



The FLASH!



Volume 14, Issue 2

March - April, 2003

Announcing the 2003 Annual CRC April Antique Radio Show and Sale - April 26th & 27th Stock Show Complex, I-70 & Brighton Blvd.

As in past years the CRC will be holding it's annual Antique Radio Show and Sale at the Stock Show Complex. As many of you know, this is our biggest and splashiest opportunity to not only show the community what antique radio collecting is all about, but it also allows those CRC members with radio and associated equipment to sell to put their wares before a crowd of literally thousands of people who will be there specifically to look at and purchase antiques.

So, get those beauties down off the shelf down and win a prize and/or make a buck.

Friday, April 25th - 1:00pm to 8:00pm - Setup

- ✓ This is the *only* time that you can drive into the complex to drop off equipment. Enter at the guard directed ramp.
- ✓ You can setup Saturday, but you will have to *carry* equipment in.

Saturday, April 26th - Set up, Reg., Contest and awards

- ✓ 8:00 am - Setup and Registration
- ✓ 9:00 am - Complex opens to public, begin selling
- ✓ 10:00 am - Registration Cutoff
- ✓ 10:30 am - Judges Briefing
- ✓ 11:00 am - Judging Commences
- ✓ 1:00 pm - Awards Posted
- ✓ 5:00 pm - Complex closes for the evening
- ✓ 6:00 pm - CRC dinner commences

Sunday, April 27th - Display and sale continues

- ✓ 10:00 am - Complex opens to public
- ✓ 4:00 pm - Complex closes

Costs for Space and Table Rental:

The stock show complex charges the CRC for the spaces assigned and for each table and chair that is used. The CRC pays for the show space and tables but passes on the cost of those items that are used by the sellers. **The cost this year is \$20 for a space and table combination.** Sellers may share this cost with each other in any combination.

Contest Categories:

- | | |
|------------------------|-----------------------|
| Accessories | Metal Case |
| Bakelite | Novelty - Transistor |
| Battery - 1926-1929 | Novelty - Tube |
| Catalin | Plastic - Tube |
| Cathedral | Portable - Pre 1939 |
| Classic Audio | Portable - Post 1938 |
| Communication Gear | Pre 1925 |
| Cosole - Full Length | Speakers |
| Console - High/Low Boy | Specialty - "Emerson" |
| Crystal Set | Television |
| Metal Box - 1920's | Tombstone |
| People's Choice * | Transistor |
| Best Restoration ** | Tube/Parts Display |
| Best of Show ** | Wooden |

*=Popular vote by public **=Popular vote by CRC members

**NEED INFO? Contact the CRC Show Coordinator
DENNIS LAURENCE - Pg2 for numbers**

Judging Criteria:

- Internal Condition - Judged if visible from outside
- External Condition
- Rareness - Relatively few are in existence
- Uniqueness - Novel, and not many like it
- Presentation - How well displayed, documented, etc.

Additional Items of Interest:

- As in the past shows, sellers may include any items that fall into the category of "collectable" - they need not be radio related.
- Volunteers are needed to watch over displays - Sat. & Sun. Please consider coming and staying for at least a while even if you're not entered in the contest or selling.
- You are highly encouraged to wear your CRC membership badge. You will need your badge for free exhibitor entry into the building.

The CRC does not assume any liability for lost, stolen or damaged articles, brought to this event by anyone, for show or for sale. The Denver Collector's Fair does provide a show-time walking guard and off hours security.

COLORADO RADIO COLLECTORS ANTIQUE CLUB

Founded October 1988

The Flash! Copyrighted 2002, all rights reserved

Volume 14, Issue 2

March/April 2003

IN THIS ISSUE

The CRC 2002 Annual Show and Sale Information - by Larry Weide	1
Message from the President - by Dennis Laurence	2
January CRC Meeting, The Promise of a Good Year - by Larry Weide	3
A View From the Tower - by John Thomas	5
A Brief History of the Development of Car Radio - by Wayne Gilbert	6
Denver Firm Equips Automobile with Radio Set - by Rick Ammon	8
Collector Books for Sale - by Charles Brett	9

MESSAGE FROM THE PRESIDENT

Can it be March already? With only six regular meetings a year we seem to move quickly from one event to the next. Planning for the April Show is well underway as well as getting started on the FLASH 15th anniversary issue.

Well its time to think about spring cleaning, so start getting your giveaway items identified for the March meeting raffle, and don't forget that we are encouraging a more organized swap meet after the meeting by all parking in the area behind the museum if you have items to sell or swap.

We hope to have a video to show at the meeting from the AWA entitled "The Charles Herrold Story", broadcasting's forgotten father.

I didn't get much of a response to my e-mail message concerning the FLASH publication and my suggestion to limit the FLASH to twice a year and otherwise sending out a newsletter to announce each meeting. I would like to get more input from the membership, so we will discuss this more at the meeting.

Also, speaking of the Flash, regardless of how many issues we have a year, **we desperately need article contribution.** Please consider submitting at least one article. If necessary, "spit and polish" will be provided - if you know what I mean.

This will be the last meeting before the April show so we will also need to iron out the details for the show.

We started the year with a good showing at the January meeting, so lets keep the momentum going!

See you at the March 9th meeting,

Dennis

CRC OFFICERS 2001-2002

President

Dennis Laurnce
(719) 278-9181
drl@pcisys.net

Treasurer

Robert Baumann
(303) 988-2089
rgbdenver@att.net
Charles Brett
(719) 495-8660
Brett3279@aol.com

VICE PRESIDENT

Open Position

ARCHIVES/BOOKS

FLASH! PUBLISHER INTERNET EGROUPO MGR

Larry Weide
(303) 758-8382
lweide@attglobal

Mark Dittmar

mark_dittmar@maxtor.com

CRC MEMBERSHIP

Annual membership in the CRC runs from **June to June**. Annual dues entitles members to a full year (6 issues) of the club publication "The Flash!". Membership provides participation in club events such as the annual April Show, mid-summer picnic, September auction as well as our semi-monthly meetings and swap meets. Dues also entitle you to club officer elections, excellent discount prices on current hobby publications and the Antique Radio Classifieds annual subscription raffle every May!

New memberships will be prorated to renewal on the following June, i.e new members joining in May should submit \$12, in December \$5, etc.

CRC MEETINGS

Meetings are held on the second Sunday of every other month starting in January (except 3rd Sunday of May) at 1:00pm at the Museum of the Americas Bldg., 2nd floor, 863 Santa Fe (between 8th & 9th Aves.). The meetings consist of business, "show & tell", raffles, swap meets and

January CRC Meeting The Promise of a Good Year

by Larry Weide, CRC Member

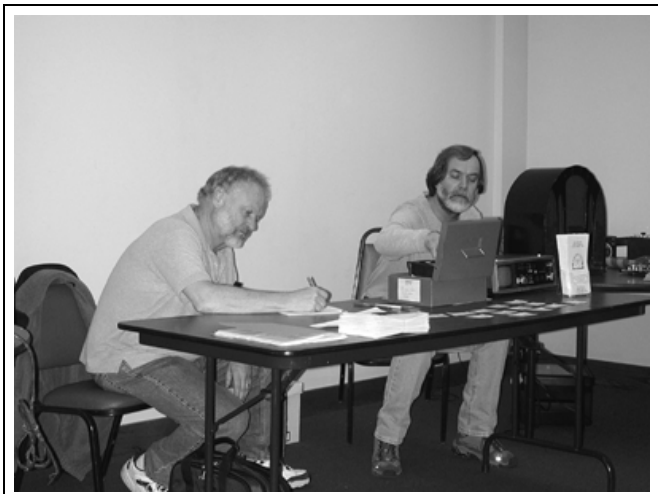
On Sunday, the 12th of January, the CRC held it's first meeting of 2003. Once again we'd like to thank Mike McCutcheon for his time and effort in obtaining our meeting space for us. At the same time we also want to let all that read our newsletter know how grateful we are to the Museo de las Americas, the Museum of the Americas, for allowing us to use their facilities for our meetings. If you have not visited this marvelous museum you are missing out on one of Denver's most underrated tour locations. For those of you who would like more information, you can call the museum at **(303) 571-4401**.

This month's activities consisted primarily of member "show and tells", a lively discussion of grill cloth installation techniques and our usual raffle of CRC member donated items.

We also, yet once again, dedicated some time encouraging members to consider writing articles for this newsletter. We know that there's a wealth of talent and experience in our membership and it's only a matter of "biting" the bullet (as we say in the computer industry) to get oneself to sit down and compose an article that would benefit us all.

Terrific contributions for this month are by John Thomas, Wayne Gilbert and Rick Ammon. This is John's *first* effort. When you see him thank him for setting a great example. Let's also consider the prospect of not having our newsletter because of lack of content. **Do we want this to happen?**

OK, off the soap box and on to taking a look at what went on at the January meeting;



Ah yes, our venerable officers, President Dennis Laurence and Treasurer Robert Baumann, busily making sure our meeting runs smoothly - and that we stay solvent.



It never fails that Tom Pouliot will show up at each meeting with a great show and tell - usually something quite rare and in working condition. This month it's a restoration of a Philco 32 farm radio, completely operational on it's 32V vibrator supply.

Next, seemingly being upstaged by all the



"goodies", we have Barney Wooters showing us his replica of an early DeForest RJ-9. However, the DeForest Tubular Audion, type T tube in it is *real*. Just to his left, Barney also brought a genuine Radiola RS to show us.



Perhaps the collector whose has given transistor radios the most CRC respect is Neil Gallensky. Here Neil is holding a Regency TR-1. To his right is an example of an even smaller speaker-less Regency, and an example of a VHF receiver by another company that used Regency plastic moldings quite a few years after Regency's demise.



us, from scantily dressed doll radios to I don't know what all. This time he brought in one of his great crystal sets. Maybe it isn't the biggest or fanciest radio around, but it sure would look nice on my display shelf.

Here, at the half time break, we have the members talking "shop", buying raffle tickets and



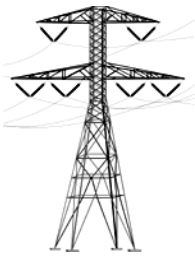
What a story! Martin Guth is holding the "bug" that his dad had used throughout WWII. The story is that his dad was in route to Greenland by air when the plane developed engine troubles. To off-load weight, everyone had to jettison their personal baggage. Quite by chance Martin's dad's baggage didn't get on the plane, so his key was saved. Martin did a beautiful chrome restoration job for a wonderful keepsake.

Ray Windrix does it again. Our club's official barber always has something of a novelty to show *The Flash!*



taking advantage of the specially priced books available only to CRC members.

**DON'T FORGET...
ALL CRC MEMBER
DUES
ARE DUE BY THE END
OF JUNE**



by **John Thomas, CRC member**

It was a pleasure for me to be at the second meeting of the CRC Coffee Klatch held at "The Shopper's Grill" in Colorado Springs, located on the north side of the "Bon Shopping Center". It was held on Monday, January 13, and meetings will continue to be held each second Monday of every month at 10:00 A.M. This month's agenda was really full.

About 8 people showed up for 'Breakfast' and coffee! (Charlie Brett did the accounting ... and had a penchant for factoring X2, each time he checked for interested party's....). Many topics were discussed, all of which would make excellent topics for the "Flash"... for any month?? Names of the individuals attending will be addressed as I get to know them better. (My excuse for a bad short term memory).

Some members in attendance were Ray Windrix, Charlie Brett, John Thomas and Don Wickes appeared briefly. Many others contributed to make it a great success. ...("Talked the talk, and walked the walk!"). The subjects varied according to each individual's need which were many and varied, indeed. All concerned had a great time. Three hours later, as my head was spinning from 'information overload', I departed. Some of the participants were still in discussion - OUTSIDE the Grill!

One of the participants (name?) took all the names and E-mail addresses, and has promised to remind us all by computer just prior to the next meeting. Be sure to come to the next meeting. Bring yourself, and anyone interested in the Radio hobby passion. Again, the next meeting is at the 'Grill' -- on Monday, 10 February.

The "FLASH" needs contributions of a literary nature...

It has been brought to our attention that the "FLASH" is in need of good topics and articles for good old-time radio discussions. Subjects for discourse could be anything related to the radio hobby, such as the topics discussed at the above mentioned meeting. The radio 'passion', as shown by the Colorado Springs meeting, should be a good guide to writing items in-and-for the "FLASH".

Larry Weide has promised -many times- to edit all such inputs that we would submit to him. He is not too worried about our abilities as writers. He says he can "fix" most things -- He says that all we have to do is try! (This is my first attempt to write anything for anyone.-- If I can try? .. so can you. ...?)

Please give us a chance to keep the "FLASH" a big success. We cannot do this without your worthy effort and 'passioned' radio lore or technical electronic expertise as inputs. Remember ...This is your club, publish 'YOUR' experiences 'NOW' in the "FLASH".

15th Anniversary Special Edition of the "FLASH"

The first meeting for creating and publishing the 15th Anniversary edition of the "FLASH" was convened at the home of Dave Boyle, just south of Castle Rock on Wednesday, 22 January. The CRC members at the meeting were Dave Boyle, (President) Dennis Laurence, Larry Weide, Barney Wooters, Charlie Brett, and myself. Robert Baumann was unable to attend, but gave important information via an E-mail message, via Dennis.)

Much of the table of contents was established and Dave sent copies of the minutes to all in attendance. Information will be available and discussed at the next meeting in March. BE THERE, as we will be discussing such items as cost, possible club subsidy, size and other 15th anniversary publication issues.

... Other Random items:

It was brought to my attention that we have not been using our name badges at our monthly meetings. we should be proud to show our membership in this organization. please try to display your badge at all meetings. It helps people like me get to know who you are!

73,

John

A Brief History of the Development of Car Radio

by Wayne Gilbert, CRC Member

Although home-radios were in common use by the early 1920s, several significant obstacles had to be overcome before the concept of the car-radio, as we know it today, could become a reality. Early car-radio manufacturers had to re-solve design and development problems that had earlier faced home-radio manufacturers. It was not that car-radios always presented unique design and development problems, but rather that car-radio design and development problems often had to be solved with unique solutions.

Of course there were some problems that were truly unique to car-radios, one example being the difficulty of shielding car-radios from radio frequency interference generated by the car's ignition system.

Although this problem was discovered very early in car-radio development, it was temporarily resolved by turning the car ignition off when listening to the radio. This solution is not as absurd as it sounds, because after all, the purpose of many early car-radios was to provide romantic mood music, and some romantic activities have always been best pursued in a parked car.

Supplying power for the radio was necessary whether the car was moving or parked, and an obstacle that demanded a solution before the car-radio could change from a novelty to an accessory. While the A+, or filament, voltage was easily obtained from the car's battery and the C voltage could be produced with common radio design techniques, producing the B+ voltage presented manufacturers and hobbyists with a bigger problem. The easiest solution, and one most often pursued by hobbyists and very early manufacturers, was to provide separate B+ batteries, similar to those then used in home-radios.

Since batteries were expensive, fragile, took up lots of space, and were inconvenient to replace,

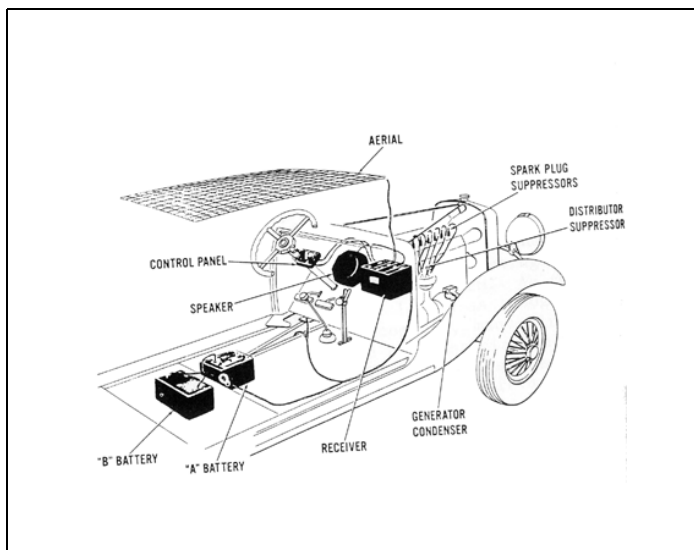
consumers demanded a better solution. As early as 1919 Alfred H. Grebe had designed and manufactured a car-radio that used a dynamotor to supply the B+ voltage. But the major drawback of dynamotors and generators was that they didn't supply a constant voltage when driven directly by the car's engine. This disadvantage, along with weight, cost, and inefficiency, doomed this approach and opened the way for the vibrating reed type power supplies.

Enter Bill Lear and Paul Galvin, whose lives and inventions are intertwined together and with the development of the car-radio phoneme like no other two people in radio's history. Galvin is, of course, associated with the Motorola name in car-radios, a

name which incidentally may have been suggested to him by Bill Lear. Lear's name is often associated with the Mallory line of car-radio vibrators, which were first used by Paul Galvin's car-radio manufacturing company, Motorola. The Lear-Mallory vibrating reed vibrators became recognized as the most practical and economical solution for supplying radio's various voltages that the industry

had been searching for, with the use of only the car's ignition battery.

Another problem to be solved by car-radio manufacturers was where to put the car-radio antenna. Many home-radios' antennas were simply a 100 feet of wire dangled out of an upstairs window, hardly a feasible design for use on a car. Early car-radio installers came up with some equally impractical ideas, stretching wire over frames mounted above the car's body, or around the frame underneath the car. Others preferred antennas attached to electrical insulators bolted to the car's roof, or antennas placed under the car's running boards, or antennas placed inside the car's fenders. The earliest successful solution, however, was to place the antenna between the interior head-liner and the roof of the car. While this solution was the one most commonly used, it did add considerably to the cost of car-radio installation, in a time when installation costs often exceeded the price of the radio, and maybe the cost of the car itself.



Placement of the car-radio took some early twists and turns too. The absolute first radios were simply hauled in a box on the car's running board to that proverbial romantic site. Later, as car-radios became less of a novelty and more of a car accessory, radios in water tight boxes were bolted to the firewall, with tuning and volume controlled by knobs mounted in boxes attached to the dash or steering wheel by extender shafts or flexible cables.

As cars became more luxurious and comfortable, owners wanted their radios to be a part of the interior design, not to look like a piece of equipment added as an afterthought. Manufacturers responded by designing radios that mounted behind the car dash with fancy chrome plated control panels that complimented or enhanced the car's appearance. With fewer holes through the car's firewall, car engine noise became so muffled that car-radio manufacturers had to use rubber mounting to shield the noise of the vibrator from the front seat passengers.

Meanwhile, in spite of the fact that auto ignition interference was one of the most prevalent and most aggravating of the car-radio problems, it had proved difficult to solve. Various methods were tried, including completely shielding the car-radio in a grounded metal box. That this was less than satisfactory can best be explained by John F. Rider's comments that his car-radio got "good reception.., whenever the car was brought to a standstill." It became obvious that although component and even total radio shielding was part of the solution, it was not the total solution.

Car-radio manufactures soon identified two kinds of radio interference, what was called low-tension and high-tension interference. In less technical terms, these could be described as radio static caused by the low-voltage and high-voltage systems in the car. Good grounding and radio shielding worked better on the low-tension interference, but it was the development of the spark plug suppresser, a breakthrough made in 1927, that most affected the high-tension static problems. Suppressers and grounding capacitors were often beyond the technical knowledge of a backyard car-radio installer, and some installers used so many and so large suppressers that they completely starved the car's ignition system of power, but the concept was there, and when used along with other design developments, this major obstacle was finally overcome.

Another problem unique to car-radio was solved by technical advancements by the radio broadcasters. Since car-radios moved from place to place, they sometimes were within receiving range of low-powered local broadcasting stations, but just as often, not. The car-radio listening public had adjusted to that limitation, but not willingly, and in about 1926, the radio broadcasters unintentionally helped to provide a solution by developing the first super-powered transmitters, insuring a super large reception area for their broadcast stations. Another serendipitous event that occurred at about the same time was the formation of NBC's network of broadcasting stations. The combination of these two radio broadcasting advancements virtually guaranteed the traveling car-radio listener consistently high quality programs wherever they traveled, and with that, the future of the car-radio industry was secure.

The problems faced by the car-radio manufactures and installers were not solved one by one, but more often solutions were developed concurrently, or as automobile manufacturers and the car-buying public demanded. Auto styles obsoleted the headliner antenna and public pressure forced the development of the vibrating reed power supply, but it was advancements in electronics that created the common place car-radio of today from the infant home-radio of the early 1920s.

Sources:

Brett, Charles. Radio collector and Sr. Electronic Engineer. Email correspondence, February 2003.

Gonshore, David. Radio collector and Electrical engineer. Email correspondence, February 2003.

Matteson, Donald. *The Auto Radio, A romantic Genealogy.* Thornridge Publishing, Post Office Box 11, Jackson, Michigan, 1987

Porter, Donald. *Learjets.* Tab Books, Blueidge Summit Press, 1990

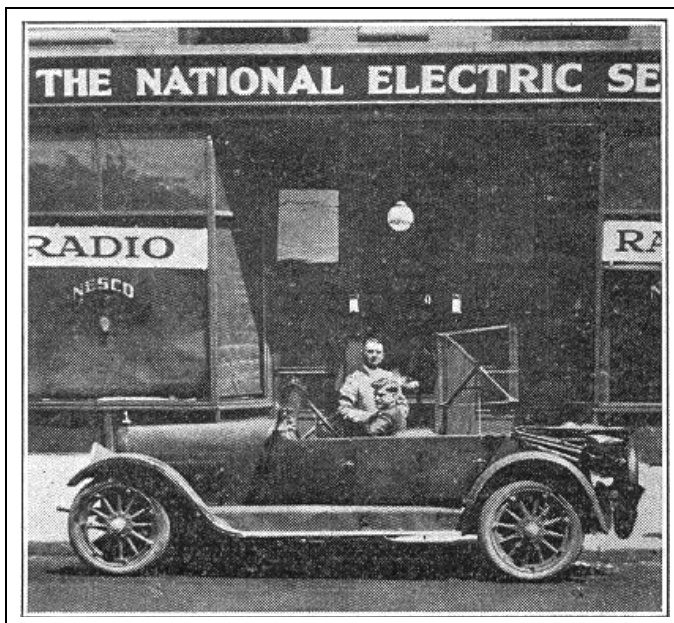
Rashke, Richard. *Stormy Genius.* Houghton Mifflin Company, Boston, Mass, 1985

DENVER FIRM EQUIPS AUTOMOBILE WITH RADIO SET

by Rick Ammon, CRC Member

“Those of our readers who were in the business section of town between eight and ten o’clock last Tuesday night, where perhaps among the many who enjoyed the music furnished by a complete radio receiving set contained an automobile. Large crowds of people, theatre and pleasure bent, remained to hear the concert, willingly foregoing an evening’s entertainment indoors.”

This was how the article started on July 17, 1922 in the “Denver Radio Broadcast” magazine. The automobile and the radio were operated by the National Electric Service Corporation at 323 East 17th Avenue. The equipment was designed and built in their laboratories under the direction of the “radio electrician”, R. E. Hankins.



According to the article, the results obtained with this set were “so remarkable as to prove conclusively the practicability of such a mobile radio installation”. It went on to say, “When receiving from a local broadcasting station radiating only 2 1/2 amperes, music and voice of articulate quality can be heard several hundred feet distant from the machine, making it necessary in most instances to reduce the volume of sound to a comfortable degree for those close by”.

In the accompanying photo, the “control apparatus is mounted in a panel form in the tonneau of the car”. The loop antenna consisted of a two foot square with eight wires mounted on the door “in

such a manner that it can be readily turned in any direction”.



Mr. R. W. Taggart, President of the National Electric Service Company, makers of Nesco Units, seated at the wheel of his radio-equipped car. With Mr. Taggart is Mr. L. B. Long, Secretary-Treasurer of the Western Battery & Supply Company, manufacturers of Westric Batteries.

“Two steps of radio frequency amplification more than compensates for the small currents set up in the loop, with two steps of power amplification all the volume desired can be had. Two stages of audio frequency are also provided; but it has been found that the excessive grid potential developed at the second power tube completely paralyzes the tube.”

The circuit? The magazine explains only that it’s a “familiar simple circuit commonly used”. For concert purposes, it was only necessary to use a loud speaking horn with the power amplifier. “For individual reception, telephone receivers may be plugged in...affording private reception at any time”.

“The set is very selective and adjustments critical. The entire apparatus can be operated by one person, including the movement of the loop aerial, when the car is moving and changing direction.”

Collector Books for Sale

		Special CRC prices. Order at club meetings. Mail order shipments: add \$2.00 postage for each book ordered. Info/order: Charles Brett, 5980 Old Ranch Road, Colorado Springs 80908, (719) 495-8660, brett3729@aol.com. void all other listings	
		Retail	Club
RADIOS, (GENUINE PLASTIC) OF THE MID CENTURY Jupp & Pina, hard bound, 219 pgs, 1998 PG, 450+ color pics		\$39.95	\$28.00
ANTIQUE RADIOS, COLLECTOR'S GUIDE - 4th EDITION Bunis, 1997 values, revised & updated, new photos, 248 pgs \$18.95		\$15.00	
GUIDE TO OLD RADIOS, POINTERS... - 2nd EDITION Johnson, 277 pgs, 1995-96 prices		\$19.95	\$15.00
ANTIQUE RADIO RESTORATION GUIDE - 2nd EDITION Johnson, 144 pgs, repairing, refinishing, cleaning		\$14.95	\$12.00
RADIO, EVOLUTION OF THE - VOLUME ONE 227 pgs, 118 in color, More than 800 radios pictured, 1992		\$22.95	\$18.00
RADIO, EVOLUTION OF THE - VOLUME TWO 226 pgs, Radios of the 1920s to 1960s, with 93-94 values		\$24.95	\$19.00
TRANSISTOR RADIOS, COLLECTOR'S GUIDE VOL II Bunis, 1996 prices, Full Color		\$16.95	\$13.00
ZENITH TRANSISTOR RADIOS, 1955-1965 Smith, 1998 PG, 160 pgs, 226 color pics, info, descr.		\$29.95	\$22.00
THE ZENITH TRANS-OCEANIC (THE ROYALTY OF RADIOS) Bryant and Cones, 160 gpgs, 1995		\$29.95	\$22.00
ZENITH RADIOS THE EARLY YEARS 1919-1936, Cones 1997-98 Price Guide, 223 pgs, 100's Photos, Desc., Hist.		\$29.95	\$22.00
RADIOS BY HANDCRAFTERS, revised 2nd edition Dachis, 1999 values, 220 pgs, 1000+ pics, Id's, history		\$29.95	\$22.00
CLASSIC TV'S, PRE-WAR THRU 1950'S 86 pgs, color & b/w pics, descriptions, etc.		\$18.95	\$15.00
Machine Age to Jet Age, Radiomania's Table Radio Guide 'III, 33-62 Stein, 256 pgs, 100's of b/w photos		\$29.95	\$24.50
TRANSISTOR RADIOS, 1954 TO 1969 Norman Smith, with prices, 160 pgs, 1000 photos, 1998		\$29.95	\$22.00
PHILCO RADIO: 1928 - 1942 Ramires & Proisise, 160 pgs, 828 pics & drawings, 1993		\$29.95	\$22.00
RADIO AND TV PREMIUMS Jim Harmon, 256 pgs, 200+ photos, 1997		\$24.95	\$19.00
RADIO MANUFACTURES OF THE 1920'S VOL I Alan Douglas, 225 pgs, 1988		\$24.95	\$19.00
RADIO MANUFACTURES OF THE 1920'S VOL II Alan Douglas, 266 pgs, 1989		\$29.95	\$22.00
RADIO MANUFACTURES OF THE 1920'S VOL III Alan Douglas, 285 pgs, 1991		\$29.95	\$22.00
CRYSTAL CLEAR VOL 1 Maurice Sievers, 282 Pgs, 1991		\$29.95	\$22.00
CRYSTAL CLEAR VOL 2 Maurice Sievers, 252 Pgs, 1995		\$29.95	\$22.00
RADIO TUBES AND BOXES OF THE 1920'S George A Fathauer, 112 Pgs, 1999		\$26.95	\$20.00
70 YEARS OF TUBES AND VALVES, 2ND EDITION John Stokes, 264 Pgs, 1997		\$29.95	\$22.00
RADIO DIAGRAM SOURCEBOOK Richard Gray, 264 Pgs, 1996		\$18.95	\$15.00
THE RADIO COLLECTOR'S DIRECTORY AND PRICE GUIDE, 2ND ED. Robert Grinder, 524 Pgs, 1995		\$26.95	\$21.00
COLLECTOR'S GUIDE TO VINTAGE TELEVISION Durbal & Glenn Bubbenheimer, 200 Pgs, 1999		\$15.95	\$13.00
NOVELTY RADIOS, VOLUME 1 Marty Bunis & Robert Breed, 223 Pgs, 1995		\$18.95	\$15.00
NOVELTY RADIOS, VOLUME 2 Marty Bunis & Robert Breed, 199 Pgs, 1999		\$19.95	\$15.00
COMPLETE PRICE GUIDE TO ANTIQUE RADIOS: PRE-WAR CONSOLES Mark Stein, 235 pgs, 100's of b/w photos		\$29.95	\$22.00
TUBE TESTERS AND CLASSIC ELECTRONIC TEST GEAR Alan Douglas, 166 Pgs, 2000		\$25.95	\$19.50
COLLECTOR'S VACUUM TUBE HANDBOOK, VOLUME I Robert T. Millard, 196 Pgs, 2001		\$25.95	\$19.50
TUBE DATA ON CD ROM Hohn, 27,000+ tubes, for Windows 95/98		\$39.95	\$28.00
SILVERTONE ANTIQUE RADIOS 1930 - 1942 Stein, 239 pgs, 2001		\$34.95	\$25.50
ANTIQUE RADIOS COLLECTOR'S GUIDE 5th EDITION John Slusser, 264 Pgs, 2001		\$19.95	\$15.00
NEW RADIOCRAFT JUBILEE - REPRINT OF 1938 EDITION Hugo Gernsback, Vestal Press		-----	\$12.00

Courtyard

Tailgate Sales After the Meeting in the Museum

**Next CRC Meeting - March 9th - Museum of
the Americas - 863 Santa Fe - 1:00pm**



Colorado Radio Collectors

Antique Radio Club

5270 E. Nassau Cir.

Englewood CO 80110

FIRST CLASS MAIL