



ARES COMMUNICATOR

Information for Scott County Amateurs



January, 2016

Accurate, Reliable Emergency Communications for our Community

Volume 16, Number 1

HR 1301 Up-date

Parity Act gets House Hearing

HR 1301, the US House version of the Amateur Radio Parity Act, will be among four communications-related measures set for a legislative hearing on January 12 before the House Subcommittee on Communications and Technology. Chairing the panel is US Rep Greg Walden, W7EQI, an Oregon Republican.

“This New Year we resolve to continue working to protect America’s consumers and small businesses,” Walden is quoted in a Subcommittee news release. “These bills collectively seek to protect folks in appropriate applications and of 21st century technology.”

sponsored by Ad a m an Illinois Re- 1301 would direct its rules relating to reasonable accommodation of Amateur Service communications to private land-use restrictions, such as deed covenants, conditions, and restrictions. The bill has attracted 116 cosponsors from both sides of the aisle.

While no one from the ARRL is scheduled to testify in support of the measure, ARRL Hudson Division Director Mike Lisenco, N2YBB, and ARRL General Counsel Chris Imlay, W3KD, are expected to be on hand for the session. The League directly contacted ARRL members in the districts represented on the subcommittee, asking them to contact their members of Con-

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gress and urge their support of the bill.

The US Senate version of the Amateur Radio Parity Act, S. 1685, cleared the Senate Committee on Commerce, Science, and Transportation last November. It has 3 cosponsors.

There is more information about the bills on the ARRL Amateur Radio Parity Act web page, located at, <http://www.arrl.org/amateur-radio-parity-act>

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WebSDR

A WebSDR is a Software-Defined Radio receiver connected to the internet, allowing many listeners to listen and tune it simultaneously. SDR technology makes it possible that all listeners tune independently, and thus listen to different signals; this is in contrast to the many classical receivers that are already available via the internet.

A WebSDR server consists of a PC running Linux and the WebSDR server software, a fast internet connection (about a hundred kbit/s uplink bandwidth per listener), and some radio hardware to feed antenna signals into the PC. This radio hardware is typically a quadrature mixer connected to the PC’s soundcard, like the popular SoftRock kits.

A list of currently active WebSDR servers is on <http://www.websdr.org/>.

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ARES Activities

Weekly Net Monday 7 PM 146.535 mhz (s)

Breakfast Saturday, February 13th

Digital Monday, February 15th

ARES Nets

- MN ARES Phone Net
6:00PM Sunday Freq: 3.860 mhz
- ARRL MN Phone Net
12:00p, 5:30p CST Daily Freq: 3.860 mhz
- ARRL MN CW Net
6:30p, 9:50p CST Daily Freq: 3.568 mhz

NETS WITH OUR NEIGHBORS

- North Dakota: Daily 3.937 mhz 6:30pm
- South Dakota: Daily 3.860 mhz 6:00pm
- Wisconsin: Daily 3.985 mhz 5:30pm
- Iowa: Daily 3.970 mhz 12:30/5:30pm

The ARES COMMUNICATOR is published for the benefit of Amateur Radio Operators in Scott County and other interested individuals.
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 Reader submissions encouraged!

Illegal Electronic Ballasts

ARRL Bulletin Dec 29, 2015

The ARRL has again complained to the FCC to allege illegal marketing of electronic RF lighting ballasts, operating under Part 18 of the Commission's rules, on the part of two major retailers. Letters went out this week to the FCC Enforcement Bureau and its Office of Engineering and Technology claiming Part 18 marketing regulations violations by Lowe's and by Wal-Mart stores. At issue is the sale of non-consumer RF lighting ballasts to consumers who, in several instances, were told by store personnel that it was okay to install these in a residential setting. In addition, non-consumer and residential-class ballasts are intermixed in store displays with inadequate signage to direct consumers to the correct choice. Both letters asked the FCC to investigate and commence enforcement proceedings with respect to the two stores' marketing and retail sale of RF lighting devices in the US.

"ARRL purports to show that the retailer is...marketing and selling to consumers (by retail sale) non-consumer Part 18 RF lighting devices which are not intended for residential deployment, to consumers who have specifically noted their intention to deploy the devices in residential applications," ARRL Chief Counsel Chris Imlay, W3KDD, said in similar complaint letters to



the Commission on December 28 and December 29. Part 18 emissions limits for consumer devices are far lower than those allowed for non-consumer devices.

"ARRL has received numerous complaints from Amateur Radio operators of significant noise in the medium (MF) and high frequency (HF) bands between 1.8 MHz and 30 MHz from 'grow lights' and other Part 15 and part 18 RF lighting devices," Imlay continued. "These devices are easily capable of emitting RF noise sufficient to preclude Amateur Radio MF and HF communications (and, as well, AM broadcast station reception) throughout entire communities."

Supporting both complaints are extensive and detailed reports by ARRL Laboratory EMC Specialist Mike Gruber, W1MG. The reports

recount incidents of actual purchases of Part 18 RF lighting devices intended for commercial use to consumers who made clear to store personnel that they intended to use the devices at home. Gruber's report includes multiple photographs that depict in-store displays of the products in question and showing signage that does not adequately explain which devices may be sold to whom.

The ARRL has asked that all non-consumer devices be removed from retail sale and marketing at the stores and to track and recall non-consumer devices already sold to consumers.

In his report, Gruber concluded that retailers should require purchasers of non-consumer Part 18 RF lighting devices to provide a valid contractor's number. He also advised that the stores improve display signage to make it clear that non-consumer Part 18 devices may not be used in residential settings.

Earlier this year, the ARRL sent similar complaint letters to the FCC regarding the marketing of Part 18 RF lighting devices by The Home Depot. The League also has complained about specific RF lighting "grow light" devices that it has alleged exceed Part 18 emission limits.

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Get Radio Active!

Winter Field Day

Jan 30 - 31, 2016

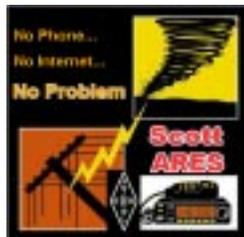
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Amateur Radio License Exam

Want to become a ham? Want to upgrade your license? You can find information and resources to success in ham radio at this page: <http://www.scottares.org/License Info.htm>

If you want to ask questions or find a local Elmer (Mentor) just drop an email to: newhaminfo@scottares.org

The hams in Scott ARES gather for breakfast the first Saturday of the month at the Perkins Restaurant in Savage. Bring you ham radio questions and talk to local amateur radio operators.

Now that you have done the work to study for your upgrade, here is where to find a convenient exam session near you. There is a VE exam search engine at: http://www.arrl.org/exam_sessions/search

Walk-ins allowed at most sessions however it is always best to check the details at the specific session you are planning to attend.

Below is a list of scheduled sessions close to Scott County. Good Luck!

January 25, 2016 Monday 6:00 PM

SMARTS

Dale A. Blomgren (952) 402-2155

Email: kd0b@arrl.net

Location: Carver County Library

7711 Kerber Blvd

Chanhassen MN 55317

Walk-ins allowed, Pre-reg requested

February 6, 2016 Saturday 10:00 AM

St Paul Radio Club

Leon H. Dill (651) 688-9964

Email: w0coe@arrl.net

Location: Ramsey Co Library Maplewood

3025 Southlawn Dr

Saint Paul MN 55109-1577

Walk-ins allowed

February 20, 2016 Saturday 9:00AM

Sponsor: SEMARC

Daniel M. Franz (651) 769-0358

Email: wd0gup@hotmail.com

Location: Zion Lutheran church

8500 Hillside Trl S

Cottage Grove MN 55016-3273

February 22, 2016 Monday 6:00 PM

SMARTS

Dale A. Blomgren (952) 402-2155

Email: kd0b@arrl.net

Location: Carver County Library

7711 Kerber Blvd

Chanhassen MN 55317

Walk-ins allowed, Pre-reg requested

Take a Dip in the General Pool

Time to test your knowledge of the information covered by the General Class license exam. Each month we'll take a look at a selection from the question pool.

Strap on your thinking cap and see what you can recall. Here is this month's sample:

1. Which of the following is an advantage of an oscilloscope versus a digital voltmeter?

- A. An oscilloscope uses less power
- B. Complex impedances can be easily measured
- C. Input impedance is much lower
- D. Complex waveforms can be measured

2. Why is high input impedance desirable for a voltmeter?

- A. It improves the frequency response
- B. It decreases battery consumption in the meter
- C. It improves the resolution of the readings
- D. It decreases the loading on circuits being measured

3. What type of transmitter performance does a two-tone test analyze?

- A. Linearity
- B. Carrier and undesired sideband suppression
- C. Percentage of frequency modulation
- D. Percentage of carrier phase shift

(Check next month's issue of the ARES Communicator for the answer.)

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"The best thing about the future is that it comes only one day at a time."

Abraham Lincoln

December General Pool Answers

1. What is the maximum symbol rate permitted for RTTY or data emission transmitted on the 1.25 meter and 70 centimeter bands

- A. 56 kilobaud

2. Which of the following is a requirement for administering a Technician Class operator examination?

- A. At least three VEC accredited General Class or higher VEs must be present

3. When may a 10 meter repeater retransmit the 2 meter signal from a station having a Technician Class control operator?

- D. Only if the 10 meter repeater control operator holds at least a General Class license

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Test Your NIMS Knowledge

This month we will begin our review of ICS-800: National Response Framework. The purpose of the National Response Framework is to ensure that all response partners across the Nation understand domestic incident response roles, responsibilities, and relationships in order to respond more effectively to any type of incident. The Framework focuses on response and short-term recovery instead of all of the phases of incident management.

Check your recall of the course material with this question.

Incident managers begin planning for the demobilization process when:

- A. Incident activities shift from response to recovery.
- B. The first resources are ready to be released.
- C. They begin the resource mobilization process.
- D. Requested by the emergency operations center.

Check next month's ARES Communicator for the solution

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December NIMS Knowledge Solution

The State Coordinating Officer is:

- B. Appointed by the Governor to coordinate State disaster assistance efforts with those of the Federal Government.

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NBEMS Current Versions

The current version of the Fldigi manual is available at NBEMS Info page at www.scottares.org. Look under the 'Help Sheets' heading.

Now is a good time to check to your digital software to make sure you are running the newest versions. You can find the most recent versions posted at both: www.w1hkj.com/download.html and <http://www.scottares.org/NBEMS.htm>

Here are the most recent releases as of January 20, 2016.

Software	Version
Fldigi	3.23.07
Flwrap	1.3.4
Flmsg	2.0.14
Flamp	2.2.03



The Monday evening training net is a great place to have your digi questions answered and problems solved! Join the Scott ARES group on 146.535 MHz simplex at 7:00pm on Monday evenings.

Tuning In Stoners

With the increase in urban farming, indoor "horticulture" industry has been booming. Chinese manufacturers are turning out indoor grow equipment at a rapid pace with little to no regulatory oversight or compliance. Because of this, there has been a significant amount of radio frequency interference (RFI).

Before we get into how to detect a marijuana grow with your car radio, you have to understand some simple mechanics of how a grow operates. To grow marijuana indoors, you need supplemental lighting necessary for photosynthesis. These lights may be fluorescent, LED, and for larger operations, high pressure sodium (HPS) or metal halide (MH).

The HPS and MH lamps may be 1000W per lamp and require a ballast for proper operation. These ballasts were originally magnetic but in the past few years have become electronic.

These devices are subject to FCC part 18 rules but there appears to be a total disregard for the FCC rules. Many (if not most) electronic ballasts are manufactured in China and may have little 'FCC' stickers on them but there is no evidence of any testing for compliance having been done. Because of this, a large amount of RFI is interfering with nearby electronics. As an example, one grow next to a California Fire station caused a continuous hum over the station's callbox speaker and interfered with them receiving radio broadcasts over their station's PA.

Many ham operators can locate a grow simply by taking a radio and portable antennae out into their neighborhood and using the radio to triangulate the exact location of the grow



Reports have begun to flood into the ARRL about interference with their ham radios from their neighbor's marijuana farming. The most complaints come from California and Colorado, for obvious reasons. Many ham radio operators began to see a correlation with marijuana grows and this RFI.

One amateur radio operator located five marijuana grows near his house due to RFI alone! Many ham operators can locate a grower simply by taking a radio and portable antennae out into their neighborhood and using the radio to triangulate the exact location of the farm.

One industrious ham operator went to his local grow shop and borrowed several lights and ballasts to test for RFI. He found that one light and ballast set up would cause interference up to 700 meters. Experience has shown that most indoor grows have more than one light and ballast, which would amplify the RFI.

One narcotics officer from the San Francisco Bay Area turns

Tuning in Stoners cont'd on page 5

Power Grid Hacked

Checked your back-up lately?

Security researcher Brian Wallace was on the trail of hackers who had snatched a California university's housing files when he stumbled into a larger nightmare: Cyberattackers had opened a pathway into the networks running the U.S. power grid. Digital clues pointed to Iranian hackers. And Wallace found that they had already taken passwords, as well as engineering drawings of dozens of power plants, at least one with the title "Mission Critical." The drawings were so detailed that experts say skilled attackers could have used them, along with other tools and malicious code, to knock out electricity flowing to millions of homes.

Wallace was astonished. But this breach, The Associated Press has found, was not unique. About a dozen times in the last decade, sophisticated foreign hackers have gained enough remote access to control the operations networks that keep the lights on, according to top experts who spoke only on condition of anonymity due to the sensitive nature of the subject matter.

These intrusions have not caused the kind of cascading blackouts that are feared by the intelligence community. But so many attackers have stowed away in the systems that run the U.S. electric grid that experts say they likely have the capability to strike at will.

In 2012 and 2013, in well-publicized attacks, Russian hackers

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Tuning in Stoners - *cont'd from page 4*

his car radio to 560 AM when he checks out potential indoor grows. He's checked out seven indoor marijuana grows since learning about the RFI issue. All seven times, the car's radio showed significant interference from the ballasts inside of the grow location.

One ham radio operator described the interference this way: "It can be pops, it can be a buzzing sound, whistles — just all kinds of different noises that we'll hear."

One Colorado Ham told a newspaper, "If I can track this down, anybody can track this down. If I listen long enough, I can tell when they turn the lights off... You can tell exactly when the harvest is."

This method of finding marijuana grows isn't fool proof, but it can be another useful tool to curb neighborhood drug sales and production.

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successfully sent and received encrypted commands to U.S. public utilities and power generators; some private firms concluded this was an effort to position interlopers to act in the event of a political crisis. And the Department of Homeland Security announced about a year ago that a separate hacking campaign, believed by some private firms to have Russian origins, had injected software with malware that allowed the attackers to spy on U.S. energy companies.

The hackers have gained access to an aging, outdated power system. Many of the substations and equipment that move power across the United States are decrepit and were never built with network security in mind; hooking the plants up to the Internet over the last decade has given hackers new backdoors to come in. Distant wind farms, home solar panels, smart meters and other networked devices must be remotely monitored and controlled, which opens up the broader system to fresh points of attack.

Private firms have alleged other recent hacks of networks and machinery tied to the U.S. power grid were carried out by teams from within Russia and China, some with governmental support. Even the Islamic State group is trying to hack American power companies, a top Homeland Security official told industry executives late last year.

Before Wallace could dive into the files, his first priority was to track where the hackers would strike next — and try to stop them.

He started staying up nights, often jittery on Red Bull, to reverse-engineer malware. He waited to get pinged that the intruders were at it again.

Months later, Wallace got the alert: From Internet Protocol addresses in Tehran, the hackers had deployed TinyZbot, a Trojan horse-style of software that the attackers used to gain backdoor access to their targets, log their keystrokes and take screen shots of their information. The hacking group, he would find, included members in the Netherlands, Canada, and the United Kingdom.

Circumstantial evidence such as snippets of Persian comments in the code helped investigators conclude that Iran was the source of the attacks. The Iranian U.N. Mission spokesman Hamid Babaei did not return calls or address questions emailed by reporters following up on a lead.

The FBI warned the U.S. energy sector in an unclassified bulletin last December that a group using Iran-based IP addresses had targeted the industry.

Whether there was any connection between the Iranian government and the individual hackers who Wallace traced is unclear.

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Last Trip to Costco

Yesterday Cal was at Costco buying a large bag of Purina dog chow for his loyal pet, Necco, the Wonder Dog, which weighs in at 191 lbs. He was in the check-out line when a woman behind him asked if he had a dog.

What did she think he had an elephant?

So because Cal is retired and have little to do, on impulse he told her that no, he didn't have a dog, he was starting the Purina Diet again. He added that he probably shouldn't, because he ended up in the hospital last time, but that he had lost 50 pounds before he awakened in the intensive care ward with tubes coming out of most of his orifices and IVs in both arms.

Cal told her that it was essentially a Perfect Diet and that the way that it works is, you load your jacket pockets with Purina Nuggets and simply eat one or two every time you feel hungry. The food is nutritionally complete so it works well and he was going to try it again. (Practically everyone in line was now enthralled with Cal's story.)

Horrified, she asked if he ended up in intensive care, because the dog food poisoned him.

Cal told her no, he stopped to pee on a fire hydrant and a car hit him. Cal thought the guy behind her was going to have a heart attack he was laughing so hard.

Costco won't let Cal shop there anymore.

Better watch what you ask retired people. They have all the time in the world to think of crazy things to say.



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Deep Thoughts



New Year Resolutions?

(Ed Note: This short list was published by one of the writers on the www.Better-Ed.org site. It provides some interesting thoughts for the coming year.)

Reflecting on one's life - both the good and the bad - is a wonderful way to see the progress you've made or failed to make on the journey that we call life.

Here are 10 questions you might use each year as a spring-board to reflect on the past year.

1. What was the best thing that happened this year?
2. What was the single most challenging thing that happened?
3. In what way did you grow spiritually?
4. What was your biggest personal challenge?
5. In what way did you grow emotionally?
6. What was the biggest learning experience?
7. Who were your most valued relationships?
8. What was the most enjoyable part of your work? (at home and professionally)
9. Who impacted you the most?
10. What would be a good phrase or statement to sum up 2015 for you?

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ARES Breakfast
Saturday February 13th
7:30AM
Perkins Restaurant
Savage, MN

NECOS Schedule January 2016

The first Monday or the month the net is held on the WB0RMK repeater, Carver. You will find WB0RMK here: 147.165/765 PL 107.2

January

Jan 18 KC0YHH Tony
Jan 25 KD0UWZ Chad

February

Feb 1 KB0FH Bob
Feb 8 WA0DGW John
Feb 15 KC0YHH Tony
Feb 22 KD0UWZ Chad

March

Mar 7 KB0FH Bob
Mar 14 WA0DGW John