

# The Colorado Radio Collectors

Antique Radio Club

# FLASH!

Volume 10

November



December

1999

Issue 6



*In this issue...*

- ◆ Radio on the Telephone ◆ Looking in on a Philco 60 Restoration ◆
- ◆ Pictures from the 1st CRC Grand Swap Meet ◆

## ABOUT THE COVER

What!?! Radio on the telephone? G'wan! Yes, it's true. Just before radio became a commercial reality, some innovators were trying to supply new access solutions for an information hungry public. Turn to page 3 to read Wayne Gilbert's article on this short lived and long forgotten telephone service.

## The Colorado Radio Collectors Antique Radio Club

**Meetings:** Unless otherwise noted in this journal, regular meetings are held on the second Sunday of every other month starting in January (except: 3rd Sunday of May) at 1:00PM at the VectraBank Building, Community Room, 1380 S. Federal Bl. The meeting normally includes business items, discussions, "show and tell", a raffle and a swap meet.

**Membership:** All dues are \$12.00 annually. Joining dues are prorated to June 1st. Contact club for foreign rates. Send dues and membership inquiries to the CRC Treasurer, Robert Baumann, 1985 S. Cape Way, Lakewood CO 80227, (303)988-2089, RGBdenver@aol.com

**Article Contributions:** Submission of articles are always appreciated. This would include historical and technical items as well as stories about individual collections. Articles may be written or e-mailed, and need not be in final form. Submissions and requests for information should be directed to the CRC "Flash!" Publisher, Larry Weide, 5270 E. Nassau Cir., Englewood CO 80110, (303)758-8382, lweide@ibm.net.

### C.R.C. 1999-2000 Officers

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**Want Ads:** Submission of Sell/Want ads are always free to CRC members. Non-members may advertise in the Flash! for \$0.20 a word. Display advertising is available by contacting the CRC publisher, Larry Weide, for info and rates.

**Publishing Deadlines:** All submissions must be submitted by the 1st of Feb, Apr, Jun, Aug, Oct and Dec. for publishing in the following months.

**Thanks to the Pressworks** for printing the Flash! - (303) 934-8600

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Upcoming 1999/2000 CRC Events  
CRC Meeting November 14th, CRC Meeting January 9th



# Colorado Radio Collectors Antique Radio Club

Founded October 1988

Dedicated to the Preservation and Education of  
Wireless, Radio, Television and Associated Equipment.

Volume 10, Issue 6

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**Errata:** page 7, column 1, paragraph 3 of the 9/99 Flash, reads: "Even the Coast Guard no longer monitors the 50kc band....". This should read "Even the Coast Guard no longer monitors the 500kc band....".

# A CHAT WITH THE PRESIDENT

## How Sweet it is!

by Tom Kelley, CRC President

Hello again fellow club members,

Welcome to another year of radio excitement. We are about to enter into radio's 2nd century and our 2nd decade as a club *and* a new millennium to boot - phew!

Let's reflect a little on our last year of this century's events;

- Bigger and better raffles, swap meets, show 'n tells and how-to demonstrations at our regular meetings
- A very successful and large spring radio show and sale at the collector's fair in April
- 1st annual grand swap meet - off to a good start with a better than anticipated number of sellers and new members, some high end radios for sale such as an AK breadboard, a Colonial Globe and a Majestic Melody Cruiser. Of course there was lots of other stuff including transistors, 30's & 40's wooden consoles and table-tops and much more - something for everybody.

So now it's on to the new era for us and hopefully even bigger and better activities. Since November will be our last meeting for the year, let me wish you a very happy and healthy New Year now in case I don't see you at the meeting.

Tom

# Radio on the Telephone

## (Telefon-Hirmondo, The News-teller)

by Wayne Gilbert, CRC Member

“Broadcasting” readily conjures up an image in most of our minds. “Stentor,” on the other hand, leaves most of us wondering if it’s an animal, vegetable, mineral, or just another new term that some computer nerd thought up. If you guessed any of the above, you are wrong, but without a stentor the first broadcasts would not have been possible. A stentor is a person with a loud voice, and they were “broadcasting” before the beginning of the 20th century, or before 1900 for those who are millennium impaired.

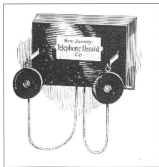


Fig. 1 - Home listening station

Wired voice transmission was the invention of a Hungarian electrical

engineer named Theodore Puska, a one time employee of Thomas Edison. It was his vision that his invention would be used as a ‘telephone newspaper’. He wanted to be able to report an event *as it happened*, instead of *as soon as possible after it had happened*, a truly futuristic concept in that era when printed newspapers were the accepted distributors of news and events, and their only truly current news was when they printed an ‘extra’ edition.

In 1893 as many as 6200 homes were equipped with a small wooden box (Fig. 1) and a set of earphones which allowed them to listen to stentors broadcasting the latest news reports and stock market quotations as well as musical concerts and theatrical plays while the rest of the world was trying to pick out spark codes with 100 foot aerials. The average radio collector may find this hard to believe or accept, but voice transmission broadcasting was not a child of the radio age and the first stentors were not found in the United States.

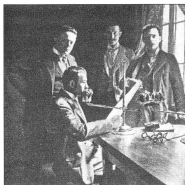


Fig. 2 - Stentors reporting the news

As many of you have already guessed, stentors were "wire" broadcasters, not wire-less broadcasters, but it is interesting to note that although the terms were different, the basic concept was the same, and that was to intentionally broadcast from a single station or location to a number of people simultaneously, who were all listening for your broadcast. It is also interesting to note that these early broadcasters were faced with some of the same problems that wireless broadcasters were later forced to face. For example: some wired broadcasts had to be delayed or canceled because of bad weather, and from the beginning there was the question of how many commercials the listener would tolerate.

The collection and gathering of the news for the telephone

newspaper were very similar to the paper newspapers of the time, but the editing was performed very rapidly and long narrow strips, known as galley slips, were quickly produced to be read into a "double receiver" (microphone) by the stentor. A good stentor could read for approximately 10 minutes before his voice gave out and a replacement had to take over, although in emergencies one stentor had to broadcast longer but never for more than 30 minutes (Fig. 2).

A transmitter amplified the double receiver's output by the same means as that used for a standard telephone, but the information was then directly transmitted to a special receiver in each of 27 districts, where it is again amplified before being further transmitted to each subscriber's wire. Although the quality of the received broadcast was reported to be good in Budapest, what was regarded as 'good' may have been in the ear of the beholder. The original mechanical amplifiers originally were made by basically connecting a rod from the output speaker diaphragm to the diaphragm of another speaker which was acting as a microphone. As microphones and speakers became more sophisticated, an earpiece speaker was simply connected face to face to a

microphone. This worked more efficiently, but did have the disadvantage of also amplifying the background hash and hiss that was inherent to all telephones of the time.

The broadcast day was divided into specific times that were allotted to news reports, stock market reports, sporting events, children's programs, and entertainment programs (Fig. 3). Generally the broadcast day began at approximately 10:30 a.m. and continued nonstop until 10:30 p.m. or the end of the last segment, whichever came first. The subscriber to the service could pretty well depend upon the broadcasts following the standard format, and listen only to those segments he chose. News reports

were usually trimmed to no more than 250 words each to insure that the schedule remained consistent. Alarm bells were attached to the receiver and would be rung to announce a breaking news item, but barring emergencies, the programming format didn't deviate from day to day. Advertising time was built into the schedule, and sold for 42 cents for a 12-second commercial.

As primitive as it sounds, this system worked and survived in Hungary until 1930. Of course it was improved upon as time passed but was always limited by the amplification problems and the quality of the normal telephone equipment until the end.

In about May of 1900, an American by the name of M.M.



Fig. 3 - Live "broadcast" of entertainment

Gillam visited Budapest and was so impressed with their system that he came home and proceeded to apply for an US patent in order to install a similar system in this country. For some reason, no doubt including the basic differences in the telephone systems, he did not get his system on the 'air' until the fall of 1911. His company was called the Telephone Herald and was patterned, at least in concept, very closely to the Budapest system. The primary difference was that the Budapest system used their own wires and the Telephone Herald used wires leased from the telephone company.

Newark, New Jersey, was chosen as the home of Mr. Gillam's new system, and he was successful in signing up 1000 subscribers by the middle of November 1911. In fact, there were so many subscribers wanting the service that he had to stop advertising for a period to allow for additional equipment to be installed. This 'catch up' phase apparently lasted until the spring of 1912, and by November of 1912 there were 5000 subscribers to the service.

By this time microphone technology had improved and the 'broadcasting' studio looked very much like the later wireless studios. Unfortunately, however, the technology for amplifying the signal

hadn't improved to any major extent, which not only limited the number of subscribers on any given line but also kept the system from operating a speaker in the customer's home. This, coupled with the poor quality of musical sounds produced by the mechanical amplifiers, created insurmountable problems that resulted in the demise of the total system by December 1912.

This little-remembered system pioneered many of the concepts later used by the wireless broadcasting systems that were to replace it after the vacuum tube solved the amplification problems, but that is a different story and the beginning of a totally different era.

Sources:

Colton, Arthur. The Telephone Newspaper-New Experiment in America. Telephony. March 30, 1912. pg 391

Denison, Thomas. The Telephone Newspaper. World's Work. April 1901. pg 640

Rowe, G. Broadcasting in 1912. Radio news. June 1925. pg 2219.

Talbot, Frederick. A telephone Newspaper The Living Age. August 1903. page 172.





## Heard on the Net



### That #S@% Email spam. How to Fight Back

Spam? why are we talking about the US Army's answer to the universal food? Well, as some of you know, "spam" (with a little s so as not to impinge on Hormel Foods canned meat product), is all that unwanted and/or unsolicited email you get from advertisers and others. Unfortunately, there's no absolute or simple answer to keeping it out of your mail box. What I would like to do is tell you some of the ways the spammers get your email address and some of the ways you can help keep the spam to a minimum.

The first common way that spammers get your address is through newsgroup postings (or bulletin boards as they are sometimes called) - such as the popular antique radio site, [rec.antiques.radio+phono](http://rec.antiques.radio+phono). The problem is if you use a fake address then nobody can respond to your post. One solution is to use an address such as [lweide\[at\]ibm.net](mailto:lweide[at]ibm.net) (where my real address is [lweide@ibm.net](mailto:lweide@ibm.net) - get it?), so that a person can get the idea of your real address but an automatic address reading program wouldn't recognize it. Or, you might try appending something to your address like [lweide@ibm.net.nospam!](mailto:lweide@ibm.net.nospam!). Guess what, spammers are not stupid and they sometimes search for these variants to addresses. So if you use this technique you should change the "fake" but the human decipherable address frequently.

Another address stealing scheme is to get the information when you fill out a web form that includes your email address. The only thing you can do in this case is to be confident of who you give your address to, and/or try to use a fake address.

A definitely fixable gotcha to watch out for is that some older browsers will electronically give out your address to sites that simply ask for it. Go

to [www.helie.com/BrowserCheck](http://www.helie.com/BrowserCheck) to see if your browser needs updating. Since current browsers are downloadable free for the asking, this one should be easy to fix.

The last source of spam invasion I'd like to touch on (and trust me, there are a lot more) is none other than AOL. You AOL users have probably read a lot about the hard work and effort that AOL is employing to limit spam as much as possible. The problem is that through their chat area logs and member directories there is a rich lode of member information that is being gobbled up by the spammers. Along with other efforts AOL has recently instituted a filter called PreferredMail that lets you refuse mail from locations known to generate a lot of spam.

So is there anything else you can do? You can try one of the "no email lists". A list of *them* is found at <http://mentalhelp.net/articles/junke.htm>. A more effective response would be to complain to the spammer's internet service connection provider - ISP. The ISPs take big hits in the use of their systems by spammers. Unfortunately, it's beyond the scope of this column to explain in detail how to find the spammer's ISP.

Finally, you may want to install one of the anti-spam programs on your computer. A listing of the various programs can be found at the AntiSpam Campaign Web site, [www.whew.com/spammers/spamtools\\_filters.shtml](http://www.whew.com/spammers/spamtools_filters.shtml).

Good luck, and

Enjoy!

# Collector Books for Sale

CRC Members get specially reduced prices on popular collector books. Place and receive your order at club meetings. If ordered for mail shipment add \$1.75 postage for each book ordered. For information and ordering: Charles Brett, (719) 495-8660, [brett3729@aol.com](mailto:brett3729@aol.com). This listing has item and price updates - void all other listings.

|   | Retail  | Club    |
|---|---------|---------|
| <b>RADIO, (GENUINE PLASTIC) OF THE MID CENTURY</b><br>Jupp & Pina, hard bound, 219 pgs, 1998 PG, 450+ color pics  | \$39.95 | \$28.00 |
| <b>ANTIQUÉ RADIOS, COLLECTOR'S GUIDE - 4th EDITION</b><br>Bunis, 1997 values, revised & updated, new photos, 248 pgs  | \$18.95 | \$15.00 |
| <b>GUIDE TO OLD RADIOS, POINTERS... - 2nd EDITION</b><br>Johnson, 277 pgs, 1995-96 prices   | \$19.95 | \$15.00 |
| <b>ANTIQUÉ RADIO RESTORATION GUIDE - 2rd EDITION</b><br>Johnson, 144 pgs, repairing, refinishing, cleaning  | \$14.95 | \$12.00 |
| <b>RADIO, EVOLUTION OF THE - VOLUME ONE</b><br>227 pgs, 118 in color, More than 800 radios pictured and priced for 1992,<br>picture from the collections of CRC members Jim Berg and Johnny Johnson | \$22.95 | \$18.00 |
| <b>RADIO, EVOLUTION OF THE - VOLUME TWO</b><br>All different from Volume One, 226 pgs, Color, Radios of the 1920s to<br>1960s, with 93-94 values, pix from CRC member Jim Berg                      | \$24.95 | \$19.00 |
| <b>TRANSISTOR RADIOS, COLLECTOR'S GUIDE VOL II</b><br>Bunis, 1996 prices, Full Color  | \$16.95 | \$13.00 |
| <b>ZENITH TRANSISTOR RADIOS, 1995-1965</b><br>Smith, 1998 PG, 160 pgs, 226 color pics, info, descr.   | \$29.95 | \$22.00 |
| <b>THE ZENITH TRANS-OCEANIC (THE ROYALTY OF RADIOS)</b><br>Bryant and Cones, 160 pgs, 1995  | \$29.95 | \$22.00 |
| <b>ZENITH RADIOS THE EARLY YEARS 1919-1936, Cones</b><br>1997-98 Price Guide, 223 pgs, 100's Photos, Desc., Hist.   | \$29.95 | \$22.00 |
| <b>RADIOS BY HALLICRAFTERS, revised 2nd edition</b><br>Dachis, 1999 values, 220 pgs, 1000+ pics, id's, history  | \$29.95 | \$22.00 |
| <b>CLASSIC TV'S, PRE-WAR THRU 1950'S</b><br>86 pgs, color & b/w pics, descriptions, etc.  | \$18.95 | \$15.00 |
| <b>Machine Age to Jet Age, Radiomania's Table Radio Guide I, '33-'59</b><br>Stein, 255 pgs, 100's photos  | \$24.95 | \$19.00 |

(CONTINUED ON PAGE 12) ☞

# Now, don't you wish you were at the 1999 CRC Grand Swap Meet?



Pictures courtesy of Bob Jensen, CRC Member



"I sold more than I bought. Boy, was my wife happy!"



"The best part of the swap meet was having the control over how I sold my stuff."



"I got to sell right away without having to wait for my items to come up - like I would at an auction."



(CONTINUED FROM PAGE 9)

Machine Age to Jet Age, Radiomania's Table Radio Guide 'II, 30-'59

Stein, 358 pgs, 100's photos \$28.95 \$22.00

TRANSISTOR RADIOS, 1954 TO 1969

Norman Smith, with prices, 160 pgs, 1000 photos, 1998 \$29.95 \$22.00

PHILCO RADIO: 1928 - 1942

Ramires & Prorise, 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

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| 2 lbs | 1.58            | 3.20            |
| 3 lbs | 2.03            | 4.30            |
| 4 lbs | 2.48            | 5.40            |

# THE PHILCO 60 REPAIR THAT ALMOST WASN'T

By Ed Brady, CRC Member

I picked up this Philco cathedral radio through ARC about a year ago. I would have missed out had I fully read the ad. The ad caught my attention because it listed a Philco 60 for sale for an amazing price of \$20. What I failed to read was that the ad was for the cabinet only. I did not find out about my oversight until I inquired about the radio. Through the course of our conversation, the original owner indicated that he had removed the original chassis for use in a Philco radio bar. However he did have a Philco 60 chassis that someone had given him that he would throw in for another \$10. So for \$30 plus \$10 shipping I had a complete Philco 60 cathedral. When the radio arrived, I was pleasantly surprised. With the exception of the wrong grill cloth and a speaker that needed re-coning the radio was complete and in good condition.

The Philco 60 was one of many cathedral radios that Philco manufactured during the 1930's. This style of radio was very popular and Philco built them by the thousands. This particular model was manufactured in 1935 and is what I would classify as a medium size cathedral. The cabinet measures approximately 11.5 inches wide, 8.5 inches deep and 16 inches high.

I began the restoration process on the cabinet. As purchased, the cabinet was in very good condition. It had a few scratches and dings but the finish was still very nice. I began the restoration by cleaning off the gook and grime. I used #0000 steel wool and mineral spirits to do this. Next I used some Min-Wax dark walnut stain to touch up the scratches. After letting the cabinet dry over night, I finished up by applying several coats of toning lacquer to bring back the shine of the original finish. I completed the cabinet restoration by installing the correct grill cloth. Unfortunately I had to install reproduction cloth but it was of good quality and accurately reproduced the original. I buy my grill cloth from John Okolowicz. I have been very pleased with all the grill cloth I have purchased from John. It is very high quality and reasonably priced. You can obtain samples by sending a self-addressed envelope to:

Grille Cloth Headquarters  
624 Cedar Hill Rd., Suite 100  
Ambler, PA 19002

The next order of business was to get the speaker re-coned. Before I sent it off for repair, I checked the field coil and audio coupling transformer windings. The last thing I wanted to do

was to re-cone a speaker with an open field coil. Using a schematic and DVM, I was quickly able to measure the resistance of the field coil and primary winding of the audio matching transformer at 1100 ohms and 390 ohms respectively. These values were very close to the values called out on the schematic. The secondary of the audio matching transformer and speaker voice coil are connected in parallel and thus the integrity of each winding could not be ascertained by simply measuring the resistance at the terminals of the transformer. The problem here is that both windings are connected to the same two terminals and their respective resistance were on the order of a few tenths of ohms (well below the accuracy of my multi-meter. Either winding could be open and I would not be able to tell because the other would give me a resistance reading on my multi-meter. I carefully removed the speaker coil winding wires from the tabs on the matching transformer and verified that the secondary of the transformer was ok. I did not bother with the voice coil since it would be replaced when the speaker was re-coned. With the windings on the speaker verified, I was ready to send it off for re-coning. I use the Speaker Shop in Colorado Springs for all my speaker repairs. They do an excellent job at a good price. It cost \$20 including shipping both ways to have this 8 inch speaker re-coned. If you would like to use them they can be reached at:

The Speaker Shop  
1839 North Circle Dr.  
Colorado Springs, Co. 80909  
719-475-2545

I would suggest that you call them and discuss pricing etc. before sending off your speaker. With the easy work completed, I was ready to tackle the restoration of the electronics of the radio. The Philco 60 is a 5-tube superheterodyne receiver (schematic in Riders 4-32) designed for the reception of standard broadcast 530 - 1600 KHz as well as short wave from 1600 - 4000 KHz. It uses an intermediate frequency of 460 KHz for the IF amplification stages. The radio uses a type 6A7 tube for the first detector and local oscillator. A type 78 tube is used for an IF amplifier, a type 75 for the second detector and first AF stage, a type 42 tube as the second AF amplifier and a type 80 tube as a rectifier.

A quick inspection of the under side of the radio showed that the two large electrolytic capacitors had leaked their electrolyte leaving blobs of white gunk on their terminals. There were several paper capacitors connected to terminals on the bakelite block condensers indicating that someone had repaired the radio during some point of its life. Given the condition of the filter capacitors, I didn't feel there was a need to power up the set and I began the electronic restoration by replacing the two electrolytic capacitors. I replaced them by disconnecting their terminals from the circuit and installing new 10uF, 450 Volt electrolytics in

their place underneath the chassis. The value of these capacitors is slightly larger than the original 8uF units, but the difference won't matter in this application. I left the original can capacitors installed in the chassis so that from the top, the radio looked original.

The next issue was what to do with all the bakelite block condensers. Given that someone had already installed replacements across several of the condenser terminals, my guess was that most of them were bad. I decided to be safe and replace them all. There appears to be two schools of thought when it comes to replacing these blocks. One is to simply install new capacitors via the lugs of the condensers and leave the old capacitors in place inside the blocks. The other is to remove the guts of each condenser block and place new parts inside. Once repaired, the condensers can be resealed using wax. I personally always use the second approach. I do it for two reasons. First, sometimes these capacitors will eventually short even if they are not exhibiting this condition at the time of the repair. Second I think that installing new components via the tabs just makes the under side of the chassis more cluttered and harder for the next person to repair 5-10 years from now. The biggest problem with these block condensers is knowing what is inside. Luckily the schematic I had numbered and provided values for all the components. Thus I could use the schematic and the numbers to determine what was inside each block.

For those of you that do not want to take the time to figure all this out, AES, Antique Radio Classified and other sources sell "The Radio Collectors Guide to Philco Block Condensers" which is a comprehensive reference guide to all the bakelite block condenser types used by Philco. If you are an avid Philco collector this is a valuable resource to have.

Repairing these blocks is quite easy although it does take a little time. Once removed from the radio, I can usually completely repair one in under 5 minutes. When removing the condenser blocks be sure to mark all the connections so that you know how to reinstall it later. Once I have the condenser block removed, I use a small flat head screwdriver to carefully remove the wax (or what ever it is) from the inside of the block. Continue the process of scraping the wax material out of the block until the components are completely exposed. Don't worry about damaging the internal capacitors since they are going to be replaced anyway. Once the capacitors are exposed, take the end of the screwdriver and gently lift each capacitor out. This will usually require you to use the block case as a lever point. However be careful because the bakelite housing is easily broken. I complete the removal process by cleaning out the remaining filler material once I have everything else removed. Now I am ready to install new components and place the block back into the chassis. Some people also go as far as refilling the block with wax



or other material. I however do not. Once reinstalled no one can tell whether or not this has been done so I don't. Besides it makes it easier to repair should I ever have too.

The next step was the check all the resistors for excessive drift in their values. I found several that were out of tolerance so I replaced them.

Through discussions with other collectors I had learned that the coils in the early Philco radios were notorious for failing. This radio was no exception. Using my multi-meter I checked the windings on all the coils in the radio. My checks revealed that the primary of both the antenna and oscillator coils were open. One by one I removed each of the bad coils and inspected each for damage. I was lucky on the antenna coil. The break in the primary winding of this coil was located at one of the two connection pins. I was able to strip off the insulation at the end of the broken wire and re-attach it to the pin. I was not so lucky on the oscillator coil. The primary winding on this coil was covered with green copper oxide that told me the insulator coating on the wire was badly damaged and the windings were corroding. This winding would need to be completely replaced. The keys to successfully rewinding these coils are to use the same gage wire, carefully counting the number of turns used, and insuring that you wind the wire back on in the original direction. Maintaining the correct direction of the windings is often overlooked but it is critical to the

operation of the circuit. The direction that the coil is wound determines the direction the current flows through the wire and thus determines the direction of the induced magnetic field. The magnetic field in turn is what generates the induced voltage in the secondary coil. Winding the coil in the wrong direction will change the direction of the magnetic field and in turn reverse the polarity of the induced secondary voltage. This will usually cause the circuit to function improperly. I began the retro fit of the oscillator coil by first determining the direction of the winding. Next I disconnected one end of the coil winding from it's binding post and began unwinding the coil being careful to count each turn as I removed it. During the process of removing the windings I encountered I encountered four breaks in the wire. The severity of the breaks can make it difficult to accurately count the turns so be careful. Once I had the original winding removed, I began the replacement process by carefully winding #40 gauge magnet wire back onto the coil form. When doing this be careful to place the new turns back onto the form as close to were the original ones were as possible. The length of space that the turns occupy effects the inductance of the winding so be careful not to leave big gaps between turns. Once I had the new winding installed, I used a hairdryer to gently heat the wax on the form so that it would capture and bind the new winding in place. I then wrapped the winding in electrical tape to insure that

it would not move. Once I had both coils repaired, I reinstalled them into the radio.

During the course of restoring the electronics, I uncovered several areas in the circuit that did not match what the schematic showed. First I found that the resistor divider ladder for the screen grids for the 6A7 and 78 tubes was missing R22 and had different values for R19 and R24. I also found that the cathodes for the 6A7 and 78 tubes were not biased together via R9 and C8. Instead they were biased independently. These changes puzzled me but I did not believe they would effect the operation of the radio. At this point I decided to leave the changes in place and see if the radio would work.

With the initial restoration complete, I connected the radio to my variac and turned it on. At about 90 volts the radio sprang to life on the AM band though the reception was weak. I was unable to pick up any stations on the short-wave band. At this point I decided to check the alignment of the set. With just a little tweeking of the compensating condensers I was able to get the radio playing really well on the AM band. The short-wave band was still dead however. With the band selector switch set to the short-wave position, I checked the oscillator and found that it was beating way too high. According to the alignment procedures, the short-wave frequency was adjusted using trimmer 12 in the schematic. However when I went to adjust it, I found there was not one. A closer examination of the radio revealed that

not only was trimmer 12 missing but the trimmers for both IF transformers were not in the correct positions and that an additional trimmer was across the secondary of the second IF transformer. At this point I remembered the other modifications I had found and assumed the worst. From what I could tell someone had significantly modified the radio and now I was going to have to undo it to get the radio back into operational order. After several hours of rework, I had the radio back in line with the schematics. The biggest problem I had was trying to determine which compensating condenser was which.

With the set completely reworked, I brought the radio back using my variac. This time the radio would not pick up any stations. I tried to align it but couldn't. The radio was unstable and howled no matter what I did. At this point I knew something was very wrong. I called Geoff Shearer and asked him to look up all the Riders references for the Philco 60. We found 4 or 5 additional references for the Philco 60 spread across several volumes. After examining all of them I learned that through the entire production run of the model 60, there had been four major revisions to the design. By following all of them I learned that my radio, as originally received, was built sometime after the final modifications were implemented. This meant that I would have to re-implement the modifications I had just taken out. This was quite the bumper to say the least. After another

3 hours of work, mainly trying to get the compensating condensers back into their correct locations, I had the radio working again on the AM band. The short-wave band still did not work due to the oscillator frequency being way out of band.

In one of the last modifications Philco made to this radio, they removed the compensation condenser for adjusting the short-wave band and replaced it with a fixed value condenser. What I found was that someone had installed the wrong value for this condenser and thus the oscillator frequency was way off. I don't know if it was manufactured this way or if someone changed it during a repair. Regardless, once I installed the correct value, the radio worked fine.

Looking back, what should have been an easy repair turned into a nightmare due to my lack of information. At the time I did not have many Riders manuals and relied on the information I had to restore the radio. The one thing I learned from all of this is to always look at all the Riders pages for a particular radio before working on it.

You never know what small tidbit of information might be on that addendum page. It could save you a lot of work and headaches. I am happy with how it plays and looks now that it's restored. It's not a museum-quality piece but it is nice enough to display and use on a daily basis. It took me an enormous amount of time to restore but I look at it as a labor of love. Besides now I have a great story to tell and a

radio that I bought for an outstanding price.

# "The Open Trunk" Classified Advertisements

◆ See IFC for ad details ◆

WANTED: Radione German radios Model R-2 1939 portable, Model R-3 1942 Mil. portable. • Zenith Royal 500 hand wired, & 500E models. • Sub-min tube shirt pocket radios, especially Hoffman "Nugget" **John A. Miner** (303) 831-5252 days  
hohum@uswest.net

FOR SALE: Reproduction Philco Cathedral cabinet parts. Front panels, rear arches, bottom moldings. Grandfather clock finials, colonial clock top trim and finials. Reproduction 90, 70 and 20(std) cabinets. Other needs such as other style moldings from your sample. Inquire. **Dick Oliver**, Antique Radio Svc., 28604 Schwalm Dr., Elkhart IN 46517. (219)522-4516

WANTED: • The female power (battery) plug for a Kemper portable K-52. Similar to octal except has 7 pins and two round locating pins (edge and center). • Knobs for a Crosley 601 bandbox. **Mark McKeown**, (303) 278-3908 mmckeown@tde.com

FOR SALE: • Crosley "Bullseye" with fins. **Bill Hinkely** (303)730-8539

WANTED: • Stewart-Warner model R-123 chassis, used in receiver models

1231 to 1239 (see Riders volume 6 page 6-2 for picture of chassis). • Chassis for AK 217, and Majestic 371. **Jerry Tynan**, (303)642-0553  
jtynan@worldnet.att.net

FOR SALE: • Copper Rod, save \$\$\$\$\$\$, several diameters available to make your own soldering iron tips (or I can for you). • Radio repair and restoration service. **David Boyle**, 1058 Colt Cir., Castle Rock, CO 80104 (303)681-3258

WANTED: GE clock radios, models 900 & 903. **Tom Kelley**, 971-1/2 Pleasant St., Boulder, CO 80302 (303)444-1837

FOR SALE: • Arvin 450 • Belmont 636 • Airline 94-Ha-1528 • Motorola 50-x-1

WANTED: • Chassis for Sparton Model 931. • Cathedral cabinets for Philco mod 50 & AK 627 • Chassis for RCA 120/124 & Steinite mod 22 • Information about any radios manufactured in Colorado; A&M, Madison/Moore, Buckwalter. etc. **Wayne Gilbert** (303)465-0883

WANTED: • Dial drive assembly for a Philco 42-327, or a junker with dial plate, support, dial pointer and sheaves

intact. • Case and knobs for a Zenith 6D311 Bakelite set. • Articulated detector arm for a Flivver crystal set. • Westinghouse Little Jewel (Refrigerator); H-124 dark green, H-127 burgundy. • Palomar base/amplifier. **Fred Sodamann**  
2603 N. Greenwood, Pueblo 81003  
(719)543-6654, fritz@market1.com

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FOR SALE: • Victor console, 1927. • GE Tombstone Model A63, 1935. • Majestic Tombstone, 1935.  
• Zenith 5G01, 1950. • Emerson Model 529, portable record recorder, 1950 Two tone arms and mike - NITB.  
• Precision Tube Tester Model 10-54.  
• 2 spools of jumper leads, 2 spools of 40's hookup wire. **Clyde Bengé**,  
10057 S. Falcon Creek Dr., Littleton CO 80126, (303)683-0624

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FOR SALE: *Juke Boxes!*  
• Rockola 441 "Deluxe" \$300.  
• Wurlitzer "Cabaret" \$300.  
**Dave Wanner**, 3230 W. Grand Ave.,  
Englewood, CO 80110 (303)797-7563

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FOR SALE: • Plug-in peak noise limiter for National TC5 Rcvr \$15 • Zenith rotor wave magnet 9x4x16 \$25 • Original factory ship. carton for Philco F743 \$7 • Philco "G" elec/dny speaker \$10 • Crosley Prestotune 12, model 1227 chassis w/tubes \$30 • Sears model 1324 chassis w/tubes \$20 • RCA R-32 chassis (3 pc's) wo/tubes \$25 • Sparton 966 chassis wo/tubes • More stuff, books/mags, vibrators **Bill Busetti** 902 Bellview #6, La Junta CO

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81050 (303)384-2365 week days

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WANTED: Working, complete, covers  
• Mountain Dew BB92 • Napoleon Cognac BB93 • Peachtree Cream BB97 • Scotch Seven BB100 • Mr & Mrs "T" BB106 • Camel Cigarettes BB156 • Salem Cigarettes BB161 • Viceroy Cigarettes BB162 • 7UP Vending BB239 • Dr. Pepper Vending BB239 • Batman (black vest) BB353 • Pick Panther BB390 • Battlestar Galactica BB447 • Stariod IM4U BB486 • Fleischmanns Gin B329 • Ice Cream Bar B381 • Ice Cream Cone B382 • **Ron Smith**, 145 Carr St., Lakewood CO 80226, (303)274-7522

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WANTED: • Old Radio magazines for my research library in Antique Radio. Need copies of pubs like Radio Design, Radio Age, and Radio Craft -1920's thru 1940's. Will provide good home, or purchase singles or full sets at a fair price. Also interested in publications from various companies; Aerovox, RCA, Sylvania, Bell Labs, etc. Likewise, need old test equipment literature and manuals. **Charles Brett** 5980 Old Ranch Rd., Colorado Springs CO 80908 (303)495-8660

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WANTED: • Zenith H511/50L6 chassis or part # 22-1804 & diag/schematic • Crosley 56TN-L restorable cabinet. **Fred White**, Day (303)966-5386, Eves 303-828-3250

FOR SALE: • Emerson model 587, working, refinished \$45 • Philco model 7-205, working \$35 • Atwater Kent model 60C, Highboy console, working \$300 • Airline Console, working \$150 • Graymark model 510, working 60's plastic \$10 • Arvin model 450, brown Bakelite, working \$45 • Arvin model 450, white Bakelite, not working \$35 • Motorola model 5X11, not working, dent in dial \$45 • Silvertone model 6050, works, missing dial lens \$35 • General Television Variable Inductor \$32 • RCA model 45-EY-2 45 Record Changer, works \$45 • **Transistors:**

• Zenith Royal 285, works, some rust on stand \$25 • Sony TR84, works, small piece missing from bottom \$15 • Guild Teapot Radio, works, does not have hotpot \$80 • Emerson model 31P51, broken antenna \$25 • Sony MicroTV model 5-303W Works \$40 •

**Books:** • Sylvania Tube Manual \$10 • Coyne Radio & TV service manuals 5 book set \$20 • 1963 Tube substitution Guide by Riders \$3 • 44th Edition of ARRL Handbook 1963 \$10 • GE Essential Tube Characteristics \$10 • Elements of Radio, 2nd Edition, Marcus & Levy \$10 • Fundamentals of Semiconductors & Tubes \$5 • Everybody's Radio Manual, Popular Science, 1944 \$8

• Principles of Radio Services, EM962, Armed Forces Institute \$12

WANTED: • Copper IF cans for GM Little General Cathedral radio • White/silver knob for Crosley E15EW dashboard radio **Ed Brady**, 1333

White Rim Pl. NE, Albuquerque NM 87112,

(505)292-0487, cebrady@esscom.com

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WANTED: Old horn speaker parts, drivers and incomplete units. Also, old light bulbs with tip and good filaments.

**Charles Combs**, 508 E. Daniel St., Albany MO 64402 ph/fax (606)726-3038,

*Colorado Radio Collectors*  
*Antique Radio Club*  
5270 E. Nassau Cir.  
Englewood CO 80110



**FIRST CLASS**



**The November meeting is on Sunday the 14th at 1:00 PM  
VectraBank Building at Federal and Arkansas**