Your Entry to the Fascinating World of Vintage Communications
From The Editor

HOW ARE WE DOING?

It seems like it was just yesterday that we released the first issue of The AWA Gateway, but here we are beginning our fourth year of publication! As those who have been with us from the beginning know, the mission of the Gateway, which is available for free download from the Antique Wireless Association web site, is two-fold: (1) to introduce readers to the fascinating world of vintage communications, and (2) to provide those who have been encouraged to pursue some aspect of the hobby with the basic information they will need to get started.

Starting a brand-new publication is normally no easy matter. After all, one can’t ordinarily come up with a
group of feature writers and columnists out of nowhere and at the drop of a hat! However, there was a way to do just that. About twenty years ago, I was publishing The Radio Collector, a newsletter intended for newcomers to the hobby. It ran for about three years, and its content was very close to what was needed for The AWA Gateway.

It was decided that The AWA Gateway would start out by borrowing heavily from The Radio Collector. But as the new publication became better known, we would begin to attract and recruit contributors of appropriate new material, gradually phasing out the legacy content.

As you scroll through the pages of this issue, you will see several signs that the transition is underway. They include four current columnists — Jim Cook, Andy Ooms, Eric Wenaas, and Ronald Yeaple — as well as feature articles by Corey Keyes and David Kraeuter. So what do you think? Do you like what we are doing with The AWA Gateway? Are there features you’d like us to try to add? Perhaps you’d like to contribute an article or two, or a regular column, yourself.

Write me soon! Hopefully, we’ll be able to begin a “Letters to the Editor” column in the next issue.

—Marc Ellis, N9EWJ

From The Deputy Director

Hi everyone. It is amazing that the new Antique Wireless Museum has been open for over a year now. It seems like it was just last week. I am told that time flies whether you are having fun or not. The Museum has amazed, entertained and educated over 1000 visitors in its first year.

Recently, we had 64 3rd grade children from the local school’s technology class. They were a hoot and just like sponges waiting to be filled with information. I am especially pleased to have children visit. I believe we have a responsibility to share the history of technology with them and hopefully spark some excitement in sciences. If we fail as a society to engage children in sciences, engineering, and technology, we will continue to fall behind other countries.

If you have not seen the new Museum, plan a visit. You will be amazed at what we offer as have been all our visitors to date. The annual AWA Convention will be held August 12 to 16 in Rochester and that would be a perfect time to enjoy four and a half days of convention activities – educational programs, book sale, flea market, contest, and auction – PLUS a visit to the Museum. As always, kids, teens and AWA members receive free admission to the Museum.

For those of you new to the hobby, the Convention provides a super opportunity to rub shoulders with inter-

AWA Gateway Columnists

JIM COOK, W0OXX

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 and lives in South Bristol. He currently volunteers at the Antique Wireless Museum in East Bloomfield. In future columns he will feature the histories of some of the Museum’s thousands of rare artifacts from the field of communication technology.
national experts, attend their programs, browse an outstanding book sale, walk the flea market to buy that special radio or find that one last part to complete your project, view the incredible and unique entries in the equipment contest, and attend the outstanding auction. I know I have said this before, but it is worth repeating. Attendance at the various AWA events and especially the Convention offers such a rich opportunity for the new collector to learn our hobby through seeing the items and being able to casually discuss topics with the experts. Since the theme of the Convention this year will be Hallicrafters, the Museum will feature a display of the broad spectrum of products that Hallicrafters produced.

Also, if you have not done so, please visit our ever expanding web site at to tap into a wealth of information and resources. Also, do not forget that the AWA Museum Store offers a wide variety of AWA publication and AWA logo clothing. You can obtain an order form on the AWA website or better yet, visit the store in person. In addition to the items offered on line, there is always a selection of older books and magazines and an eclectic selection of radios and test equipment available for sale.

These are exciting times for the AWA. Come share them at the Museum or the AWA Convention or how about both! The AWA will have a booth at the ARRL Centennial Convention in Hartford, CT July 17-19, 2014. Please stop by, meet us, and say hello.

Bob Hobday N2EVG, Deputy Director, AWA Museum

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By Eric P. Wenaas, Ph.D. eric@chezwenaas.com


For those antique radio enthusiasts who admire American crystal sets, crystal detectors and crystals, these two volumes by Maurice L. Sievers entitled Crystal Clear are a must. The author says that he waited for 15 to 20 years for someone to write a tabular, descriptive and illustrated publication on the subject. When no one did, he decided to write such a book himself using the information he had compiled over the years while adding to his own collection, viewing the collections of others, and searching magazines and catalogs for ads and other descriptive material.

Sievers wrote the first volume with the intention that it would be a complete, stand-alone book, and arranged to have it published by The Vestal Press of New York in 1991. He then decided to write a second volume to expand on the first after finding that compiling information was a dynamic process in which new details surfaced, photos of new artifacts were provided by readers, and certain corrections were needed in the first volume.

He also found that he had more material than he could include in the first volume because of space constraints. In his own words: “... I must say, as in the fisherman’s tale, “You should have seen the ones that got away.” When he was ready to publish his second volume in 1994 he contracted with Sonoran Publishing of Chandler, AZ, who had acquired the rights to certain assets of The Vestal Press including the first volume of Crystal Clear. Sonoran published Volume 2 in 1995 and reprinted it again in 2008. Sonoran also reprinted the first volume in 1995, adding “Volume 1” to its title. Thus, the first volume can be found with or without “Volume 1” appearing on the cover—the content for the two being identical.

Crystal Clear is clearly the bible on all things having to do with crystal set artifacts made in America. The first volume boasts information on about 537 vintage crystal sets, 341 crystal detectors, and 207 crystals, supported by 750 illustrations including high-quality photographs and interesting ads.

There are three large tables entitled “Crystal Sets,” “Crystal Detectors” and “Crystals” organized according to manufacturer. Each table has five columns with entries for manufacturer, trade name and other identifying characteristics, original sales price, the year it first appeared, and references. Following each of the three tables are reproductions of the most interesting and appealing advertisements for the respective category of artifacts. There is an outstanding index conveniently divided into six parts: General, Crystal Detectors by Trade Names, Crystals By Trade Names, Crystal Sets By Trade Names, and Manufacturers (Originating Companies).
In addition to all this detail on the artifacts themselves, there are 45 pages of introductory material covering the basics of crystal detection, various styles of cat’s whiskers, a list of companies that made more than one category of artifacts (detector, crystal, crystal set), and historical accounts of the crystal sets made by three major companies in the early 1920s: Wireless Specialty Apparatus Co. (WSA), Radio Corporation of America (RCA), and Philmore Mfg. Co.

The most compelling section of the introductory material, however, is one entitled “Crystal Set Differences, Details, and Dilemmas,” which gives the scoop on—you guessed it—differences, details, and dilemmas. For example, we learn that Crain Brothers Radio Shoppe of Oakland, CA offered the Radiola X for sale in 1925, copying the trade name of RCA’s Aeriola Jr. RCA demanded that the name be changed and Crain Brothers obliged by replacing Aeriola with “Crain Craft” and adding Jr. to gain the second part of the prestigious Aeriola Jr. name. The original ad picturing the Aeriola X is reproduced along with a later ad announcing the name change to Crain Craft Jr.

The second volume is very similar in style, layout and content to the first, albeit with a totally different set of artifacts. Sievers says, “Volume 2 picks up where Volume 1 left off, identifying an additional 172 crystal sets, 91 crystal detectors and 26 crystals…” He also says it features over 350 photographs and 160 reproduced advertisements of crystal radio products made between 1910 and 1960, as well as providing additional information on many of the crystal sets covered in Volume 1.

The index to the second volume is conveniently combined with the index to the first volume so you only need to consult the second volume index. The photographs in the second volume are somewhat uneven in quality because many of them were provided by other collectors, whereas the photographs in the first volume are mostly of artifacts in Sievers collection taken under his supervision.

This book is a must for the collector who buys crystal sets and wants to be sure the set is complete and original. A surprisingly large number of crystal sets and detectors on the market are either missing parts or have non-original parts that were used to replace the missing parts. Sievers has taken care to ensure that the sets appearing in his book are original in all respects.

According to Sievers, Volume 1 has been acclaimed as the most accurate and comprehensive reference book on American-made crystal radio receivers ever published. In all the years I have used these two volumes, I have only found one significant faux pas, which was actually no fault of Sievers. The four Wireless Specialty crystal detectors found on pages 12 and 13 of the first volume were taken from WSA’s 1919 catalog entitled Radio Equipment referenced by Sievers, but unbeknownst to the antique wireless community at that time, most of the labels in that WSA catalog were incorrect.

The four detectors pictured on pages 12 and 13 were copied directly from the WSA catalog complete with the incorrect labels Type I-P-200, Type I-P-201, Type I-P-202 and Type I-P-203. The four detectors pictured are actually Type 176, Type 190, Type 155-C and Type S.E. 183-A respectively. In fact, you can even see most of the Type S.E. 183-A designation on the detector in the photograph labeled Type I-P-203 in Crystal Clear.

Also the Type I-P-501 WSA receiver pictured on page 17 of Crystal Clear is actually an SE-1420 receiver that WSA made for the Navy. There are both subtle and significant differences in the apparatus actually pictured—which was manufactured prior to 1919—versus the apparatus manufactured after 1919 with the type numbers indicated in the respective labels. The complete story of how WSA mislabeled this apparatus can be found in the AWA Review, Vol. 25, 2005, pp. 25-48.

I completely agree with Sievers when he says, “Crystal Clear is the first word, the last word, and everything in between regarding American crystal sets, crystal detectors and crystals.” It is a must for the both the casual and serious collector as well as anyone who is simply interested crystal radio artifacts. It is still in print and is available in paperback, both new and used, from a number of booksellers.
Today we are impressed by how the satellite views in Google Maps let us observe the land around us. When my wife and I are planning a road trip, we use Google Maps to help us find the best route with no surprises.

Yet aerial surveillance of the countryside with instantaneous electrical download is not new. It was used extensively during the Civil War. In the spring of 1861, Professor Thaddeus Lowe met with President Abraham Lincoln and offered to demonstrate the potential military advantage of a manned surveillance balloon equipped with a telegraph set. On June 16, from his balloon Enterprise at an altitude of 500 feet tethered near the White House, Lowe sent Lincoln the following telegraph message:

This point of observation commands an area near fifty miles in diameter. The city (Washington) with its girdle of encampments presents a superb scene. I have the pleasure of sending you this first dispatch ever telegraphed from an aerial station…

Lincoln was enthusiastic and ordered the Union army to adopt this innovation. On September 24, 1861, Lowe ascended to more than 1,000 feet near Arlington, Virginia, across the Potomac River from Washington, DC, and began telegraphing intelligence on the Confederate troops located at Falls Church, Virginia, more than three miles away. Union guns were aimed and fired accurately at the Confederate troops without actually being able to see them — a first in the history of warfare.

Lincoln created the Balloon Corps of the Army of the Potomac in October 1861 to provide detailed descriptions of battlefield terrain and of Confederate positions and troop movements. At night the balloon “aeronauts” counted campfires of the enemy to estimate troop concentrations.

Messages from the battlefield were available to Lincoln in real time. Telegraph wires from the tethered balloons were connected directly to the Union’s telegraph network. This provided instantaneous telegraphic communication from the observer in the balloon above the battlefield directly to the War Department in Washington, which was next door to the White House.

The telegraph office in the War Department became Lincoln’s Situation Room. An army officer on duty in the telegraph office recalled:

He came over from the White House several times a day, and thrusting his long arm down among the messages fished them out one by one and read them…

And when Lincoln read something that disturbed him, he would fire off a strongly worded telegram to the general in charge.

The Confederates tried to launch their own balloon communications system, but their efforts were not as successful as Lincoln’s. The Balloon Corps remained an important part of the Union’s military strategy throughout the Civil War.
corps, but without much success. The Union army had a strategic advantage over the Confederates. The Union balloons were inflated at the battlefield with hydrogen produced by horse-drawn portable hydrogen generators invented by Thaddeus Lowe. The Confederates did not have access to this portable hydrogen generating technology. They had to inflate their balloons with illuminating gas available only in cities such as Richmond and then haul them to remote battlefields. More often than not their ungainly inflated balloons would be blown about by the wind and punctured by trees on the way to the battlefield. They would be deflated by the time they reached their destination.

The Confederates did their best to shoot down the Union balloons, but the balloons typically ascended to altitudes of 500 to 1500 feet, beyond the range of their guns. The story is told of one Confederate gun crew that in desperation pointed its cannon upward at too steep an angle and charged it with too much gunpowder, causing it to explode on firing, killing the gun crew. Although an estimated 3,000 ascensions were made during the war, no Union balloon was ever damaged by enemy fire.

A replica of Lowe’s Civil War balloon, the Intrepid, is on display during the summer season at the Genesee Country Village & Museum in the town of Mumford, New York, where it is available for passenger rides.

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**THE ANTIQUE WIRELESS MUSEUM**

LOCATION: 6925 Routes 5 & 20, East Bloomfield, NY, 14469 (for Google Maps, search for 6925 State Route 5, East Bloomfield NY)

HOURS: Tuesday 10:00 a.m. to 3:00 p.m., Saturday and Sunday 2:00 p.m. to 5:00 p.m. Except closed on holidays.

ADMISSION: $7.00 for adults, kids and teens are free, and AWA Members are free.

WEB: www.antiquewireless.org

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**Play It Again**

A No-Nonsense Guide to Vintage Radio Restoration

**PART 13: THE EMERGENCE OF THE AC/DC SET**

**FIRST-AUDIO TRANSFORMERS DISAPPEAR**

The audio amplifiers we have studied so far coupled stages together with transformers. Early tubes had such low amplification factors that the additional voltage gain of transformers was necessary to get enough total voltage to drive the output tube. Figure 1 shows another way to couple stages together using resistors and capacitors. It is called R-C coupling.

An audio signal on the grid of V1 varies the current through V1 correspondingly. This current flowing through the plate resistor, RP, varies the voltage drop across RP causing the voltage at the plate of V1 to vary. The amplitude of the voltage at the grid of V1 is multiplied at the plate by V1’s amplification factor. Coupling capacitor C passes the amplified audio to the grid of V2, but blocks the DC plate voltage from the grid. Old coupling capacitors are often leaky causing severe distortion. I always replace them.

Resistor RG returns the grid to ground. Control grids must always have a DC path to ground. The action of V2 is identical to V1. The network of RP, C and RG is passive and doesn’t amplify. If the tubes are type 27’s, the signal at the output will be amplified 8X in V1 and 8X in V2 for a total of 64X. The same amplifier using 1:3 ratio coupling transformers has a total gain of 576. Since two R-C coupled tubes only amplify 64X, a third tube is needed for the additional 8X to bring the total gain to an acceptable value of 512.

Although R-C coupling was well-known in the 1920s, designers were fixated on transformers despite their cost, poor fidelity and hum pickup. The development of the Type 47 output pentode in 1931 greatly reduced the amount of audio amplification needed. The voltage required to drive a tube to full output equals the grid bias. A Type 71A triode needs 40V of drive to get 0.8 watts out to the speaker, and a Type 45 needs 56V for 2 watts output. The 47 can deliver 2.7 watts output.

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Fig. 1. Example of stages coupled by an RC network. Courtesy Pat Owens.
with only 16V of drive. The output pentode made it possible to eliminate the audio transformers without using additional tubes.

**GETTING ALONG WITHOUT THE POWER TRANSFORMER**

The next step was to get rid of the power transformer. In 1932-33, tube makers came out with the Type 43 output pentode and 2SZ5 rectifier. Both used a heater-cathode operating at 25V, 300mA. The 2SZ5 had two independent plates and cathodes so it could be used as a voltage doubler, though few used it that way. A 5-tube superheterodyne was developed using existing 6V/300mA converter, IF and detector/first audio tubes to go with the 2SZ5 and 43. The filaments, wired in series, added up to 68V. With a resistor in the series to get rid of the other 42V, the filaments could be operated directly from the 110V AC line. The 2SZ5 rectified the 110V AC to furnish the B +.

The filament (ballast) resistor took various forms: it might be a big wirewound unit on the chassis, built into the line cord, or packaged like a tube with its own socket. By 1939, tubes like the 12SA7, 12SK7, 12SQ7, 50L6 and 3SZ5 had been developed. Their filament voltages add up to 121, eliminating the ballast. Filament current was reduced to 150mA for cooler operation.

This tube lineup was so commonly used that it was called the “All American Five”. The tubes (and later their miniature equivalents) were used in tens of millions of radios until replaced by transistors. In the 1930s there were still places where the residential power was DC. The fact that transformerless radios worked equally well on AC or DC was used as a selling point, and the radios came to be called AC/DC sets. The only difference between AC/DC superhets and those we have studied was in the power supply.

The development of cheap, high-capacity electrolytic filter capacitors allowed designers to substitute power resistors for the much more expensive filter chokes; the development of powerful permanent magnets for use in speakers meant that speaker field coils could be eliminated.

**THE AC/DC POWER SUPPLY**

Figure 2 shows the series filament wiring and power supply of a typical AC/DC set. Voltage for the 6V/150mA pilot lamp, PL, is obtained from a tap on the rectifier filament. The rectifier plate is fed through the tap and lamp. When first turned on, the lower resistance of the cold filaments makes the lamp flare up. It dims while the filaments warm up and then brightens again as B starts flowing through it. The lamp is an essential part of the circuit; operating the set without it will quickly burn out the rectifier filament.

R1 is a 20-50Ω resistor to absorb surges. V5 is a standard half-wave rectifier. Because of half-wave rectification and the absence of a filter choke, the filter capacitors, CF must be large (30µF). R2(1-2kΩ) has little filtering action; it separates the two filter capacitors so they can act independently. This is called a “brute force” filter.

**AC/DC SAFETY**

Because of the power supply design, AC/DC radios can be killers. Notice that one side of the power line is the B- bus. In residential wiring, one wire is hot (115V) and the other is grounded (cold). Some makers actually used the chassis as the B- bus. Others floated the B- and connected it to the chassis through a capacitor for RF grounding. If the set is plugged in wrong, 115V will appear on the chassis, capacitor or not (capacitors conduct AC, but limit the current that can flow). If you touch the chassis while touching a grounded metal object or standing on a damp floor, you will get a nasty shock or worse.

If you plug the set in correctly so the cold wire goes to B+, the chassis is cold, but only while the set is turned on. When you turn it off, the chassis is disconnected from ground. 115V will then flow through the filament string (150mA) and appear on the chassis. Even if the chassis is isolated from B- with a capacitor, I refuse to trust the cheap paper capacitor usually used. The only safe AC/DC set is an unplugged one!

Most sets made after World War II are well insulated against accidental contact with the chassis when the cabinet, knobs and back are intact. They are safe in the bedroom, but are not to be trusted in the bathroom or kitchen where the user can easily be grounded through the plumbing.

How do we safely work on AC/DC sets when they are out of the cabinet? We use an isolation transformer. This transformer has 2 separate 115V windings. The input winding is plugged into the AC line. The floating 115V output has no hot and cold wire, therefore no voltage exists between it and ground. The average AC/DC set draws about 30 watts. A small isolation transformer rated at 1A (100W) is a practical size for most radio workbenches. Don’t work on any AC/DC set without an isolation transformer!
If you are reading this, you must be interested in vintage radios or other aspects of the radio phenomenon. Every person with a radio interest has a story. Mine follows.

Why do I subscribe to almost a dozen radio-related magazines, listen to short wave, usually have a radio on, and have more than an average interest in station formats, programming, AM distance reception, broadcasting history, station history, and pre-solid state receivers and electronic devices?

It is not because my career has been predominately radio-related. Although I had my own radio repair and used set business during my high school years in South Dakota, I also worked at WKLW-FM in Grand Rapids, Michigan while in college, as well as in RCA’s consumer electronics plants in Indianapolis for 9 years. Nor am I particularly skilled technically or very knowledgeable in electronics theory. I am interested in antique radio collecting and at times have had up to 50 units, but I do not really consider myself a collector. Yet I have a great interest in radio, and would much prefer a world without television than a world without radio.

Describing the radio memories of my youth may explain at least part of my fascination with the medium. Until I graduated from high school in 1956, I lived in the relative isolation of a farming community on the prairies. I never lived in a city of any size or had any access to television. I grew up in the 40s and 50s in a town of less than 500 people in South Dakota.

As late as 1956, only two or three TV sets existed in my hometown of Corsica, and antenna towers about 100 feet tall were required even for sporadic snowy reception from Sioux Falls, South Dakota or Sioux City, Iowa, each 100 or more miles away. So for as long as I lived there radio was an exotic link to a far off rest-of-the-world, and my inquisitive mind could hardly get too much of the information and entertainment floating through the air.

How isolated were we in Corsica? It was certainly not in the mainstream of national cultural trends (not even then necessarily a bad thing). It had no traffic signals, of course, but that was not particularly unique in small town America. I never used a dial telephone while living there; we told Central which number we wanted her to connect us with. Not until I arrived in a city in Michigan to attend college at the age of 17 did I hear of the National Football League or the National Hockey league. I don’t believe that any of my 21 classmates of the Class of ’56 knew of those professional sports leagues either. Yet Corsica was, and is, a great town to grow up in,

We knew a lot about major league baseball, even though the nearest team was 700 miles distant. We knew baseball through the medium of pictures of players like Stan Musial and Bob Feller on Wheaties boxes, but especially through the great medium of radio. The Mutual Broadcasting System, (MBS) with more affiliates than NBC, ABC, or CBS, most of which were in smaller cities with lower power stations, carried the Game of the Day. It was broadcast every afternoon during the baseball season to those areas of the country that were not near any local major league team.

The games covered rotated throughout the 16 major league teams in existence then. No team predominated the schedule. Mondays, usually an off day for the majors, meant a minor league game. All games broadcast were day games; night games were not yet a major part of the schedule. Also, our high school classes were suspended each year during the World Series (always afternoon games then) while we gathered in a large study hall to listen to each weekday game. In 1955, the Philadelphia Athletics moved to Kansas City and some of those games were carried on a South Dakota station, but the A’s never caught on as a local team for our area.

More on sports: for a short time in the early 50s, CBS broadcast a Saturday afternoon radio program, College Football Roundup. It carried about ten minutes of live
action from each of several football powerhouses of that era. In addition to current highly ranked schools such as Notre Dame, Texas, Oklahoma, and Michigan, teams like Navy and Harvard were included.

Almost the only other sportscasts were state high school basketball tournaments, state Junior League baseball tournaments, minor league pro baseball (the Northern League Aberdeen Pheasants and Sioux Falls Canaries) and South Dakota University and South Dakota State games. The state had no Division I teams in any sport, and none of us knew of the NCAA. Some cities with radio stations carried high school sports, but none of them had signals reaching my town after sunset.

My last word on sports for now: my dad and I enjoyed Indianapolis 500 broadcasts as well as a heavyweight fight or two involving Joe Louis.

Although my sisters made me understand that small people were not talking and making music in our Zenith console (probably after having given me the idea in the first place), I nevertheless found the sounds to be fascinating. My mother discouraged radio listening (at least to the extent that I was eager to do it) on the basis that it could be a waste of time, that someone my age was not likely to sort quality programming from the type more abundantly available, and that developing active mental and physical skills was more valuable than being entertained passively.

On the same grounds, she greatly encouraged non-fiction reading. She also believed that radio programs with a lot of action or emotion could lead to nightmares, fear of the dark, restlessness, or other symptoms of anxiety in children. The terms “hyperactivity” and “attention deficit disorder” syndrome were not in general use then, but they describe the symptoms she feared.

However, she did introduce me to programs she deemed worthwhile (actually they would be classified as worthwhile by most adults): the Metropolitan Opera, sponsored by Texaco for more than 40 years on ABC, and heard now on National Public Radio; and on the musically rich Monday evenings, The Cities Service Band of America, conducted by Paul Lavalle, The Bell Telephone Hour, The Railroad Hour, and The Voice of Firestone. The last three consisted of classical and semi-classical music from orchestras, opera singers, and Broadway stars.

My father worked in his general store all day six days a week, and usually had a radio on all day tuned to a small city station 40 miles away for its background music, news, farm markets, egg prices, and weather. So he was inclined to read at home without a radio on much in the evenings.

However we almost always listened to Fibber McGee and Molly on Tuesday nights; on Monday evenings we listened to America’s Town Meeting of the Air, a debate program covering current issues, and Doctor IQ, a quiz show sponsored by the Mars candy company, maker of Milk Way and Snickers bars, with prizes of silver dollars. That program was famous for the line, “I have a lady in the balcony, doctor,” cited by the assistant with the roving microphone looking for persons with potential answers.

Sunday listening included The Greatest Story Ever Told on ABC, Bible events dramatized by Fulton Oursler, a prominent author/playwright of the time. Sunday was also time for news by Drew Pearson, Walter Winchell, and Monday Morning Headlines presumably for people who had tuned out of world events for the weekend. How effective is advertising? Well, I have no
trouble remembering that the McGee’s were sponsored by Johnsons Wax, Pearson by Adams Hats, and Winchell by Jergens lotion.

In addition to attending church services, our family regularly listened on Sundays to The Back to God Hour, The Lutheran Hour, The Hour of Decision (with Billy Graham preaching and George Beverly Shea singing), and the music portion of The Old-Fashioned Revival Hour. Those programs remained on the air for decades after the golden age of radio ended, and at least one of them is still broadcasting.

Until the sixties, there were very few full-time religious formatted stations (none in my state), but Sundays meant religious programs on almost every station until noon at least, and public affairs programs and classical music during much of the afternoon on many stations. NBC or CBS had The Catholic Hour, The Jewish Hour, and The Protestant Hour Sunday mornings on their networks.

In the next edition of this series, I plan to start with the programs that clinched a young person’s interest in radio at an early age—broadcasting aimed at kids.

Company Chronicles
See copyright statement at end of article.

The Music Master brand was first used by the Philadelphia firm of Sheip and Vandergrift, founded in 1908, which had acquired patent rights to a form of wooden phonograph horn. Early in the 1920s, phono-industry sales executive Walter L. Eckardt was struck by the fact that outside horns were becoming essential radio accessories as fast as they were disappearing from phonographs. To take advantage of what he saw as a very profitable marketing niche, Eckardt formed the General Radio Corporation in April, 1922. Though the intent was to deal in both radios and accessories, General’s first product of consequence was the Music Master radio horn. Bells for the Music Master were manufactured by Sheip and Vandergrift; drivers by Timmons. Towards the end of the following year, Eckardt re-registered the Music Master trademark for use with radio horns and, a few months later, changed his firm name to Music Master Corporation.

The company was now selling 2500 horns per day and becoming quite profitable. But Eckardt had more grandiose plans. Recapitalizing Music Master by selling three million dollars in stock, the hard-driving executive began to branch out. During this period, he was quoted as saying, “I am after fame. I’d like to create the biggest manufacturing concern in the radio business.” Early in 1925, he purchased a 30-acre facility in Betzwood, PA (near Valley Forge), where he planned to build his horns and experiment with vacuum tube development. He also intended to market a line of ten radio models ranging in price from $50.00 to $460.00.

Rather than waiting to establish his own production facilities, Eckardt placed manufacturing contracts for the various models with several established manufacturers: Ware, Algonquin, Jones, Sleeper and Thermodyne. By the middle of the year, the firm’s new line was being advertised lavishly and dealers and distributors were being signed up. However, the contract manufacturing plan proved to be a mistake. One of the manufacturers (Ware) turned out to be on the verge of bankruptcy. Deliveries of finished sets were slow and quality control was poor. After Ware’s contract was cancelled, the troubled company dumped its 15,000-set inventory at a cut price, which was not good news for Music Master’s dealer network.

With inventories inadequate to meet its sales obligations, the firm faced a deadly cash crunch. Dealers and distributors deserted, and Algonquin dumped 2,000 units of its model at $25.00 each. Music Master itself began to dump inventory to raise cash, but the end was near. The company was declared bankrupt in May 1926, though it continued operations under the management of a trustee for a few years afterwards. Walter Eckardt was unable to re-enter the radio business under his own name and spent the rest of his career working for others.

With some planning ahead, you can build this radio in a matter of minutes. You’ll need only four parts (see left-hand side of Figure 1):

1) Ground connection. The water pipe coming into your house from the water company will do nicely. Or the metal water pipe under your kitchen or bathroom sink. Or try the metal sink spigots.

2) Antenna. This can be any wire, but should be as high as possible and as long as possible. This is the most important part of your radio, so put most of your effort here. Experiment. Throw one end of a long wire or extension cord out a second-floor window. Or perhaps your friend has a real long-wire antenna going out to the garage or to a tree in the back yard. Cultivate that friendship.

3) Old headphones. The older the better. The ones your grandparents might have used in the radios of the 20s through the 50s would be ideal. You can safely use anything you have, but the ones you use with your iPod will likely disappoint. If no vintage earphones are available, Amazon’s inexpensive “high impedance crystal set earphone” should also work with this set.—ed

4) Diode. Try any that are in your parts collection. In a pinch, try using any two leads on any transistor. For political correctness and best performance, get a 1N34 diode. Alas, Radio Shack appears to no longer supply these. Get one (or a hundred) dirt cheap on eBay or Amazon. Also, query that friend who has the long-wire. Amazon carries a later version of the 1N34, called the 1N34A, that will work fine. Note that the diode can be connected in either direction (compare the left-hand and right-hand diagrams of Figure 1). —ed

NOTES
FM reception–no.
Stereo–no.
Quadraphonic–no.
Volume control–no. If you must, just shorten or lengthen the antenna.
On/off switch–no. If you must, just disconnect something.
Tuning control–no. You take what you get.
Tone control–don’t even think about it.

David Kraeuter is a retired librarian living in Washington, Pa. He has played with electronics since he was in seventh grade.
In previous installments of this story, we talked about most of the important electronic developments incorporated into radio receivers prior to the beginning of World War II. But it would be wrong to leave you with the impression that the end products of radio evolution were the little 3-way portables and AC-DC table models discussed last month. While these “midget” sets were being marketed, plenty of full-featured, wood-cabineted table models and consoles were also being sold.

Moreover, during the 1930s and early 1940s, radios began to sprout new features that we haven’t yet touched on. These features didn’t necessarily advance the state of the radio art; in fact, many were frank marketing gimmicks. But some of the ones that made radios more interesting and/or more convenient to use should be mentioned here. Most of these could be loosely categorized as tuning innovations.

**DIAL DEVELOPMENTS**

One of the most obvious innovations was in the design of the radio dial itself. In the early 1930s, the typical dial rotated behind a small window having a fixed pointer. Only a few divisions on either side of the received frequency could be seen. A little later, on many sets, the window had broadened out to a semicircular arc showing much more of the scale.

Still later, the “airline” or “clock” style dial came into use. This had a fixed scale (printed in a square, circular or oval pattern) and a movable pointer turning on a center axis. This made the set’s complete tuning range visible all at once, and paved the way for the addition of the new short-wave bands that were beginning to intrigue the listening public.

**SHORT WAVE**

By the early 1930s, some manufacturers began to offer coverage of the early police band, which was located just above standard broadcast. Patient listeners tuning that band could eavesdrop on communications between police cars and dispatchers. Later in the decade, as war clouds gathered, sets were offered that covered still higher frequencies sometimes labeled “Short Wave” or “Foreign Broadcast.”

Explorers in these rarefied regions could tune around among broadcasters and propaganda stations from all over the world, each reporting on current events with its own particular bias. Here, too, could be heard the friendly chatter of ham radio operators and the more businesslike conversations of maritime, aircraft and other commercial communicators.

Sets with a single short-wave band typically had a “split scale,” with one end of the pointer indicating the broadcast frequencies and the other the short wave. Multiband sets usually had additional dial scales arranged concentrically with the broadcast band scale.
It wasn’t uncommon for the call letters of major market radio stations to be printed near their operating frequencies on the broadcast scale. And the shortwave scale often sported the names of different countries near the frequencies typically used by them. Generic markings (such as “Police,” “Aircraft,” “Amateur” or “Ships”) were also sometimes shown.

Towards the end of the decade, the “slide rule” dial began to appear. The scales on this dial were straight rather than semicircular, and the pointer traveled in a straight line across them. Multiband sets had two or more straight lines arranged parallel to each other, each with its appropriate range of markings. This arrangement made the numbers on the dial scale a great deal easier to read.

**PUSH BUTTONS AND TUNING EYES**

Push buttons that could be set to select favorite local stations also became common around this time. Both mechanical and electrical designs were popular. The mechanical version physically moved the set’s main tuning capacitor into the preset position via a cam-and-lever arrangement. The much slicker electrical version typically worked by switching individual trimmer capacitors in and out of the tuning circuit. Push-button mania often spread to other set functions as well, with bandswitching, tone and even power under index finger control.

No discussion of tuning innovations would be complete without mentioning the tuning eye, which first appeared about the mid 1930s. The “eye” was actually the round screen of a small electron ray tube. When the set was on, the screen lit up with a lurid phosphorescent green glow. Two shadows appearing on the screen moved closer together as the station was tuned in—looking vaguely like the closing of an eye—and farther apart as it was tuned out. Thus the “eye” served as a tuning aid, helping the listener obtain the strongest possible signal.

The tuning eye was actually a spinoff of the automatic volume control circuitry that had come into use during this era. The AVC, as it was called, automatically reduced set sensitivity when strong stations were tuned in, preventing overloading, and increased sensitivity as weak stations were tuned in. The varying voltage that controlled the AVC action, applied to the grid of the tuning-eye tube, was responsible for the opening and closing effect.

**HAPPY COLLECTING!**

No overview can hope to be complete, but this series of articles should have given you a pretty good handle on the types of “golden age” (1920s through 1940s) radios that are out there to be collected. Conversely, if a radio from this period should fall into your hands, you should be able to estimate its age and its place in the evolutionary scheme of radio development. Good hunting and happy collecting!
Most collectors of old radios are fascinated with the technical improvements and design variations in radio receivers that appeared in the early years. Broadcasting began in 1920 with few listeners. Ten years later radio broadcasting and radio sales were a major business. As is the case with any new technology, the users of early radio were interested in how radios worked and how the design of their own sets differed from others in use at that time.

**RECEIVER DESIGNS**

During the first years of broadcasting, most of the radio receivers were either crystal sets or tube sets with regenerative detectors. Each of these had significant disadvantages. The crystal set was inexpensive, but sensitivity and selectivity were poor. The regenerative detector was able to provide reasonable performance with just one or two tubes, but adjusting the level of regeneration could be challenging.

The regeneration control had to be reset whenever the radio was tuned to a different station. If the detector was adjusted so that it oscillated, which often happened while the listener was trying to tweak for optimum reception, it became a small radio transmitter that interfered with reception by nearby receivers.

These limitations brought about the development of a third type of radio receiver in the early twenties: The “Tuned Radio Frequency” or TRF receiver. The concept was to provide two or more tuned RF amplifiers to supply a stronger signal to the detector stage. Most TRF radios had either two or three RF amplifier stages, followed by a detector and one or two audio amplifier stages.

This required four to six vacuum tubes, resulting in a radio that was more expensive than the regenerative detector receivers and required more battery power. In the mid-1920s, the cost of a regenerative detector radio was in the $18-30 range, while TRF radios were ranged in price from $60 to more than $100, at least one month’s pay for most families.

**TAMING TRF OSCILLATION: THE NEUTRODYNE**

But designing a TRF radio that would perform well proved to be difficult, primarily because the only vacuum tubes available at that time were triodes, and triodes oscillate easily because of the inter-electrode capacitance within the tubes. There were several ways of minimizing oscillation in TRF receivers. One solution was to mount tuning coils at right angles to each other to minimize magnetic coupling. Another was to intentionally reduce the gain of the RF amplifiers.

But the most important design solution was invented by Louis Alan Hazeltine (1886-1964). He developed the Neutrodyne circuit, which effectively cancelled out oscillation that would otherwise occur. The 2013 edition (Volume 26) of *The AWA Review* includes an excellent article about Hazeltine written by Mike Molnar. It describes the many inventions that he and his associates developed to improve electronics.

While Hazeltine is mainly remembered for his Neutrodyne circuit, his company continued to develop circuits to improve radio and make television feasible. One of his associates, Harold Alden Wheeler (1903-1996), developed diode automatic volume control — a system that was eventually used in almost all radio applications.

One of the radio manufacturing firms that was licensed to use Hazeltine’s Neutrodyne circuit was the Freed-Eisemann Radio Corporation. Joseph David Roth Freed had graduated from the College of the City of New York and become a Radio Expert Aide at the Radio Test Shop, Washington Navy Yard, where Alan Hazeltine was a consultant. In 1922, after working for the Wireless Improvement Company, Freed teamed up with his brother Arthur and Arthur’s previous employer, Alexander Eisemann, to form the Freed-Eisemann Radio Corporation.

I have in my collection a Freed-Eisemann Model FE-15 TRF radio, which sold for $75 in August 1925. This radio uses five 01-A tubes. I do not have a set of tubes for it, but it is complete and would probably work if tubes and batteries were available. It has an impressive appearance and excellent workmanship. I also have working Eisemann headphones from the same period, but the headphones were made by the unrelated Eisemann Magneto Corporation. My reference for the history of Freed-Eisemann is Alan Douglas’ book, *Radio Manufacturers of the 1920s*.

The three large tuning dials on this radio are typical...
of TRF radios in the mid-1920s, and they were sometimes referred to as “three dialers.” The tuning controls were not calibrated in terms of frequency or wavelength, but have 0-100 logging scales instead. Radio listeners would often record the positions of the three dials that corresponded to radio stations in their area. The other two controls on the front panel are the filament rheostat and a volume control. Connections for the batteries and antenna were on the back of the set.

**MAKING RADIO USER FRIENDLY**

As soon as radio listeners overcame their awe about radio broadcasting, they asked for improvements to make radios easier to use. One of these requested improvements was a single knob control for tuning. Another was a tuning control that was more linear so that stations were spread evenly over the dial. There was also a desire to develop radio loudspeakers so that headphone listening would not be necessary. All of these consumer demands were met by 1930.

A new vacuum tube, the tetrode, added an additional grid between the control grid and the plate. This reduced the tendency to oscillate and made the tube more stable. Radio designers could now improve performance without increasing the number of vacuum tubes. Although the tetrode was invented by Walter H. Schottky in 1919, tetrode tubes didn’t become available commercially until the late 1920s.

Several methods were used to provide single-knob tuning. The Atwater-Kent 55C used metal belts to link the three tuning capacitors to one tuning control. They were indexed with pins on the capacitor shafts to keep them from slipping, much like a timing belt on an automobile engine.

Other mechanical methods were also used to couple individual tuning capacitors to achieve single-knob tuning. But the eventual solution that was used beginning in the 1930s was to gang capacitors by operating them all from a common shaft. Some of these ganged capacitors were quite impressive. I once owned a Majestic TRF radio from the early 1930s that used a four-gang tuning capacitor that was nearly one foot long.

Making tuning more linear was accomplished by changing the shape of the variable capacitor plates. A simple variable capacitor with semi-circular blades will vary capacitance almost linearly as the moveable plates are turned. But the relationship between resonant frequency and capacitance is not linear. Reshaping the blades improved linearity, but a glance at the tuning dials of most radios will confirm that completely linear calibration has generally not been achieved.

There was also a clever adapter available in the 1920s that allowed radio owners to mount a headphone unit on an acoustic phonograph—using its horn reproducer for the same purpose.

But speakers required more audio power than most early radios could provide without additional audio amplifier stages. Those appeared in the later 1920s, along with better audio output tubes, such as the 12A, the 71A, and the 4S, that could drive speakers to provide satisfactory listening levels.

At the end of the 1920s, many more technical developments were on the horizon, including better vacuum tubes and the promising superheterodyne circuit invented by Edwin Howard Armstrong. But the start of the Great Depression with the stock market collapse in October, 1929, created extreme challenges for radio manufacturers. Many companies closed their doors before 1940. But the extreme competition during that difficult decade brought about some interesting developments and a wide range of different radio designs that made radios from this period especially interesting for collectors.

**WHY “CONDENSERS?”**

It’s interesting, by the way, that capacitors were called “condensers” for at least the first half of the 20th century. I have never fully understood this error in nomenclature. “Condenser” is the appropriate term for components in mechanical systems that condense a vapor into a liquid, as is the case in steam systems, refrigeration equipment, and distilleries. But there is nothing in an electrical circuit to “condense.” Capacitors are energy storage components, as are inductors. Perhaps it would have been more appropriate to call them short-term accumulators or temporary batteries.

In any case, the term condenser was used from the earliest days of radio until the 1950s. Today, an electronics professional who referred to a capacitor that way would be ridiculed. Perhaps the last vestige of this archaic terminology was its use in automotive ignition systems to refer to the capacitor located inside the distributor on gasoline engines prior to the advent of electronic ignition systems.
OUR 2014 ANNUAL CONVENTION

As we approach the 2014 AWA Convention, August 12-16, it’s time to consider your summer travel plans. The Convention is open to everyone who registers. Check out our website’s Convention information at http://www.antiquewireless.org/annual-convention.html. You can download the registration materials, print them and mail them in; or go on line and register using PayPal.

Additionally, if you have not yet visited the new AWA Museum and you will be driving in Western New York State, please drop by. It is open Tuesdays, Saturdays and Sundays all summer long. You can preview the Museum’s displays using a virtual tour that is available on the website at http://www.antiquewireless.org/museum-virtual-tour.html. If you are not an AWA member, consider joining. In addition to the four AWA Journal mailings, this year you will receive a copy of the AWA Review, published annually. This year’s issue is about to go to press.

Do you have ideas for materials you’d like to see placed on the AWA website? Please contact me and let me know.

THE AWA SPRING MEET

As is traditional, the AWA hosted its Spring Meet in Bloomfield, New York on the first Saturday of May. The meet was held at Veteran’s Park at the old “AWA Annex” location just across the street from the Museum. The meet began at 7 am and concluded about noon. During that time, there was a flea market, an equipment auction conducted by Ed Gable, and a presentation by Roy Wildermuth on Russian military radios. These events, hosted by the Antique Wireless Museum staff, were open to both members and non members. In the afternoon, the Antique Wireless Museum was open to visitors while the Board of Trustees held their Spring Semi-Annual Meeting.

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 KARLRAD@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 Oscillator. 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.indianahistoricalradio.org. $15.00 annual dues includes the ICHR 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 N5Y 4P3, Canada. Email: va3dn@execulink.co. Website: http://lvrchomestead.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 NJ, 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 jccradio@cox.net. Website: www.okvrc.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.
Twelve Radio Memories

By Rev. Corey Keyes

revkeyes@rochester.rr.com

First: I’m a young kid of seven or eight. My sister and I are in the back seat and it is once again past our regular bedtime. Dad is driving; mom is riding shotgun. The push-button car radio (AM only, thank you very much) provides hokey music, then news. The magic minute of 10:07 p.m. arrives, and the creaking door and croaking tone (of E.G. Marshall) usher in CBS Radio Mystery Theatre on WHAM.

Mom is concerned it will scare the kids too much this late at night. She doesn’t realize I listen to it almost every night in my room, under the covers, through the earphone on my little transistor radio. She’s right, of course. That show, coupled with my vivid imagination, is far too scary for this time of night. Got to listen, though, because the dark bedroom to come, with all its sinister shadows, is half the fun.

Second: I’m a little older, maybe 11 or 12, and I alone am awake in the house at 3 a.m. I am rattled and anxious — no doubt part of the teeth-grinding, mind-twisting crossing-of-days that was adolescence. I’m going out of my mind, staring at the ceiling, feeling every sting of yesterday’s junior high social slings and arrows and hearing every crack and groan of that old house. I reach under my bed, and there’s that same old transistor radio, mostly thrown over for album sides and eight-tracks, but still faithful.

I turn it on (the nine-volt is still juiced!) and find WSAV on the dial, just as the DJ drops the needle on Nights in White Satin (the full, poetry- and kettle-drum-soaked album version, of course). I mean, we’re talking about WSAV here. I breathe deep, comforted, close my eyes and drift away.

Corey Keyes is a proud member of the Antique Wireless Association, a veteran broadcaster who worked in the Columbia, SC and Rochester, NY radio markets (radio stations WTCB, WXXI and WYSL) in the 1980s and 1990s, and the pastor of West Bloomfield United Church of Christ in West Bloomfield, NY.
ABOUT THE ANTIQUE WIRELESS ASSOCIATION

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 the 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.