EXEMPLARY EXAMPLE OF RECONSTRUCTED 1916 AMATEUR SPARK STATION
at W4AA, Concord, N.C.

The above station was setup by Wayne Nelson in the past year and represents what the better amateur station would look like before WWI. The transmitter at left consists of a 1 kW Thordarson transformer, large air spaced condenser and a Chambers helix. The kickback preventor is seen between the X1mr and motor of the Bell rotary gap. The Murdock change-over switch is one Wayne bought in 1916 for old 4 AA. The key is, of course, the Boston type.

On the receiving end one may see a Paragon RA-6 at lower left. This is one of the first manufactured to use a regenerative circuit. The Audio Tron detector is at the far right with the tube hanging from the panel. Other receiving equipment at the right side of the table is the longwave job above the RA-6 -- a Navy type tuner with long wave loading coil above with plate bearing "Radio Apparatus Co., Pottstown, Pa." This set uses an E.I. galena detector.

I am sure most will recognize Tesla's photo at left of loading coil. The small picture behind the G.R. hotwire ammeter is one of Marconi. I beautiful setup. There's a good chance that W4AA and XYL may attend the 1970 Conference at Canandaigua...
Typical restoration by Tate Thetrea

1970 AMATEUR AWARD

Each year the Honor Committee may select a member who in their judgment has contributed greatly to the advancement of amateur radio with emphasis on tradition. The Award goes this year to "Tate" Thetrea, W6FX of Detroit, Michigan.

CM Thetrea was bitten by the bug after reading the part wireless played during the sinking of the Titanic in 1912. By 1914 he had constructed a receiver and shortly after his first crude spark transmitter. Following the war, Tate obtained his ticket and was issued the call 8FX which he has held ever since. In later years he briefly held a commercial license and served as radio operator on the Great Lakes.

His devotion to amateur radio is endless. He has held A.R.R.L. Appointments for almost 40 years!! — everything from RM to SCM — the latter a position held from 1959 to 1969.

He has either headed or assisted in numerous "Old Timer" programs at amateur and public events and on occasions written historical material.

Outstanding is his unselfish devotion to the preservation of historical equipment. The Committee knows of no one who has spent so many hours as Tate in seeking, begging and buying old wireless equipment, restoring it and then GIVING IT FREE to Public Museums! He has directly or indirectly contributed to at least SEVEN different public museums. In some incidents, he actually set up the displays for museums.

His reward: The satisfaction of having the public view early equipment and knowing it is being preserved.

CM Thetrea has truly followed the fine tradition of Amateur Radio!
OLD TYME HAM ADS

OLD TYME ADS are free to members. Material must be over 25 years old. Please write ad on SEPARATE sheet of paper and be sure and give your name, address and Zip code. If you "want something"--better results are obtained if you have something to swap. The Association is NOT responsible for any transaction.


WANTED: schematic and technical data for TOBE Amateur Communication Receiver Model H with TOBE 35 Tuner all made in about 1935. Have duplicate wireless books and magazines to swap. Write: Henry Wenden, KB1KO, Box 222 Worthington, Ohio 43085

HELP! Need make and model # for voltmeter on Bristol Model "D" Inverse-Duplex -- also 2 pin jacks for same and APT for Crosley Mod. 51. Will trade WE 205-D's, Fed., AK, Kelford APT's or cash. R.E. Lozier, 318 E. Houston, Monroe, N.C. 28110

FOR SALE: Colin B. Kennedy 5 tube, one dial set Radiola 20, cone speaker, Westinghouse RA tuner without cabinet. Jack Nelson, W2FW, 915 Sherman St., Schenectady, N.Y. 12303

HAVE TO SWAP: 1921-22 QSTs, loose-coupler, Audio Tron and other old gear. Need four white de Forest knobs. Everett Berry, 1919 Real, Lansing, Michigan 48910


TRADE: SK-150 transceiver with AC power supply never used, NCL 2000 linear used only one week, FM high band gear, and low band (432 mc.) Want early wireless gear, radio receivers, magazines, parts, tubes, etc. Jerry Vaniek, 331 S. Lowe Ave., Chicago, Ill. 60616

SELL or TRADE: 1907 Electro-Importing Catalog No. 4. Best offer takes it. Harry Cep, 190 Beach Street, Bridge- water, Mass. 02324

WANTED: Modern Electrics magazine for 1913 - August and Sept., 1909 - May, June, July and August. Have 10 issues to trade or will buy. Thorne Mayes, WGAX, 21120 Sullivan Way, Saratoga, Calif. 95070

WILL SWAP or pay cash -- need Silver- Marshall audio transformers 255, 256 and 257 plus RCA UV-712. Bill Greig, 80 Cony St., East Walpole, Mass. 02032

WANTED: WM. J. Murdock "mud" transmitting condensers and any make helix or oscillation trans. to complete QV transmitter. Mike Sanella, W1LR, 67 Coolidge Rd., Arlington, Mass. 02174

FOR SALE: CW-936 W.E. amplifier, RADA receiver (one unit), Kolster TRF revr, Crosley Trimly Special and several component parts. Selwyn Balke, KCLFW, 136 Summer St., Andover, Mass. 01810

SELL or SWAP: Four loudspeakers--RCA 100-A (metal cabinet), Peerless cathedral type, American Bosch Ambionate (17" wood-veneer cone) and Sonora in wooden cabinet with AK Type 5V reproducer. Want good Free-Eisemann neuronde or commercial crystal set. Bob O'Donnell, 235 W. Sheridan Ave., Annville, Pa. 17003

SWAP- Bristol amplifier, Tusak 300 receiver and other old sets. Need taps and tap switch for detector unit for de Forest Interpanel. Larry Whitlock, WLLNR, P.O. Box 104, Bridgewater, Conn. 06752

ANTIQUE WIRELESS ASSOCIATION
MUSEUM
HOLCOMB, NEW YORK 14469

The A.W.A. provides facilities for member's equipment and a photographic workshop for the amateur historian. Open for special events or by advance appointment between May 1 and October 31.

TELEPHONE: 315-657-7489 or 716-663-0856

Club Radio Station: Amateur W2AN

NIKOLA TESLA took out the patent for the FIRST rotary spark gap -- a patent filed in September, 1896 and accepted in November, 1896. British Patent No. 20961. His first gap had four points but he experimented with other types later.
A report by Michael Sannella, W1LR
assisted by Frank Caswell, W1AIIT

On several occasions members of the A.W.A. have asked "What happened to the William J. Murdock Company. Were they still in business?" I decided to answer the question and at the same time retrace a path I had taken many times when I was a younger of 12 and 13 years.

I had no trouble finding my way to the Chelsea Plant and was welcomed by none other than the grandson of the founder who were now operating the company. This had been somewhat pre-arranged since I had contacted earlier William J. Murdock Jr., an attorney like myself. I found the firm being operated by three people: James M. Murdock, George J. Murdock and Henry C. Lang.

Even though the plant was now modernized, I found many items reminding me of my youth. This was when I use to walk over three miles to 157 Carter Street, make a purchase and frequently lug a heavy piece of equipment all the way back to my home in East Boston.

The wooden buildings still remain. I saw some of the machinery originally installed in the early 1900's with over head belting still in use. The same machine used to make phone and screw caps was still in operation. It was a pleasure to meet Joseph Resca, an employee who was hired in 1910 and still with the firm!

On mentioning the "Chelsea Mud" condenser to Resca, he said he was the one who tested the day's run. Those that failed would go off with a crackle and a bang and sometimes crack open the mud case.

They gave me one of their 1919 catalogs and an early phone plug-- the one with the phone jacks on the face. Of interest, their No. 66 Connector, Listed in the 1919 Catalog, is still in demand and in production.

Knowing this would be an historical occasion, I was fully prepared with a portable tape recorder. George Murdock Jr. kindly agreed to an interview. This is what he said:

"William J. Murdock founded the company in 1896. His younger brother, Dan, joined him shortly after. The two operated the business as a partnership with the survivor to take over the entire company. With Dan's passing in the 20's and William ready to retire, the business lingered as William had two banks and was President of a hospital and had lost interest in the radio firm."

"Another factor was RCA who had acquired most of the basic radio receiver patents and required all manufacturers to have a license. They set a minimum of $100,000 per year as a low-

Write for descriptive catalog today

SUB-CONTRACTS WELCOMED
Murdock manufacturing and assembling facilities are available to producers of Radio Phones and related parts. Murdock engineers and craftsmen can help you. Please send your inquiry to

WM. J. MURDOCK CO.
173 Carter St., Chelsea 50, Mass.
At the left is James M. Murdock holding their latest product, a set of inductive headphones. With him is George Jr. with one of William J's original products—a loose-coupler type crystal set which they sold in 1913.

er limit on royalties. This resulted in many small companies being forced out of business. William finally sold his franchise to the Philadephia Battery Company putting them in the receiver manufacturing business under the name PHILCO."

"The firm did continue to manufacture headphones, however, for radio reception and single phones for apartment house use. The apartment type phones are still manufactured in small quantities and the headsets (with little change from the original) are still being made for the armed forces."

"Like most companies, we were hard hit during the depression but we never closed our doors although at times there were only three or four employees. Then came WWII. My father, George Murdock Sr., took over the plant and they literally made mountains of headphones for military use—24 hours a day, 7 days a week."

"After the war there was no market for phones as the field was flooded with surplus. My father lost interest about the time Jim and I came along. We finally purchased the business from father in 1963 and were sole owners until 1967 when Henry C. Iang came as an equal partner and Chief Engineer. In 1968 we bought out CLEVITE-BRUSH line of headphones and microphones from Clevite which makes up part of our present production."

"Last year we had a public offering of stock and decided to invest this in the educational market. Iang designed the popular cordless headphones which work on the inductive principle. Dan Restoff, our Marketing Manager, has set up 75 dealers in the U.S. Interesting enough, the headphone market is much larger than it ever was. We are now geared to education and if we can recapture our share of the coming boom in the educational market, we should be around for many years to come."

It was a pleasant experience visiting the Murdock Company. I hope members of the A.W.A. will find this report of interest. I might add that most all of the parts used in their popular headsets were actually made at the company from raw material and not purchased from outside.

73, WILR

The A.W.A.'s well known show
"THE GOLDEN YEARS OF RADIO"
will be featured at the A.R.R.L.
National Convention, Boston, Mass.
Sept. 26
Signatures: AN EXCITING SIDE-LINE FOR ANY COLLECTOR

It was inevitable -- there would be collectors of signatures in our historical radio hobby. Members have written asking the value of a letter signed by Lee de Forest and other well known pioneers. The answer: "Haven't the faintest idea." This is a new one here at A.W.A. In addition to dollar value, we've been asked "Whose signatures should I look for?" You can go wild on this one. It is strictly a matter of personal choice. These are the obvious ones: Marconi, Armstrong, de Forest, Tesla, etc. From here I suppose one could branch into other fields such as pioneer radio manufacturers such as Fowll Crosseley Jr., Al Crebe, A.P. Morgan and others. Radio personalities: Graham McNamee, Amos and Andy, etc. Then there are authors: Orrin Dunlap, Elmer Bucher, J. Zenneck, etc. Magazine Editors and radio designers: Hugo Gernsback, Lawrence Cockaday, Donald McNicoll, etc. Well known amateurs of the past: Paul Godley, John Reinartz, Fred Schnell and R.H.G. Matthews. Somewhere one should include Edison, Hertz, Braun, Sarnoff, etc.

As you can see, the whole business is endless. There can be much overlapping such as Paul Godley who not only was a famous radio amateur but also designer/engineer and Clarence Tuska, well known for his early amateur interest with the A.R.R.L., but also later as radio manufacturer. The autograph/signature collector will have to develop his own preference or taste. As to value -- that will take care of itself with time. Since the subject came up, I searched through our own personal files and came up with the following signatures which I prize highly:


I was quite surprised I had these many letters with personal signatures. The two which I prize the greatest are from Nikola Tesla with his special letterhead written in 1919 and one from Dr. Lee Forest written in longhand from his headquarters in Germany. Shown below are signatures from the May, 1934 issue of QST magazine of which the originals would be of value to the collector. Lotsa luck in collecting and let us hear from you.

73, Bruce Kelley, W2ICE

SENATORE GUGLIELMO MARCONI
M. H. AYLESWORTH
DR. J. H. DELLINGER

G. Marconi

M. H. Aylesworth

Dr. J. H. Dellinger

DR. LEE DE FOREST

H. H. BEVERAGE

DAVID SARNOFF

Lee de Forest

H. H. Beverage

Paul F. Godley

PROFESSOR A. E. KENNELLY

DR. A. HOYT TAYLOR

W. D. TERRELL

Arthur E. Kennelly

Dr. A. Hoyt Taylor

Paul B. Terrell

DR. ORESTES H. CALDWELL

HERBERT Hoover

O. Caldwell

Herbert Hoover

W. D. Terrell
Guest of Honor at Conference

WILLIAM F. COTTER

Members of the A.W.A. will have the good fortune of meeting an outstanding pioneer and receiver engineer at the Annual Meet October 10th. Our guest started as an amateur pre-WWII. He attended Fane Stevens Institute of Technology where he met HAZELTINE and other notables. Paul WARE, later of Ware Radio Company, was one of his associates.

Following the war, Bill joined Western Electric BELL LABS and worked under Raymond HEISING on ship-to-shore radio telephone development. In the spring of 1922 he joined L.C. Horle at FEDERAL Telephone and Telegraph Co. in Buffalo who were anxious to have an engineer familiar with radio since they were planning to expand into the radio component and receiver field.

In short time Bill found himself heading the radio engineering department. Collectors can be grateful for he was instrumental in the design of the beautiful Federal receivers of the period such as the Model 58, 59, etc.

At this time Cotter also found himself as Chief Engineer of the company's new broadcast STATION WGR. The original transmitter was a breadboard using a couple 10 watt tubes. This was soon replaced by a high power job built by Horle using 250 watt bottles and located in the relatively new Hotel Statler.

In 1925 the former German controlled BOSCH Magneto Company, makers of automotive ignition equipment, also decided to go into the rapidly expanding radio business having obtained a license from the Radio Frequency Laboratories. They made Bill a tempting offer as head of their Radio Engineering Division which he accepted and held until 1935. During this 10 year period he was responsible for all Bosch radios. By this time German interests had regain control of Bosch and things were happening overseas under the Hitler regime.

Bill decided to move. Virgil Graham was leaving Stromberg-Carlson. Would William Cotter take charge of the radio engineering department at STROMBERG-CARLSON? The answer was "Yes" and resulted in a post he held from 1935 to 1946.

In this period he engineered some of the finest broadcast sets ever made. S-C was far ahead of most manufacturers and one of the few to recognize the great advantage of FM. As a pre-WWII manufacturer, Bill had the opportunity to work directly for a short time with MAJ. ARMSTRONG on FM receiver design.

Postwar buyers were not too interested in the handsome engineered receivers manufactured by Stromberg-Carlson. Television was around the corner and small table models plus hi-fi components were flooding the market.

Where did Bill go? You guessed it! -- he accepted the position as Director of Engineering for SCOTT RADIO Laboratories in Chicago where he could again put his talent to good use on what some consider the ultimate in home broadcast and shortwave receiver design: The big beautiful SCOTT.

He remained with Scott until 1951 at which time he succumbed to TV when offered the position of Director of Production Engineering with RAYTHEON for their new line of radio and television sets. Bill remained with Raytheon until 1956 at which time he went to Rochester to join GENERAL DYNAMICS Electronics Division from which he retired in 1961.

Truly, a remarkable career that few can beat.

NATIONAL RECEIVERS

TYPE HRO

SW-3  FB-7

Watch out for their power supplies--they all appear somewhat similar but can be quite different. The SW-3 AB is the old standby model for the early 2.5 volt receiver such as the SW-3 and others using up to 5 tubes. The 5880AB and the later 5897 is suited for 2.5 volt receiver sets with more tubes and ones with 4.5 volt in the output. This would include ACW-49, the 58 Thrill Box, the popular FB-7 and the HRO using 2.5 volt tubes.

The Model 5896 power supply is designed with a 6.3 volt filament winding and can be used on all receivers using such tubes. This would include the later SW-3, the One-Ten receiver, the FB-7 and HRO models using 6.3 volt filaments.

If the power supply is acquired with the receiver chances are you will have no problem -- if not -- check the filament voltage on the power supply before plugging in the receiver. The filament connections are the two large prongs. And as a reminder -- for receivers using the 2.5 volt tubes -- be sure all contacts are clean -- both in plug and tube sockets. Poor contacts on high current tubes will give poor performance.
Wayne Green, W2NSD (Editor "73" magazine) admires de Forest Type "Q" 1920 broadcast transmitter at A.W.A. exhibit. l. to r.: K2NP, W2NSD, W2QY, Lauren Peckham and K2BX.

A highlight of the Hamfest (2000 attendance !) is the huge used equipment flea market. Here we see Jim Di Ruzza from Dayton, Ohio surrounded by A.W.A. members. l. to r.: W2ICE, Jim, Jack Farrell (Pontiac, Mich.), W2RNW and W2QY.

1970 HISTORIAN AWARD

The Award goes this year to Jack Gray who has devoted all his spare time in the past 15 years to historical radio. Prior to this, he and his wife were very active in the Scout movement. A retired Supervisor Engineer at WJW/VOA, he started in the game as an amateur and commercial ship wireless operator.

Outstanding achievements in historical radio on which the Committee based the selection includes: Gathering material, photographing and writing the script for four outstanding film shows on early radio, author of several historical magazine articles, setting up and maintaining numerous radio displays at various public events, promoted historical radio by appearing live on several TV and radio programs and lastly, by restoring and setting up one of the finest semi-professional radio museums.

Jack Gray became a Silent Key, Aug. 1

HISTORICAL NAMES

Harry Cap (Bridgewater, Mass.) adds three more to Bob Cobaugh's list of ships named after famous inventors which appeared in the last OTB:

- SS GIULLEIMIO MARCONI (27,000 tons)
- SS NIKOLA TESLA (6,000 tons)
- SS ALLESEANDRO VOLTA (6,090 tons)

LIBRARY OF CONGRESS

Going to Washington, D.C.? -- be sure and visit the Library of Congress Manuscript Reading Room, 3rd Floor in the Annex Building and see original papers, letters, manuscripts and photographs of famous radio pioneers which are currently on display. They include papers of de Forest, Alexander and other well known pioneers plus material from radio entertainers such as Fred Allen, Groucho Marx, Lone Ranger, etc.

(Tnx Lee Anderson)

Gilfillan

is another radio firm that has managed to hold its identification since the early days. The company started to manufacture receivers in the early 20's and stayed in business for many years until they expanded into other electronic areas such as radar. Today, a leading electronic organization, they are a subsidiary of International Telephone and Telegraph Company.

We know at least two A.W.A. members with GILFILLAN -- Harry Blocher, W6QXS and Gordon Stayboldt. You guessed right -- they both collect early Gilfillan receivers. One of the earliest in their collection is a GN-3 built in 1923 using four UV-199's.
The above headline in recent radio publications told the reader that a new organization was in the making -- the largest of its kind in the world. It also told the demise and lost of identity of a pioneer organization: THE ALLIED RADIO CORPORATION.

Allied Radio has been a supplier to the radio builder, serviceman an amateur for well over 40 years. Allied catalogs of the 1920's are currently sold by collectors for as much as $10 per catalog.

Thumbing through a 1929 Allied we found two order blanks for customers. They were almost identical except for the headings which we reprint below. What's the story? What was the connection between ALLIED RADIO and HAMILTON-CARR Corp.? Same address and catalog............

WHOLESALE
ORDER BLANK

to Allied Radio Co.

Distributors and Manufacturers

711 West Lake St. CHIC

Write your Name in Full

Street Address or Route Box Number

DEALER'S
ORDER BLANK

to Hamilton-Carr

Distributors and Manufacturers

711 West Lake St. CHIC

Write your Name in Full

Street Address or Route Box Number

JOHN STONE STONE

Born: 1869, Dover Virginia
Died: 1943, San Diego, Calif.

The radio historian frequently encounters this name in his reading, so perhaps a short biography is fitting. After formal schooling at Columbia and John Hopkins, he entered the service of the old American Bell Telephone Co. of Boston in 1890 and remained until 1899.

In 1891 he was issued his first patent -- one of 1/4 in his lifetime. He formed his own company at the turn of the century, The Stone Telegraph and Telephone Company and in time started experiments in wireless making him one of America's first radio pioneers. One of his more notable achievements at this time was the use of a tuned or resonant circuit, patented Feb. 8, 1900. This invention conflicted with Marconi's famous 1/4 circuit patent. It is ironical but the final decision was finally awarded to Stone on the year of his death (1943)--Forty-three years later.

His company, like Massie, Clark, De-Forrest and others at the turn of the century, was not too successful. We find him working with De-Forrest's triode in 1912 and eventually back into telephone work.

During the 20's and early 30's, Stone pioneered in long distance beam transmission. He was first to make practical the use of stacked arrays.

More on Stone a famous pioneer may be found in the September, 1943 issue of the I.R.E. Proceedings where an excellent account is written by I.R.E. Historian Lloyd Espenschle as well as by Dr. Lee de Forest and ROA Historian George Clark.

EARLY BC TRANSMITTER

Part of the evening program at the Annual Meet will be an exact reproduction of an early broadcast program. To maintain authenticity, a self-excited transmitter was recently built using components circa 1920-22.

Some may feel the operation of such a transmitter unlawful. Have no fear. Difficulty was encountered picking up the signal even at 50 feet!

The oscillator is a single UV-202 (supplied by W1ANA) running 8 ma. at 120 volts without antenna. Since the broadcasts will be picked up by receivers of the same period, it will be necessary to run the receiving antenna to the transmitter for satisfactory reception......
There's something wonderfully different about our meetings

Come Join Us...

ANTIQUE WIRELESS ASSOCIATION

7th ANNUAL HISTORICAL RADIO CONFERENCE AND PIONEER BANQUET

OCTOBER 9-10, 1970

The Annual get-together of old time radio operators, historians and collectors for a weekend of technical interest and fun. A special welcome to pioneer broadcast personnel and members of R.A.R.A., O.O.T.C., Q.C.W.A. and S.O.W.P.

The theme for the 1970 Conference will be the "50TH ANNIVERSARY OF BROADCASTING"

Programming for Everyone

Ticket Information

Mail your check and inclose Registration card before Oct. 1 to Secretary: BRUCE KELLEY, W2IOE, MAIN STREET, HOLCOMB, N.Y. 14469 Registration acknowledgement, dinner tickets and badges will be given out at the Sheraton Inn and NOT by return mail. The registration fee applies only to men to help defray operating expenses. Women who plan to attend the Rose Hill tour will have to pay $1 entrance fee.

- Registration (Unlimited): $2.25
- Registration and Noonday Smorgasbord: $5.75*
- Registration and Pioneer Banquet: $8.00
- Registration, Smorgasbord and Pioneer Banquet ONLY: $11.50
- Pioneer Banquet (Ladies and evening guests only): $5.75
- Ladies: Registration not required
  - Smorgasbord: $3.50
  - Smorgasbord and Banquet: $9.25

(*Note: Price on meals include gratuity, taxes and facility expense. Add $1 to each meal after Oct. 3 Limited seating capacity at Pioneer Banquet.)

Historical Radio Museum

The Association's amateur museum is located at East Bloomfield (Holcomb) about 7 miles west of Canandaigua on Routes 5 & 20. The barn museum houses one of the largest diversified collections in the country (25,000 items) ranging from Civil War telegraph instruments to complete WNT ship installation and a 1929 broadcast station. Transportation will be provided between the Inn and East Bloomfield.

CONFERENCE

Sheraton Inn

Canandaigua, N.Y.

Overlooking Canandaigua lake
PROGRAM

FRIDAY
4:30 P.M.
OPEN HOUSE at the Historical Radio Museum
(Many new exhibits and demonstrations)

7:00 P.M. After dinner "get-together" (Cocktails served)

8:00 P.M. A 30 minute pictorial program showing the
WORLD'S MOST FAMOUS STATION -- NAA

Introduction (old NAA, Arlington) Charles Brelsford, K2WV
Present day NAA at Cutler, Maine by Lincon Cundall, W2CQ
Incredible pictures showing actual construction of this
2 million watt giant! Something you'll never forget. The
material was obtained by Art Goodnow, W1DM and provided
by James Weldon, President Continental Electronics, builder
of the world's super VLF stations.

The Old Old Timers Club MEET

Presided over by O.O.T.C. Pres. Andrew Shafer, W0TE,
New Carlisle, Ohio and assisted by William Gould, K2NP,
Elbernon, N.J. An opportunity to meet O.O.T.C. Officers
and learn of their activities.

10:00 P.M. Open House at the Barn Museum for the "late birds".

SATURDAY

9:00 A.M.
OLD TIME RECEIVER CONTEST

Chairman: John Caperton (Louisville, Ky.) assisted by
Serge Krauss (Elkhart, Ind.) and Yates Hoag (Utica, N.Y.)

CLASS I Best factory made pre-WWI receiver - any type.

CLASS II Best shortwave plug-in coil regenerative recei-
ver -- kit or factory made (no homemade).

CLASS III Best super-het -- either kit or homemade --
Pre-WWII (No factory sets).

CLASS IV Best reflex using 2 to 5 tubes. Kit, homemade
or factory made.

First, second and third ribbon awards in each class.
Judging will be based on general appearance, design
and rarity. Each participant limited to 1 receiver
per class.

JOIN THE FUN! Bring an old receiver. Plenty of space.

9:30 A.M.
AUCTION SALE OF OLD EQUIPMENT, BOOKS, ETC.

This part of the program will be handled in a brisk
manner by our old standby JOE PAVEK, W0CEF, Minneapolis,
Minn. and assisted by Dex Deeleby, W8ZKQI. Only those
registered may buy or sell. No junk -- please...

(Special note: All Saturday morning programming will be
held on the East Bloomfield Village Green at the old
Grange Hall. East Bloomfield and Holcomb are joint towns.)

(All meetings start PROMPTLY at stated time)
SATURDAY  
AFTERNOON

The remainder of the program will be held in the air conditioned Sheraton Inn, Canandaigua, N.Y.

12:00 Noon

OLD TIME SMORGASBORD -- A wide variety of delicious foods.

Welcome by Pres. George Batterson, W2GB. Mr. Batterson will greet the group with a 1 KW. spark set using a Thordarson xfrmr and Grebe rotary gap. Mr. E. Redington, WRZM, will reply with a 1/4 KW. Blitzen and Murdock non-sync rotary.

Special Greeting to pioneer BROADCAST STATION PERSONNEL by Ken Gardner, W2BGN, former Chief Engineer WHAM.

AMATEUR OF YEAR AWARD

Recipient: "TATE" THERREAU, W3FX, Detroit, Michigan

Presented by Ivan Lucks, W3CD, retired head of Amateur Division, F.C.C.

Introduction of Museum Curators. This will include E.A. De Coste, Curator, National Museum of Science and Technology, Ottawa, Canada and Stuart Davis, National Telegraph Museum, Union, New Jersey.

1:00 P.M.

LADIES PROGRAM A trip to beautiful ROSE HILL A GREEK REVIVAL MANSION

600 METER SHIP-TO-SHORE OPERATION ON NORTH ATLANTIC IN 1921

Assisted by Max Jacobson, W3DUG, retired Supervisor Field Operations N.B.C. and presented by Bob Morris, W2LV, retired A.B.C.

FREED RADIO -- 1929

A rare 15 minute movie showing actual assembly lines, packing and shipping broadcast receivers 41 years ago. Original film supplied by Robert Freed, Editor "Electronics Illustrated" magazine and son of Freed-Eiseman's founder.

OLD CORTLAND STREET

New York's famous radio row as once seen by old time radio Editor and Author Bob Hertzberg, W2DSS. Present scenes by Bob Cobaugh, W2NX.

THE UNITED WIRELESS TELEGRAPH CO.

A documentary presentation by Thorn Mayes, W6AX, Saratoga, California. Working with I.E.E.E. Historian and members of the Society of Wireless Pioneers W7AN, W7JY, W7OE and W7RD, Thorn has assembled a pictorial show covering America's first great wireless company.

6:00 P.M.

SOCIAL HOUR  (Cocktails served)

7:00 P.M.

PIONEER BANQUET

Toastmaster: RAYMOND GUY, W4AZ, Pioneer broadcaster with NBC/WJY/WJZ

Recognition of old time amateurs, commercial and broadcast operators.

Salute to Guest of Honor WILLIAM COTTER

WGR's pioneer engineer and former radio division head of Federal Tele & Tele, Strumberg-Carlson, Bosch Radio, Scott Radio and Raytheon Companies

RADIO HISTORIAN OF THE YEAR AWARD

Recipient (posthumously): JACK GRAY, W8JDU (Crosley Radio and WLM/VOA)

Presented by Ralph Yeandle, W2IK (General Electric and WGY/W2XAD/W2AP)

DEMONSTRATION OF A PIONEER BROADCAST STATION

Modulated oscillator (UV-202's), SB mike and Victor phonograph. The 360 meter signals will be tuned in on several early battery receivers placed around the Banquet Hall. Critical comments by a PANEL OF EXPERTS.

OLD TIME ENTERTAINMENT To be announced.
RESERVATIONS AT SHERATON INN

Use the inclose card which entitles you to A.W.A. reservations. The Inn is one of the more luxurious of the new Inn Motels in the Finger Lakes vacationland area. Bring the XYL along and give her a treat!

SHERATON INN 770 South Main Street, Canandaigua, N.Y. 14424
Telephone: 315-394-7800

Note: There are also several all season commercial motels in the area most of which do not require advance reservation.

CANANDAIGUA IS CENTRALLY LOCATED:

-----slightly over one hour drive from either Buffalo or Syracuse...
-----less than 7 hours from upper Jersey, Boston or Washington...
-----slightly over 8 hours from southern Ohio or Michigan...
-----and only 4 hours from California by jet!

(Note: Admittance to all events by badge only)
NEW BOOKS

HORSELESS CARRIAGE DAYS by Hiram Percy Maxim (Paperback) #20964-4 $1.35
A GENIUS IN THE FAMILY by Hiram Percy Maxim (Paperback) #20948-2 #1.00
Write: Dover Publications
180 Varick St., New York, N.Y. 10014

FROM HEADQUARTERS

CONFERENCE
October 9-10

The new date and location will be a disappointment to some and a real break for others. The Committee had little choice in the date. The new location will not be to the advantage to members in the mid-west but a real break for those in the W-1-2-3 and 8 call areas. Surprising, many letters were received hailing the fall date in preference to one in the summer. It would appear we had better stick to September or October as in the past. See you Oct. 10th.

73, George Patterson, Pres.

PAUL FORMAN GODLEY

A nice letter was just received from Paul who had returned from a 3 month cruise around the world. He is an avid CT8 reader and made several comments on the last issue.

First, he wanted it understood that the design of the PARAGON FOUR (p.6) was not his design as he had left the ADAMS-MORRISON CO. before they had made this particular model. We understand why he didn't want to be associated with this receiver -- it was rather a sad thing to unload on the average BC listener back in 1925.

Paul also called our attention to a couple errors in the "Poldhu Story". Running through some reference books found he was correct. The "Poldhu Story" was a publicity release.

GM Godley should know. He was actively engaged in the commercial field over 50 years ago and knew Marconi personally. As a matter of fact, he was Marconi's guest aboard the ELINTA about the time it being used for short-wave experiments.

"PILOT" SUPER-WASP

and the history of the Pilot Radio Corporation by Bob Hertzberg will be the feature story in the next CT8.
Wunderlich radio tube

is a tube all collectors should have. It was released by Arcturus in 1931 and became popular in 1932. In appearance, it looks like the 30 tube of the time except it had a 6 prong base. The glass was the familiar Arcturus blue and the word WUNDERLICH is imprinted in the base which is red instead of the familiar black.

The name WUNDERLICH was not coined as a trade name as most would like to believe. It is the name of its inventor, Norman E. Wunderlich.

The tube is really a triode with an additional grid so one could use it, for an example, as a fullwave input detector (see schematic).

The original tube became known in time as the Standard "A" since in early 1933 a second type was introduced as the "B" WUNDERLICH. This tube not only had the extra grid, but also an extra anode which came out of the top. The "B" tube is the rarer of the two.

This qsl was sent to us by John Stokes (Auckland, N.Z.) who calls to our attention the note "USER hams do not use Washington intermediates". The card confirms a qso made in 1930 when New Zealand was using ZL and not the old OZ prefix as noted. We find, however, OM Hitroff recognizes our WAC Award and the popular "Zep" antenna!

J.H. HARRIS ROGERS
Underground Antenna Pioneer

Dr. J. H. Harris Rogers was born in 1865 at Franklin, Tenn., the son of a clergyman. His interest in electricity started at an early age. He engaged in research both in France and New York and perfected a system in printing telegraph in 1872. At the age of 21 he moved to Washington, D.C. and was appointed Chief Electrician at the Capitol, holding this job for 6 years. He resigned and setup a lab in 1895 at Hyattsville, Maryland. Dr. Rogers was granted 50 patents in his lifetime the most interesting being a system of secret telegraphry and his famous underground and sub-sea wireless transmission development. He was awarded the Inventors Medal of Maryland, Academy of Sciences. Dr. Rogers died in 1929.

--- George Starry, Latrobe, Pa.
While reviewing some material from Zip Jones we came on a complete writeup on how to construct a tester to check the continuity of early Radiola's using the 199 catacombs ---- a frequent problem with the collector who wants to restore one of these sets. The article is too lengthy to print but we will give you a head start by reproducing the schematic of the popular 25.

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**CQ MAGAZINE**

The original "CQ" magazine is not the current publication of the same name now available to the radio amateur. The original was a small but well written magazine published in the early 30's for the commercial operator. Subscription was $1.50 a year or 15¢ a copy. The first editor was Jim Delaney and later M.R. Rathbone, Jr. (Tnx W3KQH)

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**Radio Craft Company, Inc.**

139 Franklin Street
Jersey City, N. J.

Any member know the story of this early radio company? Was there a tie-in with de Forest Radio Telephone & Telegraph Company? They made a Type D-6 receiver. Any info would be appreciated by John Stokes, 505 Dominion Rd., Mt. Eden, Auckland 3, New Zealand.
JACK GRAY (W3JDV) has an article on WiN coming up soon in the Broadcast Journal. He is planning a 10 x 20 ft. storage room for his museum. Jack will need it after he adds the new gear he has been accumulating this past winter which includes lots new G-R equipment, CR-9 and Cbre rotary gap, WE-6C, etc.

TATE THEREAU (W3FX) is in the process of making a quench gap spark transmitter. One of Tate’s hobbies is tape recording various spark signals.

JACK NELSON (W2FW) got a fine haul in a nearby attic to augment his collection: Kennedy 5 tubes, Radiola 20, Westinghouse RADA, couple cone speakers, Bunnell key, etc. That’s the place to look: old attics and barns….

BOB LOZIER (Monroe, N.C.) showed part of his collection at Central Piedmont College. The publicity indirectly resulted in a Bristol Mod. D Inverse Duplex receiver, large collection of early meters, tubes, speakers, variometers and other items. Good going Bob…

BOB PIANAGAN (WA1HAU) completely restored an early Splitdorf -- right down to refinishing the panel. He used the adapters described in last OTB to eliminate use of 20L-As. Bob would like to know more about Splitdorf. Who was he ?., etc.

MIKE CAVENY (VE3GG) found the Poldhu Story bringing back fond memories. He listened to the longwave station regularly with his old honeycomb receiver and remembers the Trans-atlantic Tests. Mike also commented on the list of Canadian Stations in the last OTB since some were not mentioned. A.W.A. merely reprinted published copy from a current magazine.

FRANK KRAMER (Stratford, N.J.) almost doubled his collection in the first 6 months of this year: Kennedy 20, RADA in original carton, Thompson neutrodynes, Sleeper Type 54, Aerola Sr., De Forest D-12 and crystal set, 1939 Meissner TV set, etc. plus all kinds of QST’s, Radio News, rare tubes, etc. which all goes to show that there is still lots old gear in New Jersey.

PERRY CORKNALL (Hardin, Ky.) reports the following new items in his collection: Radiola Regonflex, Magnavox A.F. amp. Mod. C., W.E. Mod. 7A amp., W.E. 518W speaker and a nice loose-coupler. The fellows in Kentucky aren’t missing too much!

EVERETT BERRY (Tansing, Mich.) still going strong digging up all kinds of “goodies” according to some fine photographs recently received. Bv is now working away from BC sets and has his eye on early amateur and commercial gear such as rotary gaps, couplers, etc. He now has almost 50 loudspeakers.

THOM MOYES (W5AX) and K2DMR had nice cruise to Alaska. On return he started to dig into the history of United Wireless Co. What started out as a casual project has developed into a full job making Thorn pretty much of an authority. You’ll see him at Canandaigua in October.

MEL COMER (Artimore, Pa.) sent A.W.A. some controversial newspaper clippings from Florida. Seems AP article stated, “David Sarnoff put radio into the American home”. This resulted in an indignant letter from a reader stating it was really “Dr. Harris Davis and Frank Conrad at Pittsburg (KKK) who really started it all and not Sarnoff.” This not being enough, another reader protested and said it was neither -- that “Dr. Lee de Forest was the Father of Radio.” Enough of this. New gear for Mel is Navy SB-1012-A by Westinghouse which is a real beauty.

FRANK APPLE (K2PI) has been picking up some rare detectors: U.S. Navy type, De Forest crystal detector, a Jove plus several others. Another find for K2PI was a Theremin in excellent condition. He had a fb photo of his collection in a recent issue of QST...good PR work.

ROSS SMITH (Elkhart, Ind.) just made up an AK breadboard: The tuning unit from Serge Kraus, the board from Roland Matson and the Det./Amp. from Mel Comer! Ross will be at the Oct. 10th Meet with 50 odd tubes to sell or swap.

PETER SCHROEDER (WLPNY) plans to be on the old time CW Net sometime in the future with a rig he built in 1938. A.W.A. sent Pete one of the 3560 Kc. Net crystals.

KEN CONRAD (W3IEJ) is real tickled with a Victoreen super. Ken haunts the local flee markets and auctions and comes up with some real “finds”...

JIM ROWE (W8KJU) inherited some 1901-06 magazines from his father which are full of information. Jim won a prize at local department store contest for having the oldest receiver. Good publicity which should help finding more.
AARON SOLOMON (VE1OC) is now the proud owner of a mint Pilot Super Waap. He would like to see more interest in collecting among Canadian amateurs.

MARVIN PRICE (Sacramento, Calif.) sent a beautiful photo of his collection which he houses in his "ham" store at 4128 Franklin Blvd.

GEORGE STARKY (Istrobe, Pa.) has a lead on some old Marconi gear. George is still making out well in corresponding with manufacturers covering the subject of early radio.

HENRY WENDEN (KE1IK) will have an old time transmitter on the air this fall using a 47-46-10.

NORM BURTON (Revesby, Australia) is now back home after a long trip to Europe. He sent AWA interesting slides which W2QY is duplicating. Norm will fill us in again soon on VHF activity from down under.

JOE PAYEK (WD0BR) reports collecting slow this past summer. He did, however, get his hands on an almost complete set of Electrical Experimenter.

JOHN ALLEY (WIDCD) while on a collecting spree uncovered a box full of glass plates (negatives). One of unusual interest was an Alaskan Wireless Station dated June, 1914, which will be printed in the next CCB.

JACK ALLISON (W2MKV) sent a lengthy list of equipment in his amateur museum which he has named WIRELESS MUSEUM of LONG ISLAND. Jack's collection is quite diversified. If in the area stop in; 160 South Country Rd., East Patchogue, L.I., N.Y. 11772

LINK CUNDALL (W2QY) is still haunting the Flea Markets and used book stores for old books particularly juvenile series. Link averages $.25 per copy!

LARRY WHITLOCK (WALLNN) is very busy restoring a de Forest Interpanel set (lucky fellow!) and recently acquired a mint Paragon RA-10 and DA-2 detector/amplifier.

STU DAVIS (W2ZH) writes that he plans to attend the Canandaigua Meet. Hope so since AWA would like to have Stu identify some of the club's telegraph equipment.

BOB MORRIS (WELW) visited a friend moving to Arizona and came back with a carload of old gear -- old receivers, tubes, etc.

THE TUBE COLLECTOR

The brief description of the VT-2 in the last OTB needs some correction... The description of the early VT-2 with crude wax fill fits the VT-1 -- the VT-2 having a fiber insert because of higher plate voltage normally used... Also, the VT-2 Navy equivalent was the CW-931 -- not CW-936. Jerry Tyne saw the errors and adds that the later replacement for the 205-B was the 205-D.

The SAGA OF THE VACUUM TUBE which had two Part 9's and brought comment from John Stokes has been cleared up by the author, Gerald Tyne. Jerry writes that his original Part 9 was too long and the publisher merely cut it in two and labeled both "Part 9" without any explanation. The two sections should have been printed as "Part 9A" and "Part 9B" or the second section could have been marked "Continued from previous issue."

EARLY CLAPP-FASTHAM RECEIVER

This crystal set was recently acquired by Les Bohl (Fremont, Calif.) and is described in J.J. Duck's 1913 catalog. A rare one since few were manufactured.

BOOK PUBLICATION: Remember the "feeler" we sent out with the OTB last year concerning publishing a book on old time radio? Well fellows, we have bad news. The author has been hospitalized and the project has come to a halt. The future doesn't look too good at the moment according to John Drake.

AWA NETS

--- Summer Schedule ---

All nets dis-continued except the regular SUNDAY NOON phone net on 3900 KC. -- SSB or AM.
David Grimes, vice president in charge of engineering for Philco Corporation, who was abroad on a special war mission, was killed on September 4, 1943, when the transport plane in which he was traveling, crashed into a mountain in Northern Ireland. He was 47 years of age.

Mr. Grimes was born on May 28, 1896, at Minneapolis, Minnesota. Following his graduation from the University of Minnesota, he served in the last war as chief radio officer at Kelly Field, Texas, when the use of radio communications in warfare was just beginning to assume importance. From June to December, 1918, he was Signal Officer attached to the British Air Forces at Aldershot and Littlehampton, England.

After the war, Mr. Grimes joined the American Telephone and Telegraph Company as a research engineer in telephony. In 1922 he established his own engineering organization to do research work on a consulting basis for a number of different companies. It was during this period that he invented the famous “Grimes Inverse Duplex circuit” that was used by many early radio amateurs in home-made receivers. From 1930 until 1934, he was license engineer with the Radio Corporation of America.

Mr. Grimes joined Philco in 1934 as engineer in charge of home-radio-set research and engineering, and continued in that capacity until 1939, when he was named chief engineer. In 1942 he was elected vice president in charge of engineering.

The Graybar Company, was given its name by men still young in years—Gifford, Jewett, and others. The human touch of the thing is positively encouraging.

The name is formed from those of Elisha Gray and Enos M. Barton. Elisha Gray was born in 1835 and died in 1901. He was educated at Oberlin College. In 1867 he received his first patent, for a self-adjusting telegraph repeater. Later he invented telegraph switchboards, and annunciators, a harmonic telegraph system and a telegraph printer. Also, the Telautograph and numerous telegraph and telephone devices. He was close on the heels of Alexander Graham Bell in the invention of the telephone. For this he filed specifications on February 14, 1876 but a few hours after the filing of an application by Bell, to whom the patent was awarded and whose rights were sustained by the Supreme Court. Gray’s associate, Barton, is said once to have remarked: “Of all the men who didn’t invent the telephone Gray was the nearest.”

Gray and Barton maintained an electrical manufacturing establishment in Chicago, at 479 State Street, from 1869 until 1872, in which latter year the business became a part of the Western Electric Company, then newly organized.

Mr. Barton became the head of the works of the Western Electric Company where he remained for a period of forty years.

It is a great personal credit to men identified with the destinies of the industry of telephone manufacture and communication service that in seeking a good name for the new division of the work they have placed permanently on letterheads and signboards the names of Elisha Gray and Enos M. Barton. The very fact that in years to come it may be necessary to explain to posterity what “Graybar” means will present opportunity to re-tell about the contributions of these pioneers to the beginnings of the art of communication.
HERE appears to be so much misunderstanding concerning M. B. Sleeper's connection with the Sleeper Radio Corporation that an explanation is due our readers.

In 1919 M. B. Sleeper organized the General Apparatus Company, the name of which was later changed to Sleeper Radio Corporation. During Mr. Sleeper's absence abroad, the company got into financial difficulties and, upon his return in December, 1922, the concern was reorganized.

Feeling that the condition of the industry at that time did not warrant his continuation in manufacturing, Mr. Sleeper organized M. B. Sleeper, Inc., to take over Radio Engineering magazine as an independent paper, though it was originally published as a house organ for Sleeper Radio Corporation.

Disapproving of the manner in which the business was conducted, Mr. Sleeper not only refused to carry the advertising of Sleeper Radio in Radio Engineering magazine, but insisted upon disposing of his stock in the manufacturing company. On December 21, 1923, the sale of the stock was concluded and, since that date, M. B. Sleeper has no share in the ownership or management of Sleeper Radio Corporation, although the company has, unfortunately, continued under his name.

By a contract made at that time, M. B. Sleeper agreed not to engage in the manufacture or sale of radio equipment under the corporate or trademark name of "Sleeper," except in the case that Sleeper Radio Corporation discontinued or went into bankruptcy.

This came about in the early part of 1926, when Sleeper Radio went into bankruptcy with a loss to creditors and stockholders estimated at a million dollars. Shortly after, the assets of the defunct company were bought for $7,500, and an attempt is being made to put the company in business again.

Now, although M. B. Sleeper is in a position to engage again in the manufacture of radio equipment, sold under the Sleeper name, it should be understood definitely that he is in no way connected with, or responsible for, the activities of any concern whose equipment do not bear the mark "Licensed for manufacture by M. B. Sleeper."

It is unfortunate that this situation should arise, but the directors of M. B. Sleeper, Inc., take this opportunity to warn the readers of Radio Engineering against any misunderstanding over the similarity of names. Look for the initials "M. B." and you will know which is which.

The above notice appeared in a 1926 issue of RADIO ENGINEERING of which Milton E. Sleeper was Editor.

HUGE SCANNING DISC
on front cover of May issue of TECHNICAL ENGINEER magazine is in the A.W.A. Museum! Copy was received from W2NX. Story will follow in OTB.

NEW GEAR IN A.W.A. MUSEUM
TUBES: W2CH, W2WN, W3JIO
MAGAZINES: W2UX, Russ Barker, Ev Berry
RECEIVERS: KLYXO, K2E5O, W2ZM, W2GH,
John Caperton
MICROPHONES: W2J1O, W2LK
MOTOR-GENERATOR SET: W2AFE
TRANSMITTER: W2AHZ
METERS: Gen. Railway Sig., Jim Di Ruzza
MISC.: GEMI, W6J1O, KLYXO, W3AW, W2JTE,
Ev Berry, General Railway Sig.
Alexanderson Gives His Papers to Union

A Schenectady inventor who made crucial contributions to the development of both color and black and white television has donated his collected papers and documents to Union College, the college announced today.

Ernst F. W. Alexanderson gave the first home demonstration of television in Schenectady in 1927. His inventive career spanned more than half a century during which time he was credited with 321 patents. His final patent was granted in 1955 for the invention of the color television receiver.

NOW 92, MR. Alexanderson initially gained an international reputation in 1906 when he constructed the first high frequency alternator which made possible long distance radio transmissions.

Educated in his native Sweden and in Germany, he came to the U. S. in 1901 to visit the famous scientist Charles P. Steinmetz who worked for General Electric and taught at Union College.

Mr. Alexanderson was hired by GE in 1902 on the recommendation of Mr. Steinmetz and continued to work for the company until 1948 and served as a consultant for another decade. After his formal retirement, he also served as a consultant for the Radio Corporation of America for whom he developed the color television receiver.

The Alexanderson papers are a complete collection of this work including five filing cabinets of notes, correspondence and unedited reports and manuscripts. Mr. Alexanderson’s papers will be placed in the Union archives at the Schenectady college’s Schaffed Library, joining a collection of Charles Steinmetz papers and those of another engineering pioneer Ernst Berg.

R.A. FESSENDEN obtained U.S. Patent #1,050,441 for "beat" or heterodyne method of reception in 1905 -- an outstanding invention that went unnoticed for many years....

HISTORY OF BROADCASTING AND KDKA ----trust O.O.T.C. members have been reading the excellent account of early KDKA in the past two issues of SPARK GAP TIMES. Good copy without being too commercial....

G.W. PICKARD of Amesbury, Mass. invented the silicon detector in 1906.
Experience has shown (at least in my case) that every other audio transformer in a Radiola III or III-A has an open winding. Not having a replacement transformer for one I was restoring and being a glutton for work, I undertook the job of repairing one of these transformers which had both primary and secondary open! Removing the outer shell and laminations, I found the windings impregnated in beeswax. This problem was solved by placing the A.F.T. in a warm oven (kitchen range). Taking a guess on the temperature, I removed the unit and using a handle of a small wooden hammer, I pushed the inner primary coil free of the outer secondary as seen in the picture above. Fortunately, the opening in this coil was in the first layer. Not so lucky with the fine wire secondary which was open three layers down. The upper picture shows before re-winding. The tools include the jeweler's glass (loupe) and other pieces which I'm sure you can recognize. The bottom picture shows the two finished coils back together using plastic tape for insulation. The batteries were part of the equipment used to check continuity. The set now works perfect -- but I'm careful with those WD-11's! -- you can't repair them...

73, Ted Woolner, W1ALBP, Shrewsbury, Mass.
Crystal or Vacuum Tube Detection with the same set

These two sets (radio receiver Model AR-1300 and Detector Amplifier Model AA-1400) meet the demand of the novice who wishes to start with a simple crystal detector and later to pass on to vacuum tube detection and amplification at minimum cost.

Radio receiver Model AR-1300 is a new tuner for the broadcast enthusiast. Used as a crystal detector it is a complete receiver. Used with Model AA-1400, here shown, the crystal detector is switched off and amplification is controlled by regeneration.

Detector Amplifier Model AA-1400 consists of a vacuum tube detector and two stages of audio-frequency amplification. It is especially adapted for use with receiver Model AR-1300 to increase the strength of broadcasted concerts. The individual filament control permits close regulation of the received energy. Distortion of broadcasted music is avoided by a special high-frequency resistance across the secondaries. Three telephone jacks insure ideal selectiveness ranging from simple tube detection to two stages of amplification.

PRICES (NOT INCLUDING ANTENNA, TUBES, AND BATTERIES)

<table>
<thead>
<tr>
<th>Product</th>
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<td>Radio receiver Model AR-1300</td>
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<td>Detector Amplifier Model AA-1400</td>
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</tr>
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<td><strong>Total for Combination</strong></td>
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See these New G. E. Products at Your Nearest Dealer

Radio Corporation of America

Sales Department, Suite 1802
233 Broadway, New York City

July, 1922