



ARCI NEWS

www.antique-radios.org

Affiliated AWA
Antique Wireless Association 

Volume 37, Issue 5
October, 2018

RADIOFEST 2018 – A HUGE SUCCESS!!



(Photos by Dan Schoo -- Radiofest 2018)

UPCOMING OUTDOOR MEET OCTOBER 7, 2018

AMERICAN LEGION HALL

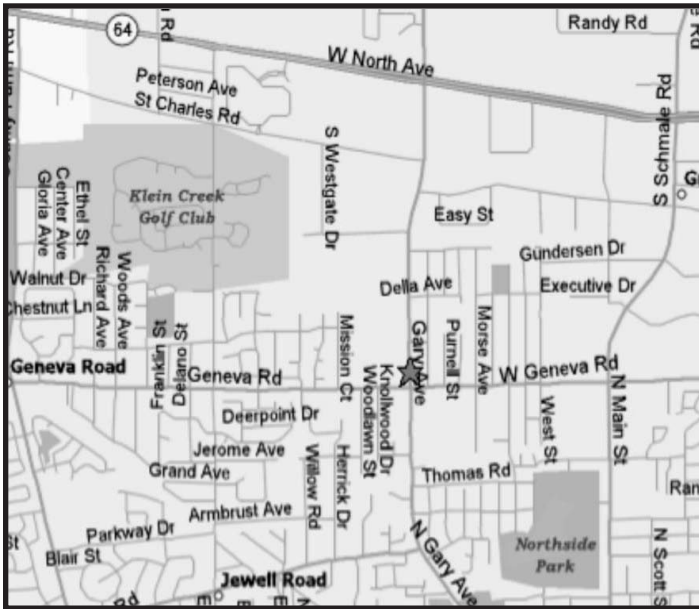
570 South Gary Avenue, Carol Stream, IL

October 7, 2018

7AM – 11AM

Business Meeting 9:30 am

Boy Scout Pancake Breakfast / Free Coffee, Juice & Cookies
50/50 Cash Drawing Raffle



2018 ARCI MEET SCHEDULE

October 7, 2018	7AM-11AM Outdoor Swap Meet Business Mtg./Officer Election 10AM	American Legion Hall Carol Stream, IL (See Map)
December 9, 2018	7AM-11AM Indoor Swap Meet Business Meeting 10AM	American Legion Hall Carol Stream, IL (See Map)

PRESIDENT'S MESSAGE

There is no doubt that fall is around the corner. Daylight hours are dwindling and autumn colors will soon appear. That also signals that ARCI's annual *Radiofest* has once again come and gone. And, what a great *Radiofest* it was! Our indoor/outdoor venue was again nothing short of fantastic, and our hotel accommodations continue to be top-notch. Our seller registrations held even with 2017, and the main auction bottom line was the third highest ever. As always, it was a packed event, and it is likely that even those who stayed for the entire duration could not possibly have experienced every part of it. However, now you can read all about it right here! This month's *ARCI NEWS* features individual, detailed articles covering individual aspects of *Radiofest 2018*, including the main auction, ham station, display, equipment contest, speaker presentations and banquet. So take a little time to sit back, relax, and read all about what actually happened at our premier ARCI event.

It goes without saying, pulling off a complex event like *Radiofest 2018* was no small feat. Yet, as has been true for many years prior, a small, highly dedicated group of volunteers stepped up to the plate and hit a home run. These volunteers come from all over the country and belong to a variety of different radio clubs. Without their valuable contribution of time, talent and energy, *Radiofest*, as we know it, would simply not be possible. This is something that every ARCI member should never take for granted. So once again, I want to take this opportunity to thank each *Radiofest* volunteer for your help and support in making *Radiofest 2018* one of the very best ever.

Please remember to mark your calendars for our next ARCI meet and business meeting, scheduled on October 7 at the American Legion Hall in Carol Stream. This will be our last outdoor meet of the year, weather permitting, but keep in mind that we can always move the festivities indoors should a little rain come our way. We will hold our usual swap meet starting at 7AM, and our friends at the American Legion Hall will be selling coffee and breakfast items. Don't forget about the donation auction. The donation auction continues to be a big part of our meets and we really appreciate the generosity of our members—and some nonmembers—in both donating items and bidding high prices at each auction. Thank you!

See You At The Next Meet,
Steve Muchow
ARCI PRESIDENT



IMPORTANT UPCOMING BUSINESS MEETING OCTOBER 7, 2018

Every October, ARCI reviews its results from *Radiofest* and begins to conceive of planning for 2019. Please join us for our annual business meeting at 9:30am on October 7, 2018.

The meeting will include a discussion about officer elections that will be held at the December Meet. We welcome all volunteers to consider running for office. Most of the volunteers return annually, and the use of email, cell phones and other technology has greatly simplified or eliminated many tasks. We anticipate returning to the Shriner's facility as our 2019 location for *Radiofest*. We also anticipate remaining at the American Legion Hall in Carol Stream for our other meets during the year. This means the roles of our volunteers are now more automated with better support. But, we still need new volunteers to preserve the vitality and initiative of one of the best radio collecting clubs in the country. WE NEED YOU! ARCI is your club! Please plan to participate and lend a hand. See you at the meeting.

SILENT KEY: JAY WHIPPLE

It is with great sadness that we report the passing of Jay Whipple Jr, beloved husband for 48 years of Anne Reisse Whipple. Jay passed on September 18, 2018 at his home in Lake Forest, Illinois with family at his side. He was born in 1933 and raised in Lake Forest. He graduated from Phillips Exeter Academy, Yale University, and Northwestern University Business School. He served in the U.S. Army at Fort Carson, Colorado Springs, Colorado. His first wife was Carol Coffey Swift of Lake Forest. He is lovingly remembered by his three surviving children, step-son, and surviving spouses. He is survived by 11 grand-children and 10 great-grand children.

Jay was an avid collector of many genres, including antique radios, televisions, and electronic instrumentation. He had many friends in the radio collecting community and served as an informal advisor to the Antique Radio Club of Illinois and the Antique Wireless Association.

He was a partner at Bacon, Whipple & Co. 1960-1982 and a senior advisor at Osprey Partners 1978-1996. Jay was a life-long Trustee of the Adler Planetarium, where he served on its Collections Committee. He also served as a coach, mentor, and competitor on the paddle courts and life.



A memorial service took place on September 24, *Jay Whipple at Radiofest 2018*. 2018 at the First Presbyterian Church of Lake Forest. In lieu of flowers, donations may be sent to the Adler Planetarium Development, 1300 South Lake Shore Drive, Chicago, IL 60605 to "Inspire exploration and understanding of the universe." Additional information is available from Wenban Funeral Home, (847) 234-0022 or www.wenbanfh.com.

THE RADIOFEST 2018 REPORT

By Steve Muchow

HUGE SUCCESS AT RADIOFEST 2018

The month or so before *Radiofest* is always a busy one for ARCI's *Radiofest* team. It is filled with follow-up phone calls to vendors, emails back and forth with each other, last minute changes, and the inevitable "one thing we completely forgot about." This year was no exception. But, taken as a whole, *Radiofest 2018* came together as smoothly as last year, which was a great relief to all involved, especially me. Much of the credit certainly has to go to our wonderful hosts, the Medinah Shriners, with their highly professional banquet staff, and their dedication to helping us pull off a successful meet. The quality of the facility and its employees is second-to-none, making our jobs much easier and less stressful. This year, *Radiofest* was changed to a two-day event (Friday and Saturday) from the three-day event (formerly including Sunday) in prior years. Please let me know your thoughts on this change as we plan for future events.

My first task of the day early Friday morning was to review the weather forecast for the day. It had rained Thursday night and was still cloudy at 7am, but the sellers' parking lot was dry. There was a 20% or so chance for rain in the morning, so we (my wife, Linda, and I) decided to take a chance and mark the parking spaces with chalk before vehicles arrived. I brought two types of chalk: one that washes away with water and one that claims it does not. Accordingly, we used the one that should not wash away. Rain fell about an hour later and yep, the chalked numbers all washed away. So, we just "chalked" it up to experience (sorry). Again, we were so glad to have the nicely printed parking assignment maps provided to sellers by Judy and Ed Huether. Those maps, coupled with the fact that the lot itself has smooth and unbroken pavement with well-marked lines helped immensely to find spots and allow traffic to move in and out. The rain stopped and our rental items, the tent, Porta Potty and A/V projector were all delivered and set up in their proper locations. Many thanks to our sellers for not driving stakes and screws into the pavement. This is a requirement for maintaining the excellent condition of the parking lot and for returning to the Medinah Shriners next year. After returning from a brief coffee break, I noticed that the ham radio operators were setting up antennas and bringing vintage ham gear into the tent. There were strong gusts of wind on Friday, but the tent and ham antennas remained intact!



So far so good until we tried to set up our low power AM radio transmitter. An Addison Village Ordinance places a limit on allowable noise level within a venue. So, rather than using a PA system, our alternate plan was to have attendees use a portable AM radio tuned to a known fixed frequency on Saturday. A low-power "FCC Part 15" transmitter located on-site would then literally broadcast announcements to the multitude of tuned-in listeners. However, signal coverage of the area was just too limited, and we had a "back to the drawing board" moment. We will re-visit this idea and determine if it is viable for next year.

Next, I went indoors to check out the progress for setting up the Friday evening auction. All chairs and tables were in place and John Stone and Nick Tillich were discussing auction logistics. It was still a bit cloudy outside, but it looked like we would have a dry afternoon to unload auction items from vehicles into the auction area. Judy Huether had moved Registration inside the Auction room and, with Mary Johnson and others, was busily handing out pre-registration packets and assigning seller spots to latecomers.

Meanwhile, back outside in the swap meet lot, the first group of sellers was already arriving to claim their spaces. Thankfully, the bulk of our Friday activities would be indoors and out of any potential bad weather. Auction attendees were streaming in, and with them, a large number of quality items. It would be a long night. The final auction item fell under the gavel after midnight. Find out a lot more about the *Radiofest 2018* auction in the separate *ARCI NEWS* article “About The Auction” in this issue.



It rained in the pre-dawn hours of Saturday morning, but the rain stopped and the parking lot was dry by the 7am swap meet opening. The swap meet area soon became extremely busy. Most sellers seemed happy with the level of activity for the rest of the day and virtually everyone gave a positive review of the facility. Around 8am, the friendly folks at the Shriners set up a concession stand with coffee and donuts. Many bleary-eyed attendees were glad to oblige. Later on in the morning, the Shriners switched the concession stand to lunch service, selling hamburgers, brats, chips and drinks—a brisk amount of business went on at the stand between 11am and 1pm. We are grateful to the Shriners for providing us with this service, since the only other options were either at the hotel restaurant or off premises.

The comments I heard from both sellers and buyers at the swap meet were overwhelmingly positive. As previously mentioned, the Shriners facility received a unanimous “thumbs up.” Accessibility is great, parking is ample and close by, restrooms are accessed easily, and the food concession continues to be a big hit. While overall satisfaction was high, there is always room for improvement. This was our third year at the Shriners and we are continually learning what works well and where improvements might be made. Our *Radiofest* team volunteers will discuss *Radiofest 2018* logistics at the next regular meeting on October 7 in anticipation of planning for *Radiofest 2019*.

This year’s speaker programs were held in Room B at the Shriners facility. This is a classroom style space has room for about 60 people, making it an ideal venue for all of our presentations. Again, the caliber of the topics and presenters this year was excellent.

- *Session 1 Bill Ross Memorial Ham Forum:* Harry Blesy, Bob Drake and Ron Grams continue the forum started many years ago by Bill Ross, W9WR (SK). Guest speakers were Erick Brueschke and Michael Mack talking about “The History of Heathkits – From Airplanes to Amateur Radio and Beyond.”

- *Session 2:* Ralph Taylor presented “Mechanical Scanning System Developed by the Chicago Television and Research Laboratory.”
- *Session 3:* Pete Nauseda presented “Vintage Radio Programming on Your Antique Radio.”

Once again, our speakers Reports from attendees were positive and attendance averaged about 35 per presentation, a healthy turnout. Again, I want to express my appreciation and thanks to all involved in providing first class programs to our attendees. Well done!

Immediately across the hall from Room B was The Music Room. We used this large space to hold our combined Old Equipment Contest and our Special Display. Barry Janov managed the display, while Jeff Aulik concentrated on the equipment contest. We have much more detailed info for you on both of these *Radiofest 2018* events contained in separate articles in this issue of the *ARCI NEWS*. You can also check out some of the great contest and display photos in these pages as well as on our ARCI web site, www.antique-radios.org.



At 3:30pm sharp, Tom Kleinschmidt and Bill Cohn commenced our *Radiofest 2018* Donation Auction, with a respectable group of eager buyers in attendance. This year we offered an all-day “Donation Sale” (in addition to the Donation Auction). People could buy and sell donated items all day up until 3pm. Items not sold during the day were placed on the auction block. By 3:30pm, the auction pile had swelled substantially even with the Donation Sale activity. Tom and Bill spent the next hour or so skillfully working their way through the entire collection of “stuff” ultimately finding homes for nearly all of it. At the end, little remained for the recycling company to remove, other than some old wood cabinets, cardboard boxes, and a few miscellaneous pieces of trash. Between items sold and auctioned off on Saturday, the sale of donated items again greatly helped the club’s bottom line. Our sincerest thanks to Bill Cohn and Tom Kleinschmidt for a job well done and to everyone that donated and purchased items.



Our annual Carl & Carolyn Knipfel Awards Banquet commenced at 6:00 PM in the East Medinah Ballroom, with over 70 hungry people in attendance. After a long and occasionally stressful day, it was time to settle in for an evening of great food and drink, pleasant conversation and finally, a little bit of fun. The Medinah Shriners prepared an excellent meal of chicken, beef and pasta for the group, and served it buffet style. The evening closed with a very entertaining performance by the popular Chicago area performance group: The Eddie Korosa Band.

VOLUNTEER OF THE YEAR

The ARCI Volunteer of the Year Award was created to recognize individuals who, through their efforts, have made significant contributions to the organization in support of our vocation, our club, and its activities. The 2018 Volunteer of the Year Award went to Jim Rajkovic for his tireless effort in updating and maintaining our ARCI website. Jim has assisted several club members to creatively update our website over the past several years. We want to give Jim a well-deserved THANK YOU on behalf of everyone at ARCI for his ongoing service and contributions to the club and at *Radiofest*.



Jim Rajkovic, 2018 Volunteer of the Year.

FIVE CLUBS MADE THE DIFFERENCE

Radiofest continues to have a national reach and typically attracts international participants. Our attendees this year included people from across the country. *Radiofest* is truly the product of five major clubs and volunteers that span New York to California. We thank each of these organizations and all our volunteers for their tremendous hard work!!



ABOUT THE AUCTION

The *Radiofest* Main Auction was once again a rousing success in 2018! Building on the foundation we had established in previous years at the Shriner's facility, we decided not to tamper too much with the formula, and left things pretty much the same for this year.

Our "seasoned" auction staff also returned, mostly unchanged from last year. Auctions of this size and scope are never easy to pull off, and we are very fortunate to have such an experienced and dedicated group of individuals to do the "heavy lifting" year after year. Nick Tillich continues to refine his data processing program to make the registration and payment processes work more efficiently each year. This year, these small refinements, aided by good weather and decent traffic conditions, allowed us to come very close to an on time auction start!

As always, Jim Sargent, our auctioneer, did a fantastic job calling the auction, efficiently gaveling his way through 292 lots in a period of about 5 ½ hours. By the final gavel drop, Jim's efforts, and those of all our other volunteers, resulted in the third largest auction total in ARCI history, with total sales of over \$34,000!

Here are some key statistics from the auction. 137 persons participated in the auction this year, which is a 2% increase from the 134 last year. We had 59 persons who consigned lots, up from the 52 last year (55 in 2016). We had 292 lots consigned, which was a 27% increase from the 229 lots last year (262 lots in 2016).

The average sale price was \$170, up from \$155 last year (\$167 in 2016).

200 of the 292 lots consigned this year sold. That means that there were 92 no-sale lots this year, a no-sale rate of 31.5%, up from 22.2% last year and 25.2% in 2016.

The total sales were \$34,050, down 5% from last year. Those figures compare with the past few years as follows:

Year	Total Sales
2018	\$34,050
2017	\$35,885
2016	32,900
2015	24,705
2014	37,783
2013	26,480
2012	25,300
2011	16,400

Compared to last year, there was a shift in the items from the \$250 ~ \$499 category to the \$249 and under categories, which helps justify the lower auction totals.

Hammer Price	Lots Sold 2018	Lots Sold 2017
\$500 or higher	15 (7%)	14 (7%)
\$250 ~ \$499	22 (11%)	34 (17%)
\$100 ~ \$249	57 (28%)	45 (23%)
\$50 ~ \$99	46 (23%)	43 (22%)
Less than \$50	60 (30%)	42 (22%)

Top 15 Lots	Hammer Price
Packard Bell Blue Mirror Radio	\$1,700
FADA Insert Grill 1000 Catalin Radio	1,500
AK 4445 Breadboard	1,100
Emerson Q236 Snow White Radio	1,100
Akai GX-747 Reel-to-Reel	1,100
AK Breadboard Model 12 Breadboard 1925	725
Atwater Kent Dealer Sign	700
RCA 40X56 World's Fair Radio	700
Kennedy XI Battery Radio	650
Packard Bell Radio	600
Howard Model O Radio (Cathedral w/ Legs)	600
Sony TR63 Turquoise Transistor Radio	575
Lot of Audio Tubes	575
Sansui G-9700 Amp and Tuner	500
Trophy Baseball ~Radio	500

The total price of the top 15 priced lots was \$12,625, down from \$13,590 last year but up from \$11,850 in 2016.

Our sincerest thanks to everyone who participated in the auction, and helped to make it one of the most successful auctions in ARCI history. The auction proceeds will help to offset the costs of *Radiofest*, and will contribute to the financial stability of our club.



WA9RCI ON THE AIR AT RADIOFEST

Once again, ARCI setup the annual Vintage Ham Station at *Radiofest 2018*. The WA9RCI vintage ham radio station included a very nice collection of Heathkit equipment provided by Ron Grams, WB9IMR. The station had vintage HW-100 vacuum tube and HW-104 solid state transceivers covering the 10-80 Meter ham bands; a deluxe SA-2060A antenna tuner; an HW-2036A Two Meter FM rig with matching power supply; four Heath SWR bridges of various vintages; the complete set of “lunch box” transceivers (HW-19 for Ten Meters, HW-29A Six Meter, HW-30 Two Meter, and CB-1 for use on 11 Meters); plus the matching pair of 10-80 AM/CW radios (Cheyenne MT-1 transmitter and Comanche MR-1 receiver from the early 1960s plus matching accessories including speakers and microphones); a Kenwood TM-621A Two Meter FM rig with two meter vertical from Jim Novak, WA9FIH; and, a HF vertical antenna from Steve Muchow, K9AHS. Although HF band conditions have been spotty due to low sunspots and solar flares, more than thirty contacts were made, mostly to southern states including several with National Parks special event stations. Many thanks to all who had a part in this fun activity!



*Radiofest 2018 Ham Station WA9RCI with our license trustee
Ron Grams, WB9IMR, at the microphone.*

ANTIQUÉ RADIO CLUB OF ILLINOIS

RADIOFEST 2018

WA9RCI

QTH: MEDINAH SHRINERS CENTER

ADDISON ILLINOIS DUPAGE COUNTY GRID EN51

OPERATION ON AUG. 25-26 ON HF WITH HEATHKIT HW-104 ON SSB;
VHF FM, A KENWOOD TM-621A WITH VERTICAL ANTENNAS.

CONFIRMING QSO WITH _____ UTC _____ FREQ _____ MODE _____

QSL TO 2335 SOUTH 2ND AVENUE, NORTH RIVERSIDE IL 60546-1308.

TNX & 73

ARCI's 2018 QSL Card.

GRATEFUL RECOGNITION

Each year, ARCI tries to thank all those who contributed to the success of the club. It takes the efforts of many people to make our club function. On behalf of the ARCI Board of Directors and the membership, congratulations to everyone for their many contributions in achieving a very successful year for ARCI and an outstanding *Radiofest 2018!*

RADIOFEST SPONSOR MEMBERS

ARCI offers "Sponsor-Members" status to members who are dedicated to ensuring the financial strength of *Radiofest*. Members who feel they are able to contribute \$25, \$50, \$100 or more to the sponsorship fund may do so. Sponsor-Members will be listed in ARCI NEWS (but not the amount of contribution), and recognized as a group at the banquet. Sponsor-Members help to provide the "emergency backing." You, as a member, are invited to help and participate as you see fit. Funds, cash-in-person, or checks identified as "Member-Sponsor Fund," should go directly to our Treasurer Rudy Hecker.

We are grateful to 2018 Sponsor Members: Harvey Mattel, Rick Nelson, Olin Schuler and Pat Schad. Thanks to each of you!

ARCIThANKS ALL OUR PARTNERS AND SPONSORS

We wish to express a special thanks to our sponsors. Thanks to you, many costs are alleviated or reduced. We encourage all our members to help support ARCI throughout the year, but *Radiofest* in particular requires generous help. Please contact Steve Muchow at smuchow@att.net or Art Bilski at art@myantiqueradio.com with any ideas or suggestions for new sponsors interested in discussing arrangements with ARCI going forward.



Capacitors and Schematics For Tube Radios
www.justradios.com



Post 76



Boy Scout Venture Crew 32



PHOTO REVIEW



RADIOFEST WINNER'S CIRCLE EQUIPMENT CONTEST WINNERS

Radiofest held its annual Old Equipment Contest in August under the direction of Jeff Aulik and Barry Janov. Many great and quite a few rare items were on display. Congratulations to everyone on all the fine entries, and of course, congratulations to the winners!!

Dr. Ralph Muchow Best of Show Award

Michael Feldt: Wilson Radio Display

People's Choice Award

Michael Feldt: Wilson Radio Display

Chairman's Award

Tom Burgess: Ten 10-in-1 Knight Kits

Radios & Apparatus Pre-1930

1st – Geoff Bourne: Harko Senior and
Two step Amplifier

Pre WWII Radios and TVs

1st- Michael Feldt: Wilson Radio
Display

2nd- Geoff Bourne: Patterson PR16C
Receiver

Radios & TVs Post WWII

1st – Geoff Bourne: Transvision 7" TV

2nd – John Reinicke: Fisher 800
Receiver

Advertising and Premiums

1st – Bob Dobush: Crosley Ephemera

2nd- Geoff Bourne: Philco Christmas
Sign

Speakers

1st- Geoff Bourne: Vocaloud
Loudspeaker

Electronic Kits

1st-Tom Burgess: Ten 10-in-1 Knight
Kits

2nd- Harry Blesy: Knight Kit Ocean
Hopper Display

3rd- Michael Ast: Reinartz 2 Kit

Open Category

1st – Geoff Bourne: EF140 Analog
Computer

2nd – George Wilder: Ampec 3
submini Tube Audio Amplifier

3rd – George Wilder : Homebrew
Crystal Radio



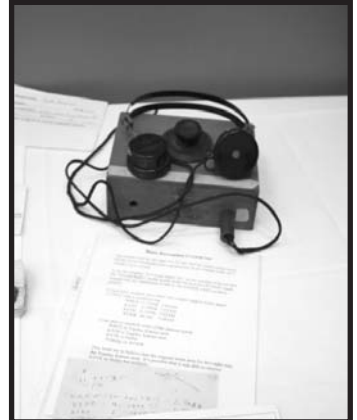
SPECIAL RADIO DISPLAY

ELECTRONICS KITS

This year we celebrated radio and electronics kits at *Radiofest 2018*. ARCI members brought one or several pieces of equipment for display. We displayed any, and all, radio and electronics kit and kit-related items, including:

- Early (1940s to 1960s) tube or transistor radios
- Kits (built and unbuilt) from well-known and lesser-known suppliers
- Test equipment
- Hi-Fi and Stereo
- Unusual product categories
- Related items such as original boxes that housed the kit
- Any original documents such as building instructions and advertising items.

Thanks to Jeff Aulik and Barry Janov for organizing the volunteers, and thank you to everyone who brought items for display.



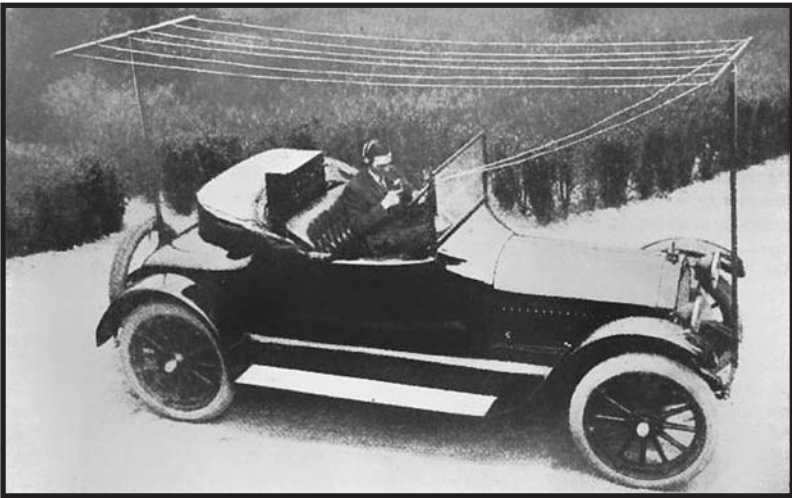
NEWS FROM THE HAMSHACK

By Jim Novak, WA9FIH

HAMS ON THE GO – THE HISTORY OF MOBILE AMATEUR RADIO

Back in the early 1920s, once radio progressed beyond spark gap transmitters which only made Morse code characters possible, both commercial broadcasters and amateurs – ham operators – began experimenting with voice transmissions. At first, hams applied modulation to the RF signal by means of a carbon microphone in series with a battery; running the audio through a loop of wire wrapped around the transmitter's RF output coil. Soon, that technique was replaced with other modulation techniques, such as series modulating the voltage going to the plate of the final amplifier tube. As more and more AM (amplitude modulation) was used, ham operators envisioned the opportunity to send and receive signals from their vehicles.

The photo of a very early – 1919 – mobile installation shows a long wire antenna running back and forth from supports on the front and rear bumpers. The Department of Commerce – predecessor to the FCC – permitted such operation above the frequencies used by commercial broadcasters, 160 Meters (about 1600 kHz) and higher. This necessitated a rather long antenna.



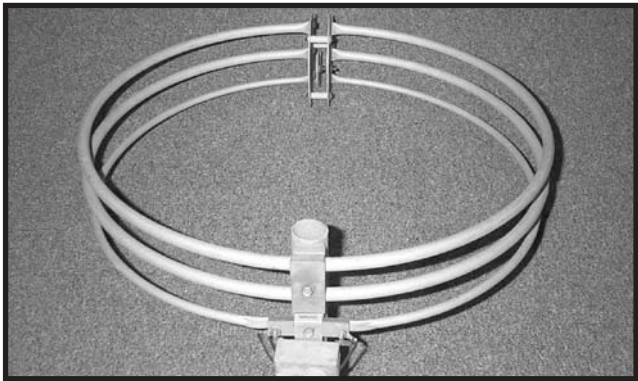
Ham radio mobile installation circa 1919.

Although the amateur radio 160 Meter band is still in use (locally, there is a group called the Chiburban Mobileers which has a regularly scheduled net and other activities), mobile operation evolved through the years as higher frequency operation became feasible. On the HF (short wave) bands, Single Sideband (SSB) operation has largely replaced AM, and there are a number of compact solid state radios available to hams that are capable of under dash mounting with 100 Watts of RF output from 75 Meters (3.5 MHz) through 10 Meters (28 MHz) or 6 Meters (50 MHz). Most HF mobile operation is done with vertical antennas, using loading coils to create antennas of a practical length.

When the AM mode was still popular back in the 1950s through the early 1970s, there was a lot of mobile activity on Six Meters, especially since Technician Class operators have access to that band.

My first mobile radio was the Heathkit Sixer, which I built when I received my license in 1962. Ron, WB9IMR displayed his Sixer at *Radiofest* this year. Popularly known as the “lunch box,” it had a super regenerative receiver and put out about a watt or two of RF from its crystal-controlled transmitter. An external vibrator power supply was essential to operate on 12 Volts DC. We had a commonly used “calling frequency” of 50.4 MHz for mobile operation, so a lot of tuning was not necessary.

Most of us used Hi-Par Saturn Six Halo antennas, which were a horizontal dipole bent back around into three loops and mounted at the top of a vertical stick fastened to the car's rear bumper.



Saturn 6 Halo Antenna.

CushCraft offered the Squalo, which was a dipole bent into a square loop that could be either mast mounted or set up on a car's rooftop with suction cups attached to little insulated spacers – kind of resembling a luggage rack from a distance.



Cushcraft ASQ-6 Squalo Antenna.

Multi-Elmac produced a popular higher-powered AM mobile setup – the AF-68 transmitter and PMR-8 receiver, which was tunable throughout the 80 to 6 Meter ham bands, with a power supply capable of 6 or 12 VDC and 115 VAC. It took up a bit of space under the dash, but there were no center consoles back then, either!



Multi-Elmac AF-68and PMR-8

When we had a sunspot maximum a few years ago, several manufacturers offered single band ten meter transceivers capable of SSB, AM, FM and CW (Morse code) operation with 25 Watts output. Two popular models were the Radio Shack HTX-10 and Uniden's HR-2510. I experimented with ten meter SSB mobile operation for a while, and recall one autumn weekend I was able to easily make contact with a dozen or so stations in the British Isles while sitting in my cousin's driveway outside of Wilmington, Illinois. I used my HR-2510 attached to a slightly shortened CB magnet mounted vertical on the roof of my car.

All of the mobile rigs described thus far had many controls and required tuning. This was not something that a driver would want to do while zipping along in traffic on I-55! But, that problem has been solved for most of us with VHF FM operation. FM mobile radios were designed initially for military, public safety and commercial operation. They are "channelized," originally crystal controlled on one, two or up to four frequencies but now feature synthesized frequency control over a wide range of frequencies. Most are simple to operate, with only a few controls such as volume, squelch, and channel selector, although some have additional features such as variable RF output power, selectable sub-audible tone to access repeaters, etc.

Actually, hams have been using FM on the two meter (144 MHz) and higher bands for many years. Hams first employed retired surplus military or business band radios retuned to adjacent ham frequencies, necessitating the installation of new quartz crystals for both transmit and receive frequencies. Many early rigs of this type used vacuum tubes, and could operate on only one, two or at most four channels. They were trunk mounted, with a heavy control cable running up to the dash mounted control head and speaker.

Presently, a wide range of compact solid state hand held and mobile radios are available for the 144, 222, and 440 Mhz Amateur bands. These can be easily programmed to use on various frequencies, as well as having receive capabilities for other services such as the National Weather Service transmissions on frequencies such as 162.550 MHz. There are also a few frequencies, such as 52.525 and 29.600 Mhz, in use on the Six and Ten Meter bands. Repeater stations operated by many clubs extend the user's range by retransmitting the signal from a mobile or handheld radio, using a high power transmitter and an antenna on a tall building or tower.

RADIO ZONE

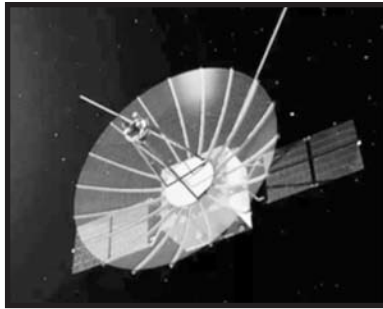
An Occasional Column on Radio Related Items of Interest
By David Bart

CHINESE LUNAR SATELLITE SENDS IMAGES FOR AMATEUR RADIO

In May, 2018, China launched the DSLWP-A and DSLWP-B microsattellites -- also known as Longjiang-1 and Longjiang-2 -- into a lunar transfer orbit. Longjiang-1 was apparently lost in the process and likely remains in deep Earth orbit. Both deployed as secondary payloads with the Queqiao relay satellite as part of the Chang'e 4 mission to the far side of the moon.

DSLWP stands for "Discovering the Sky at Longest Wavelengths Pathfinder." The satellite will test low-frequency radio astronomy and space-based interferometry. While it carries Amateur Radio and educational payloads, no transponder is aboard.

The Chang'e 4 mission will be the first-ever attempt at a soft landing on the far side of the moon. The Chang'e-4 lander and rover are scheduled to launch in December, 2018. The Harbin Institute of Technology (BY2HIT) developed and built the DSLWP spacecraft and is overseeing that mission. The microsat also carries optical cameras from Saudi Arabia.



The Queqiao communications relay satellite. (CASC)

Some earthbound radio amateurs and sky watchers have received images from the tiny Chinese satellite, which is now orbiting the moon. An open telecommand protocol allows radio amateurs to take and download images. The spacecraft transmits on 70 centimeters (435.400/436.400 MHz), with 250/500 bps GMSK using 10 kHz wide FM single-channel data, with concatenated codes or JT4G. JT4 uses four-tone FSK, with a keying rate of 4.375 baud; the JT4G sub-mode uses 315 Hz tone spacing and 1,260 Hz total bandwidth.

The Harbin Institute of Technology team also operates LilacSat-1, a 2U Amateur Radio CubeSat launched as part of the European QB50 initiative, and LilacSat-2 (CAS-3H), an Amateur Radio and technology test satellite

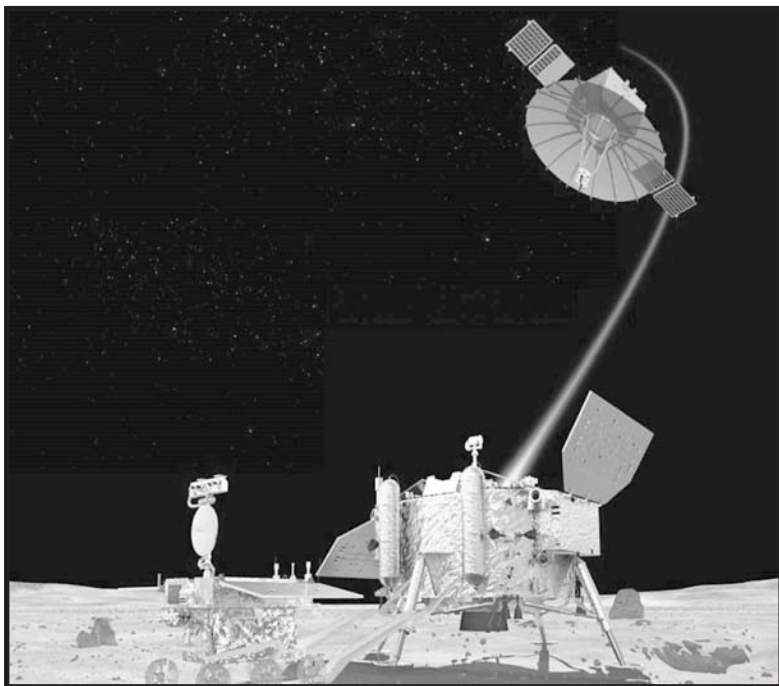


The Earth and Moon imaged on June 8 by the KACST-developed camera on China's Longjiang-2/DSLWP-B microsatellite. The image shows Saudi Arabia on the distant Earth, as well as the northern hemisphere of the lunar far side, near Petropavlovskiy crater. (CNSA/CLEP/KACST)



The Moon's Mare Nubium imaged by the student camera aboard Longjiang-2/DSLWP-B, launched as part of the Chang'e-4 lunar relay satellite mission in May 2018. (Harbin Institute of Technology)

A demonstration of the lissajous/halo orbit to be used by the Queqiao Chang'e-4 relay satellite mission is available at <https://gbtimes.com/change-4-update-queqiao-relay-satellite-in-halo-orbit-longjiang-2-returns-amazing-images-from-moon>.



A rendering of the Chang'e-4 relay satellite, launched in May 2018, and lander and rover to set down on the lunar far side in late 2018. (CAST)

The Queqiao communications relay satellite is required for the lunar far-side landing to facilitate communication with a not-yet-launched lander and rover. The moon's far side never faces Earth, and some significant scientific measurements from the dark side of the moon require real-time contact with Earth. Queqiao was developed by the China Academy of Space Technology (CAST).

The Harbin Institute of Technology Amateur Radio Club has invited more radio amateurs to get involved with the DSLWP mission. QSL cards have been designed for different flight phases for amateurs who successfully receive telemetry or make contact. Information can be obtained at: QSL/HIT Amateur Radio Club, Letter Box 1241, 13 Court Street in Harbin Institute of Technology, Harbin, P.R.CHINA 150001 or by E-mail to by2hit@126.com.

References:

Andrew Jones, Chang'e-4 lunar far side satellite named 'magpie bridge' from folklore tale of lovers crossing the Milky Way, *Gb Times*, Apr 24, 2018.

Andrew Jones, Chang'e-4 update: Queqiao relay satellite in halo orbit, Longjiang-2 returns amazing images from Moon, *Gb Times*, Jun 15, 2018.

Andrew Jones, A tiny Chinese satellite is orbiting the Moon and allowing radio amateurs to download images, *Gb Times*, Sep. 4, 2018.

Radio Amateurs Receive Images from Chinese Lunar Satellite, *ARRL Letter*, Sep. 6, 2018.

BUSINESS CARD ADS

We invite all of our members to scan and send in your business card to be included in *ARCI NEWS*. For \$80 your card will appear in the next 6 issues! Your card will be seen by approximately 400 people per issue and up to 1,000 people at *Radiofest* where we make additional copies of *ARCI NEWS* available at no charge. If interested, please scan your card and send it to jbart1964@gmail.com and mail a check for \$80 to Rudy Hecker, ARCI Treasurer, 127 Weymouth Court, Schaumburg, IL 60193. Thank you all for your continued support of ARCI!!!



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ANTIQUÉ WIRELESS ASSOCIATION

The AWA will hold its annual membership and board meetings on Sun., Nov. 4 in the Conference Center (across the street from the museum) at the AWA's Antique Wireless Museum complex at 6925 Routes 5 & 20 (intersection with Rt. 444) in Bloomfield, NY. All members are welcome. The AWA, our national affiliate, publishes the AWA Journal and the AWA Review. Dues are \$35 per year. For more information, please see www.antiquewireless.org.

WISCONSIN ANTIQUE RADIO CLUB, INC.

The Madison Chapter of WARCI will hold a swap meet on Sun, Oct. 14 at 8am at 3610 Lexington Ave. in Madison, WI. The next WARCI meeting will take place Sun., Nov. 4 at "The Terminal", located at 5917 South Howell Street in Milwaukee near the airport from 7AM-11AM. For information, see www.warci.org.

NORTHLAND ANTIQUE RADIO CLUB

The NARC Fall Indoor Swap Meet will be Nov. 3. For information, please see <http://www.northlandantiqueradioclub.com/index.shtml>.

MICHIGAN ANTIQUE RADIO CLUB

MARC's Vintage Electronics Expo will be in January 2019. For more information on the schedule for MARC's Vintage Electronics Expo, please see <http://michiganantiqueradio.org/events/>.

INDIANA HISTORICAL RADIO SOCIETY

The IHRS Fall Foliage Meet will be on Oct. 13 at 8:00am at the Riley Park Shelter, Greenfield, Indiana. (One block north of US40 on Apple Street.) For more information, please see <http://www.indianahistoricalradio.org/ihrsched.htm>.

CLASSIFIEDS

Everything I have radio related is for sale. Too much to list. If you want to see what I have, call David at 630-336-9790. I live in Woodridge, IL.









ARCI NEWS

Antique Radio Club of Illinois

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