CQ CHATTER

DECEMBER 2016 VOLUME B16 •ISSUE 10

WOOD COUNTY AMATEUR RADIO CLUB

Kickoff Banquet Planned

The annual WCARC kick-off brunch is planned for Sunday, January 8, at noon. The location is at J. Patrick's restaurant in the Holiday Inn French Quarter. The cost (including beverages) is $15 for adults, $14 for seniors, and $9 for children (under age 3 free), not including gratuity. This is a good opportunity to connect the faces with the calls.

One important item of business to be discussed at the brunch is the election of a new slate of officers for 2017. The nominating committee will recommend candidates for the following offices:
President, Vice President, Secretary, Treasurer, and Board of Directors.
Nominations from the floor will of course also be accepted before the

WCARC Establishes Station at BiG FabLab

The WCARC now has a VHF/UHF station at the BiG FabLab in Woodland Mall. Through the efforts of Phil-W8PSK, Steve-K8BBK, Bob-WB8NQW, Jim-KD8NJW and Bob-N1RB, a mast-mounted antenna was erected on the north wall of the facility in mid-November.

The antenna is a dual-band J-Pole for 2m/70cm at 25 ft. W8PSK has graciously loaned the Club his dual bander mobile rig, a Yaesu FT-8700. The rig is operational and is available for Club use when needed.

Future plans involve the erection of an HF antenna for use with a Kenwood TS-530 transceiver and a Yaesu shortwave receiver at the site. The purpose of having a station in the FabLab is to interest some of the "hands-on" people who frequent the facility in amateur radio. It can also serve as base in case of emergency. For further information, see any of the officers. ■

NET CHECK INS

Nov 8 Traffic: 0

W8PSK (NCS)
KD8VWU
K8BBK
WB8NQW
KD8NJW
K8JU
N1RB
WD8LEI (8)

Nov 15 Traffic: 0

N1RB (NCS)
K8JU
KD8RNO
W8PSK
WD8JWJ
KE8CVA
N8VNT
WB8NQW
KD8NJW
KD8VWU
KA8VNG
KA8VNG
KE8EZT
K8BBK
N8YAE
WD8LEI
KC8EKT (16)

BRAIN TEASERS

1. Which of the following is equivalent to 500 mW?

a.) 0.02 W

b.) 0.5 W

c.) 5 W

d.) 50 W

2. What class of electronic components is capable of using a voltage or current signal to control current flow?

a.) capacitors

b.) inductors

c.) resistors

d.) transistors

3. What is a Part-15 device?

a.) an unlicensed device that may emit low powered signals on frequencies used by a licensed service

b.) a type of amateur radio that can be legally used in the Citizen's Band

c.) a device for long distance communications using special codes sanctioned by the IARU

d.) a type of test set used to determine whether a transmitter is in compliance with FCC regulation 91.15

December Contests

The contest lineup for the month of December is given below. Please note that the WARC bands (60, 30, 17 and 12 m) are never open to contesting.

Dec 2-4	*2200 to 1600 Z*	160 m
ARRL 160 m 'test		**CW**
Dec 4	*0000 to 2359 Z*	160 m
10 m RTTY 'test		**RTTY**
Dec 4	*1300 to 1600 Z*	80 m to 20 m
SARL Digital 'test		**digital**
Dec 10-11	*0000 to 2359 Z*	10 m
ARRL 10 m 'test		**CW SSB**
Dec 16-17	*2000 to 2359 Z*	160 m
Russian 160 m 'test		**CW SSB**
Dec 17	*0000 to 2359 Z*	160 m to 10 m
RAC(anada) Winter 'test		**CW SSB**
Dec 17-18	*1400 to 1400 Z*	160 m to 10 m
Croatian CW 'test		**CW**
Dec 18	*1800 to 2359 Z*	80 m to 6 m
ARRL Rookie Roundup		**CW**
Dec 26	*0830 to 1059 Z*	80 m to 40 m
DARC Christmas 'test		**CW SSB**

December Hamfests

December 4. L'Anse Creuse Annual Hamfest. Madison Place, Madison Heights, MI. **web:** **http://n8lc.org**

Nobel Laureate Joe Taylor, K1JT, to Conventioneers: Amateur Radio Will Thrive

from ARRL Letter

note from the editor*---K1JT is the author of several weak signal digital applications that adapt professional radio astronomy weak signal techniques to amateur use. They include WSPR, JT9 and JT65, and are available for multiple platforms. These modes were explained in the Digital Communications in Amateur Radio series by WCARC member, Jeff Kopcak, K8JTK*

Among the things the Amateur Radio community can count on in its second century, according to Nobel Laureate Joe Taylor, K1JT, is that ham radio will continue to thrive and serve the public interest. While his primary topic at his standing-room-only presentation on July 19, during the ARRL National Centennial Convention, was "DXing with Weak Signals and Beyond," Taylor — who detailed the development of his *WSJT* suite of "weak-signal" DSP software — also broke out his crystal ball.

"Radios *are* going to become increasingly digital," he said, with analog-to-digital and digital-to-analog conversion occurring "closer and closer to the antenna — in fact, pretty much *at* the antenna can be done already." Taylor also said that in the future, good engineering will definitely be a combination of hardware and software. Beyond that, he said, science, technology, and Amateur Radio will continue to benefit from a healthy cross-fertilization between amateurs and professionals.

"I know that is true in my own case," said Taylor, whose interest in Amateur Radio at a young age helped guide his career path. "My own boyhood fascination with the art and science of radio got me into this hobby, and from there, it launched me on a path leading to advanced degrees in physics, to teaching university physics, to making fundamental research contributions to mankind's knowledge of the laws of nature," Taylor told the rapt audience. Taylor pointed out that in Amateur Radio's infancy, scientists of the day did not believe the short waves could support useful communication. The government listened, and gave that part of the spectrum to hams, who soon proved them wrong. "The experts truly were astonished," Taylor said, exhorting his listeners to make whatever contributions they can to the art and science of radio and to the public good.

"It's a great story and it couldn't have happened the same way without the ARRL," he continued. "Let us also work to keep our League a strong and effective voice on our behalf. I'd like to think that someone will be here 100 years from now looking back fondly on all the good things accomplished by Amateur Radio during ARRL's second cen-

WCARC Weekly Net

Tuesdays at 2100 all year

147.18 MHz 67 Hz PL

Net Control Roster

Dec 13	K8OVO
Dec 20	WB8NQW
Dec 27	N1RB
Jan 3	KD8VWU
Jan 10	KD8NJW
Jan 17	NM8W

NEXT MEETING

Business Meeting

Monday, Dec. 12th

TIME: 7:30 pm/7:00 EB

PLACE:

Sheriff's Training Room

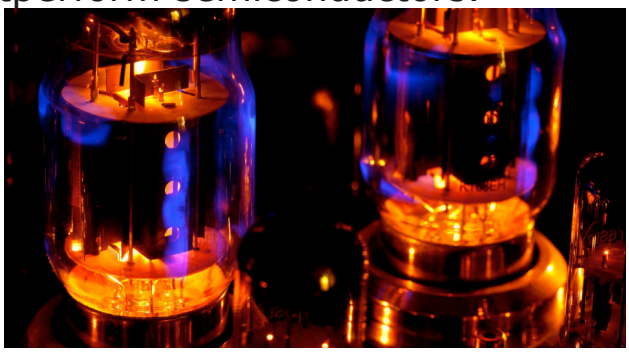
Dunbridge & E. Gypsy Lane Rds.

Bowling Green, OH

Scientists Are Bringing Back Vacuum Tubes

from Popular Mechanics (Avery Thompson)

A group of scientists have developed super-efficient microscopic vacuum tubes that may be able to outperform semiconductors.



Getty Photography by Alex Brunsdon

Researchers from UC San Diego are **using vacuum tube technology to develop more efficient computer processors**. The research could result in faster microelectronic devices and better solar panels. Their results are **published in a paper** in the journal *Nature Communications.*

Commonly thought of as a **primitive precursor to the modern transistor**, vacuum tubes were the building blocks of computers in the early 20th century, and computers built using them filled entire rooms or buildings.

The invention of the transistor in the mid 20th century allowed computers to be built much smaller, and paved the way for the computing revolution of the late 20th century.

continued---on p.6

NET CHECK INS

Nov 22 Traffic: 0

KD8VWU	***(NCS)***
K8BBK	
N8VNT	
KG8FH	
WB8NQW	
N1RB	
KC8EKT	
W8PSK	***(8)***

Nov 29 Traffic: 0

KD8NJW	***(NCS)***
KE8CUZ/M	
KC8EKT	
KD8RNO	
W8PSK	
N8VNT	
K8BBK	
KG8FH	
KE8CVA	
WB8NQW	
N8PYA	
WD8LEI	
KD8VWU	
N8YAE	
AA8HS	
N1RB	
K8JU	
K8OVO	***(18)***

tubes---from p.5

That being the case, the transistor is **arguably the greatest invention in history**.

However, transistors are far from perfect. The materials they're made out of, semiconductors, have several disadvantages. They can **only be made so small** due to the laws of physics, and there's an upper limit on how efficient they can be. We're starting to hit those limits, so many researchers are looking for alternatives. And one group is taking a look back toward vacuum tubes for inspiration.

When current is run through a semiconductor, it has to pass through solid material, which slows down the current and limits efficiency. Vacuum tubes don't have that problem because the current travels through vacuum. Creating miniature vacuum tubes could increase the efficiency of our electronics.

However, an essential component to a vacuum tube is free electrons in a vacuum, which is difficult to create at the nanoscale. Typically, large voltages or powerful lasers are needed.

Researchers at UC San Diego have managed to overcome this hurdle by using special gold nanostructures combined with a low voltage and a low-power laser. The result is a tenfold increase in efficiency, and transistors that can operate with more power and less resistance than those that use semiconductors.

The next step for the group is to scale down the vacuum tubes and explore their many applications. If their research pans out, the comput-

continued---on p.7

Brain Teaser answers: (T) 1-b, 2-d, 3-a

DON'T FORGET!
10 meter informal net meets
Sunday@ 2030 year round
on 28.335 MHz

tubes---from p.6
ers of the future may be using technology from a century ago—just much smaller. ■

Hamvention® Countdown at New Venue

ARRL Letter

With just 6 months to go until the **Hamvention**® debuts at its new **Greene County Fairgrounds and Event Center** venue in Xenia, Ohio, May 19-21, General Chair Ron Cramer, KD8ENJ, and Dayton Amateur Radio Association (DARA) Board Member Mike Kalter, W8CI, assure that all is progressing smoothly. Cramer and Kalter made another appearance on the ***Amateur Radio Roundtable***, hosted by Tom Medlin, W5KUB, to update progress on preparations for the all-new Hamvention. Cramer and Kalter said they continue to be bombarded with questions, concerns, and rumors regarding how the event will be staged.

"You have to remember, we're starting from the ground up," Cramer said. "So it's taken a while to get things going." He asked for patience from prospective visitors, but he and Kalter told Medlin that the vast all-volunteer team has everything well in hand and that plans are coming together. Both maintained that those attending Hamvention 2017 "will be very impressed."

Cramer predicted parking would not be an issue, and that there would be plenty of room for the anticipated number of vehicles, with overflow parking available and transportation to the buildings housing the vendors and events from the parking areas, as needed.

Traffic and transportation logistics are being addressed, Cramer said, and Hamvention® is working with four police departments as well as a professional traffic planner to ensure that all goes smoothly.

Cramer said Hamvention 2017 tickets will become available starting in December — a bit earlier than in past years. The cost of admission will rise by $2 from the 2016 price of $20 for advance tickets and $25 for those purchased at the gate. But, he pointed out, there will be no parking charges on site.

The Hamvention website is yet to be updated to reflect the 2017 event, but Cramer and Kalter said that both indoor and outdoor layout maps will be made available online in advance of the show, and these will be included in the Hamvention program as well.

Kalter said he and Cramer continue to hear concerns about the outdoor flea market, which will be sited within the racing oval. Kalter said some prospective attendees worry that the grassy area will become muddy if it rains. "That is not true," he assured viewers of the

continued---on p.8

hamvention---from p.7

program. "They have a very nice drainage system there." He said parking areas also are equipped with adequate drainage.

Hamvention also expects to provide Internet connectivity throughout the new venue, which encompasses more than 100 acres. Hamvention sponsor DARA has a 3-year commitment at the new venue, which has served primarily as home to agricultural fairs and events in the past. Hamvention® announced in August that it would be relocating to Xenia, following the closure of Hara Arena, where the show took place for more than 50 years.

The *Amateur Radio Roundtable* show included a DX Engineering-produced **video** shot from a drone operated by Greg Ordy, W8WWV, and narrated by DX Engineering's Tim Duffy, K3LR. ■

It's time to renew

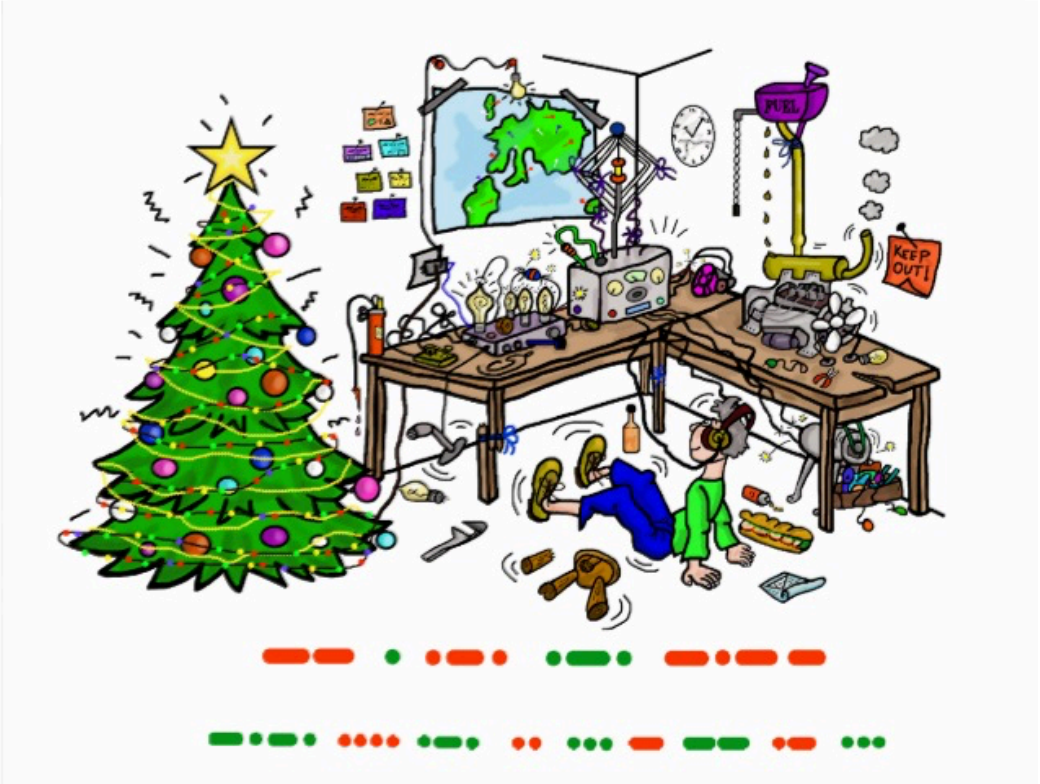
dues for 2017 payable to:

WCARC

P.O. Box 534

Bowling Green, OH 43402

see WCARC website for membership rates



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