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**From The Editor**

In this issue, we continue our series “Collecting Radio Peripherals” with a discussion of books and periodicals of all eras. Whether originally written for the radio service person, hobbyist or student, a good collection of these materials is invaluable to any radio collector or restorer. Other highlights of the issue include a personal story about installing a hi-fi system in the White House for JFK and Jackie, a recounting of the radio listening experience on the Great Plains during the 1940s and 1950s, a discussion of radios of the late 1930s, a book review covering John Rider’s monumental “Perpetual Troubleshooter’s Manual” and a corporate biography of The Sonora Phonograph Company. Finally, be sure to click on the link, in “Members’ Corner,” to the very latest AWA 2015 Convention information on our website.

—Marc Ellis, N9EWJ
**From The Deputy Director**

Hi everyone, I hope everyone has survived the very long winter this year. It seems like it has gone on forever.

Recently, I volunteered at my church’s second-hand sale and a gentleman whom I did not know asked another volunteer if we had any old radios. They said no, but you should talk with Bob about that. After Corky and I introduced ourselves, I explained about AWA and the Antique Wireless Museum. That excited Corky who indicated that he had an interest in old radios and in learning more about how to fix them.

I suggested to him, as I do to all new collectors, that he find a club for antique or amateur radio enthusiasts and get involved. Since Corky lives in our area, I suggested that he join AWA and start to volunteer at the Museum. This provides an excellent opportunity to talk radios and to find a potential mentor.

In amateur radio parlance, that person is traditionally called an “Elmer.” I offered to be his Elmer — helping him through the learning curve of collecting and safely repairing his radios — with the understanding that I am myself still learning from the many experts in AWA.

That brought back a whole flood of memories of being a teenager and learning/surviving the hard way on my own. Perhaps now as an older, smarter (?) guy I could share what not to do and what to do so Corky wouldn’t have to be lucky to survive his learning curve.

Yes, I could do that for him, noting that as a member of AWA he has access to the best experts in the world.

I also suggested that Corky read the entire series of AWA Gateways where there is a wealth of information written especially for the new collector on basic electronic theory, why and how to collect, where to possibly find that treasure you have to have for your collection and, in my column in the March, 2012 issue (Volume 2, No. 1), some fundamental safety pointers for the beginning repair man. All past Gateways can be read, or downloaded, free of charge, from our web site www.antiquewireless.org.

Being an Elmer for a new collector is fun and rewarding and if our hobby is to continue and prosper, we need to pass on what we have learned to the new collector. Besides, it is always fun to talk radios.

If YOU want to talk radios and communications history every Tuesday, join the Museum Staff! There are many, many tasks to work on each Tuesday at the Museum, but there’s always time for fun and great conversations. Join us by just coming to the Museum and saying “I would like to help.” It is that simple. You might say “But, I work and can’t come on Tuesdays.” No problem. We also need more Museum guides or docents on weekends and we provide the training.

JOIN US!

—Bob Hobday N2EVG, Deputy Director, AWA Museum

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**AWA Gateway Columnists**

**JIM COOK, W00XX**

*Radio Reflections*

The son of a radio technician, Jim became a licensed amateur radio operator at age 15 and obtained commercial radiotelephone licenses before he was 20. He worked as a transmitter operator for two radio stations while studying Electrical Engineering at the University of Kansas. After graduation he became an electronic circuit designer for Texas Instruments. Later he redirected his career into electrical power engineering and recently retired after 34 years in the facilities engineering group for Hallmark Cards.

**ANDY OOMS**

*Enjoying Antique Radio*

Andy is a retired labor relations and human resources executive who has had a lifelong interest in radio — including AM DX-ing, short wave listening, old-time radio programs and antique radios. In his varied business career, he has worked on the space shuttle project, at one of the last RCA radio production facilities in the U.S., and for the Alyeska Pipeline Service Company. Since retirement, he has done some writing, camp-hosted at various state and Federal forests and parks, and taught English, American Literature and Employment Strategy in Viet Nam and the Philippines.

**ERIC P. WENAAS, PH.D.**

*Book Reviews*

Dr. Wenaas has had a lifelong passion for antique radios. He received BS and MS degrees in Electrical Engineering at Purdue and a Ph.D. in Interdisciplinary Studies in The School of Engineering at SUNY Buffalo. He spent most of his career at Jaycor, a defense company in Southern California — eventually becoming President and Chief Executive Officer. Since his retirement in 2002, he has written numerous articles for AWA and other publications. In 2007 he published a critically acclaimed book *Radiola: The Golden Age of RCA—1919-1929*. For this work, he received AWA’s Houck award for documentation in 2007.

**RONALD N. YEAPLE, PH.D.**

*Communications History at the AWA Museum*

Dr. Yeaple is retired from the faculty of the Simon Business School at the University of Rochester. Prior to joining the faculty, he was Executive Vice President of the Ritter Company, a $30 million biomedical products company. Previously, he held engineering and product planning positions at Xerox Corporation and General Dynamics Corporation. He holds 7 patents in acoustics, biomedical instrumentation, and electronic publishing, and has authored four books and numerous journal articles and book chapters. Dr. Yeaple earned a Ph.D. in Electrical Engineering and an M.B.A. from the University of Rochester and Bachelor and Master’s degrees in Electrical Engineering from Cornell University.
Ron Yeaple tells us that this will probably be his last Gateway column, since other activities are now claiming his free time. We’ll miss you, Ron, come back if you can! For his last column, Ron departs from his discussion of museum artifacts and tells us about a fascinating assignment, some years ago, that gave him and his wife unusual access to the White House and the Kennedys.

—MFE

Early in my career, I served as Product Manager of Consumer Products for the Stromberg-Carlson Company in Rochester, NY. One day in January, 1961 I received a call at work from a Vice President of General Dynamics, the parent company of Stromberg-Carlson. He asked if I could be in Washington the next morning for a meeting at the White House.

After I got over my disbelief about meeting at the White House, I learned that President Kennedy’s wife, Jacqueline, wanted to surprise the president with a birthday present, a new stereo system for their White House living quarters. General Dynamics was a major defense contractor, and our Vice President thought it would be advantageous if the president’s stereo could be a product of General Dynamics.

The next morning I showed up at the White House and was ushered into the office of General Ted Clifton, the Military Aide to the president, who was in charge of acquiring the stereo system for Mrs. Kennedy. General Clifton was gracious but stated that I was too late. He and Mrs. Kennedy had already selected the stereo, which was to be installed in the second floor Oval Living Room. In fact, he said, the stereo was already here in his office, whereupon he showed me a beautiful oiled-walnut Danish modern stereo console by Ampex Corporation (another defense contractor).

I thanked him for his courtesy in seeing me, and asked if on the way out I could stop by the room where the stereo was to be installed. He escorted me up to the second floor Oval Living Room, which was in the process of being redecorated. There were ladders and drop cloths everywhere. While I was standing there, Mrs. Kennedy came into the room wearing an old sweatshirt and jeans. At first I didn’t recognize her.

General Clifton was kind enough to introduce me and my wife Bev and I pose with one of the bookshelves in the Oval Living Room. The speakers were installed firing up into the recessed clamshell above the top shelf, hidden behind a plywood panel that had actual book backs from the Harvard Classics glued on.

I took the opportunity to ask Mrs. Kennedy what style of furniture she was planning for the redecorated living room. “Antique French Provincial,” she said. This led me to inquire gently about the compatibility of the Danish modern stereo cabinet with her decorating plan.

As an alternative, I suggested, it might be possible to design a custom built-in stereo system that would be completely invisible — no wires, no grille cloth, no cabinet — just beautiful music. (I knew from my experience at home and elsewhere that women hate wires
and grille cloth in their living rooms, and of course the Danish modern stereo cabinet was a complete mismatch to her decorating scheme.)

“That would be wonderful,” she said. At this point, I had no idea how to do this, and General Clifton looked displeased. I asked for a couple of days to come back with a plan for an invisible stereo system, and they agreed.

When I got back to Rochester I thought about the Oval Living Room and remembered that on either side of the entrance there were recessed built-in bookshelves with recessed clamshell decorations at the top, much like the bookshelves we see in photographs of the president’s Oval Office in the West Wing. It occurred to me that we might be able to place the two speaker systems on their backs on the top shelves firing up into the clamshells, which would act like radar reflectors in dispersing the sound out into the room.

The speaker cabinets could be hidden behind vertical plywood boards onto which we would glue actual leather book backs cut from a bound set of the Harvard Classics (the president was a Harvard man). To someone facing the bookshelves, the top shelves would appear to be filled with a set of the Harvard Classics, and the speaker openings, facing upward and well above eye level, would be invisible, as promised — no grille cloth and no visible wires, just beautiful music.

There was a small alcove off of the Oval Living Room in a passageway that connected this room to the president’s bedroom. To hold the electronics, I designed a vertical equipment cabinet of furniture-grade mahogany to fit into this alcove. The controls would be immediately accessible but out of sight in the Oval Living Room, as promised.

In mid-April, the custom cabinet was finished. I rented a station wagon to transport the empty cabinet along with all the separately packed components and speakers to be installed when we got to the White House. The drive down from Rochester was an adventure: a rear tire tread began disintegrating on the way; next, a minor accident occurred when we stopped to get the tire replaced. The station wagon, which had a faulty parking brake, rolled back out onto the street with my wife Bev and the president’s stereo on board; and just before we went over to the White House a waitress spilled a cup of coffee on me.

When we arrived at the White House at the appointed time, we were asked to drop off the equipment and come back a few hours later, after lunch. My guess is that this gave the Secret Service time to go through all the equipment before it was installed. It was at this lunch that the waitress spilled coffee on me. We wiped it off and hoped it wouldn’t be noticeable.

The Signal Corps had pre-installed all the speaker wires and modified the bookshelves per our drawings, so the installation went fairly quickly, with Bev right beside me. A Secret Service agent stayed at my elbow to watch everything I was doing. There was an anxious moment when I turned on the power and a faulty electrolytic capacitor in the power amplifier exploded with a loud “pop” and a hiss of steam. I jumped and the Secret Service agent jumped. I explained what I thought had happened, and I unpacked and installed one of the backup amplifiers I had brought, just in case.

When everything was hooked up, we put on a record and stepped into the Oval Living Room. The sound was magnificent. Without any visual hint of where the speakers were (since they were hidden up in the bookshelves), the music just floated out of the clamshells into the room. And because the clamshells acted to diffuse the sound, there were no high frequency beams or hot spots that are so distracting when listening to stereo with conventional speakers. The music sounded perfectly balanced throughout the room.

General Clifton was delighted with the installation and took a number of snapshots that he subsequently mailed to us. Bev and I were given a tour of the White House, including the West Wing. As we passed the Cabinet Room, the doors suddenly opened and Bobby Kennedy, Robert McNamara, and a number of others we recognized hurried down the hall. A few days later we learned that the secret Bay of Pigs invasion of Cuba, which would end up in defeat and embarrassment for the Administration, had begun while we were there.

Toward the end of the afternoon, despite the bad news that he was now receiving, the president took a few minutes to come upstairs to listen to his new stereo system, and we had the opportunity to meet him. He
asked if there was anything he could do for us. We thanked him for the opportunity to create this system for his living quarters in the White House and requested an autographed photograph, which he provided. I had just turned 26 years old, and I wondered at the time, what in my future career could possibly top this!

The president was pleased with his new stereo system, and a few weeks later he ordered a set of extension speakers for his bedroom, which was next door to the Oval Living Room. He also ordered a top-of-the-line Stromberg-Carlson console as a state gift for President Bourgiba of Tunisia. And in December, the White House ordered still another Stromberg-Carlson stereo console. Apparently we had achieved the objective of the General Dynamics vice president to build brand awareness of Stromberg-Carlson and General Dynamics Corporation at the highest levels in the White House.

In an interview some time after the president’s assassination, Jacqueline Kennedy recalled that she and the president often spent quiet evenings in the Oval Living Room listening to records. His favorite recording was the music from “Camelot.”

Years later, Bev saw a picture in a magazine of the Oval Living Room taken during the Johnson Administration. Lady Byrd Johnson was in front of the bookshelf, facing the camera. The speakers were still in the top shelf.

Note: Versions of this story were previously published on Forbes.com and in the Canandaigua NY Messenger.

Members’ Corner
News of Particular Interest to the AWA Membership

YOUR AMAZON PURCHASE CAN BENEFIT AWA

Most of us use Amazon frequently to buy books and many other items. Please consider using “Amazon Smile” to make your next Amazon purchase. If you do, Amazon will donate 0.5% of that purchase to a designated charity of your choice at no cost to you. You can access Amazon Smile by going to https://smile.amazon.com/. After you sign in using your normal account and password, type in AWA as the designated charity, and select A.W.A. Electronic Communication Museum (which, for now, is our official corporate name). Then make your purchase(s) as usual. AWA will receive a donation of 0.5% of the amount of your purchase. Easy money!!

MARK YOUR CALENDARS FOR THE 2015 AWA CONVENTION!

The dates for the 2015 AWA Convention are Tuesday, August 11 to August 15, 2015. Many fine presentations, a flea market and opening of the AWA Phase II Museum project are scheduled. A schedule of presentations and other details are available at: http://www.antiquewireless.org/annual-convention.html

A SPECIAL BENEFIT FOR AWA MEMBERS

Radio Daze at www.radiodaze.com has offered current AWA Members a discount of 8% on all purchases. Now you can buy all your restoration supplies and receive a special AWA member’s-only discount. When ordering for the first time, AWA members need to use the coupon code AWAMEMBER. Once you use that coupon code, your current AWA membership will be confirmed and your on-line account at Radio Daze will be coded with the discount for future purchases. This special 8% discount is only available to current AWA members. In addition, free shipping will be provided for purchases of $150 or more.
By the 1920s, Sonora Phonograph Company, Inc. was a large and well-established manufacturer. It is variously stated to have been an outgrowth of the Sonora Chime Co. in 1907 (From Tin Foil to Stereo) or to have been established in 1913 (Poor's Manual of Industrials, 1924-1927). In 1926, George E. Brighton, maker of True Blue Tubes, claimed to have founded Sonora and was, indeed, listed as board chairman in 1924.

At any rate, it was a large company with gross yearly sales of several million dollars. But it had nowhere to go if it dealt only in phonographs. So Sonora added radios to its line. The sets were not made in its own plants, but bought from Wireless Specialty, Ware, Splitsdorf, or American Bosch.

Perhaps because the company was run by investment bankers rather than phonograph or radio people, Sonora seems to have gone through more than its share of mergers and financial deals. As early as 1917, its western distributorship became a founding part of Magnavox. In 1924, a number of other distributorships merged into one Sonora company. Then, in 1927, Sonora and some allied companies merged into the Acoustic Products Co.

In mid-1928, the DeForest company was supposed to join, but somehow a large block of its stock was bought by various individuals instead of by the holding company, then resold at considerable personal profit. This affair was the subject of a lawsuit in 1931.

In early 1929, Consolidated Radio Laboratories (Arborphone) was scheduled to join Sonora. Perhaps it did make the model line introduced in October 1928, but shortly afterward Arborphone merged with United Reproducers.

On July 10, 1929, several board members resigned. Then, almost immediately, Acoustic Products bought Federal in Buffalo for $225,000. The company name was officially changed back to Sonora in September, 1929. But it hardly mattered as the company went into receivership in December (followed closely by United Reproducers) and its assets were auctioned in September, 1930.
During the 1940s and 1950s, I envied those living in any city large enough to have radio stations affiliated with all four networks. Since I was growing up in one of the Midwestern rural prairie states with vast open spaces, my ability to hear all available network programming was limited, although I definitely tried to meet the challenge.

The challenge involved the interrelated factors of population, distance, and radio wave propagation. South Dakota had (and has) relatively few people, mostly separated by large tracts of ranch and farm land. In the fifties, Sioux Falls, the largest city, had a population of only 50,000, and only one other city exceeded 10,000. Since the number of potential listeners was limited, relatively few stations existed and most were small.

The towns with small stations were quite far apart and not many were near my town. Some stations broadcast only during the day, and at night only one South Dakota station could be heard at my location consistently without major interference.

So my daytime listening differed in many ways from my after-dark experiences. During the day, I could get all four major networks, although not every available program was carried by all affiliates. I was limited to one good CBS, one good Mutual, one good ABC, and one fair NBC signal. During spring and summer thunderstorms, only the CBS station overcame the atmospheric electrostatic interference, although a lower powered station was much closer.

I enjoyed all radio listening including local programming, but became aware at an early age that network programming was more likely to be of greater entertainment value and that non-network programs were likely to have more news. So I was very interested in networks, their programs, and their affiliations, and wondered which programs were being broadcast, and by whom, at any given hour. Of course, people in the industry were interested in the same things, leading to my favorite, and only, network joke.

Molly, of Fibber Magee and Molly fame, was once talking about an issue, and said that a certain approach should be a “National policy, as it was the American way, and if the feeling isn’t Mutual, I’ll give you Hail Columbia.” More about the writing for that program later, but it was a good show for pun lovers. Giving someone “Hail Columbia” was then an expression meaning expressing strong disagreement, a phrase no longer used much.

The December 2014 Atlantic magazine mentions that in 1948 about 85% of AM stations in the USA were affiliated with one of the four major networks. Not for me to say I know better, but I think that number is much too high. About 50% of the small city stations I have heard had no major network connection and the major cities with 20 or more stations typically would not have more than four permanently network-affiliated stations. Maybe a couple more would affiliate temporarily for special situations. The networks and their stations were zealous in guarding their exclusive coverage in the listening areas involved.

I could hear few, if any, Mutual programs after dark. My local consistent strong signal was that of WNAX, Yankton, South Dakota which was ABC until 1950 when it completed a well-publicized switch to CBS. NBC, which had some of the best programs for me, the Monday night music lineup and Fibber Magee on Tuesday nights, was a challenge. In order to hear a program in its entirety after sunset, one had to be ready to change dial positions due to the fading of signals from distant stations.

There were several 50,000 watt stations that we could pick up in our town due to our being in the vast multi-state prairie region with no mountain interference within 300 miles in any direction. So we would start listening on one distant station and after ten minutes or so move on to another from a different direction.
when propagation caused the first station’s signal to fade. So if asked on which station I heard Fibber Magee, my precise answer could have included stations in Chicago, Omaha, Albuquerque, Salt Lake City, Kansas City, Denver, or Dallas. Fortunately, most 30 minute programs could be heard with the help of only two stations.

Since I enjoyed almost every type of radio programming, I did not mind at all listening to any network, or to any local station. Narrowcasting as practiced today (for example with one style of music full time for a demographically defined market) was unknown. Almost all stations in my region had a wide variety of programming, a variety of recorded music (live music at some stations), network offerings, news, weather, and community announcements. Most stations then could be described as full service community-oriented operations.

In the earlier days of broadcasting, for a station to transmit a wide variety of popular, classical, country (known also as Western, or hillbilly), and sacred music was not unusual. As more stations came on air, specialization increased with classical being heard on the fewest stations. Popular and country on the same station at various times of day was very common.

Eventually some stations became country only, at the time rarer than popular or mixed formats. Such stations were usually in cities which already had popular music outlets. Almost every station carried some sacred music on Sunday mornings, as well as weekday mornings shortly after sign-on at 5 or 6 a.m. A company music program tradition was to do a sacred song about once an hour, usually as the windup song. Even the Grand Ol Opry followed that practice.

Live music in my part of the country was usually either country or dance (of the polka, waltz, and schottische variety). Major city stations had bands, orchestras, soloists, or groups of vocalists. In some cases, the musicians were full-time paid employees of the station that often performed off-air at various venues because of their radio-generated regional fame.

Some other narrowcasting formats that I recall included full-time polka stations, one in Columbus, Nebraska, and one in New Ulm, Minnesota, “KNUJ Polka Station for the Nation” being its station break ID theme. Educational stations I heard were KUSD, Vermillion, voice of the University of South Dakota, and WOI, Ames, operated by Iowa State University. Those stations broadcast significant amounts of classical music and had some excellent children’s programming as well.

Hourly newscasts were not normal until the fifties. So radio news was apparently of minor interest to anyone until World War II. Most stations had about four newscasts per day, usually 15 or 30 minutes each. Full time news, sports, or talk stations? Not until some Chicago, New York, and Los Angeles stations (the big 3 cities of broadcast history) initiated “all news, all the time” formats in the sixties.

Network stations carried national commentators in addition to local newscasts. Some famous names: Lowell Thomas, Gabriel Heather, Elmer Davis, Fulton Lewis, Jr., Edward R. Murrow, Drew Pearson and dozens of others were heard nationally at one time or another for many years, especially before television news became the standard electronic news dispenser. Walter Winchell, Louella Parsons, Hedda Hopper, and Jimmy Fidler covered the celebrity news and gossip formats. One of the longest lasting news commentators was Paul Harvey, popular in middle America from the late forties until the 2000s.

We listened regularly to Mexican stations, broadcasting from just south of the border. They were allowed to operate at 150,000 watts, three times that allowable by U.S. stations, and consequently they easily reached most of the United States. At that time, border Mexican stations broadcast in English. Virtually no American stations then broadcast in Spanish. Times change, right?

The “border blasters” had an interesting mix of country music, preachers, and “quacks” pushing questionable medical procedures and medications. Commercial spiels were very long, maybe up to five minutes for one product. The most intriguing one for me was a tablecloth covered by a picture of Jesus which glowed in the dark. We did not get one.

In the next issue: middle of the night sounds, farm radio, and programming with women in mind (if I control my tendency to digress).
last month, we concluded our coverage of third-party service literature — that is, collections of service information, covering specific radios, published by sources other than the manufacturer. After you have been active in the hobby long enough to develop preferences for particular makes, you may also become interested in collecting manufacturer-provided service information. A discussion of such material is beyond our scope, but good examples are the yearly service notes that were published by RCA and Philco.

RADIO SERVICING BOOKS

There are many books originally published for the radio service trade that are just as useful to today’s rehabbers and restorers. And in addition to their value as source materials, they are collectibles in their own right. This is a very large playing field. However, I think it’s worth mentioning a few of the most obvious classics and some of my own personal favorites. Forgive me if I happen to leave out some of yours!

Keep an eye open for the McGraw-Hill radio servicing books published during the 1920s, 1930s and 1940s. They’re easily recognizable by their drab-green bindings and gold lettering. A series written by Moyer and Wastrel (which includes Practical Radio, Radio Construction and Repairing, and Radio Receiving Tubes) is very helpful in understanding the technology of the 1920s. Another McGraw-Hill book, Principles and Practice of Radio Servicing (editions published in 1939 and 1943), offers insights into radios of a later period.

Alfred A. Ghirardi wrote two 1930s classics that belong in every collector’s library. Modern Radio Servicing (Murray Hill Books) is a treasure-trove of practical troubleshooting information. A more theoretical approach to radio is provided by Radio Physics Course (Radio Technical Publishing Co.).

First published in the late 1930s was Ghirardi’s Radio Troubleshooter’s Handbook. Billed as the companion book to Modern Radio Servicing, it is loaded with case histories of actual problems in specific radio receivers and also contains much useful appendix material.

Another sought-after service publication of the era is Official Radio Service Handbook by J. T. Bernsley (Gemsback Publications, 1936). This is a little like Ghirardi’s Modern Radio Servicing and Radio Troubleshooter’s Handbook rolled into one. It contains practical radio servicing techniques, case histories of actual repair problems with specific receivers and a variety of useful reference material.

At the beginning of this series of articles, we spent quite a bit of time on John Rider’s massive, multi-volume, Perpetual Trouble Shooter’s Manual. But this prolific author also wrote and published many short, highly-focused books on specific aspects of servicing. These include the 1930s releases Servicing Superheterodynes, Practical Testing Systems, The Oscillator at Work, and various titles in the An Hour a Day With Rider series.

For help in understanding 1940s and 1950s technology, I often find myself referring to the work of another widely-published radio writer, William Marcus. Useful books you might come across are Practical Radio Servicing and Profitable Radio Troubleshooting (both written in collaboration with Alex Levy and published by McGraw-Hill—which, by this time, had abandoned the drab-green binding for a spiffier two-tone blue one) and the more theoretical Elements of Radio (written with Abraham Marcus as a War Department training course and published by Prentice-Hall).

TEXTS AND “HOBBY” BOOKS

Though we’ve certainly hit some of the high spots, we’ve hardly done justice to the wealth of radio service
material waiting out there for you to discover. And there are other areas which we can’t even begin to cover. These include books on radio theory primarily written for engineers (by such authors as Terman and Henney) as well as the vast range of volumes written over the years for radio hobbyists. A few of the former should be in every serious library as a reference source for theoretical questions. As to the latter, pick up as many as you can! They are invaluable in conveying a feeling for the exuberance and romance surrounding the radio hobby in the twenties, thirties and forties. And many provide construction details for receivers and other equipment that would be as much fun to build today as they were decades ago.

A few of my favorites, all of which turn up fairly regularly at radio meets and/or are available in reprint form: Radio for Everybody by Austin C. Lescarboula (Scientific American Publishing Company, 1923). Great review of 1920s radio theory and practice; some construction details on simple sets. Gernsback’s Educational Library (Radio Publications, New York, NY, 1938), a set of ten pamphlets for radio beginners that you can spot by their small size (about 5” by 6”) and comic-book style covers. These provide interesting orientation material for new hobbyists, including a smattering of theory, simple radio experiments, practical antenna designs, and construction details for allwave receivers.

Finally, a favorite from my own boyhood, Radio For the Millions (Popular Science Publishing company, 1943). This volume is crammed with lavishly-illustrated servicing tips, as well as construction details on a variety of receivers from the simple to the exotic. The high percentage of eccentrically-packaged projects (including radios built into bookends, flour canisters and lamps, a “letter radio” that can be mailed and a “twin-bed” radio that can be tuned from either side) makes this volume a browser’s delight.

PERIODICALS AND OTHER MATERIAL

Almost everyone enjoys reading vintage trade and hobby periodicals. The advertising in these publications is as interesting as the editorial material. Together they are invaluable in helping us understand the equipment of their eras and the context in which it was used. Once again, we can hardly begin to name all of the ones you might come across. But among the best known are The Electrical Experimenter (pre-broadcast era radio), and the later Radio News, Radio Craft and Short-Wave Craft.

Be sure not to neglect the broader-based hobby magazines of the Popular Science variety, or the periodicals designed for general readership (especially those aimed at middle-class and carriage-trade audiences). Magazines in the latter categories, such as The National Geographic and Saturday Evening Post, frequently carried detailed ads, usually larger and more colorful than those in the hobby and trade mags, featuring radios and other luxury items.

It’s ironic, by the way, that bound volumes of the Geographic found in libraries often have had most, or all, of the ads removed. Presumably because it was felt that such material was of only ephemeral value. So the historian who goes that route to find vintage product illustrations is apt to be disappointed.

There are many other categories of radio-related print material that we can only mention here. They include promotional materials (aimed at both the professional and consumer trade), packaging, catalogues and instruction manuals. I’d suggest keeping your eyes peeled for print and paper items whenever you browse through book stores or attend swap meets. Even if you don’t have a major commitment to collecting in this area, you’re sure to come across many items that will provide valuable reference material or enhance your enjoyment of our hobby. You will also be rescuing these items from the possibility of being mishandled or trashed by less-knowledgeable people, thus saving them for the use and enjoyment by future generations of historians and hobbyists.
Many radios manufactured between 1935 and 1940 are very collectible. Not only had the technology improved from earlier in the decade, but many of these radios featured innovations that made them especially interesting. These included “tuning eye” tubes and elaborate dials with lights that were switched to highlight the band that was in use. Some Philco radios from this period used a line of light to serve as the dial marker. It moved up or down to the band in use. (Also prized by collectors are the Zenith “shutter dial” radios that featured a mask that moved with the bandswitch to reveal only the band in use. —Ed)

In 1935, RCA introduced metal vacuum tubes and octal base tubes. Nearly all radios manufactured during or after 1935 used octal-base tubes. This helps a person determine approximately when a radio was manufactured. In many cases, the internal design of earlier tubes was retained, with only the base and nomenclature being changed. For example, the Type 80 was an early full-wave rectifier; when repackaged with an octal base, it became the 5Y3G.

The use of “tuning eye” tubes, more properly known as electron-ray tubes, was supposed to make tuning more accurate, but it was primarily a marketing feature. Most used 6ES, 6GS or 6US tubes, which had a green disk with a dark wedge at the bottom. They were essentially indicators of the automatic volume control voltage and thus could be used to indicate when tuning was optimum. A stronger signal caused the width of the dark wedge to become narrower. Some Zenith radios used a 6T5 “bull’s-eye” tuning indicator.

The 6T5 tube operates in a similar manner to the other tuning eye tubes, but indicates a strong signal by changing the diameter of a green circle. 6T5 tubes in good operating condition are rare and expensive.

During the late 1930s, many people who lived in rural areas did not have electricity. Philco and Zenith teamed up with wind generator companies to offer radios for these customers. I have included a Philco ad from the November 1937 issue of Farm Journal that describes the offer for the combined purchase of a wind generator called the “Sky Charger” with a new radio. The wind generator partner that Zenith worked with was “Wincharger.” Silvertone also offered a wind generator in Sears catalogs.

Most wind generators provided six-volt DC power and were similar to those used on automobiles, but 12 and 32 volt generators were also used. The wind generators charged lead-acid storage batteries. Generator power output was low, often less than 100 watts, but it was sufficient for a radio and a small electric light. I remember seeing some of these wind generators still in use on Kansas farms in the 1950s.

Radios designed for operation from these DC power sources used vibrator power supplies similar to those that had been developed for automobile radios. These “farm radios” can be identified by the fact that they have a plug-in vibrator installed among the vacuum tubes on the chassis.

Over the years, I have owned or worked on many radios from the late 1930s, including a 1935 Atwater-Kent, a 1938 Philco, and a Grunow console. But the radio that I am restoring now is a 1937 Model 4485 “Golden Jubilee Special” 8-tube Silvertone console that belonged to my wife’s grandfather. Collecting and restoring a radio that was owned by a family member can make that radio special even if it is otherwise common.

The original owner of this 1937 Silvertone console radio was Walter S. Shipp, but everyone in the family called him “Pop.” He lived on a small farm near Marshall, Texas. When I worked at Texas Instruments in Dallas, my wife and I often made weekend trips to visit her grandparents. I spent many enjoyable hours visiting...
with Pop on the back porch of his house.

Pop was a remarkable man. He graduated from business college but preferred to work as a brakeman and conductor on the Texas & Pacific railroad. He did this for his entire career, from before World War I until the end of World War II. Pop told me that he really enjoyed his work with the railroad and never regretted his career choice. During the Great Depression, rail traffic decreased and Pop worked reduced hours, but he still saved up enough money to buy his family this new Silvertone radio.

Pop's family enjoyed listening to a number of programs on this radio, including the historic 1938 Halloween broadcast of Orson Welles' “War of the Worlds.” They heard the introduction to the program so they knew it was fiction and that the world was not actually being invaded by Martians. Pop’s favorite programs were “The Grand Ole Opry,” originating from station WSM in Nashville, Tennessee, and “Louisiana Hayride” broadcast by radio station KWKH in Shreveport, Louisiana.

This radio has two shortwave bands, and the family occasionally listened to broadcasts from international stations. They recalled tuning into one of Adolph Hitler’s ranting speeches broadcast from Germany. Although no one in Pop’s family understood the German language, they concluded that Hitler was a bad man and “up to no good.”

By the time I was married in 1967, the old radio was no longer working. Pop was legally blind and spent most of his time sitting on the back porch in a rocking chair, so listening to a radio was important to him. He had a newer radio, but Pop told me that he really missed the old Silvertone because it had excellent sound.

On one of my trips to Marshall in the early 1970s, I brought along a few tools and parts in the hope that I could get the old radio working again. I replaced the power cord and the filter capacitors. While the radio needed additional repairs, it came back to life, making Pop very happy.

My mother-in-law inherited the radio after Pop died, and my wife and I inherited it later. When I brought the set to our home in Kansas, my children wanted to know if the old radio still worked. I used a short length of hook-up wire for an antenna and cautiously turned on the power. When the dial lights came on, one of my sons immediately said, “Aw, it doesn’t work.” I explained to him that old radios need to warm up before they work.

About that time, we heard noise coming from the speaker. I adjusted the tuning, and we immediately heard an announcer identify the station as WOAI in San Antonio, Texas. I had just moved the radio 500 miles from Texas to Kansas, only to have but the first station we heard be in Texas!

The radio needs to be completely restored to work properly. The volume control is defective and the audio is distorted. One of the pot metal ears that supported a dial light is broken off. More than 50 years of operation and storage in the hot, humid East Texas climate caused most of the wiring insulation to deteriorate. We decided to set the radio aside until I had an opportunity to properly restore it. While this 1937 Silvertone radio is special to me, it is only average compared with radios that were manufactured in the late 1930s. It has a 6G5 “tuning eye” tube which makes it interesting. The large dial has an impressive appearance and features a pointer that moves through an arc of more than 300 degrees. It also has an unusual audio output circuit that uses a 6N6G dual triode tube. A Silvertone radio catalog from this period indicates that this radio was one of the least expensive console radios they offered at the time, with a retail price of $42.50.

In recent years, I found and purchased a spare chassis of the same model that is supposed to be in working condition. Even if it is not, it will provide many spare parts that might be hard to find otherwise, including a tapped volume control with switch. I also set aside spare vacuum tubes that I know are good, and tracked down a schematic diagram to help me with restoration. My goal is to make this radio look as good and work as well as it did the day Pop brought it home from the local Sears, Roebuck and Company store.

My wife’s grandfather’s radio, now being restored, features a tuning eye indicator and a dial pointer with an arc of over 300 degrees.

When I became interested in collecting and repairing antique radios, one of my first purchases was the complete set of Rider’s Perpetual Troubleshooter’s Manual, plus annual indexes aggregated in several different time periods. These manuals did and still do provide schematic diagrams covering more sets than any other manual for the years from the inception of broadcast radio in the early 1920s to the year 1954.

While the first manual was published in 1931, the radios go back to the early 1920s. This manual was the brainchild of John F. Rider, who was a radio engineer with an interest in radio and television repair, and a prolific writer of books on the subject in addition to this series.

During the 1920s, Rider contemplated a series of manuals published on an annual basis containing schematic diagrams useful to the radio repairman. He met with various radio manufacturers during this period in an attempt to convince them to provide official schematic diagrams of their radios for inclusion in such a manual. The manufacturers were initially very skeptical, to say the least, but he ultimately succeeded in persuading a number of manufacturers to participate in his endeavor.

The manufacturers ultimately saw the wisdom of cooperating with Rider for various reasons, some to receive free advertising and others to enable local servicemen to repair their radios without having them returned to the factory. Rider’s concept was to begin with the first volume covering radios back to the beginning of the broadcast radio era in 1921 to the date of the first volume. According to the introduction appearing in Vol. I, it was to become the nucleus of a “perpetual series of such books and a perpetual library of service information,” hence the word perpetual in the title. Each volume would pick up where the last one left off, thereby avoiding duplication.

To this end, Rider collected schematics and assembled them into a prototype for his first volume in March of 1931. He then published four versions of Vol. I in 1931 and two versions of Vol. II in 1932, but he had trouble coping with the plethora of schematics he was accumulating and failed to come up with a workable page indexing system. The next year, RCA agreed to help Rider assemble and print Vol. III, and in the process introduced a new numbering system that turned out to be quite viable.

RCA published Vol. III with the RCA meatball logo and “RCA Radiotrons” on the cover in bold letters in the center and the words Complete Perpetual Troubleshooter Manual in smaller print at the lower right, followed by John F. Rider in even smaller print.

The same version was also published with a slightly different cover entitled Cunningham Radio Tubes with the large “C” Cunningham logo. The word “Complete” on both covers referred to the fact that all schematics from the first three years were included in this thick volume printed by RCA with thinner paper than Rider had used in the first two volumes. There are also versions of these manuals without the word “Complete” on the cover that contains Vol. III only.

The new page numbering scheme was quite simple. The manufacturers were organized alphabetically. The first number on every page in any given volume corresponded to that volume number. The second number on each page began with the number “1” at the beginning of each manufacturer’s section, and increased sequentially for that section. New pages could be added at any time for any manufacturer without altering the numbering of existing pages, and the servicemen could aggregate the schematics by manufacturer if they so desired.

Rider decided to adopt the new page numbering system, but was then faced with the problem that the numbering of the first three volumes was inconsistent with it. In the end, Rider reprinted the first three volumes with the new numbering system, and accommodated those who owned the original versions by including all three numbering systems in the cumulative index, which appeared in three separate columns with the headings: “Page,” “Early Page,” and “R’tron Page.”

Rider later introduced an abridged version of the manual covering the first five volumes, which required a renumbering of the pages in the abridged version. He published a separate index for the abridged version, but also included page numbers for the abridged version in his Master Index for Vol. I – XV published in 1947 by adding a column labeled “Abgd. Page.”

A variety of cumulative index combinations were published, some of the more popular ones being Vols. I – X published in 1939, Vol. I – XV published in 1947, Vol. XVI – XII published in 1951 and Vol. XXIII published in 1954. The last three together constituted a master index for the complete set. There are many other combinations such as Vol. I – VII published in
1936, and Vol. XI – XII published in 1941, to name just a few.

As far as content goes, the manuals contain schematic diagrams, wiring diagrams, chassis layout and tube locations, part numbers and values, voltage and resistance values, alignment information, etc. There is little uniformity in the content—it was mainly whatever the manufacturers chose to provide that year. Resistance and capacitance values are missing in some cases, particularly for the earlier sets from the 1920s. There is little else to say about the content, except that Rider’s was the gold standard for repair manuals for twenty three years, containing the most information on the largest number of sets.

To be sure, there were competitors, but they focused on abridged versions containing only the most popular sets. Rider stopped publishing his manuals in 1954 for several reasons, but the main reason was most likely competition from Howard W. Sams Publishing founded in 1946. Sams introduced the Photofact™ service folder, which included all the information in the Rider manual, and in addition had large photographs identifying parts and locations, and also had written service information. Sams also included television, audio equipment and other equipment types.

Publication of Rider’s manuals ceased long ago, but there are two ways of obtaining a complete set. The first and easiest way is to purchase a set of CDs containing all the volumes and indexes for Volumes I – XXIII from on-line vendors. There are several vendors that can be found on eBay offering sets of Rider CDs for $10 to $17. Be sure to look for high-resolution versions. For those who want the original hard copy, the books can also be purchased on eBay or found at swap meets and websites that offer service information. For those who want more detailed information on John F. Rider or his manuals, consult the following two references containing a great deal of information unavailable elsewhere.


Clubs That Will Welcome You

- The Antique Radio Club of Illinois (ARCI) — Meets bi-monthly. Meets generally held at the American Legion Hall, Carol Stream IL but meets in June in conjunction with the 6-Meter Club of Illinois at the DuPage County Fairgrounds and once per year for Radiofest at the Willowbrook Illinois Holiday Inn. Check website for schedules, details and maps.) Contacts: President, Olin Schuler oshuler@comcast.net; Club Public Contact, Art Bilski, 630-739-1060, clubinfo@antique-radios.org. Website www.antique-radios.org.

- Antique Radio Collectors of Ohio — meets first Tuesday of each month at 2929 Hazelwood Ave., Dayton, OH (4 blocks east of Shroyer Rd. off Dorothy Lane) at 7 p.m. Also annual swap meet and show. Membership: $10.00 per year. For more info, contact Karl Koogle: mail to above address; phone (937) 294-8960; e-mail KARLKRAD@GEMAIR.COM.

- California Historical Radio Society — For info on current meetings, call the CHRS hotline: (415) 821-9800.

- CARS, the Cincinnati Antique Radio Society — Meets on the third Wednesday of each month at Gray’s History of Wireless Museum, which is part of The National Voice of America Museum of Broadcasting, Inc., located in a building that is now on the National Historic Register at 8070 Tylersville Road, Westchester, Ohio. 45069. For more information contact Bob Sands at (513) 858-1755.

- Carolinas Chapter of the AWA — Hosts four “mini-swap-meets” each year (in January, May, July and October) plus an annual conference, “Antique Radio Charlotte,” on the 4th weekend in March. Executive committee meets approximately quarterly. For more info, visit the website at CC-AWA.ORG or contact Ron Lawrence, W4RON, Chapter President, P.O. Box 3015, Matthews, NC 28106-3015; phone (704) 289-1166; e-mail W4RON@carolina.rr.com.

- Central Ohio Antique Radio Assn. — Meets on the third Wednesday of March, June and September at 7:30 p.m. Swap meets: “Cabin Fever” in January and outdoor tailgate in July. December Christmas party. For more info contact Barry Gould at 614-442-1518 or Dave Poland at 614-890-5422 or http://coara.org/.

- Delaware Valley Historic Radio Club — Meeting and auction begins 7:30 p.m. on the second Tuesday of each month. Location: Telford Community Center on Hamlin Ave. in Telford, PA. Annual dues: $15.00, which includes a subscription to the club’s monthly newsletter The Oscil-lator. For more info contact Delaware Valley Historic Radio Club, P.O. Box 5053, New Britain, PA 18901. Phone (215) 345-4248.

- Houston Vintage Radio Association (HVRA) meets the fourth Saturday (January thru October) at Bayland
Park 6400 Bissonnet, 9 a.m. in SW Houston. Each meeting includes an auction and program. Annual two-day convention held in February includes three auctions, old equipment contest, technical talks, swap meet, and awards banquet. One day MEGA auctions held in the spring and fall. A newsletter, The Grid Leak, is published bi-monthly. Event postings, announcements, photos and other features are available on HVRA website: www.hvra.org. Membership is $20/yr. Address: HVRA, P.O. Box 31276, Houston TX 77231-1276 or call Bill Werzner, 713-721-2242; email: werz1943@gmail.com.

• Hudson Valley Antique Radio and Phono Society [HARPS] — meets the 3rd Friday of the month 7:30PM at the Episcopal Church of Suffern Annex, 65 Washington Ave., Suffern N.Y. 10901 for info contact Rev. Dale Cranston at (845) 357-1615 or dale.cranston@gmail.com.

• Indiana Historical Radio Society — Active since 1971. Meets in Feb. (Lawrence), May (2-days, Kokomo) and Oct. (Greenfield). Flea market, old equipment contest, and auction at all events. Meet details and club info at website www.indianahistoricradio.org. $15.00 annual dues includes the IHRS Bulletin published quarterly. Contact Herman Gross, W9ITT, 1705 Gordon Dr., Kokomo, IN 46902, 765-459-8308, email w9itt@comcast.net.

• London Vintage Radio Club — This Ontario, Canada club meets in London on the first Saturday of January, March, May, and November. Annual flea market held in Guelph, Ontario in June. Contact: Dave Noon, VA3DN, 19 Honeysuckle Cr., London, ON NS Y 4P3, Canada. Email: va3dn@execulink.co. Website: http://lvrc.homestead.com/index.html.

• Mid-Atlantic Antique Radio Club (MAARC) — Meets monthly, usually on the third Sunday of the month at the Davidsonville Family Recreation Center in Davidsonville, MD. (But meets once or twice a year in Northern Virginia—check website for schedules, details and maps.) Contacts: President, Steve Hansman, 855 Arundel Drive, Arnold, MD 21012, (410) 974-0561, email: shans01a@comcast.net; Membership Chair, Geoff Shearer, (703) 818-2686, email: gshearer2@verizon.net. Website www.maarc.org.

• The New Jersey Antique Radio Club — Meets the 2nd Friday of the month 7:30 p.m. at either Info Age 2201 Marconi Rd. Wall Township N.J. 07719 or Bowen Hall, Princeton University. We hold three annual swap meets and four seasonal repair clinics. Visit the club’s website for details www.njarc.org or contact NJARC President Richard Lee (914) 589-3751 or president@njarc.org.

• Northland Antique Radio Club (Minneapolis/St. Paul) — hosts four events with swap meets each year (in February, May, September and November) including an annual conference, “Radio Daze,” for two days in mid-May. Annual dues are $12.00, which includes a subscription to the club’s quarterly newsletter. For more info, visit our website at www.northlandantiqueradioclub.com.

• Northwest Vintage Radio Society — Meets the second Saturday of each month at Abernethy Grange Hall, 15745 S. Harley Ave. Oregon City, OR. Meeting starts at 10:00 a.m. Membership $25.00 per year. Guests welcome at all meetings and functions except board meetings. Spring show, the second Saturday in May. For more information, contact Mike McCrow 503-730-4639; e-mail: tranny53@comcast.net.

• Oklahoma Vintage Radio Collectors —Meets second Saturday of each month, (except for April, October, and December), at Hometown Buffet, 3900 NW 63rd St., Oklahoma City, OK. Visitors welcome. Dinner/Socializing, 6 p.m., meeting, 7 p.m. Swap meets on second Saturday in April and October at 8 a.m., Midwest City Community Center, 100 N. Midwest Blvd., Midwest City, OK. Membership $15/year including monthly Broadcast News. Info: contact Jim Collings at (405) 755-4139 or jrcradio@cox.net. Website: www.ovrc.org.

• Ottawa Vintage Radio Club — Usually meets the second Wednesday of every month (except July and August) in the Conference Room, Ottawa Citizen, 1101 Baxter Rd., Ottawa, Ontario, Canada. Auctions in October and May. Call Paul Guibord (613-523-1315), or check www.ovrc.org for details.

• The Pittsburgh Antique Radio Society welcomes visitors to our Saturday flea markets, contests and clinics held at least four times yearly. A fall auction is included in September and our annual luncheon program is on the first Saturday in December. An annual Tri-State Radio Fest is held in April. Our journal, The Pittsburgh Oscillator, is mailed quarterly. For more information visit us at http://www.pittantiqueradios.org, email President Chris Wells at radioactive55man@comcast.net, or phone Treasurer Tom Dixon at 412-343-5326.

• Society for Preservation of Antique Radio Knowledge (SPARK) — Meets monthly at Donato’s Pizzeria, 7912 Paragon Rd., Centerville, OH. Annual swap meet. Membership $15/yr. Write SPARK Inc., c/o Dan Casey, 10075 Morrow-Rossburg Rd., Pleasant Plain, OH 45162 or call Dan Casey at (513) 265-8466 or e-mail dansradioland@gmail.com.

• Texas Antique Radio Club — Meets alternate months in Kyle and Sherertz, TX. Contact: Doug Wright, 625 Rolling Hills Dr., Canyon Lake, TX 78133. Email: dwjw@gvtc.com; website www.gvtc.com/~edengel/TARC.htm.

• Vintage Radio and Phonograph Society (VRPS) meets monthly on the third Saturday. Located in the Dallas, Fort Worth Metroplex, our current activities are annual convention, auctions, swap meets, repair training sessions and monthly programs. For details visit our website www.vrps.org, or by contacting VRPS President Jim Sargent at (817) 573-3546 or bsargent@swbell.net.
The Antique Wireless Association is an organization of about 2000 international members linked by a common interest in the history of electrical and electronic communications. AWA members come from all walks of life and our ranks include teenagers, octogenarians, and beyond in both directions. At one of our meets, you might find yourself shaking hands with a retired broadcast executive or military electronics specialist, an engineer in a high-tech electronics firm, or an eager young person looking for advice on restoring his or her first radio.

The organization was started in 1952 by Bruce Kelley, George Batterson, and Linc Cundall—amateur radio operators and radio collectors from upstate New York. Their initial goal was to establish a museum where they could collect and preserve early wireless and radio equipment and historical information before it was lost to future generations. Decades later, their legacy continues to motivate our members.

Some of us are most interested in the technical background behind the epoch-making discoveries that now make it as easy to communicate across the globe as around the corner. Others enjoy the romance surrounding the men and institutions that put these discoveries to work: the maritime radio operators who averted disasters with their alert ears and quick thinking; the short-wave stations that radiated glimpses of exotic cultures and mindsets; the giant radio networks that delivered unparalleled entertainment and timely news to our homes while hawking toothpaste, cigarettes and soap flakes.

Though AWA members share this common interest, which many can trace back to early childhood, they express it in different ways. Some of us collect radio-related literature and manuals. Others collect and restore hardware: Morse keys and sounders, battery radios of the 1920s, telephones, advertising signs, cathedral and console radios—you name it! Collections can become very specialized, restricted to such things as radio components crafted of shiny Bakelite and gleaming brass or perhaps the fragile and intricate vacuum tubes that made the communications miracles possible.

Among our members are meticulous craftsmen who enjoy replicating vintage receivers and/or transmitters. Those who are licensed amateurs frequently operate such equipment in special communications events sponsored by the AWA.

In addition to the commitment to the preservation of historical artifacts and background materials at our Museum, AWA also publishes *The AWA Journal* and *The AWA Review*. The *Journal* is a quarterly publication that gives our multi-talented members an outlet to share their historical research, equipment restorations, troubleshooting and servicing tips and other information of common interest. *The AWA Review*, which also publishes member contributions, contains more extensive and scholarly papers. It is published once a year.

*The AWA Gateway* is the latest addition to the AWA family of publications. It’s delivered electronically and free of charge—downloadable from our web site www.antiquewireless.org.

Our content is targeted at those who may not be familiar with the AWA and who perhaps are just becoming interested in the history, collecting or restoration of vintage communications gear. For that reason, our technical articles are more basic than those in our other publications and our articles about AWA generally do not assume knowledge that that only those familiar with our organization might have.

The AWA also sponsors a four day annual convention in August featuring technical presentations and forums, a large auction, an awards banquet, an equipment and artifact competition, a book sale, and an active flea market. The convention affords attendees plenty of time to renew and make friendships, time to engage in long conversations on collection, preservation and all other aspects of the hobby.

The AWA Museum campus is located in Bloomfield, New York. Membership in the AWA includes free admission to the world famous facility. It is crammed with too many treasures to describe here, but you can see some of the exhibits on our web site www.awawireless.org.

The AWA is chartered as a non-profit organization in New York State, an IRS 501(c)(3) tax-exempt corporation, and is a member of the American Association of Museums. To learn more about AWA or to join our organization, visit the AWA website.

**DONATING ARTIFACTS TO THE AWA**

You may have artifacts that you are interested in donating to the AWA. We would be pleased to discuss any possible donation. Please call us at (585) 257-5119.