OMIK TECH-TALK
OCTOBER 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 now 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.

The Western Amateur Radio Association (W.A.R.F.A.) is now has net check-in and rag chew on Xreflector 398 on Sunday, Tuesday and Thursday at 3:00 UTC. You can view the reflector dashboard by typing the link below in your web browser. Http://xrf398.dyndns.org If you need assistance reaching the reflector contact Frank K6fed@yahoo.com.

Amateur Radio Parity Act Passes in the US House of Representatives!

09/14/2016
Source :ARRL

"The bill is passed without objection." With those words, Amateur Radio history was made on September 12, when the US House of Representatives **approved** the Amateur

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Radio Parity Act, **H.R. 1301** on a voice vote under a suspension of the rules. The focus of the campaign to enact the legislation into law now shifts to the US Senate. The House victory culminated many years of effort on ARRL's part to gain legislation that would enable radio amateurs living in deed-restricted communities to erect 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 shepherded by ARRL that a bill made it this far. The legislation faces significant obstacles to passage in the US Senate, however.

"This is huge step in our effort to enact legislation that will allow radio amateurs who live in deed-restricted communities the ability to construct an effective outdoor antenna," ARRL President Rick Roderick, K5UR, said. "Thanks to everyone for their help in this effort thus far. Now we must turn our full attention to getting the bill passed in the Senate."

ARRL Hudson Division Director Mike Lisenco, N2YBB, who chairs the ARRL Board's Legislative Advocacy Committee, has been heavily involved in efforts to move H.R. 1301 forward. "This has been a multiyear effort that is finally seeing some light," he said. "The passage of the bill in the House is a major accomplishment, due to the hard work of so many — from the rank-and-file member to the officers and directors."

Lisenco said it's not a time to rest on our laurels. "We are only halfway there. The focus now shifts to our effort in the Senate," he said. "We are beginning a massive e-mail campaign in which we need every member to write their two Senators using our simplified process. You will be hearing from President Roderick and from your Directors, asking you to go to our '**Rally Congress**' page. Using your ZIP code, e-mails will be generated much like our recent letter campaign. You'll fill in your name and address and press Enter. The e-mails will be sent directly to your Senators without you having to search through their websites."

Lisenco said getting these e-mails to members' Senators is a critical part of the process. "Those numbers matter! Please help us help you by participating in this effort," he said.

As the **amended bill** provides, "Community associations should fairly administer private land-use regulations in the interest of their communities, while nevertheless permitting the installation and maintenance of effective outdoor Amateur Radio antennas. There exist antenna designs and installations that can be consistent with the aesthetics and physical characteristics of land and

structures in community associations while accommodating communications in the Amateur Radio services."
During this week's limited debate, the House bill's sponsor, Rep Adam Kinzinger (R-IL), thanked ARRL and the Community Associations Institute (CAI) for reaching an agreement to move the bill forward "in a bipartisan and very positive manner." He pointed out to his colleagues that Amateur Radio antennas are prohibited outright in some areas.

"For some this is merely a nuisance," Kinzinger said, "but for others — those that use their Amateur Radio license for life-saving emergency communications — a dangerous situation can be created by limiting their ability to establish effective communication for those in need."
Kinzinger said that in emergencies, hams can provide "a vital and life-saving function" when conventional communication systems are down. He also praised the Military Auxiliary Radio System (MARS), a US Department of Defense-sponsored program, comprised largely of Amateur Radio volunteers, that also supports communication during emergencies and disasters.
Cosponsor US Rep Joe Courtney (D-CT) also urged the bill's passage. "This is not just a feel-good bill," Courtney said, recounting how Hurricane Sandy brought down the power grid, and "we saw all the advanced communications we take for granted…completely fall by the wayside."

Ham radio volunteers provided real-time communication in the storm's wake, he said, saying the legislation was a way "to rebalance things" for radio amateurs who choose to live in deed-restricted neighborhoods by enabling them to install "non-intrusive antennas."
Courtney noted that he spoke recently with FCC Chairman Tom Wheeler, and said that Wheeler "strongly supports this legislation."
Leading up to the vote, Rep Paul Tonko (D-NY) also spoke in support of the legislation, calling it a commonsense approach that would build "fairness into the equation for Amateur Radio operators" in dealing with homeowners associations.
The earlier U.S. Senate version of the Amateur Radio Parity Act, S. 1685, no longer is in play, and the Senate is expected to vote by unanimous consent on the version of H.R. 1301 that was adopted by the House on September 12.

ARRL Announces Club Competition Eligibility Changes
09/20/2016
Source: ARRL

Earlier this year, following a challenge that resulted in the realignment of several club scores in the ARRL 10 Meter Contest, it became clear that the Club Competition rules were not being enforced as

consistently as they should have been. In order to make sure club results are accurate and fair to all, the ARRL Contest Branch is renewing its effort to help clubs comply with the rules (See Section 8 of the "**General Rules for All Contests**.") The Contest Branch has announced changes in three areas: Online uploading of club rosters, the use of six-character grid locators, and the deadline for submitting eligibility.

Online Uploading of Rosters

Clubs now will be able to upload a club roster via an online web page, just as they do with contest logs. This service is being developed for the ARRL by Bruce Horn, WA7BNM, and Trey Garlough, N5KO. Using this web page, a club can upload the necessary information, and it will be time stamped and stored (see below for the data format). It will no longer be necessary to mail, e-mail, or fax the club roster to the Contest Branch. The club secretary or other authorized member just has to upload a file containing the current club roster, including the club's section or the center of the club's eligibility circle. The web service will also provide a window to copy and paste from a text list that includes the necessary information. This process has worked exceptionally well for submitting contest logs and has been accepted by the contest community as convenient and trouble free. A group of club secretaries is currently testing the process to be sure it works as expected.

Six-Character Grid Locators

All members' locations will be entered and displayed as six-character grid locators, such as FN21aw or DM02ks. It will no longer be necessary to determine latitude and longitude for members or a club circle center. The center of the locators will be used to calculate a member's distance from the club center using a standard algorithm that will also be public. A member may reside and operate anywhere in a six-digit locator that satisfies the distance rule. If the grid locator for a member is not known, the roster will display "Distance Unavailable."

Many online services can provide a six-character grid locator from an address or from latitude and longitude. The maximum circle distances are *not* changing, however.

Eligibility Deadline

With the availability of the online service, the deadline of 30 days following a contest to submit a roster is changing. Putting contests on the same footing as all other competitions and to eliminate any temptation to pick only high scores or to engage in "category shopping," the eligibility deadline is being changed to the start of the contest, effective with the ARRL November CW Sweepstakes — eg, 2100 UTC on November 5, 2016 — and will apply to all nine ARRL contests that have a Club Competition category (see General Rule 8.1).

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Rosters and club circle centers can be changed and uploaded at any time — via multiple uploads as needed — until the contest starts. If an individual member is added or deleted, just change the roster and resubmit it in its entirety. The last roster and circle center that is submitted before the contest's start time will be used for that contest. A club can change its circle for each contest, if desired. All roster versions will be saved, just like contest logs. This is similar to the team registration process for *NCJ*-sponsored contests that has been in use for some time.
After a roster is submitted, it will be available for inspection online, so that everyone can see which stations are claimed as eligible for a given club. (Individual contesters can submit their scores in support of any club they are eligible to support, of course.)

Discussion
The roster eligibility service will *not* be used to enforce the club competition rules, only to allow other contesters to view the rosters and to make it easy for clubs to follow the rules. Challenges may be made through the Contest Branch. Minimum log totals for each club category will remain the same.
If your club will have difficulty using the online service or meeting the deadline, contact ARRL Contest Branch Manager Bart Jahnke, W9JJ. We hope that clubs will take this opportunity to review their membership rosters, ensure that the current location information is correct, and get ready to compete in the upcoming ARRL contests.

Club Roster Format
In a CSV file, entries are organized by rows. In a TSV text file, entries are organized by lines.
Row 1: Official club name (must match the name of an ARRL-affiliated club)
Row 2: Six-character grid locator of club center (ie, DM02ks).
Rows 3-n: Club roster entries
Column 1: Club member's call sign
Column 2: Six-character grid locator of member's location (if no data are supplied, it will be flagged as unknown in the roster).
Columns 3-n: Optional fields for clubs to use in any way they'd like; these will be ignored on upload.

Higher Bands Will Pick Up this Fall, Data Suggest Smaller Solar Cycles Lie Ahead
09/08/2016
Source: Arrl

Propagation guru Carl Luetzelschwab, K9LA, says that, while conditions on 12 and 10 meters will pick up as they always do in the fall, F2 propagation on those bands will decline thereafter, with only sporadic E during the summer months as a possible saving grace. On the other hand,

the lower bands — 160, 80, and 40 meters — should be good going forward, and 20 and 17 meters will be the mainstays of daylight HF propagation. Luetzelschwab made these observations during an August 23 World Wide Radio Operators Foundation (**WWROF**)-sponsored **webinar** "Solar Topics — Where We're Headed."

He said data suggest that Cycle 24, the current solar cycle, will bottom out in 2020, and advised that radio amateurs may need to lower their expectations on the higher bands (and 6 meters) looking beyond that.

"I think the only conclusion we can make with some confidence is that we are headed for some small cycles," he told his audience. He cited various evidence related to the Sun's polar fields — which appear to be decreasing in strength, A index trends, and cosmic ray data to support his assertion. Luetzelschwab cautioned, however, that past performance does not necessarily predict future performance.

"There seems to be a good correlation between how long a solar minimum is and the next solar cycle," said Luetzelschwab. "The longer you spend at solar minimum, the smaller the next cycle."

He observed that hams active since the 1950s and 1960s have experienced short inter-cycle solar minimums of approximately 2 years, until the one between Cycle 23 and Cycle 24, which lasted about 4 years. He also allowed that the science is not fully understood, and that some things appearing to be patterns may just be coincidences.

On the other hand, he said, it looks like the downward trend of disappearing sunspots has leveled off, suggesting that Cycle 25 may see a lower smoothed sunspot number as opposed to zero or near-zero sunspots. Counting those sunspots can be a subjective business. "That's a tough job," he said of the task, noting that it appears observer bias also has been a factor over the years, affecting historical sunspot data. "We now have new corrected data that are believed to be more accurate."

Luetzelschwab's article "The New Sunspot Numbers," appearing in the October issue of *QST*, will discuss the new sunspot numbers.

Luetzelschwab cited historical sunspot cycle data going back centuries — including the "Maunder Minimum" of zero and near-zero sunspots between the years 1645 and 1715 and a later, less-drastic "Dalton Minimum." He pointed out that over the last 11,000 years, 19 notable grand maximums — including Cycle 19 and the cycles around it — and 27 notable grand minimums were recorded. "We're likely to have more of both grand maximums and grand minimums in the future," he predicted. The current system of numbering sunspot cycles begins with Cycle 1 in the mid-18th century.

"We don't fully understand the process inside the Sun that makes solar cycles," Luetzelschwab said. "Thus, you should exercise caution with statements seen in the news."

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Classes & VEC Testing

None scheduled

Ham Radio License Exam Practice

The ARRL has a online resource that allows users to take randomly generated practice exams using questions from the actual examination question pool. **ARRL Exam Review for Ham Radio™** is *free*, and users do *not* need to be ARRL members. The only requirement is that users must first set up a site login (this is a different and separate login from your ARRL website user registration).

http://arrlexamreview.appspot.com

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 and are selected from the same sub-elements that would be used for an official license examination.

http://www.qrz.com/hamtest/

http://www.eham.net/exams/

http://arrlexamreview.appspot.com

Find and Exam in Your Area:

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

http://www.arrl.org/find-an-amateur-radio-license-exam-session/

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

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

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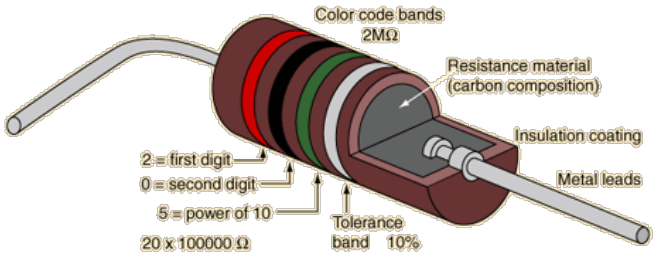
Electronics Refresher



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 difference 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

Safety

Safety Tip

Distracted driving is seven times more deadly than drunk driving! Nonetheless, stay sober, or stay home!

What is distracted driving?

Distracted driving is any activity that could divert a person's attention away from the primary task of driving. All distractions endanger driver, passenger, and bystander safety.

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Because operating the ham radio requires visual, manual, and cognitive attention from the driver, it can be a distraction.

In 2014, 3,179 people were killed, and 431,000 were injured in motor vehicle crashes involving distracted drivers.
The percentage of drivers text-messaging or visibly manipu-lating handheld devices increased from 1.7 percent in 2013 to 2.2 percent in 2014. Since 2007, young drivers (age 16 to 24) have been observed manipulating electronic devices at higher rates than older drivers. **(NHTSA)**
Five seconds is the average time your eyes are off the road while texting. When traveling at 55mph, that's enough time to cover the length of a football field blindfolded. **(2009, VTTI)**

Radio and Software Tech Talk

New Technologies

AT-5888UVIII Tri-Band Mobile Radio

Frequency Range:
RX: VHF 1: 136-174MHZ, UHF1: 220-260MHZ, UHF2: 400-512MHZ

TX: VHF1: 144-148MHZ, UHF1: 222-225MHZ, UHF2: 420-450MHZ
Function:
Working Mode: Full duplex on UU, UV, VV, UV or VU as repeater mode
Dual Receive: Consist with A & B band
Power: VHF1: 55W/25W/10W/5W UHF1: 25W/10W/5W, UHF3: 45W/25W/10W/5W
758 memory channels
CTCSS+DCS+DTMF+2Tone/5Tone encode and decode
Bandwidth: 12.5KHZ/25KHZ
Compander
Scramble function (9 groups fixed+2groups be defined by user)
Channel step:
2.5/6.25/10/12.5/15/20/25/50KHZ
ANI function (DTMF/ANI, 5-Tone/ANI)
PTT ID.
DTMF Microphone

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Digital Technologies

D-Star No Radio Required!!

Wireless Holding DV4home
http://www.wirelesshold.com

The DV4home is another member of the successful family of DV4 products. As usual it supports all digital modes, while simplifying and extending the supported functions. While it acts as a "home" for the DV4mini it can be easily used mobile or portable as well. It is a stand alone unit that does not need a PC to operate. (DV4mini not included)

(automatic update of firmware via Internet)

The DV4home uses the same microcontroller platforms as the DV4home compact, but adds 2 AMBE3000 chips, a microphone and a speaker connector to the unit. There is a built-in speaker and the microphone is included.

These components allow these additional functions:

-
- Direct Internet transceive mode without a DV4mini by using the microphone and the external speaker. This is an economical alternative if no local wireless signal is needed. In this mode the DV4home supports D-Star, DMR, dPMR, NXDN (and later C4FM via software update)
- Dual mode support: even without a DV4mini inserted the unit can be simultaneously connected to a D-Star and a DMR reflector, using 2 separate speakers to play the respective audio streams.
- Transceiver mode connects a D-Star or DMR radio via a plugged in DV4mini to a reflector.
- Conference mode requires a DV4mini inserted into the unit and allows to use the built-in microphone/speaker connectors and the RF connection through the DV4mini to a DMR or D-Star radio. This mode works in D-Star and DMR.
- Transcode mode allows to use a digital radio in one mode and connect to a reflector in another mode. Use your D-Star radio to try out DMR!

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- The following conversions are supported:
  - D-Star → DMR
  - DMR→ D-Star

- Later via software update:
  - All -->. Fusion (C4FM)
  - Fusion (C4FM) → All

- DMR/D-Star Bridge mode allows to interconnect DMR and D-Star reflector rooms using the licensed DVSI AMBE chips. This mode bears the risk of creating loops in the network, therefore a free license key is required which also helps that the installations can be supported by the network administrators to assure a flawless integration.

- IPSC2 and DMRplus bridge permits the connection between DMRPlus.

There are 2 versions available, the DV4home and the DV4home compac

The **ThumbDV and Star*DV** are a big hit among the Amateur radio community. With either one of these items and a internet connection, a ham can plug it into their computers USB port, install some free software enjoy all the fun on Dstar.

Thumb DV

The Thumb DV allows the use of your MAC or PC's microphone and speaker to talk simultaneously on Dstar reflectors.

The ThumbDV can be purchased online at www.nwdigitalradio.com for a cost of $119.

Star DV

The Star allows the use of your PC's microphone and speaker to talk simultaneously on Dstar reflectors.

The Star*DV can be purchased online www.moencomm.com at a cost of $129.

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DV4mini AMBE (Voice) 70 cm UHF

USB stick containing 70 cm data transceiver. This version contains an AMBE chip which allows the use of your PC's microphone and speaker to talk simultaneously to reflectors and through the DV4mini to other digital radios in range. DMR and DStar are supported with the AMBE chip. Fusion will be added later through a software upgrade. The other modes are supported like in the regular DV4mini using a handheld.
http://wirelesshold.com/dv4miniVoice.aspx

For Sale or SWAP

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.