

The

FLASH!

The Newsletter of
The **Colorado Radio Collectors**
Antique Radio Club

Volume 36, Issue 1

Next CRC meeting - January 19th

Jan/Feb 2025

Fada P-130 Restoration by Bill Potorti, CRC Member



Last year I purchased a Fada P-130 at an online auction for \$15. It looked in rough shape, but the auction photos didn't do it justice-it looked worse in person. It was a cute MW/SW suitcase style set but was missing much of its 'skin'. I thought this a good opportunity to experiment with re-covering a set.

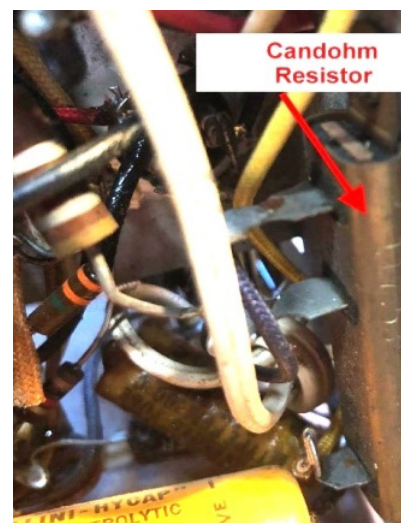
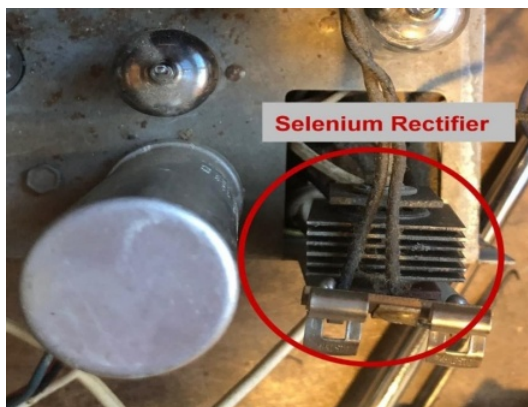
The P-130 came out around 1951. It's a 5 tube superhet powered either by AC or battery. There were several portable MW/SW receivers coming out about that time period, most notably some of the

Zenith Transoceanics. This may have been Fada's response to that.

Part I – Electronic Restoration

Before tackling the case, I wanted to make sure that the radio was working, otherwise I'll wind up with a nice-looking doorstep. It wasn't. I hooked it up to my dim bulb tester first and was able to get some

sound from the speaker, a slight hum, and garbled reception, even after plugging it in directly. I encountered 2 red flags after pulling and examining the chassis. The first was a selenium rectifier. If you're not familiar with them, they are notorious for going bad and not in a good way. The last set I encountered with one, it had already exploded and coated the inside of the chassis



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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."

CRC MEETINGS: Meetings are usually held on the 2nd Sunday of every other month starting in Jan. (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: Jan. **19th**, 2025 CRC meeting - Highlands Ranch Library, Event Hall A. March 16th, 2025 CRC meeting - Highlands Ranch Library Event Hall A. April 13th, 2025 - Vintage Voltage, Nat. Western Complex. May 11th, 2025 CRC meeting - Highlands Ranch.

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MESSAGE FROM THE PRESIDENT



I hope you are all well. I was unable to make last month's meeting. In reading the writeup that Rich Kuberski put together for this issue of the Flash, I see that I missed a good one. Thank you, Rich, for filling in when neither I nor Mike Cook could attend the meeting. I'm glad you were there for the club (as you always are) when we needed you.

I hope you enjoy Bill Potorti's article this month as much as I. Selenium rectifiers always make me a bit nervous. I'm glad Bill provides some good background information and steps us through how to replace them. Thanks for a great article this month, Bill, with some helpful links at the end.

I am sad to see Larry and Steve stepping back from the Flash. How can we possibly show our gratitude for all that they have done. In looking back at old issues, I see Larry listed as a co-editor starting in January 2019, so that is 36 issues. As for Steve - wow. His name is on issues back in 2002, perhaps even earlier. He is listed as editor by himself, until Larry joined him, from 2003 onwards. That is more than 130 issues. WOW.

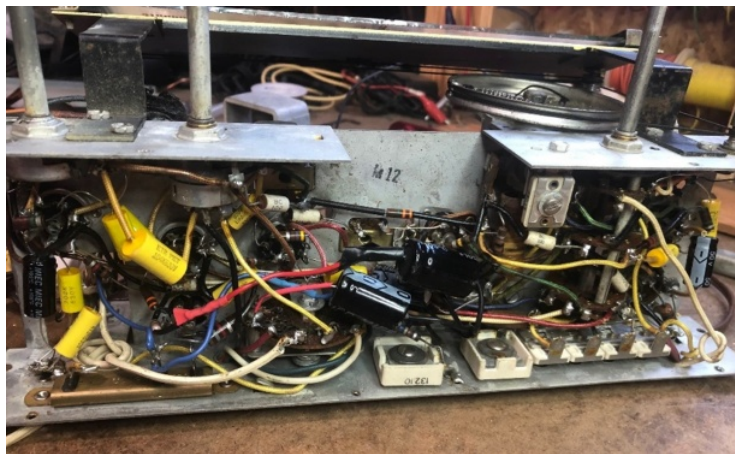
We owe these folks a big round of thanks, and we are forever indebted to them.

I wish you all a wonderful holiday season. See you in January.

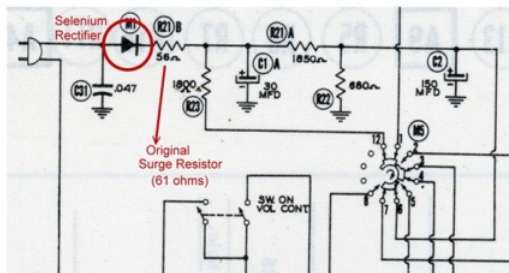
Paul

(Continued from page 1)

with black carbon from the resistors it took with it. That's another story. This will be replaced with a 1N4007 silicone diode and dropping resistor. The other red flag was the existence of a Candohm resistor. It's a multi-part resistor that is also notorious for going bad. Even if it tests good, I'm inclined to replace it with discrete parts. But before doing any of that, I start with replacing the filter capacitors. I also replaced the paper caps and any out of spec resistors along the way. The Candohm seemed to be in pretty good shape, so I left it alone.



A little background on the selenium rectifier. In the 1920's, German scientists discovered that sandwiching selenium against another metal (usually steel or aluminum) would allow current to pass in only one direction. After WWII they began being produced commercially. They had many advantages over tube rectifiers, one being that they had no need for filament power.



There is a voltage drop of about 1.2 volts for each fin of the rectifier. The current one has 6 fins; therefore, it should drop about 7.2 volts. I determined that by measuring the voltage across the rectifier and comparing it to the line voltage. 120 volt line voltage to 113 volts across the rectifier, approximately 7 volts. It's still functioning correctly at this point, but it still has to go. I measured the current by placing an ammeter in-line and found 66ma (0.066 amps). I double checked that by measuring the voltage drop across R21B and found 4 volts.

This resistor (part of the Candohm) was supposed to be 56 ohms, but ohmed out at 61. Ohms law $4 \text{ volts} / 61 \text{ ohms} = \text{about } 66\text{ma}$, confirming my reading. In order to make up the difference between the voltage dropped across the original selenium rectifier and the new arrangement, it's necessary to add a 'Dropping' resistor. Some people don't think this is necessary, but I think it will increase the longevity of the other components of the radio if we keep the incoming voltage down to the original (or close to) voltage. The 'Dropping resistor' value should be the voltage drop across the rectifier (originally 7 volts) divided by the current. The 1N4007 silicone diode has a drop of 0.7 volts. At 6.3 volts (7-0.7) (the additional voltage we need to drop), and 66ma the dropping resistor would be about 95 ohms.

What wattage resistor should be used? Using current x voltage (IV), I arrived at about 0.4 watt ($.066 \times 6.3$). I wired in a 100 ohm 5 watt resistor temporarily and found a 7.5 volt drop across the diode resistor combination. Close enough!

The only issue I encountered was that 5 watts got pretty hot. I had a 10 watt 150 ohm resistor in my toolbox. In the original circuit R21B (61 ohm measured) is listed as a surge

resistor to protect the selenium rectifier. It's actually 1 section of the Candohm. As stated earlier, there is a 4 volt drop across it. I decided to try eliminating it from the circuit and 'absorb' it into the new dropping resistor. Now the 150 ohm dropping resistor/diode dropped approximately 11 volts which is close to the original 7 volts plus 4 volts across the original (now disconnected) surge resistor. I wired it in on an added terminal strip. The 10 watt also runs warm, but I was in touch with Rich Bonkowski (W3HWJ) who wrote the article noted in the source, and he assuaged my concerns. " You may read 66 mA, but that is the DC current. The actual current through the diode is a distorted pulsed sine wave. The RMS current (AC) may be much higher. This is an idealized image with a pure resistive load." Rule of thumb, whatever your current reading is, and by extension your power rating in watts, always double or triple that value to give yourself some headroom. I've measured the voltages on the tubes and found them close to spec. It's running well.



Part II – Cabinet Restoration

Using calipers, I measured the thickness of the original material on the case. It was very thin, about 1/64 inch (0.4mm).

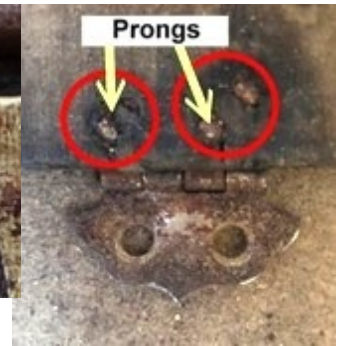
My original thought was to use a material called Tolex which is commonly used on guitar amplifiers and the like. What I found was that it is close to 1/32 of an inch thick and I initially thought it might be too thick and bind up around the hinges and between the 2 halves of the case. I began scouring for alternatives, going so far as looking at wallpaper or textured cardstock. I did have some leather repair material that I had used on a chair. I measured that thickness at 1/32 inch and decided to experiment with small pieces on the case. To my delight, there was enough tolerance to allow me to use that material if I wished. It has an adhesive back which makes it easy to apply. I decided to take another look at Tolex. I did find some that measured 1/40 inch thick-even better! I ordered a couple of pieces and decided to use it. Tolex is not self-adhesive and requires contact cement to adhere it, so it's a little more expensive than the leather repair material, but it does come in several colors whereas the leather patch was limited to browns and black.



Before going any further, it was necessary to remove all the hardware- escutcheons, handle, hinges and so on.



Anything attached with screws was not a problem, what became an issue was removing the rivets holding many things in place.



You're probably familiar with them – they're called Split or Bifurcated rivets with 2 prongs that are bent down after inserting. In many cases here, the prongs became embedded in the wood and were very difficult to straighten out so that they could be removed. There were at least a dozen of them.



What I eventually wound up doing was using a Dremel tool with a small cutoff wheel, and cutting the prongs so that the rivet could be removed.



Anything that was rusty was given an Evaporust bath. I used KwikWood epoxy putty to repair any divots I made, and re-glued some veneer. Tip: spread some of this epoxy around all of the rivet holes, sand, and redrill the holes (1/8 or 5/32 bit). It does add strength to the old wood.



I traced some of the original 'skins' on newsprint and then onto the Tolex. A sharp utility knife cuts through it without a problem.

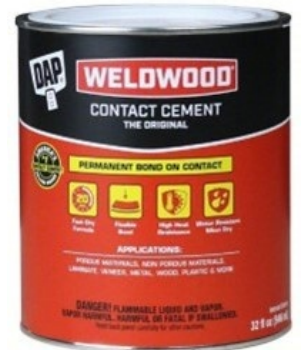


I used 1/2 inch long x 1/8 inch diameter split rivets with 7/32 head diameters to replace the old ones. After pushing through the material, the prongs can either be separated with a screwdriver or by a die made for this purpose (which I had) and then hammered flat. Tip: There were a couple of places that I had trouble getting a hammer into. I used a large hex head bolt with the head against the prongs and was able to tap it with the hammer to get into tight spaces.

It's important that you think through the application process beforehand. If you're lucky enough to have some of the original covering (as I was), you can get clues to the order in which it was applied. In other words, certain pieces will overlap other pieces and it's good to have that in mind as you're applying them. For example, in my case the bottom/front piece was applied first, followed by the sides, as in the photo. Now the front and top pieces will overlap the front and sides, hiding the edges.



I used WELDWOOD contact cement as the glue. This is the recommended method with Tolex. Make sure you have adequate ventilation when using this-it's pretty nasty! There are more user-friendly versions of contact



cement, but reviews have been mixed.

I used a disposable 4 inch foam roller and pan to apply it to large surfaces, and a small throw away brush for small areas. If you stick the pan/roller in a plastic bag between uses, it will typically stay usable for several hours. If you've never used contact cement before, it can be a little time consuming having to wait a minimum of 10 minutes (or more) before sticking the 2 surfaces together. They will stick on contact, so take care lining them up. I use a J roller to make sure the surfaces make good contact.



Finished Product

It was a fun project all in all. Is it perfect? No, but I'm pleased with the way it turned out for a first effort, and I've gained a lot of knowledge along the way. Don't be too quick to toss aside the ugly duckling set. It can be restored to look like new.



Before

After

Sources:

Selenium Rectifier replacement-There are several videos on Youtube, some helpful, some less so. A good basic article can be found at:

<https://w5rkl.com/wp-content/uploads/2022/07/RBSelenium2.pdf>

Tolex - Several companies sell this. I bought mine from www.amplifiedparts.com. Different companies will sell different colors and patterns at different prices. Usually sold by the yard x 52 inches wide. Shop around.

Weldwood contact cement - Most big box stores.

Split Rivets - I bought mine through Amazon from Hanson Rivet www.hansonrivet.com
Rivet Die from - www.weaverleather.com

JB Weld KwikWood - Most big box stores

Leather repair- If you want to try this instead of Tolex, I think it's a good option. You're limited in colors, but the patterns are a little more subtle and it's self-adhesive. It's a bit stiffer than Tolex and doesn't have any stretch. There are several options on Amazon. I've used leather repair tape by Onine with decent results. There are wide sheets available.

Evaporust - Good, non-corrosive rust remover. Amazon or Harbor Freight Tools

Is Your Radio Working OK?

If Not—See

JUDSON R. DAVIS

NATIONAL RADIO SERVICE

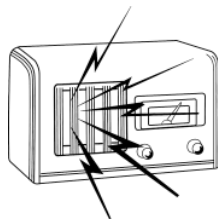
Wrightstown, N. J.

Phone: Pemberton 6175

—or—

Leave Your Radio at J. Sterling Davis' Store.

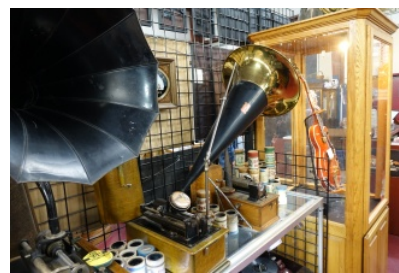




The Latest CRC Club News

The November 10th, 2024 CRC meeting was attended by 22 club members and former CRC member Layne Wright attended as a guest. The meeting was held at The Rocky Mountain Music Museum, located at 3535 S. Irving St, Englewood, CO. With Paul Heller and Mike Cook both unable to attend, Rich Kuberski presided over the meeting.

The CRC again would like to thank Gordon Close for hosting the meeting. Those in attendance were grateful for the chance to view the museum and enjoyed Gordon taking the time to talk to the members about the history and future plans for the museum. If you weren't there, you missed a very good meeting!!



Above: Photos of The Rocky Mountain Music Museum meeting



Above: Photos of some of the raffle table items at the meeting

Photos submitted by Jerry Stone, our new CRC Videographer and Photographer

Presented below are Rich Kuberski's notes from the November 10th CRC meeting, which also gives the details about the upcoming CRC club shirts:

"We had a great meeting today at the Rocky Mountain Music Museum. Our host, Gordon Close, gave us a great overview of his huge collection of string instrument/pianos/amplifiers/radios/ memorabilia/etc. It's his lifelong accumulation and well worth taking in. If you were not able to attend the meeting, consider taking the time to visit. Mr. Close also gave some insight about his plans for the collection in the future. He needs to see to it that the collection is preserved and properly displayed. No final plans as yet. We also enjoyed a variety of pizza's while Gordon was telling us about his vast collection.

We also discussed creating a new logo for the club. Bill Lettow is working on that, and he will have a few options for the club to vote on at the January meeting. Voting will include Bill's proposed options along with an option to keep the original Logo. Scott Thomas has found a person that can apply the selected Logo to shirts for us.

Every member in good standing that wants to have a shirt with a club logo, and your name if desired, will furnish the club with a shirt on which to have this Logo embroidered. The shirt needs to be brought to the January meeting (January 19, 2025 Highlands Ranch Library, Event Hall A) or mailed directly to Rich Kuberski so that they will arrive prior to the January meeting (6359 Holman Ct., Arvada, Co. 80004.) Shirts arriving late will be returned to you at the same time as the completed shirts. Make sure that you physically attach your name to the shirt and note if you want your name printed on the shirt and how you want it to appear. The club will pay to have this work done. Completed shirts will be available for pick up at the March meeting or at the April CRC/Vintage Show.

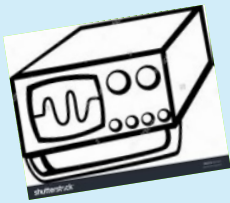
This is one of the places that I buy my shirts; you may want to consider them.
<https://www.tgw.com/golf-apparel/golf-shirts>

The club has sufficient funds in the treasury to pay for the embroidery on the shirts. Additionally, the club will grant free membership for the calendar year 2025 for all members currently in good standing.

The team working on the Flash gave notice that they are retiring from this position. We need people to immediately step forward to take on this task. Steve Touzalin will provide assistance during the transition. It is important to maintain this communication among the members. The newsletter is part of the glue that holds the club together. It's not a difficult or technically challenging task, but it does take some time and effort. If you haven't been a club officer, event coordinator or other significant participant in the operation of the club, I think you should consider that now is the time for you to participate. You can't always expect someone else to take care of the few tasks required to keep the club in business."

As noted above, the Flash is undergoing some changes. Larry Snyder has retired from his position on the Flash, he will still be attending club meetings and events when possible. We would like to sincerely thank Larry for all his hard work and years of service in preparing the Flash publication, and to say: "Thank you Larry, job well done!".

On a side note, CRC member Bill Potorti has expressed an interest in possibly taking over the duties as the Flash editor. I am sure that he would welcome anyone willing to help him out.



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 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



FOUND: Paul Thompson sent in the following website link:

<https://www.radionerds.com/>

lots of information on military electronics

CRC Meeting - January **19th**, 1 PM at the Highlands Ranch Library, Event Hall A.
Address: 9292 S Ridgeline Blvd, Highlands Ranch, CO 80129

