

The

FLASH!

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

Volume 35, Issue 2

Next CRC meeting - March 10th

March/April 2024

Eliminating Static

in an AA5 radio

by Larry Snyder, CRC Member and Flash Co-editor



During the March 26, 2023, Vintage Voltage Show, I was approached by Karen, who brought her grandmother's radio to the show. She was accompanied by Richard, who previously had a console radio repaired by Dave Boyle, but since Dave recently dialed down the volume on his radio repair business, they were now seeking someone who could make this cherished family heirloom work once more. I was interested, and they retrieved the radio from their car for me to see.



There was no identification on the outside of the radio other than the "Airline" logo on the front. A label on the cabinet back panel indicated it was repaired in Wichita, Kansas sometime in the distant past when phone numbers were shorter like MUrray 5-1215. Neither Karen nor Richard knew the model number, and they had never removed the back panel to look inside. When I asked what was wrong with the radio, they said when they turned it on, it had a LOT of static and no stations could be heard. There was no smoke or sparks! My assessment was that this radio was sold by Montgomery Ward sometime in the 1950's and the static indicated the output tube, output transformer and the speaker were working at that time. With that, we discussed a budget and a time frame for the repairs. I started working on the radio, part-time, 2 days later.



When I removed the cabinet back & loop antenna, a sticker on the chassis included the model # 25GSE-1555A, and a notation it was manufactured in December 1951. The schematic for the radio was then located in Rider's Perpetual Trouble Shooter's Manual Volume 23, on (Montgomery Ward) pages 38-40.

Montgomery Ward began selling radios using the Airline brand name in its mail-order catalogs in the 1930s.

The Airline radios were manufactured for Montgomery Ward by Belmont Radio, Davidson-Hayes, US Radio and TV Corporation, and Wells-Garner. Early models were high-quality. Some later

(Continued on page 3)



The Flash! © 2024, all rights reserved.



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 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 July to June. New memberships will be prorated to the following June. 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: March 10th, 2024 CRC meeting - Castle Rock Library at 1 PM. March 24th, 2024 Vintage Voltage Show (**New Location**). May 19th, 2024 CRC meeting - Castle Rock library at 1PM. July 14th, 2024 CRC meeting.

CRC contact information.

President

Paul Heller 303-432-0434
phesopheon@comcast.net

Vice-President

Michael Cook 303-885-8034
mldcook@hotmail.com

Treasurer

Merril Campbell 719-596-3482
campbell321@juno.com

The Flash! Co-Editor's

Larry Snyder 303-279-9711
Lsnyder200@cs.com

Steve Touzalin 303-988-5394
stevetou@comcast.net

CRC Facebook Group address:

<https://www.facebook.com/groups/1132691767366259>

eGroup posting address:

colorado-radio-collectors@googlegroups.com

Webmaster

Paul Heller
phesopheon@comcast.net

Website address:

<http://coloradoradiocollectors.com/CRC2/>

MESSAGE FROM THE PRESIDENT



I hope you are all doing well. March is going to be a fun month with two events: a meeting and a show! Please come to our meeting and enjoy time with fellow radio enthusiasts. Oh, and free pizza as well. Please bring your show and tell items because we all enjoy hearing about those.

Speaking about enjoying something... Larry Snyder has written an excellent article this month. His diagnosis and repair of a particular "Airline" radio is really first rate. Static can be tricky to figure out, and I've certainly learned a few things now. Thanks for sharing this with us, Larry.

At one time, our club meetings had guest speakers. I'd like to restart that again. If you know of someone who would be a great guest speaker, please let me know.

We all owe a debt of thanks to Larry Weide for his many years of dedication to our club. His impact cannot be overstated, and it would be very difficult to list all the positive things he has done for some of us and for the club overall. As for me personally, I have found Larry to always be a source of encouragement even though I have not known him for very long. Larry, thank you. You will be sorely missed.

Paul

(Continued from page 1)

models targeted the low-end, budget market. The radios were sold with a full warranty and home delivery. Montgomery Ward discontinued its Airline brand of radios sometime in the 1950s.

This 1952 radio is referred to as an "All-American Five" because it contains five, 7-pin miniature tubes namely 12BE6, 12BA6, 12AV6, 50C5, and 35W4. Earlier AA5's used the electrically equivalent, octal based, 8-pin tubes 12SA7, 12SK7, 12SQ7, 50L6, and 35Z5 or a mixture of the pin types, as the industry transitioned from the 8-pin tubes to the 7-pin miniature tubes. Before the AA5 radio circuits were developed, radios were heavy, and costly because they needed a large power transformer to utilize the 120V line power supply. In the AA5's the tube filaments were wired in series eliminating the need for a power transformer. The AA5 circuitry was extremely popular and used by several American radio manufacturers in the 1950s.

After identifying the radio, and obtaining the schematic & data sheets for it, my next step was to check all resistors and replace those that varied from the original specification by more than 10%. All paper & electrolytic capacitors were replaced regardless of the values found because they do not age well, and this is a 71-year-old radio. All ceramic capacitors were checked and replaced if out of specification by more than 10%. All tubes were checked using a B&K model 747 solid-state tube checker resulting in the 12BE6 det-osc, the 12BA6 I.F. amp, and the 50C5 power output tube being replaced. The resistance values for all coils, transformers, and the volume control pot were also measured and recorded. During the replacement process the wiring was checked to ensure all parts were installed per the schematic, and there were no stray loose strands of wire, or solder droplets in the chassis. A 20-psi air hose was used throughout the process to clear the chassis of loose debris.

With the initial parts replacement completed, the radio was plugged into a "dim-bulb" tester and the 120V AC supply was slowly increased to safely check for electrical shorts. Afterward, when the radio was plugged into the wall outlet and allowed to warm-up the radio still had LOTS of static. I knew the radio needed an alignment, but I could not hear the Signal Generator RF tone through the static.

The radio wiring was checked point-to-point, a second time, looking for parts I may have inadvertently connected incorrectly. I inspected everything, looking for loose connections, poorly soldered joints, or bare wires that might make intermittent contact when the radio was handled. None were found.

However, I did notice the radio had *possibly* been exposed to fumes from car battery acid. because the brass shaft on the volume control had turned black and there was a coating of a hard white powder-like residue on the outside of the two plastic knobs, and also on the exposed tuning shaft. The printed words and diagrams that were on the cabinet back when it was new, were now only discolored shadows and completely illegible.



Although the Volume Control (VC) had the proper resistance value, the same white powder was possibly on the wiper and resistance surfaces inside the potentiometer (pot). I learned years ago that one dirty connection in the signal path can cause noise and static. So, I removed and opened the VC pot, cleaned what I could with a toothbrush, and sprayed the resistance surfaces with *Caig's ProGold Gx5* contact conditioner. While I had the spray can in hand, I also sprayed the tube pins, the pin socket holes and the tuning condenser contacts. Then I reassembled the unit in the chassis.

When I plugged the radio in and turned it on, only one weak station made it through a reduced volume of the pervasive, ever-persistent static. Meager progress had been made.

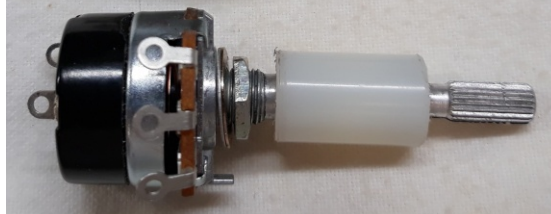
I decided to replace the old Volume Control with a new one to see if the condition would improve.

Replacing the original VC pot was not as easy as I thought because it had a long shaft & splines. VC pots with a long shaft & splines are not readily available today, if at all. So, I used a new, short shaft pot + a homemade nylon coupling + a short, splined shaft to get the needed configuration and length.

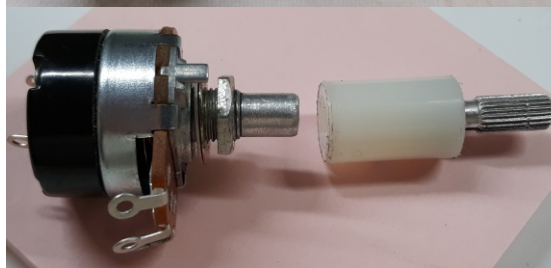
The Original Volume Control



The New Volume Control



The shafts are the same length when the nylon coupling is pushed against the nut after the pot is assembled in the chassis.

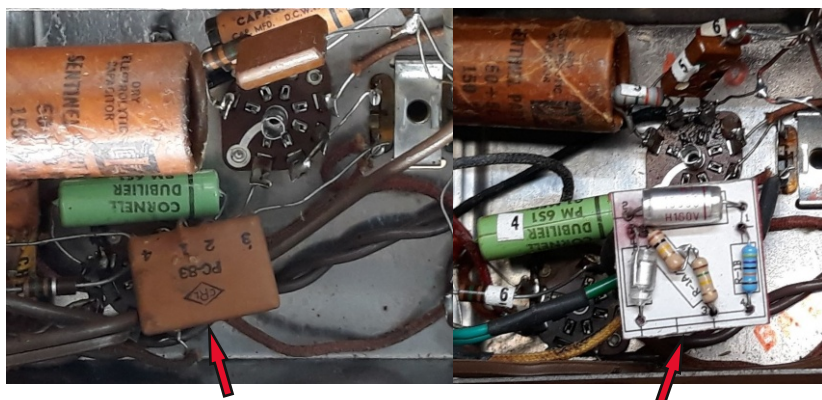


The New Volume Control

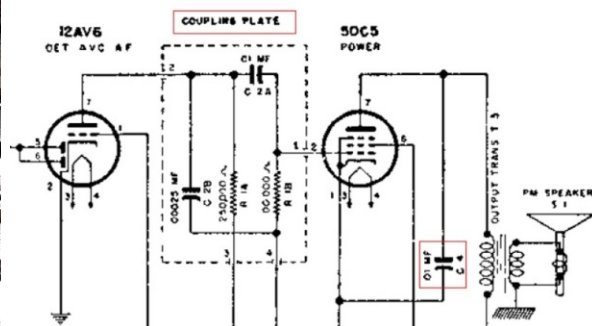
I assembled the new VC in the chassis and turned the radio on for another test. I could now tune in a few more weak stations, but the static was still present in the background, and the stations faded away in less than a minute. Frustrated, I did not work on the radio for 3 or 4 days. When I returned, I looked more closely for other possible solutions and found the following items to repair before powering up the radio again.

1) **The 'Coupling Plate'** The 'Coupling Plate' is a sealed packet containing 2 resistors and 2 capacitors. It couples the plate of the 12AV6 to the grid of the 50C5. It was difficult to measure the individual values of the capacitors inside the packet. I suspected the 250 pF capacitor was bad.

I made a new assembly with accessible, discrete components.



The original Coupling Plate The new Coupling Plate

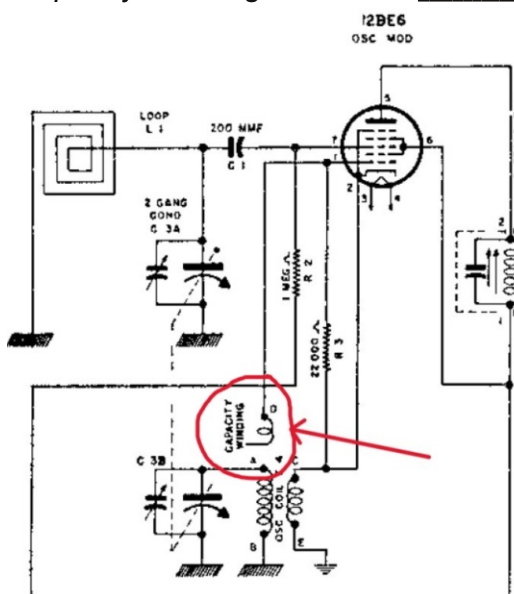


Location of the *Coupling Plate* and C4 on the schematic.

The capacitor in the green plastic case, labeled 4 in the above photo, was also replaced at this time.

2) The '**Capacity Winding**' wire on the oscillator was not found.

I did find the connection from the 12BE6 grid to tab "D" on the oscillator coil, but not the actual 'Capacity Winding' wire from "D" tab to the coil.



a Location of the *Capacity Winding* on the schematic.

On the schematic, the primary coil of the oscillator coil is inductively coupled to the grid of the 12BE6 tube by what is labeled as the '*Capacity Winding*'. This is merely a turn or two of fine wire wrapped around the main coil of the oscillator.

These few turns of wire, called a '*gimmick*' in some reference books¹ form a small capacitor with the windings of the oscillator coil and in this way the oscillator becomes capacitive-coupled to the grid of the 12BE6.

¹*Elements of Radio*, 4th Edition, Marcus & Marcus, Prentice-Hall, pp. 218, 244-245.

I replaced the '*Capacity Winding*' wire, wrapping it twice round the primary coil.

3) **The loop antenna** was separating from the distorted cabinet back. The adhesive deterioration and the back's distortion was likely due to long term exposure to the heat of the 50C5 power tube.

When the radio was handled, the motion of the loose antenna wires changed the loop's capacitance with the chassis, and thereby noticeably affecting the volume and the alignment.



I re-glued the loop antenna with insulating varnish.

The weighted containers are holding down the loose wires of the loop antenna down while the varnish dried.

The green tape was removed before applying the varnish to the other half.

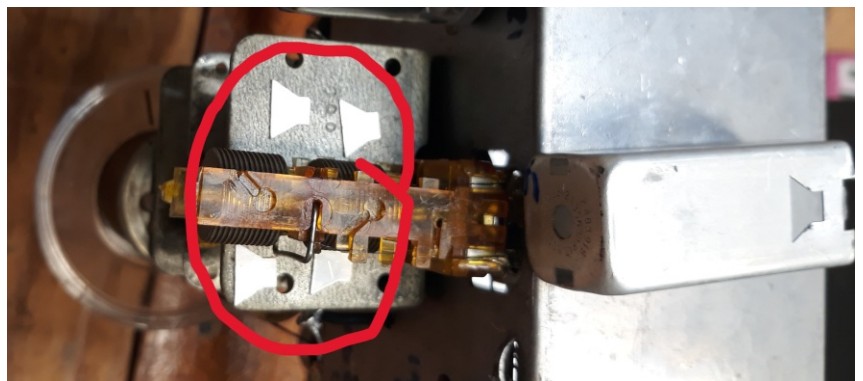
4) **Aluminum debris** was found inside the 1st I.F. transformer can.

I could not align the Intermediate Frequency (I.F.) transformers. Sometimes the alignment tool would go in, and at other times not at all. A faint tinkling sound was sometimes heard as I turned the radio over to adjust the other side of the transformer. The few settings I did make seemed to unexpectedly vanish, reverting all progress made back to *square-one*.

Peering into the small hole at the top of the 1st I.F. can with a flashlight, I could see something metallic was inside the can, and I could push it around. I had never opened an I.F. transformer before to see what was inside, but this seemed like the right time to do so.

Four aluminum pieces were found inside the can, they are shown below laying on the end of the tuning condenser. They are cutout pieces from the retainer clip holes in the sides of the can.

There are only 2 holes per can, not 4. Therefore, at least 2 pieces came from other units; maybe all of them, depending on how they may have ended up inside the can more than 70 years ago.



The pieces are small enough they fit anywhere around the tuning slugs jamming them up and/or blocking the slots for the alignment tool. The pieces of loose debris were most likely, intermittently, shorting the steel adjustment slugs to the grounded I.F. can. The sharp edges on the debris may have also, intermittently, shorted the internal coil wiring to the grounded I.F. can.

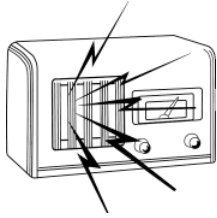
The **aluminum debris** in the 1st I.F. can was very unusual, and extremely troublesome. The radio had signs of normal wear and tear indicating that it had been well used by it's previous owner, and it had been serviced by a professional repair shop presumably in the late 1950's and may have been used for some period of time thereafter. So, if the radio played all those years, why was the debris not found before now?

Needless to say the pieces were not put back in!

After all the above changes were incorporated the static was gone and many stations could be selected after radio was re-aligned.

If I had to make a list of suspected culprits which contributed to the static, the '**Capacity Winding**' and the **aluminum debris** would share the #1 position. The '**Coupling Plate**' and the C4 capacitor replacement would be in the #2 position.

I would classify all the other parts I replaced, as the expected variety of commonly replaced parts.



The Latest CRC Club News



After careful consideration, Paul Heller announced on the evening of Friday January 12, via the club website and the CRC Google Email group list, that the January 14, 2024, meeting scheduled to be held in the Castle Rock Library, was cancelled due to inclement winter weather, sub-zero temperatures, windy conditions and potential heavy snowfall forecasts. Paul Heller tried to reschedule the meeting for Sunday Jan 21st but, after taking a poll of who may attend the meeting on such short notice, it was decided to abandon the Jan 21st option. We will resume our regular scheduled club meetings in March.

The following memorium was submitted by David Boyle.

Long time club member Richard Beckman passed away December 17, 2023.

Richard was born in Quincy, IL, June 1933 and basically spent his adult life in the field of electronics.

He was drafted into the Army in the early 1950's. His specialty was the repair of radio communication equipment. Upon his discharge 2 years later, he continued gaining experience in radio and then TV repair. He eventually hired on to Western Electric continuing to work on the electrical equipment aspects of the telephone system. Western Electric transferred him to the Denver area in 1970. At that time, he was involved with the phone system changing over from the old rotary relay technology to the (now) ESS.... electronic switching. He retired here in the Denver area after 30 years with the phone company.

He leaves his wife of 67 years, Dalphna, along with 5 married children, 15 grand, and 13 great grandchildren. Two of his children and families are still here in this area. Dalphna tells me that every one of his children has a repaired radio from his collection.

Of note, Richard joined our club many years ago when we were still meeting at the Vectra Bank on S. Federal Blvd. back in the 1990's. I would like to add that Dalphna attended every meeting with Richard. That is a "record" never to be broken!

Steve Touzalin recalls:

I remember seeing Richard and his wife at the meetings in the past. He was in charge of "The Flash Distribution" for a very long time. He would pick up the Flash copies from the printer company and mail them out, and also bring any extra copies to the next meeting. He was listed as a member on the 1998 roster list, possibly even earlier, I don't have the membership lists before then, so at least a CRC member for over 25 years. They would bring some really nice radios for the raffle table that they found at garage sales, etc. I have yet to find any photos of Richard.

Show & Tell

On Saturday Jan 12, Bill Potorti sent this email.

I was going to share this at the meeting, but mother nature intervened, so I'll try to share it here. I've been playing around with an idea that some of you may want to use as an adjunct to your displays at the upcoming show. I thought it would be interesting to show a few of my radios in operation without the advantage of a power source, or an external antenna (in the case of 1920's sets). To that end, I've recorded short videos and uploaded them to YouTube. I then generated a QR code (which are everywhere these days), allowing the public to scan the code with their phone and view the video while seeing the radio in front of them.

For more information contact Billpot@gmail.com or go to the CRC facebook website.

<https://www.facebook.com/groups/1132691767366259>

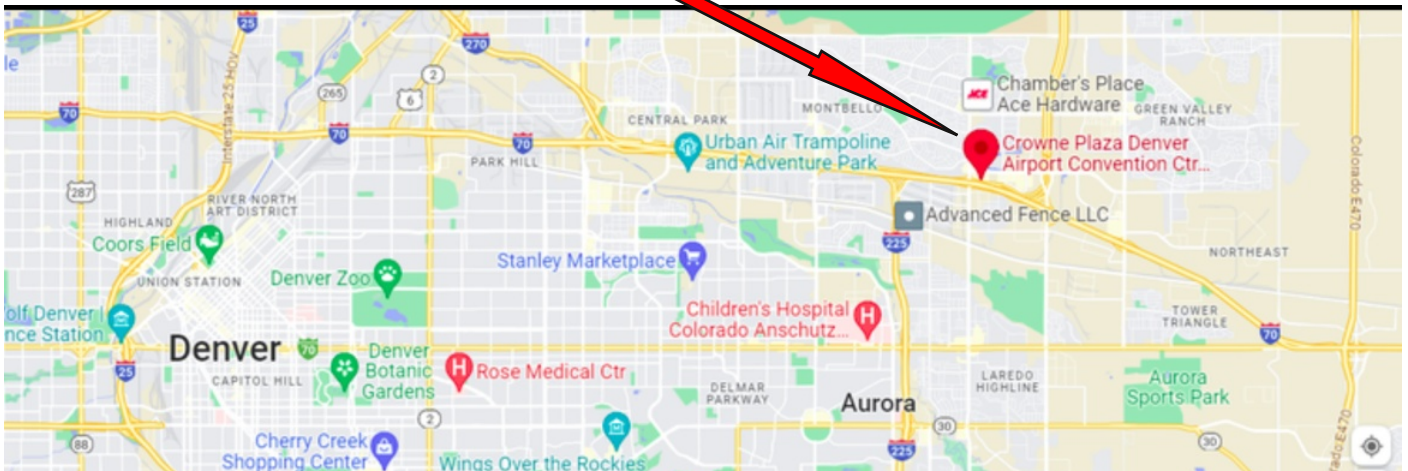
Vintage Voltage Show

The next Vintage Voltage Show will be held on March 24, 2024, at the Crowne Plaza DIA located at I-70 and Chambers Rd. The show has been renamed to be *The Vintage Voltage & Vinyl Expo*.

There will be no judging and no pre-registration this year, due to a lack of volunteers to perform the many tasks associated with these activities. It was also determined that club members will be allowed to sell directly from the display tables, *with the caveat from the Vintage Voltage organizers, that the sold items must stay on display until after the show.*

**All the details will be discussed at the
March 10th club meeting in Castle Rock!!!**

Crowne Plaza: Denver Airport Convention Ctr - 15500 East 40th Avenue, Denver, Colorado, 80239



Late Breaking News...

It was recently learned that **longtime** CRC member Larry Weide is moving back to California to be closer to his daughters and grandchildren. A brief description about Larry's many contributions to the CRC through his decades of membership is presented below.

Larry first discovered the CRC while attending the CRC's Spring Annual Show in 1991, **"We were wandering around the stock show complex back when they had antique shows there. I came by the CRC setup and knew that that was for me. This was the technology that I grew up with but this is when I started to collect and restore"**. Larry was listed in the Fall 1991 CRC membership list and since then has contributed to the success of the CRC club throughout his membership. Larry held several Club Officer's positions. In 1992 he became the CRC club Treasurer; he remained the CRC Treasurer through 1994. In 1995 Larry became the Vice President of the CRC for a year. Larry then became the CRC club President in 1996 for one year.

Larry also contributed to the club in many other ways. He performed the duties of managing the registration for the 1992 club Auction (pictured to the right). He continued to manage the Auction registration and record the results along with The Annual Show registration and judging results until just recently. In December 1994 several CRC club members, including Larry, participated in the **KEZW 1994 Annual Open House and Annual Radio Clinic**. See the photo from Vol 6-1 of the Flash, shown below. In the Fall of 1995, Larry along



Larry 1992



This picture was taken at the KEZW 1994 Annual Open House and Antique Radio Clinic. You know "the boys" (L to R seated: Dick Hagman, David Boyle, Barney Wooters - Standing far right: Wayne Gilbert, Larry Weide - Ed.). Standing next to Wayne is Rick Crandall, the Programming Director and, of course, the host of the "Breakfast Club" which is on from 6:00am to 10:00am Monday through Friday. Next to Rick is Roger Tighe KEZW/KOSI Station Engineer. The open house was held December 3rd from 10:00am to 1:00 pm. During that time the station held guided tours for about 150 people...quite a crowd. Listeners came through with radios to identify, price, and examine for possible repairs. There were 16 radios which made it quite busy. Points of interest: An early 2-tube Crosley with 199's. A lady with an early 50's Crosley "avacado" Bakelite she'd received when she worked for Crosley in Cincinnati. - Larry - *

with several other CRC members sponsored the CRC's role in **The Belmar Broadcasting Show**. Larry also produced the **"Return With Us Now..."** [Gallery Guide](#) for the event (*Click above to view/download*). Beginning with the 1993 Vol 4-2 of the Flash, Larry hosted a column in the Flash titled "The Scrounge Box" which appeared in the Flash for quite a number of issues.

At the end of 1996 he then became the 'official' editor of the Flash for a great number of years. Larry expertly produced 10, 15, and 20 year CRC Anniversary Editions of the Flash. He was also instrumental in starting the digitization process of all the back issues of the Flash that are now on the CRC club website. His many other contributions to the club and club events are way too numerous to list, but they are greatly appreciated. As a

result of his years of dedication to the CRC, he was awarded a Superior Service award from the club in 2019. (See photo below.)

Since he is moving into smaller living quarters, Larry does not have near the room for all his many collected **treasures** that he has acquired over the years. Larry generously held an estate sale at his home on February 10th, 17th, 18th, and March 2nd & 3rd, to reduce his collection size and offer other CRC members a chance to also add to their collections.



Larry on the left, receiving the Service award from David Boyle

Larry will be leaving for California on March 20th. For those wishing to stay in contact with Larry, Larry's email address remains the same, lweide@msn.com, but his phone# changes to (303) 717-9223. His new address will be 1010 2nd St. #245, Lafayette CA 94549.

We hope to have the opportunity to give Larry a proper send off at the March 10th CRC meeting. We do sincerely wish him all the very best. He will truly be missed! (Some additional photos of Larry are on the next page)

(Additional photos of Larry Weide)



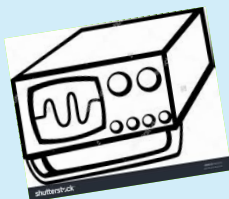
Larry - 1995 Auction



Larry with Mark McKeown - 2005



Larry with Dana Cain - 2011



Classified Ads



Ads are free for CRC members. To place an ad send your ad description along with personal contact information to Steve at stevetou@comcast.net or Larry at Lsnyder200@cs.com.

FOR SALE:

Starting to gradually sell off restored radios from my extensive collection to club members and friends. Prices are very reasonable and will gladly negotiate. Range from the early 1920's to mid 1950's.

Mostly wood radios from the 1930's...my favorite styles! Castle Rock Area

David Boyle 303-681-3258

email: djboylesr@msn.com

REPAIR SERVICE: Radio repairs for club members. Reasonable rates. Good references. Please call Mike Cook 303-885-8034 mldcook@hotmail.com

FOR SALE:

Tube Radios - Tombstone, Cathedral and Novelty Transistor Radios.

I have collected radios of all types for 35 plus years and now it is time to let them go to new home/s. I have over 250 tube type and over 5,000 transistor (both novelty and shirt pocket type)

Please call 303-238-1384

radios4us@aol.com

Thank You, Ron Smith

WANTED - Austrian Minerva 388 wood table radio, vintage about 1937. Bob Krassa ACØJL. bob@krassa.com or 303-475-2824 Thanks!

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



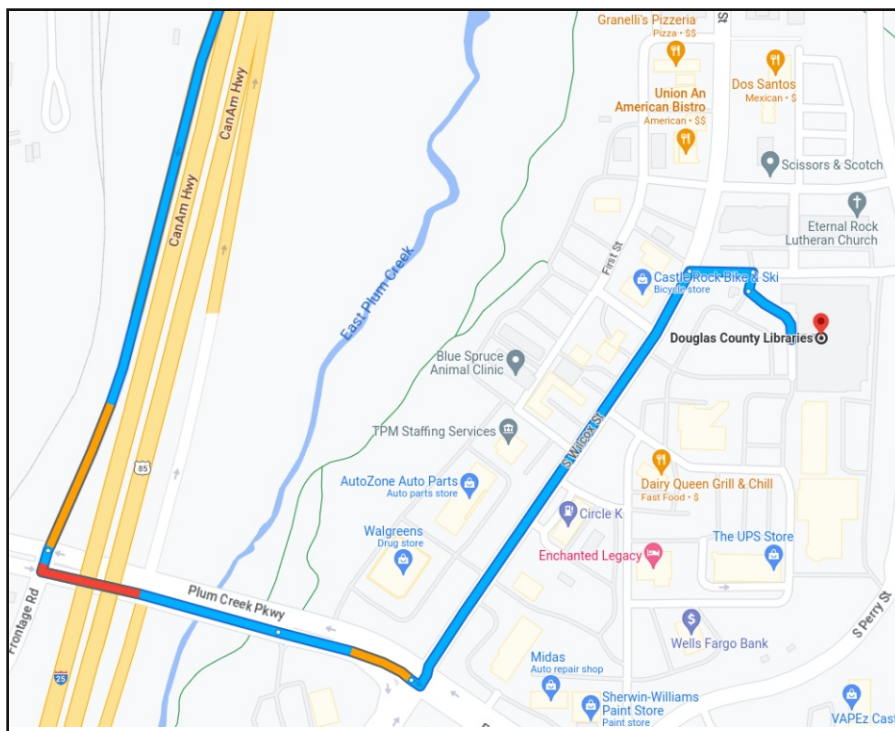
Acme Tube Supply
Sean Duffy
(573) 999-6187
acmetubesupply.com

[facebook.com/acmetubesupply](https://www.facebook.com/acmetubesupply)

NEEDED: Articles and advertisements for future Flash newsletters. Please contact **Steve** or **Larry** with any material you may have.

SUBMISSION OF ARTICLES & AND ADVERTISEMENTS: Classified Ads and articles of any radio/electronic or historical related subject to be published in The Flash! are encouraged and welcomed. The article(s) should be submitted in Microsoft Word, OpenOffice, RTF, or as plain text, to Steve Touzalin by email at: stevetou@comcast.net or Larry Snyder at Lsnyder200@cs.com or by postal mail to 417 So. Queen Circle, Lakewood CO 80226. Formatting isn't necessary as it won't transfer into our software, but if you do, set the font to Times New Roman, size 10, left justified. If you have graphics (.jpg files) to be inserted, please name them and be specific about how you would like them placed. We will do our best based on space limitations.

CRC Meeting Sunday, March 10th 1 PM at the "NEW" Castle Rock Library in Castle Rock.



Directions to The "New" Castle Rock Library in Castle Rock:

From I-25: Take the Plum Creek Parkway, exit #181. Turn East onto Plum Creek Parkway.

Turn Left (North) onto S. Wilcox Street and continue north 2-tenths of a mile. The Castle Rock Library is on the east side of the street at 100 S. Wilcox St. The parking may be limited or some distance away from the entrance.



Classic Gear for Audio, Radio, TV and Music

Sunday, March 24, 2024

11:00 am - 4:00 pm

Crowne Plaza DIA Convention Center

New BIGGER location: I-70 at Chambers Rd.