The Alabama Historical Radio Society Newsletter

November 2018

NOTE FROM PRESIDENT DAVE

Greetings to all!!!

I am sure you are enjoying the cooler weather and now the change back to normal time. Work continues to go well in the shop; many items have been completed and returned to their owners, but some remain. If you are the owner of a radio that you may have worked on several months ago but may have left it on the shelf at the shop, please come on back to the shop and let's get the project completed. If you need assistance with the repair, I, or one of the other guys, will be glad to help you get it completed.

We continue to refine our procedure for checking in items and keeping track of them while they are in the shop. If you receive any donation or item for repair, please inquire about the latest method of checking-in, if you are not sure. The shop committee appreciates your help. We received many new donations in October, including radios, valuable early tubes, catalogs, books and parts from Huntsville and Tennessee.

Dee Haynes, with the Museum Committee, worked with Bill Tharpe and secured a plastic enclosure for the Searchlight radio. Space was made, and this radio is now on display in the atrium of the Alabama Power Company.

The October monthly meeting was well attended. I want to express my thanks to John Outland for the very interesting program. John shared the pictures of his trip to Alaska. He traveled by car and pulled a small trailer over 10,000 miles to visit his son and family.

An auction for members was held after the meeting. This auction turned out to be one of the best we have ever had!! The bidding started out very slow and looked like there was no interest in the items for sale. Ray Giles and Willie Henderson invited the members to come up and take a closer look at what was being offered. After the bidding started, things started to move, and many items were sold. Strangely the smaller items were not sold, but many larger items were!! As we all know, there are no two auctions alike!! Thanks to all who helped and those who bought!!!!

AHRS recently hosted the monthly meeting of the Birmingham Records Collectors. The meeting was arranged by Ray Edwards, a member of both organizations and hosted by Dee Haynes. The feedback was very positive, especially on the displays of the Joe Rumore and Joe Dentici studios, both legendary DJ's in the Birmingham area.

Some members met at Bogues Restaurant at 7:30 A.M., for breakfast before the usual Saturday shop activities and the electronics class. All are invited to join us on the next class day. Bogues is located at 3028 Clairmont Avenue, Birmingham, Alabama, 35205 on the Southside of Birmingham, east of UAB

See you at the shop!!

President Dave
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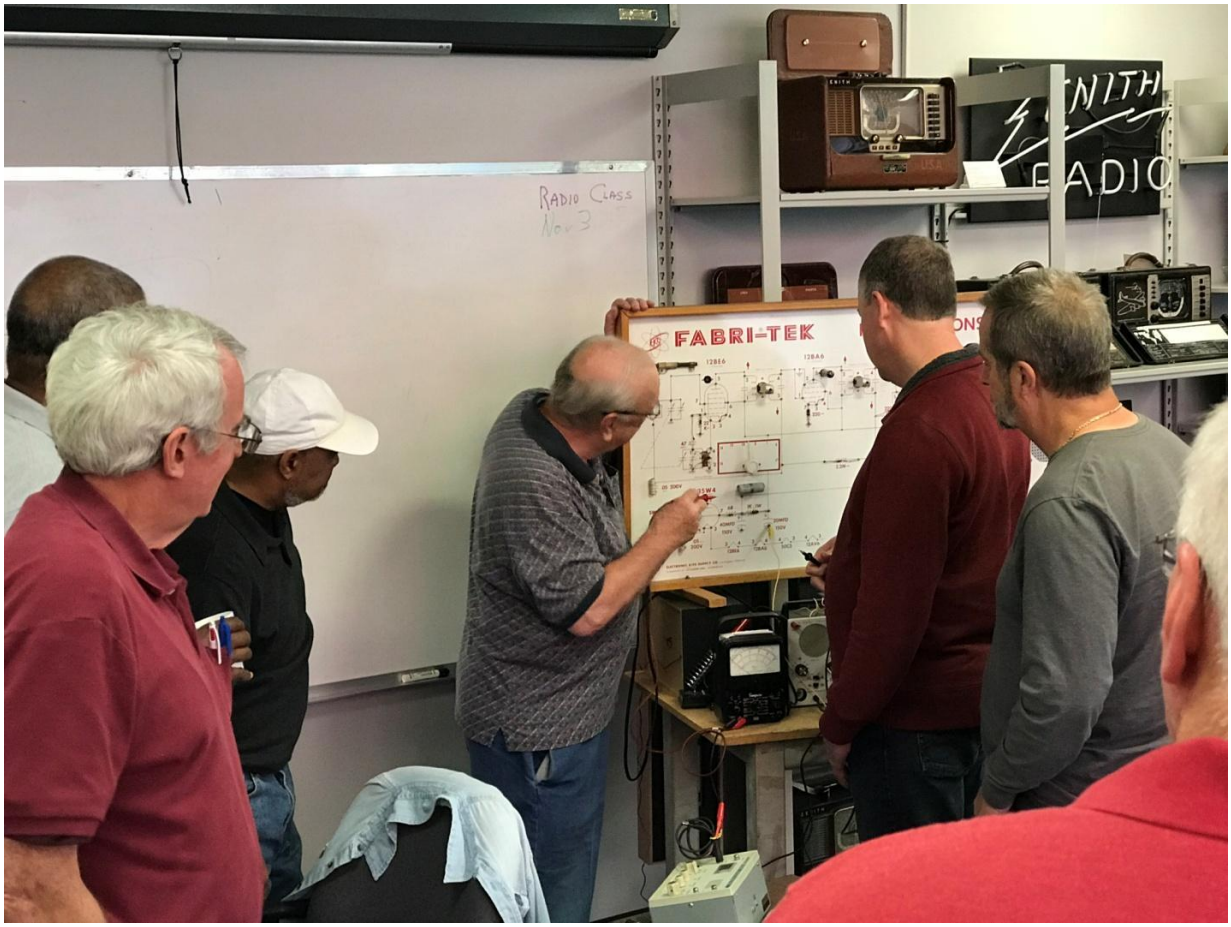
WHAT'S HAPPENING IN THE SHOP

As President Dave mentioned, the recently acquired Searchlight Radio was placed in the upper Atrium of the Alabama Power Company Headquarters with three other radios that have been on display there for several years. These radios are located on the west side of the Atrium, while the main Don Kresge Memorial Radio Museum is located on the east side of the lower Atrium. The Searchlight Radio makes a great addition to the display.

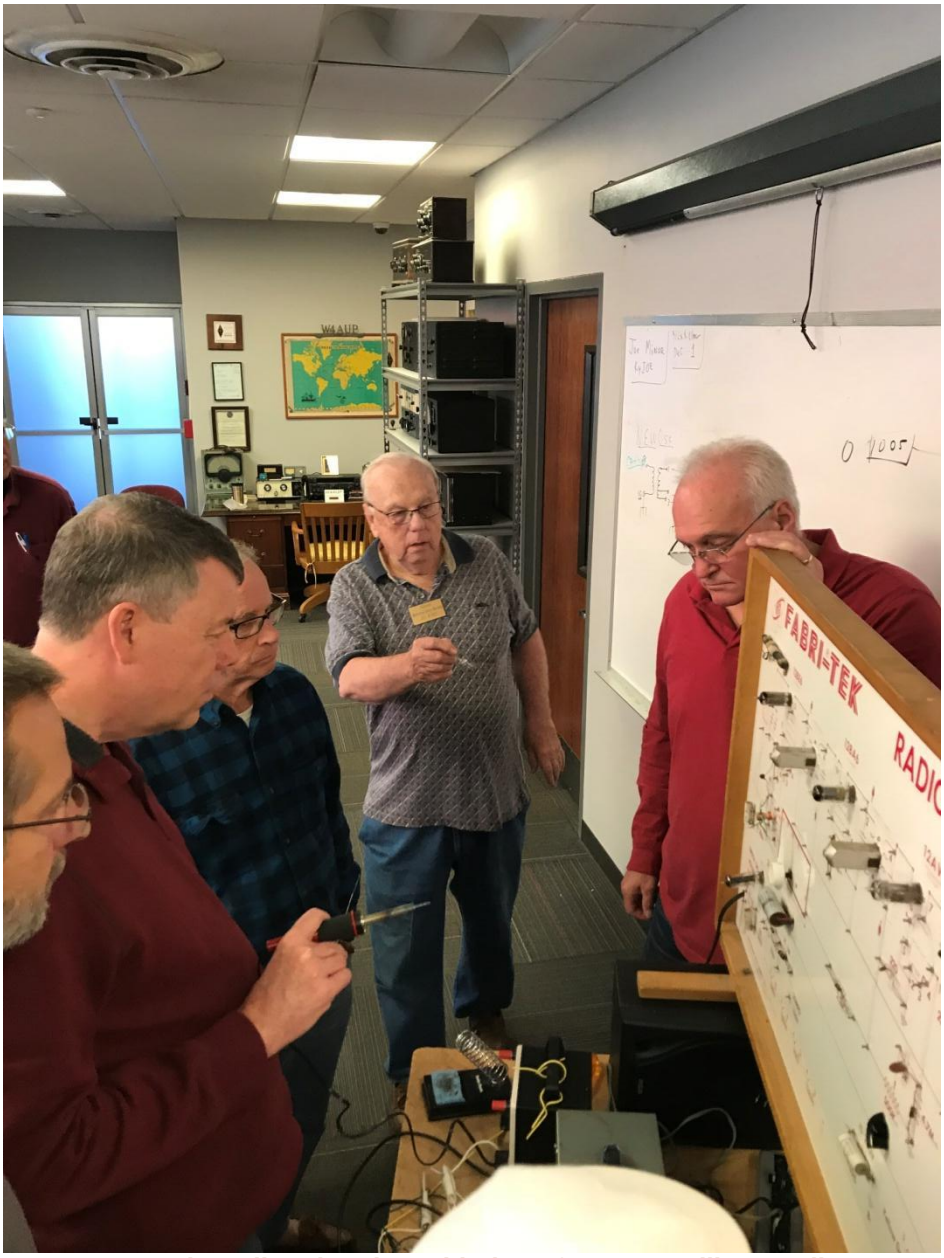
Upper Atrium Radio Display with (left to right) a Sparton Catalin Table Top, E. H. Scott Philharmonic Console and Sparton Blue Mirror Glass Sled along with the new Searchlight Radio.

Instructor Joe Minor taught the November Radio Class, continuing the study of the all-American five radio circuitry, parallel resonant circuits, such as used in IF cans, use of resistors to reduce voltage and a review of several student radio projects. The class participants worked on the class radio demonstrator, which had developed a problem. The class traced the problem to an open oscillator coil and replaced it with a new one. Next month's class on December 1, starting at 9 a.m., will complete the coil installation and retune the input circuit. Joe plans to have more hands-on class work in the next several classes. Bring your radio projects to class and learn how to repair old radios. You can enjoy some first-class fellowship, also!

Instructor Joe Minor setting up test equipment to troubleshoot the Radio Demonstrator Board.



Joe Minor describing how the oscillator circuit works in the all American five Demonstrator.



Joe Minor directing the soldering of a new oscillator coil.

The October Monday Night Meeting featured update reports from the Shop, Museum, Marketing and Library committees. President Dave Johnson mentioned several initiatives underway at the Society and thanked everyone for their support. Following the business meeting, member John Outland presented the program about his recent round-trip to Alaska by SUV, pulling a small camper with him. He stopped at many popular tourist sites along the way and showed pictures of them to the group. He traveled over 10,000 miles to visit his son and family. Following John's program, a member-only radio and gear auction was held. It was successful, especially, with moving out some surplus equipment. There will be another auction early next year, so stay tuned.

President Dave Johnson leading the October Monday Night Business Meeting at the Shop.

John Outland talking about his trip to Alaska at the October Monday Night Meeting.

John Outland showing pictures of sites along the route to Alaska.

The November Monday Night Meeting will be held on November 26, at the Shop in Birmingham, beginning at 7 p.m. After the business meeting, an interesting program will be presented. At press time, program details were unavailable.

The reorganization of radio displays in the Shop is continuing. I have included several pictures showing interesting displays in the Shop, along with progress on newer display shelves.

Cabinet with smaller radios, microphones, tape recorders, tubes and more at the Shop.

Zenith Display at the Shop. Note the radio on the top right shelf is one of two known to exist Superflex radios made in our Birmingham community in the 20's.

These radios have been recently placed as part of our Hallicrafters display at the Shop. Identification signs are being set, but are not complete.

Close-up of Hallicrafters SX-28 in its new home on the display shelf at the Shop.

One of the Hallicrafters radios donated by Julian Harris in its new spot.

I recently visited with new member, Brandon Sylvester, at his shop in Montgomery, to pick up several radio consoles he was donating to AHRS. He showed me pictures, before and after, of several radios he had worked on, and I was blown away by the quality of his restoration work. He is self-taught, getting much of his knowledge from the internet on YouTube and from folks around the world who have similar interests and who restore old radios. I took a picture of him in his work shop and a picture of some of his restoration work. He would like to work with an AHRS member located in the Montgomery area, if you could help mentor him. He recently traveled to our Shop in Birmingham and worked with Dave Johnson on one of his current restorations. He has recently acquired a Scott Phantom to restore. He is highly interested in what we do, and he will make a great AHRS member!

New member Brandon Sylvester working at his shop in Montgomery.

This 1936 Zenith 6-S-27 radio chassis is one that Brandon has completed restoration.

One recent radio was donated by David Voight and it has us scratching our head. It says "Radio Alterna - Paris". Radio Museum has some information on similar radios, but not this one exactly. This radio has a roll-top front (like a roll-top desk) like five models on the Radio Museum page. Those are known as Corbeille a pair and made in the 20's in Paris by Francois Gautier. Tuning dials and tube layout are different. Anyone have more information?

Radio-Alterna built by F. Gautier in Paris, France in the 20's.

The Officer and Director elections are set for the Annual meeting scheduled for December 27, the same day of the Society Christmas Party at the Shop. Following the election, food and fellowship will be enjoyed by all members and guests in attendance. The meeting should begin around 6:30 p.m. Come celebrate the season with your fellow members!

Veteran's Day is this November 11 and will be celebrated with a parade in Birmingham, AL on Monday, November 12. Whether or not your area has a parade, be sure to thank those who served or are serving in the armed services. Fly your American flag proudly and think about the sacrifices made to keep us free!

Thank you for supporting your Alabama Historical Radio Society!

BEYOND THE ANTENNA: HOW THOSE SIGNALS GET EMITTED IN THE FIRST PLACE

By Don Keith (N4KC)

Members of AHRS typically have a good idea of what happens after a radio frequency signal tickles the antenna and gets detected and demodulated by one of those wonderful antique radios. But I wonder how much they know about the other side of the equation, the radio station that emitted that RF in the first place.

Let's consider a little history. After World War II, just about everybody and his brother wanted a car, a house, and a broadcast radio station, preferably on the AM band. The Federal Communications Commission was stuck with the problem of how to cram onto the limited bit of spectrum—540 to 1600 kilohertz at the time—more and more signals without causing interference to each other. This was a bigger problem at night since propagation allows for signals to travel much longer distances when the sun sets. But the FCC wanted all communities to have access to local radio service, primarily to have a way to communicate information should an enemy launch a nuclear attack on the USA. So they set out to find a way.

First, they recognized value in having high-powered stations that could cover big swaths of the country, day and night. They declared those frequencies to be "clear channels," allowing 50,000 watts of power and non-directional signals, and the Commission either grandfathered in some existing stations or licensed others. Call letters we all know—WLW in New Orleans, WLS in Chicago, WSB in Atlanta, WSM in Nashville, WOAI in San Antonio—were all clear-channel stations (not to be confused with the company name Clear Channel Communications that later became the largest operator of broadcast stations in the country but have since, for some reason, changed their name to iHeart Radio). Other stations in bigger metropolitan areas were authorized for 50,000 watts of power but had other restrictions in place. There were a few 10,000-watt stations and others with non-standard power, too, but most AM licensees were limited to 5,000 or 1,000 watts, assuming that would be enough to cover their "cities of license," the area they were supposed to serve with programming to meet what the Commission called PICON: the public interest, convenience and necessity. But, if the stations wanted to play that new-fangled rock 'n' roll music, sell commercials and make money when we were not being threatened by Mother Nature or Nikita Khrushchev, then fine.

Thus was born a land rush! Or, at any rate, an AM broadcast channel rush. So the Commission was challenged to provide spectrum for literally thousands of new stations. Note that at the time, the FM band was wide open, but interest was practically nil. AM was the place to be.

The answer? Varied. First, many stations were authorized for high power during daylight hours, but when the sun set, they had to reduce their output considerably. Many were 5KW when the sun was out but at dark, they cut back to 1KW or less. Other stations had no nighttime authorization at all. (I worked for a number of years at WVOK, 690 kilohertz, in Birmingham, where we were obligated to go

off the air at local sunset, which was as early as 4:45 PM—in the middle of afternoon drivetime—in December, and we could not crank back up that 50,000-watt monster transmitter in the backroom until 7 AM the next day. It was not until the early 1980s that we got authorization to emit a massive 32-watt signal at night, later upped to 500 watts with a directional tower array.)

But to crowbar in still more stations to meet demand, the FCC began authorizing directional signals, and especially during those long-distance-propagation night hours. This required, in many cases, a complicated set of carefully-spaced towers (you did know that AM station antennas are their towers, right?) and electrical circuitry typically called phasors. And they were stunning, both in their design and complexity. These devices took the signal from the station's transmitter and fed it in different phases to different towers to make certain the RF was eventually sent out in a very strictly-regulated pattern to protect other stations operating on the same frequency in a city some distance away.

Bingo! It worked. Sort of.

It took some real engineering brainpower to design these directional antenna systems and then convince the FCC the proposed station would not cause interference to some other poor soul already camped on that frequency. Some consulting engineers grew rich—and some lost their minds, literally—doing this kind of work. Then, the station engineers had to keep the plant in spec, often doing what is called a "proof" to make sure the signal was not creeping outside its boundaries and slaughtering some poor innocent station on the same or adjacent frequency. (This involved going out into different parts of town and measuring the strength of the station's signal to be sure it was strong or weak where it was supposed to be. By the way, you haven't known true fear until you deploy in the middle of the night in certain high-crime neighborhoods with thousands of dollars of diagnostic gear.) Directional stations for years were required to have a licensed engineer on staff—someone holding the First Class Radiotelephone commercial license—just to monitor the transmitter and antenna parameters. I know many guys who worked their way through college sitting in front of meters at a transmitter site, doing homework and jotting down meter readings when obligated to do so.

Some of these directional systems required multiple towers and buildings full of complicated gear, generating a very narrow signal. I worked for a station in Nashville that was on 1430 kilohertz, running 5KW daytime, non-directional, but switching to 1KW at night, using a six-tower directional array. Just writing down all the meter readings that detailed the phase angle degrees on the phasor was a big job. Our signal was so narrow, pointed south, that we called it "The Gallatin Road Ray Gun." We were loud and clear south to the Alabama line, but if you got very far east or west of Gallatin Road in Nashville, only a mile from the transmitter, we disappeared in the caterwauling of all the other stations around the nation on 1430 kilohertz. But pity WFHK in Pell City. They, too, were on 1430, but they could only run 1,000 watts—to cover greater Pell City but protect us and other stations from their powerful emissions—and had to sign off at night for the same reason.

Well, these accommodations accomplished the goal of getting stations on the air, serving their cities and citizens. But later, and to this day, it has caused myriad problems. When requirements were relaxed, and anyone could engineer directional stations, many carefully honed patterns became skewed from neglect and a lack of expertise. That led to more interference. But at the same time, the FCC was undergoing budget cuts and was unable to adequately enforce the restrictions.

Also note that the AM band may only be about one-and-a-half megahertz wide, but it ranges from 185 meters to 555 meters when it comes to wavelength. Such a wide range and the especially long wavelength at the low end of the band creates issues beyond the scope of this article. But they are considerable.

There was an economic aspect, too. FM woke up. Much of the listenership migrated to the new band during the 1970s. It became more and more difficult to make money with a low-powered station using a very directional antenna system that deliberately limited potential coverage and audience. I was asked to consult a daytime-only directional AM in Sarasota, Florida, that was doing a top-40 format, attempting to compete with FMs. Of course, I recommended a format change to something that might—in some alternate universe—reach enough folks to still be able to sell commercials and stay afloat. But when I learned the station had a six-tower directional array—very tall towers with lots of guy wires since

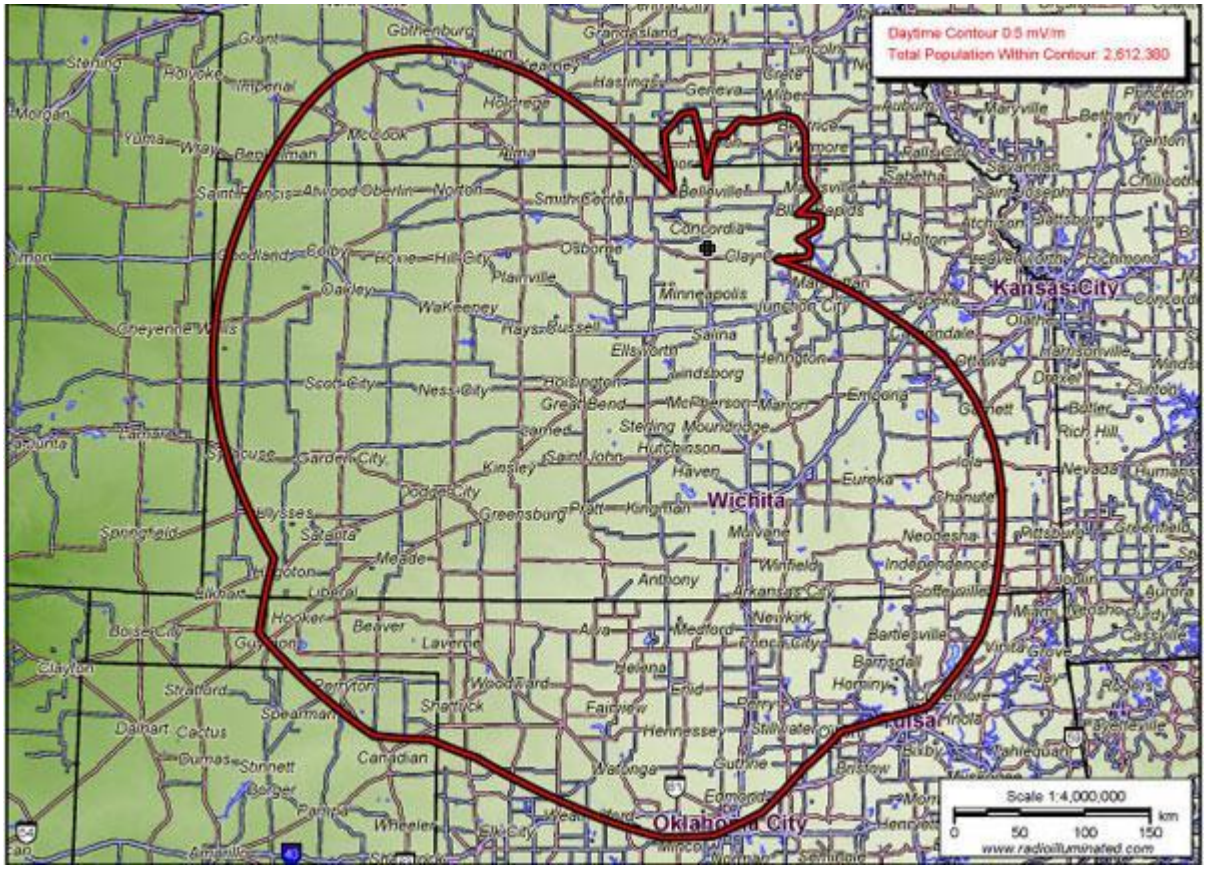
the station was on, as I recall, 620 kilohertz—setting on over a hundred acres of prime land on the Florida coast, I made one more suggestion: turn in the license, take down the towers, sell them and the land to the highest bidders.

The station owner was not pleased with that recommendation, but as it turned out, he did just that several years later. And so have many, many directional-AM station owners. Their stations, unfortunately, were not worth what the land was where their towers sat. And it is difficult to build subdivisions and shopping malls and office parks with towers in the middle of the plot emanating lethal amounts of radio-frequency energy.

Now, the FCC is attempting to save what is left of the AM band, but doing so by giving AM owners preference for being licensed for so-called FM translators. These are very-low-powered FM transmitters with antennas limited to relatively low elevations, but it gives the AM a full-time signal on the FM band, theoretically re-broadcasting the programming on the AM. My belief is that the signals are not good enough to compete if there are real FMs in the market but are strong enough to cause interference to everyone else on the band.

But more on that, perhaps, in a future article. And on the real killers of the AM broadcast band, ambient noise and bad receivers. And why other efforts—AM stereo, digital broadcasting, and more—have not caught on. And why so many AM DXers—hobbyists who try to hear and confirm reception of distant broadcast stations—are pulling their hair out.

But for now, I think I'll go listen to some AM…if my neighbor's pool heater is turned off and I can remember some of my high school Spanish and the station's directional pattern has not slipped 90 degrees off kilter and…



This picture shows the broadcast pattern for KFRM-AM on 550 in Wichita, Kansas. It shows the station's directional pattern with a 5KW transmitter near Concordia, licensed to Salina, but covering Wichita and a lot of farm area. That station used to bill millions a month just with agricultural advertisers.

Editor's Note

Don Keith is an award-winning broadcaster and best-selling author, as well as a member of the AHRS. He holds an Amateur Extra class license and has written three books about ham radio, focusing on getting started in and getting the most enjoyment from the hobby. His military thriller, ***Firing Point***, co-written with Commander (ret.) George Wallace, has just been released as a major motion picture titled Hunter Killer and the book is being reissued under that title. Don's author web site is www.donkeith.com/. His ham radio site features many articles of interest to radio hobbyists of all types and is located at www.n4kc.com/.

SATURDAY MEETINGS

We meet every Saturday (unless a Holiday weekend) at 9:00 a.m., at the one-story AHRS Shop at the corner of 8th Avenue North and 18th Street, (1801 8th Avenue North, Birmingham, AL 35203). Birmingham, AL 35203). Use the rear (Southeast) entrance.

SHOP ON TUESDAYS

The Shop is open on Tuesdays at 9:00 a.m. until around 11:30 a.m. when we go to Marilyn's Deli and Dog for lunch next door. Note that parking can be a problem on Tuesdays, so you may have to find street parking occasionally.

REGULAR MEETINGS

We meet on the fourth Monday night of each month, too, at 7:00 p.m. Please come join us!

FREE ELECTRONICS CLASSES

One more great benefit from becoming a member of AHRS--free Electronic classes!

Classes are taught the first Saturday of each month (except when something special is taking place, then we agree on what Saturday).

We start from the beginning Ohms Law, inductors, resistor and Capacitors color codes, as well as what each component does within the radio circuits. We also teach how to use test equipment used in the repairing of radios. We teach troubleshooting radio troubles, as well as how to read a radio diagram. There are coil winding classes, and one-on-one repair help. Come join these classes!

DUES INFORMATION

Membership dues are $25 a year, payable beginning in January. If you have questions about your dues, you can contact Treasurer Mike Woodruff at 205-823-7204. Dues can be mailed to AHRS at P.O. Box 131418, Birmingham AL 35213.

WEBSITE

Be sure and check out our website at https/www.alabamahistoricalradiosociety.org, which has copies of all newsletters from 2006 to the present (click on News), videos, photo galleries, museum, Old Time Radio columns, Projects, Reading Rooms, Archives, and Contact Information.

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2018 HAMFEST AND SWAP SCHEDULE

Editor's Note
The next few pages have the 2018-19 Hamfest and Swap Schedule for the Southeastern United States. I have not edited these—they are copied directly from the ARRL site.

HAMFEST/CONVENTION
11/17/2018 | Flamingo Net / UMARC Free Flea
Location: Coral Gables, FL
Type: ARRL Hamfest
Sponsor: Flamingo Net / University of Miami ARC
Website: http://FlamingoNet.8m.net

HAMFEST/CONVENTION
12/07/2018 | West Central Florida Section Convention (Tampa Bay Hamfest)
Location: Plant City, FL
Type: ARRL Convention
Sponsor: Florida Gulf Coast Amateur Radio Council
Website: http://fgcarc.org
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