

RECREATING MY FIRST RADIO—45 YEARS LATER

By Robert Baumann, CRC member

Virtually every radio enthusiast maintains an affinity for their first radio; the radio that fostered a lifelong hobby, led them towards a career in electronics or created the passion to become a radio amateur. This is particularly true when that first radio was one built with their own hands - either a commercially marketed kit or from scratch using separately obtained components.

My first radio was a Knight-Kit crystal set purchased from Allied Radio in Chicago as a ten year old sixth grade student in 1964. The radio only cost a couple of dollars, plus modest shipping charges and a few dollars more for a long wire antenna kit and high impedance headphones.

A radio that requires no batteries and costs nothing to operate is mysteriously desirable to a youngster; especially

just discovering radio. It appeared in the Allied catalog and remained a popular, low-cost, introductory radio and good seller for many years.

Popular KNIGHT-KIT Crystal Set Kit

- Sensitive Crystal Diode
- Smooth, Easy Tuning
- Loud, Clear Reception
- Efficient "Hi-Q" Coil



ENTERTAINING EDUCATIONAL

NET \$215

This famous, feature-packed Knight-Kit crystal set kit is acclaimed everywhere for its outstanding performance and remarkably low cost. Delivers loud, clear reception of local broadcast stations. Circuit employs a fixed-type germanium crystal diode detector of the type used in high frequency detecting equipment. Crystal is preset and does not require adjustment. Kit includes coil form and wire for winding efficient "Hi-Q" coil. Complete with all parts, detailed instructions, wire, solder and baseboard. Less headphones and antenna kit. Shpg. wt., 1 lb.

83 Y 261. NET.....2.15

59 J 110. 2000-Ohm Headphones. 1 1/4 lbs. NET. 2.00
83 C 100. Antenna Kit. 1 1/4 lbs. NET.....1.03

RADIO EXPERIMENTER | N 80

Tapped Coil Crystal Set

This neatly constructed crystal receiver which uses few parts, needs no power supply, has a minimum of adjustments, and will give clear reception over a limited area. It is designed to give maximum selectivity in metropolitan areas where several high-powered radio stations may be heard. Where selectivity is not necessary, you can adjust this set to provide maximum amplitude by placing extra turns on the secondary winding while constructing the coil, as we will explain later.

The receiver may be mounted on a board 4 1/2 by 6 in. or it may be placed with the emphasis in a slight box for easy carrying. Before beginning construction, carefully examine both schematic and circuit diagram while doing the actual construction, as it shows positions and identities of each part, wire and connection. Then, as construction progresses, they should check



Want to try a receiver with fixed crystal detectors? Here is a selective circuit with few components

By MILO ADLER



with the schematic in order to become familiar with the symbols used and to better understand the actual workings of the circuit and its operating principles. When you can follow more complex circuits, and the symbols, part functions, and wiring procedures are completely familiar, you only need the schematic as a guide.

First drill two holes for mounting the coil 1/2 in. from each end of the coil form and just large enough to pass the 5/16 in. machine screws used for mounting the coil. Next drill four holes shown at A. In the pictorial diagram in the coil form, leaving the first hole 1/2 in. from end of coil form as mentioned above and the second hole 1/2 in. from the first one. Then carefully insert about 5 in. of wire through the second of the two small holes in the coil form from the outside of the coil form towards the inside. Next pass the same wire through the first of the holes from the inside of the coil form, and pull until loop on inside of form taut. Fasten coil of wire

Inside this issue:

Presidents Msg Quick Tip from the "O F's"	2
Photos from July Meeting	5
Recommended Reading	6
The Book Shoppe	7
2009 CRC Auction Information	8
Open Trunk Auction Sellers NOTICE:	9

when such a radio has no speaker, doesn't light up or give off any heat-related odor (as tube sets customarily do) so that it can be discretely listened to "after hours" when you're expected to be asleep.

The Knight-Kit crystal set kit was based upon an article by Allied Radio employee Milo Adler which appeared in Radio Experimenter magazine in 1950. Crystal sets (including some rather ornate examples) had gained popularity in the 20's, but this low-cost kit became a hit with a younger generation that was

The instructions dated 1956 shown here indicate the kit part number as 83S261 while the 1957 catalog refers to the same kit as part number 83X261. My 1964 crystal set provided respectable performance but didn't see much use as shortly thereafter I built a three tube, multi-band regenerative receiver. My first radio collection was sold off when I left home for college seven years later except for one modest performing, solid state Radio Shack communications receiver.

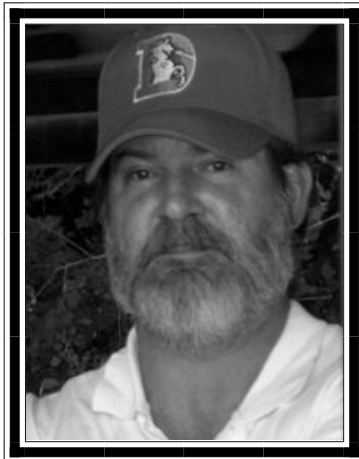
(Continued on page 3)

COLORADO RADIO COLLECTORS ANTIQUE RADIO CLUB

Founded October 1988
The Flash! © 2009, all rights reserved

Message from the President

My, how time flies. Its already September and time for our annual C.R.C. Auction/Bar-BQ. In my opinion, this is one of the premier events our club has.



low radio enthusiasts.

A good time should be had by all.

Final preparations will be made at this months meeting on

September 13th, 1:00 pm, at the Bemis Library in Littleton.

Hope to see you all there!

Brian

For sellers, a chance to clean off your shelves, give a new life to old treasurers, and put some money in your pocket. For buyers, bargains galore.

Located in a wonderful park like setting, main dishes and beverages provided by the club, and the companionship of fel-



CRC CONTACTS

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Upcoming Events

9/13—CRC meeting in Littleton
9/20—CRC Auction in Wheat Ridge
11/8—CRC meeting in Castle Rock

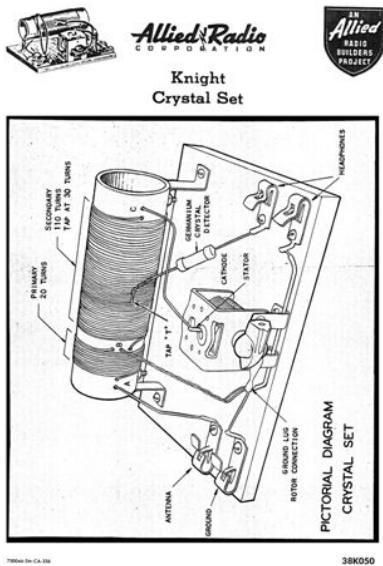
CRC MEMBERSHIP

Annual membership in the CRC runs from July to June. Dues entitle members to attend meetings, "The Flash!" our newsletter, discount book prices, participation in our spring show and Fall auction. Current annual dues are \$12. New memberships will be prorated to the following June.

CRC MEETINGS

Meetings are held on the 2nd Sunday of every other month starting in January (except 3rd Sunday of May) at 1:00pm. The meetings consist of business, "show & tell", raffles, auctions, swap meets, technical discussions and other subjects of interest

(Continued from page 1)

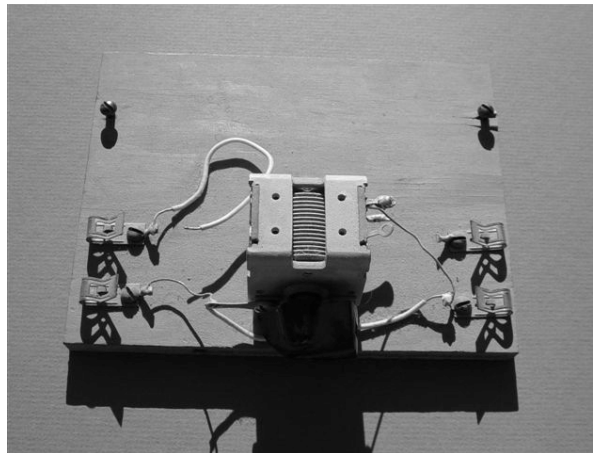


Over the years I have been able to replace the next two kit radios I built in the mid-60's: that regenerative Ocean Hopper and a KG-221 high band (VHF) FM public service receiver. But for the better part of 20 years, I have never found a Knight-Kit crystal set for sale. In their day, due to the low cost and ease of construction, they were rather ubiquitous. One must assume many were simply "outgrown" and discarded. Others were torn apart with components being used for more ambitious projects. Some are still cherished by their original owners. Such is the case of one of my classmates from 1964 who now lives in Colorado Springs as well as another CRC member who resides in Boulder.

I have long hoped that someday I would find another example of my first radio, my first hand-built receiver. Some years ago I spotted the base from one which included only the tuning capacitor and four Fahnstock clips in a junk box at a hamfest in Longmont. The sellers were reluctant to accept the dollar I offered them, encouraging me to take something else in addition for that sum. But I was excited with my find - the beginning to the end of a long quest. As seen in the "as found" photo-

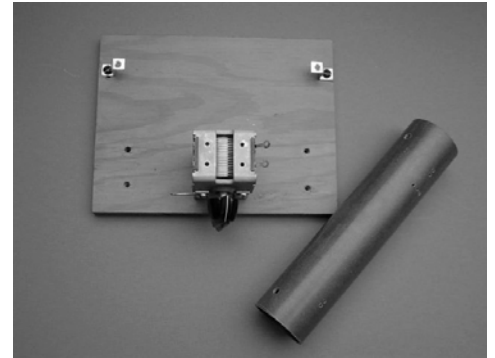
graph, it was rather filthy and incomplete; lacking diode, coil assembly and coil mounting hardware. Liberal amounts of solder and flux had been used to make cold solder joints. But it was a decent start.

Although the variable capacitor appears to be a standard 365 pf, a 381.4 pf is specified in both the 1950 magazine article and the 1956 instructions so the set would tune the entire AM band. This value apparently accommodated the increase of the high limit of the broadcast band from 1500 to 1600 kcs. in the 1940's. Capacitors currently marketed for such applications are now 410 pf because in the 1980's, the AM band was again expanded to 1700 MHz.



During subsequent years, I gradually found suitable replacements for all of the missing parts. The most important component, a phenolic coil form of adequate dimensions (commonplace decades ago but now fairly difficult to find), was purchased at a hamfest in Monument a couple of years ago for an additional \$1. A package of glass 1N34 diodes (as was the style included with my 1964 kit - again, less common today) was found in a box of junk behind a Denver area ARC thrift store last year. Suitable coil mounting brackets were purchased from a Boulder electronics surplus store. The final piece of the puzzle, the authentic Lincoln headphones as offered with this kit by Allied in the 1960's, was somewhat ironi-

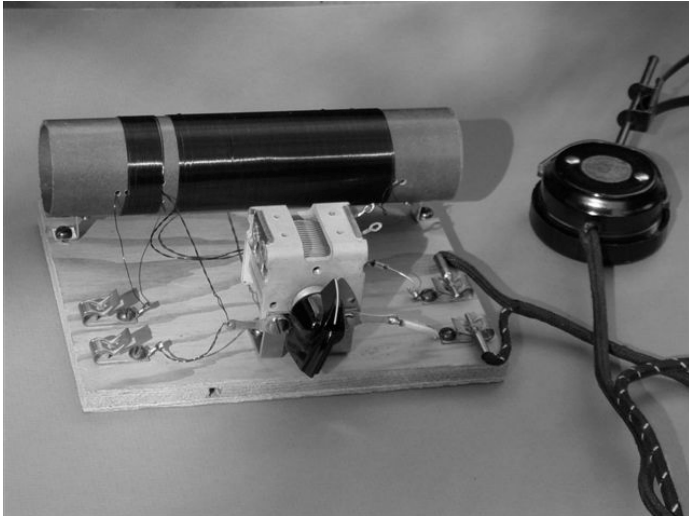
cally found just outside of Chicago at a hamfest in Bolingbrook, Illinois for \$1 last August. As the 2009 CRC Annual Show approached, I decided it was a good time to build my second Knight-Kit crystal set.



It seemed to take longer and required more tools to resurrect this junker and assemble the replacement parts. I was reminded that winding such a coil required a bit of patience and concentration. Also that care needs to be taken when scraping off the enamel coating before soldering lest you nick the wire surface or cut the wire completely. Changes were made to accommodate the 1 3/8" diameter coil form as the original was slightly larger at 1 1/2". I questioned how well this radio had worked - if at all - due to the cold solder connections I removed and generally poor initial construction as evidenced by what had survived of the set.

Since I already had some #22 enamel wire and considering inflation, this rebuild was probably a bargain at just over \$3 including headphones. While a bit more time went into this "reconstruction" project, the enjoyment was likely just about the same: getting one ready for display at our show or building one as my first radio 45 years ago. It will remain a reminder of my younger, more innocent days but I will continue to search for yet another "authentic" Knight-Kit crystal set to add to my collection. (Completed photos on next page.)

(Continued on page 4)



Completed Set



Crystal Allied Earphones

(Continued from page 3)

SELLERS

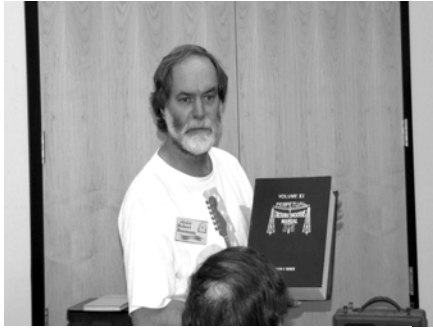
**Be Prepared for the 2009 CRC Auction
Fill out this form and bring it along when you register!!!**

Brand	Model	Year	Reserve
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Photos from July 12th Meeting in Castle Rock



Bill Dial talks about cold cathode tubes



Robert donates book to club



Don Wick w/secure telegraph



Bill Harris w/"Hitler" radio



Mike Cook w/Military TO's



Judith Wright shows turntable



Dave Boyle w/small tube tester



Ronald Hill w/Muntz TV



Kenneth Hodge w/his Dads old recording and modified turntable



Don Andrus w/mystery box



Tom with two radios for sale



Martin Guth asks about Knight VTVM

Recommended Reading:

Submitted by Robert Baumann, CRC member

50 Years of Amateur Radio Innovation Transmitters, Receivers and Transceivers: 1930-1980

Author Joe Veras has been an amateur radio operator since 1957 and is known for his professional photographs of vintage communications gear. His images have been admired in places such as the annual CQ Classics Calendar for decades. This 2008 book is the culmination of a 13 year project project which began in 1993. Over 400 pristine examples of collectible gear are represented in this volume which contains high quality photos and a brief description of each radio, year introduced and original price. The contents represent over 200 photo shoots and some 500,000 miles of travel. In addition to equipment from the author's own collection, radios from 70 other sources are included.

There have been other books published on the topic of vintage communications gear, many of which contain more in-depth technical descriptions. This book is a bit different from those and the photographs are unequalled. The contents are presented in eight eras: The



Birth of the American Amateur Radio Industry, The War Years, Post-War, Single Sideband, Post-War VHF, The Rise of the Transceiver, Solid State, FM and Repeaters. Unfortunately, a detailed index is not provided. It can be found on-line, printed onto 16 sheets of paper, trimmed down, double-side printed onto four sheets and inserted into the book as I have done.

The book is hard-cover, 11" X 8 1/2",

128 pages with a list price of \$39.95. It was published by the Amateur Radio Relay League and may be found on their website: www.arrl.com. It's not for everyone but for those who truly appreciate vintage communications gear, I believe most will find it a welcome and enjoyable addition to their radio library. Sales have far exceeded pre-publication predictions and it was reportedly a popular sell out item at the Dayton Hamvention ARRL exhibit in May.

The number of radios included was limited in order to maintain adequate image size and reasonable price. With thousands of photos to draw from, Joe released a companion CD which contains another 825 pieces of equipment. I find it equally interesting because some smaller and less glamorous accessories which were omitted from the book are included on the CD. It may be ordered directly from the author: www.jveras.com/vintagebook.htm

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 to Steve Touzalin, either by email at stevetou@comcast.net, or by postal mail to 417 So Queen Circle, Lakewood CO 80226.

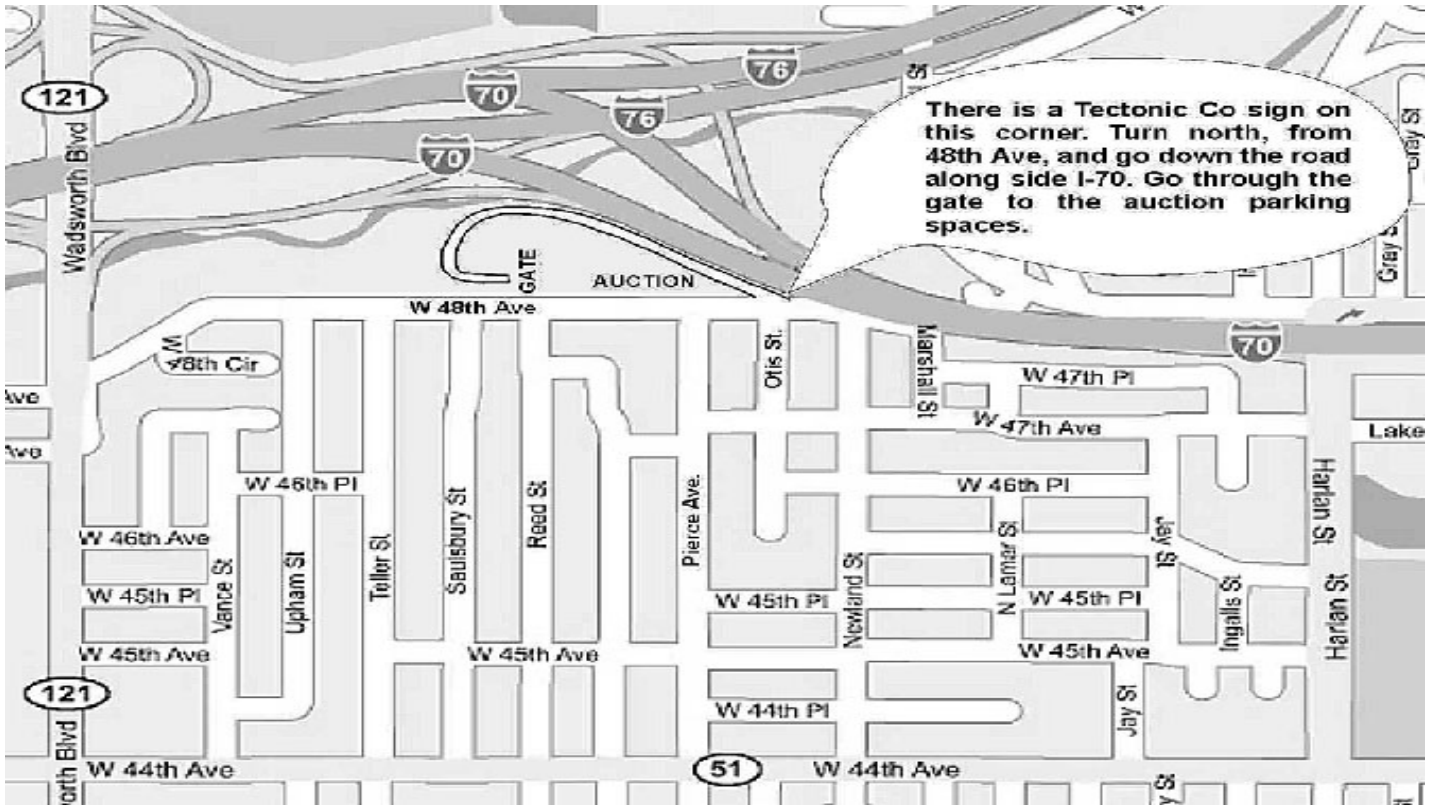
Formatting is not necessary, but if you do, set the font to Times New Roman, size 10, left justified. If you have graphics to be inserted, please be specific about how you would like them placed and we will do our best based on space limitations.

The Book Shoppe

Special CRC prices. Order at club meetings or contact: Charles Brett, 5980 Old Ranch Road, Colorado Springs, CO 80908
 (719) 495-8660, brett3729@aol.com. Mail order shipments please add \$2.00 postage for each book ordered.
Void all other listings.

Prices:	<u>Retail</u>	<u>Club</u>		<u>Retail</u>	<u>Club</u>
RADIOS, (GENUINE PLASTIC) OF THE MID CENTURY Jupp & Pina, hard bound, 219 pgs, 1998 PG, 450 + color pics	\$39.95	\$28.00	COLLECTOR'S VACUUM TUBE HANDBOOK, VOL 1 Robert T. Millard, 196 pgs, 2001	\$25.95	\$19.50
GUIDE TO OLD RADIOS, POINTERS... 2nd EDITION Johnson, 277 pgs 1995-96 prices	\$19.95	\$15.00	SILVERTONE ANTIQUE RADIOS 1930 - 1942 Stein, 239 pgs, 2001	\$34.95	\$25.50
ANTIQUA RADIO RESTORATION GUIDE - 2nd EDITION Johnson, 144 pgs, repairing, refinishing, cleaning	\$14.95	\$12.00	ANTIQUA RADIOS COLLECTOR'S GUIDE 5TH EDITION John Slusser, 264 pgs, 2001	\$19.95	\$15.00
RADIO, EVOLUTION OF THE - VOLUME ONE 227 pgs, 118 in color, more than 800 radios pictured, 1992	\$22.95	\$18.00	ANTIQUA RADIOS - 7TH EDITION John Slusser, 317 pgs, 2008	\$24.95	\$19.50
RADIO, EVOLUTION OF THE - VOLUME TWO 226 pgs, Radios of the 1920's to 1960's with 93-94 values	\$24.95	\$19.00	RADIOCRAFT JUBILEE - REPRINT OF 1938 EDITION Hugo Gernsback, Vestal Press	\$15.95	\$12.00
ZENITH TRANSISTOR RADIOS, 1955-1965 Smith, 1998 PG, 160 pgs, 226 color pics, info, descriptions	\$29.95	\$22.00	CLASSIC CONE SPEAKERS Buford & Jane Chiddester, 122 pgs, 2001	\$25.95	\$19.50
THE ZENITH TRANS-OCEANIC (THE ROYALTY OF RADIOS) Bryant and Cones, 2nd Edition, 176 pgs, 2008	\$29.95	\$22.00	TUBE LORE Ludwell Silbey, 186 pgs, 1996	\$29.00	\$15.00
ZENITH RADIOS, THE EARLY YEARS 1919-1936, Cones 1997-98 Price Guide, 223 pgs, 100's photos, desc., history	\$29.95	\$22.00	ARTHUR COLLINS RADIO WIZARD Ben Sterns, 394 pgs, 2002	\$18.95	\$14.00
ZENITH ILLUSTRATED CATALOG AND DATABASE 1936-1945 Cones, Bryant & Blankship, 182 pgs, 2003	\$29.95	\$22.00	MACHINE AGE TO JET AGE - VOL I Mark V. Stein, 256 pgs, 1998	\$24.95	\$21.00
ZENITH RADIOS THE GLORY YEARS 1936 - 1945 Cones, Bryant & Blankship, 256 pgs, 2003	\$34.95	\$25.50	MACHINE AGE TO JET AGE - VOL II Mark V. Stein, 358 pgs, 1997	\$28.95	\$23.00
RADIOS BY HALLICRAFTERS, revised 2nd edition Dachis, 1999 values, 220 pgs, 1000+ pics, id's, history	\$29.95	\$22.00	MACHINE AGE TO JET AGE III, Stein, 256 pgs, b/w photos Radiomania's Guide to Tabletop Radios 1930-1962	\$29.95	\$22.00
CLASSIC TV'S, PRE-WAR THRU 1950'S 86 pgs, color & b/w pics, descriptions, etc.	\$18.95	\$15.00	TABLETOP RADIOS - VOL I Mark V. Stein, 240 pgs, 2002	\$29.95	\$22.00
TRANSISTOR RADIOS, 1954 TO 1969 Norman Smith, with prices, 160 pgs, 1000 photos, 1998	\$29.95	\$22.00	A. ATWATER KENT Williams & Wolkonowicz, 108 pgs, 2003	\$25.95	\$19.50
RADIO MANUFACTURES OF THE 1920'S VOL I Alan Douglas, 225 pgs, 1998	\$24.95	\$19.00	THE WOOD FINISHER Bruce Johnson, 341 pgs, 1993	\$12.00	\$10.00
RADIO MANUFACTURES OF THE 1920'S VOL II Alan Douglas, 266 pgs, 1989	\$29.95	\$22.00	THE WEEKEND REFINISHER Bruce Johnson, 296 pgs, 1989	\$12.00	\$10.00
RADIO MANUFACTURES OF THE 1920'S VOL III Alan Douglas, 285 pgs, 1991	\$29.95	\$22.00	THE PLATING MAN'S MANUAL Johnson	-----	\$10.00
CRYSTAL CLEAR VOL 1 Maurice Sievers, 282 pgs, 1991	\$29.95	\$22.00	THE FABULOUS VICTROLA "45" Phil Vourtsis, 176 pgs, 2002	\$29.95	\$22.00
CRYSTAL CLEAR VOL 2 Maurice Sievers, 252 pgs, 1995	\$29.95	\$22.00	THE ALL AMERICAN FIVE RADIO Richard McWhorter, 92 pgs, 2003	\$19.50	\$15.00
RADIO TUBES AND BOXES OF THE 1920'S George Fathauer, 112 pgs, 1999	\$26.95	\$20.00	E. H. SCOTT - THE DEAN OF DX, 2ND EDITION Marvin Hobbs, 240 pgs, 2003	\$29.95	\$22.00
70 YEARS OF TUBES AND VALVES, 2ND EDITION John Stokes, 264 pgs, 1997	\$29.95	\$22.00	OLD TIME RADIOS Joseph Carr, 256 pgs, 1991	\$19.95	\$15.00
RADIO DIAGRAM SOURCEBOOK Richard Gray, 264 pgs, 1996	\$18.95	\$15.00	THE EARLY DEVELOPMENT OF RADIO IN CANADA - 1901 - 1930 - Robert Murray, Editor, 154 pgs, 2005	\$26.95	\$19.50
THE RADIO COLLECTOR'S DIRECTORY AND PRICE GUIDE, 2ND EDITION - Robert Grinder, 524 pgs, 1995	\$26.95	\$21.00	PLASTIC RADIOS Stein, 255 pgs, 2006	\$37.95	\$26.25
COLLECTOR'S GUIDE TO VINTAGE TELEVISION Durbal & Glenn Bubenheimer, 200 pgs, 1999	\$15.95	\$13.00	NOVELTY RADIO HANDBOOK Weaver, 160 pgs, 2006	\$29.95	\$22.00
NOVELTY RADIOS, VOLUME 1 Marty Bumis & Robert Breed, 223 pgs, 1995	\$18.95	\$15.00	PHILCO RADIOS 1928 - 1942, 2ND EDITION Ramirez & Prosise, 192 pgs, 2006	\$29.95	\$22.00
NOVELTY RADIOS, VOLUME 2 Marty Bumis & Robert Breed, 199 pgs, 1999	\$19.95	\$15.00	CRYSTAL SET DESIGN CALCULATOR 200 circuits, Sonoran Publishing, CD	\$29.95	\$22.00
COMPLETE PRICE GUIDE TO ANTIQUA RADIOS: PRE-WAR CONSOLES - Stein, 235 pgs, 100's b/w pics	\$29.95	\$22.00	CATHEDRAL & TOMBSTONE RADIOS Mark Stein, 287 pgs, 2008	\$29.95	\$22.00
TUBE TESTERS AND CLASSIC ELECTRONIC TEST GEAR Alan Douglas, 166 pgs, 2000	\$25.95	\$19.50	RADIOLA : THE GOLDEN AGE OF RCA 1919 - 1929 Eric P. Wenaas, 495 pgs, 2007	\$65.00	\$45.00

THE CRC 2009 ANNUAL AUCTION



Once again, through the efforts of club member Rich Kuberski, we are privileged to hold our annual action in a park-like setting. In addition, we will also be continuing our tradition of combining the auction with a pot luck barbecue. That is, the club will provide the burgers, hot dogs, condiments, chips and soft drinks while the members bring side dishes to share with all.

So plan on not only on being part of the auction, by both buying and selling radio treasures, but also by bringing your family where they can enjoy the picnic and the surrounding park facilities.

WHAT:

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

WHEN:

Sunday, September 20th at 1:00pm

- Seller's Registration □ 10:00a - 12:45p
- Buyer's Registration □ 10:00a until end
- Viewing □ As items are delivered
- Auction □ Starts at 1:00p *SHARP*
- Barbecue Lunch □ Served 10:30a-11:30a

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

AUCTION RULES

- There is no cost to register as a buyer or seller.
- There is a seller's 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. **(Sellers, use form on page 4 when you register.)**
- Sellers may optionally indicate, **at registration time only**, an unannounced 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 Colorado Radio Collectors Antique Radio Club's treasury.
- Buyers can not take possession of any lot(s) until the total cost for all purchases are paid. Collection of buyer fees



The Open Trunk

Member submitted advertisements



WANTED: Buy/Sell/Trade: "Heavy Metal" communications gear, telegraph related items, vintage calculators & microphones.

Robert Baumann, (303) 988-2089
HQ180A@aol.com. (07/09)

FOR SALE: Note. All of the instruments listed below are refurbished, repaired and VG.

Heathkit 5" oscilloscope, #0-12, built by myself, perfect for radio repairing..

\$30.00 OBO

RCA # W-44 audio generator, sine and square wave. Like new **.\$30.00 Firm**
Superior # TV-50, Radio and TV signal generator. VG, calibrated,

\$50.00 OBO

BK model # 606, tube tester, also calibrated per manual, VG.....**\$40.00 OBO**

VOM looks like a typical Triplett or Simpson from the 1950's. Much newer of Japanese Mfg. VG with leads, and great black handled case..**\$28.00 OBO**

Accurate Instrument Company;

Utility Tester for radios, home appliances, etc. Can test 1950's era tube filaments (4 different sockets plus a B/W TV CRT socket on long leads)..

Has ability to test ac and dc volts, resistance, amperage----everything for the home appliance. Quite a post war collectable that has the test leads, manual, all in a nice case! Great for the garage work bench---teach your wife to use it!.....only **\$11.00 OBO**

David Boyle 303-681-3258
07/09

REPAIR SERVICE:

Radio repairs for club members. Reasonable rates. Good references.

Call David Boyle
303-681-3258

07/09

WANTED: Old microphones (not CB or ham), working or not.

Also, NBC chimes in good condition.

Tom Keeton 303-797-8073
09/09

WANTED: I need a couple of station selection push buttons for a Zenith '41 console.



Larry Weide (303) 758-8382
lweide@msn.com 03/09



A New Experience in Luxurious Listening

... Yours only in a New Zenith Chairside with the COBRA TONE ARM!

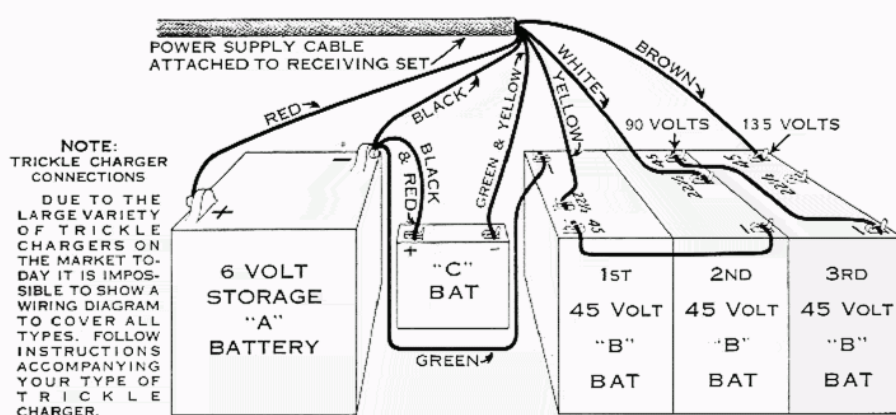


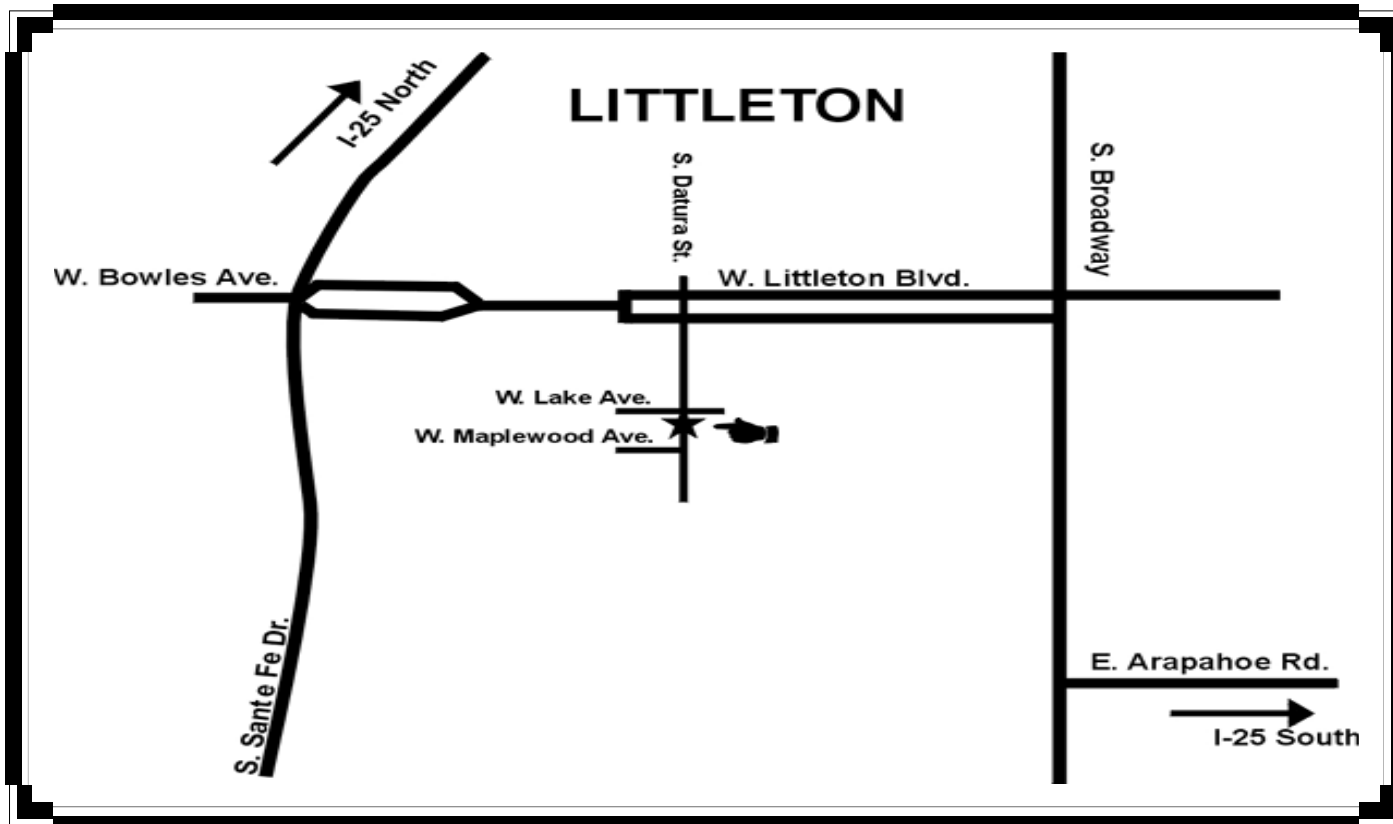
Illustration 21

WIRING DIAGRAM FOR MODELS 30, 32, 33, 35 AND 50

Diagram shows brown wire connection, using a 135-volt power tube in the last Audio Socket. If a standard 5-volt, 1/4-ampere tube is used in the last Audio Socket, 90 volts (two 45 "B" Batteries) will be sufficient, and the brown wire should be connected to the tap marked "90 volts" on the diagram shown above.

The amount of "C" battery voltage necessary will depend on whether or not you decide to use a power tube. The proper "C" battery voltage for the power tube is printed in the instructions packed in each tube carton. For UX 201A or CX 301A tubes a 4 1/2-volt dry cell battery is sufficient.

The September 13th, 1:00 pm meeting will be at the Bemis Public Library in Littleton



Colorado Radio Collectors
Antique Radio Club
417 S. Queen Cir.
Lakewood CO 80226

FIRST CLASS MAIL