

# THE PLATTSMOUTH AMATEUR RADIO CLUB

# Communicator

# June 2016

## Rare de Forest Audion Donated to ARRL, Mated with Vintage Radio for Museum Display

(ARRL 05/10/2016) An ARRL member from Virginia has donated a rare de Forest "round bulb" Audion to the League, which has paired the groundbreaking triode with a de Forest Receiver of similar vintage and rarity. Walt Bain, W4LTU, recently wrote ARRL Headquarters to see if the League would give the antique tube a home. Radio pioneer Lee de Forest filed his first patent for the Audion in 1907, describing it as a detector of sound, and he is generally credited with having invented the vacuum tube. Although it was first used as the detector in the de Forest Audion Receiver, the Audion subsequently was heralded as the world's first electronic amplifying device. Bain, who is 86, said he inherited the Audion from his father, George Bain, a graduate of Wesleyan University in Connecticut in the 1920s who went on to work for Westinghouse.

"In the 1930s he was chief engineer at KenRad Tube and Lamp Company," Bain told ARRL. "He would have met de Forest anytime during college, at Westinghouse, or KenRad." This particular Audion likely dates back to the early 1910s and appears to be a somewhat later version of the device that de Forest had submitted on his patent application a few years earlier. An intact Audion such as this one is considered extremely rare.

*(Continued on Page 3)*



## Field day June 25-26

Field Day is held the fourth full weekend in June and everyone is invited to join us Murray for all or any part of the weekend for some operating, to learn, or just to visit with others. We are located right by the water tower so it makes a pretty good marker as well as antenna support. Setup starts mid-morning followed by lunch and the meeting with the operating starting at 1 pm. The ending time is 1 pm Sunday and we usually have lunch and tear-down beginning by that time.

<http://www.arrl.org/field-day>



## Meeting Calendar

8am, May 28, 2016

at Mom's Café

Field Day June 25-26 at Murray

Meeting at Noon, June 25

8am, July 30, 2016

**2016  
PAID MEMBERSHIP**

- AGØL .....Steve Loyd [E]
- AIØN..... Chuck Engberg\* [E]
- K3CRF.....Dave Smith [E]
- K5LBS ..... Jerry Gault [E]
- KBØFSI ..... Pat McCollum [T]
- KBØLF .....Fred Ericksen [E]
- KBØOGO .....Roger Behrns\* [E]
- KBØSJB.....Tom Katalenich [G]
- KCØHYD ..... John Titsworth [G]
- KCØHYE.....Shirley Titsworth [T]
- KDØNMD.....Dudley Allen [G]
- KDØBXB..... Kim Allen [T]
- KEØETZ..... Derek Winterstien [G]
- KEØXQ.....Bill McCollum [E]
- KGØKR .....Beth Engberg\* [E]
- KIØPY ..... Kevin Faris [E]
- N5SEZ..... Ray McNally[E]

*\*Charter Members #New Ham*

Note: Thanks to all who have paid their dues and many who have given additional donations. All donations are greatly appreciated. Please let me know of any corrections.

**Meetings are 8am the last Saturday of most months at Mom's Café in Plattsmouth.**

**Tuesday night get-togethers at Plattsmouth Burger King at 7 PM**



**P.A.R.C. Officers**

**President**

**KBØOGO .....Roger Behrns  
rb55930@windstream.net**

**Vice President**

**KCØHYD .....John Titsworth**

**Secretary**

**N5SEZ.....Ray McNally**

**Treasurer**

**KIØPY ..... Kevin Faris**

**Newsletter Editor**

**KBØOGO .....Roger Behrns  
rb55930@windstream.net  
513 Vine St.  
Louisville, NE 68037  
(402) 234-6775**

**Repeaters:**

- 443.45<sup>+</sup> is located in downtown Omaha
- 443.225<sup>+</sup> is located in Murray.
- 147.48 Simplex is also in Murray.

*Contents copyright ©PARC 2016  
Some contents may be copyrighted by the referenced source or author. Unsigned articles may be used for noncommercial use with notification and attribution.*



The April 30, 2016 meeting was called to order at 8:25 am at Mom's Café by President Roger Behrns.

Those in attendance were Roger (KBØOGO), Linda, Kevin (KIØPY), Steve (AGØL), Fred (KBØLF), and John (WR5I).

Kevin made a motion to accept the January meeting minutes and Fred seconded. Passed

The treasurer reported \$260 in the repeater fund and \$62.85 in the general fund for an ending balance of \$322.85. \$320 was paid for our annual liability insurance. Steve moved to accept the treasurer's report and Fred Seconded. Passed.

The Village of Murray approved our request to use the park for Field Day.

Kevin reported on progress on the repeater enclosure at the Murray water tower.

Spiral is looking to distribute WiFi from the Murray water tower and bring fiber to the site. They may be interested in use of the enclosure. Nebraska Emergency Management may also be interested in space for some microwave relay equipment.

There would be adequate room in the enclosure for Spiral, NEMA, George's commercial repeater and the club equipment. George is working with NPPD to bring 220V for the air conditioners to the site.

Steve moved and Fred seconded a motion to approve Roger and Kevin to negotiate with the interested parties on the use of the repeater enclosure and the financial arrangements. The motion passed.

The meeting adjourned at 8:53.

PLATTSMOUTH ARC MEMBERSHIP REGISTRATION FORM					
Name		Call Sign		Class	
Address		City		State	Zip
E-Mail			Phone #		
Spouse Name			Call Sign		Class
Membership Type <input type="checkbox"/> Primary(\$15) <input type="checkbox"/> Spouse (\$5) <input type="checkbox"/> Student (\$5) <input type="checkbox"/> New Ham	● Additional donations are gratefully accepted. ● New Hams are free during the year they receive their first license. ● Please give this form and dues to the club treasurer or any club officer.		Donation for: <input type="checkbox"/> Repeater fund <input type="checkbox"/> Insurance <input type="checkbox"/> Other _____ <input type="checkbox"/> General		Amount:  <input type="checkbox"/> I prefer my donation to be anonymous.
Any additional e-mail or cell phone #s?					

*Audion* (Continued from Page 1)

ARRL Lab Test Engineer Bob Allison, WB1GCM, who curates the League's museum collection, accepted the Audion and had it installed on the League's own de Forest Audion Receiver, which lacked a tube. "Each year, we have about 2000



visitors to the Lab; they will get to see that tube," Allison said. The League's Audion Receiver, once owned by Columbia University, bears the patents of de Forest's Radio Telephone and Telegraph Company. The Audion's three elements are clearly visible within the blown-glass envelope. Connections to the Audion's rectangular plate and squiggly grid were made via wires that exited on one end of the bulb. The other end featured a candelabra-style lamp base, which screwed into a socket. The lamp base provided the filament connection. The Audion is mounted with the lamp base up, to prevent the filament from sagging and touching the other two elements of the tube.

In developing the Audion, de Forest had built on the work of John Ambrose Fleming, who invented a two-element vacuum tube in 1905. De Forest discovered that applying a radio signal to the grid instead of to the filament, or cathode, would yield a more sensitive RF detector than what was then available. De Forest also was an early radio broadcaster, transmitting speech and music in the New York City area in the early 1900s. De Forest came up with the idea of using a series of Audions to enhance their amplifying capabilities, an attribute American Telephone & Telegraph company capitalized upon, after securing de Forest's patents.

In time, vacuum tubes supplanted solid-state mineral detectors in radio receivers, although in a "what goes around, comes around" turn of events, solid-state devices called "transistors" replaced the vacuum tube in the 1950s and 1960s. Today's iPhones have the equivalent of 2 billion transistors packed inside.

(Photos by WB1GCM)

<http://www.arrl.org/news/rare-de-forest-audion-donated-to-arrl-mated-with-vintage-radio-for-museum-display>

<http://www.arrl.org/arrl-vintage-amateur-radio-equipment-exhibit>

## No Need for Panic Regarding Synthetic Aperture Radars on 70 Centimeters, ARRL CTO Says

(ARRL 05/03/2016) A recent BBC news article regarding a synthetic aperture radar (SAR) contract award for operation within the 70 centimeter band has raised some concern within the Amateur Radio community. The contract to Airbus Space would involve determining the density of Earth's forests using a P-band (432-438 MHz) SAR. That band segment was allocated for use by the Earth Exploration Satellite (Active) Service at World Radiocommunication Conference 2003 (WRC-03). ARRL Chief Technology Officer Brennan Price, N4QX, said SAR activity has not been found to be a significant problem to Amateur Radio activity on the 70 centimeter band. Both EESS (Active) and Amateur Radio are secondary on the band in International Telecommunication Union (ITU) Regions 2 and 3 (Amateur Radio is co-primary with the Radiolocation Service in ITU Region 1), and Price said SAR operation is subject to significant constraints.

"The interference potential from one orbiting SAR to one fixed Amateur Radio station is on the order of less than 1 minute over an orbital period of more than 10 days," Price said. "Practically speaking, nearby electrical lines and Part 15 devices are more likely to be bothersome."

Price said news items in articles aimed at the general public are "often notoriously short" on technical details. ITU-R Recommendation RS.1260-11 — incorporated by reference in the ITU Radio Regulations and binding on EESS (Active) stations — spells out the WRC-03 consensus on SARs operating at 70 centimeters. Among other things, RS.1260-1 states that EESS (Active) instruments operation profile "shall be campaign-oriented, targeted to specific geographical areas and shall limit the instrument active time to the minimum required to achieve the campaign objectives. Thus, the measurements carried out by the instrument do not require continuous operation of the instrument, and intervals of months between successive measurements on the same area can be expected." The Recommendation further states that the operational duty cycle of an SAR in campaign mode will be 15 percent (typically 10 percent).

A Russian satellite, AIST-2D, launched on April 28, will conduct SAR work as a technology demonstration and scientific research satellite developed at Samara Aerospace University. Its 200 W SAR will operate in the 433-438 MHz band. It will also transmit telemetry in the 70 centimeter band.

<http://www.arrl.org/news/no-need-for-panic-regarding-synthetic-aperture-radars-on-70-centimeters-arrl-cto-says>

<http://www.bbc.co.uk/news/science-environment-36195562>