

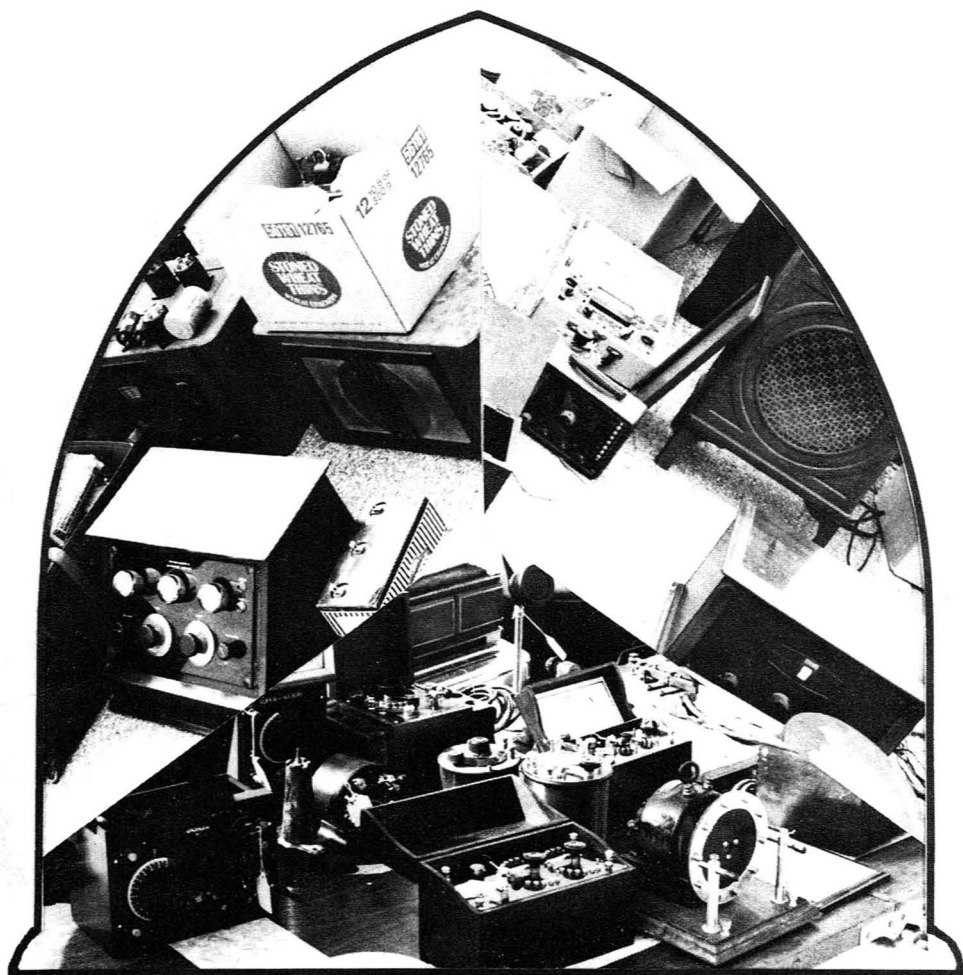
CHRS

official

JOURNAL

Vol.5 No.3,4

Sept.- Dec. 1980



**Building Vintage CW Transmitter • Geissler Tube •
Feature Set • Walker Multiunit • Restoring Old Radios •
The BTH Company •**

CHRS
JOURNAL
Vol. 5 No. 3,4 official
Sept. - Dec. 1980

CONTENTS

40 Meter Vintage Xmitter.....	1
Spotlight Collector.....	3
The Geissler Tube.....	4
Restoration Hints.....	7
The BTH Company.....	9
Publications.....	12
Oldest Operating Battery.....	17
Walker Multi Unit.....	20
Servicing Shortcuts.....	22
Novelty Nook.....	23
Radiola Horns.....	24
1980 AWA Conference.....	28

THE SOCIETY: The California Historical Radio Society is a non-profit corporation chartered, in 1974, to promote the restoration and preservation of early radio and radio broadcasting. CHRS provides a medium for members to exchange information on the history of radio, particularly in the west, with emphasis in areas such as collecting, cataloging and restoration of equipment, literature and programs. Regular swap meets are scheduled at least four times a year, in the San Jose area.



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CHRS Official Journal is published by California Historical Radio Society Box 1147, Mountain View, CA 94040. Address membership correspondence to Ed Sage, Membership Chairman, 1781 Helene Ct., Benicia, California 94510. Articles and non-commercial ads for the Journal should be submitted to Allan Bryant, Editor, 38262 Ballard Drive, Fremont, CA 94536. Historical data for copying or donation should also be sent to the Editor.

The OFFICIAL JOURNAL of CHRS is published quarterly and furnished free to all members. The first issue (published in September 1975) is still available \$3.00, other early issues are \$2.00 each. Articles for the Journal are solicited from all members. Appropriate subjects include restoration hints, information on early radio broadcasts and personalities, anecdotes about the pioneers, etc. Anyone interested in assisting in producing the Journal should contact the Editor.

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wherever
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UNDER a tree, on a mountain top—tune in. Out on the sea, lazing coolly on the deck—tune in! And off for a motor trip, put into the car one more suitcase—a Radiola Super-Heterodyne *complete*. Its loudspeaker is built-in, its loop in the cover, its batteries inside!

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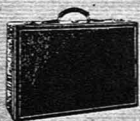
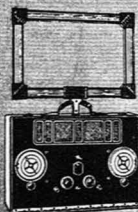
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Radiola 24

Built in a suitcase of black cowhide, cobra grain. Open ready for use. And closed for carrying. With 6 Radiotrons UV-199 - - - \$195



Radiola 26

Finished in Walnut. Complete for carrying. And with an extra battery cabinet for home use. With 6 Radiotrons UV-199 - - - \$225



Building the 1932 Vintage.
CW Transmitter for 40 Meters

By Floyd Lyons

This project was born at a meet of the Calif. Historical Radio Society at Foothill College on May 5th, 1979. I had noticed a Homemade Transmitter that was entered in the Tube Transmitter gear contest by one of our members, Fred Tesche, W6NCS. It won 1st Place. I asked Fred if he would help me in building a similar rig and he immediately said "Yes" and is a most helpful and enthusiastic mentor.

He drew a very popular old circuit of the early 30's, advised the layout/location of critical components, provided specifications and ratings of various parts, and pointed out the "do's and don'ts". In short, he provided the knowledge, and I went home and endeavored to follow his instructions.

The accessories that we made included the two copper tubing tank coils and the neutralizing condenser. The oscillator variable condenser of about 90 mmfd. and the P. A. Variable condenser with a maximum capacity of about 125 mmfd. were found to be quite suitable with the coils described. The neutralizing condenser with about 0-20 mmfd. did the trick.

Data on the coils:

Oscillator coil - 1/8" copper tubing - outside diameter of winding, 2 1/4" - 13 turns - approximately 8' of tubing - length of winding, 3 1/4".

P. A. coil - 3/16" copper tubing - outside diameter of winding, 3 1/4" - 13 turns - approximately 11' of tubing - length of winding, 5" - center tap for plate voltage lead.

Note: I have found Refrigeration Supply Outlets to be a good source for this copper tubing; here you get a high class job of annealing. Auto Parts Suppliers usually have a stock of tubing also.

* * * * *

Inasmuch as I am basically a broadcast man and not a Ham, Fred put the little rig on the air with about 20 watts into the antennae. Dan Cron, W6SBE, answered our CQ and later sent a QSL, with this report: "589 on 40 Meters CW. Your rig sounded very good. I never would have guessed it was 1932 design I'm happy to endorse the little rig." Shown here is a picture he sent us of his Station in operation! It made my day!

Sincere thanks to W6NCS
and W6SBE.

--Floyd Lyons

PARTS LIST

(CW Transmitter)

- 6 .002 mfd. mica condensers (C: 1,3,7,9,10, & 11)
- 1 90 mmfd. variable condenser, oscillator C2
- 1 100 mmfd., 600 wkv, coupling condenser (C4)
- 1 20 mmfd. neutralizing condenser, 1000V or greater gap (C5)
- 1 125 mmfd. variable condenser, power amplifier, double spaced (C6)
- 1 .002 mfd., 1000V, mica condenser (C8)
- 1 10K resistor, 1 watt (R1)
- 2 50 ohm resistors, center tap (R2 & R5)
- 1 50K resistor, 2 watts (R3)
- 1 10K resistor, 10 watts (R4)
- (1 Oscillator Coil (L1)---
(---details in comments
(section
(1 P. A. Coil (L2)---
2 RF chokes, 2.5 mh
2 Tubes: 2A7 Oscillator, and
210 P. A.
1 Toggle switch, SPST
1 Phone Jack (for Key), open circuit, Frost

- 2 5-prong, glazed white porcelain, wafer-type tube sockets. (one for quartz xtal; one for 247)
- 1 Quartz Xtal for 40 Meter Band (using here 7030 mhz)
- 1 White porcelain based tube socket with nickel-plated shell (For 210)
- 1 9½" X 21" baseboard, mahogany
- 2 Bakelite dials for Osc. & P. A. variable condensers
- 1 Weston milli-ampere Meter, Model 301, 0-100 (M1)
- 1 Weston milli-ampere Meter, Model 301, 0-200 (M2)

CORRECTION

In Vol. 4 No. 4 Page 12 of the Featured Set column it was stated that General Electric made the Radiola III set for RCA.

This is in error. Actually Westinghouse manufactured the SET.



Photo by Don Cron

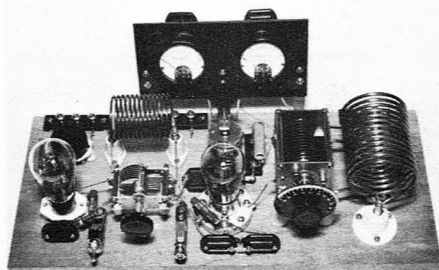
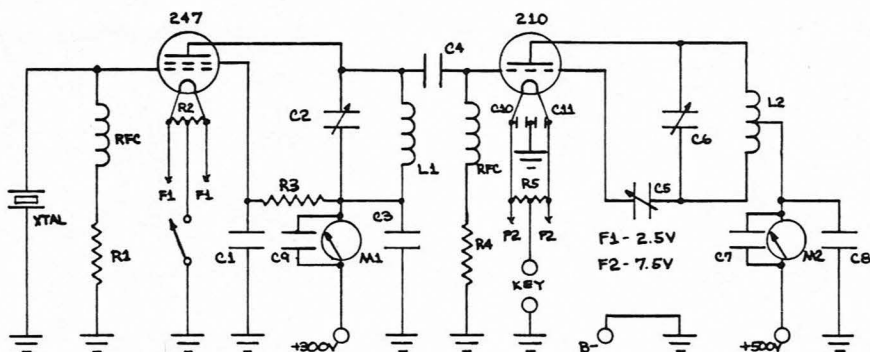


Photo by Floyd Lyons



1932 VINTAGE CW TRANSMITTER FOR 40 METERS

Schematic by Scott Welch

SPOTLIGHT COLLECTOR

DAVE MCKENZIE

I am a retired J.C.Penney Co. store manager with a love for radio. I have been building "one tubers" and crystal sets since 1930 from parts obtained from commercially built receivers bought at the local furniture store for 25¢ (including tubes). I've been a ham (KØSVJ) since 1959 and have been collecting antique radios since 1958. I had to sell over half of my collection when we moved to Florida a couple of years ago.



Photos by Dave McKenzie



I enjoy collecting and restoring, and try to stick with small sets, but I'm not very successful in overlooking or passing up trades on the larger sets. My present collection runs from a small Beaver Baby Grand to a nice large Scott Worlds Record Shield Grid Nine. Some favorites in my collection are: Busco Special Crystal Set, sold by Buscher Co. of Kansas City; DeForest Audion Detector RJ-5; Mignon model RD-1, number 7, DeForest OT-3 Midget Radiophone Transmitter and the A.K. 5 board set.

I guess I like radios of all kinds but those listed above are special to me.

RADIO POEM

All aboard! Here we go!
Down to listen to the radio.
May be out late - don't sit up and wait,
For Ike surely has the right kind of bait.
He gets Kansas City and San Antone,
New York, St. Louis, and nearer home.
Also Atlanta - "Covers Dixie like the dew",
And one night he caught old Honolulu!
Now won't you admit Ike Simmons is a bright,
TO catch all these "fish" in a single night?

Editors note: The preceeding poem was submitted by Jack Reeder. The poem was written in 1922 by Sarah Watson. Ike Simmons was the original owner of the R.D.A. set featured in last issue's Mystery Set column. Incidentally, Sarah Watson later became Sarah Simmons.

RADIO TOPICS

A Journal of Ham Radio



The Third District Radio Convention
for men and women, amateur and commercial

THIS IS THE LATEST ISSUE OF THE JOURNAL
Published Monthly by the Chicago Division Council

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It is interesting and different.
Each copy is worth the price of a year's subscription—One Dollar.
Write today for Sample Copy

RADIO TOPICS
4533 N. Sawyer Ave., Chicago, Ill.

THE GEISSLER TUBE

By Russ Winenow W6AVG

Heinrich Geissler was a German glass blower and physicist who was born in 1814. In 1852 he established a work shop at the University of Bonn where he provided instruments for the scientists working there. Among other things he constructed standard thermometers, a calibrating device and an instrument for measuring the strength of vapors. About 1855, Geissler had produced a mercury vacuum pump which was far superior to anything in use at that time.

About 1858 the physicist Julius Plucker was experimenting with spark discharges in the air between two electrodes. He charted the voltage required for a spark to develop under certain conditions such as the distance between points, the size and shape of the terminals and the humidity of the air. It would seem credible to assume that he suggested to Geissler that he construct a tube with electrodes at each end, and some method of controlling the density of the air within.

It was soon discovered that when a high voltage was applied between the electrodes in a sealed and evacuated tube, that rarefied gases remaining were caused to glow brightly.

I am afraid we will never know who actually discovered the glow phenomenon although Geissler has been given the credit. Geissler's tube and the mercury pump helped to lead directly to the discovery of X-rays and the neon light.

Sir William Crooks, among others, soon found that if the exhaustion was carried far enough, the glow disappeared and a spot of light appeared on

the wall of the glass opposite the negative electrode. This lead to the conclusion that there had to be a stream of particles involved. He called these particles "radiant matter" and these later became known as "cathode rays".

On the fifth anniversary of Bonn, in 1868, Geissler was awarded an honorary doctorate for his work. He died in 1879 and unfortunately did not live long enough to see all the marvelous developments that followed in the wake of his tubes.

In 1884 Hittorf began experimenting with hot cathode tubes and noted the unilateral effect of a direct current applied between the hot cathode and the anode.

In 1895 Wilhelm Conrad Roentgen discovered the existence of another phenomena which he called "X-RAYS".

Cont. p.5

FIELD WIRELESS

Firefly and cricket
Have set up their wireless
In the fields, and tireless
They flash and click-click it.

What are they saying?
The long day is over:
The dew's on the clover:
It's time to stop playing.

There's more. They are spelling
Which way the wind's blowing.
How fast thing are growing.
How good they are smelling.

Oh! I wish I could utter
Half that they're sending
And receiving, blending
Their spark and their sputter.

Sometimes you feel creepy
To think they are talking
With things that go walking
When people grow sleepy.
—B. A. Botkin, in N. Y. Evening Post.

In 1909 the Geiger counter was developed in the Cavendish Lab of the University of Cambridge by Ernest Rutherford and H. Geiger.

In 1919 a young experimenter produced "neon" effects in burned-out light bulbs.

In 1921 we see that Irving Langmuir of G.E. developed the "neon light".

Others followed, too numerous to mention.

We will discuss some of these events in greater detail in subsequent issues of the Journal.

References--
Biographies of Men of Science
Scientific American, Oct 1950.
Magnetism & Electricity -
Brooks & Poyser -
London 1914.

SPECIAL INSERT

An announcement has recently been received from Toronto, Canada that the Canadian Vintage Wireless Association is being dissolved. This decision was announced at the Association's Annual General Meeting on January 17, 1981. Reasons given - lack of participation by members as evidenced by inability to fill executive positions including that of Editor of the quarterly "Catswhisker". The President noted, sadly enough, that "non-participation is a fatal disease for a hobby organization". Amen to that. Here's hoping for a resurgence of interest by our fellow collectors to the North.

VINTAGE

TIPS ON TUNING

Generally speaking, a selective receiver (one that tunes sharply) is a good one, because this is evidence that there are few losses in the set itself.

* * *

Don't be discouraged if the primary circuit does not tune sharply. It is due to the high resistance of the antenna circuit, and beyond making sure that you have a good ground connection, there is little that can be done about it.

* * *

If you have no vernier condenser, the sharpest kind of tuning can be done by resting the rubber end of a long pencil between the edge of the dial and the panel and turning slowly so as to get a micrometer effect.

* * *

Variations in the internal capacity of different tubes will often change the tuning slightly. When you put in a new tube be sure to test for this variation--or else you may find that the tuning chart varies.

* * *

If you cannot make the tickler work, it may be due to a partially exhausted "B" battery. One bad cell in the whole block will sometimes cause a loud squeal that is hard to find.

* * *

Broad tuning and weak signals are often the result of moisture collecting in the insulation of the tuning coils. They may not feel moist to the hands, but the dampness is there just the same. You will be surprised at the improvement that follows a good drying out in the sunlight or by placing the apparatus near the stove.

* * *

For summer work a short antenna cuts down the static. The signal may also be somewhat weaker, but it does not fall off as much as the static and the result over-all will be more pleasing reception.

* * *

Loose or worn variable condenser shafts make it appear that the broadcasting from one particular station is never on the same wavelength. Keep the thrust bearings tight enough to prevent variation in the spacing of the plates and the stations will always come in on the same dial settings.

* * *

A gradual change in the location of the best point on the dial for a station that you hear often is sometimes due to a change in capacity of the set caused by the drying out of the wood of the cabinet. This is particularly true if the cabinet fits closely against the tuning coils or condensers and if the wood is new and green.

* * *

Some home-built sets tune to one division on the dial when the hand is resting on it and to another place when the tuning is done with a pencil rubber. In most cases this is due to the fact that the rotary plates of the condenser are connected to the grid circuit, and the capacity of the hand near the shaft, changes the tuning. The remedy is to reverse the connections to the condenser so that the rotary plates are grounded!

* * *

You can learn to tune a set by "rule of thumb" without knowing what the different controls actually do, but you will be able to tune quicker and more accurately if you have, at least, a working idea of what happens electrically when you make a change in adjustment.

* * *

If a local station is too loud on two steps and not loud enough on one step, leave the jack in the second step and control the volume by slightly tuning out the signal. This gives better reproduction than turning down the rheostats.

--Alfred P. Lane



Next Issue
C.H.R.S. visits the world's
oldest continuously operating
lightbulb.

Roaring '20s Version

Sound Systems--

Roaring '20s Version

By Connie Morningstar

The answer to the radio question of 1927 was the Radio Chair--according to its manufacturer, Andy Mouw, Inc., of Grand Rapids.

This comfortable, upholstered lounge chair sold for no more than an ordinary radio cabinet at the time. Although especially designed to house the widely advertised Atwater Kent Compact Model 30, it could accommodate any other compact radio set and batteries in its large right arm. The left arm contained the loud speaker which was concealed behind an upholstered hinged door.

The radio set could be uncovered simply by raising the right arm and panel and resting them on the top of the set. When closed, the Radio Chair was indistinguishable from other overstuffed chairs of the period. The piece was 34 inches high, 36 inches wide, and 35 inches deep.

Andy Mouw had been manufacturing medium-priced upholstered furniture in Grand Rapids since 1912. By 1927, dealers were being advised to feature Mouw's Radio Chair as a leader. It appealed, the maker insisted, because it was different. Certainly, it was convenient.

Connie Morningstar's "Sound Systems--Roaring '20s Version" appeared in the October, 1979, issue of "The Antiques Journal, Dubuque, Iowa." The article is reprinted with the publishers permission-reproduction rights do not apply to this article. This article was submitted by Joe Horvath.



Restoring Old Radios

by Wm. Herbert Brams

Cleaning Radio Cabinets

If the finish of a cabinet is still in good condition but is spattered with paint, remove the spots with very fine sandpaper. This will minimize damage to the finish. Also, I have found that Old English Scratch Remover is very effective in hiding scratches.

Replacing Capacitor in Philco Sets

In many Philco radios, the capacitors are mounted in small Bakelite blocks, making replacement difficult. I discard the blocks and install the longest terminal strips that will fit in the set. With only a few strips, all the components can be mounted, with greatly increased accessibility of the parts and a minimum of change in appearance to the outside of the set.

Removing Tar

To remove tar from tar-filled components, mount the piece securely over a pie pan and bake in an oven. Start at the lowest heat and increase gradually at thirty minute intervals until the tar melts off (about 150 - 200° F).

Dial Lamp Sockets

If the insulator around the base contact in dial lamp sockets has deteriorated (a common problem in Philco sets), unsolder the wire and remove the metal eyelet that forms the contact. Cut a round piece of phenolic perfbboard plastic so that it will fit in the socket but slide easily inside. Drill a hole in the center to receive the eyelet. Thread the wire through the socket and spring then through the plastic piece and the eyelet and solder. There should be no bare wire exposed underneath the eyelet.

Trimming Veneer

If one is restoring a cabinet by applying new veneer over it, one is faced with the problem of cutting the veneer to fit the intricate grillwork over the speaker. Try this: heat a piece of iron wire (such as coathanger wire) red hot and use it to burn away the excess veneer. The method is quick and eliminates cuts in the veneer by slips of the knife. Remove the burn marks with fine sandpaper.

I. F. Alignment Problems

Occasionally a radio will break into oscillation as the I. F. trimmers are tuned to resonance. To cure this, try connecting the AVC bypass capacitor closer to the I. F. transformer. Also, check that the nut holding the coil assembly to the can is tight. If these methods do not work, the I. F. transformers may have too high a gain. Solder a resistor (about 100,000 ohms) across the primary or secondary windings.

Removing Rivets

Rivets can often be removed easily by filing off the underside with a triangular metal file, then tapping them out with a punch or prying them out with a screwdriver.

Repairing Metal-Cased Tapped Resistors

If you are replacing one section of a metal cased tapped resistor (Candohm) with a fixed resistor, insert a knife into that section and carefully cut the resistance wire. Occasionally, these sections are intermittent rather than completely open

Fixing Volume Controls

Many old radios have volume controls that are difficult to replace because of their size, value, or construction. If these seem to be defective, open them up and spray them thoroughly with tuner cleaner. In most cases this will restore them to working condition.

Checking Small Capacitors

Mica capacitors occasionally have become leaky or gone off value. These should be tested and replaced if necessary. Also, test all new capacitors for leakage. If these are part of a tuned circuit test them also for capacitance. I have on occasion found a new capacitor that was leaky or off-value.

Cleaning Tuning Condenser Plates

Tuning condenser plates sometimes grow metal whiskers, causing a great deal of static or dead spots as the dial is turned. Remove these by rubbing the plates with pipe cleaners.

Warped Condenser Plates

In radios of the 20's and early 30's the tuning condenser plates were often set in cast "pot" metal. Check to see if this metal has expanded, causing the plates to touch one another. If so, carefully bend them back into position.



THE BTH COMPANY-
(A BRIEF HISTORY)
(THE BRITISH THOMSON-
HOUSTON CO.LTD.)

by Dave Brodie

This Company was formed in 1896 with offices in London. However, the actual origin may be traced to earlier years when Dr. Elihu Thomson of Manchester, England and Prof. E.J.Houston of Alexandria, Virginia, formed the American Electric Company in New Britain during 1880. The venture failed and was reorganized later under the name The Thomson-Houston Electric Company (1892) later to become the General Electric Co. (New York). An agency was established in England in 1886 which eventually became the B.T.H.Company Ltd.

The first crystal receiver was built in 1912 to receive time signals from Paris in order to synchronize the Company's clocks. The first tube (spherical) was constructed in 1915 and the Company then produced the well-known "R" tubes during World War 1. In 1922 the Company became one of the founders of the British Broadcasting Company. During the early 20's the Company acquired facilities solely for the manufacture of radio equipment. Headset production reached a peak of 20,000 per week and the crystal and tube sets so well-known, particularly to the British collectors, were manufactured during the early 20's. During 1924 the Company introduced the famous C2 loudspeaker of which over 1,000,000 were sold. In addition, during 1925, production of the Rice-Kellogg moving coil loudspeaker commenced. This speaker was developed at the G.E.Research Laboratory in Schenectady. It is interesting to note that the Company's radio pioneer,

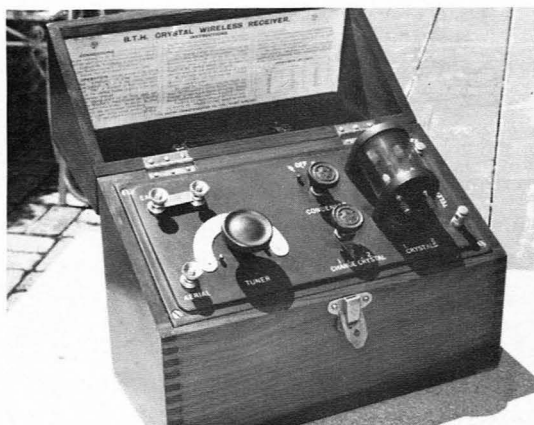


Photo by Paul Giganti

R.C. Clinker, served the Company from 1895 until his untimely death in 1931. He built the first of the Company's crystal sets, the first of their spherical tubes and subsequent tube sets, etc. Prior to joining B.T.H. he worked under Prof. John Ambrose Fleming at University College, London.

Reference to the Company's crystal sets may be found in Vintage Crystal Sets 1922-1927 by Gordon Bussey, pages 76, 78 and 79. Four examples of these sets are provided herein. Three of the popular "Bijou" and the double crystal Model A. The former are from the writer's collection and the latter was provided by Paul Giganti.

We are indebted for the above information to the Editor of the September 1977 Bulletin of The British Vintage Wireless Society.



HELPFUL HINTS

Compiled by Dave Brodie

Perhaps one or more of the following will be of interest to you:

- B
T
H

M
O
D
A
- TUSKA EXPERIMENTAL RADIO APPARATUS-CATALOGUES #1 and #3
- These are well reproduced. No. 1 covers the components and early sets made by the C. D. TUSKA COMPANY whereas the No. 3 catalogue introduces latter sets together with some components. Available from Arthur W. Aseltine, 345 Glenwood St., Ann Arbor, MI 48103. Cost-\$3.00 each. Arthur also sells a reproduced manual titled "Instructions for Atwater-Kent Open Mounted Style Radio Receiving Sets" which covers models 5, 9, 9A, 10, 10A, 10B and 12. Cost is also \$3.00.
- B
I
J
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R
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C
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V
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R
- ADAMS-MORGAN (PARAGON) 1922 CATALOGUE REPRINT.
- Available from Cecil Bounds, Pine Springs Rte. Carlsbad, N.M. 88220
- GREBE REPRINTS
- Sales brochure covering CR3, 5, 8, 9, RORD and RORK. Also companion INSTRUCTIONS FOR OPERATING which covers same models plus RORN. Available from RADIO AGE, 636 Cambridge Road, Augusta, GA 30909. Both for \$5.00
- B
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P
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- FEDERAL MANUALS AND CATALOGUES
- Contact Dick Schamberger, 515 Crescent Ave., Buffalo, N.Y. 14214
- ANTIQUE RADIO PARTS
- Write Box 28, Rte. 1, Cutler, Ind. 46920
- REPLICA AUDIO TRANSFORMERS A-K
- Don Patterson of Radio Age -- See above

Cont. p.11

F
O
R
M

B
B



COLLEGE CELEBRATES 1ST RADIO BROADCAST

Schenectady, N.Y. (AP)

Sixty years ago Tuesday, a group of Union College amateur radio operators gathered an armload of phonograph records, fired a transmitter, and brought a new sound to the growing number of radio listeners in this upstate city.

It was a simple half-hour of recorded popular music, piped directly from a phonograph into the microphone of Station 2ADD. The college claims it was the first regularly scheduled radio broadcast in the United States.

It predates by nearly three weeks the airing of Harding-Cox election results by Pittsburgh station KDKA on Nov. 2, 1920. KDKA generally is regarded as the pioneer of commercial radio broadcasting.

The Union students had produced three Thursday evening concert broadcasts by the time KDKA aired the announcement that Warren G. Harding had been elected president.

The first Union broadcast reached as far as Hartford, Conn., more than 100 miles distant, said college spokesman Susan Milstrey.

Union claims at least two other broadcasting firsts.

On Nov. 14, 1920, the college station broadcast the Hobart-Union football game live from Geneva, N.Y. -- marking what is believed to be the first time a sports event was aired for the general public.

The next spring students stashed a portable transmitter in a baby carriage and wheeled it -- complete with baby -- through downtown Schenectady.

Union claims it was the first "remote" broadcast.

The amateur station evolved into an AM station. Since 1975, it has been WRUC-FM, a 10-watt non-commercial station. This week WRUC will mark its anniversary by replaying programs from the past two decades.

General Electric, a hometown industry, was deeply involved in commercial radio development and provided advisers to the young station.

One was Irving Langmuir, a GE research scientist who won the 1932 Nobel prize for chemistry. Another was Walter R.G. Baker, a 1916 Union graduate. Baker went on to head GE Broadcasting Co.'s pioneer TV station, WRGB in Schenectady.

LOCAL NEWS -- CIRCA 1924

Broadcasting that Goes Under
a Bay

Station KGO, in Oakland, California, has recently installed a broadcasting studio across the bay in San Francisco. The microphone impulses, picked up in the San Francisco studio, are transmitted nearly ten miles in a cable laid under the water of San Francisco Bay, before they reach the broadcasting station itself.

--From Popular Radio

WIRE

Contact Charles Days, Box
205, S. Dartmouth, Mass.
02748

AUTHENTIC REPLICAS-KNOBS,
DIALS, POINTERS ETC.

Contact Keith Parry for flyer,
17557 Horace St., Granada
Hills, CA 91344



ORIGIN OF THE WORD "HAM"

The word "ham" as applied to Amateur Radio, dates back to 1908 and was the call letters of the first amateur wireless station operated by some members of the Harvard Wireless Club. They were Albert S. Hyman, Bob Almy, and Reggy Murray.

At first they called their station Hyman-Almy-Murray, but tapping out such a long name in code soon called for a revision. They changed their call sign to Hy-Al-Mu, using the first two letters of each name.

Early in 1909 some confusion resulted between signals from HyAlMu and the Mexican ship named the Hyalmo. If was then the boys decided to use only the first letter of each name and the call became HAM.

In the early days of radio, amateur operators picked their own frequency and their own call letters. Then, as now, some amateurs had better signals than some commercial stations. The resulting confusion and interference finally came to the attention of Congressional committees, and they in turn gave much attention to proposed legislation designed to critically limit amateur activities.

In 1911 Albert Hyman chose the controversial wireless legislation bill as his thesis topic at Harvard. His instructor insisted that a copy be sent to Senator Davis A. Walsh, a member of one of the committees hearing the bill.

The Senator was so impressed he sent for Hyman to appear before the committee. He took the stand and described how the little amateur station was built. He almost cried when he told the crowded committee room

that if the bill went through they would have to close the station. They could not afford the license fees and all other requirements that were set up in the bill. The debate started and the title ham became the symbol of all the little amateur stations in the country crying out to be saved from the menace and greed of the big commercial stations that didn't want them around.

* * *

Finally the bill got to the floor of Congress and every member talked about the poor little station HAM. That is how it all started. You will find the story in the Congressional Record. Nation wide publicity associated radio station HAM with amateurs. From that day to this, and probably to the end of time, in radio language an amateur is a ham. Sine of the times-Indiana Co. ARC.

Submitted by Dave Brodie



PUBLICATIONS



EARLY WIRELESS:

By Anthony Constable

This British publication has been mentioned before in this column but publishing delays have prevented bringing you up-to-date. I have just received a copy from the publisher and am very well pleased with the contents. Ron Ham, a columnist for Practical Wireless, says it all as follows:

"My immediate reaction to Anthony Constable's book was one of sheer delight, because here is a book in where there is something for everyone and, although concerned with a technical subject, it is fascinating to read. There are 166 illustrations with over 130 pictures of vintage sets and loudspeakers for the enthusiast to drool over. This book

must be a winner. For many, the story of wireless, or radio, call it what you will, had unfurled within their own lifetime and technology advanced so rapidly from the spark transmitter and coherer detector receivers, through the era of the thermionic valve to the transistors and microchips we use today - the author was so right to devote chapters 1 (Electromagnetic Ripples; From earliest times to c.1900) and 2 (From Coherers to Valves; From 1897 to World War 1) of his book to remind readers in such detail of the early days and how it all began. Apart from collectors and enthusiasts, Early Wireless should complement the bookshelf of any modern historian because, within the history of radio is contained the great social changes which have occurred over the years. For the newcomer to wireless there are about 30 drawings to explain the workings of the spark transmitter, coherer and crystal detectors and the early thermionic valves. For the

collector, the author has prepared a 33 page list of wireless sets, with prices, and some technical information and details of manufacturers that were around in 1926. In my view, 'Early Wireless' £8.50 (approx. \$13.00) is a worthwhile purchase and is attractively presented in hardback"

NOTE: Although the Author states that this publication is somewhat oriented to British developments, he has included over 25 photographs of American vintage equipment all of which were furnished by members of C.H.R.S. to whom the Author expresses his gratitude. We are in the process of attempting to obtain a volume discount for members. You will be advised of developments as they occur.

THE HISTORY OF HAM RADIO

"73" Magazine-Issues of November, 1978, May 1979 and March 1980

These are reprinted from articles which appeared in the QCC News, a publication of the Chicago Area Chapter of the QCWA. Herein you will find brief accounts of the horrendous litigation of the "early days", the development of early receivers, pertinent legislation and the growth of world-wide amateur radio. These articles should be of interest to all collectors interested in the history of the development of radio, whether or not they are amateurs, since the early circuits which we find in our collectibles were, for the most part, inspired by and for amateurs who formed the bulk of the public then interested in this new medium.

EDISON-THE MAN WHO MADE THE FUTURE

By Ronald W. Clark (G.P. Putnam's Sons, New York \$12.95)

The Author is hailed by the American Journal of Physics and the New Scientist as a masterly biographer for his biography of Einstein and is well known as a specialist in scientific biography. This work is particularly interesting since he is dealing with a controversial figure who some claim was the most famous American of his time and above criticism. Others claim he developed other men's ideas in addition to being an inventor and consorted with "robber barons". The author has obviously delved into personal papers, letters, etc. and produced a work which presents Edison clearly against the background of his times. It is interesting to note that Edison's dealings with Tesla are covered in but two pages although he does refer to Edison reneging on a promised payment of \$50,000 which caused the ever-lasting break between the two great men. The book is reasonably well illustrated, and quite readable except for

the unusually large number of direct quotes from Edison or his contemporaries which I found somewhat tedious.

"73" MAGAZINE-ISSUE OF
FEBRUARY 1980

The PAPER. THE STATION,
AND THE MAN

(a brief history of the New
York Times Radio Stations)

The story covers the period
1920 to 1965 and is well illus-
trated. Good reading.

EARLY RADIO DETECTORS-A
BACKWARD GLANCE

"73" Magazine-Issue of
July 1980

Discusses the magnetic detec-
tor, Hertz detector, Branly
coherer, Fleming diode, crys-
tal detectors, the De Forest
audion, etc. There is gold in
the hills for those collectors
who read ham magazines!!!

HAM RADIO HORIZONS

Issue of August 1980--\$1.50

Refer to page 46 if you are
interested in what it was like
to put together a ham station
during the Big Depression.
This economy rig uses the
well-known Hartley trans-
mitter with a UX-245 and the
three-tube Pilot Wasp made
from a kit. Would you be-
lieve \$3.50 for the kit (being
closed out because of the
advent of the new A.C. tubes)
and tested 201A's for 10¢
each. Untested cost a nickel!!
An interesting article by the
ever-popular Bill Orr, W6SAI.

ANTIQUE RADIO PARTS SUPPLY

Roland Matson--\$2.50
(includes postage)

This nine page catalog was
recently received and is a
must for the restorer. Here
are a few of the items manu-
factured by Mr. Matson:

Radiola-crystal detectors,
nameplates and wooden tops for
the Model V; De Forest-panels,
switches, wiper assemblies,
etc. for the RJ-9; Crosley-
cabinets for the "50" series,
nameplates, knobs, etc.; At-
water Kent-breadboards, name-
plates, green and golden lac-
quer paint, tube sockets,
binding posts etc. Price list
included. This appears to be
a unique service to restorers.
Write to Matson's Antique Radio
Parts Supply, 388 Concord Road,
Bedford, Ma. 01730

LIGHTNING IN HIS HAND

THE LIFE STORY OF NIKOLA TESLA

By Hunt and Draper
(Omni Publications
Hawthorne, Calif. \$8.95):

Hugo Gernsback considered him
the world's greatest inventor-
the greatest of all times-and
placed him ahead of Archimedes,
Faraday, or Edison. Tesla
spoke of himself as not being
an inventor but as a discoverer
although he held dozens of
patents. Here is the story of
this amazing genius, said to
be born 100 years ahead of his
time; highly educated, cul-
tured, completely dedicated to
his scientific experiments
yet abysmally ignorant of busi-
ness practices. A man who re-
ceived \$1,000,000 from Westing-
house plus royalties yet simply
tore up the royalty contract
when Westinghouse encountered
financial difficulties. An
act which reputedly cost him
\$12,000,000. This publication
is well worth your attention.
Well-written in a non-technical
style, you will be rewarded
with the details of Tesla's
battle with Edison, his fasci-
nating discovery of alternating
current and stories of other
triumphs too numerous to men-
tion. The sort of biography
you are reluctant to put down.
Suggestion: Check your friendly
librarian for a copy, you may
have to wait as I did but the
wait will be eminently worth
your while. By the way, the

authors have well-documented this biography and, in addition, provide the reader with 15 pages of bibliography--enough to satisfy the most ardent Tesla enthusiast.

PUETT ELECTRONICS:

THE ENCYCLOPEDIA OF ANTIQUE RADIO--VOLUME 2--\$7.95

DIRECTORY OF ANTIQUE RADIO SERVICES--\$3.00

The first publication listed above is advertised as being a continuation of the material found in Vintage Radio and in Volume 1. If it is similar in format to the first volume, it has its value as a collector's reference manual to be used in the identification of sets. Volume 1 was replete with advertisements of antique radios but did not include narrative information as did Vintage Radio. Whether or not Volume 2 follows the same format, it is to be assumed that it will serve its purpose of assisting in identification purposes.

The second publication has not yet reached my desk. The author claims 600 listings of sources for obtaining tubes, technical data, books, escutcheons, dials, knobs, etc. Contact Puett Electronics, P.O. Box 28572, Dallas, Texas 75228

THE MAKING OF THE ELECTRICAL AGE

By Harold I. Sharlin-1963-\$5.95

Sharlin has a rather unique educational background as he holds a B.S. in electrical engineering and an M.A. in history. Furthermore, he has had a number of interesting positions including instructor in electrical engineering at Drexel Institute of Technology and assistant professor in the History of Science Department at New York University. It is no wonder that with this admirable background he has produced an interesting volume of this nature.

The book consists of eight sections covering the start of the age of electricity and concluding with a section on the

development of the computer. Obviously one cannot deal with this wide spectrum in detail within 230 pages. However, the two sections on the development of radio are quite complete and provide the reader with a clear, concise view of the subject. Herein one will find references to most of the well-known names such as Maxwell, Faraday, Thomson, Hertz, Edison, Marconi, Fleming, De Forest, and many others. The presentation is in a historical vein and in a manner that holds the reader's interest. Recommended reading for those interested in the history of the development of radio.

AN AGE OF INNOVATION

Editorial Edition of
Electronic's 50th Anniversary
Issue - April 17, 1980

This publication received remarkable reviews in the A.W.A. September 1980 issue of The Old Timer's Bulletin. Considered to be the best historical magazine reviewed during the current year. Other references describe this work as being an unforgettable overview of electronics containing everything from the individuals whose talents led to the great advances to the origin of specific breakthroughs. Also available in book form from Electronics Magazine Books, P.O. Box 669, Hightstown, N.J. 08520. Cost of the book-\$18.50. The book is said to contain 274 pages, also 300 illustrations, many in full color.

QST-June 1980:

Elsewhere in this issue we have published a warning as to a poisonous substance which may be encountered when working with old capacitors, dummy loads, etc. This substance is PCB (polychlorinated biphenyl) which, because of its dangerous properties, resulted in the Federal Government mandating that the manufacture and distribution of PCB in this

country cease within 2½ years after 1976. Exposures may still occur since the chemical was frequently used in the 50's and 60's as an additive to mineral oil or glycerine to improve dielectric properties. The above information was derived from an article written by Larry W. Strain (N7DF) to whom we are indebted. We urgently suggest you locate this issue and refer to page 42 for a concise discussion of this important matter.

RADIO EQUIPMENT AND SUPPLIES

RADIO EQUIPMENT AND SUPPLIES is a big 160-page catalog, originally issued in 1922 by the Robertson-Catacract Company of Buffalo, New York, a major distributor in the field. It's full of pictures of receivers, transmitters, tubes, vario-couplers, tuning inductances, headphones, and all the apparatus that radio people of that day had to grapple with in order to "bring in the stations" or to "get on the air".

The Vestal Press has made a top-quality reprint of this large book. What with its contents including 30 pages of receivers, 74 pages of accessories for receivers, 30 pages

on transmitting equipment, and 20 pages of basic "Radio Information and Data", there's something for everyone of the present-day enthusiasts. It contains literally hundreds of photographs and drawings, and the 1922 prices would make anyone weep!

Copies are available directly from The Vestal Press Ltd., Box 97, Vestal NY 13850 or through any bookstore, for \$12.50 + 75¢ shipping. (NY residents have to add sales tax)

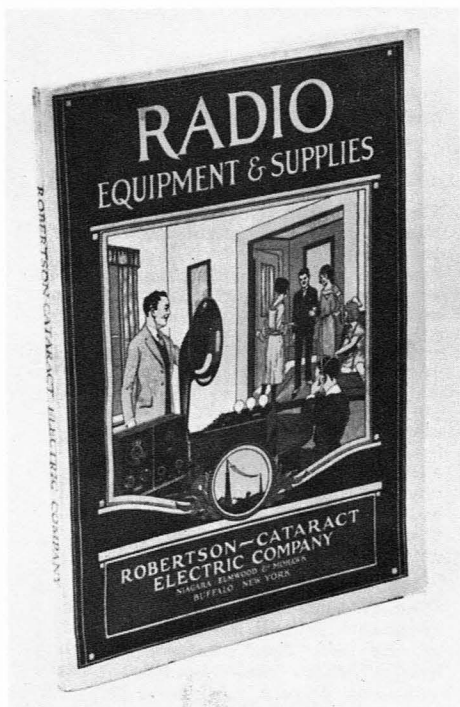


Photo by Vestal Press

SPECIAL NOTICE

The 1981 Annual Historical Radio Conference, originally scheduled for Dearborn, Michigan, will be held at Canandaigua, October 22-24, 1981. Details in the March Old Timer's Bulletin.

CROSLEY

THE CROSLEY RADIO CORPORATION
CINCINNATI

Startling! Revolutionary!

THE WORLD'S OLDEST OPERATING BATTERY

By Allan Bryant.

The world's oldest operating battery may be viewed at the Clarendon Laboratory at Oxford. It is part of the laboratory's collection of antique apparatus.

The battery is an example of the Dry Pile invented by De Luc in 1812, and later improved by Zamboni. This particular example was constructed in 1840 and has been operating a simple form of electric bell continuously for over 140 years. (Figure 1)

In an effort to learn more about this battery I contacted Dr. A. J. Croft of the University of Oxford, Department of Physics. Dr. Croft was very helpful and provided us with the following history of the device, and an explanation of its construction...

"The legend has been certified as being in the hand-writing of the Rev. Prof. Robert Walker (died 1865) by his grandson whom I met several times until his death some 20 years ago. The two cylindrical assemblies stand on glass insulators and are coated with molten sulphur. This is not only an excellent insulator but has also served to seal in the right amount of humidity - ie. enough to perform as an electrolyte without short-circuiting the battery as a whole. We do not of course know what is inside but we think it likely that it was made up to a common formula of the time, viz. alternate discs of tin and manganese-dioxide-impregnated paper. It is probably the depolarizing action of manganese dioxide which accounts for the long life. This was almost certainly not understood at the time and it is likely that manganese dioxide had been popular for some decades because its property of releasing oxygen on heating,

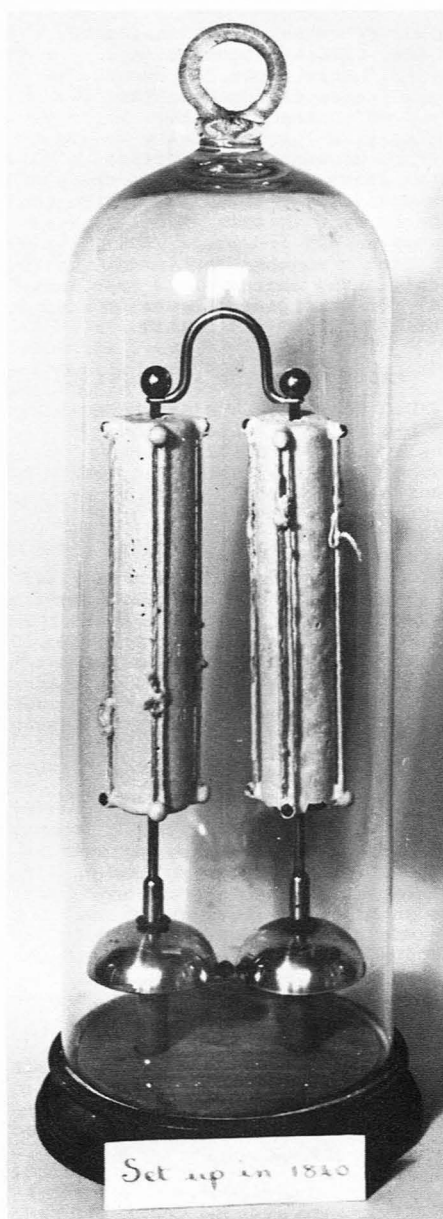


Figure 1

had given rise to the belief that it had something to do with life, and people were still impressed by Galvani's experiments."

"My own opinion is that the dry pile was important in its time because it linked the high voltages of early electrostatic experiments with the low voltages of Volta, although it was some time before the role of the electrolyte in the latter and in the "dry" pile were understood."

"Our pile still rings its bells, the activity being variable but commonly about 2Hz. We think that the voltage must be about 2KV and the current one nano-ampere. People often ask when it will stop and our reply is that the clapper which you will see is already quite worn may well be the first to go, but ought to last another 140 years."

"The design of our pile is very like that illustrated in G.J. Singer, Elements of Electricity 1814 and I enclose a photo-copy of a photograph of an engraving from this book." (Figure 2)

For those of you who are interested in learning more about the Dry Pile, Dr. Croft recommends this book:

THE ENGLISH MECHANIC
By Charles E. Banham

You will find the art of making Dry Piles fully described in the Feb-March, 1915 issue.

Figure 2

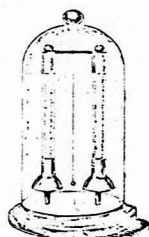


FIG. 196.
*The Perpetual Chime,
constructed with Dr.
Luc's columns.*

VINTAGE

Tips on Tuning

Generally speaking a selective receiver (one that tunes sharply) is a good one, because this is evidence that there are few losses in the set itself.

* * *

Don't be discouraged if the primary circuit does not tune sharply. It is due to the high resistance of the antenna circuit, and beyond making sure that you have a good ground connection, there is little that can be done about it

* * *

If you have no vernier condenser, the sharpest kind of tuning can be done by resting the rubber end of a long pencil between the edge of the dial and the panel and turning slowly so as to get a micro-meter effect.

* * *

Variations in the internal capacity of different tubes will often change the tuning slightly. When you put in a new tube be sure to test for this variation--or else you may find that the tuning chart varies.

* * *

If you cannot make the tickler work, it may be due to a partially exhausted "B" battery. One bad cell in the whole block will sometimes cause a loud squeal that is hard to find.

* * *

Broad tuning and weak signals are often the result of moisture collecting in the insulation of the tuning coils. They may not feel moist to the hands but the dampness is there just the same. You will be surprised at the improvement that follows a good drying out in the sunlight or by placing the apparatus near the stove.

* * *

For summer work a short antenna cuts down the static. The signal may also be somewhat weaker, but it does not fall off as much as the static and the result over-all will be more pleasing reception.

* * *

Loose or worn variable condenser shafts make it appear that the broadcasting from one particular station is never on the same wavelength. Keep the thrust bearings tight enough to prevent variation in the spacing of the plates and the stations will always come in on the same dial settings.

* * *

A gradual change in the location of the best point on the dial for a station that you hear often is sometimes due to a change in capacity of the set caused by the drying out of the wood of the cabinet. This is particularly true if the cabinet fits closely against the tuning coils or condensers and if the wood is new and green.

* * *

Some home-built sets tune to one division on the dial when the hand is resting on it and to another place when the tuning is done with a pencil rubber. In most cases this is due to the fact that the rotary plates of the condenser are connected to the grid circuit, and the capacity of the hand near the shaft, changes the tuning. The remedy is to reverse the connections to the condenser so that the rotary plates are grounded!

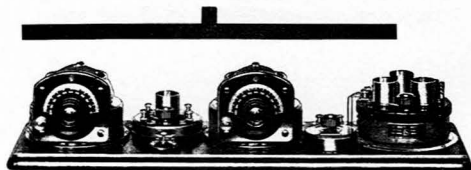
* * *

You can learn to tune a set by "rule of thumb" without knowing what the different controls actually do, but you will be able to tune quicker and more accurately if you have, at least a working idea of what happens electrically when you make a change in adjustment.

* * *

If a local station is too loud on two steps and not loud enough on one step, leave the jack in the second step and control the volume by slightly tuning out the signal. This gives better reproduction than turning down the rheostats.

--Alfred P. Lane



WARNING

Beware of old oil-filled capacitors and transformers. They may contain an insidious poison which can be absorbed into the skin and, over a period of time, damage the body irreparably before being detected. The substance is PCB which is sometimes added to mineral oil or glycerine to improve the dielectric properties of these organic solvents.

Almost all capacitors and transformers built in the 1950's and 1960's contain some of this compound. The above information was obtained in an article published in the June 1980 issue of QST. Obtain a copy and refer to page 42 for the complete article which contains technical information regarding this disturbing situation. We feel this has a place in our Journal because many of our members do not restrict themselves to sets of the 20's and 30's but also restore later models which may well contain this health hazard. We have no knowledge whether or not the substance was used prior to the 50's.



--FEATURED SET--

WALKER MULTI UNIT

by Floyd A. Paul, W6THU

By 1929 higher frequencies were progressively being used for communications and in addition to the radio amateur interest in high frequencies the radio public was developing an interest in these communications. The typical receiver built in the mid and late twenties was manufactured to receive the broadcast frequencies 550 KHZ to 1,500 KHZ. To enable the public to listen to short wave on their broadcast sets, converters were developed. Many of the lower price, economical converters were one tube units, some were kits, and sold in the \$8 to \$20 class. The typical converter was somewhat smaller than a shoe box, had a tuning control, volume control and an adapter plug with cable. An adapter plug (four or five Pin)

was plugged into the detector tube socket to obtain voltages for the converter and to provide a coupling into the audio stages of the set. Thus, one used the power source from a conventional radio and used the audio stages for amplification and the converter furnished the signal. The converters generally came with two to three coils for wide frequency coverage of from 20 to 550 meters. Radio News of Jan. 1929 had an article on the AC Dayton Co. converter that could be used in the parlor with the owner's broadcast receiver. The converter did essentially what the paragraph above describes. The one tube converter could be laid on a table or on the receiver cabinet. It contained three coils to cover 17 to 84 meters. It could be used with the typical receiver with little or no changes in wiring. It employed the conventional regenerative circuit, a fixed tickler coil with capacity tuning. It could be used with any receiver using

a ux socket in the 1st RF stage or the detector stage.

Many companies began making one tube converters or kits in 1929. The Barawik Co. Catalog (Chicago) of Spring & Summer 1929 advertised seven different manufacturers of converters. One such manufacturer, WorkRite Radio Corp., advertised a George W. Walker, Multi Unit which was described as the most versatile convertible device available. In addition to being a converter, the multi unit device could perform many other functions. Among those advertised were short wave receiver, short wave adapter, regular broadcast receiver, screen grid pre-amplifier, remote control adapter, extra stage or booster, single dial converter, audio oscillator, wave trap and wave meter. Some of these tasks are redundant but the message in the ad was that this was a very versatile unit. Further advertisement features mentioned "Oscillates violently over the entire range 550 to 20 meters, uses all tubes from 199 to 210 and all voltages ac, dc or rectified. "The radio fan has at his disposal a device which will provide him with something to tinker with for an entire season without performing the same experiment twice."

Let's explore what the George W. Walker unit is and what it is capable of doing. The schematic is shown in Fig. 1. A photo is shown in Fig. 2. The accessories to the unit are described in Table 1. It is a one tube circuit with plug-in coil, grid leak detection, feedback in the plate to grid coil so as to regenerate, including oscillation. It therefore could amplify signals through regeneration, oscillate by plate/grid capacitive coupling, detect, or function as a wave trap. An article on page 338 of Radio News Oct. 1929 entitled "This Laboratory Instrument Has Many Uses" by George W. Walker described this

unit and its capabilities. Mr. Walker was previously a designer with the Victoreen Company.

The Walker Multi Unit's physical constituents are as follows: a socket for a four pin tube mounted in a box with eight terminal posts, a variable capacitor connected across the plug-in inductor coil socket, a choke coil, a grid leak resistor in parallel with a small .00025 ufd capacitor, a plate inductance coil, a plate capacitor, a variable feed back capacitor from plate to grid circuit and a rheostat in the filament lead. All parts are so mounted and connected to the eight terminal posts such that a great deal of flexibility of circuit connection is provided. However, in providing flexibility by making each tube element easy to tap onto, the Multi Unit becomes a

spread out spider web with many stray capacities working against the basic circuit. The experimenter is cautioned to try and keep all interconnecting leads as short as possible. The author got his unit to amplify, oscillate and work as a tuner and wave trap. The draw back to its usefulness is in the amounts of gain available in a typical battery receiver of the 20's. Most receivers were built for local broadcast signals and had relatively little audio gain. For example, two 01A tubes with two 1:3 audio transformers interconnecting them provide about a 500 gain. If the detected signal from the Multi Unit is in the uV region the 500 gain is insufficient to give a readable volume, even in earphones.

Table 1
Accessories

1. Shorting Bars (for terminal posts)
2. A five pin tube adapter plug wired to a four pin plug straddled by a five pin socket (the four pin plug inserts into the Walker Multi Unit socket marked "T"). A five pin tube inserts into the five pin socket.
3. A four pin plug tube adapter straddled by a four pin socket. A four pin tube (22, 26, UX 199, UX01A, etc) can be plugged into the adapter for straight through operation or left unplugged and 4 wires coming out of adapter can be tied to terminal posts 7 & 8 (fil.), 4, 5 or 6 (plate) and grid wire left open.
4. Two coils: Broadcast 200 -550M
Shortwave 15-95 M

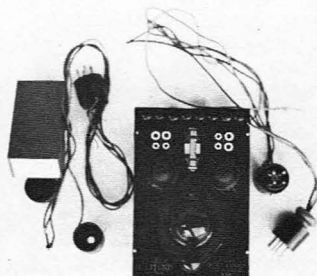
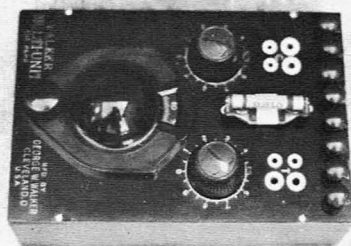


Figure 2



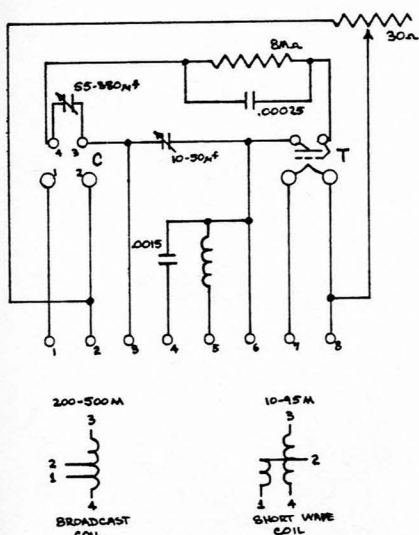


Figure 1

Schematic by Scott Welch

SERVICING SHORTCUTS

Compiled by Allan Bryant

Leaky Bandswitch Controls

Occasionally the phenolic insulation in bandswitch controls becomes leaky allowing high voltages to appear on low voltage lines. If this happens, scrub the switch thoroughly with a toothbrush and tuner cleaner. -- H. Brams

Autodyne Converters

Inexpensive sets of the early 30's often used an autodyne converter (usually a pentode) that functioned both as an oscillator and converter. If this stage is not operating, lower the value of the cathode resistor. This resistance is usually a few thousand ohms.

-- H. Brams

Atwater Kent Model 37

A weakness of this model seems to be the speaker filter or blocking condenser. There is no reception, but a raspy sound, corresponding to the modulation of the signal may be heard. The location in the circuit is shown in Fig. 2. Incidentally, a 0.1 mf. condenser in this position works as well as the specified 0.5 mf. unit.

--James L. Hoard

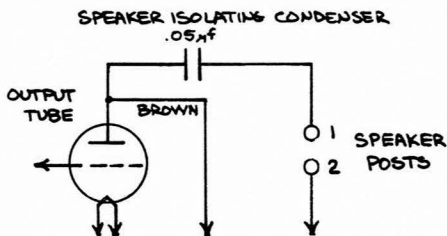


Fig. 2 A.K. Blocking condenser

Alignment

When aligning radios put an AC voltmeter across the primary of the output transformer and set the meter on the 30 V AC scale. This method gives a clearer indication of the resonance points and greatly reduces the ear-splitting signal from the speaker. If you use a screwdriver for adjustments, make your readings with the screwdriver removed from the adjustment screw; often the metal causes an incorrect reading.

--H. Brams

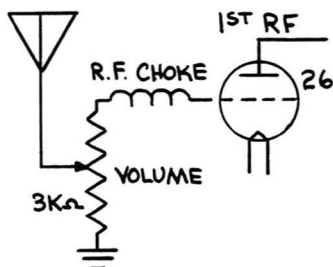
Magic Eye Tuning Indicators

Very often the one megohm resistor in Magic Eye tuning indicator sockets has greatly increased in value or has burned out. Replace these with one half watt units.

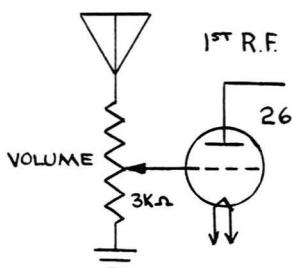
--H. Brams

Radiola 18

Most owners are aware that this receiver does not have as much volume as other sets of its time with the same general lay-out. The sets may be pepped up at least 25 per cent by making the change shown in fig. 1. The only item needed is an antenna choke.--Anon.



NEW CIRCUIT



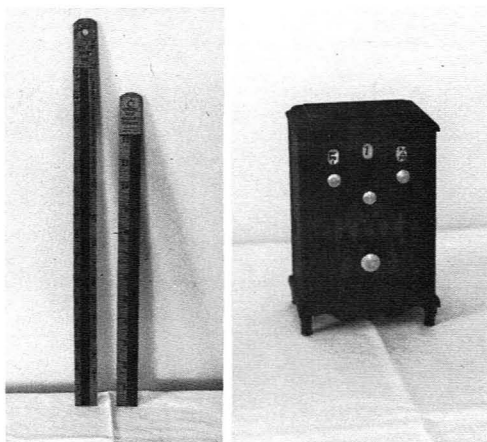
OLD CIRCUIT

Schematic Drawn by Scott Welch

Fig. 1. More volume on Radiola

NOVELTY NOOK

The first item in this month's Novelty Nook is a radio cigarette container and calendar that looks like a console radio. The dials set the day, date, and month, of the calendar portion of this little gadget. The top of the radio opens to insert the cigarettes. To deliver a cigarette out the lower portion of this model - simply turn the lower knob.



Photos provided by Dave McKenzie

The next items are Atwater Kent gasolene measurement sticks. These sticks were intended to measure the level of gas in early automobile fuel tanks.

Left - Atwater Kent Gasolene Gauge. This is a double scale gauge. The scale on the right is for Ford cars. The one on the left is for "all others".

Right - Atwater Kent Gasolene Gauge - single scale.

Last but not least is a folder containing De Forest Radio and Tel. Co. blue prints. This series of blueprints is for the type MR-6. Four pages show schematics and panel layouts for MP-200, MP-100, MT-200, and battery hookups for the same.

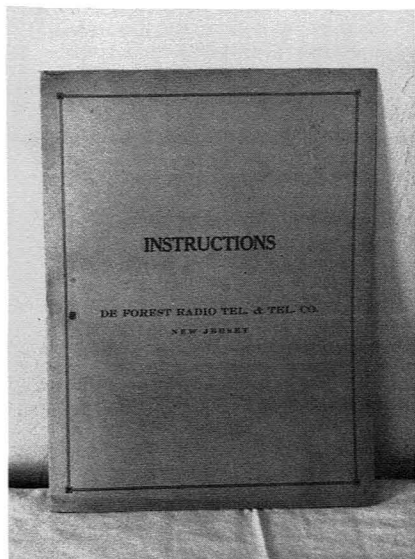
Do You Need a Vacuum Tube?

We will send you one free of charge if you secure 3 yearly subscriptions to "RADIO." You can have your choice of any standard receiving tube. Send \$6.00, the 3 subscriptions, and 25 cents for mailing the tube.

RADIO, 465 Pacific Building, San Francisco, Calif.

The next two pages are typed descriptions, instructions and coil charts. These look to be an original set of blueprints.

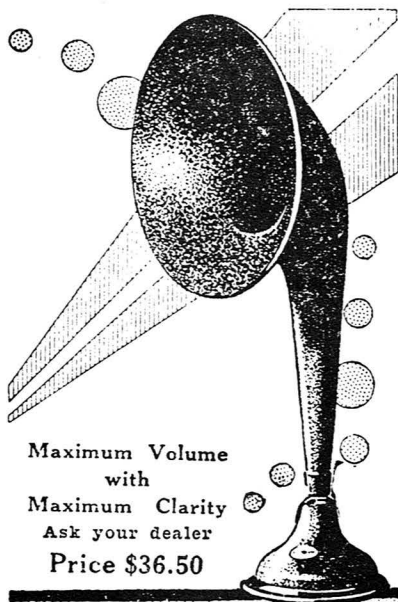
All of the items in this Novelty Nook came from the collection of Dave McKenzie. Do you have a novelty item that you would like to see appear in this column? If so, send a description of the item along with a B/W photo to the editor.



Radiola Horns

By Alan Douglas

I was never much interested in Radiola horns, until I bought this FH. I had thought that since the FH wasn't often advertised, it must have been the first Radiola horn, followed by the UZ1320 and later the UZ1323. To judge from the ads I've found, though, the FH and UZ1320 were both available at the same time.



Radiola
Loudspeaker
TYPE F-H

Radio Digest; May 31, 1924

The UZ1320 first shows up in Radio News for October 1923, while the first mention of the FH I've seen is in the New York Sun for December 15, 1923. By March 1924, when the new line of Radiolas appeared, both horns were offered at the same price. Because of this, and because the FH was pictured with the Westinghouse sets while the UZ1320 was shown with the Radiola Superheterodyne from GE, I assume that GE made the UZ1320. There is no question about the FH, which has a Westinghouse style FL driver inside.



CONTINENTAL

"New York's Leading Radio House"

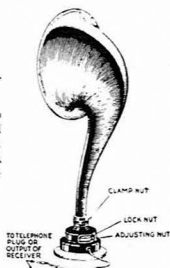
Radiola Loud Speaker

UZ1320 reproduces broadcasted programs with clear and undistorted tones.

The magnetic system, the shape of the horn and the material of which it is made are of the very best. Mechanically this unit is very ruggedly built. The finish is of a dull black with a felt base. The bell is 12 1/4" in diameter and the height is 26 1/2".

One adjustment is provided for securing maximum efficiency on different values of signal strength.

UZ-1320 List Price, \$36.50.



CONTINENTAL RADIO AND ELECTRIC CORPORATION
SIX AND FIFTEEN WARREN STREET, NEW YORK, U. S.

Radio News for Oct., 1923

Most FH's have a decal on the base, and felt on the bottom, but this one has three rubber feet and never had a decal. It is pictured with a UZ1325 for comparison. The UZ1325 first shows up (in the magazines I've seen) in "Wireless Age" for August 1924, p. 25.



RCA Horns

THE 1980 AWA/CHRS CONFERENCE

Do you recall the 1979 Conference which was beset with inclement weather and gas shortages and yet was extremely successful? Well, Nature relented in 1980 and the morning of May 3, 1980 dawned bright and clear and gas was available throughout the land. The result was evident in increased attendance, both buyers and sellers, together with the finest display of contest equipment in the history of this annual Event. Foothill Electronics Museum was again the site and the swapmeet, scheduled to start at 8 A.M. was in full swing when that hour arrived. Before closing at 5 P.M., approximately 150 of the faithful had participated including about 40 sellers who brought selections of equipment, tubes, parts, and assortments of magazines etc. Trading was quite brisk and this portion of the program, as ever, was a resounding success.

The swapmeet closed at 12 Noon and registrants adjourned to the College cafeteria for lunch during which time our esteemed panel of judges carefully inspected the largest collection of contest gear ever submitted at this annual Event. After the judging, the entire collection was placed on display until 1:30 P.M. and again from 4 to 5 P.M. (Details of contest results are tabulated elsewhere).

After a much too-long absence we were again privileged to enjoy a program presented by Dr. George Steiner and Paul Courtland Smith. Dr. Steiner is one of radio broadcasting's pioneers and Mr. Smith is one of radio's outstanding engineers.

Photo By Alan Douglas



Together they transported us back to the early days of broadcasting. Dr. Steiner's gifts of mimicry and dialogue delighted the audience particularly as he was ably assisted by Mr. Paul Smith on sound effects.

The Dr. Charles D. Herrold Award memorializes this famous pioneer of early broadcasting. It is annually awarded by CHRS to an individual who, in the opinion of the Award Committee, has been outstanding in the field of preservation and restoration of early radio. This year it was awarded to a collector of many years and a man whose consummate skill and expertise in building and restoring equipment is well known to all--a most worthy recipient:

BOB HERBIG W6ME

To you, Bob, we extend our heartiest congratulations!

The final event on a full afternoon's program was a slide/audio show presented by AWA and titled "The Early Years". Bruce Kelley, as usual, ably introduced the show's narrator, none other than Mr. Clarence J. Tuska, Co-Founder of ARRL, radio engineer, and retired head of the RCA patent department. As the title implies, we were taken back to the early, early years of the "teens", WWL, and the early twenties. A fine show indeed and expertly run by our own Thorn Mayes. Our thanks to you, Thorn. Thus closed a memorable Conference.

THE 1980 AWA/CHRS CONFERENCE CONTEST RESULTS

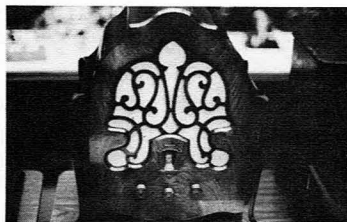
1. Crystal receivers:
 - 1st Place--Dave Brodie
 - 2nd Place--Alan Patmore
 - 3rd Place--Ed Sage

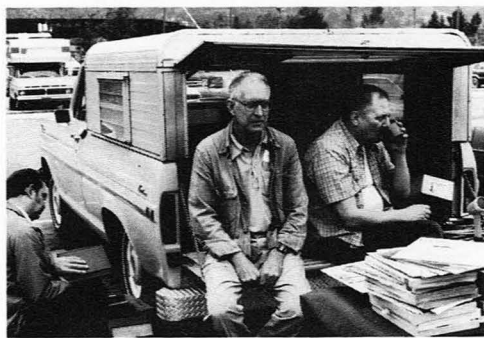
2. Regenerative receivers:
 - 1st Place--Bruce Rogers
 - 2nd Place--Alan Patmore
 - 3rd Place--Charles Byrnes
3. T.R.F. receivers:
 - 1st Place--Hank Eckhart
 - 2nd Place--Roberto Suarez
 - 3rd Place--Alan Patmore
4. Super Heterodyne receivers:
 - No entries
5. Wireless gear:
 - 1st Place--Les Raynor
 - 2nd Place--Richard Eckert
6. Tube transmitters:
 - 1st Place--Fred Tesche
 - 2nd Place--Floyd Lyons
 - 3rd Place--Henry Meyer
7. A.C. table model receivers:
 - 1st Place--Pete Griffin
 - 2nd Place--Ron De Lucchi
 - 3rd Place--Jim Cirner
8. Homebrew equipt. (new):
 - 1st Place--Floyd Lyons
 - 2nd Place--F.W. Sloat
 - 3rd Place--Roberto Suarez
9. Homebrew equipt. (old):
 - 1st Place--Jim Cirner

SPECIAL AWARDS

Most Unique Set in Show--
Crystal receiver--Dave Brodie

Best of Show--
A.C. Table model receiver--
Pete Griffin





THE 1980 NATIONAL CONFERENCE OF THE ANTIQUE WIRELESS ASSOCIATION

by Dave Brodie

The Conference was again held at the Sheraton Inn at Canandaigua New York, during the five days ended Sunday, September 28. Action on the first and last days was confined to visiting the Museum at nearby East Bloomfield, Thursday was devoted to the opening of the flea market and holding of the tube auction and the remainder of the activities were held on Friday and Saturday. However, as usual, the early birds arrived Wednesday morning and by noon the flea market started to take shape well before the announced commencement on Thursday morning.

In summary, estimated total attendance reached about 700 of whom 600 registered and the remainder consisted of those who decided to by-pass that formality. (This is a conservative estimate, in my opinion). In any event, this was obviously the largest group to attend a National Conference. Banquet attendance reached about 300 which is the capacity of the dining room.

PROGRAM

The various presentations were extremely well received as evidenced by capacity attendance. This interest is not only commendable but also gratifying to A.W.A., particularly when one realizes that so many resisted the lures of the flea market to attend the sessions. The array of sessions included the "Radiola Story", "Collecting and Identifying Tuska Receivers", a forum on solving unique restoration problems, a discussion of material in the George Clark Radioana Collection and, finally, a presentation by "Tony" Constable. The latter is co-founder of The British Vintage Wireless Society and has been Editor of that Organization's quarterly Bulletin since in-

ception. Tony is a physicist, radio historian, writer and collector and eminently qualified to give us his opinion as to "The Way It Is in Great Britain". Needless to say, his discussion, accompanied by slides, was well received by a packed audience at the Pioneer Dinner.

AUCTIONS

The equipment auction was held before a capacity crowd. Gross receipts amounted to approximately \$15,000. Sale prices, as a whole, appeared reasonable. You may judge for yourself by scanning the following few examples which I jotted down: Radiola 33-\$50; Aeriola Sr.-\$75; De Forest Interpanel MR4-\$725; West. Electric 7A-\$90; Grebe CR8-\$420; Crosley Ace-\$100; Crosley 58-\$180; Mc Murdo Silver Masterpiece 111-\$360; AK10 (min. bid \$325)-no bids; RADA-\$80; Splitdorf-\$85; Signal loose coupler-\$130; Radiola 111-\$50; Crosley Pup-\$125; Crosley 51-\$60; Nat'l Pr. supply-\$35; Murdock coil (2 sliders)-\$80; 103 Radiola Spkr.-\$35; W.E. Spkr.-\$60; A.K.20-\$40; Paragon 2-\$170; RCA 106 Spkr.-\$60; W.E.7A (no tubes)-\$60; W.E.7A (with tubes)-\$100; Aeriola Sr. & Amplifier (with B.B. WD11's)-\$175; S.W.3 \$60; Metrodyne-\$100; A.K.33-\$45.

The tube auction was also extremely well attended. Gross receipts exceeded \$3,000. Here are a few examples of the action at this event: VT1-\$20; 205E-\$10; Myers tube plus mount-\$40; DL5&DV2-\$22; Moorhead (AP)-\$35; DeForest 20-\$35; Weigand valve-\$80; WD11 (bake.base)-\$27; Audion (tubular, no fil.)-\$25; UV200 (brass base & tip)-\$11; 6 Kelloggs & four 201A's-\$47; Three 216A's-\$36; Six Kelloggs-\$63; WD11 (new with bake.base)-\$25; 5 UX201A's-\$20;

OLD EQUIPMENT CONTEST

I am sure that many of the registrants share my interest in this annual contest which brings into one room the most interesting (and beautiful) examples of our hobby. The best of our

collections. It is almost incredible as to the amount of labor involved in preparing the equipment for this annual show in the hopes of winning a coveted award plus the pleasure of exhibiting choice pieces to fellow collectors. Although A.W.A. provided 10 classifications of equipment, there were no entries in Class 7 (Spark transmitters) and in Class 8 (Microphones). Watch these classes next year !!!!! All the entries were superb yet I must admit that my greatest attention was directed to the Mignon equipment which took first place in Class 5. This was the first Mignon I had ever seen other than in the catalogues. Here is a complete list of the results of the contest.

CLASS 1. CRYSTAL RECEIVERS
(11 entries)

- First Alan Douglas
Scientific American
Multiple Tuner
- Second John M. Williams
Fordham Crystal in
glass case + Log
- Third Mike Schaffer
Skyrad
- Third Bruce & Charlotte
Mager
Ceramic Bug

CLASS 2. REGENERATIVE
RECEIVERS
(13 entries)

- First Ralph Muchow
DeForest 1919 Regen.
Receiver in case
- Second Charles Bradley
Cutting & Washington
- Third Lester P. Raynor
Kennedy 231 + 521
- Third Dick & Ann
Schamberger
Tusca 950 & Federal
3 unit
- Special Award Walter H. Smartt
Homebrew -- Early Modu-
lar Components by Hickok

CLASS 3. TRF Receivers
(5 entries)

- First Floyd Bennett
Federal Type 141
- Second Gary B. Schneider
Standardyne Multivalve
- Third Larry Wright
Golden Leutz Plio 6
- Special Award Charles Days
FADA

CLASS 4. SUPERHETERODYNES
(3 entries)

- First Merrill & Rita Bancroft
AK Cathedral - Mod. 90
- Second John G. Adams
- Third John Wiesner
Philco Mod. 84

CLASS 5. ALL OTHER RECEIVERS
(9 entries)

- First Jim & Felicia Kreuzer
Mignon R73 with R7X Long-
wave unit
- Second John Drake
DeForest Tel & Tel Audio
Detector Receiver
- Third Larry Wright
John Fifth Component
Receiver
- Special Award Rogert Rees
AMRAD 3500-1

CLASS 6. TUBE TRANSMITTERS
(5 entries)

- First and
BEST OF SHOW Ralph Muchow
Adm. Byrd's original
dogsled & aircraft
Transmitter & Receiver
used at South Pole
with picture display
- Second Lauren Peckham
GE Transmitter --
5 watt
- Third Fran Thisse
REL Low Power
Transmitter

CLASS 7 and 8. No entries.

CLASS 9. TEST EQUIPMENT
(7 entries)

First Alan Douglas
Wavemeter built by
Robert F. Fowen in 1917
(Chief Eng'r. DeForest
Radio Co.)

Second Peter deAngelo
Weston portable Elec-
trodynamicometer volt-
meter

Third Ralph Muchow
Kolster Decremeter mfg.
by Nesco

Third Larry Wright
Kolster Decremeter mfg.
by John Firth Co.

CLASS 10. LOOSE COUPLERS
(6 entries)

First Roger Rees
B. Chambers & Co.
L/C made about 1914

Second Merrill & Rita
Bancroft
Clapp-Eastham 4C

Third Floyd Bennett
Colby Short-wave Tuner
and Long-Wave Tuner

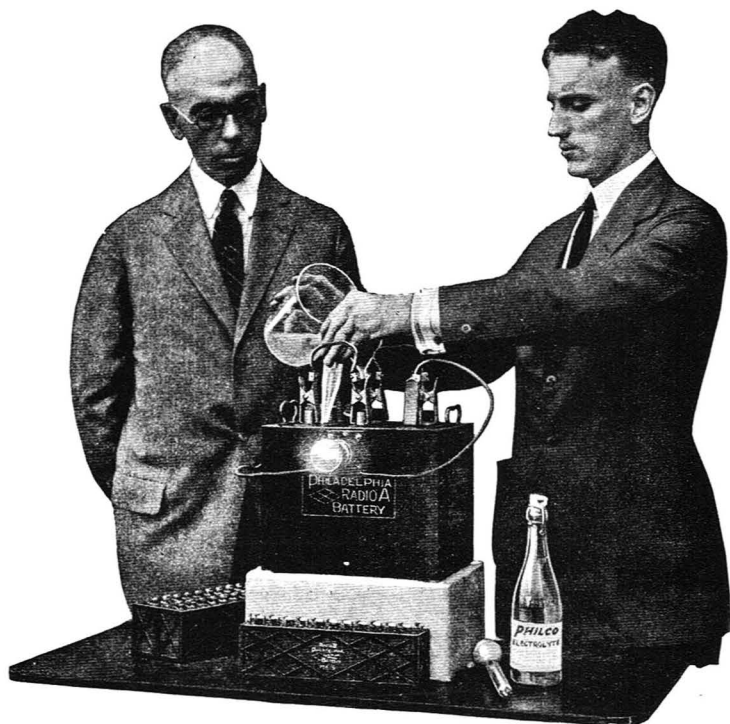
NO CLASS Special Award
John Milton Williams
Dr. Leonard Fuller's
Lab. Key

So ended the 1930 National
Conference. It is so unfor-
tunate that few of us can take
the time and accumulate the
wherewithal to attend.

Personal Note: After traveling
all the way to Canandaigua and
thoroughly scouring the flea
market, between sessions, I
found just about everything
the avid collector could ima-
gine. Battery sets galore,
an increasing quantity of A.
C. sets (table models and
consoles), wireless gear,
test equipment, and a wide
assortment of books, cata-
logues, pamphlets, etc.--
everything except what I
desperately wanted--1920
QST's. Believe it or not!!!



This demonstration will be made at Philco service stations everywhere on October 25th—Philco Drydynamic Demonstration Day. Don't miss it! Note the date!



A history-making achievement in battery engineering

Now—for the first time in history—you can equip your radio with batteries *born the day they're first used*—storage batteries that are full powered and 100 per cent new when you get them.

The new Philco Drydynamic Radio Batteries—a revolutionary development in battery engineering—are **CHARGED DRY** at the factory. *Their life doesn't start until you pour in Philco electrolyte.*

This means that you can now get absolutely fresh, charged radio batteries—not partly worn out batteries that have lost charge and wasted away in the dealer's stock.

Philco Drydynamic Radio "A" Batteries have all the time-tested features of the famous Philadelphia Diamond-Grid Batteries—the standard for automobiles, mine locomotives and other heavy-duty purposes.

They give a uniform flow of voltage that assures absolute freedom from "cracking," "frying," noises and eliminates need for constant adjustments. Because of their Philco Retainers they hold their charge longer than any ordinary battery, they are conservatively rated and will deliver all the electricity the name plates say they will deliver, and they are *guaranteed for two years.*

The Philco Drydynamic Radio "B" Battery with its 24-volt capacity, takes the place of 15 dry cells. Its 12 cells are neatly and compactly sealed in an attractive one-piece hard rubber case—a fit companion for the finest radio outfit.

Ask your radio dealer to show you these remarkable Philco Drydynamic Batteries, or go to any Philadelphia Diamond-Grid Battery Service Station.

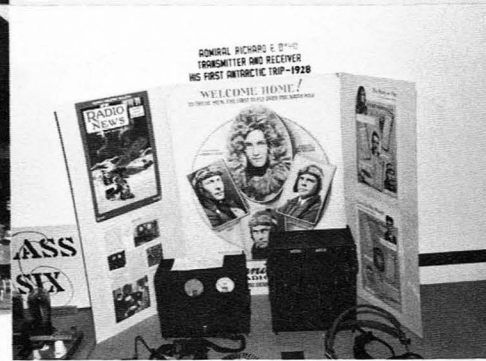
Philadelphia Storage Battery Company, Philadelphia

RADIO DEALERS—Philco Drydynamic "A" and "B" Batteries let you into the battery business on a package-goods basis, because they are shipped to you *charged but absolutely dry*. To make ready for use, just add conveniently bottled Philco electrolyte. No charging equipment. No acid slop. No batteries going bad in stock. Your customers are sure to get fresh, full-powered batteries. Wire or write for details.

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BATTERIES

with the famous shock-resisting diamond-Grid plates

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Yes, I want to know more about the new
Philco Drydynamic Radio Batteries
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"THERE IS NO SUBSTITUTE
FOR THE BEST"

The HORN with the "WHY"

When you first hear Radio through the Jewett Superspeaker, you marvel at the amazing accuracy and volume of the reproduction.

Yet there is no mystery in Superspeaker performance; it is based on laws you yourself can easily understand.

One could never jam the massed harmony of a full brass band through the eye of a needle. So the Superspeaker horn is ample in size for the work it must do.

Also sound, as you know, moves in a direct line. The Superspeaker throat is therefore straight as an organ pipe, avoiding the bugling effect due to the crooks or curves. And its inner surface is smooth and glossy, never tripping or confusing the waves of music or voice.

But most important of all is The Superspeaker's absolute immunity to harmonic vibration. It adds no notes of its own to the round, natural message with which it fills your room. So it "violins" only to a violin—"trombones" only to a trombone—rings only to a real bell. Non-metallic materials, in tapered and laminated construction, are the secret here.

Finally, to reflect its message into your home theater, The Superspeaker provides a sounding board shaped like a shell—the model used for generations by acoustical engineers.

Just listen to The Superspeaker! Compare its performance with that of any other loud speaker in the world. The difference will amaze you.

No extra batteries—Exclusive air-gap adjustment to modify results from nearby stations, and increase strength of those from far away—A true musical instrument, built and guaranteed by the million-dollar company whose name it bears. Sweep the ether with a Superspeaker!

JEWETT RADIO & PHONOGRAPH COMPANY
5694 TWELFTH STREET, DETROIT, MICH.

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