS

1200/9600bd. 1.7" touch screen. 1750 Hz tone burst. CTCSS/PL and DCS. AMS (Automatic Mode Select) Twin RX (V/V, V/U, U/U)

Yaesu VX-8DR

TX: 50-54 / 144-146 / 430-440 MHz
RX: 0.5-999.9 MHz
TX: FM/NFM 5 Watts
RX: AM/FM/NFM/WFM (Stereo with headphones)
Waterproof/submersible (IPX7). Built-in packet modem 1200/9600bd with APRS support. Bluetooth and GPS options. Barometric sensor. Weather alert. Alpha tags. Spectrum display. CTCSS/DCS. Twin RX.

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K6FED@yahoo.com

This space is reserved for anything amateur related you want to sale, swap trade, buy or get rid of.

Send your list to K6FED@yahoo.com.

Items are listed for one month. Additional time can be requested by email.

For Sale or SWAP

For Sale:

The following items are listed by Fred, KD6DKH he can be reached at 951-756-1868

Comet CF 706 duplexer 1.3-57MHz to 75-500MHz \$50

MFJ 262 Dummy Load 1000 Watts Dry dummy load \$15

Two Astron 35 watt power supplies with meters \$100 EA

Hell Elite Gold Mike \$90

MC 60 Mic without cord \$65

MC 60 Mic with cord for Kenwood TS 2000 \$90

Kenwood 710 GA 2 / 440 APRS GPS built in with separation kit. \$400

MFJ 941 E Tuner HF \$60 gives you a 300 Watt antenna tuner that covers everything from 1.8 - 30 MHz -- plus you get a lighted Cross-Needle meter with on/off switch, antenna switch and a 4:1 balun! (The light uses 12 VDC or 110 VAC with MFJ-1312D)