



JOURNAL OF THE  
CALIFORNIA HISTORICAL  
RADIO SOCIETY

FOR THE RESTORATION AND PRESERVATION OF EARLY RADIO



# CHRS OFFICERS AND STAFF 1996

# ABOUT CHRS

**PRESIDENT/  
MAIL PICK-UP**  
Steve Kushman  
4233-25th. St.  
San Francisco, CA 94114  
415 821-7671

**VICE PRESIDENT**  
Lee Alder  
P. O. Box 6785  
San Rafael, CA 94903  
415 499-9228

**SECRETARY**  
Russ Turner  
414 Liberty St.  
San Francisco, CA 94114  
415 824-8367

**TREASURER**  
Will Jensby  
645 Giannini Dr.  
Santa Clara, CA 95051  
408 296-6071

**MEMBERSHIP  
SECRETARY**  
Hal Layer  
P. O. Box 27676  
San Francisco, CA 94127  
415 661-6958

**BOARD MEMBER/  
PUBLICITY CHAIRMAN**  
Mike Adams  
112 Crescent Court  
Valley, CA 95066  
408 439-9544

**BOARD CHAIRMAN/  
MAILING CHAIRMAN**  
Dale Sanford  
107 St. Thomas Wy.  
Tibouron, CA 94920  
415 435-6131

**ON SITE EVENT  
CHAIRMAN**  
Paul Bourbin  
25 Greenview Ct.  
San Francisco, CA 94131  
415 648-8489

**WEBSITE CHAIRMAN**  
Alan Voorhees  
10809 McIntyre St.  
Oakland, CA 94605  
510 562-3235

**MEMBERSHIP  
CHAIRMAN**  
Mike Simpson  
21818 Via Regina  
Saratoga, CA 95070  
408 867-7315

**BOARD MEMBER**  
John Eckland  
969A Addison Ave.  
Palo Alto, CA 94301  
415 323-0101

**BOARD MEMBER**  
John Wentzel  
1609 Irving St.  
San Francisco, CA 94122  
415 731-1920

**GENERAL COUNSEL**  
Bart Lee  
88 Kearny St. #1301  
San Francisco, CA 94108  
415 956-5959

**NAME BADGE CHAIRMAN**  
Norm Lehfeldt  
757 Guerrero St.  
San Francisco, CA 94110  
415 285-0643

**TECHNICAL ADVISOR**  
Larry Clark  
438 York Dr.  
Benicia, CA 94510  
707 745-9132

**JOURNAL STAFF:  
CONTRIBUTING EDITORS**  
Bart Lee  
Alan Voorhees  
Lee Alder

**CONTRIBUTORS**  
Lynn Love  
Tom Jackson  
Michael E. Franzen  
Bart Lee  
Steve Kushman  
Alan Voorhees

**NORTH VALLEY CHAPTER**  
Norm Braithwaite  
P. O. Box 2443  
Redding, CA 96099  
916 246-4209

The California Historical Radio Society (CHRS) is a non-profit corporation chartered in the State of California. CHRS was formed in 1974 to promote the restoration and preservation of early radio and broadcasting. Our goal is to provide the opportunity to exchange ideas and information on the history of radio, particularly in the West, with emphasis in collecting, literature, programs, and the restoration and display of early equipment.

The *Journal* of the Society is published and furnished free of charge to members. Yearly membership dues are \$20 (U.S. funds).

Submissions for the *Journal* are always welcome. Typed copy is preferred, submitted on a 3.5 inch IBM or Macintosh diskettes in ASCII or Microsoft Word format. Send all material to Alan Voorhees and include your name, address, and phone number. You write about radio and we'll print it.

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CHRS  
P.O. Box 31659  
San Francisco, CA 94131  
415 821-9800  
CHRS on the Internet:  
<http://www.wp.com/chrs>

## ON THE COVER

Decked out in his signature cap and gown, the "Ol' Perfesser" Kay Kyser conducts his orchestra. From the motion picture, *THAT'S RIGHT—YOU'RE WRONG*.

Front row, left to right, Sully Mason, Harry Babbitt, Ginny Simms

Back row, left, Ish Kibibble

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# NEWS AND INFORMATION...FROM THE PRESIDENT

Steve Kushman

## NEWS:

**Congratulations!**—To Henry Engstrom, the 1996 recipient of the 'Doc' Herrold Award. Henry has not only been a 'contributor' to CHRS over the years, but also heads the Military Radio Restoration Group. He was also instrumental in our initial contact with the Presidio, to begin the Restoration Project. Thank You Henry!

**Dues**—It's renewal time again! By now, you should have gotten your renewal forms. Please take the time to read them carefully. Make sure your information is correct by checking the mailing label. As we reported in our summer Journal, your Board of Directors voted to raise the yearly dues to \$20, due to increased operating costs. This increase, approved in July, takes effect with all 1997 memberships. Those of you who have already renewed at the old rate...let your conscience be your guide.

**Election**—At the July meeting, the Board of Directors voted to change the CHRS By Laws, so that the following may occur:

1. The Board of Directors will fill vacancies

on the Board.

2. Board members are limited to a three year term.
3. The Vice President will be elected by the Board.
4. The Vice President will succeed the President upon the President's retirement.
5. The ex-President will become President Emeritus.

If you haven't done so yet, please vote on these By Law changes on your renewal forms.

**Hotline**—Remember, the CHRS HOTLINE number has been changed to **415 821-9800**. Now that we are in the rainy season, it is very important to check the HOTLINE for rainout information or any changes in our events.

**Journal**—I continue to hear from many members that our Journal is, "terrific," "great," "the best radio club magazine in the country!" Well, it's all true! **Alan Voorhees**, our editor, should be congratulated for doing a great job of putting this first rate publication together. Look for the Journal in your mailbox four

times a year...in March...in June...in September...and in December. We are always looking for articles for the Journal. And since many of our members collect many different things, we can use articles on not only tube radios, but phonographs, microphones, hi-fi audio, transistor radios, television, telegraph keys, etc. You get the idea, start writing!

**Name Badges**—Our thanks to **Norm Lehfeldt**, our Badge Chairman, for those colorful, stick-on, name badges, he has been printing for our events. If you need changes on those badges, please let Norm know. Norm reports that the debut of the re-styled plastic badge is near. If we owe you a plastic badge, we are sorry for the inconvenience and the delay.

**Technical Reprint Service**—Our Technical Advisor, **Larry Clark**, continues to offer Reprints of schematics or other materials from the CHRS Library. Just send a note to Larry and let him know what you need. Enclose a self addressed stamped envelope and \$1. Mail to:

*continued on next page*



# **Larry Clark**

438 York Dr.

Benicia, CA 94510 (707 745-9132)

Or if you need assistance with a repair project, call Larry and maybe he can help. Thanks Larry! The Library is still looking for Rider's Vols. 1, 2, 4, 5, and 17 thru 23. If you have these and aren't using them call the HOTLINE.

**Presidio Project**—As some of you already know, CHRS is involved with the **Perham Foundation** in a project to restore the original radio station buildings in the historic Presidio of San Francisco. The eventual goal is to have these sites restored to original condition, display working historical gear, to possibly have a home for the Perham Foundation's Electronic Museum and to possibly build the California Historical Radio Society Museum. The CHRS Museum would not only contain radios, but other historically related media, such as phonographs, hi-fi equipment, historical audio gear, microphones, keys, etc. Please read **Bart Lee's** article for more information. And by the way, Kudos to Bart for drafting the proposal that got this ball rolling!

**Museum Fund**—In order to restore buildings and build museums, we need money, manpower, money, intellectual input, money, donations from Corporations, and donations of services and materials. We will gladly accept donations from our members, and remember, donations are tax deductible. Please check the appropriate lines on your renewal form or call **Bart Lee** or myself if you can help.

**Auction**—To kick off our CHRS Museum Fund Drive, we will be holding an auction at our February 1st. event at Foothill College. Please donate an item or two (please...no junk), an appraiser will give you a written appraisal for your items that you can use as a tax deduction.

Your items will then be offered at auction to the membership, with the proceeds going into the Museum Fund. Also possibly up for auction...items from the estate of one of our members.

## **INFORMATION:**

**Collector Events**—Here is the list of events for 1997. All events are subject to change or rainout. Please call the **CHRS HOTLINE**, 415 821-9800, for the best updated information. Please note the events that are *ten-*

*tative or to be announced.*

### **January 5th. SUNDAY, 8am**

San Francisco

Aleman Flea Market, 100 Aleman Blvd. (near HWY 101 and 280 interchange). Take the Aleman exit off of 280. Sellers fee applies.

### **February 1st. Saturday, 8am**

Los Altos Hills

Foothill College, Lot "T." Take El Monte Rd. west off HWY 280. AUCTION. Sellers fee applies.

### **March 1st. Saturday, 9AM**

Sacramento

Towe Ford Museum, on Front St. near Capitol Ave. Near Old Town. Sellers fee applies. See the largest car museum in California for possibly the last time. Thanks to **Bill Howell** for arranging this event.

### **April 5th. Saturday, 8am**

Concord

Concord Flea Market at the Solano Drive-in. Sellers fee applies. Thanks to **Stan Lopes** for setting up this event.

### **May 3rd. Saturday, 8am**

Los Altos Hills

Foothill College, Lot "T." Sellers fee applies.

### **May 17th. Saturday, 8am**

San Luis Obispo

Date is tentative, location to be announced. Thanks to **Dan Steele**.

### **June 7th. Saturday, 8am**

San Rafael

Erik's Downtown Drive-In, corner of 2nd. and Lindaro. Sellers fee applies. Thanks to **Lee Alder** and remember...**Erik** cooks a great breakfast!

### **July 5th. Saturday, 8am**

San Francisco

St. Annes of the Sunset, 850 Judah St. off Funston (13th. ave.). Sellers fee applies. Thanks to **John Wentzel** of Aladdin Radio for making the arrangements.

### **July 18th. Saturday, 9AM**

Merced, at **Cliff Berthelson's** Radio Warehouse, corner of 13th. and X street. Sellers fee

applies. Thanks for having us Cliff!

### **August 2nd. Saturday, 8am**

Los Altos Hills

Foothill College, Lot "T." Sellers fee applies.

### **September 6th. Saturday, 9AM**

Marina, CA

Marina Airfield at Fort Ord. Sellers fee applies. This event is tentative. Thanks to **Howard Griffin** for making the arrangements.

### **October 4th. Saturday**

Redding

The Shasta-Cascade Amateur Radio Society invites CHRS members to participate in their event. The location to be announced. Call **Norm Braithwaite** for details.

### **October 18th. Saturday, 9AM**

Fairfield and Rio Vista

Western Railroad Museum, State Rt. 12. Collectors event and Picnic. No sellers fee, pay reduced museum admission. Thanks to **Paul Bourbin** for setting up this one.

### **November 1st. Saturday, 8am**

Los Altos Hills

Foothill College, Lot "T." Sellers fee applies.

### **December**

(nothing yet) **Happy Holidays from CHRS.**

**Positions Available**—We are looking for two people who can help at our Collector events. CHRS would like someone to become the Club Photographer. The Club will pay for film and processing. Who would like to document the goings on at our meets? We need a Coffee Commissioner!

**John Eckland** has retired from this prestigious position and is ready to pass the ceremonial Coffee Urn to a new master. Who can brew?

**Year End Thoughts...**Well, it's been a year since I took this job and it's been interesting. I've never done anything like this before and I've learned a lot. I've learned that the Antique Radio Hobby is thriving! Radios are more scarce and more expensive than ever. Our membership has grown by about 100, this year, putting us very close to 500 members! I've learned that most Club members belong for the sole purpose of buying and



# CHRS WELCOMES NEW MEMBERS

selling 'stuff.' This Club can be so much more than just 'stuff.' Let's open the communication lines, exchange dialogue and ideas about the future of the hobby and of CHRS. We need new people who can step forward and help run the club and shape its future. If you want to help, check the appropriate lines on your renewal form or call me at 415 821-7671.

It's the time of the year to give thanks. We all should give thanks for our good health and good fortunes during 1996. I want to thank the people who make this Club run. First my thanks to **Alan Voorhees** for his tireless work on the *Journal* and his creation and maintenance of our web site. A year ago we only dreamed about the Web. And now thanks to **Alan**, we have one of the finest sites on the Web. Thanks to **Dale Sanford** and his wife, who stuff, stamp, fold, sort and mail everything we send to the membership. It's a lot of work, and I can't thank **Dale** enough. Thanks to **Will Jensby** who keeps the books straight. Thanks to **Hal Layer** who turns membership forms into computer data and then into mailing labels. **Bart Lee** continues to contribute. I call him a lot, and ask him many questions and he always has time for me. He always writes insightful and interesting articles for the *Journal*, and **Bart** is one of the key players in the Presidio Restoration Project. We all owe **Bart** many Thanks! After all these years, **Paul Bourbin** continues to strike fear in the hearts of would be early sellers. He manages our meets like no other. Thank you **Paul!**

**Mike Adams** gets the word out about our activities. Thanks **Mike**. And thanks to **Larry Clark**, **Lee Alder**, **Mike Simpson**, **Norm Leheldt**, **Russ Turner**, **John Wentzel**, and **John Eckland** for their contributions to CHRS in 1996. Also thanks to all of you who write for the *Journal* and set up meets for us!

1997 promises to be a year filled with exciting possibilities. We have 14 events lined up for the year. And, the Presidio Restoration Project will move closer to becoming reality. I am always available to receive your thoughts and suggestions please call me at 415 821-7671 or leave a message on the HOT-LINE at 415 821-9800. All my best wishes to you and your families for a joyous Holiday Season and a prosperous New Year!

HAPPY COLLECTING!  
Steve

An organization such as CHRS needs and welcomes new members. New members bring new ideas and enthusiasm and keep the club interesting and fresh. We thank these collectors have joined since September 1996.

Steve

**Valerie Munn-Denver, CO**  
**Ed Jesser K6VPX-Los Gatos, CA**  
**Bill Toensing-Nevada City, CA**  
**Fred Kirsten-Lafayette, CA**  
**Stephen Sparks-Santa Rosa, CA**  
**Mike Brooks-Oakland, CA**  
**Jack Fritz-Sebastopol, CA**  
**Ron Vikjord-Modesto, CA**  
**Richard McCraner-Ahwahnee, CA**  
**Bill McChesney-Oakdale, CA**  
**Edward Hoyt-Merced, CA**  
**Luis & Maria Perez-San Clemente, CA**  
**Richard Lane-Turlock, CA**  
**Kurt Swanson-Sacramento, CA**  
**Bob Mantz KQ6CM-Milpitas, CA**  
**Charlene Hunter-Sonoma, CA**  
**Dave Schutt-San Jose, CA**  
**Dennis Trimble W6LVY-Morgan Hill, CA**  
**Tim Sayers-Reed City, MI**  
**James Bremer-Redding, CA**  
**Joseph Cali-San Jose, CA**  
**Rod Kennedy-Moraga, CA**  
**Hollis Poche-Santa Clara, CA**  
**Perham Foundation-Los Altos, CA**  
**Gary Reeves-Lewisville, TX**  
**Verne Anderson-Campbell, CA**

## IN MEMORIAM

**Paul Giganti** became a Silent Key on November 9th at the age of 86 after being in ill health for several years. Paul had been a radio collector and dealer for nearly forty years, as well as an amateur radio operator (W6GVY), even longer.

An ad of Paul's offering radios for sale can be found in the *AWA Old Timer's Bulletin*, 1961. He had built a world-wide reputation for fair dealing with both sellers and buyers. Paul helped many a new collector get off to a good start and add to their collection, as well as finding rare sets for the advanced collector.

He will be missed by all.

## LETTERS

### LOOKING FOR A TUBE TESTER

In the 1950's, as I was growing up, my father was manufacturing TV tube testers. He tells me that he sold quite a few in the San Francisco area. He is now 75 years in age with failing health and would like to have one of his old tube testers. It was made in a red leatherette suitcase style case. His company was "American Scientific Development Company" and the meter would say "Fort Atkinson, Wisconsin" on it. If any of your society members would know of the location of one of these testers in any condition, would you please ask them to contact me.

*Richard Anthes*

2541 Richert Avenue, Clovis, CA 93611  
209/292-8802

### PLYWOOD RADIOS

I am currently researching an article on the history of the plywood radio cabinet from 1946 to 1956 and I'm hoping some of my fellow members of CHRS can help me in locating information on the manufacturers of these inexpensive alternatives to the catalin radio enclosures. The larger radio companies like Zenith, RCA, or Bendix would often produce the chassis for their radios but would sub-contract the manufacture of the radio cabinets to some local cabinet maker. While most of these shops seem to be leftovers from the war effort, they also survived by making plywood goods such as furniture and hi-fi equipment. Most of these shops would produce the cabinets and grills as well as put the finish on the cabinets.

It is these companies, with names like Plyform, Ply-Craft, Plymade of Chicago, Evans Plywood Moulding Co. of California and Michigan that I need information about, though any information about any company engaged in the manufacturing of radio cabinets is needed. Do any of my fellow readers have any memories, photos, catalogs or older magazine articles on the subject? Any and all leads or information would be, of course, greatly appreciated. I am looking forward to sharing this chapter of radio history with the readers of the *Journal*.

*Steven Cabella*

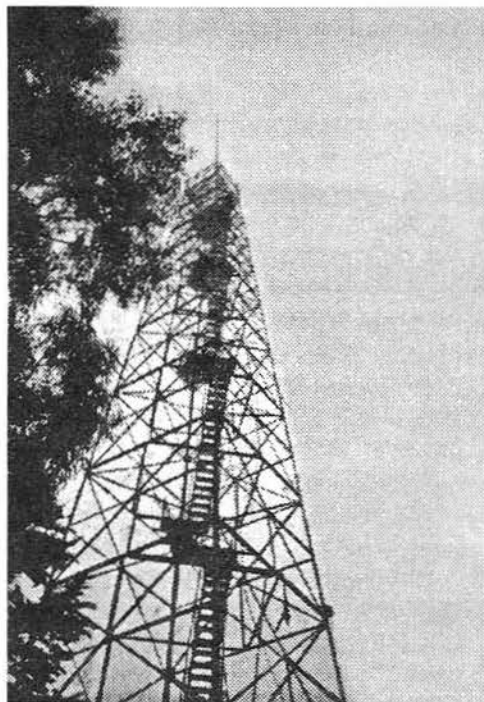
500 Red Hill Ave, San Anselmo, CA 94960  
415 561-6810

# PRESIDIO HISTORICAL RADIO PROJECT REPORT

Bart Lee xWPRE2DLT

325 Filbert Steps, San Francisco, CA 94133

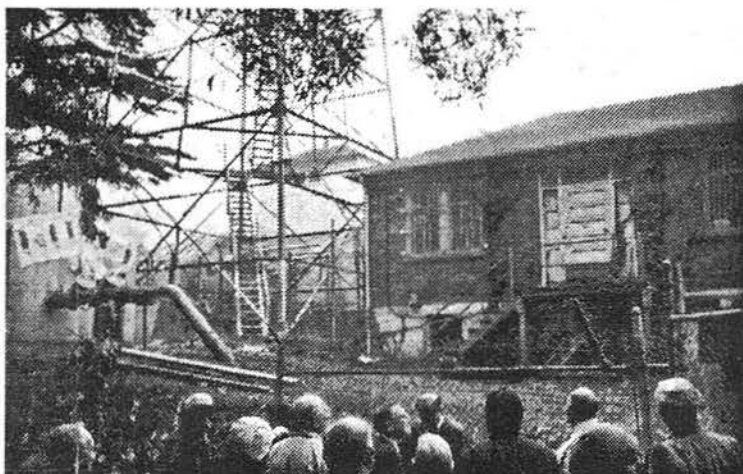
(415) 788 4072



*Presidio tower at the 1922 WVY site, now used by the Park Service Police radio.*

Below, left: The first (circa 1922) WVY site, also broadcast station AGI and the Army Amateur Radio Service site in 1926; probably the monitoring station #2 site in Dec. 1941. Bart Lee recounts its history to Perham Foundation and CHRS boards.

Below, right: WVY transmitter site building from the back side.



The PERHAM FOUNDATION, by its president **Don Kojane**, committed in November to the National Park Service at the Presidio of San Francisco to enter into partnership to rehabilitate the main radio sites at the Presidio. These sites are the WWII Coastal Artillery station atop Presidio Hill, the 1920s vintage radio station by the reservoir, and the museum-size WVY transmitter site near the hill. The PERHAM FOUNDATION hosted a large meeting and lunch at the Presidio Officers' Club on November 2d, attended by NPS personnel **Steve Haller**, Historian of the Presidio, **Jim Gasser**, manager of the real estate division, **Don Kojane**, **Will Jensby** and several other Board members and staff of the PERHAM FOUNDATION, CHRS President **Steve Kushman**, vice president **Lee Alder** and Board Chairman **Dale Sanford**, and invited guests such as NASA's **Michael F. Wright**, representing the Silicon Valley Engineering Council, and **Kip Crosby**, of the Computer History Association of California.

We all owe an immense debt of gratitude to CHRS member **Henry Engstrom**, also active in the Military Collectors Radio Net and the Military Radio Restoration Group for making the connection to **Steve Haller**. Henry's credibility and energy opened the doors for the Presidio Historical Radio Project. He too attended the November 2d meeting, seeing the initial results of his work. Henry has been doing museum quality restorations of military radio systems for many years, for example, the complete command and liaison radio system of the B-17 bomber. He is also a radio operator of this vintage gear. The Board of Directors of CHRS has given me the privilege of announcing that it has awarded to **Henry**

**Engstrom** the Charles E. "Doc" Herrold Award for 1996. Congratulations to you, Henry!

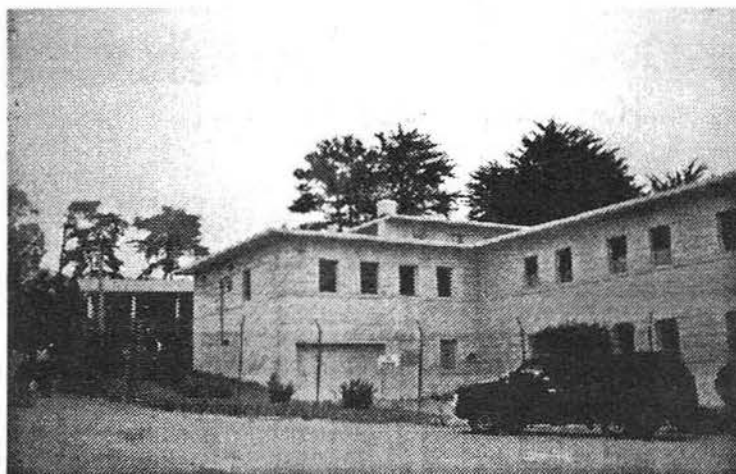
The next steps in the Presidio Radio History Project are a formal application, then organization of the working team. Volunteers with every skill are needed for everything from paint removal to fund raising. Please give me a call to help. The Coastal Radio Station site alone is big enough for meetings, operating receivers and transmitters, and a repair facility. It will also be possible to hold swapmeets at the Presidio.

A second front is also opening. At the Marconi/RCA/MCI radio station in Bolinas there are several WWII vintage transmitters. The lessee up there and the MCI station chief, **Jack Martini**, are more than amenable to saving good vintage gear. In the end, this is exactly the sort of gear that should illustrate the WVY era of radio equipment. Several of us are working this aspect of the project. Volunteers are needed for moving and storage of this gear, fairly soon.

Please feel free to call or write to me about any aspect of this project. My home number is (415) 788-4072 and my office number is (415) 956-5959. If you want to leave an after-hours voicemail, the extension is 103. Let me hear from you, please!

*Correspondence is invited.*

*Photos: Michael E. Wright, P.E.*



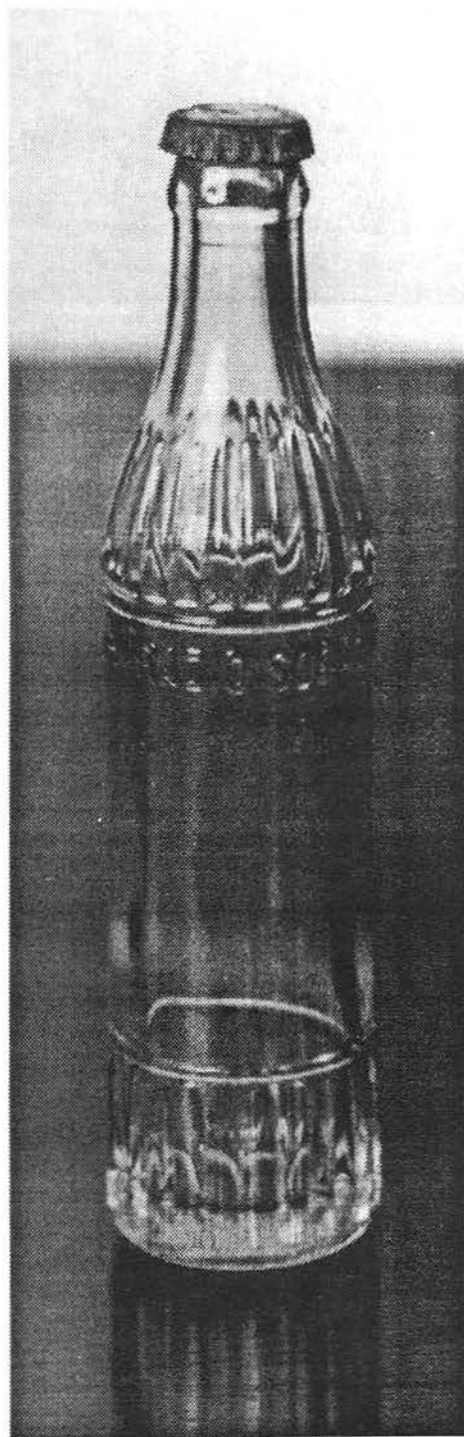
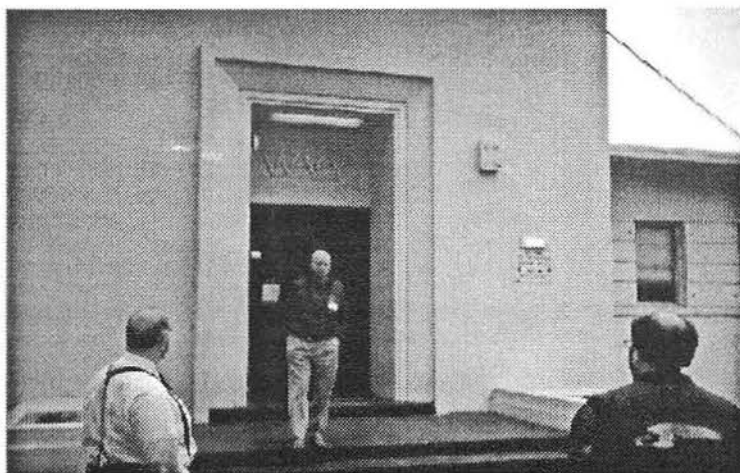


## RADIO SODA

*Top: Costal Radio Station, circa 1941, the candidate for rehabilitation*

*Center: Another view of the transmitter building*

*Bottom: WVY transmitter site at the Presidio. Henry Engstrom stands in front of this museum-size building. Note WVY call letters above the door. Bart Lee (L) and Steve Kushman (R)*



An interesting find in the collection of CHRS member Joe Cain is this soft drink bottle labeled *Radio Soda Works, San Jose, Calif.*

If anyone knows any of the history of this company, please share it with the *Journal*.

# RADIO COLLECTING ON THE INTERNET

Alan Voorhees



It seems you can't do anything these days without hearing about the Internet. If you aren't "connected" it may be hard to imagine what all the fuss is really about. People selling Internet services tell of the vast amounts of information available (although they neglect to inform you that finding it is like looking for a book in the library with the card catalog shuffled). On a more realistic scale, it's a handy way to keep abreast of personal interests, and the radio collecting hobby is well represented on-line.

There are two parts of the internet where radio information is readily accessible, newsgroups and the World Wide Web.

Newsgroups allow the posting of questions and information, and replies to them.

There is an active antique radio newsgroup (rec.antiques.radio+phono) which is the forum to seek the answer to the puzzling questions about that set you just acquired or to ask advice on the restoration or repair of a radio.

The World Wide Web is the part of the Internet that has received the most attention since it exponentially grew in the past couple of years. It is here that Toyota and Honda sell their cars, and that individuals display pictures of their cats. In this amazing mixture of information and excess are a number of interesting web sites dealing with antique and vintage radios.

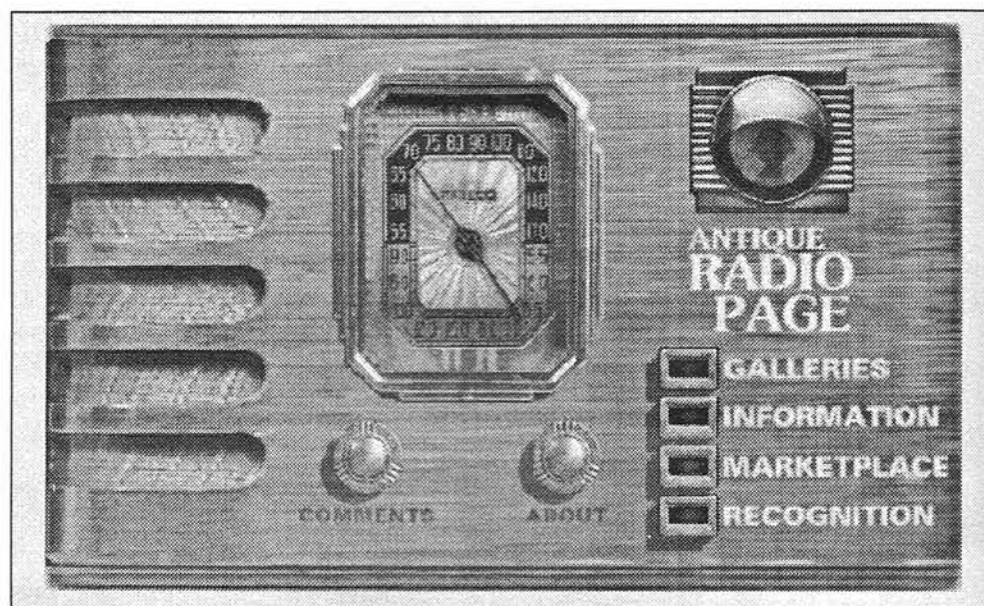
The first stop you should make is, of course, the CHRS web site (see sidebar for addresses). CHRS has been on the web since

earlier this year, and has had hundreds of visits to its site. Stop by and you can find the latest club information including the calendar of swap meets, complete with directions and maps, general information on joining the club, and you can tap into the information in a number of past *Journal* articles contained on-line. With each new issue of the *Journal*, additional articles are posted on the site.

For those with enough hardware (68040 Mac or 486 PC and a 28.8 connection) there are even eight complete shows from radio's golden age available for listing; Jack Benny goes on the air before his writers finish the script... Kay Kyser holds a session of the College of Musical Knowledge... Jimmy Durante continues to dismantle the English language... Philo Vance solves a murder.

Elsewhere on the Internet, Don Adamson's *Antique Radio Page* (below) is one of the best designed radio sites you'll find. It's loaded with photos and descriptions of radios from the 1920s to transistor sets, a wide range of radio resources (both on the Internet and others), and an active want ad section.

These want ads lead to another advantage of the web... adding to your collection. The site for buying radios is undisputedly, *Machine Age*, the self-declared "collectors super-site." Located here are four major radio dealers, with sets pictured, described, and priced. The biggest listing is that of *Radiomania* run by Mark Stein. The site is like a color version of his *Radiomania* catalog, with





around 200 sets available. You can find wooden sets, plastics, novelty, transistor and console radios here.

John Sakas' *Radio Craze* is also located under the Machine Age banner. John is well known as a dealer in catalin and other highly collectable radios. John, like Mark, can be contacted by e-mail from their sites.

If the prices at the dealers seem too high, there are a number of collectors offering sets from their collections on the Internet. Like visiting a CHRS swap meet, you'll find a wide range of radios available in an equally wide range of prices. *Machine Age* is a site for personal collectors as well as dealers, and it has a free ad section for personal selling or seeking of antique items.

You can find most everything you might need for restoring a radio; grill cloth, dial reproductions, schematics, refinishing supplies. All just a mouse click away.

Find a friend with a computer and an Internet account and have them show you around!

### Vintage Radios

Click on a picture below for a larger JPEG photo; click on the ? for information on the set pictured. Radios are presented in approximate chronological order.



## Radio Craze

Click on any picture to zoom in, or click on the text to inquire about an item.



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<http://www.wp.com/chrs>

Don Adamson's Antique Radio Page:  
<http://members.aol.com/djadamson/arp.html>

Machine Age:  
[http://www.cais.com/machine\\_age/](http://www.cais.com/machine_age/)

Radiomania:  
[http://www.sscsi.com/machine\\_age/radiomania](http://www.sscsi.com/machine_age/radiomania)

Radio Craze:  
<http://www.radiocraze.com>

# KAY KYSER and the KOLLEGE OF MUSICAL KNOWLEDGE

Alan Voorhees



Ish Kibbible does some explaining to the "Ol' Perfesser" Kay Kyser

*Who is listed in Ripley's BELIEVE IT OR NOT as being the only bandleader that didn't sing or play an instrument?*

*Who was the country's top-grossing band leader in 1941?*

*Who was the first person to entertain the troops and entertained more troops during the war than any other person (including Bob Hope)?*

*Who had seven records at the same time—more than anybody else—on YOUR HIT PARADE?...It's the "Ol' Perfesser" himself...*

"Evenin' folks, how y'all?" With that and a cry of "Students!" the Kollege of Musical Knowledge, which represents the bulk of the Kay Kyser Band's 3,000 radio broadcasts, was called to order. The Kollege became the nation's number one quiz show in the 1940s with Kyser decked out in a cap and gown, jumping around the stage like the college cheerleader he once was, giving "hints" to the questions he was asking, and then feigning astonishment to the answers he practically gave the contestants.

The "Ol' Perfesser" Kay Kyser, was born

James Kern Kyser in Rocky Mountain, North Carolina in 1905. He was first introduced to the music business in Law School when Hal Kemp, who led the school's very popular Carolina Club Orchestra, graduated in 1926. Hal approached Kay, then the very popular leader of the cheering section, and pressed him into service as a replacement conductor.

When school resumed in the fall of 1927, Kyser advertised for people to join the band, and the first was saxophonist Sol "Sully" Mason who became, and remained, the band's second-in-command. A group was assembled and they put together a repertoire of a half-dozen numbers and set out on their first engagement. The band ended up playing its six tunes several times, and as the evening wore on the dancers started calling out the names of the songs before the singers started, leading Kyser towards his idea of "singing song titles" which would become a Kyser band trademark. And one of the songs played that night, *Thinking of You*, would become the Kyser theme.

## AFTER GRADUATION

The band expanded and grew in popularity, and when Kay graduated in 1928 he talked the Victor Talking Machine Company in pressing

The Kay Kyser and his band





a record of the band for distribution in the area—enabling him to promote the group as “Kay Kyser and his Victor Recording Orchestra.” The band began to get better bookings and in 1930 got an engagement in New York City where the *New York Times* proclaimed him a “genius if jazz.”

The band traveled around the country and in 1932 Kyser was offered a 15-minute spot on the radio. In order to squeeze in as much music as possible in the short time segment, Kay implemented the “singing song title” idea to eliminate the need for spoken announcements between selections. In 1934 Hal Kemp again had Kay fill as his replacement at the Blackhawk in Chicago, which included valuable radio time as well.

It was in Chicago that the band began to take off, doing better than even Kemp had been doing. Kyser tried a number of gimmicks on the Radio broadcasts, and finally drew upon his college days to develop the musical quiz show format (“Kay Kyser’s Kampus Klass”) which would become the “Kollege of Musical Knowledge” and be carried on NBC a few years later. Kyser also became the only band leader to have a starring career in the movies, making seven films in five years.

#### AMERICA ENTERS THE WAR

By 1942, when America officially entered World War II, Kay Kyser had become the country’s top-grossing band leader having had nearly 50 records on the charts, and ten records in the top ten. The “Ol’ Perfesser” of radio’s “Kollege of Musical Knowledge” had already begun to entertain our troops by originating his program from military bases around the country in February of 1941. It wasn’t until nearly a year later that other programs followed suit to entertain “the boys.”

After the attack on Pearl Harbor, Kyser spent all his free time working for the war effort. He helped start the Hollywood Canteen, where movie stars served food, talked and entertained the troops. Kay sold war bonds on the radio and wherever he went, and his band played for the troops whenever they could. With his involvement in the war effort, Kyser declined to accept any additional commercial bookings, but did honor those he already had, including a Meadowbrook (NJ) supper club engagement where the Kyser band played one

of their last commercial dates. Booked for four weeks, they followed the Harry James band. There was much speculation that Kyser wasn’t up to it. The sound of his band wasn’t what critics said the audience wanted anymore, the band had lost all of its 15 years worth of arrangements in a fire a few months before and they hadn’t played an East Coast date in years.

#### THE BAND IS REBORN

But the first week of the engagement had Kyser breaking the attendance records of Harry James, and a surprise had unfolded. The band had a new sound. In rebuilding the library, the arrangers had made significant changes. The trademark “singing song titles” were gone. A large number of the tunes were upbeat instrumentals, and the vocal arrangements were varied, ranging from solos to as many as eight singers at a time. “This is one of the breeziest and most unrelenting shows ever put on at a dance spot,” said *Drum Beat* magazine, “Kyser is a brilliant variety artist and deserves all the acclaim in the world.”

In July 1942 the musician union strike began, and the resulting ban on recording left Kyser more time to devote to the troops. Other entertainers followed Kyser’s lead, most notably Bob Hope, but none devoted more time or money to the cause. Kyser paid the band travel expenses himself.

Kay’s wartime band was the best it had ever been, despite the draft having nearly gutted the band of musicians. Only a few of the members of the band in 1942 were left a few years later. The band had record sales at their highest ever (despite the recording ban which made for a lack of new product) and had four records that sold over a million copies; they had sold over 400 million in war bonds, and had made thousands of appearances. But, since he now only performed at military bases, most critics didn’t see or hear the band, and as a result the band often is overlooked in their place in musical history.

#### THE WAR COMES TO AN END

In 1944 Kyser married singer Georgia Carroll. In 1945 “Ish Kibbible” (Merwyn Bogue) was drafted and Sully Mason left to start his own band. Kay found a new singer, Michael Dowd, and gave him the stage name of Mike Douglas. Kyser finally was able to get a small

group together to entertain overseas. General Douglas MacArthur, one of Kyser big fans, had Ish Kibbible assigned to Kyser, and the band became the first civilian entertainers on Okinawa. While in the Pacific, fearing yet another poem from Ish Kibbible, Japan surrendered.

Because of problems with arthritis, Kay wanted to slow down, but contracts made that impossible, so he continued with the Kollege broadcasts, with their 11 year run ending in 1948. At that time the big band era was waning, and Kyser disbanded. Kay moved back to North Carolina with his wife, who had retired to raise their three daughters.

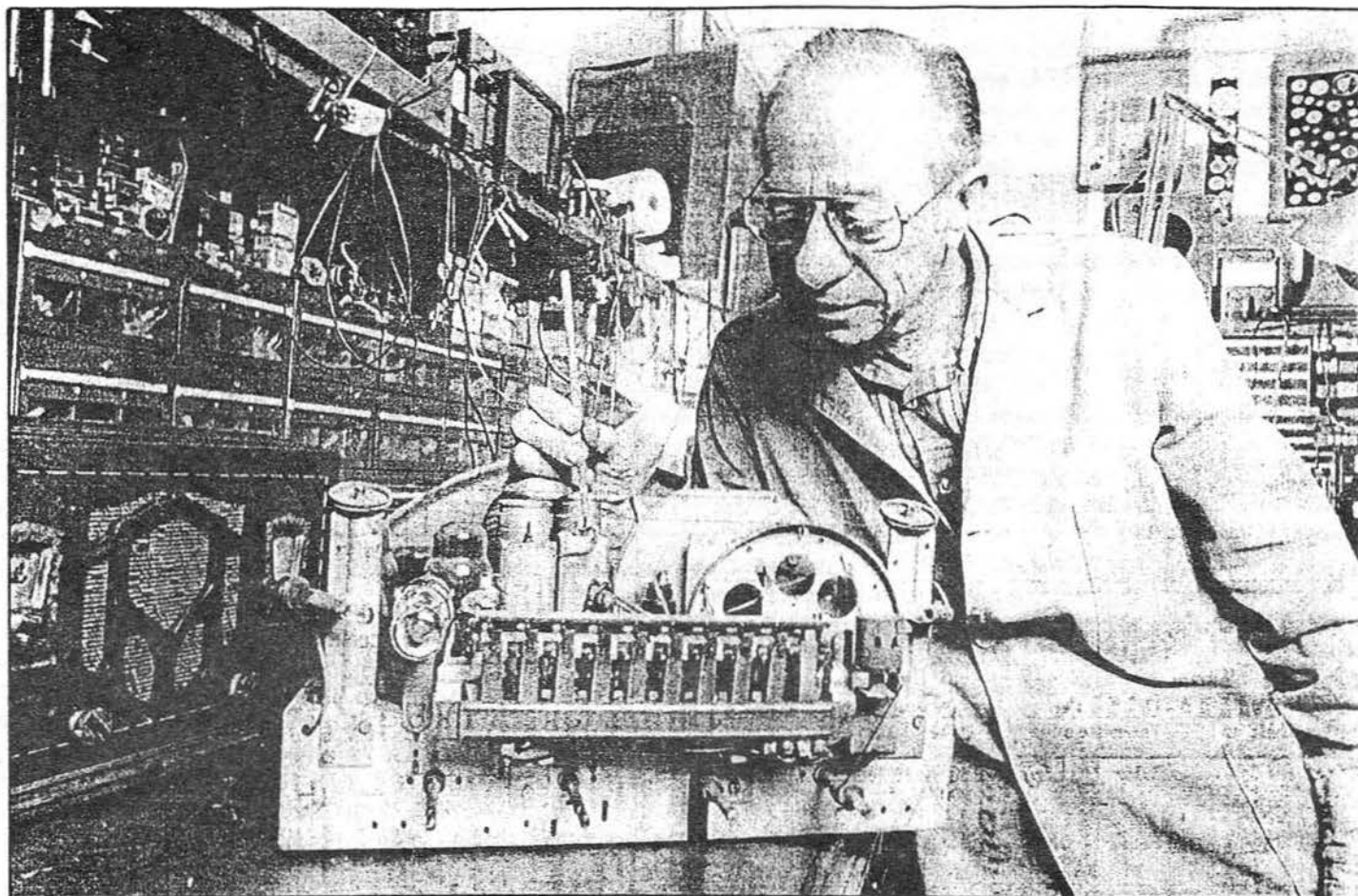
Kyser’s retirement from the music business gave him the opportunity to devote himself full time to his church. He became first a Christian Science practitioner and after having success in this, Kay in the 1960’s became a Christian Science teacher and also became involved with the Broadcasting department of the Church headquarters in Boston. Kay headed up that department and it’s various programs until the mid-1970s, when he returned to Chapel Hill, NC. In the late 1970’s, Kay went back on the road, so to speak, by becoming a Christian Science Lecturer. He wrote frequently for the Christian Science periodicals, the *Journal* and the *Sentinel*.

In his “retirement” years, which were much more than that, Kay continued to touch many lives. Kay Kyser died in 1985.

Band vocalist Ginny Simms



# Occupational extinction



Associated Press

**JOBS OF YORE** — John Wentzel, 68, repairs an old tube radio at his shop, Aladdin Radio Repair, in San Francisco.

Wentzel's job still exists in the Dictionary of Occupational Titles, but others like "milkman" are disappearing.

By James O. Clifford  
Associated Press

SAN FRANCISCO

**J**OHN WENTZEL has a job that's quaint, charming, nostalgic — and vanishing. Wentzel, 68, repairs old-fashioned tube radios, outdated since the transistor reduced the "wireless" to pocket size.

"I get old ones brought in all the time," said Wentzel, 68. "But the real oldies are in my own collection. I have one that goes back to 1923."

Then there's Michal Grycz. He gets up each morning and delivers milk. Or Lee Wedeking, who operates a switchboard.

What's a switchboard? Well, kids, it goes back to the days when people, not mammoth computers, handled almost all telephone connections.

Jobs come and go, according to Mike Swain, of Raleigh, N.C., an occupational analyst who

## Handbook delists obsolete jobs

helped revise the Dictionary of Occupational Titles for the U.S. Department of Labor.

The dictionary was first published in 1939. The department should be releasing the updated version of the fourth edition soon. The dictionary is used by job placement officials to match people and jobs.

According to Swain, 74 occupational titles have been dropped from the dictionary while 134 have been combined with other occupations.

The dictionary does contain "radio repairer-tube," so Wentzel still exists as far as the federal government is concerned.

Wedeking's switchboard is in there, too. Not so for Grycz'.

"We still have a few milk route drivers here in Raleigh," Swain said in a telephone interview.

The new edition won't even have that.

"There's a generic 'route driver' to cover all deliveries," Swain said.

Some other titles being dropped grab your attention. Ever met a process stripper? Sounds like someone who takes off their clothes while serving a court document.

"Actually, it has something to do with color photography," said

Swain.

But none of the jobs rings the past like Wentzel's, Grycz' and Wedeking's.

Wentzel's shop, Aladdin Radio Repair, is a real time tunnel.

The radios are right out of Norman Rockwell painting. It's easy to imagine a family gathered in the living room, listening to World War II coverage on a console radio topped with photo

A visitor can be excused for being disappointed when a radio is switched on and Jack Benny's voice doesn't flow out, or Boston Blackie fails to expound about being "a friend of those who have no friends, enemy of those who make him an enemy."

Surprisingly, Wentzel said he has no trouble finding parts.

"Some suppliers have big stocks, and I'm always coming across World War II stockpiles," he said. "You'd be surprised how much business there is for tube radios."



## WANT ADS

### WANTED:

Televisions, Philco Predictas, all models. All types of earlier TVs wanted. Send or fax description to Sheldon Donig, 340 Laurel Ave. San Anselmo, CA 94960. 415 454-8851 Fax 415 456-9322.

Antenna for Radiola Super VIII console, or details to construct one...pictures, dimensions, etc. Mark S. Rauber, Box 1077, Minden NV 89403. 702 782-3596.

Blue, etched, side mirror for Sparton 558 (4 knob). Dial glass for Sentinel 248 (wavy grille). Chassis for Stewart Warner R469. Steve Kushman, 4233-25th. St., San Francisco, CA 94114. 415 821-7671.

1945-1953 Plywood radios from the following companies: Emerson model #503, #519, #535 or any with the perforated fronts; Tele-Tone #117, 117A with speaker holes; RCA model #28T. State price based on condition. Also want Zenith "radio nurse," brown plastic speakers. Steven Cabella, 500 Red Hill Ave., San Anselmo, CA 94960. 415 461-6810.

Mini-tube and hybrid coat pocket size plastic radios, pocket crystal radios, hearing aids. I'll buy, or trade my transistor radios. Mike Brooks, 7335 Skyline, Oakland, CA 94611. Phone 510-339-1751.

Mini-tube and hybrid coat pocket size plastic radios, pocket crystal radios, hearing aids. I'll buy, or trade my transistor radios. Mike Brooks, 7335 Skyline, Oakland, CA 94611. 510 339-1751.

Zenith T. O. 7G605 Clipper 1942 (sailboat or bomber on grille cloth). Chris Rogers, 38 Smethurst Ave., Pakenham, Australia 3810.

Atwater Kent model 20, big box radios, any condition. please state price. Paul Thompson, 315 Larkspur Dr., Santa Maria, CA 93455. Phone 805-934-2778.

Any information on the history, use, or development of the HT-4 transmitter by Hallicrafters. Mikhael Brown, 188 Sprucemont Place, San Jose, CA 95139. Phone 408 578-6076.

UV-199 socket to make adapter to test tube at a 80 socket or an adapter. Edsel Erwin, 1513 E. Houston Ave., Fresno, CA 93720-2750. Phone 209 299-5012

Rack mount Navy radio RBC or RBB, or the cabinet alone. Buy or trade table top cabinet for RBA. For Sale-Complete set of 20 years of "Ham Radio"- \$50. John Gibson, 1075 Sterling Ave., Berkeley, CA 94708. Phone 510 849-1051.

Good photos of tube type transmitters, trancievers, and allied equipment, for the next edition of *Tube Type Transmitter Guide*. Gene Rippen, 105 Donnington, Auburn, CA 95603. Phone 916 885-6147.

Small knob (one) for W. E. Aeriola Sr., either filament or tickler. Gene Warner, 522 Weiman, Ridgecrest CA 93555. Phone 619-446-2617.

Vintage and collectable TVs and related items, other than parts or service literature. Eric Stumpf, P.O. Box 60245, Santa Barbara CA 93160. Phone 805 964-9417.

Riders manuals, Volumes 1, 2, 4, 5 and 17 thru 23. Call CHRS HOTLINE, 415 821-9800.

Pocket size reel to reel tape or wire recorders. Guy Doss, 736 Los Padres Blvd. Santa Clara, CA 95050. Phone 408-241-2437.

Majestic model 194 gothic cathedral cabinet, or a loaner to copy. Also Philco 60 chassis and speaker. Ben Martin, 18334 Pepper St., Castro Valley, CA 94546. Phone 510 582-6804.

### FOR SALE:

Free to a good home: Heathkit model GR-269 portable TV, Heathkit GR-2025 Console TV, and RCA home entertainment center circa 1960s. Also a Majestic radio console without power supply, I think this is from the '20s. Robert Stueland, 21711 Alcazar Ave., Cupertino, CA 95014-5929. 408 253-8848. Lykemall@AOL.COM

Electrolytic capacitors, NOS, two section- \$4, 3 section- \$5, four section- \$6. Some rated at 450 volts. Evan Powell, 4717 Conquista Ave., Lakewood CA 90713. 310 429-3793

CHRS Tee shirts, \$17, including postage. CHRS baseball caps \$10, including postage. Call CHRS HOTLINE 415 821-9800.

Neon transformers and capacitors; telsa coil parts and various high voltage parts. Dan Smith, 707 664-8156

Send large SASE for tubes, parts, literature, radios or for books, magazines, catalogs, manuals. Two stamps, please, brings you both lists. Stan Lopes, 1201-74 Monument Blvd., Concord, CA 94520. 510 825-6865

Hallicrafters SX-43 restored-\$175- (no speaker). You pay UPS, local pick-up preferred. Ted Stewart, 2157 Braemar Rd., Oakland, CA 94602. Phone 510 531-7042

Bird Wattmeter with case and six slugs: 2-30 Mhz 100w, 500w, 1000w- 100-250Mhz 25w, 250w- 200-500 Mhz 25w. Excellent condition, Model 43, 50 ohm. Dave Schutt, 22 So. Keeble St., San Jose, CA 95126. 408 293-3437.

Kenwood TH21-A, 2 meter hand held tranciever, new ni-cads, short and long rubber duck, charger and 115VAC supply. Original packing and manual- \$60. Henry Meyer, 30 Tobin Clark Dr., Hillsborough, CA 94010. Phone 415 349-2071

### SERVICES:

Repair/replacement of meters before 1940. Wanted- Old meters/Galvos before 1910. As is okay. Thanks, Leonard Cartwright, 879 Russet Dr., Sunnyvale, CA 94087. Phone 408 739-6025

## HELP!



Starting in 1997 the CHRS *Journal* will be published on a new quarterly schedule, with issues arriving in your mailbox in March, June, September and December.

Your editor (see artist's sketch above) is worried that there won't be enough input to sustain the expanded schedule and that he will be reduced to writing endless articles on radio refinishing (the first of which, by the way, will appear in the next issue).

The *Journal* needs the varied collecting expertises of CHRS members to keep the content varied and interesting. Why not write about your radio interests and submit it? Deadlines are the 15th of the month preceding publication. You can mail submissions to:

Alan Voorhees  
10809 McIntyre Street  
Oakland, CA 94605

or e-mail to:  
radio@hotmail.com



## SALE!

The Howard Sams' six-part series, *Radios of the Baby Boom Era*, a comprehensive picture refer-

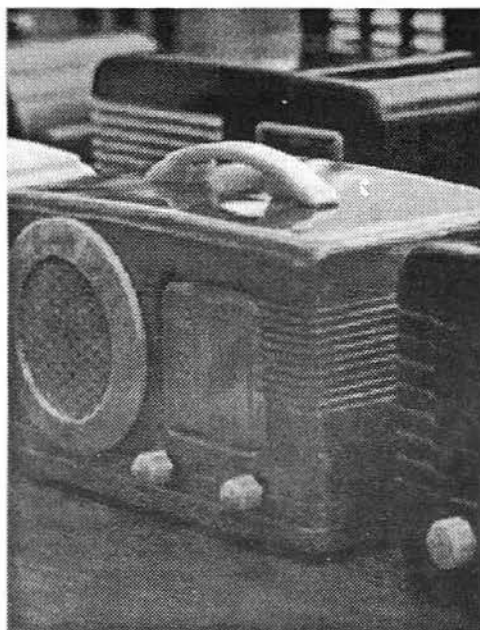
ence to the classic radios of the post-World War II era is available at a reduced price until December 31, 1996.

The complete set of six books, regularly priced at \$96.95, is now available for \$49.95 including shipping directly from Howard W. Sams Co. To order call 800 428-7267.

Use Sams Order #61009 and refer to the special pricing code of BK0CT1 when ordering. VISA, MasterCard, American Express accepted.

# WHERE TO FIND ANTIQUE RADIOS

Lynn Love



As relative newcomers to the radio collecting hobby, only three years, my husband Martin and I have learned something about the various sources for finding radios and related items. Our first conception was that antique radios are mostly found in antique shops. That's just but one source. The following are good sources that frequently turn up great finds. These are listed in no significant order except the best is saved for last.

## GARAGE SALES

About the time we started radio collecting, Martin and I became certified garage sale "Junkies". We have actually become quite professional at it. We can hit the pavement at 9:00 am on Saturday morning and cover from Burlingame south to Redwood City on the peninsula in three or four hours. We have found that garage sales are the best source for finding radios at give away prices. Our best find was a Philco 71 Baby Grand Cathedral in great condition with grocery bag full of tubes for a mere \$25. You will find lots of plastic table sets from the 50's and 60's for under \$2. They are great for collecting, for parts and tubes, and for selling at swap meets. Garage sales are hit or miss. You can go for several months and find very little. On the other hand, they can be very productive. I remember one Saturday when the first 3 out of 4 garage sales we hit produced radios, all within four blocks of our house. Don't be afraid to bargain and

negotiate if you think the price is out of line. Also, leave your name and phone number with the seller if your offer is initially turned down. Odds are good that you will get a phone call on Sunday or Monday accepting your offer. The only down side to garage sales is that it can be tiring. You may hit 50 to 100 garage sales in a day and that's a lot of in and out of your vehicle.

## THRIFT STORES

Believe it or not, thrift stores can be a good source for antique radios. Like garage sales, they are inconsistent in their supply. We try and hit most of our local stores once every week or so. Prices can vary substantially, depending on the store. Bargains can be found as well as overpriced, trashed sets. If you frequent the store, introduce yourself to the manager and give him your phone number. Many times they will call you when they get something in, and give you first shot at it and may even negotiate a price.

## ESTATE SALES

Check your local newspapers for estate sales. Estate sales sometimes turn up real finds, usually in fairly good condition. Depending on who is conducting the sale, prices can vary from being priced close to market value to overpriced. Their knowledge of antique prices, or their lack thereof, seem to govern prices. Bargains can be found, but less frequently than garage sales. Bargaining is sometimes done, don't be afraid to ask. Worst case is you may get a dirty look. Bids are frequently accepted if you don't want to pay the asking price. You may get a phone call back and get a set at the price you want to pay. For some reason, estate sales are usually conducted on Friday and Saturday only. I guess this allows the antique dealers to get first crack at the good stuff on Friday while the rest of us working stiffs are earning a living. If you can, hit estate sales on Friday and if you want to bargain, do it late in the day on the last day of the sale. They are more likely to bargain an hour before closing.

## FLEA MARKETS

### AND CHURCH BAZAARS

I've been told that flea markets are good sources, we just haven't seen it yet. We must be going to the wrong ones. You know, the

commercial ones where you get your tube socks and pipe wrench from the same seller. (where do they get this stuff?) There are flea markets that are not commercial, these are the ones you want to hit. I am aware that there is a non-commercial flea market in both Oakland and San Jose. We just haven't had the opportunity to attend them yet. Similar to flea markets are church bazaars that sell donated goods for fund raising. Go to these because they sometimes turn up good stuff at very reasonable prices.

## WORD OF MOUTH

We have acquired more radios through word of mouth than we ever imagined. People from work, friends, neighbors, relatives, doctors, you name it, get the word out. At least monthly we get a tip, a lead, or an offer to sell us a radio. Just recently we picked up some sets from a garage sale, and by word of mouth from the garage sale. Some neighbors from down the street had a mini block sale several weeks ago. I bought two radios, several old speakers and stack of 40 or 50 really great 78 records at two of the sales. I introduced myself as the neighbor 8 doors down and across the street. One of the sellers called me about a week later and asked me to come down to his garage. He opened up the trunk of his car and asked me if I was interested in this stuff. There were three wooden AC sets from the mid 30's, two plastic sets from the 40's, a tube tester, a multi-meter, a 1941 RCA service manual, and a box of parts consisting of several transformers, tubes, coils, etc. I asked him how much he wanted for the goods. His response was, "Oh nothing, my brother was cleaning out his garage and just wanted to get rid of this junk". See how word of mouth works! Let all your acquaintances know what your interests are. You'll be surprised at what comes your way.

## CHRS SWAP MEETS

When all is considered, the best source overall for antique radios is our clubs' swap meets. Prices are almost always fair, bargaining is done, the variety and selection cannot be beat, and the friendship and knowledge available from our members makes it the *BEST* place to find old radios. Martin and I enjoy every swap meet we attend, whether we are selling, buying, or just plain browsing and hanging out.



# HUM, FEEDBACK & OSCILLATION

Michael E. Franzen

Hum, feedback and oscillation are a scourge to the radio repair man. They are the least understood and hardest to troubleshoot faults in a radio receiver. While a major article could be written on any one of these conditions, it is the hope of this writer that the following hints and tips will assist the repair man when one of these conditions is encountered. I dedicate this article to my father, Val Franzen (1908-1992) who put up with me as a kid in his radio shop and taught me how to troubleshoot and repair radios.

## HUM

Hum is the most frequent problem that is encountered in older receivers. There are three basic forms of hum; steady state, tunable and ground loop.

Steady state hum can be caused by defective filter capacitors in the power supply. Never replace a faulty filter capacitor with one of a higher rated capacity. Doing so will shorten the life of the rectifier tube. Receiving tube manuals usually show or state the maximum capacitance allowable for the input filter capacitor. Steady state hum can also result from heater to cathode leakage in the audio stages of the receiver or defective audio coupling capacitors as well as a defective hum bucking coil on field coil speakers. It is also possible for a faulty pilot lamp or a defective eye tube to cause hum in an AC receiver.

Tunable hum is heard only when a station is tuned in. A good test for this type of hum, on AC-DC receivers is to reverse the line plug. If the hum decreases, the cause is the ac line bypass capacitor. On AC receivers, it is best to always replace both of the ac line capacitors if two are used. A few AC-DC receivers did not use an ac bypass capacitor and a good service practice is to add one. It should be approximately .1ufd at 600 volts. AC receivers usually use .01ufd bypass capacitors. If the receiver did not have ac bypass capacitors, it is a good idea to add them. If the receiver used a capacitor on only one side of the line, it is a good service practice to add a second one on the other leg of the ac line. On a few AC receivers I have measured as high as 25 VAC from the chassis to the safety ground on the bench outlet. This is an indication that the power transformer has leakage and should be replaced.

Ground loop hum is not a problem on properly designed receivers, but as receivers age, it

may show up. Ground loop hum may be traced to bad solder connections to the chassis, multiple chassis grounding points or deteriorated insulation inside of shielding.

On AC-DC receivers, the proper way to connect series string vacuum tubes is to start at the AC line with the rectifier continuing on to the audio output, IF tube, RF-Oscillator-1st detector and then ending with the 2nd detector/1st audio tube. In other words, the chassis ground should always be on the tube that is most sensitive to hum modulation.

## OSCILLATION

Single stage oscillation is perhaps the least understood type of trouble. It normally comes from an IF stage. Usually no amount of filtering applied to the plate or screen supply, cathode or avc circuit will correct the oscillation. If an IF transformer has been replaced with one having a higher "Q" the problem is compounded. In IF stages, the limiting factor in the amount of gain that may be obtained from a circuit before oscillation occurs is the grid-to-plate capacity of the tube. A simple way to check an IF stage to see if the oscillation is being produced by that stage is to connect a milliammeter in series with the B+ lead of the output transformer. Shunt the meter with a .1 ufd capacitor. Detune the 1<sup>st</sup> and 4<sup>th</sup> circuits in opposite directions. Intermittently short the grid of the I-F amplifier while rotating the grid trimmer of the I-F transformer. If the plate current changes when the short circuit is applied and removed, the circuit is changing from oscillation to a stable condition and is the culprit.

## REMEDIES FOR SINGLE-STAGE OSCILLATION

1. Use a close fitting tube shield on the offending tube.
2. Use a tube with a lower grid-plate capacity.
3. Use a tube with lower mutual conductance.
4. Raise the bias on the offending tube just to the point of stopping the oscillation.
5. Replace "G" or "GT" tubes with equivalent metal types. Note that pin no.1 of metal types is the shield. This pin must be grounded. Make sure that it is not used as a tie point for other circuitry.

In IF stages, you can sometimes put the plate lead on one side of the chassis and the grid lead on the other to stop the oscillation.

Raising the bias on a tube is equivalent to

lowering the mutual conductance of a tube. To change the bias on oscillator/mixer/converter or IF tubes, change the value of the avc resistors.

## OVERALL FEEDBACK & OSCILLATION

On manufactured receivers which are built by reputable companies, over-all oscillation after many years in service can be traced to common by-pass capacitors. Another source, on AC receivers, is a faulty or lack of a by-pass capacitor across the electrolytic filter capacitor. The purpose of this capacitor is to insure a permanent low impedance RF path to ground. Over-all IF oscillation can occur when the RF resistance of the electrolytic filter capacitor increases with age.

In UL approved ac-dc receivers, feedback is usually the result of faulty design because the chassis is not solidly connected to the "B-" point in the receiver, but is merely by-passed to that point by a capacity exceeding .25ufd. To limit shock hazard in receivers where one side of the line is connected to the chassis, the capacity between the chassis and the minus "B" must be limited to .25ufd.

## Diode Circuit Noise

While not hum or oscillation, a major source of noise in an old receiver, is the volume control. Actually many times this is the result of an improperly designed 2<sup>nd</sup> detector circuit. Figure 1 illustrates the offending circuitry. This illustration is a Philco model 37-602 and is similar to the circuit used in several models of Philco as well as other brands. The noise results from diode current flowing through the volume control. As components age, in particular the carbon volume control, the noise increases. Many radio repair men seem to think that the noise is caused only by a dirty element in the control and merely spray clean it. A permanent fix can be had by rewiring the circuit to correspond to figure 2. All that has been added is R1 and C1. The improved circuit will also eliminate grid current and stabilize the avc action in crowded reception areas. You may need to experiment with the value of R1. The value of R1 can be varied to change the bias on the oscillator/mixer and IF stages thereby eliminating oscillation. (See #4, above, under *Remedies for Single-Stage Oscillation*.)

# How Cathode Rays are used in Both Transmission and Reception by Farnsworth Television

by Samuel Kaufman, *Radio News*, December 1935

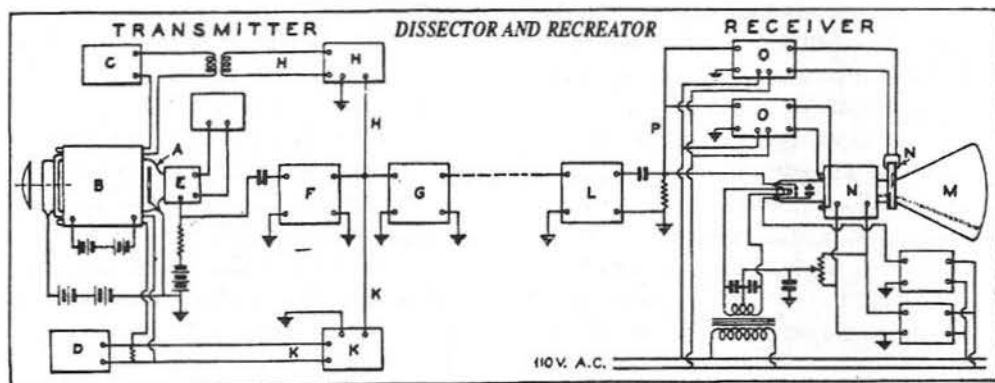
Many experimenters would like to know how the cathode-ray type of tube can be used in television for picking up the picture as well as for recreating it. This article explains the mode of operation of the Farnsworth system employing a number of important and novel features.

Last month the Philadelphia laboratories of Farnsworth Television, Inc. demonstrated the fidelity and clearness of Philo T. Farnsworth's system and the fact that 10- by 12-inch and 6- by 7-inch images had been successfully achieved by the young inventor. Now, we will set forth the method as well as the results of the his high-definition television tests.

## 360-400 Lines

Here is a precise picture of the Farnsworth system—one of the most advanced in the world. We might note these few facts before proceeding into our technical description of the apparatus and methods: The RADIO NEWS demonstration was conducted on 240 lines. But the inventor intends to increase his system to 360 lines and, still later, to "something in the order of 400 lines."

An idea of the type of image seen at our special demonstration is conveyed by Figure 1. But, you must keep in mind the fact that photographs are very difficult to take of the moving images at the end of a cathode-ray tube and that the same image directly conveyed to the eye registers as being clearer than the average photograph of the image. Also, it



is apparent that the eye and brain of the viewer of a television program automatically make allowances for minor imperfections of the moving image. But the same viewer is bound to be more critical when gazing at a still picture of the same image. Actually, however, a television program consists of a rapid succession of minute parts of pictures and it is the efficient reconstruction of the entire series that registers itself on the viewer's mind in determining the merits of the transmissions.

The RADIO NEWS group was impressed with the Farnsworth demonstration. And the daily press, too, accorded favorable comment to demonstrations at the Philadelphia laboratory. The figure above gives the basic schematic outline of the Farnsworth television transmitter and receiver circuits, virtually identical to the apparatus employed at the press demonstrations. Mr. A. H. Brolly, chief

engineer of Farnsworth Television Laboratories, Inc., who jointly with Mr. Farnsworth explained the system to this magazine's staff, prepared the diagram. The pickup of the transmitter, designated on the diagram as A has been dubbed the "image dissector." The light intensities of an image focused upon its photosensitive surface is converted by the dissector into fluctuations of an electric current. The scanning system also embraces its enveloping coil assembly (B) and the scanning oscillators (C) and (D). Mr. Brolly pointed out that their joint duty is to analyze the area of an image into a regular succession of space elements and convert them into corresponding signal current adequate for routing over but one signal channel.

Current impulses are amplified by an electron multiplier (E) which is an integral part of the valve, and by vacuum tube amplifiers (F

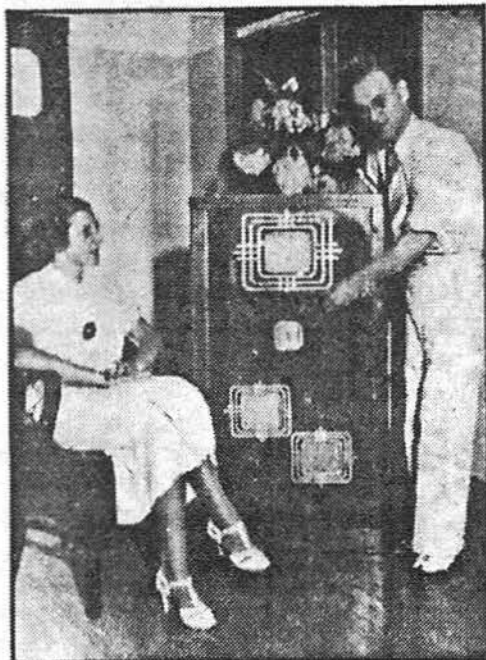
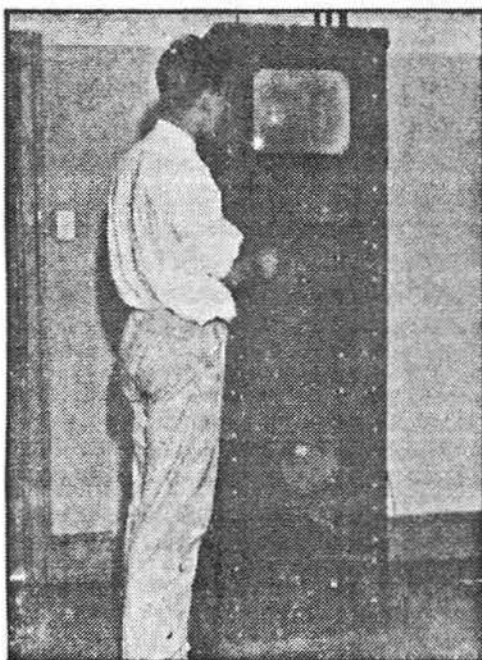


### WHAT YOU CAN SEE

The illustration, above, is a reproduction of a photograph made of a received image of the oscillight tube, which is the heart of the Farnsworth Television system.

The middle picture shows an operator adjusting the Farnsworth commercial rack-mounting television equipment.

At right of page is Mr. Farnsworth demonstrating his standard home-type receiver for television and sound reception.





and G) to produce signal voltages great enough to modulate a radio carrier. Mr. Brolly explained further that the connections (H and K) between the scanning circuits and the amplifier, provide impulses which automatically synchronize reproducers tuned to the transmitter.

The cathode-ray tube (M) is the heart of the reproducer. It converts the received electric impulses into corresponding light variations and arranges them in orderly space-sequence to reproduce the image at the transmitter. This is done with the use of the scanning system comprised of the coils (N-N), the associated oscillators (O-O) and the tube (M) itself. Once more the scanning oscillators are joined to the signal channel as shown by (P) to make possible automatic control from the transmitter. Mr. Brolly points out that amplification compensates for the inefficiencies of translation and transmission while the series of processes is completed by propagation of the signal.

It was also explained that the focused electron image in the dissector is scanned by displacing it in its own plane by means of transverse magnetic fields which sweep the image across a fixed aperture, thus allowing a small area of the picture element to produce a current in an electrical circuit, where it may be amplified and transmitted over wire lines or by radio. A resultant field which is inclined to the axis of the tube is obtained by the addition of a transverse magnetic field to the focusing field. Electrons starting from given points on

the cathode travel in spiral paths directed along the resultant magnetic field and come to focus at a point displaced by the transverse field.

It was pointed out that the pictures at the receiving end could be black-and-white, a fluorescent green and black or possibly other colors. It seems that there is a public objective toward black-and-white pictures. It is not because black and-white images are more natural, but rather on account of the fact that the public has learned to accept black-and-white as natural through constant attendance at motion-picture shows. The color of the picture through the Farnsworth methods depends on material utilized to produce the fluorescence of the cathode-ray tube screen. In the Farnsworth tests, pictures with a greenish tone were obtained through the use of a zinc orthosilicate screen. To reproduce images in black-and-white, a combination of substances, including calcium tungstate, is employed.

At Farnsworth's test transmitting point (for both wire and radio), the apparatus includes his cathode-ray "camera," or "dissector," an amplifier for the minute impulses and an ultra-short-wave transmitting outfit. And, as noted, the receiver also embodies the cathode-ray tube and its allied equipment.

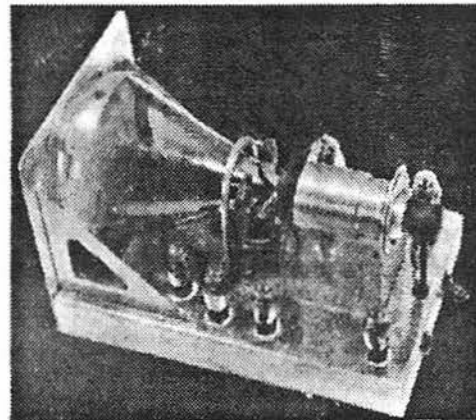
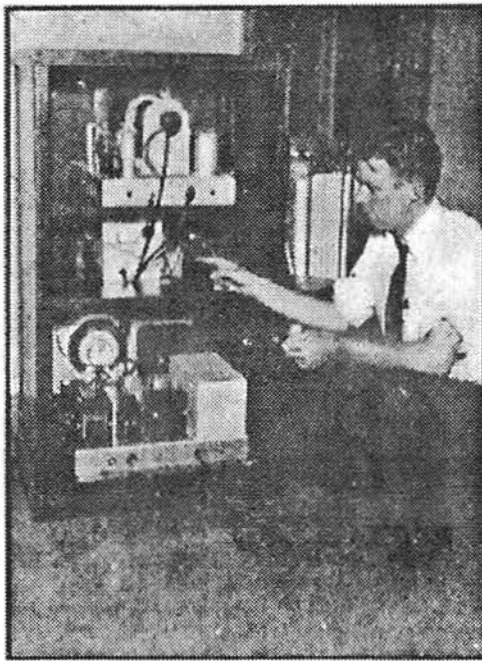
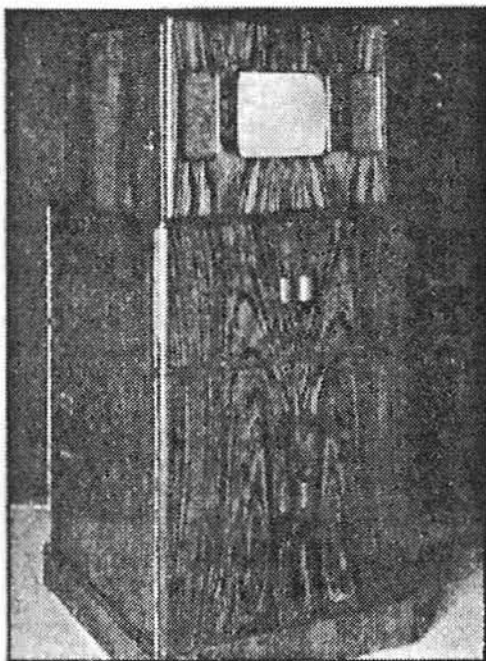
Experiments have reached the stage where home model receivers have been designed in attractive cabinets. The featured model seen at the Philadelphia demonstration for the RADIO NEWS staff has the screen end of the cathode-

ray tube framed neatly at eye level from a sitting posture.

The recent tie-ins accomplished by the Farnsworth firm with the Baird interests of England and the Fernseh A.G. group of Germany will eventually result in a pooling of the best features of all three systems in a single set. The outward similarity of the new Fernseh set to the Farnsworth home model can be noticed in the German model shown below. The modern encasing enhances the appearance of the set while doors hide the control knobs.

The receiver cathode-ray tube has been named the "Oscillight Tube." The flat, broad end is the fluorescent screen and the electron gun is toward the end of the funnel-shaped valve. In and around this cylindrical end of the funnel is also mounted the focusing and horizontal magnetic deflection coils and the vertical deflecting magnet.

One of the chief things to be ironed out in television as Mr. Farnsworth has said is "standardization." This, he declared, must precede commercialization. Also, he said, that his firm will not manufacture television equipment, but will issue non-exclusive licenses to other companies. Philco already is sanctioned to make Farnsworth-type receivers while Heintz and Kaufman has permission to make visual transmitters. Although the demonstrations were warmly received by the Press, company engineers are already at work on improvements.



#### THE TELEVISION RECEIVER

Above, the television reception unit comprises the cathode-ray tube and associated radio tubes mounted on metal chassis.

Center illustration shows the television receiver, at the top; the Power supply, bottom; while the operator points at the short-wave unit.

At the left of the page is the Fernseh model using the same principles and manufactured for the German market.

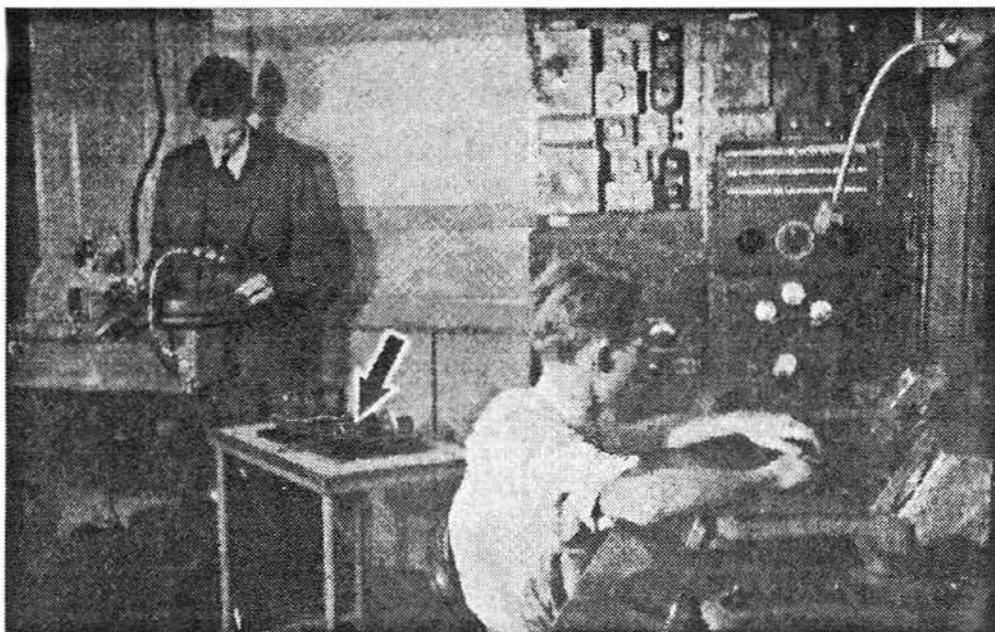
# BRINGING BACK VOICES FROM THE PAST

L. M. Cockaday

Radio News, March 1938

On a very fair Thursday evening, not so very long ago radio listeners from coast to coast could hear, over the Mutual Network, the voice of the late Theodore Roosevelt in an address he made to a boys' club 25 years ago. The broadcast was made through the medium of a phonograph record. This old type cylinder record was amplified and electrically transcribed onto a disk for the broadcast and the story of how the old record came to be made almost a quarter of a century ago, was told by Robert Vincent at whose request Colonel Roosevelt made the speech. Vincent was being interviewed by Jerry Danzig of the WOK Press Section.

are co-operating with him in this respect. "Kipling wrote in his latest book 'Gramophone records of good men would be more helpful to education than bushels of printed books.' That expresses our sentiments exactly," said Mr. Reeves. He continued: "We will shortly be able to release for a special series of radio broadcasts and for use in schools and homes, records of the actual voices of such past leaders of American Life and American Culture as William McKinley, Garrett A. Hobart, William Jennings Bryan, Phineas T. Barnum, Woodrow Wilson, John Wanamaker, Thomas A. Edison, William Howard Taft and scores of others. Also the present leaders of current thought in all fields, we hope, will make recordings for us, so that their voices may be preserved for posterity. Permanent copies of all these records will be kept in the archives of the Library of Harvard University."



## HOW TEDDY ROOSEVELT'S VOICE WAS REJUVENATED

*Scene in the Reeves Sound Studios, where the 25-year-old cylinder record is being reproduced with its tones revitalized on a wax disc. The device for replaying the old record (indicated by arrow) is shown on the small centrally located table. The operator in the foreground is monitoring the feeble sounds produced by the old record. The amplifier in the background is strengthening these tones, while the second operator watches the delicate cutting of the new disc.*

## "TEDDY" SPEAKS AGAIN

Since then, letters and cards have been pouring in from all sections of the country stating how much the audiences enjoyed that program and asking for more features of that nature. Many friends of Theodore Roosevelt said that the voice of this greatly beloved American, as heard by them on the radio, was unmistakable and characteristic.

The electrical reproduction of T. K.'s voice was made at the Reeves Sound Studios, 1600 Broadway, New York. Accordingly our news reporter and photographer proceeded to these studios, to bring you pictures of the equipment used in the transcription of this record. Mr. H. E. Reeves stated that his company is now working on many similar ventures and that the Edison Laboratories in New Jersey

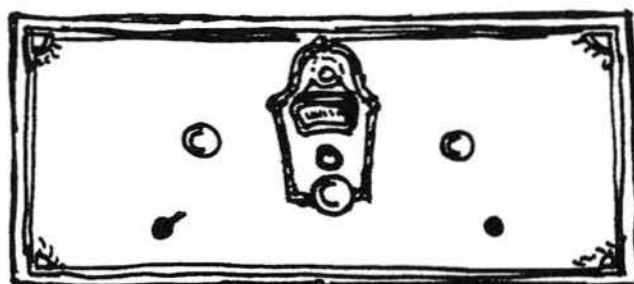
## USEFUL, EDUCATIONAL PROJECT

This is an interesting and most useful project and will not only be entertaining but may do much for educational purposes. One will be able to sit by one's own fireside and hear Bryan give a discourse on Immortality or Taft suggest a solution to the difficult Labor Question. Classes in science will be able to listen to Thomas A. Edison himself tell about the marvels of electricity and history students can actually hear Calvin Coolidge welcome home that intrepid flyer who succeeded alone in a single motored plane in completing the first non-stop flight from New York to Paris. Also that flyer's story of his reception in Europe spoken by himself is one of the records in this series. Surely, this is a step in the right direction and it is not surprising that one of the late Thomas A. Edison's closest associates recently said: "Reeves has done a wonderful work in these transcriptions. He is doing his share for the technical advancement of the heritage left us by Mr. Edison."

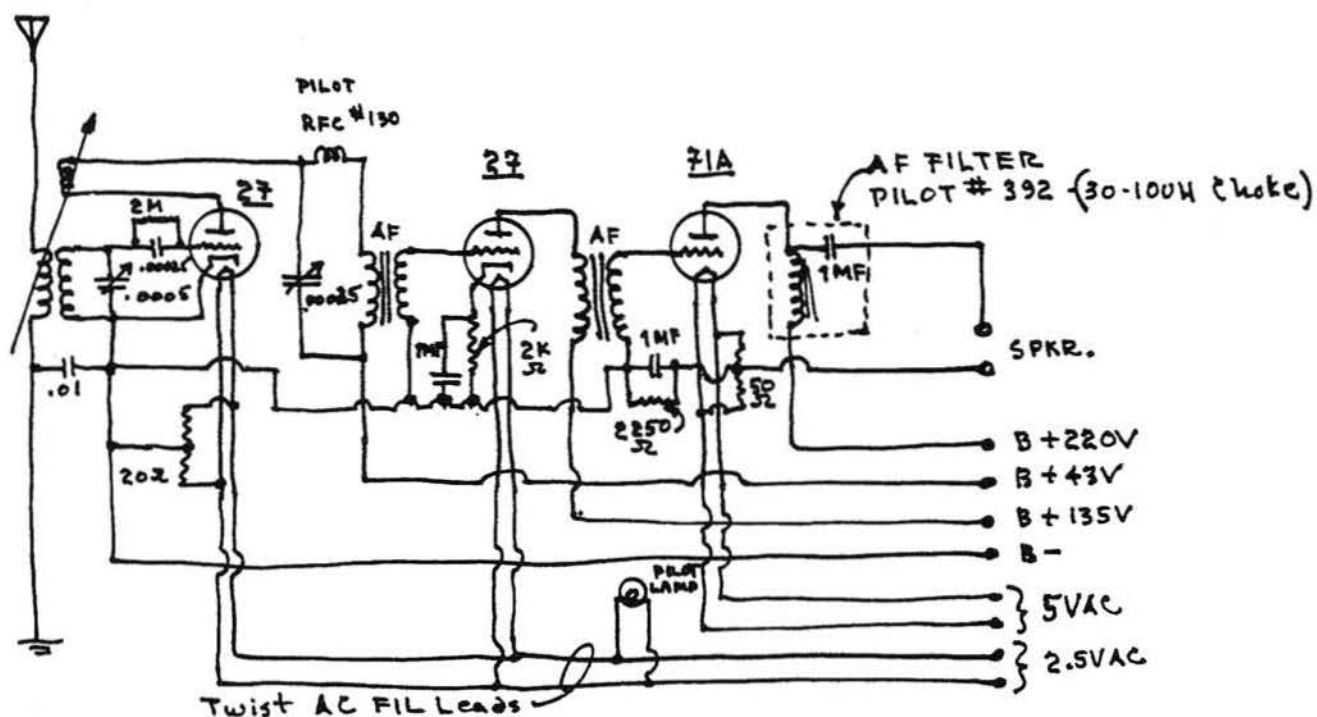
A graduate Mechanical Engineer of Georgia Tech and Brooklyn Polytechnic, Hazard E. Reeves became research engineer for the Columbia Phonograph Co. and later recording engineer for the Stanley Recording Co. He has been consulting engineer for many well-known firms and Director of Recording for the Harvard University Film Foundation. He is now president of his own Laboratory and technical adviser to the Omnivox Company.



PILOT A.C. THREE - 1929

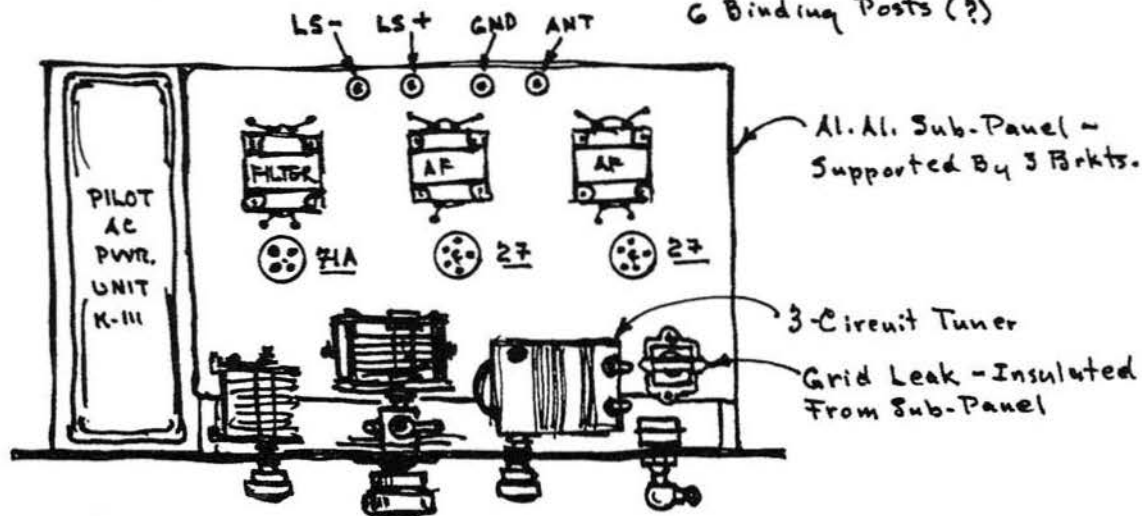


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