

Southeastern Antique Radio Society



Fourth Quarter 1994

THE ARVIN 444A

by Blake Hawkins

In April of 1947, on the occasion of my 11th birthday, I received a nice new \$20 bill. There was no trouble deciding what to do with it. I wanted a real radio. I had built several crystal sets and a one tube regenerator (with a type 30 tube) but I wanted a better receiver than I knew how to make. The chosen radio was an Arvin 444A. My grandfather had one and I liked the size and looks.

It took three trips to the dealer to get one that worked out of the box. The first one had a defective power switch. Stuck in the ON position. The second one lasted for three days before it quit. Finally, number 3 proved to be OK.

Over the next 4 years I spent many hours with the radio, it was most always playing when I was in my room. During the day the local Augusta, GA radio stations came in...but at night was the real fun. I could get the clear channel stations, among them were WSM, WHAS, WCKY, WLW, WBT, KDKA, WBZ, WWVA, and WRVA.

Noting the recent collector interest in this and the other metal radios produced by Noblitt-Sparks Industries, I went through my radio junk yard and came up with three of them. One in fair condition and the other two in poor shape. I took the only one that had an original line cord in good condition and started the restoration.

The 444a is not an especially good radio. It has only 4 tubes:

"The All American 5" minus the 12SK7 IF stage. So there is no IF amplification and only one IF transformer. The main penalty for this is lack of sensitivity. The original antenna was a 20 foot hank of #22 stranded, rubber covered wire which had to be stretched out to make it receive at all. In my radio, the antenna is routed through the top left speaker mounting hole so that it wants to lay on top of the very hot 50L6GT unless you make the effort to pull it a bit to the side. Arvin later corrected this problem by installing a solder terminal strip for the antenna on the output transformer mount.

The cabinet is painted metal and if you are not careful you will get a little shock when you touch it. Depending upon the position of the AC plug in the socket, the shock will occur either with the radio on or with it off. The neutral side of the line cord is connected through the power switch to a floating ground which is then connected to the chassis through a 3330k resistor and a .05 mfd 400 volt capacitor in parallel. In 1947 that is what the manufacturer did to get UL approval for a metal cased radio. With the radio plugged in correctly, and the switch OFF, the floating ground goes to the hot side of the power line through the series heater string. Thus it is sitting there with 117 volts on it awaiting your contact. The resistors of course limit the amount of current so it is just a tingle, however if the capacitor shorts thing could get worse.

The poor selectivity of the radio is enhanced by the difficulty of tuning. The small knob is connected directly to the shaft of the tuning capacitor and the frequency decreases with the clockwise rotation. This puts 1600 kc on the left side of the dial and 550 kc on the right. (The Arvin 444a was made

before Kilohertz was invented so it works on Kilocycles.) (Ha-Ha ed.) Because the metal cabinet doesn't have very much ventilation and the tube are packed in tightly the 444a runs very hot to the touch.

There are the usual troubles as with any AC-DC set...the audio output tube, 50L6GT seems to go most frequently with the 35Z5GT a close second. The original tubular capacitors were wax filled; they all melt and some of the wax runs down the resistors and other components. There are three electrolytic capacitors contained in a single unit. The original is 40,20 mfd 50 volts, and 20 mfd 25 volts. Counting the triple section electrolytic as one there are only ten capacitors and 11 resistors in the radio.

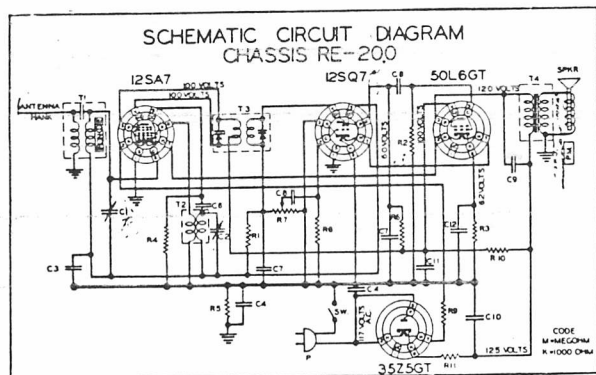
The factory tubes are Ken-Rad : 12SA7 mixer, 12SQ7 detector and audio amplifier, 50L6GT audio output, and 35Z5GT rectifier.

Now to the project: the case and knobs cleaned up well. Some 409 and a bit of non abrasive automobile polish did the job. The paper label on the bottom of the radio was already in bad shape so I tried not to do it any more harm. Electronically I was not so lucky. All the tubular caps were bad as was the electrolytic. The speaker had a rip in it but one of the other radios had a good one so I used that. All the tubes were good, all but three of the resistors were out of tolerance.

Just for fun, and because I had been discussing the subject with Barry Ethridge at the last club meeting, I rebuilt the electrolytic by melting the wax out with a heat gun, putting in modern components and resealing it with hot glue. With a little more care I could have reused the old wax. But the results looked OK.

The original price was \$15.95 for the 444A ivory model I have. There was also the 444 in walnut color, a dollar cheaper. Which is quite high when you consider that the same chassis was sold by Sears Roebuck in a slightly different metal case as the Model 6002 for \$9.95.

Although I don't have my original radio, I do still have the original pamphlet that came with it. Unusual for the time, it had the schematic diagram and a parts list. You will also find the schematic and service information in "Rider's Perpetual Troubleshooter's Manual, Volume XV." Although limited as a radio receiver, the Arvin 444A is fun to own and a nice addition to the collection.



The President's Page

I'm writing this page with just 3 days remaining before Christmas 1994. Where did this past year go? Here's hoping each of you and your families have enjoyed a safe and Happy Holiday Season and that your good deeds earned you a special place on Santa's list.

Our Antique Radio Society has prospered and grown during 1994 and membership is at an all-time high. We had two very successful swap meets and our Newsletter has improved greatly in both content and appearance. Even though we lost our regular monthly meeting location — Shoney's Restaurant closed — attendance at the new time and location is gradually improving. Overall, it has been a very good year.

Looking ahead to 1995, we will have an annual agenda that includes planned meeting topics; increased Newsletter articles; a spring swap meet and renewed emphasis on the mini-swap meets before each monthly meeting. The goal is to offer each member a full measure of club activities thus improving the value of your membership dollars.

I'm pleased to announce that our spring meet will be at the C.E. Steele Community Center in Conyers, Georgia, on Saturday, March 11, 1995. Many of you have requested we use this location since two previous meets there proved to be very successful. The meet will run from 8 AM through 5 PM with indoor and outdoor space available. Bring your own tables as there will be a limited number available. Table setup indoors will be first come, first served. In the past, this arrangement has been satisfactory. A map of the area is included for your convenience. Anyone needing help with motel accommodations or just need general questions answered are urged to drop us a card or a phone call. The club address and officers telephones are listed in this Newsletter.

Finally, I want to personally thank the officers and members of S.A.R.S. for their gracious support during 1994. Each of you have helped make my job a rewarding experience, not just another task. Together, we've made S.A.R.S. an important part of the Antique Radio preservation efforts in this country. I sincerely hope each of you will continue to support our efforts by renewing memberships and attending the meetings/swap meets as they occur. May 1995 be a prosperous New Year for all.

Charlie Milton

SOME SERVICE TIPS from Marty Reynolds

Late 1994 brought not one but two Zenith H511 sets into the fold. H511s are table radios from '49 or so that have a low silhouette, pointed feet, and rounded ends. They look a little like a spaceship from "When the Worlds Collided."

Except for cabinet fractures, deceased line cords, and leaky AVC audio bypasses in each, they were basically OK. Even the electrolytics! A real tribute to "the quality goes in before the name goes on."

You noticed how I hedged in the statement "basically OK," right? There was just one little hitch and that was intermittent pops in both. I can't tell you how I snooped and ferretted to discover the RF bypass silver mica built into the output IF was the culprit! Taking the IF down to clean the silver oxide that had migrated around the mica disk edge was no picnic.

According to Charles Milton, the procedure was well documented in ARC in mid-'93. So I won't go on about this wheel re-invention which is a touchy process. But I will reveal how I fixed the second set. There's three mica caps in the can base. Two coil padders and the RF bypass usually found across the volume control pot in a superhet with a triode/diode last detector tube (12AV6, 12SQ7, etc). One side of the bypass goes between the 2nd coil's "cold end" and ground. Ground appears as the grounded 5th pin on the IF transformer's bottom.

Here's the trick. Lift that 5th pin off ground & install a 150mmf (pf) cap across the volume control and you've made the fix. Time? Maybe ten minutes vs. half the night for the IF can R&R plus delicate internal repair.

I gave the '511s away to my kids as Christmas presents. Even 13 year-old boys know "tubes are better for music" (dad looks the other way on that opinion). The sets work splendidly. On what amounted to their 44th birthdays, the H511s made for two happy recipients and an upbeat donor Dec. 25th, 1994!



SCRIBBLES FROM THE SECRETARY

By the time you, my coveted readers, have this in your hands, the Christmas season will have come and gone. Let me take a moment to wish each of you and yours a belated Happy Holidays. Further, let me introduce you to a new feature of our news letter. One of the items of business at our December 12th meeting was the concern that we needed to improve attendance of our monthly gatherings. After some discussion it was concluded that the percentage of members who could reasonably be expected to show up was what we had been experiencing, all things considered (distance, day of week, location of the meeting, conflicts, etc.) That conclusion left us with a large number of members who were unable to attend but presumably would be interested in a summary of what goes on at the meetings. This new column will make a humble attempt to fill that need.

11 members attending.

AWA affiliation on track (per Charles M.)

possible spring swap meet in Conyers. Charles M. given the go-ahead to lease the building.

Volunteers are being sought to work on the newsletter.

Discussion of presentations at meetings: including high lighting specific manufacturers - Scott, Atwater-Kent, etc.

Also including the possibility of a "Program Chairman" Marty R. suggested putting a newsletter on a dial-up BBS. Some follow-up was indicated.

Johnny H. suggested we need to improve attendance as mentioned above.

Two entries in this month's category: Sony ICR100 (the first integrated circuit radio, circa '68 - Gordon M.: Emerson Explorer 888 circa '58 - Bill A.

Adjourned.

The Antique Wireless Association station W2AN. AWA is the World's largest organization devoted to the use and preservation of early communication equipment.



Bob (W2ZM) and Bruce (W2ICE) operating the Millen Memorial station at W2AN. Originally designed for 20 meters, it was converted to 75 meter operation in 1994.

CLEAR CHANNEL BROADCASTING and the VINTAGE RADIO

by Blake Hawkins

Part of the mystique of antique radios is the image of long ago, sitting near the receiver and listening to programs originating in far away cities.

From the 1920's through the 1950's a feature of listening to AM radio was that you had a wide choice of distant stations especially at night.

Many of us, located on farms or in small and medium size towns, could hear the news and music favored by people in New York, Chicago, Pittsburgh, Dallas, and other cities with large, clear channel stations.

You could hear the weather conditions there, and when disaster struck, you would know the news in depth from the local reporters. National and World news was also available from NBC, ABC, and CBS.

There are not as many opportunities for this kind of AM radio listening now and it's not just your imagination, the radio, or band conditions. There are other reasons. Broadcasting as we know it really got started when the U.S. Congress passed the Communications Act of 1934, which set up the Federal Communications Commission and put into action the mechanism for assigning frequencies and entering into international agreements which specified who could operate where and with what power. Early on, the Broadcast Band in the United States went from 550 to 1500 Kilocycles, (Kc) and many radios from the early 30's have this range. Later, 540 was added on the low end and the upper end was extended to 1600 Kc. Between 1600 and 1700 Kc was the Police Band. It was easy for a radio designer to extend the upper end of the tuning range and give their company an additional sales point of having Police calls as well as regular broadcasts on their product.

Naturally the Police didn't think much of this, but that's another story.

The broadcast (channels) were 10 Kc wide so the official frequency range was 535-1605 Kc.

The FCC set up a frequency allocation plan designed to bring radio service to the entire country with large national stations, medium size regional stations and smaller local stations. These were designated by Roman numerals as Class I, Class II, Class III and Class IV. There were also sub groups of A,B,C, and D.

Some of the oldest stations, like WSB, here in Atlanta, had 3 letter calls and kept them while new calls were all 4 letters.

The Class I stations were called Clear Channels and mostly operated with 50,000 watts and were authorized to operate 24 hours a day if they wished. These were the distant stations we all could easily hear at night. Why only at night? Because of the Sun, that's why. If the Sun stayed in the same place all the time medium waves would always go the same way. But it doesn't. It rises in the East and sets in the West. That causes the Ionosphere,

which reflects radio waves, to move up and down and change in thickness. The net effect is that the radio signals bounce around and go farther at night than in the day time. Right here we pause to note that there are two components to a broadcast signal. The Sky Wave which goes up to the Ionosphere and the Ground Wave which rumbles along the surface of the earth. The ground wave is the constant reliable signal that the broadcaster measures to determine his primary coverage. The Sky Wave is what makes radio listening exciting. It reflects off the Ionosphere and skips for long distances when conditions are right.

Back to the Clear Channels. The Class I-A clear meant that at night, only the dominant station was on the air. With no interference, these stations signals traveled thousands of miles and could be received on even the simplest of receivers.

In 1964 there were 24 Class I-A clear channel frequencies assigned in this country. Many of the stations on them had been broadcasting since the dawn of radio. If you have been listening to radio since the 30's, 40's or 50's then you recognize many of the call letters and will probably remember some favorite programs from them. Alas, Listening is not what it used to be, the original stations are still there but because of political and economic pressures the original FCC frequency plans and several others since did not work. After the Second World War many people looked to AM Broadcasting for big profits and used Congressmen and other elected officials to pressure the FCC for more and more station authorizations. Prior to the war there were about 1500 stations, now there are over 4000. The Class I-A clear channel frequencies have been broken down, additional stations added and many of the originals can no longer be received interference-free at great distances. You need a selective receiver and a rotatable loop antenna to do some serious distance (DX) listening.

Some of your vintage radios such as my 1941 Philco model 41-255 will do the job when conditions are right. If you like to listen with a 1920's TRF receiver the job is a bit harder. Either way the thrill of using the old equipment is still there.

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