THE FLASH!
THE NEWSLETTER OF THE COLORADO RADIO COLLECTORS ANTIQUE RADIO CLUB

Volume 37, Issue 2 | ***Next CRC Meeting - March 8th*** | ***March/April 2026***
Castle Rock Library Room F

Reproduction Batteries Part III

The Zenith Battery (Z-985)

by Bill Potorti - Flash Editor

Continuing in my reproduction battery series (see Flash vol 33-6 and vol 34-1) I needed to make one of the big boys- the Zenith battery pack, found in the Transoceanic series, as well as others. This is a combination A and B battery in one package.

The first item on my agenda was to find a label. I was unable to find a battery label online except for one vendor who sold their own battery packs, and not a stand alone label. I didn't want to spend upwards of $50 just for the box and without any battery connectors. I did have an old battery found in one of my sets. I decided to try to scan the old battery and make my own labels. My scanner couldn't accommodate the entire battery at one time, so I had to make a couple of passes and stitch the images together. After doing that (and cleaning up some of the defects) I was left with a presentable set of labels. I've made them available in the source section following this article. Since my printer also couldn't accommodate the size of the labels, I sent them to Kinkos to be printed out on 17x14 inch stock.

Sent to Kinkos

In the past, I've used 1/16 inch thick basswood to make the boxes. In this case I moved up to 1/8 inch thick basswood to offer rigidity and strength. These batteries have some weight to them. I drew out the designs, cut the pieces to size and glued the sides together, using the small pieces of 3/8 inch dowel to add gluing serface and strength. I also added some pieces to the top to support the plug and the bottom to give another attachment point near the center.

(Continued on Page 3)

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Newsletter for The Colorado Radio Collectors Club, founded in the Fall of 1988
"Dedicated to the preservation and education of wireless, antique radio, television, and associated equipment"
View Past Issues of the Flash! here: https://coloradoradiocollectors.com/CRC2/index.php/flash

CRC MEETINGS: Meetings are held on the 2nd Sunday of every other month starting in January (except May is the 3rd Sunday) at 1 :00 pm. The meetings consist of business, "show & tell", raffles, auctions, swap meets, technical discussions and other subjects of interest. Visitors are welcome!!
CRC MEMBERSHIP: Current annual dues are $20 and membership in the CRC runs from January to January. New memberships will be prorated to the following January. Members are entitled to attend meetings, participate in our Spring show and our Fall auction, and receive our newsletter, **The Flash!**. Submit dues payable to: ***Merril Campbell - 4723 Woodbury Dr. - Colorado Springs, CO 80915***

UPCOMING EVENTS: CRC Meeting March 8th at the Castle Rock Library meeting room F- 1PM
Vintage Voltage Show - April 19th - National Western Expo Hall

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Message From The President

Greetings fellow radio collectors and restorers. Normally about now I would be writing about looking forward to spring, but we have not had much of a winter. For many of us, winter is when we can spend more time at the workbench. I hope your workbenches have been busy even during these many warm days of the past two months.

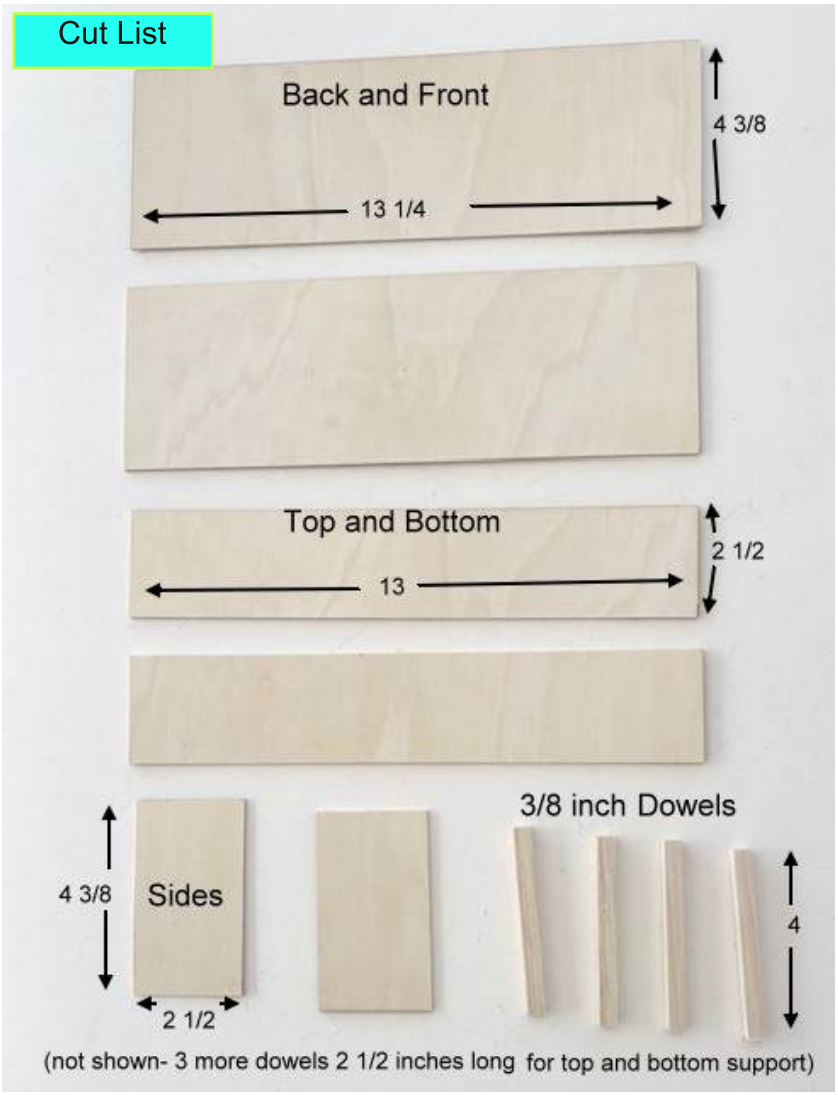
I'm working on a Zenith console and the rubber dial belt is stretched and has no grip, so it needs to be replaced. Rich Kuberski and I visited Rocket Seals in Denver (thanks to David Boyle for suggesting it) to pick up an o-ring that I think will do the job nicely. It is always nice to see that an old business like this is still operating in our community.

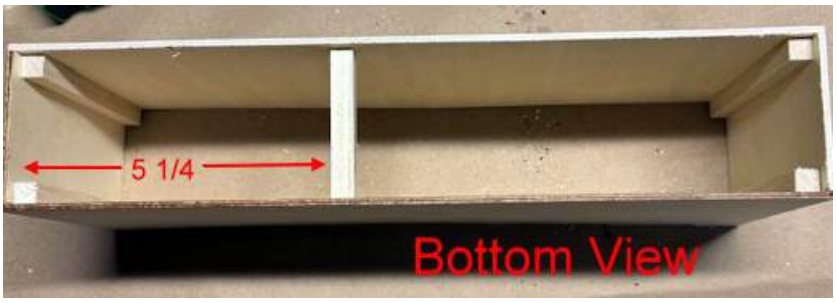
I am still looking for presentations for our meetings. Remember it does not need to be about radios. Many of us have similar hobbies besides radios.

I hope to see you at our next meeting on March 8!

Paul

(Continued from Page 1)





I assembled the box first by gluing 2 of the 4 inch dowels to the ends of both front and back sides. I let them back 1/8 inch from the edge. This is where the side will be inset. I also let them back 1/8 inch from the top where the top will be inset.

When the glue is dry, I glued and inset the side pieces. This left me with a hollow box.

I glued one of the short (2 1/2 inch) dowels about 5 1/4 inches from the inside edge of the bottom 3/16 inches from the bottom edge. This offers another attachment point for the bottom for added strength. Note: the bottom dowels are 3/16 inch in from the edge, while the top is only 1/8 inch in.

The Plug

The production of the plug was perhaps the hardest part of this project. I used 1/8 inch (3mm) thick phenolic as the base. How to make a diagram to locate the pins was problematic. The pins themselves are 1/8 inch in diameter. I obtained some 1/8 inch brass rod which fit the socket of my radio well. My original efforts involved using the socket as a template. I found that 10d nails were also the correct diameter, so I cut some short lengths off the point and inserted those in the socket, them used them to punch and mark a small piece of foam board. I decided that I would drill thru the phenolic using the foam board as a guide, tap the holes for 6-32 threads and then cut 6-32 threads on the end of the brass rod and thread them into the holes, projecting far enough behind to attach nuts.

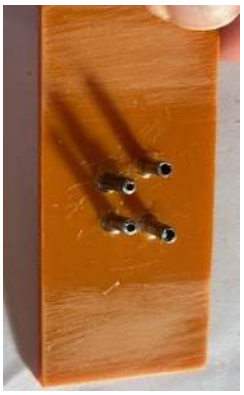
There were 2 problems with that method- I wasn't able to get the accuracy I needed (the rods were slightly askew) and 2 of the rods were close enough that I wouldn't be able to attach nuts without them shorting out. What else could I use instead of the brass rod? 1/8 inch pop rivets offered me an alternative. That was also a failure.

Back to square one. For the pins I decided to scavenge the pins off of some old 1920-30 era tubes. They are 1/8 inch in diameter also and close to what the originals in the battery are. I keep a box of duds and chose some 01a's. I pulled the pins from 3 of them. They were all a little different on the ends. I found 4 that were a match or close to it. Scrounging around, I also found a 5 pin type 47, and a 6 pin Type 18 tube, either one of which I could use to get 4 identical pins from if I needed to.

I made another template by holding a piece of paper against the socket of the set and used an awl to carefully poke holes thru the paper, making sure not to move it during the process.

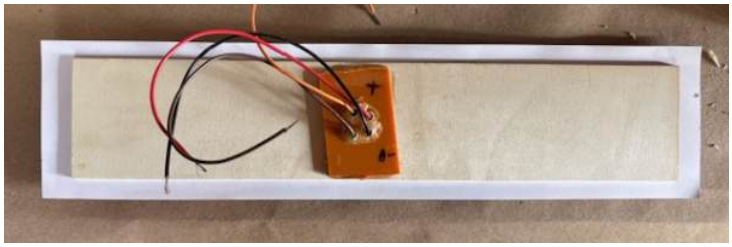
I cut a piece of the phenolic 1 1/2 inches wide x 3 inches long. I then attached a small piece of double sided tape to my phenolic board in the center, mounted the template I just made, and carefully drilled through the holes using a 5/32 inch bit.

I held the drilled phenolic plate over the socket and visually inspected it to make sure that it lined up with the holes in the socket. I inserted the pins from the back and pushed them into the socket. I then pulled the board tight against the pins and used a hot glue gun to secure them to the back of the phenolic. When the glue had set, I carefully removed the plug. On the front side of the plug I put a small amount of epoxy around the base of the pins, and reinserted it partway into the socket again to make sure the pins don't shift. Once everything is set, I then soldered in some new leads to the pins. Time to cut a hole in the top plate. It's offset as you can see from the top label. I found the easiest way to do this is to glue the label to the top first. Normally I apply glue to the label, but in this case, I applied glue to the top plate. The label is actually wider than the top plate, so I center it over the back of the label and press it home. I use a 1 1/16 inch forstner bit to drill through the label and the plate. I set my drill in REVERSE and slowly cut through the label. I went slow so as not to tear the label. I still had a little tearing along the edges, which I covered up later with a black magic marker. When I got through the paper, I reversed the direction of the drill and cut through the basswood.



On the back side of the top, I'll glue the plug. Oops. When I drilled the pin holes for my plug I wasn't paying attention to how the pins would line up with the voltage markings on the label. The 2 pins close together correspond to the 9v battery. I was about 90 degrees off, so I cut my phenolic down to a size that would fit inside the top when I rotated it. I lightly sanded the edges of my plate to give it a little tooth for the epoxy. I applied a generous amount of epoxy to sides of my plug plate trying to avoid the center so that it won't show,clamped and let setup.

The remaining 2 short dowels are now glued in place to the top of the box, 1/8 inch from the top and on either side of the plug plate (not underneath the plate). This lends strength to the pulling and pushing the socket will receive from the plug being pushed on and off.



Assembly

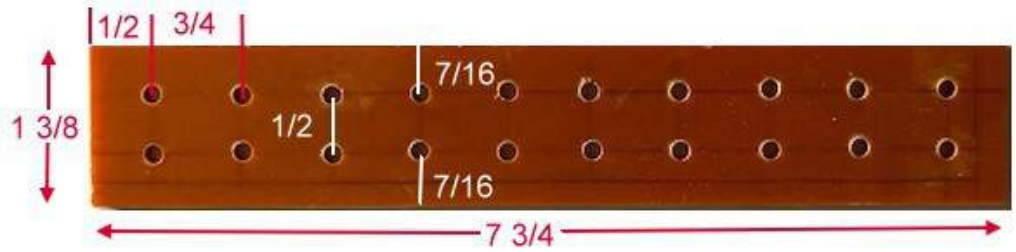
It's time to put everything together and attach the labels. First the top was glued down in the corners and the top braces. I made the top label oversized so that it could be bent over the sides and hide any seams when the front and back are added. I cut a small section of the corners out so that it would lay flat. I used a different glue for this (in the Sources) as spray adhesive would have been too hard to control. Next I attached the front and back. The center black strip is off center, so I made the labels long enough to be positioned and lined up with the top on both sides of the box. The excess is wrapped around the sides. The small side pieces were attached next.

The bottom label was affixed to the bottom plate. The bottom plate is screwed into the 4 corners as well as to the middle brace.
Onto the battery connectors.

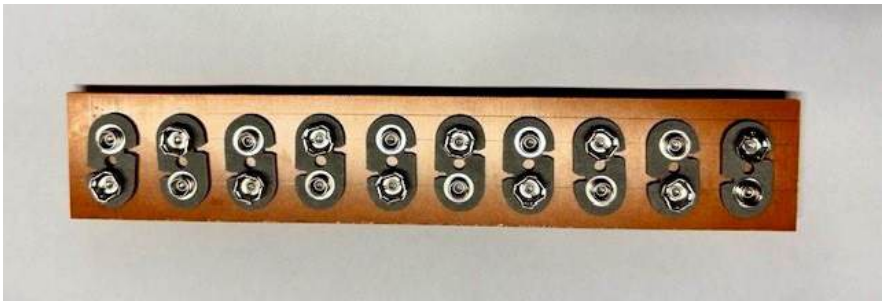
Battery connections

This battery has 2 sections- a 9 volt “A” battery and a 90 volt “B” battery. Since the 9v A battery supplies the filaments, simply wiring in a single 9 volt battery wouldn't last long. I decided to use c size batteries and wire 6 of them in series. I used 2 battery holders, each holding 3 c cells and wired them up in series to get my 9 volts.

For the B battery I wired 10 - 9 volt batteries in series. In the past I've used standard 9 volt battery connectors and wired them to each other. That works fine, but I decided to try something more elegant this time. I found individual snap on connectors, and attached them to another piece of phenolic material and wired them together. I used 2mm push washers to hold things in place. I alternated the connectors + and - to make it easier to wire them up.



9v battery connector



2mm Star Lock washers hold the connectors in place

Using bus wire, I wired all of the batteries in series

The battery packs were wired into the shell and voltages are tested.

All ok. I screwed the bottom plate back on, and put it into a radio for testing. It works! Now I need to make another.

I found during this process that 4 pin speaker connectors from older radios are a perfect match for the battery plug on the Zenith radios (as long as the pins are 1/8 inch diameter).

I found some on Ebay and used one on the next project. It was much easier than drilling holes to match up the pins with the plug. In the 2nd battery I attached the speaker plug to the top of the phenolic. If I were to make another, I would attach it to the bottom, as the pins stand a little too proud.

Speaker Connector

Sources

1/8 Basswood - 12x16 -Amazon- mine came in a 12 pack. You only need 2 pieces.
Hobby Lobby might have it, but they tend to be pricey

C cell holders - either 2-3 cell holders or 3-2 cell holders - Amazon

1/8 inch Phenolic - Amazon- 3mm Phenolic Board

9v Connectors - Mouser.com part #534-968

2mm washers - Amazon- Star Lock Washers, often in a combo pack of different sizes

Labels - available on my website Billsradios.com

Glue- I use E7000 as the spray adhesive to attach the labels. For gluing the edges of the top that wrap around, I use Crafters Pick Ultimate Glue. This is a good all purpose glue that dries fast and clear. I also use it to repair speaker cones. Found at Hobby Lobby and others.

Veneering a Radio using Steam-A-Seam 2

Contributed by Scott Thomas-CRC Member

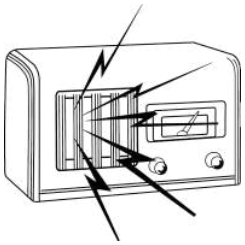
I am a member of the Woodworker's Guild of Colorado. This is a great group of men and women who are willing to pass on their skills to novice woodworkers such as myself.
One such member, Scott Roth, an expert in veneering gave a presentation/workshop on the method he developed to apply veneer to a projects. I will try to pass on his method using the notes I took at his workshop.
Scott Roth for years taught veneering to students using the glue and veneer press method but then experimented with using the Steam-A-Seam 2 product. He found that using this product gave him a quick and simple way to apply veneer to a substrate. Seam-A-Seam 2 is a fusible webbing material used by quilters. You can buy this material at your local quilter's shop or on Amazon for about $7 for five 9"x12" sheets.

Roth's Steam-a-Seam 2 Method:

Step 1: Remove the paper from one side the fusible webbing and adhere the webbing to the veneer.
Step 2: Remove the remaining paper of the webbing attached to the veneer and place it on the substrate, which in our case would be the radio.
Step 3: Place the paper you just removed from the fusible webbing over the veneer and apply a medium heated iron on the paper.
Step 4: Press down on the iron and then lift it up while applying the veneer to the substrate.
Once the veneer is applied you can use a scraper or a light sanding to even out the veneer on the radio.

Notes/Tips:

Normally, you have to apply veneer to both sides of a substrate but since this is a dry method Scott indicates this isn't required for the Steam-A-Seam 2 method since the glue is not wet.
For burls spray one side with water then apply the fusible webbing while still damp to straighten out the burls. I haven't tried this and it seems to go against the first tip but I guess the dampening of the burl doesn't create the same issue as wet glue causes on the stability of the substrate and veneer.
Use a veneer saw to cut with the grain since a knife wants to follow the grain.
Use a shooting-board to put a straight edge on the veneer.
Do not press and move the iron around on the veneer being applied. Just press and lift. I moved the iron around without lifting the iron up and had to completely start over since the Steam-A-Seam 2 just balled up.



The Latest CRC Club News

'Twas the 11th of January when we had our last meeting. It was a perfect January morning - the sun was out, no snow , and the traffic was light on the way to the Castle Rock Library from Berthoud.

Paul Heller was back from his journeys and officiated. We had 25 attendees. The first order of business concerned the club dues. It was decided to forego the dues for another year. If anyone has already paid for this year, your membership will be extended through next year (2027). If you would prefer a refund, please contact Merril.

Dave Boyle had a few announcements. He told us the meeting dates and times for the rest of the year. He once again requested for a volunteer to take over next year in arranging this. If anyone would be interested in helping, let Dave or one of the officers know. Dave would also like to give a demonstration of his infamous Tesla Coil. The date for this this to be determined.

We next began discussing the next show, which will be held on April 19th at the same place as last year, the National Western Complex. The arrangement of the tables may be changed from what we had last year. It was decided to have a modified awards program this year. Plaques will be awarded in 3 categories: Best of Show, Best Restoration, and Best Educational display. We will be using colored stars placed on a form to vote. The details will continue to be fleshed out at the next meeting in March.

Bill Lettow suggested that we set aside a small area of our display and create a small vignette consisting of an armchair, armchair radio, old lamp, etc. This was one of a few ideas that came up with the intent of drawing people in. We'll also have a wireless transmitter sending out old music to be played by radios capable of operating in our area (battery powered or plugged in to the existing outlets near the wall).

Our next item on the agenda had to do with storage. It seems like a few times during the year, we're approached from people wanting to donate items to the club due to their spouse or friend passing away. Currently, we have no where to store items like that, other than in corners of our members garages, etc., or as in the case of the Beckman estate last year, in the bed of Merill's pickup. Ideas were tossed around about renting a small storage unit (the club can afford that). Rich Kuberski is going to see if Tectonics has storage room that they'll allow us to use or rent. That would be ideal, being close to the auction site. Wayne also said we could store things in one of his buildings temporarily.

Just a reminder. Our annual show at the Vintage Voltage Expo will be on April 19 at the National Western Exhibition Hall - same as last year
More details will be forthcoming in the E-Group and Facebook group

There was no presentation this time. Paul would like to encourage members to come and make a presentation, even if it's not radio related, as was the case with Bill Lettow's presentation of his trip last time. Do you have a project you're working on? have you taken an interesting trip? Please let Paul know if you have ideas and he will help and schedule you into one of the meetings.

After the break, it was time for the

RAFFLE!

There were a lot of meters, transistor radios, and other radios

Books and various other items rounded out the available offerings.

Show 'n Tell

Dave Boyle brought in a medical quack device- Master Violet Ray. He says it works but didn't offer a demonstration.

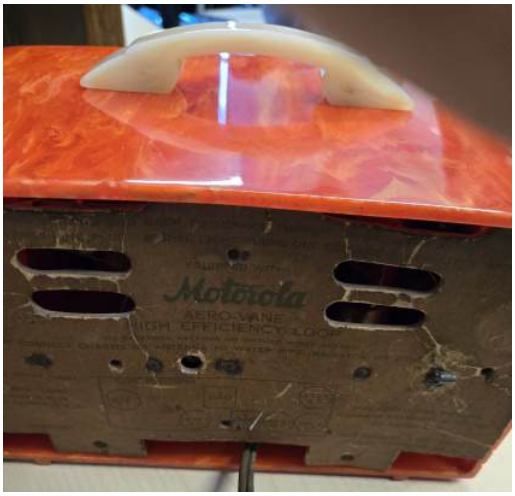
Stewart Warner 62T36 from 1947

Bill Lettow brought in his Catalin set from 1947 and described the process he went through in getting it cleaned up and restored.

Photos contributed by Bill Kohl

Merril with his Zenith 809 from 1934. Much work went into refinishing the cabinet and polishing the chrome. Scott Thomas was able to replicate the bottom molding which was damaged

Motorola 50x



Merril also brought in a beautiful Catalin Motorola 50x that he got at an antique store in Lost Wages(Las Vegas).
Of course things never go as planned and the front bezel broke while trying to remove it. After much research on how to repair Catalin, and a lot of elbow grease, Merill came away with a very nice radio-you would never know the break was there.

Merril also brought in many of the products that he uses when refinishing.

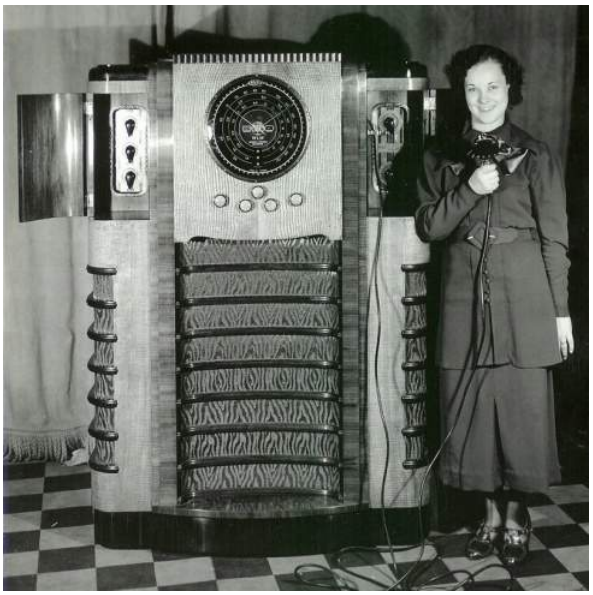
Photos by Bill Kohl

In response to Zenith's success with their Stratosphere radio, Crosley came out with the WLW Super-Power in 1936.

It stood 58 inches tall, 42 inches wide and 22 inches deep

It had 37 tubes, six speakers and put out 75 watts of power

Everything that could be was chromium plated.



It had a public address system and microphone.

The dial was 12 inches in diameter

It had 4 chassis:

Chassis 1 - contains the RF circuitry, IF circuitry, initial audio circuits, AVC, AFC, tone circuits, volume expander circuit and power rectifier which supplies field coil excitation for first 12" speaker.

Chassis 2 - contains 3 individual band pass audio amplifiers, microphone pre-amp and its own filament supply transformer.

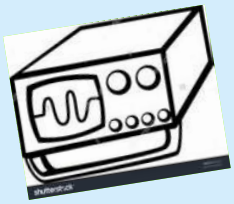
Chassis 3 - contains power supply for Chassis 2 and field coil supply for 2nd 12" speaker.

Chassis 4 - contains power supply for field coils of the 3 tweeter speakers and the 18" speaker. Also supplies power for the 4 aux control lights.

Frederick Taylor restored the cabinet of one of these remaining radios. See Fred's amazing restoration work on Facebook in antique tube radio groups

For more information:
https://www.nutsvolts.com/magazine/article/the-colossus-of-radio

Fred in the Shed
https://youtu.be/_5RmSTpYeg0?



Classified Ads

Ads are free for CRC members. To place an ad send your ad description along with personal contact information to the Flash Editor or or one of the CRC officers.

FOR SALE: New old stock & quality used vacuum tubes. Please refer to my business card pictured to the right. Thank you! Sean Duffy (573) 999-6187 acmetubesupply@gmail.com

CRC Meeting - March 8, at the Castle Rock (Miller) Library

Address:100 S. Wilcox Street, Castle Rock, CO 80104