CHRS official
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HAPPY NEW YEAR

Feature Set: RADIOLA 20 • COLLECTOR SPOTLIGHT: Bill Wakefield
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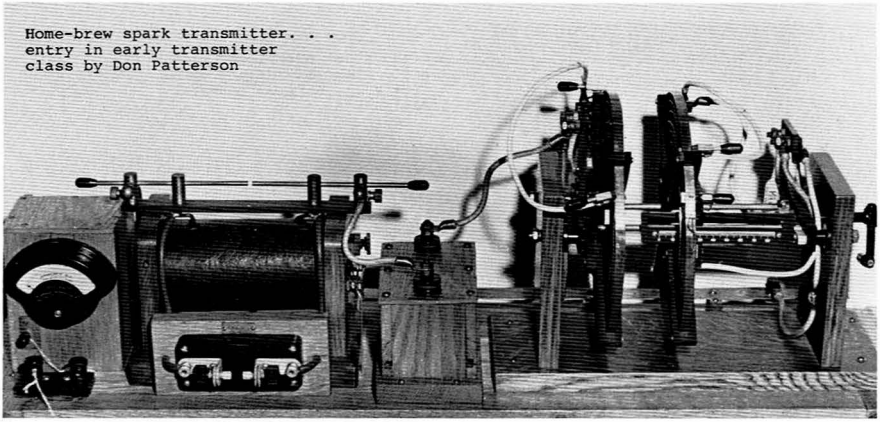
THE SOCIETY: The California Historical Radio Society is a non-profit corporation chartered in the state of California, and was formed to promote the restoration and preservation of early radio and radio broadcasting. Our goal is to provide the opportunity to exchange ideas and information on the history of radio (in California especially). We hope to be of service to those interested in such areas as collecting of equipment, literature and programs, etc., and restoration of early gear. Regular meetings and swap meets are scheduled at least four times a year, in the San Jose area. We now have over 130 members from throughout the state (and a few from out-of-state). As we grow, so do our benefits to our members. Tell your friends about us!

The Official Journal of the California Historical Radio Society is published quarterly and is furnished free to members. Our first issue was published in September 1975, and copies of early issues are still available; the first issue is $2.00, others are $1.00 each. Articles for the Journal are solicited from all members. Any items of interest, such as restoration hints, information on early radio broadcasts and personalities, anecdotes about the pioneers, etc., will be gratefully accepted. Anyone interested in editing a section of the magazine on a full-time basis should contact the editor. This can relieve our editor of a great deal of work and insure maximum attention to your area of particular interest.



Home-brew spark transmitter. . . entry in early transmitter class by Don Patterson

1978 AWA CONFERENCE

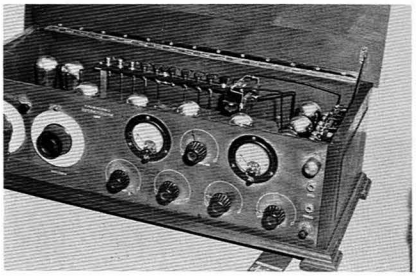
by Dave Brodie

It's difficult to believe that a year has rolled around since the 1977 National Conference of the Antique Wireless Association. Nevertheless here is what can only be a brief summery of the expanded 1978 Conference held in the resort town of Canadaigua, N.Y. during the four days ended Oct. 1, 1978.

PROGRAM: The Association adopted the theme "World War I Radio Stations and Signal Corps Gear." Several movie and slide presentations were presented relating to that period. These included a rare movie of WWI super-power transatlantic stations, a slide show depicting the conversion of spark and crystal sets to tube equipment, a new AWA show covering early amateur operations and the founding of the American Relay League (this program included a "visit" to an Air Corps Signal School and a discussion of WWI aircraft receivers and transmitters). Other programs covered the history of two famous early stations, NBD and WSL, each of which is the subject of a fascinating story of war-time operations. In addition to the "Theme" programs, the membership enjoyed other outstanding presentations, including: the story of the brilliant television inventor Philo Farnsworth, a brief history of RCA (GE) tube development from the late twenties to the present (supported by a spectacular display of tubes), and a brief history of the Federal Telephone and Telegraph Company.

AUCTIONS: Two auctions were held, one for general equipment and the other for tubes. The equipment auction grossed about $11,000 and the tubes grossed about $2,000. These annual auctions help maintain the AWA Museum, since 10% of the gross receipts are deposited in the museum fund. It may interest you to scan a few of the items sold:

EQUIPMENT: Federal Jr.-$125, Federal 57-$325, Steinite crystal-$95, AK sign-$225, Zenith 4R-$200, WE horn-$75, RCA 100 speaker-$15, Grebe CR12-$400, Crosley 52-$62, RADA-$90, Pilot TV-$100, Radiola 5-$190, Federal 61-$450, Sparton TRF-$22, Crosley Pup-$120, Duck catalog 1920-$33, Elect. Import Co. cat. 1919-$27, Radiola III and Balanced Amp-$90, AK 10-$285, Crosley 5-$100, Telegraphone Wireless Recorder-$475, Radiola 18-$25



A super-het described in an early issue of Popular Mechanics . . . entered by Mark Kaplan

TUBES: Spherical audion (no fil.)-$75, Meyers-$36, WE 205D-$6, Telefunken RV-25 (new)-$17, Mercury rect.-$95, Moorhead ER (no fil.)-$30, C-300 brass, tip-$9, WE 216A-$14, Marathon tube-$9, UX200 (new)-$6

EQUIPMENT CONTEST: Ten classes of equipment were established which attracted 92 entries. Marconi equipment captured first place in the "Prior to WWI" category and also in the "WWI Receiver" category. Other winners: Crystal sets - US Army Signal Corps BC14A, Regenerators - Sterling two tube, Superhets - Norden Hauck C-10, TRF - Priess, Other Receivers - Freed-Eisemann, Transmitters - DeForest OT3, WWI Transmitters - Air Communications, Equipment Associated with WWI - Audion control box, Best in Show - French receiver used at WWI transatlantic station NBD (Otter Cliffs, Maine). This set is owned by John H. Caperton.

GENERAL COMMENTS: The 1978 Conference was surely one of the most successful ever held by AWA, as is evident by a record attendance of about 600. The banquet on Saturday evening attracted a capacity crowd of 312 and the flea market was invaded by dozens of cars, vans and trucks, which started to arrive three days before the scheduled opening date of the Conference. Once again we commend our member Bruce Kelly for his continued assistance in making the 1978 AWA National Conference such a remarkable success.

prices by Paul Giganti
photos by Bruce Kelly, AWA

One day in the 1830's, Samuel F. B. Morse was caught out in a rainstorm without his hat on, and he fell briefly ill. While recovering in bed, Morse devised a system for sending messages by blowing his nose in a series of dots and dashes. He named his creation the "Morse cold" in honor of the inflammation that had inspired him. However, listeners understood him to call it the "Morse code". For a time, only communicators with respiratory ailments could be employed to send "Morse code" until the inventor found a means of sending the dots and dashes electrically. -- SF Examiner

Coming events

The Winter CHRS swap meet will be held on Jan. 27, 1979 (Saturday), from 9:00 to 4:00. The location will be Gish School, 711 Gish Road, San Jose. Admission is 50¢ per member, tables are free. This meet is being advertised on KMPX 99FM, the "Big Band" station.

The CHRS/AWA Spring meet will be held at Foothill College on May 5, 1979. More information on this meet will be available in the March issue. Volunteers are needed. Contact Norm Berge, 1275 Quincy Drive, San Jose, Calif. 95133, (408) 251-7773.

Antique Radio Prices and Their Phenomenal Escalation

by Paul Giganti

In a way I feel partly responsible for today's high prices on old radios. When I first began to collect, I made up my mind to accumulate a collection in a hurry. So I decided to pay high prices in order to attract the gear; such as $5.00 for a Grebe Synchrophase (my first set), $3.50 for an Aeriola Senior, $50.00 for an IP-500 (a fantastic price), and $15.00 for an AK Breadboard. This really blew the market and sellers began to realize the value of the treasures in their attics.

I met Harold Greenwood about 20 years ago when I first became interested in the old gear. Harold had already been collecting for several years and had just begun work on the Greenwood Book, the first ever written on Antique Radio and Wireless. You probably know the book as Vintage Radio, the title given it by Morgan McMahon when he took over the revision and reprinting of the book. I recall vividly a trade I made with Harold. He had been looking for a Radiola Special, a one-tube Regen receiver, and I had the good fortune of finding one. So I went down to see him and set the radio on his desk. He went into his garage where the floor was literally covered with his duplicates. He pointed to a Kennedy 110 and asked me if I thought that would be a fair trade. I was so shocked at such a fabulous offer that I stuttered a little. He took this to mean that I was not satisfied, so he kicked a Grebe CR-8 and said, "How about adding this?" Then I was really flustered and started to say,"Do you mean I can have both?" He pointed to a CR-5 Grebe and said he would throw it in also. I pulled myself together and said, "Yes".

A few years later, Bill Traver and I purchases the Greenwood collection. We acquired almost everything in the book, a total of about 300 pieces, including all the tubes for the receivers. We did not get the tube collection. This was purchased by Floyd Lyons, an active light bulb collector who was beginning to take an interest in radio tubes. The price of the collection was $3000 or $10 per unit. Mind you, this included Marconi, DeForest, RCA, Grebe and at least five AK breadboards. Overnight I became a poor-man's Glen Streeter. I kept what I wanted and readily disposed of the rest. I even sold a DeForest tuner to the Smithsonian Institution.

I recall another incident which occurred during the depression. A friend and I walked into a junk shop in Chicago and spotted a Grebe CR-8 receiver. The price was $1.00, so we chipped in 50¢ each, took the set home and sawed it in half. I wanted the variocoupler for a crystal set and he took the rest. Today I would be shot for such a sacrilegious act.

The price of antique radios is determined by several factors:

1. How anxious the buyer is to possess the object.

2. How reluctant the seller is to part with it.

3. Then there is inflation.

We do, however, have guidelines;

such as previous experience. For instance, if a radio is priced at $100 and does not sell, obviously the price is too high. In a few exceptional cases, raising the price might cause it to move. Some buyers are not attracted to a piece that is, in their opinion, too "cheap".

Some sets, for no apparent reason, seem to sky-rocket in value. One of these is the Atwater-Kent Breadboard. Today, this is a very popular set and in extreme demand. About 5 years ago I had 12 breadboards in my garage, priced at $35.00. They did not move. Nobody seemed interested in them as they were too "modern". Finally they went, one by one. Last month I was broker on a sale of an AK model 5. The price: $1320. What happened to cause this sudden jump in value of a set that not too many years ago sold for $85.00? I can tell you why. A collector in Illinois had a duplicate AK-5 which he was holding for trade. A certain collector in Lodi, California made him an offer he could not refuse. $1000, at that time the highest price ever paid for an AK Breadboard. This set a precedent. From then on, any collector with an AK-5 would take no less. I ask you, who is to blame for this state of affairs, the buyer or the seller?

At this point I would like to say something in defense of the dealer one of whom, because I have to eat, I happen to be. Some collectors take a dim view of dealers in our hobby and tolerate them as a necessary evil. I once visited a collector who told me that I was not a good collector because I sold things. I pointed to a Radiola III on his shelf and asked if he would take $1000 for it. He said, "Yes." So then I told him that the only difference between us was that his price was higher than mine.

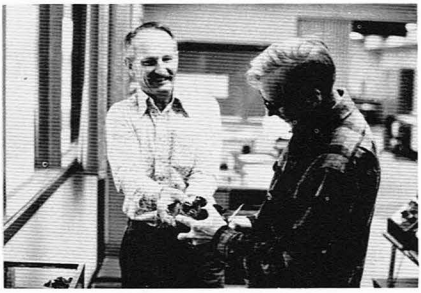
To a lot of collectors, a dealer's prices seem high. Let me say something in this regard. Let us take a hypothetical case. A dealer hears about a collection for sale through the grapevine. He spends $40.00 on phone calls. Then he buys a plane ticket and spends two or three days inventorying the collection and arriving at a price. In the meantime he must put up at a motel. If the deal goes through he hires a moving van and several helpers; then proceeds to drive across the country. Arriving at the home base, he rents several garages for storing and sorting. Some of the sets are very good and some are three dialers. And you know how they go. I forgot to mention the loan at the bank, with a substantial rate of interest attached. Then he sits back and waits for customers to break down his door.

Speaking of three dialers, don't sell them short. Some of them are quite beautiful and can make a good addition to any collection. Some collectors, especially the new ones, are turning up their noses at the three dialers. All they want is Marconi, DeForest, Atwater-Kent Breadboards, etc. I'm afraid they are in for a disappointment. They might be passing up a good deal, as prices on three dialers are as yet not affected by inflation. It is possible to pick up a good three dialer for as little as $35.00 to $75.00.

In conclusion, I would like to tell you a true story. It happened in Holland over a hundred years ago. Holland, as you know, has always been famous in a commodity market similar to our Board of Trade. People were mortgaging their homes and buying tulip bulbs on speculation. Soon the price reached $2000 for a single tulip bulb. One day, during the town meeting, a wise old man got up and said, "Folks, let's face it, no tulip bulb is worth $2000." At that moment the tulip market collapsed and a great many people lost their shirts. Wouldn't it be nice if some wise old man would get up and say that no old radio is worth $2000?

September Swap Meet

These photographs of our September meet were taken by George Durfey.



by Don Stoll

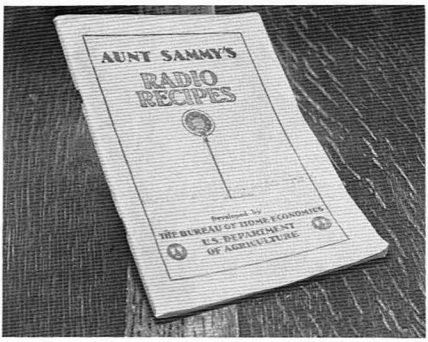
As a newcomer to the fraternity of early-radio buffs, I have suddenly reached the first plateau . . . which is the deflating realization that bargain-priced "good" radios of early vintage are not stumbled across as easily as I had hoped. It seems like all the local antique stores are "picked over" regularly and often are allied with a mysterious collector/restorer/repairer of antique radios. The antique flea markets seem to always have a squad of undercover collectors combing the stands repeatedly for treasure radios. And the local newspapers are slim pickin's at best.

To alleviate the "no radio blues" (after wasting two hours examining countless flea market stands with not one find), I have found relief in collecting amusing or amazing novelties that capitalized on the public radio boom of the 20's and 30's.

I'm not sure whether novelty radios (radio-clocks, radio-lamps, radio-toys, etc.) should be classified as radio novelties or considered a separate category of collector items.

Any comments or suggestions would be appreciated. Address to: Don Stoll, c/o Foundation XIV, 2245 Old Middlefield Way, Mountain View, Calif. 94043.

Below are two recent finds. "Aunt Sammy's Radio Recipes" cost $1.25 and the "Radio Ribbon" probably cost about $1 (part of a package deal). So novelties seem to be cheap entertainment at least, and reasonably plentiful compared to radio sets.



86-page soft bound booklet, 6"w X 9"h, printed in 1927. First page has footnote that explains: "Aunt Sammy's Radio Recipes is in no sense a complete cookbook. It is issued to meet the enormous demand for printed copies of the most popular recipes broadcast from October 1926 to June 1927, in the "Housekeepers' Chat" programs of the radio service, United States Department of Agriculture." About 300 menus offer items from Quick Turnip Soup to Orange Russe. Hopefully there are a few gourmet "finds" in these pages. I'd like to know who announced the Aunt Sammy role.

Wooden spool 1-3/4" dia. X 3" h. with 100-feet (I haven't checked length) of what appears to be gold-strand woven ribbon about 1/4" wide by 0.020" thick. About 20 strands of bright gold foil or leaf sewn and/or woven with yellow thread. No date on cardboard tube package or instruction sheet. Instruction sheet says:

> "RADIO RIBBON, The Perfect Aerial for Indoor Use, made by HY-SIL MFG. CO., Revere, Mass. . .ideal for both crystal and tube sets. . .a striking combination of ornament and utility. . .unusually efficient for long distance reception. . .may be used as a loop, either of the helix or solenoid type.

Building a Spark Transmitter

by Joe Horvath W6GPB

Do you have an old Spark Transmitter in your collection? If not, then I don't think that your collection is complete!

Spark Transmitters and the old Mineral Detectors were the oldest type of radio gear ever used. So if you want your collection to be a real representative one, then the old Spark Transmitters and Mineral Detectors are what you want in your collection.

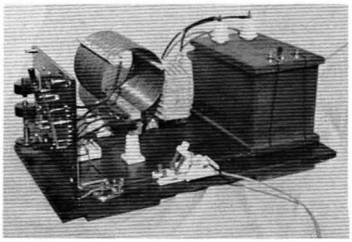
This article is about how I built myself an old Spark Transmitter out of parts that were just laying around and at times in my way!!

Many collectors are laboring under the opinion that old Diathermy machine parts are not suitable for old Spark Transmitters. Nothing could be further from the truth.

The biggest bet that collectors are missing is all of the old spark type Diathermy machines that are around. These Diathermy machines had very excellent parts in them, especially the spark gaps. Victor and Fischer were two that manufactured these machines; they also marketed many of these same components to the old spark radio operators.

For several years I had a beautiful Victor Marble panel, 12" X 16" in size, on which were mounted a beautiful spark gap, a double pole double throw high/low potential switch, a switch lever with six tap switch points, antenna and ground terminals. With the exception of the spark gap, all of the parts are beautiful polished brass.

This marble panel then became the nucleus of a Spark Transmitter that would enhance anyone's collection.

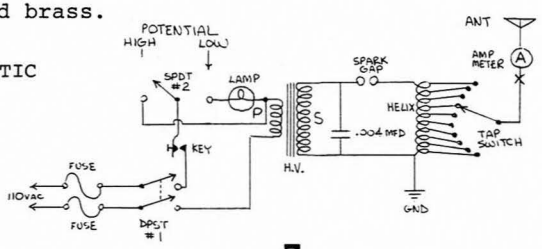


Warning! These Spark Transmitters are illegal to use on-the-air!!!

PARTS LIST:

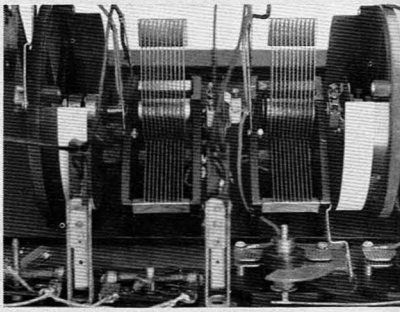
- .One Porcelain screw type fuse holder.
- .two thirty ampere plug fuses.
- .Switch #1, DPST porcelain knife switch.
- .one sending key.
- .Switch #2 SPDT mounted on marbel panel, high/low potential switch.
- .one porcelain type light bulb holder, for dropping the voltage to cut power.
- .High voltage transformer, any make will do; mine is a Packard Electric 13,000 volts at 1/2 KW rating.
- .Mica transmitting condenser, 004 MFD. at 12,500 working volts or better.
- .SG spark gap, adjustable gap, could be rotary spark gap also.
- .Helix coil -- any well-made copper coil will do that can be tapped.
- .Antenna tuning tap switch and lever, heavy duty points.
- .X-loading coil or heavy duty variometer to increase the wavelength; it would depend on the length of antenna that would have been used.
- .0-Hot wire amp-meter.

SCHEMATIC



RCA Radiola 20

by Floyd A. Paul

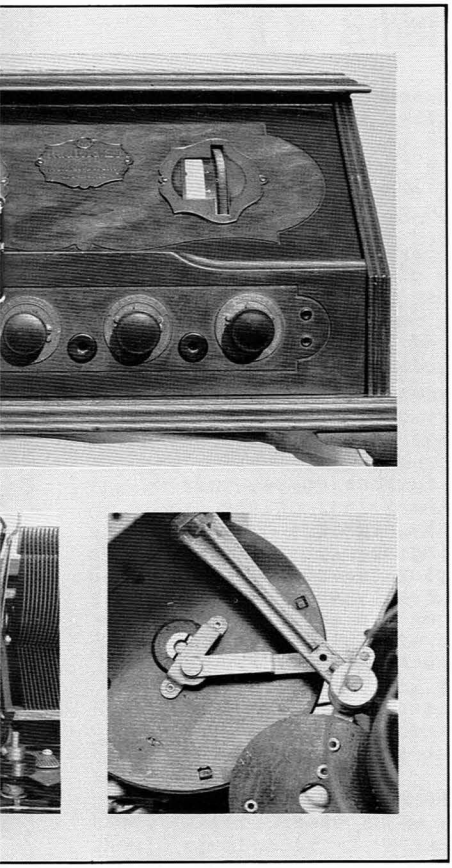


GENERAL DESCRIPTION: Radiola 20 is a five tube broadcast receiver which provides very high sensitivity and selectivity for its design period. It was made in 1925. The set contains two stages of TRF amplification, a detector and two stages of audio. It also contains tickler-controlled regeneration. The three ganged condensers mounted on one selector drum are of the straight line frequency type. Original RCA literature on the set recommended using the Radiola Model 100 or UZ-1325 as loud speakers for the Radiola 20. The original set instructions recommended a 4-1/2V "A" battery, three 45V "B" batteries, and a "C" battery. The set uses four UX-199's and one UX-120. The dials, knobs and jacks on the front of the cabinet are all exposed and easy to operate. The front panel controls are as follows: Station Selector Drum, Amplification Drum, 1st RF Stage Vernier, 2nd RF Stage Vernier, Battery Setting and Volume. The three front panel jacks were: 1st Stage AF, 2nd Stage AF and Voltmeter Fins. The set sold in 1925 for $180 and had the additional model designation of AR-918.

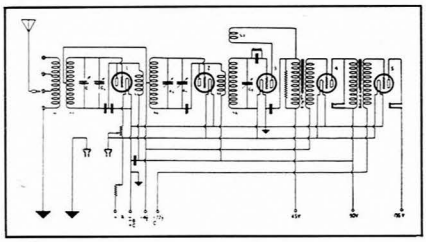
TUNING: All tuning controls work very smoothly and effectively. The set is quite selective and the movement and the rotary motion feeling of the controls is among the nicest of any early model battery sets. The sloping panel of the cabinet allows one's hands to rest on the panel while the fingers tune the Station Selector dial or control the regeneration. A solid, smooth Rolls Royce tunity quality and feeling is experienced when operating the Radiola Model 20 set.

BATTERY VOLTAGE AND VOLUME CONTROL KNOBS: The Battery Knob adjusts the voltage to all filaments but a Volume Control is also in series with the 1st RF tube and is used as the primary control for volume. The battery adjust rheostat is six ohms and the volume control is 20 ohms. The six ohm battery rheostat varies the 3V supply from 3V down to 0.8V. When the six ohm rheostat is turned to maximum voltage, the volume control varies the E_f of the 1st RF tube from 3V to about 1V. Both Battery and Volume Controls have more than enough adjustment for extreme variations.

SELECTION OF UX-199's FOR OPERATION: In getting the set to play and in selecting the UX-199 tubes, the placement of tubes in specific sockets seems somewhat critical. Again, as in the two featured set articles reported in the last two CHRS journals, the detector



tube circuit is more tolerant to weak tubes so that UX-199's with weak emission can be used fairly successfully in the detector socket. Also, microphonic tubes became annoying in the playing of this set. Part of this is due to the common bakelite strip which mounts all five tubes and gives no shock or vibration damping to any of the tubes with respect to each other, even though the whole bakelite strip is, itself, shock mounted from the chassis by rubber grommets. But, by rearranging several UX-199's, a minimum of microphonics was found.



BIAS SUPPLY AND PLATE VOLTAGES: The bias supply available for these tests was a -10V supply, so several supply arrangements were made to see the effects since the schematic called for a -4.5V bias and a -22.5V bias. First, the -4.5V bias point was grounded and the -10V applied to the UX-120. This worked fairly well. Both set bias points were tied together and the -10V bias was applied. This heavy bias on the RF and 1st audio tubes biased the tubes to near cut off and considerably reduced volume was obtained. The best operation came by dividing the bias supply in half with a resistor network and applying -5V to the -4.5V point and applying -10V to the -22.5V point on the set. A Cunningham tube manual of 1933 recommends a bias of -16V for an E_p of 135V. In my tests the higher plate voltages of up to 150V to the UX-120 did not produce additional power output, and so a plate voltage of 60V was used in my operating tests. The I_p of the UX-120 was limited to 2 ma. which was also the current through the horn speaker. The UZ-1325 horn speaker has 2,000 ohms and produced a 4V drop in the plate circuit of the UX-120. The horn speaker was also tested in the 1st audio stage jack and on strong local signals fairly good volume was obtained from the horn.

The detector worked well at E_p voltages of 30 to 50 volts. At 25 volts and lower the volume of the detector fell off. An E_p of 40 to 70 volts worked well on the RF and audio tubes. Higher voltages of 80 to 100 volts did not cause any better performance. At 60V, 4 ma. was drawn by all RF and audio tubes.

(Continued on next page)

On Restoration

by Dave Brodie

A Timely Reprint from an Editorial in the September 1978 Bulletin of the British Vintage Wireless Society.

Restoring and researching a piece of equipment alone can be no easy matter and all collectors are reminded that the third aim of the Society is preservation not renovation. This does not mean that renovation or restoration is a bad thing. Our emphasis is on preservation, and we consider that this must take precedent in all cases. Time and again, important equipment has been ruined by the enthusiasm of the do-it-yourself restorer -- and not only in the wireless line! If you have what appears to be a unique item, it is all the more important that you postpone restoration until all the facts are known. Even if your item is not unique, you may get great personal pleasure from "working on it," but try to remember posterity! If in fact the BVWS does not constitute a "museum" of a distributed kind, then we should try to adopt the attitudes of a good museum keeper -- we should look after things and find out what we can about them before passing them on to the next generation. We don't want to pass on a lot of well polished "fakes," or find ourselves in the embarrassing position of fellow collectors showing no interest in our prize exhibits simply because they are over-restored. The exhibition at the Victoria & Albert Museum last year showed that BVWS collectors on the whole are well aware of these principles.

In further correspondence with the Editor of the BVWS, he aptly stated: "The first exciting days of collecting and restoring for new members seem to be really quite destructive! Surfaces are scraped and revarnished with all sorts of modern polyurethane materials, etc. -- but in time collectors see the mistake of doing this and begin adopting the conservationist's approach."

CHRS adds its "Amen" to the above.

RADIOLA 20 (cont'd.)

MECHANICAL CONSTRUCTION OF CHASSIS AND PARTS: The chassis and parts layout is orderly and well thought out. The three gang, straight line frequency condensers are separated enough to add in the reduction of RF coupling between the RF stages (fig. 2). The structural aspects of the chassis, mounting flanges, coil mounts, tube mounts, etc. are rigidly designed and mechanically sound. The tickler controlled regeneration wheel is uniquely designed to roll the tickler coil smoothly and effectively into and out of the coupling coil's magnetic field (fig. 3). The set is extremely well built mechanically.

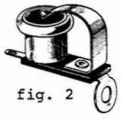


fig. 2

Small Grid Bias Cells

by Allan Bryant

Many receivers of the 1930's employed Duo-diode triodes with high mu factors, such as the 75 and 2A6. These were used as a combination second detector, AVC and first audio. The triode requires a low negative bias and has a low plate current. Furthermore the contact potential at the grid is unusually high for a new tube (about +.9V), gradually decreasing with age. Contact potential is defined as that point where positive grid current starts to flow (fig. 1). Contact potential is caused by the initial velocity of emission of electrons from the cathode and an electro-thermal effect due to the differences in temperature and in material composition of the grid and the cathode.

fig. 1

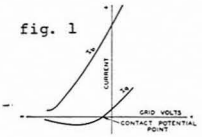
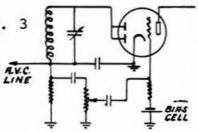


fig. 3



This introduces two difficulties. First, these tubes should operate at -2 volts C bias. If the bias is originally set at -3 volts to overcome the contact potential of +.9 volts, eventually the tube will be over-biased. If the bias is produced automatically by a cathode resistance, the latter would have unusually high resistance for an audio tube. Unless extremely high capacity shunt condenser, which are expensive, are used, considerable AF degeneration (loss of signal strength) will occur. Much of this difficulty is eliminated by the Mallory grid bias cell, shown in fig. 2. This cell is acorn shaped, about 5/8" in diameter and 11/32" deep. It is an electrolytic cell which originally has a no-current potential of 1 volt, and if charged by a current will have a potential not exceeding 2 volts. It holds its charged potential for about 48 hours, gradually dropping to normal.

A typical circuit to overcome the effects of degeneration and varying contact potential is shown in fig. 3. For a new tube, the cell which is in the grid circuit with a grid resistor, cancels all the + contact potential, leaving a net C bias of about -.1 volt. On a strong signal, grid current flows momentarily, charges the cell to -2 volts, and the net bias is -2+ (+.9) = -1.1 volts. As long as the signal does not exceed this value, normal action takes place. Momentary excessive grid signal only recharges the cell. As the tube ages, its contact potential drops and more of the cell voltages are usable. Thus with aging of the tube, it will handle stronger signals. Inasmuch as the cathode C bias resistor is no longer used, degeneration is obviously eliminated as a problem.

These cells were said to have an unlimited life, and the cost of the cell more than balanced the need of cathode bias by-pass condensers. You will find these cells employed in many Stromberg Carlson and later model Spartan receivers.

The problem we collectors encounter today, is what to do with the old cells. If your set has the cell intact, measure its potential with a voltmeter. Most likely it will be dead. Jim Cirner and I have had good luck in rejuvenating dead cells, by letting them soak in rubbing alcohol for a few minutes. This procedure will rejuvenate most cells to approximately 1.2 volts. If this method doesn't work, or if you're missing the cell, try replacing it with an AA cell (1.5 volts). Be sure to observe proper polarity when wiring it into the set.

Parts of the preceding article were taken from "National Radio News", February/March, 1936.

Bill Wakefield

I have been collecting in a somewhat serious vein for about three years. At first I was what might be termed a "general collector". Recently, however, my collection and interests have focused on the period of early broadcast (to 1924) plus some wireless components. For balance I do maintain a few examples of typical sets made up to 1940. Books, catalogs and magazines are an equally important part of collecting to me, as the enjoyment derived from reading them is considerable.

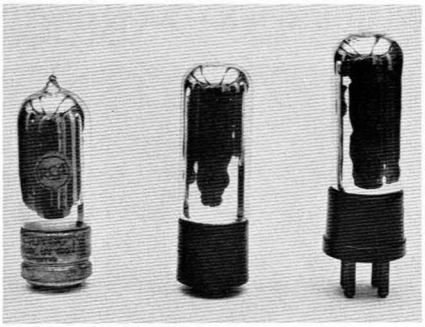
I would be hard put to pick a favorite set. The pieces in my collection fit a theme and each one is as important as each piece is to a puzzle. Paragon and Grebe items do evoke special interest, though.

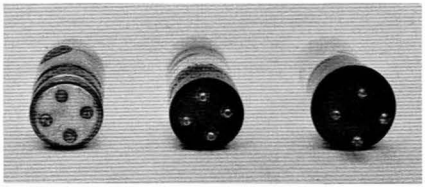
Visitors are always welcome, and I always appreciate invitations to visit other collectors.

The 199 Tubes

by Russ Winenow W6AVG

The Cunningham tube manual of 1934 described the V99 and the X99 as being 3 electrode general purpose tubes designed for dry cell operation. The two types had different bases (fig. 1 and 2). The long contact pins of the X99 fit the standard four contact socket, the V99 fits only the small shell socket with bayonet slot. The standard four contact socket mentioned was the type having accommodations for four long pins, two of which were heavier than the others. The 99 was designed for use as an audio or radio frequency amplifier. Note that the X99 and V99 have different internal connections (fig. 3).





Gerry Tyne gives us a run down on the development of the 199.

1920 GE supplies Phillips of Holland with machinery to manufacture tubes.

1921 GE produces the first thoriated filament.

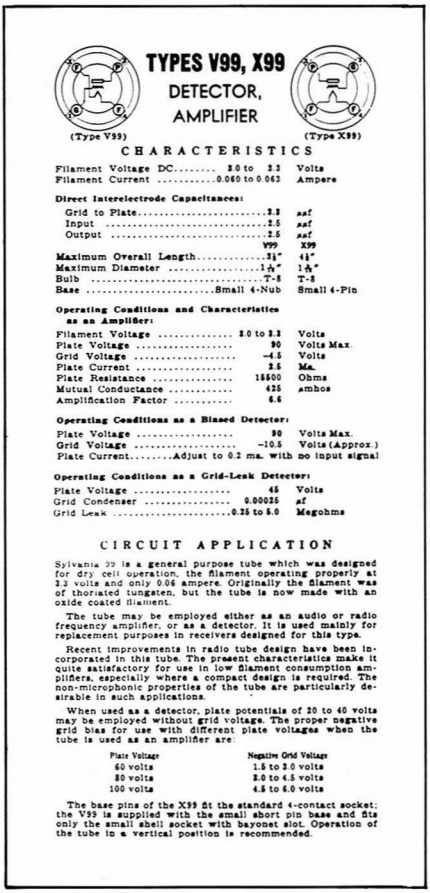
1923 Tubes by Phillips appear in the US market labeled "Star tubes" and marked model 199. RCA complains and GE files suit. In settlement Phillips agrees to stay out of RCA's territory.

1924 The tipless version appears.

1925 UV199 superseded by the UX199 (same tube but with different bases and filament connections). The UX120 was developed in response to demand for higher outputs.

1927 GE brings out the 230D and the 231D for use in the same applications as the UV or UX199. The 230 base matched the old 199 and the 231 the new.

References: Gerry Tyne, in the "Saga of the Vacuum Tube," published by Howard Sams, 1977. RCA Tube Manual, 1932. Cunningham Tube Manual, 1934. Sylvania Tube Manual, 1935.



TYPES V99, X99
DETECTOR, AMPLIFIER

(Type V99) (Type X99)

CHARACTERISTICS

Filament Voltage DC	3.0 to 3.3		Volts
Filament Current	0.060 to 0.063		Ampere
Direct Interelectrode Capacitances:			
Grid to Plate	3.8		mmf
Input	2.6		mmf
Output	2.5		mmf
	V99	X99	
Maximum Overall Length	3¼"	4¼"	
Maximum Diameter	1 9/16"	1 9/16"	
Bulb	T-8	T-8	
Base	Small 4-Nub	Small 4-Pin	
Operating Conditions and Characteristics as an Amplifier:			
Filament Voltage	3.0 to 3.3		Volts
Plate Voltage	90		Volts Max.
Grid Voltage	−4.5		Volts
Plate Current	3.5		Ma.
Plate Resistance	15500		Ohms
Mutual Conductance	425		μmhos
Amplification Factor	6.6		
Operating Conditions as a Biased Detector:			
Plate Voltage	90		Volts Max.
Grid Voltage	−10.5		Volts (Approx.)
Plate Current	Adjust to 0.2 ma. with no input signal		
Operating Conditions as a Grid-Leak Detector:			
Plate Voltage	45		Volts
Grid Condenser	0.00025		mf
Grid Leak	0.25 to 5.0		Megohms

CIRCUIT APPLICATION

Sylvania 99 is a general purpose tube which was designed for dry cell operation, the filament operating properly at 3.3 volts and only 0.06 ampere. Originally the filament was of thoriated tungsten, but the tube is now made with an oxide coated filament.

The tube may be employed either as an audio or radio frequency amplifier, or as a detector. It is used mainly for replacement purposes in receivers designed for this type.

Recent improvements in radio tube design have been incorporated in this tube. The present characteristics make it quite satisfactory for use in low filament consumption amplifiers, especially where a compact design is required. The non-microphonic properties of the tube are particularly desirable in such applications.

When used as a detector, plate potentials of 20 to 40 volts may be employed without grid voltage. The proper negative grid bias for use with different plate voltages when the tube is used as an amplifier are:

Plate Voltage	Negative Grid Voltage
60 volts	1.5 to 3.0 volts
80 volts	2.0 to 4.5 volts
100 volts	4.5 to 6.0 volts

The base pins of the X99 fit the standard 4-contact socket; the V99 is supplied with the small short pin base and fits only the small shell socket with bayonet slot. Operation of the tube in a vertical position is recommended.

BIOGRAPHIES

The following biographies are those of our new CHRS officers.

FLOYD PAUL, Technical Editor: Floyd Paul is an Electrical Engineer who has spent 27 years in Aerospace -- the last 15 at the Jet Propulsion Lab in Pasadena, as Manager of Reliability Programs Section. He worked on most JPL space programs, designing and testing launch hardware. Floyd repaired radios and installed car radios in 1939-41 while in high school. About five years ago he started his collection of battery and AC sets. He is a ham, W6THU, and holds two commercial licenses. Floyd enjoys the restoration of sets and collecting old literature. He is a member of AWA, SCARS, and Edits/Publishes the Roaring Twenties Newsletter.

ALLAN BRYANT, Editor in Chief: Allan Byrant is an Engineer with Amdahl Corporation in Sunnyvale. He works in the System Test Department, testing and debugging large digital computers. Allan has been collecting actively for the past three years. He has a small collection of crystal, battery and AC sets. Allan is a deadicated flea market scrounger.

RUSS WINENOW, Tube Editor: Russ Winenow started collecting in 1919. One of his first was a DeForest spherical audion which he bought from a classmate in high school along about 1920. He became a licensed ham operator in 1921. He worked for some years in the jewelry business; then during and after the depression was an office worker for the state. The war years were spent in the shipyards. After the war he did commercial radio repairing (having passed the exams for radio telephone first and telegraph second) for the EMMCO Electric Company of San Francisco. Leaving there in 1948, Russ went to work for the Robert Dollar Company (Heintz & Kaufman Division of Globe Wireless). This association allowed him to acquire various transmitting and experimental tubes which had served their purpose and were no longer required by the factory. Leaving H & K in 1952, he went to work for Lenkurt Electric Company in San Carlos, retired in 1969, returned to work on contract, and is still at it. Russ scours garage sales and flea markets as often as he can. He is a life member of the IEEE, member ARRL, AWA, QCWA, was secretary of the Lenkurt Amateur Radio Club for ten years, is licensed Amateur Advanced W6AVG, Citizens Radio KDU 8597 and Commercial Radio Telephone First.

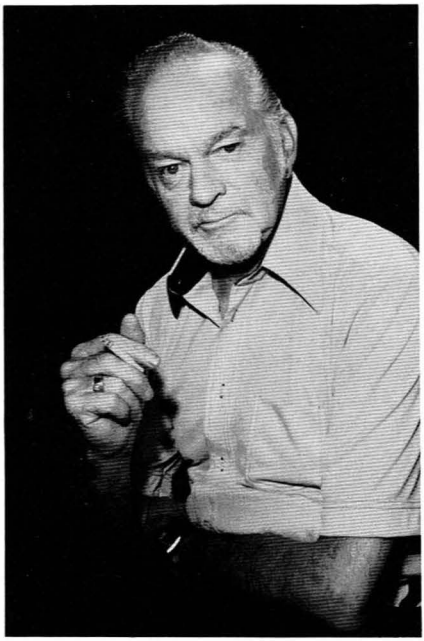
GEORGE DURFEY, Photographer: George Durfey, a Research Engineer at SRI International, has had s latent interest in old radio equipment for many years. This interest has blossomed into activity with his joining CHRS. He collects almost anything relating to radio. Atwater-Kents are a particular favorite. Restoring and getting the old equipment operational is an especially rewarding aspect of the hobby for him. Photography has also been a hobby of his form many years.

DON STOLL, Publisher/Printer: Don Stoll currently owns Foundation XIV, a small printing company specializing in full-color custom printing. Don's interest in radio started with ham radio in 1953 (K2DIX), then moved through the USN as a Communications Technician, to RCA in Florida as a computer lab technician, to Ampex as a technical writer. Tech writing gave way to advertising copywriting, then a technology-oriented advertising agency, whereupon Don now produces complete brochures, catalogs and the likes for local technology companies. Having recently discovered CHRS, Don's major interests are Art-Deco radios of the late 20's to early 30's, and radio novelties and graphics of all periods.

CHRS LIFETIME MEMBER: Paul Courtland Smith

Paul Courtland Smith has been chosen to receive the first CHRS Lifetime Membership. Paul is an Associate Professor of Broadcast Communication Arts at SF State University. He personifies the complete sound man. His experience over more than thirty years includes working on the first network use of audio tape, and being production engineer on programs including Jack Benny, Edgar Bergan, Suspense and others.

Presently, in addition to teaching, he is Production Coordinator for the 1979 Grammy Awards Show. This show will feature a salute to San Francisco's recording and music industry. He is also a member of the National Recording Academy (NARAS) Television Committee. Paul Smith, it is indeed an honor to welcome you to our club.



Brief Review of Experience and Activities in Recording, Radio and Television:

1938: Became chief engineer for Metro Recording Co., in San Francisco. Personally handled Art Linkletter's "Gallery of Celebrities" show, on-the-spot disc recorded CBS program.

1939: Operated California State-operated Radio Division of the Golden Gate International Exposition at Treasure Island. I was involved with such shows at "Eddie Cantor's Camel Caravan", "The Benny Goodman Show", "Burns and Allen", "Firestone Hour", and many more.

1942: Set up and mixed music broadcasts for Ray Noble, Glen Gray, Freddy Martin, Desi Arnaz, Stan Kenton, Red Nichols, and many others.

1949: Was assigned to Bing Crosby show and worked with the very first Ampex tape machines.

1953: At their request, was transferred to CBS Radio Hollywood staff.

1954: Was mixer and editor on the new Bing Crosby daily show.

1956: Assigned as mixer on CBS "Matinee" show.

1959: Accepted offer of transfer to CBS Television Videotape department at TV City. Became Videotape editor. Notable successful assignments included the "Jack Benny Show", "George Gobel Show", "Red Skelton", "Buick Electra Playhouse", "Studio One", "Twilight Zone", and "Playhouse 90".

1962: Transferred to the local CBS TV operation at Columbia Square as audio engineer.

1964: During a five-week vacation in April/May 1964, did a contract job for United Recorders, Hollywood, including a Louis Armstrong session at United's Las Vegas studio, a Tony Bennett session at the "Hungry i" in San Francisco for Capitol Records. Was promoted to the position of Central Control Supervisor.

1964: In November, after a 23-year association, resigned (over flatteringly strenuous objections) from CBS.

1965: On the first of January, officially assumed duties as System Manager for ORCO (Oroville Communications Co.) in Oroville, California. Technically, the system wasn't perfect, therefore resigned effective June 30, and returned to Hollywood. Accepted a position with ABC where assignments included "The King Family", "Shivaree", "Lawrence Welk", "Hollywood Palace", and the "Jimmy Dean Show".

FOR SALE OR TRADE: Radiola III, IIIA, V, and an RF chassis for V. Crosley 51, FADA, British Ericsson 0/1002 xtal set, Crosley two stage amplifier. Send SASE for list and prices. F. A. Paul, 1545 Raymond, Glendale, Calif. 91201

FOR SALE: Power your battery sets: Wet cell 6V A battery - $10, Majestic B eliminator with spare BH tube in carton - $10, 201A tubes - $4, 199 tubes - $5, Audions - $40 (good filaments), 216A - $10, various other WE tubes - $10. Dave Brodie, 315 Cotton Street, Menlo Park, Calif. 94025, (415) 323-0353

WANTED: QST's prior to 1922, schematic for Hammarlund-Roberts 4 tube set, schematic for Clapp Eastham Radak model DD, schematic for Erla model S-51, Crystal sets for cash. Dave Brodie, 315 Cotton Street, Menlo Park, Calif. 94025, (415) 323-0353

FOR SALE: Westinghouse RADA with tubes, like new appearance, works well - $275, A366 Murdock condenser, pg. 48 Duck #13 cat., 15 panel DeForest receiver set, pg. 59 Duck #13 cat., with Moorhead tubes - $850. Arthur J. Bardish, 4042 Herman Avenue, SW Grand Rapids, Mich. 49509

FOR SALE: Tuska 300 - $250, Radiola II (no lid) - $130, Radiola II (complete) - $175, WE cone speaker - $40, Crosley Trirdyne #3R3 - $40, Super Unidyne TRF - $65, Aeriola Sr. (excellent) - $125, Aeriola Sr. (fair) - $85, Crosley 51 - $75, Federal 110 - $310, UX199 tubes - $5 ea., 201A's - $4 ea., DeForest Spherical Audion in original box (no fil.) - $125, WD11 tubes - $20 ea., Welsh tube - $40, DeForest DV-2 tube - $10, National SW5 receiver - $150, Western Elect. 4B rereiver - $220. Trades on all of the above will be considered. Paul Giganti, 2429 San Carlos Avenue, San Carlos, Calif. 94070, (415) 593-4723

WANTED: AK 20 compact, prefer without case, must be in reasonably decent shape. Also want Radiola 28 chassis and loop. Norm Berge, 1275 Quincy Drive, San Jose, Calif. 95133, (408) 251-7773

WANTED: Remler 330 control panel. Magnifier for 2" Pilot TV. Allan Byrant, 38262 Ballard Drive, Fremond, Calif. 94536, (415) 791-8967

TRADE/WANT: I have for trade an RC, an Arborphone, and some other misc. items. I am interested in getting AK speakers, radios and components, including literature. George Durfey, 912 LaMesa Drive, Menlo Park, Calif. 94025, (415) 854-4041

WANTED: AK Breadboard radios had a metal name plate, size about 2-1/2" X 5/8" with screw hones <u>exactly</u> two inches center-to-center.

ATWATER KENT
Philadelphia, Penn.

Will pay $5.00 for an extra-clean one, or the best one received. Others will be returned by prepaid mail. Ed Tilton, 2414 Southview, Alamo, Calif. 94507

WANTED: ART-DECO Radios, Spartan or other brands. Mirror, metal or plastic cabinets, consoles or table models. Also catalogs, brochures or other literature regarding ART-DECO Radios. Don Stoll, Foundation XIV, 2245 Old Middlefield, Mountain View, Calif. 94043, (415) 965-0112

WANTED: Old radio magazines and related literature for donation to CHRS for use in the journal. Please send material to the editor

WANT ADS are free to all members of the California Historical Radio Society. Submit ads to the editor: Allan Bryant, 38262 Ballard Drive, Fremont, Calif. 94536. Due to the non-profit status of our society, we cannot accept ads of a commercial nature. The editor reserves the right to edit or reject ads.

MASTER INDEX

September 1975 to December 1978

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Tranadyne
Tropadyne
Trirdyne
Ultradyne
Ultra Synchrodyne
Unidyne
Wav-o-dyne

Dyne Fever

Radio sets of the 20's were typically named with the suffix "dyne". Among the first to use the word was Reginald Fessenden who coined the word "Hetrodyne". F. A. Paul started a "dyne" listing in his Roaring 20's newsletter in the Spring of 1977, and got several of his readers to respond by sending in additional names. The latest listing is shown here, and it is requested that anyone knowing of additional "dyne" name sets drop a line to F. A. Paul, 1545 Raymond, Glendale, Calif. 91201.

The Journal

The CHRS Journal, as I see it, is the second best radio club journal in the country -- and we are trying hard to improve it. Perhaps the most serious problem we face is stagnation due to the lack of articles. As we try to increase the size of the journal, it becomes apparent that only about 8% of the members contribute in any way, this includes ads. In this new year I solicit all members to take an active interest in your journal. This could be in the form of an ad, article, or magazine clipping. Also, members' comments on the journal are welcomed. The following dates are the deadlines for the next two journal issues. All ads, stories etc., should be submitted prior to these dates.

DEADLINE for March issue: February 1, 1979
DEADLINE for June issue: May 1, 1979