



2018 AWA CONVENTION AGENDA

NOTE: This agenda is subject to change by convention time. Check from time to time for updated information.

TUESDAY, AUGUST 14, 2018

- 1:00 pm.....Registration Desk Opens
- 6:30 pm.....Buffet Dinner Social Hour – Cash Bar
- 7:00 pm.....Welcome Buffet Dinner

WEDNESDAY, AUGUST 15, 2018

- 9:00 am.....Registration Desk Opens
- 9:15-10:30 amJoe Knight: *First Vacuum Tube*
- 10:45 am-
- 12:00 pm*Mike Molnar: Jack Poppele, His Scrapbooks and the Jenkins Television*
- 12:00-1:00 pmLunch Break
- 1:00-2:15 pmBill Burns: *The First Underwater Cables*
- 2:30-3:45 pmCrisss Onan: *Collins Audio Cart Conquest*
- 4:00-5:15 pmMike Molnar: *The Lost Conversations with Vladimir Zworykin*
- 5:00-8:00 pmAWA Museum Open
- 7:30 pmSocial Hour – Cash Bar
- 8:00 pm.....Free Ice Cream Social

THURSDAY, AUGUST 16, 2018

- 6:00 am.....Flea Market opens and remains open continuously.

NOTE: Flea Market Vendors must display a Vendor's Pass. Sales are strictly private transactions. Vendors remain responsible for taxes and all legal aspects of these transactions. Neither AWA nor RIT are parties to any of these transactions.

- 9:00 am.....Registration Desk Opens
- 9:00 am.....Book Fair Opens
- 10:00-
- 10:30 am.....Joel Kosoff: *A Spark Transmitter Demonstration*
- 10:45 am-
- 12:00 pmEric Wenaas: *Did Mahlon Loomis Really Invent Radio?*
- 12:00-1:00 pmLunch Break
- 12:00 pmSpecial Guests Luncheon – all welcome
- 1:00-2:15 pmRoy Wildermuth: *Real Radios Have Motors, the Story of Collins Autotune*
- 2:30-3:45 pmChris Hausler: *The First Telegraph*

- 4:00-5:15 pmRobert Lozier: *RCA Prototype Restoration*
- 5:30 pmBuffet Dinner Social Hour – Cash Bar
- 6:00 pm.....Buffet Dinner & CCA Presentation
- 8:00-11:00 pmEquipment Contest Check-in
- 8:00-10:00 pmMoonlight Restorations Seminar – hosted by Robert Lozier
- 10:00 pm.....Movie: *Television Under the Swastika*

FRIDAY, AUGUST 17, 2018

- 8:00 amEquipment Contest – Last-minute Check-in
- 9:00 am.....Equipment Contest Judging
- 9:00 am.....Book Fair Opens
- 9:00-10:30 amAWA Members' Meeting
- 10:45 am-
- 12:00 pm.....David Bart: *WWI Harvard Radio School*
- 12:00 pm.....Registration closes
- 12:00-1:00 pmLunch Break
- 1:00-2:15 pmFelicia Kreuzer: *Wireless in WWI*
- 2:30-4:30 pmFelicia Kreuzer & Joe Knight: *Pre-1912 and Spark Era Seminar*
- 4:00-5:30 pmAuction Items Check-in
- 6:00 pm.....Annual Banquet Social Hour – Cash Bar
- 7:00 pm.....2018 AWA Convention Banquet followed by Contest viewing
- 9:00-11:00 pmAuction Preview
- 11:00 pm-
- 12:00 am.....Contest Pickup

SATURDAY, AUGUST 18, 2018

- 7:00-8:00 am Auction Preview
 - 8:00 am Auction – until finished
- NOTE: In order to participate in any indoor activities, dinners, and the Auction, you must have registered for the Convention. Your convention registration includes one auction bidder's card. Additional auction cards are issued only upon payment of additional registrations. The AWA recommends you do not let others use your bidder number. A bid is a contract under New York law – YOU ARE RESPONSIBLE FOR ANY CHARGES. There will be a \$20.00 fee for failure to pay auction charges. No Seller's Payouts until one hour after the end of the Auction.

2018 OLD EQUIPMENT CONTEST

BY GEOFFREY BOURNE AND CHRIS BACON, CONTEST COORDINATORS

The themes for the 2018 AWA Annual Conference are "Spark" and "First of a Kind or Series." Spark is a celebration of the earliest days of wireless, prior to the development of vacuum tubes and transistors. First of a Kind or Series is a recognition of milestones in the development of radio design and technology.

SPARK

In 1943 the U.S. Supreme Court invalidated Marconi's radio patents and upheld Nikola Tesla's patent for the invention of radio. This decision was partly based on Tesla's development of high voltage RF transformers popularly known as Tesla Coils. Using a spark gap or an arc to excite a tuned RF transformer at high frequencies, these devices produce spectacular effects at extremely high voltages. Tesla and others soon found that the oscillations from these transformers could be detected at great distances. These discoveries were adapted into practical radio transmitters, making the association of spark with radio inevitable.

Like most other technologies, spark transmitters evolved over the years. Marconi's early transmitters were little more than Tesla Coils with antennas and keying relays. Some shipboard and amateur spark transmitters remained at this stage. Open air spark gaps had short lives and needed constant adjustment, so were soon refined. The rotary spark gap was a major advance which not only imparted an audio frequency note to the signal, but also improved performance due to the moving contacts. Quenched gaps and magnetic gaps followed. Spark signals inherently occupy wide bandwidths, limiting the number of stations that could operate without interference. As more uses for radio were found and more stations were planned, much study went into coils, condensers, and antennas to reduce the bandwidth required by each station.

The need for better transmitters led to Valdemar Poulsen's 1903 invention of the arc converter or arc transmitter. Its many refinements included an arc with electrodes enclosed in a hydrocarbon

atmosphere or passed through a specially prepared solid material, to excite the RF transformer. In all but the smallest arc transmitters, powerful electromagnets further confined and concentrated the arc. This gave a "focused," much cleaner signal requiring less bandwidth. Transmitters were keyed by de-tuning the antenna coils rather than turning the arc on and off, further improving performance, and, in a few experimental versions, water-cooled carbon microphones provided voice modulation. Arc transmitters reached their peak by about 1920, but soon were eclipsed by vacuum tube transmitters, which made far more effective use of bandwidth. When the 80-M and shorter wavelengths were opened to hams in 1923, spark operation was prohibited. With the exception of "legacy" maritime installations, spark transmitters were no longer allowed on the air in the U.S. after 1929. But even for ship and maritime land stations, the greater efficiencies of tubes relegated spark transmitters to emergency backup and lifeboat duty, and by about 1940 nearly all were gone. Very few original spark transmitters have survived, and even parts are now scarce.

FIRST OF A KIND OR SERIES

Many collectors have come across radios, tubes, and other artifacts and realized that in some manner, this item was the first of its kind—setting a trend which others followed. An example is the Regency TR-1, the first commercially viable transistor radio. Other "firsts" might be a Fada prewar kit TV, often considered to be the first electronic TV available to the public, or the first radio with a 50L6, 35Z5, 12SA7, 12SK7, 12SQ7 tube line-up, dubbed the "All American Five." It could be the first use of a particular circuit, cabinet design, set of tubes, component, or material which set a trend for other radios which followed. Any device used for electronic communication may be entered in this category, and you must document how your entry represents the first of its type or kind. The judges reserve the right to expand the categories as needed to encompass the entries received.

SPARK CATEGORIES

1. COMPLETE SPARK TRANSMITTERS

A: Original or restored original

B: Replica, using new or original parts

2. SPARK TRANSMITTER PARTS AND ACCESSORIES
3. SPARK STATION RECEIVERS AND OTHER COMPONENTS
4. DOCUMENTATION

FIRST OF A KIND OR SERIES CATEGORIES

5. **FIRST OF A KIND IN TECHNOLOGY**
 - A. First use of a circuit or principle (eg. first RCA superhet, first AC line operated receiver)
 - B. First use of parts, tubes, or materials (eg. first radio with "All American Five" tube line-up)
 - C. First use of a manufacturing technique (eg. first radio with PC board construction)
6. **FIRST OF A KIND IN DESIGN**
 - A. First use of a cabinet design or style (eg. first Gothic style table radio)
 - B. First use of a material or fabrication process (eg. first radio to have a Bakelite case)
 - C. First radio designed for a particular application (eg. first mantle radio or first shirt pocket radio)
7. **FIRST OF A KIND FOR YOU**

First of a kind doesn't have to be something that set a trend in the industry or made history. What was your first antique radio, the one that started you in the collecting hobby? The first one you thought was really special? This category is open to personal favorites—but be prepared to tell the stories behind them!

STANDARD CONTEST CATEGORIES

8. **PASSIVE RECEIVERS**

Any radio which uses only passive devices such as a crystal or other type of detector, without active amplification, to convert radio energy into intelligent signals.
 9. **REGENERATIVE AND SUPER-REGENERATIVE RECEIVERS**

These late 1910s through 1920s receivers contain at least one stage of amplification in which part of the output is fed back to the input in such a way as to add to the original signal and increase its strength, offering tremendous sensitivity from a single tube or a few tubes. Licensed manufacturers produced a variety of radios based on this principle, as did some unlicensed companies. Millions were built by do-it-yourselfers.
 10. **1920s TRF, REFLEX, AND NEUTRODYNE RECEIVERS**

Although regenerative receivers provided great economy in their use of tubes and power, they did not offer great selectivity and interfered with each other if mis-tuned. These factors became important as more broadcast stations took to the air. The tuned RF, or TRF receiver became the circuit of choice from about 1923 on. The reflex receiver is a variation of the TRF circuit in which the detected audio is passed through one or more of the RF stages for further amplification. While more complicated and difficult to adjust than plain TRF receivers, reflex circuits reduced the tube count and economized on batteries. The Neutrodyne was a refinement of the TRF design using carefully adjusted feedback capacitors, or "Neutrodons" to neutralize the internal capacitances of the RF tubes, obtaining better performance without additional tubes.
 11. **1920s SUPERHET RECEIVERS**

The superheterodyne principle was discovered during World War I but it proved very difficult to build economical, high performance superheterodyne receivers that would be accepted by the public until the mid-1920s. Nevertheless, there was considerable interest in the circuit which some companies tried to address with specially built products as well as parts and kits, until the mainstream receivers were ready.
 12. **CATHEDRALS AND TOMBSTONES OF THE 1930s AND 1940s**

From the mid-1920s on, most radios were large with separate batteries or power supplies, speakers, and accessories which filled a table top, or they were housed in consoles. Some manufactur-
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ers recognized the market for smaller, self-contained, and less ostentatious radios. The first "mantle radios" appeared in 1929, followed by the Gothic or cathedral style which became an iconic symbol of the early 1930s. Numerous tombstone and flat top style radios were made from the mid 1930s until the early 1940s.

13. RADIOS OF THE DECADES, 1930s TO 1970s

While cathedral and tombstone radios were popular, many other styles were produced including consoles and floor radios, horizontal table radios, chairsides, radio-phono combos, clock radios, and portables. Radios in this category will be organized by decade:

- A. 1930s
- B. 1940s
- C. 1950s
- D. 1960s (up to 1968)

14. TRANSISTOR RADIOS

The transistor was invented at Bell Labs in 1948 but it wasn't until late 1954 that the first commercially viable shirt pocket transistor radios were available to the public. Early transistors had limited gain and bandwidth, making it difficult to design them into radio circuits that performed well. Transistor technology advanced rapidly in the late 1950s and 1960s, and radio designs changed constantly as better transistors became available. In the late 1960s, the development of silicon transistors almost immediately obsoleted Germanium types and simplified many of the previous design problems, setting the stage for today's "one chip wonders" and software defined radios. This category is open to all transistor radios made up to 1968.

- A. **Shirt pocket radios**
- B. **"Lunchbox" portables and transistor table radios**
- C. **Complex multi-band transistor radios and direction finders**

15. HIGH FIDELITY

The quest for better sounding, true fidelity performance began with late 1930s high-end consoles and developed into a major area of electronics after World War II. For perhaps the first time since radio was introduced, amplifiers were designed for low distortion and noise, and wide frequency response. Matching tuners were developed. Wide band FM offered fidelity surpassing anything possible with AM. Following World War II, innovations such as microgroove records, miniature magnetic phono cartridges, improved speaker designs, magnetic tape, and FM stereo kept the field active and lively. Since listening tests and measurements would be impractical in the contest venue, equipment will be judged on historical significance, rarity, and condition (not necessarily in that order). Be prepared to tell the stories behind your entries!

- A. **Pre-WW2 High Fidelity receivers and equipment**
- B. **Classic Tube High Fidelity, 1946-1968**
- C. **Early Solid State High Fidelity**

16. SPEAKERS AND HEADPHONES

Radio as we know it would be impossible without some means of converting the received signals to sound. Many different designs were developed to make the most of the feeble signals and voltages from early battery powered equipment, then as tubes and circuits improved, speakers were re-invented to make better sound quality possible.

- A. **Horn Speakers:** These speakers use relatively low power electromagnetic drivers and produce sound amplification with horns or bells.
 - B. **Pin or Armature Cone Speakers:** Horns were large, costly to make, and efficient only over a narrow frequency range. Many of these limitations were overcome by connecting a cone of paper or similar material to an electromagnetic driver.
 - C. **Dynamic Speakers:** By the late 1920s, development of higher powered tubes enabled a new speaker design, using a solenoid wound coil in a concentric magnetic gap. Changed only in detail, the dynamic speaker is still in widespread use, making it one of the most common and important devices in electronics.
 - D. **Headphones:** Headphones date back to the earliest days of wireless, when every bit of
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sensitivity was needed. Many different types were developed by a variety of manufacturers. They still are commonly used in miniaturized form for private listening.

17. TEST EQUIPMENT

Few early tube radios were capable of operating for very long without maintenance, and dealers soon found a secondary business in testing and repairing what they sold. From simple meters to test batteries and tube filaments, needs grew to include signal generators, set analyzers, multi-meters and electronic voltmeters, better tube testers, and eventually sweep generators and oscilloscopes. Following WW II, television spawned a whole new service industry requiring specialized test equipment.

18. TUBES AND SEMICONDUCTORS

In this category you can display a single tube, transistor, or semiconductor—or entire collections. There should be a theme to the display, such as historical significance, technological breakthrough, or a story.

A. Tubes

B. Early diodes, rectifiers, and transistors (up to 1960)

C. Later transistors and semiconductors

19. TELEVISION

Shortly after radio became a practical reality, innovators and inventors began looking for ways to add sight to sound. Numerous mechanical systems were developed and tested, but it wasn't until electronics were fully applied that television emerged from the lab.

A. Mechanical: Bring in a scanning disk or mirror screw receiver. It can be original or a modern replica.

B. Electronic: Enter any television receiver or studio equipment. Can be black and white or color, factory assembled or kit. It can be original or a modern replica.

20. INTERNATIONAL RADIO

Radio developed in other countries along lines which sometimes paralleled developments in the US, and at other times were very different. This category is of particular interest for members from other countries as well as US members who collect radios made outside the US.

A. Pre-1945: Any radio or electronic communications artifact made before 1945, from any other country than the US.

B. Post-1945: Any radio or electronic communications artifact made from 1945 to 1968 from any other country than the US.

21. NOVELTY RADIO

Radios were often made in other shapes and forms as novelty items. They may be disguised as cartoon characters, toys, furniture, or other objects. This category is a celebration of these colorful and imaginative sets.

A. Tube Novelty Radios

B. Transistor Novelty Radios

THE AMATEUR RADIO CATEGORIES

22. ELECTRONIC TRANSMITTERS AND RECEIVERS

From the outset, amateur radio operators have been involved in tinkering and contributing to the development of electrical and electronic communications. Most hams eventually switched to factory made receivers and transmitters because it became too complicated to build similar equipment on their own, but the experimental tradition continues to this day.

A. "Home brew" (one-off item from an original design, magazine, or book article by an individual or individuals) vacuum tube amateur equipment;

B. Commercially produced vacuum tube amateur equipment;

C. "Home brew" solid state amateur equipment, including tube/transistor hybrid circuits;

D. Commercially produced solid state amateur equipment (including tube/transistor hybrids) up to 1968.

23. STATION ACCESSORIES

Running an amateur station calls for far more than just a receiver and a transmitter. Antennas and tuners, sending keys, microphones, clocks, logbooks, QSL cards, handbooks, and numerous other items are necessary. This category is open for the display of vintage ham items. By vintage, we mean at least 50 years old.

(The Amateur Spark category will return next year.)

THE CRAFTSMAN CATEGORIES

24. RESTORATION OF APPEARANCE

The purpose of this category is to display examples of rebuilding and refinishing the cabinets that were used to house radio and television receivers. There is no requirement for a particular kind or size of set to be entered and it does not need to be operational. A description of the work done is an important part of the entry. Entries will be judged on the originality of the appearance of the item, including fit and finish of cabinet parts, appearance of chassis and components, and appearance of escutcheons, dials, knobs, and other details.

25. RESTORATION OF OPERATION

This category is for entries where a radio or related piece of equipment is returned to its original performance or operating condition in a historically correct manner through the use of replica or refurbished components, or by concealing modern components inside old ones. Electrical and mechanical restoration of the chassis is considered here, instead of restoration of cabinetry and appearance in the category above.

26. NEW OR REBUILT

Most parts used in vintage and antique electronic devices are no longer manufactured. Many styles of older batteries, tubular paper capacitors, "dogbone" carbon resistors, and similar items are needed for accurate restorations but cannot be purchased new. Consequently, restorers have gone to great lengths to conceal modern components inside old ones or make full replicas of old parts. In some cases, replicas of unobtainable complex sub-assemblies or even entire radios have been produced. Experimenters have also reproduced vintage radio circuits for various purposes using modern components so as to not jeopardize scarce original parts. This is the category for those who like to make or rebuild things which are antique radio related.

27. OPEN CATEGORY

Enter any electronic communications related item which does not fit into the other listed categories.

THE CONTEST AWARDS

ELLE CRAFTSMAN

Given in memory of Bruce Elle to a builder of a high quality radio receiver of an old or new type.

MATLACK TRANSMITTER

Given for excellence in constructing or restoring transmitting equipment.

RALPH O. WILLIAMS DISPLAY

Recognizes the informational value and quality of an exhibit at the Old Time Equipment Contest at the AWA Conference.

THOMPSON BEST OF SHOW

Awarded in honor of early amateur Eunice Thompson, W1MPP, for the top entry in the Old Time Equipment Contest at the annual conference.

PEOPLE'S CHOICE

Awarded to the entry that receives the most favorable votes from attendees and visitors to the contest. All entries including displays are eligible for this award.
