

The

# FLASH!

The "Colorado Radio Collectors Antique Radio Club" Newsletter

*Dedicated to the preservation and education of wireless, radio, television and associated equipment.*

**Volume 30, Issue 5**

**CRC Annual Auction/BarBQ - Sept. 8th**

**SEPT/OCT 2019**

## Replicating Early Speaker Cones

by Larry Weide - CRC Member

During the 1920's for all intensive purposes the first speakers were merely a horn attached to an earphone. The next evolutionary step was to remove the horn and metal acoustical diaphragm and replaced them with a paper cone attached to a coil and magnet unit via a rod. Unfortunately time, dampness, pests and abuse have taken their toll on many a paper cone. But as you will see, replacing a cone is not all that tough, and it can be done very inexpensively.

Although the cones of these speakers came in many different sizes, orientations and colors,



### Western Electric 1925 25" cone speaker, with replaced cones

most of them had two characteristics that make them fairly easy to replicate with modern materials. First, most of them were constructed with a paper that had the consistency similar to medium grade tag board - which is easily found in art supply stores. Second, they almost always had the shape of a regular cone - which lends itself to a simple construction technique.

The first thing to do is to determine your original cone's depth from the opening or widest part of the cone to where the cone comes to a point. Next, you need to determine the width of the cone's opening. In

cases where the cone is beyond measuring, you would use the speaker shell/container and linkage connecting points to anticipate the cone's dimensions. Tag board is cheap and you can afford to make a mistake or two when arriving at your final measurements. Of course you can "play" with other even cheaper papers until you get the dimensions just right.

The next step is to calculate and mark cutout guidelines on your new speaker paper. There are two calculations to make. First is the diameter of a circle, to be drawn on the paper as it is laid out flat, and second is a geometric

"chord" line that will be used to indicate what size "pie" shaped section to cut out of the circle pattern in order to form it into the correct size cone shape. You can use the three formulas below to find the dimensions of the circle and chord that you need.

To find the pattern diameter and chord dimensions follow these steps;

1) Use the depth (h) and width (W) of the cone to find the diameter:  $D = \sqrt{(4hh + WW)}$   
or... D = the square root of the quantity of 4 times the height squared plus the width squared.

*continued on page 3*

# Club Announcements

## MESSAGE FROM THE PRESIDENT

It is with great pleasure to be approaching one of two of our best and exciting yearly events...The Annual Auction and BBQ. Sunday September 8th and at our usual venue...a beautiful facility and perfectly suited for "what-we-do." Please refer to our website for details at:

<http://coloradoradiocollectors.com/CRC/index.php/events/club-auction>

Here are several brief reminders and timeline of activities:

**\*\* A suggestion; bring your own folding chair...better that sitting your "a-- on-the-grass" as there are always limited spots to sit.**

**\*\* Generally some of us show up early to assist in the set-up for the auction at around 8 AM or so. Everyone is welcome to help set up and also help cleaning up after our auction is over.**

**\*\* I arrive around 9 AM to clean and set up the "kitchen" area.**

**\*\* Sellers registration 9:15 AM to 11:15 AM**

**-However, we encourage pre-registration for all entries.** Pre-registration is mandatory for more than 5 items. Format is elsewhere in this Flash and then is to be sent to Alexis by email: [alekosalexand@gmail.com](mailto:alekosalexand@gmail.com) prior to the auction. The earlier the better.

**\*\* Buyers registration 9:30 AM until the end. Note: your sellers number is your buyers number.**

**\*\* Viewing is anytime before the auction...or when you can sneak-a-peek with out disturbing the auction process!**

**\*\* BBQ lunch is served 10:30-11:30 AM. Bring side dish appropriate for the event to compliment hamburgers and hot dogs. Typically salads, beans, deserts, & side dishes of ??, We will furnish chips, drinks, condiments for the burgers and dogs.**

**\*\* Auction starts @ 12 Noon Sharp!**



For those who were unable to attend the July meeting we presented Superior Service Awards to ten of our own for past and/or present extraordinary voluntary service to our club. Without members volunteering for behind-the-scenes and overt continued assistance in the running of our club...we wouldn't exist! In no particular order: **\*\*\*** To be awarded either at the auction or at a future meeting.)

Yuriy Yedidovich; Creation & Maintenance of Club Website. **\*\*\***

Alexis Alexandrids; Ongoing Computer Services for the annual Auction & Show. **\*\*\***

Tom Pouliot; Master Auctioneer For the annual club sale.

Larry Weide; Ongoing Computer Services For the annual Auction & Show, Producing 'The Flash'.

Steve Touzalin; Producing the 'The Flash', The club newsletter.

Merril Campbell; The club's 'Trusted Treasurer.

Richard Beckman; Distributor of the club's newsletter, 'The Flash' for many years. **\*\*\***

Mike McCutcheon; Master of the e group, Technical assistance, Refreshments & Snacks.

Jim McCutcheon; Many years of providing Refreshments at club meetings.

Richard Kuberski; Producing the 'The Flash', Coordinating the Auction, Photography/Videography.

Hope to see all you in the "chow line" at the auction...or at the November meeting.

Stay Tuned, *David*

## Meeting Locations

(Unless noted otherwise)

Littleton	Castle Rock
January	March
May	July
September	November

## 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.

## CRC MEMBERSHIP

Annual membership in the CRC runs from July to June. Dues entitle members to attend meetings, "The Flash!" our newsletter, participation in our spring show and Fall auction. Current annual dues are \$20. New memberships will be prorated to the following June.

## Upcoming Events

Sept. 8th	CRC Auction
Sept -	No scheduled meeting
Nov. 10th	CRC meeting

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Desktop Publishing software

## CRC Contacts

### President

David Boyle 303-681-3258  
[djboylesr@msn.com](mailto:djboylesr@msn.com)

### Vice-President

Michael Cook 303-885-8034  
[mlldcook@hotmail.com](mailto:mlldcook@hotmail.com)

### Treasurer

Merril Campbell 719-596-3482  
[campbell321@juno.com](mailto:campbell321@juno.com)

### Flash! Co-Editor's

Larry Snyder 303-279-9711  
[Lsnnyder200@cs.com](mailto:Lsnnyder200@cs.com)

Steve Touzalin 303-988-5394  
[stevetou@comcast.net](mailto:stevetou@comcast.net)

### eGroup Administrator

Mike McCutcheon 303-343-2956  
[ColoradoRadioCollector@gmail.com](mailto:ColoradoRadioCollector@gmail.com)

### eGroup

#### posting address:

[colorado-radio-collectors@googlegroups.com](mailto:colorado-radio-collectors@googlegroups.com)

### Webmaster

Yuriy Yedidovich  
[yyedistudio@gmail.com](mailto:yyedistudio@gmail.com)

### Website

#### address:

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

2) Find the "pie" shaped section cutout angle:  $\alpha = 360(D-W)/D$   
 or...  $\alpha = 360$  times the quantity of the newly found diameter minus the width, all of which is divided by the newly found diameter.

3) Find the chord length:  $C = D \sin(\alpha/2)$   
 or..  $C =$  the newly found diameter times the sine of one half of the newly found cutout angle.

Be aware that if you do the above calculations with a scientific calculator you may need to account for the angle in radians rather than in degrees.

Radians = Degrees X pi / 180  
 (pi=3.141)

OK, we're now ready to make our speaker cone cutout pattern.

1) Using the diameter (D), draw a circle on your paper. If you don't have a suitable compass use the string/pin/pencil method to draw your circle.

2) Using the chord (C) as the length of a line, draw this line so that it starts and ends exactly on the circumference of the circle. The exact position around the circle is unimportant.

3) Now, draw a triangle connecting the center of the circle with the two points that are marked by where the chord line touches the circumference of the circle. The chord line itself will become the side of the triangle that is opposite the center of the circle.

4) At this point we have drawn the outline of a "pie" shaped section of paper that you need to cut away - after you have cut out the entire circle. But first however, in order to allow a lapped glue joint, you also need to include at least an additional 1/4" strip along side one of the radii that you will be cutting along. Be sure this additional paper area is taken from the section that you are cutting out (throwing away) and is accounted for AFTER you have drawn the correct guidelines as described in step #3. This lap strip will have to have its end corners trimmed a bit so that they don't interfere with the glue joint.

5) After you have completely cut out your

pattern you can begin to shape it into a cone by carefully easing the two cut sides together so that it forms the lapped joint. The trick will be not to kink or crease the paper as you wrap it around. I've used cans, rolling pins and other cylindrical objects as forms to help "ease" the paper into a curve without creasing it.

6) The last step is to glue the lap joint in place. Carpenter's glue is a good choice since this type of glue will allow you to do a little adjustment or moving of the joint before it sets up. This is important since the position of the paper in the lapped joint will determine just how symmetrical your cone will be - assuming that you've done your marking accurately to begin with. If your cone will be visible you might want to sand the edge of

Pattern and Cone Relationships

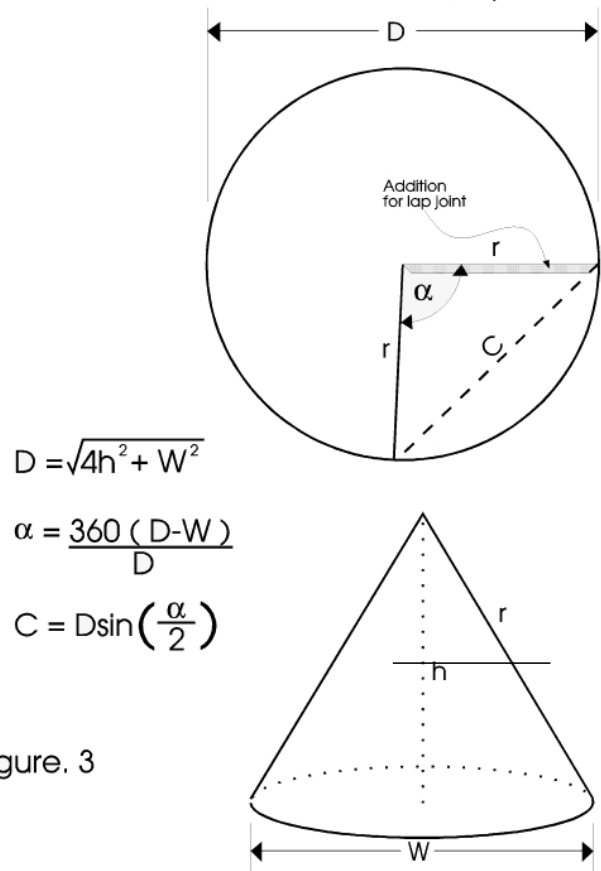


Figure. 3

the joint just a bit to "feather" out the seam to make it less noticeable.

A troublesome area may be the mounting of the opened end of the cone. The problem is that there were a number of ways used to do the mounting, so you'll just have to see how

# THE CRC 2019 ANNUAL AUCTION

Once again, through the efforts of club member Rich Kuberski, we are privileged to hold our annual auction in a park-like setting. In addition, we will also be continuing our tradition of combining the auction with a pot luck BarBQ.

The club will provide the burgers, hot-dogs, condiments, chips and soft drinks while the club members bring side dishes to share with all. Family members are encouraged to attend!!!

**WHAT:** An auction of radios, televisions, documentation, parts, test equipment and associated items. The public is encouraged to participate in **both** buying and selling.

**WHEN: Sunday, September 8th**

Seller's Registration: 9:15am - 11:15am

Buyer's Registration: 9:30am until end

Viewing: As items are delivered

**Auction Starts at 12:00 noon SHARP**

**BarBQ Lunch Served 10:30am - 11:30 am**

**Bring a side dish to share with everyone;**

*Slaw, Potato Salad, Fruit Salad, Desserts,*

*Chips, Beans, Your favorite recipe, etc.*

**WHERE:** Tectonic Management Group Inc. Office grounds and picnic facilities (map on back page).

## AUCTION RULES

There is no cost to register as a buyer or seller. **If you are a seller, your seller number is also your buyers number.** There is a sellers commission that will be equal to \$1 or 10% (which ever is greater) of the "hammer" price on each lot sold to any buyer - including the sellers who may elect to "buy back" their lots.

Minimum value of each lot to be \$5.00

Sellers may optionally, **at registration time only**, set a secret minimum bid (reserve) on any lot.

No commission will be incurred on any lot that is not sold. All seller commissions will be deducted from and before the payment to the seller, and these commissions will become the property of the C.R.C. treasury.

Buyers can **not** take possession of any lot(s) until the total cost for all purchases are paid. Collection of buyers fees will commence at the conclusion of the sale of the last lot entered into the auction. A buyer's receipt is required for pickup of purchased lots from the lot/item display area.

Buyer fees will be collected before sellers are paid. The C.R.C. only accepts CASH or CHECKS. Identification may be requested from those paying for their purchases by personal check.

\* Sellers will be paid only by C.R.C. check and may for a \$1.00 surcharge, elect to be paid by mail.

\* This auction is limited to radio and electronics related items as described above. The CRC reserves the right to reject items deemed inappropriate.

\* Any item registered for sale by auction may not be sold outside of the auctioneer's control, and can not be removed from the sale once the auction commences.

## SELLERS: Please pre-register your items with Alexis.

Send your information to him at  
[alekosalexand@gmail.com](mailto:alekosalexand@gmail.com)

Use the format listed below. **No item will be accepted for registration after 11:15 on the day of the sale.**

Name: \_\_\_\_\_ Phone/email \_\_\_\_\_

	Brand	Model	Year	Reserve (optional)
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____

additional forms at: [http://coloradoradiocollectors.com/CRC/images/crc\\_auction/Pre-register-form.pdf](http://coloradoradiocollectors.com/CRC/images/crc_auction/Pre-register-form.pdf)



# *Photos from the July meeting*

Thanks to Bill Grimm



Tom Pouliot



Larry Weide



Merril Campbell



Steve Touzalin



Rich Kuberski



Jim and Mike McCutcheon

The above club members were presented Superior Service awards from David Boyle for their participation in the club.

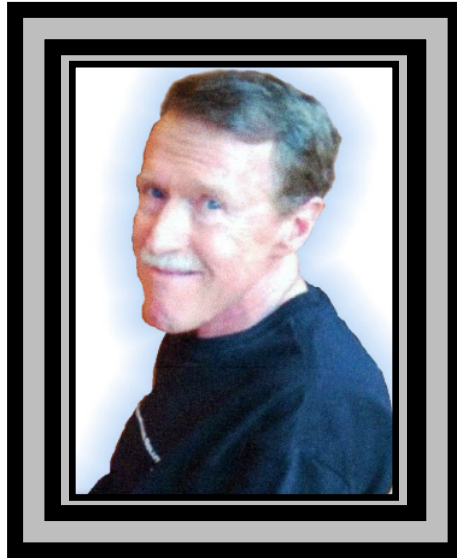


Don Andrus presented several of his Western Electric and other very interesting meters that he has collected.



Some of the items on the raffle tables.





Henry "Skip" Marsh Jr.

9/15/1946 – 3/12/2018

We send our most sincere condolences and much appreciation and thanks to Jennie Marsh, wife of Henry Marsh. In honor of her husband, Jennie has donated most of her husband's formidable collection of Zenith radios to the CRC. Her intent is to see that the collection would go to those who would appreciate and care for these radios as much as Henry did.

Henry had a life and career that was as full and rewarding as anyone could ask for. With degrees in political science and government he served in the US army as a Captain in the infantry and intelligence branches. In civilian life afterward he became a corporate officer in defense consulting organizations where his work took him around the world managing special ops support for the military. Domestically, he managed drug interdiction and surveillance hardware development.

Henry had many hobbies and interests. He loved the rodeo, country music and history. He was a skilled marksman and a member of the Sports Car Club of America. He was also very active in his church where he taught and where he and Jennie were also active in charity and donation work for the impoverished. And, of course, he had a passion for rescuing, restoring and collecting antique radios – particularly Zeniths.

**Speaker Cones** *continued from page 3*

your original cone was done. Sometimes the cone's opened end was rolled or bent around the frame edge. Sometimes the cone's opened end was finished with a ring of felt or cloth that was fastened to the frame. Some cones were free floating and were supported in a guide made of a band of felt or other material that lined the frame or cabinet interior. Depending on your particular mounting situation you may have

to account for an additional lip of cone material to use in the mounting. For those cones that have colors other than the paper's raw finish, you can tint them with non-water based paint. Flat spray colors work well. You can make markings on the paper before bending, apply paint through a stencil or apply a thin paper that has been printed with a pattern. TIP: circular markings remain circular after the cone is formed. Keep that "talking furniture" talking!

# 'Open Trunk'



## Classified Ads

**REPAIR SERVICE:** Radio repairs for club members. Reasonable rates. Good references.

**Call David Boyle 303-681-3258**

### FOR SALE:

1) Knight (Allied Radio) Model KG-680 In-Circuit Capacitor Tester

Note: This is a unique in-circuit capacitor tester for opens and short indications. Not the usual test bench capacitor tester for capacity and other electrical characteristics. Eye tube is very bright. Completely electronically refurbished with required new parts and one new tube, other tubes good. Tested and ready to use with instructions. New test leads. Complete manual available "free" on the Internet. \$60.00

2) EMCO Model 20DT Dual Trace Oscilloscope.

Works fine, just retired from my own radio/TV repair and test bench! With both probes. Ready to use. \$80.00

**Call David Boyle, 303-681-3258**  
[djboylesr@msn.com](mailto:djboylesr@msn.com)

**FOR SALE:** Radio Tubes. Tested as "Very good" to "good." Tested on some of the top end and calibrated Hickok testers. Have around 3000 plus tubes tested and boxed ready to go. Inventory includes many new tubes. Prices on used tubes typically would be 50% or less of AES posted prices. Cost of all new or used tubes can be negotiated.

**ALSO FOR SALE:** Large selection of NOS Dial Belts from recent sources. GC and JFD Brands. All I need is brand and model number...I have catalog data to look up the correct belt. If I have it...\$4.00 each.

**David Boyle 303-681-3258** or better yet:  
[djboylesr@msn.com](mailto:djboylesr@msn.com)

**FOR SALE:** Radiola 1925 Super-heterodyne Second Harmonic "Semi Portable (AR-812). Cabinet has some scratches on original varnish. Contains 6 RCA 199 triodes that test good. Sub chassis components are encased in wax and are difficult to access. The receiver does not play. Battery power. \$250

**Jerry Knievel 303-766-0845**  
[jerryknievel@gmail.com](mailto:jerryknievel@gmail.com)

**FOR SALE:** Full size/console TV 1950's B&W RCA 6-T-65 "Eye Witness" Farnsworth small console radio/record player k-262

**Larry Steele (719) 596-8883**  
[larrysteel@comcast.net](mailto:larrysteel@comcast.net)  
in Colorado Springs

### 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 **303-2381384**  
[radios4us@aol.com](mailto:radios4us@aol.com)

Thank You,  
**Ron Smith**

**WANTED:** I am searching for a vintage Sony PS-F9 Vertical Record Player sometimes referred to as a Sony Flamingo Record Player. Please contact **Jonathan Brown** at [jbrown220@aol.com](mailto:jbrown220@aol.com) or call **303-514-9900** Thank you.

**RECOMMENDED: by Paul Thompson** <http://hayseedhamfest.com/>

Tune in and Hear



Over KOA, Sunday,  
at 5 to 5:15 P. M.

**The Fontius**  
SHOE CO

10th at Welton, Denver

Come to Us for  
**ENNA JETTICK SHOES**  
\$5 to \$6 . for women \$5 to \$6

**Cunningham**  
RADIO TUBES



On the  
Crest of the  
Radio Wave  
Since  
1915

### SUBMISSION OF ARTICLES & AND ADVERTISEMENTS

Classified Ads for The Open Trunk 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**. Submit to Steve Touzalin by email at: [stvetou@comcast.net](mailto:stvetou@comcast.net) or Larry Snyder at [lsnyder200@cs.com](mailto:lsnyder200@cs.com) or by postal mail to 417 So. Queen Circle, Lakewood CO 80226.

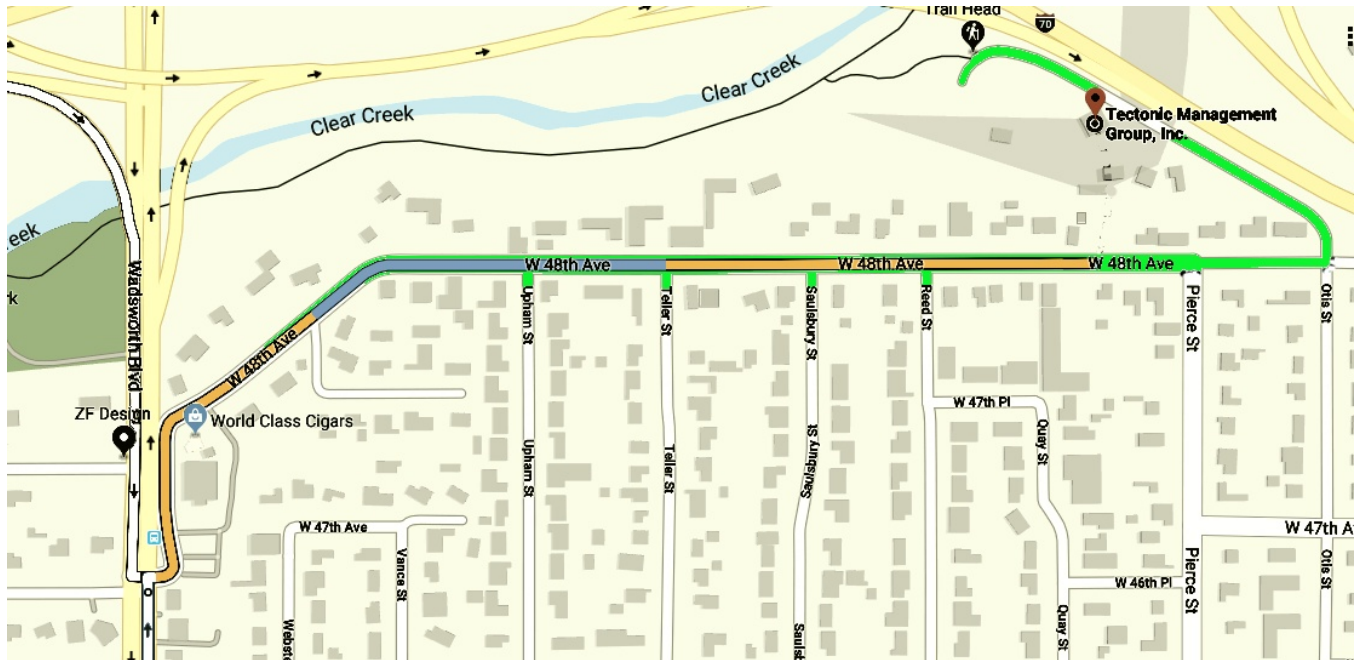
Formatting isn't necessary, but if you do, set the font to Times New Roman, size 10, left justified. If you have graphics (.jpg files) to be inserted, please name them and be specific about how you would like them placed. We will do our **best** based on space limitations.



# CRC Annual Auction/BarBQ September 8th

Tectonic Management Group, Inc., 6695 W 48th Ave, Wheat Ridge, CO 80033

<http://coloradoradiocollectors.com/CRC/index.php/events/club-auction>



**Colorado Radio Collectors**

**Antique Radio Club**

417 So. Queen Circle

Lakewood, CO 80226

**1st Class Mail**