The Indiana Historical Radio Society BULLETIN

Volume 49 Fall 2020 Number 3

9ny—WHBH—WCMA
CULVER MILITARY ACADEMY

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The Indiana Historical Radio Society Bulletin
Fall 2020

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WITH THE COLLECTOR

Tell us about your radio collection..
Is there a specific area of collecting that interests you?
Early wireless? 1920's radio? 1930's? Transistor radio? Specific manufacturer? All of the above?

What project(s) are you currently working on?
Consider the above and send a paragraph or two about your collecting to the IHRS editor. Include a picture of you with your favorite or current project.

Fred Prohl – email: inhistradio@gmail.com or
Fred Prohl, 615 Wren Dr., Franklin, IN 46131

Indiana Historical Radio Society Membership

Annual membership (January 1 thru December 31) in the Indiana Historical Radio Society is $15.00. Send your payment written to Indiana Historical Radio Society to: Don Yost, IHRS, 3814 E 400 N, Windfall, IN 46076.

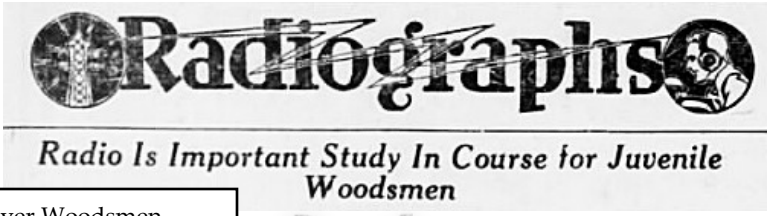
Include your current mailing address, if not on your check, and your email address, if you have one. Membership questions? Contact Don at dearsir@netscape.com or call him at (765) 945-7014.

9NY—WHBH—WCMI CULVER MILITARY ACADEMY

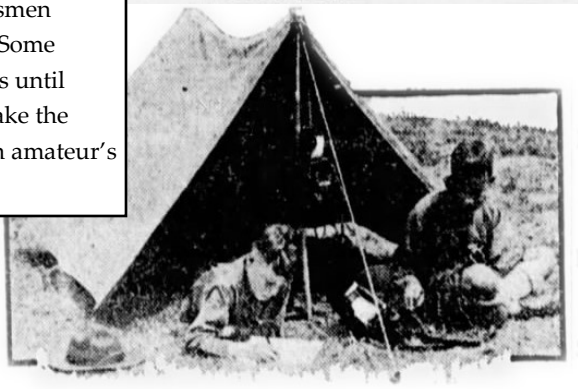
by Fred Prohl, October 2020

Culver Academy was founded in Fall of 1894 by Henry H. Culver, a successful businessman with an international manufacturing empire. Culver purchased approximately 300 acres of land on the shore of Lake Maxinkuckee , close to the town of Maramont in North Central Indiana. (The town's name was changed from Maramont to Culver in 1897.) He built a large dormitory with classrooms and welcomed 45 male students in 1894, about half the capacity of the dormitory. As a military (and Naval) school the Academy offered a curriculum of standard studies with additional military field training and boatmanship on Lake Maxinkuckee. The Culver Military Academy began a summer camp in 1902. The Summer program offered, in addition to the ongoing Naval School, the Cavalry School and Woodcraft Camp. In later years the Summer Camp expanded to a Summer School for Girls, and an Aviation School.

Students in the Woodcraft School experienced a form of military life by living in the field. This meant pitching tents, cooking food, exercise, and hiking. WWI introduced wireless communication as a valuable tool for field communications. In 1922 Culver's Woodcraft and Naval School began using wireless communications in their training.


Radiographs

Radio Is Important Study In Course for Juvenile Woodsmen



The Culver Woodsmen practicing code. "Some (students) progress until they are fitted to take the examination for an amateur's license."[1]

Culver Uses Wireless

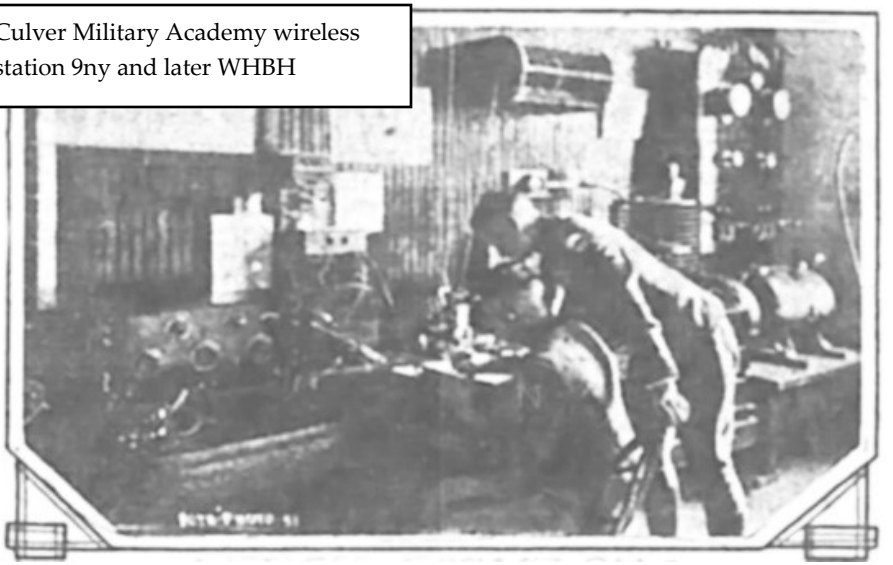
"Culver students are using wireless in maneuvers imitating just such conditions as actually exist in Mexico. On practice hikes the skirmishing parties keep in touch with main bodies by wireless, each party carrying a portable set, Maneuvers also are directed by orders transmitted by wireless." *The Palladium Item, Richmond, IN March 7, 1922*

"In the Culver School of Woodcraft, where 350 boys of 10 to 14 are devoting their summer to the study of woodcraft and the lessons of field and stream, radio is an important feature. They have literally stampeded their three instructors in their zeal to keep apace with Marconi."[1] The article continues describing the radio shack, an old time one room log cabin seated in the center of the woodcrafters tent camp where the boys are "tuning up their own sets, set up beside their 'pup tents." They are taught the general service code from the Boy Scout Manual. The 1000 watt amateur station used by the woodcrafters is 9NY, licensed to Francis W. Ewing, Woodcraft School, Culver, Indiana.[1]

"Radio communication is not only studied as a science by classes at Culver Military Academy, but it is put to effective use in the prac-

SIGNAL DETAIL IN TRENCH
Culver Military Academy Cadets Find Radio Practical For Communication In Maneuvers, Indianapolis News, March 4, 1922

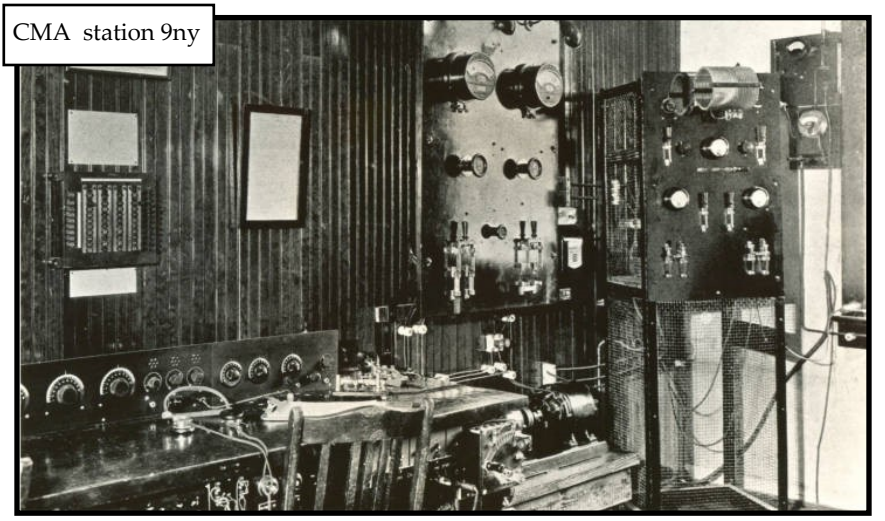
Culver Military Academy wireless station 9ny and later WHBH



tice of military tactics. The wireless is brought into prominence on special occasions when the corps of cadets is carrying out field operations approximating, as nearly as possible, war conditions. In such maneuvers the portable sets are used by the cadets in the field to keep in touch with the base plant at the academy. The portable sets have a sending power of about twenty-five miles."[2]

The Culver 1000 watt amateur station, 9NY, was located adjacent to the Physics Lab. The wireless system was originally aboard the Brazos, a U.S. Merchant ship, with

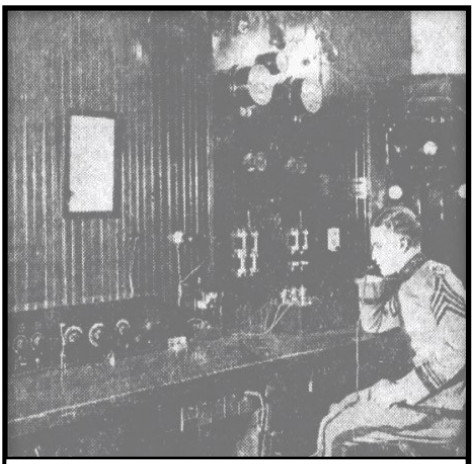
CMA station 9ny



the primary system consisting of a two-kilowatt, 240-cycle marine type Marconi. The above and below pictures (on page 5) show the wireless set with a rotary synchronous spark (right side of the pictures) and a twelve jar Leyden condenser.

On the left is the receiving equipment capable of receiving wave lengths from 235 to 15,000 meters. The receivers use various types of crystal detectors and two-stage amplifiers. Students in class use one quarter kilowatt sets with short wave receivers. The antenna, a fan type, consist of six 65 foot wires with a 90 foot spread on top and the towers are 95 feet above ground. The sending wave lengths vary from 200 to 375 meters with a distance of about 200 miles.

It is planned to place aerials on two yachts of the Culver Naval School fleet so the naval crews can send and receive radiograms from shipboard on Lake Maxinkuckee."



"Walter J. Reeves of Columbus, Ind., Announcer of WHBH, the New Culver Military Academy Radio Station."
Indianapolis Star, March 11, 1925

"Culver Starts Radiocasting"
The Columbus Republic, March 23, 1925

In March 1925 Culver Military Academy announced that a new radio station, WHBH, has been licensed for operation. The station will operate at 100 watts and 222 meters. WHBH Station, Culver, Indiana, is first listed in the June 30, 1925 publication from the U.S. Department of Commerce. WHBH was listed as a 100 watt station on 1350 kilocycles.[3]

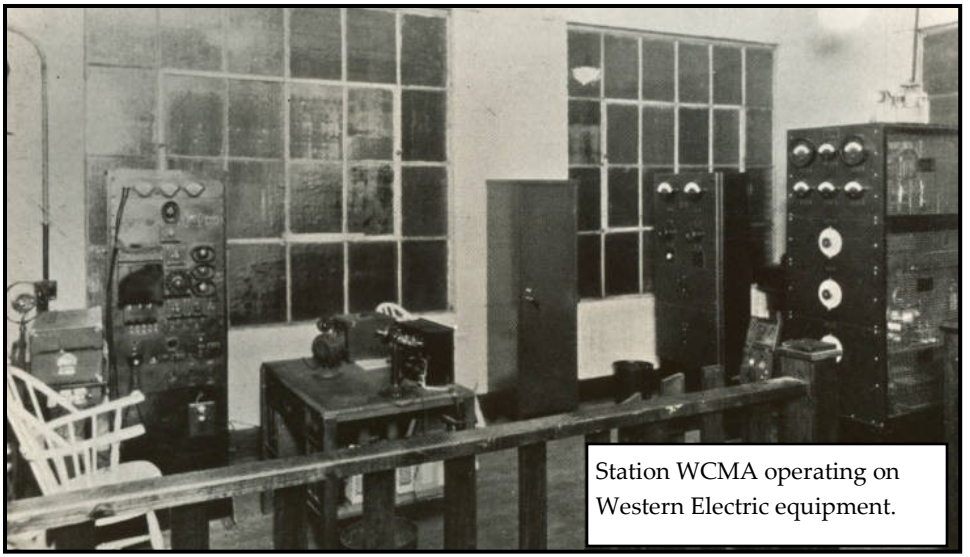
"Test programs of the new station were reported favorably over a radius of 700 miles."[4] The station was constructed by academy students in the Physics Department. Programs were broadcast on Monday nights beginning at 8:30 PM with occasional broad casts on Saturday evenings. Entertainment was provided by the Culver Military band, orchestra, and bugle calls.

Takes Air In March

"In March, the Academy radiophone station WHBH took the air for the first time with a test program played by the Jazz Orchestra. Despite the fact that the attempt was made on a Saturday night, the results of the test were remarkable. The station was heard for a distance of more than one hundred miles and more than one hundred and fifty people wired their congratulations to the broadcasting officials. Since that time WHBH has been a permanent contributor on the ether waves and the Cadet Orchestra has been its stellar entertainer." *Logansport Pharos, April 17, 1925*

Culver Military Academy announced their intent to change the call from WHBH to WCMA (W Culver Military Academy) in November of 1926. At that time the station was operating at 253.5 meters.[5] During the months following Culver announced a contract with Western Electric to design and install the new station. "WCMA should be on the air within the next ten days or two weeks with a 101-B transmitting set." The design included a studio constructed with celotex walls for improved sound reproduction.[5]

As of November 1927 WCMA was operating at 500 watts with a frequency of 1150. WCMA shared 1150 with WOOD, Grand Rapids, Michigan.[6]



Station WCMA operating on Western Electric equipment.

Culver Station Sold to Radio Corporation

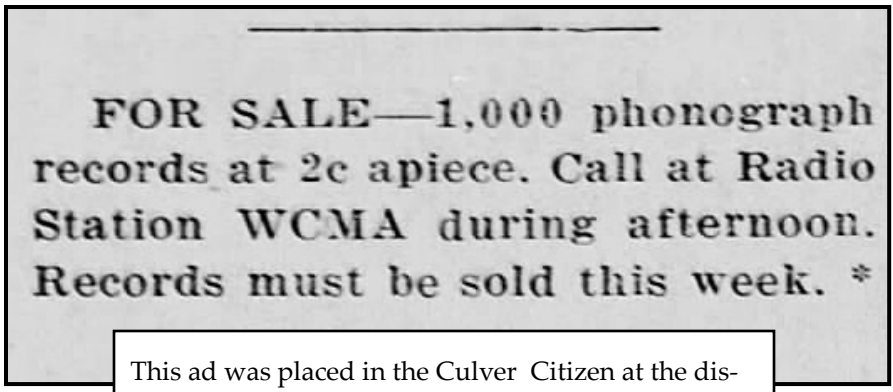
Logansport Tribune August 7, 1930

The Culver Military Academy radio station was sold today to the General Broadcasting Company and will resume programs each afternoon under the direction of Carl B. Watson of Indianapolis.

August 1930 - Culver Mmilitary Academy sold WCMA to General Broadcasting Corporation, affiliated with the Curtis Radiocasting Corporation. WCMA will operate with a group of stations in Indiana and Illinois. The station continued to operate at the Academy location.

"Several changes in the transmitter of WCMA, originally built by the Western Electric Company, are being made which insure a much wider and better reception."[6]

The separation of WCMA from the Culver Military Academy became complete when the WCMA studio and (new) transmitting equipment were established in new quarters on Lake Shore Drive in Culver. The relocated station installed all new transmitting equipment. "The installation of entirely new equipment is in conformance with the requirements of the Federal Radio Commission has just been completed. A part of the new equipment is the crystal control enabling the station to automatically stay on its frequency of 1400 kilocycles."[7]


FOR SALE—1,000 phonograph records at 2c apiece. Call at Radio Station WCMA during afternoon. Records must be sold this week. *

This ad was placed in the Culver Citizen at the discontinuation of station WCMA. November 6, 1932

The existing antennas at the Academy will be used in conjunction with the new equipment on Lake Shore Drive. The old Western Electric transmitting equipment will stay at Culver Military Academy.

The Breman Enquirer announced on November 24, 1932 that "Culver's radio station was discontinued Sunday after being in operation for six years ."
The station was sold to WKBF, combining the operating time of the two stations.

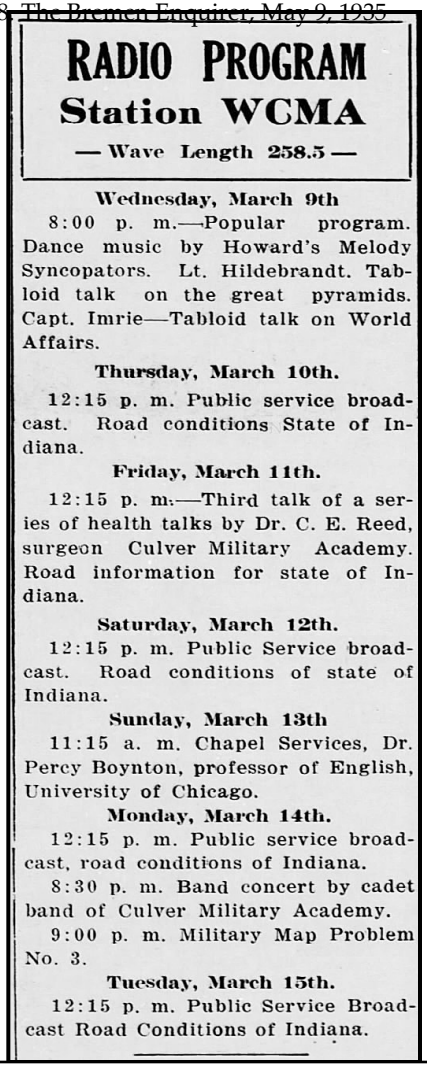
Afterword:

May 9, 1935 The Culver Military Academy's Recreation Building became the site for WPPS. WPPS was the call for the Indiana police radio system. The old equipment for WCMA was updated for operation with the police using the huge radio towers at the Academy."[8]

"Transmitters for stations at Columbia City and Seymour have been bought and will soon be placed in operation."[8]

Written by Fred Prohl, October 2020

1. The Hutchinson Gazette, Hutchinson, KS, August 16, 1922, page 8
2. The Indianapolis News, March 4, 1922
3. jeff560.tripod.com/ source for radio stations in the 1920's
4. The Culver Citizen, May 26, 1926
5. The Culver Citizen, Nov. 30, 1927
6. The Argos Reflector, Argos Indiana, August 14, 1930
7. The Breman Enquirer, November 31, 1931
8. The Bremen Enquirer, May 9, 1935



RADIO PROGRAM
Station WCMA
— Wave Length 258.5 —

Wednesday, March 9th

8:00 p. m.—Popular program. Dance music by Howard's Melody Syncopators. Lt. Hildebrandt. Tabloid talk on the great pyramids. Capt. Imrie—Tabloid talk on World Affairs.

Thursday, March 10th.

12:15 p. m. Public service broadcast. Road conditions State of Indiana.

Friday, March 11th.

12:15 p. m.—Third talk of a series of health talks by Dr. C. E. Reed, surgeon Culver Military Academy. Road information for state of Indiana.

Saturday, March 12th.

12:15 p. m. Public Service broadcast. Road conditions of state of Indiana.

Sunday, March 13th

11:15 a. m. Chapel Services, Dr. Percy Boynton, professor of English, University of Chicago.

Monday, March 14th.

12:15 p. m. Public service broadcast, road conditions of Indiana.

8:30 p. m. Band concert by cadet band of Culver Military Academy.

9:00 p. m. Military Map Problem No. 3.

Tuesday, March 15th.

12:15 p. m. Public Service Broadcast Road Conditions of Indiana.

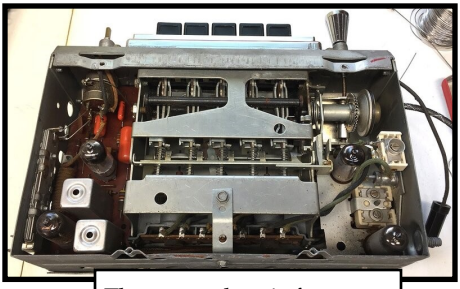
The Culver Citizen, March 9, 1927

My 56 Chevy Radio Project
John Raskauskas

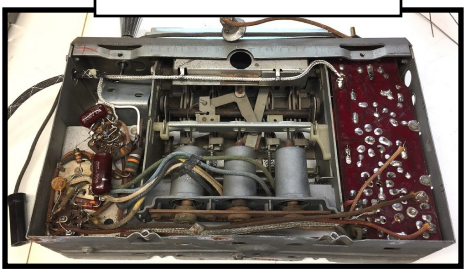
Hello All,

I debated on whether or not to even post about this project but decided that some may be interested. Since waiting until completion of this project to post, there is so much information that I am going to try to condense it into short statements on what was done:

First the lengthy "history"... An elderly friend of mine whom I've known since childhood (51 years) and retired from Delco/Delphi gave me this radio a few months ago along with a car-full of other items he wanted to get rid of from his basement. It still had a Gonset[1] "Super-Six" convertor wired into it from his younger Ham-Radio days that he wanted to keep, so he disconnected it. The radio came from his first car he had while in college at NC State University back in the early 1960's, a turquoise & white '56 Chevy Bel-Air convertible which he later sold to his brother. During a visit, we had a great kitchen-table conversation with him and his wife about the car which he had before they were married. They would drive it on Atlantic Beach near Morehead City, NC for picnics. He also had a three-piece and would use the car to take the band to play on the beach. His soon-to-be wife went to East Carolina University and was Miss Cotton Hall one year--she sat on the top of back seat with top down in a parade. She commented that she thought his Ham-Radio interest was kind of "weird" back then with the equipment (including home-made 75M transmitter) mounted in the car...



The tuner chassis for a 1956 Delco tube car radio.



I didn't realize at first the history of this radio and assumed it had come from a blue/white '55 Bel-Air 2-dr hardtop project car he had when I first visited them as a kid. When Meade (MAG) told me it was a '56, I mentioned this and was told of its true origin. After that, I decided to refurbish the radio and

build a cabinet for it to honor its history and the long-time friendship. It will also be the first all-tube Delco car radio I've refurbished for my collection and this project will be a good companion to the '66 Chevy Delco all-transistor set that my Dad gave me when I was six and I built into a cabinet a few years back.

The cabinet is made from all scrap material and items that I had on hand. Nothing had to be purchased for its construction.

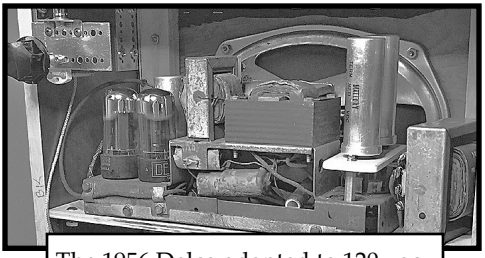
I detail cleaned the radio, very carefully wet-sanded the black plastic push-buttons with 2000-grit paper to remove scuffs & scratches then polished them and outside of dial window with Novus-2.

Then I carefully and thoroughly polished the chrome escutcheon with Mother's Chrome Polish.

Since the vibrator had been removed, I temporarily jumpered one side of its connector contacts to ground and applied 12 VAC for testing---radio appeared to work fine with all original Delco tubes except for the 0Z4.

The tuning was a little stiff, so I disassembled mechanism to clean, lubricate, and align. The clutch slipped a bit, so I carefully wet-sanded the rubber facing to remove hardened surface and thoroughly cleaned contact areas with Isopropyl alcohol---now grips fine when engaged.

Decided to do "reversible" modification for AC-only operation and added a power transformer with radio power-switch rewired to control AC mains input. I used a



The 1956 Delco adapted to 120 vac.

voltage-doubler circuit with 1N4007 diodes along with power resistor of needed value in series to get proper B+ voltage---built this circuit on a piece of plastic and mounted it using standoffs with screws passing through vibrator and 0Z4 socket holes. The 12V output of transformer was somewhat high, so I added two paralleled 1.5 Ohm power resistors (.75 Ohm) in series with rewired & connected filament/dial-lamp input to bring it down to correct level. It was surprising how much RFI the 0Z4 had caused. Still, I had what sounded like noise coming in from AC line, so I connected the chassis to the ground wire of the AC cord and it was eliminated.

The shielded cable which connected radio to PS/Amplifier chassis had an intermittent conductor, so I replaced it with Teflon insulat-

ed wiring with new braided shielding.

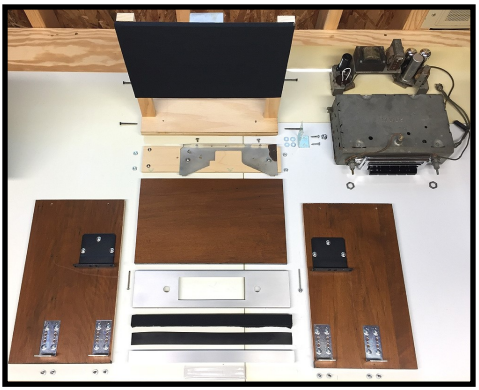
Although radio seemed to work well, the sound seemed a bit too "trebley", so I replaced all tubular caps which are now used with the new power source. I was amazed that the original alignment was still right-on, including dial pointer!

For the antenna I used a "tilt & swivel" antenna from an old TV which was about the same length extended as one on a car. Mounted it so it is not visible from front when retracted and folded down. A ceramic variable capacitor was added at the mounting point to "trim" the antenna as needed to eliminate having to go through hole in cabinet bottom for adjustment.

The radio works very well and can now be easily peaked at all frequencies. I had an old antenna test plug from Delco, so I soldered a brass washer to the outside end for a handle and added shielded wiring to connect to new antenna assembly.

A couple of vintage Delco 6" X 9" speakers, which were given to me by another older Delco friend, were tried, and I decided to use one which had a very large magnet and larger than normal voice-coil as it had the best sound quality. The speaker could operate at very high volume without distortion. I looked up the part number and discovered it was made for the '51 Cadillac…

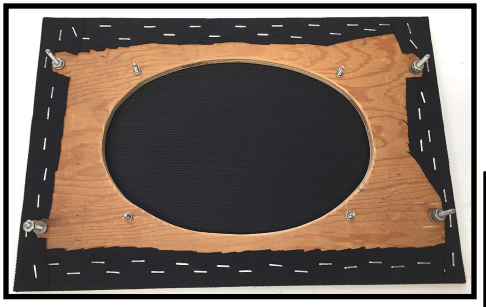
After laying out radio components and speaker on the bench, I decided on the cabinet size and began gathering materials stashed in garages. The side and top panels were cut from one of the pre-



finished wormwood oak panels rescued from dumpster at previous job. The material for grille-cloth was given to me by an elderly neighbor lady many years ago and has been used for several speaker projects. The hardware and aluminum pieces were salvaged and saved from multiple sources including old workplaces.

After cutting out the speaker panel, I covered it with the black fabric. The material has thin, closely-spaced "ribs" and very carefully aligned them horizontally on panel ensuring that they were even with edges after pulling tight before

stapling. Since the radio needed to sit above cabinet base for air circulation, made a wood trim-bar and covered it the same way as speaker board so the aluminum mounting panel for front of radio would ap-



pear to be "floating". Removed and took careful measurements of escutcheon, then marked aluminum panel for drilling & cutting. Very carefully cut opening with nibbling tool and filed edges to fit. After

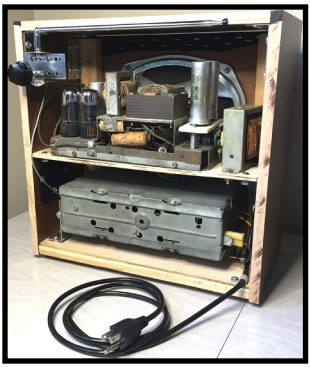
The aluminum panel was drilled, cut, and polished.

cutting and fitting aluminum pieces, "brush-polished" them using fine Scotchbrite and dishwashing liquid solution to remove scuffs and scratches, then finished with Mothers California Gold carnauba wax. I had a strip of very thin, sturdy satin -black plastic which fit beneath the upper lip of lower aluminum channel trim and worked perfectly to cover the area between it and the fabric covered wood radio panel support bar.

After assembling top & sides using metal brackets screwed from the inside to eliminate unneeded holes, carefully sanded all (viewable from front) cut edges and painted with satin-black latex enamel using small piece of foam

rubber quickly wiping excess off of finished surfaces before it started to dry.

After cabinet was installed on the base, there was a slight gap at either side of speaker panel. Carefully measured needed lengths and cut two narrow strips of heavy textured satin black vinyl which were folded and slid within gaps---made



a neat finishing touch...
Took a long while to find a set of original knobs and finally found some (except for "dummy") on Ebay. They arrived Friday and after detail cleaning/polishing, installed them. Still looking for that "dummy" !

The radio works great and has enough clear volume to drive you out of the room with those P-P 12V6's and that '51 Caddy speaker! Did not disturb his long-ago pushbutton settings and they are as follows: 1-600, 2-860, 3-1190, 4-1230, 5-1510 Anyone in that area of NC recognize these frequencies ??? The project picture on the top of page 20 shows the radio with two Franklin Mint '56 Chevy models left to me by my blood father.

John Raskauskas – October 2020

1. *The Gonset Communicator was a series of vacuum tube VHF AM radio transceivers that were widely sold in the 1950s and early 60s.*
2. *Editors note: Since the writing of his article, John has located the correct knob for the 56 Chevy radio.*

Left: The 1966 Delco Transistor car radio project completed several years ago.
Right: The just completed 1956 Delco Tube car radio.

Repairing the Car Radio in Detroit

By Edward Dupart August 2019

I started working on car radios back in the late 1950's and have worked on them ever since. The car radios of the 30's to 60's were relatively easy to work on, but getting it out of the car was not always easy.

A little history on the car radio. Many manufacturers experimented and produced car radios in the 1920's, Delco-Remy, Silver Marshal, Sparton, Midwest Radio to name a few, but Motorola is probably credited for making really successful car radios at the beginning. I can remember walking past a major Motorola office on Lyndon Ave in Detroit and seeing their first car radio and I always liked that display. Paul Galvin and his brother started Galvin Manufacturing Corporation in 1928 and later the name changed to Motorola and came from motor and victrola. They introduced their first car radio in 1930.

Ever wonder why we have 6.3 volt filament/heater type tubes? It goes back to the car radio that ran off a 6.3 volt car battery. The lead acid cell produces 2.1 volts and times that by 3 and one gets 6.3 volts. The very early car radios had to use the 5-volt tubes, 01A's, 12's that were used in the "house radios". In the home radios 5 volt filament tubes were sometimes powered by a 6 volt car battery and a rheostat is series with the filament would lower the voltage to the 01A and similar to a safe voltage. As the 6 volt battery got weaker the rheostat resistance would be decreased, which allowed the radio to be played when the battery started to get drained/weaker. RCA decided to use multiples or sub multiples of the 5-volt filament, which explains why they came up with 2.5, 5, 7.5 and 10-volt filaments. They said this made winding transformers easier. It looks like the car radio won the filament/heater war for establishing a popular heater voltage, but the popular 80, 5Y3, 5U4, etc., rectifiers established the 5 volt heater/filaments as a dominant voltage for rectifiers. The exceptions would be the 6Z4, 84, 6X4 and the 6X5, 12X4, which were used in car radios and other portable equipment and they found their way into home radios as well. Philco liked using the 84.

The usual problem with car radios was the vibrator and the buffer capacitor. The vibrator is an electro-mechanical device that would change the car's DC battery voltage to a pulsating DC voltage that could be used with a trans-

former to step up the car battery voltage to around 150 volts, high enough for tubes to operate off of. The vibrator had a coil that would generate a magnetic field and a reed with contacts on it that would move/vibrate back and forth in the magnetic field making and breaking a contact with the battery voltage, thus creating a pulsating DC. There would be arcing/sparking at the contacts and the buffer capacitor would reduce this arcing/sparking and make the vibrator last longer. The buffer capacitor was around .006 mfd at about 1600 volts. Whenever I changed the vibrator I would change the buffer capacitor.

To remove a car radio from my 1952-57 Nashes required removing the ashtrays, the glove box, the knobs, the nuts on the control shafts and the nut holding the radio to the firewall. Sounds easy but it required me to lie on my back upside down with my head under the dash and so it was with many cars. I was young and a lot thinner so I didn't mind being a contortionist. I remember working on a mid 60's Thunderbird and having to remove the console to get to the

I. Silverstein, author of "Servicing Automobile Radios" makes Ed's point about the difficulty of removing car radios as shown in the graphic associated with Silverstein's article. The article was published in the March 1955 Radio News, page 67. The graphic was adjusted for this issue of the Bulletin.

radio. Now that was a big job and most of the work was just getting to the radio. Fixing the radio was easy, but removing and installation was not easy. 55 Chevy's and pickup trucks were fairly easy to get the radio in and out. So were the Ramblers of the late 50's through the 60's unless they had air conditioning. Then it became difficult, because the air conditioning unit would have to come loose. My brother's 41 Plymouth was easy to get the radio in and out of and I replaced the standard Plymouth radio with a fancy Chrysler radio with a colorful dial. I liked that car. So removing a car radio could be easy or it could be difficult depending on the car.

Not every radio TV shop would work on car radios. Some made a stipulation that the owner would have to remove the car radio and reinstall it himself. There were a few who would do the complete job, removal, repair the radio and installation. I remember one man who converted an old time gas station on the north side of Grand River just west of Greenfield for just working on car radios. This isn't related to radios but there was a shop on Grand River well east of Greenfield that worked on car clocks and they could be difficult to get to and yes I worked on car clocks. The last car clock I worked on was for a 67 Chevy Chevelle. They were interesting devices. There is still money to be made working on antique/ vintage car radios and I'll throw in clocks too.

Ed Dupart, August 2019

2020—VINTAGE RADIO ACTIVITY—2020

Check each organization's web page for current Vintage Radio Meet Activity.

Indiana Historical Radio Society indianahistoricalradio.org

ARCI—Antique Radio Club of Illinois antique-radios.org

MARC—Michigan Antique Radio Club michiganantiqueradio.org

CORA Central Ohio Antique Radio Association coara.org

SPARK sparkantiqueradio.com for monthly meetings

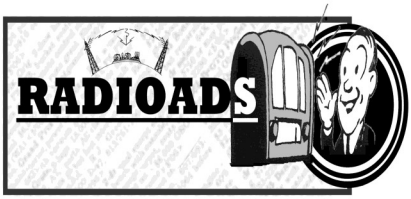
CARS—Cincinnati Antique Radio Society Cincinnati –antique-radio.org

PARS—Pittsburgh Antique Radio Society pittantiqueradios.org

MSARC - Mid-South Antique Radio Collectors

AWA Antique Wireless Association antiquewireless.org

That's right! The Indiana Historical Radio Society in October 2021 will celebrate fifty years as an organization dedicated to the preservation of vintage radio.



Submit your "FREE TO CURRENT MEMBER" RadioAd by the 15th of February, May, August, or November in time for the Bulletin issue that follows.

Wanted: Good WD-11
Aeriola Sr. collector Dave Arland needs a good, original tube
Contact: dave@arlandcom.com

2020 Officers	Responsibilities
Alex Whitaker President 2927 South East Street Indianapolis, Indiana 46225 317-787-2854 ehscott@sbcglobal.net	Activities, business, administration, & publicity
Michael Feldt, Vice President 12035 Somerset Way, East Carmel, Indiana 46033 (317) 844-0635 email: feldtm@msn.com	Sites and dates of meets
Don Yost, Treasurer 3814 E 400 N Windfall, Indiana 46076 (765) 945-7014 email: dearsir@netscape.com	Dues, financial, and address change. Please notify immediately of change of address.
Editor Fred Prohl 615 Wren Drive Franklin, IN 46131 (317) 736-1228 email inhistradio@gmail.com	News articles, radio ads, photos for Bulletin publication Maintain indianahistoricalradio.org
Dr. Ed Taylor, Historian 1790 East 54th St. Apt 112 Indianapolis, IN 46220 (317) 259-4842	Indiana Historical Radio Society Historical Documentation

Bulletin Deadlines: News, Articles & Radio Ads, 2/15, 5/15, 8/15, 11/15

The BULLETIN

A publication of the Indiana Historical Radio Society
Forty-nine years of documenting early radio.

1956 Delco Car Radio Project by John Raskauskas

Above: The recently completed 1956 Delco tube car radio display, adapted to AC. See page 10 for the article.

Below: The tuning dial for John's operating 56 Chevy radio,