

THE OLD TIMER'S BULLETIN

OFFICIAL JOURNAL, ANTIQUE WIRELESS ASSOCIATION
Published for the Old Time Wireless Operator, Historian and Collector

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No. 4



Informal photo at A.W.A. business meeting: l. to r. - W2GB President, W2AFN, W2YHK (Pub. Editor) and W2WTY.

W2AN - the club's 1923 transmitter has been checked out and found to operate perfectly. At this writing there is need to do a little more work on the power supply. W1BB has volunteered to furnish us with a monitoring crystal with a frequency of 1805 kc. Operating schedules will be printed in the next bulletin.....

ELLIOTT CRESSON MEDAL was awarded recently to A.W.A. member Grote Heber, pioneer in Radio Astronomy. As most of you know, Grote built the world's first radio telescope during his spare time back in the 1930's. With this 'dish' he measured galactic and solar natural radio waves. He is now associated with the Research Corporation of New York City and is now working on long wave radio astronomy in Tasmania. We have excellent material on his pioneer work which will be printed in a future bulletin....congrats Grote!

SILENT KEY - Earl Cline, Sr., W4PPZ, recent President of the O.O.T.C. Earl knew the game inside-out as a devoted amateur and partly through his efforts the OOTC is the organization it is today. Both A.W.A. and O.O.T.C. honor his memory.

ANNUAL BUSINESS MEETING

27 area members turned out for the Annual Meeting held Nov. 16 at EDJA. President Batterson reviewed the club's activities for the preceding 12 months which was highlighted by 4 events:

Program at Dearborn (April),
A.W.A. Open House and Luncheon (May),
A.R.R.L. Convention Exhibit (Sept.),
Historical Meet and Dinner (August).

In addition, the club provided the usual number of film programs, exhibits and demonstrations during the year. The subject of housing facilities was discussed and Treasurer Cunsill reported the organization solvent.

The tenure of office for the four directors was subject to election. Directors Brelaford (W2CTA), Dengler (W2IK) and Triggs (W2YHK) were re-elected and Hamler (W2LF) declined to run and was replaced by Ken Gardner, W2BGN (ex-SBGN). Ken is an old time broadcast engineer (one time Chief Engineer of W2AM). He has been in the game for over 40 years.

An interesting program followed when W2QY demonstrated the electrical action of a carbon/needle type detector and a coherer by noting the change in resistance on a vacuum voltmeter. W2CTA exhibited two rare Grebe receivers - a CR-6 and CR-7. This was followed by a tape play back of VLF "whistlers" - R.F. signals recorded in the audio frequency range. The program was concluded by a slide show of pictures taken recently at South Wellfleet, Otter Cliffs (NH), the Ford Science Museum and of the August Meet.

Helen, W2ZYPT (xyl-K2JA) served the gang refreshments and the meeting was closed around 11:30 P.M.

WORLD-WIDE...the A.W.A. roster is ever increasing....latest to be added to the list is a Radio Club in INDIA and a new member in Canal Zone.....

ANTIQUA WIRELESS ASSOCIATION

A.R.R.L. Affiliate

An amateur organization interested in the history of early wireless...

Annual dues: (including the "Old Timer's Bulletin", Certificate and other benefits) - \$2.50 per year payable to Club Treasurer-

Lincoln A. Cundall, W2QF
69 Boulevard Parkway
Rochester 12, New York

"OLD TIMER'S BULLETIN":

Editor: Bruce Kelley, W2ICE
Main Street, Holcomb, N.Y.
Publishing Editor: Larry Triggs,
W2YRK

PLATE GLASS receiver (2 RF, det. and 2 audio) circa 1925 was recently acquired by Ken Conrad of Akron, N.Y. A showpiece, all sides and top are of heavy plate glass with 3 large bakelite dials and rheostats suspended in the air....the insides is beautifully assembled with bus wire. Ken also picked up an old Navy key and 4 Ford spark coils....

PAPER SPEAKER COILS is an item you haven't seen in a store or catalog for over 35 years, however, Frank Pagano recently purchased some from one of the many stores in New York's "Radio Row" which is going out of business. Frank tells us that by summer the old Cortland Street section as we once knew it will be just about gone - all buildings being demolished for a huge construction project.....

NEW YORK COLLECTION which has expanded considerably in recent months is one owned by Bob O'Neil, K2AXE, at Ithaca, N.Y. A fair portion of the more recent items came from a one time collector in Waverly - "Stub" Tappan, W2AVD, who passed away a few years ago. This part of the collection consists of many Grebes, Kennedys, I.P.'s, etc. all in immaculate condition. In fact, the equipment is as good, if not better, than the day it was manufactured for "Stub" average 3 to 4 weeks re-storing each receiver! His workmanship was un-excelled. K2AXE extends an invitation to the 'gang' to stop in...

SILENT KEY - "Cliff" Dow, W6EB. The first to make a 2 way contact between U.S. and Hawaii in 1922. One time Chief operator on the SS "Hope", pioneer mercy ship to south-east Asia. (W6RLW)

PIONEER WOMEN OPERATOR - it is seldom we have an opportunity to tell about a women pioneer - and we have one right here in our organization- Eunice Thompson, W1MPP, up in Lovell, Maine.

Eunice started in the game back in 1920 when she was one of the operators at old 1XE, the American Radio and Communication Co. station - better known as AMRAD. 1XE gave up its experimental status in 1922 and became WGI. She devoted many years to the station and became a familiar voice on the "air waves".

Unlike some, her interests were diversified and she became quite familiar with the manufacture of AMRAD products and attended the Eastern Radio Institute of Boston. After AMRAD, she accepted a position with New England Power Company which she served 32 years having only retired recently.

Eunice obtained her ham ticket in 1921 and has been the holder of many calls. A member of the OOTU, W1MPP can be heard regularly on the "Barnyard Net" every morning (3960 kc.). An interesting personality with a world of experience, stop in and see Eunice and OM George on your next visit to Maine. Suggest you drop them a line in advance, however, to confirm the time.

NON-AMATEURS in A.W.A. makeup at least 25% of membership. Contrary to what one may think, our members WHO DO NOT hold an amateur license are frequently more informed on the subject of early radio than those who have a license!

A.R.R.L. DIRECTOR - congrats to OT Gil Crossley, W3YA, re-elected Director of Atlantic Division, A.R.R.L. Associated with the Electrical Engineering Dept. at Pennsylvania State University over a period of many years, Gil is well qualified to represent the amateur - both in retrospect and the present. He has been interested in our organization since its inception and can always be counted on to help.

NAVY HISTORIAN is Harold Dinger, W3CH, ex-SES. "Hal" directs his interest toward early Naval Wireless - a tremendous field since the U.S. Navy (and the Naval Research Lab.) have been foremost in wireless development since the turn of the century!

CHICAGO COLLECTOR - a new member in this area is Dr. Russell Hauselmann, surgeon at St. Luke's Hospital. "Doc" has an exceptionally fine collection of early receivers plus a few commercial items which he works on in his spare time.

QTH: 914 Columbian Ave.,
Oak Park, Ill.

COMING EVENTS

- April COLLECTOR'S GET-TO-GETHER
(A.W.A. Museum, Holcomb, N.Y.)
- May OLD TIMER'S NITE
(Ford Museum, Dearborn, Mich.)
- May OF LUNCHEON and DEMONSTRATION
(W.N.Y. Hamfest, Rochester, N.Y.)
- August A.R.R.L. NATIONAL CONVENTION
(New York City)
- October NATIONAL HISTORICAL MEET
(New England Wireless Museum,
East Greenwich, Rhode Island)

Exact times and location to be announced in later bulletins.

NEW HAMPSHIRE "OT" Dick Smith, W1NHQ, had no intentions of becoming a collector being content with his old 1 kv spark set as a souvenir. However, without trying too hard and having several good friends, Dick now has a SE-1420, Kennedy and Federal receivers plus all kinds of Clapp-Eastman, Amrad, Murdock and other early gear!

W1NHQ recalls that back in 1907 while at the Children's Museum in Brooklyn, an 'older' boy introduced him to the use of a more modern detector - the perikon detector. The boy's name was Lloyd Espenschied!

A.R.R.L. MUSEUM is moving along at a good pace according to W1ANA. (see December issue of QST). Roland says one of the amateur exhibits will be a complete Murdock spark transmitter. They have all the components except the rotary gap...can you help?

COLBY RADIO SCHOOL - we note with interest that two of our members attended the old Colby Wireless School in Auburn, N.Y., pre-WWI...W1ANA and K2SPZ...

Colby not only maintained a school for commercial wireless operators but also manufactured excellent receivers up until the mid 20's.....

1964 NATIONAL MEET: Bob and Nancy Merriam, W1NTE, have offered their QTH for the "2nd Annual A.W.A. National Gathering" of amateur historians and collectors. The New England Wireless Museum is but a few hours drive for most New Englanders and only a few more from N.Y., Penna. and New Jersey. The date will be either the 1st or 2nd weekend in October. Start making your plans now for an autumn sojourn to historic New England...more info later.

ED CUMMINGS (ex-W1P 1913)

Ed sent us some most interesting material with photos for a future bulletin. Here we see him tuning a Marconi receiver at the newly constructed New England Wireless Museum.....



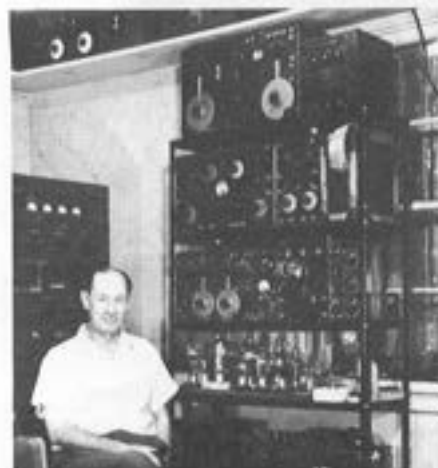
OT SCHEDULES - winter condx es long skip hve loused up sai skeds, however, a fu stil git together...a nu one is between K2HP es W0CF every sat..plus a group out in W0 land on 7.0 mc.... we also understand tt W0CTA es W0CBW git together once a week...W0JUV finds W0CFP, W0ICE es W0MCC..while W0GB, W0IF es W0ZM can be hrd sundays around 7220 kc.....W0EJ, W0NTE es W0ICE run into one another on 3.94 mc...while W0NXY, W0JUXW es W0ICE can be hrd on 75 meter SSB...lastly, the Rochester "gang" holds forth on 144 mc.....

DE FOREST W-5 broadcast receiver belonging to Frank Pagano is now on exhibit in the club's museum. Earle Young picked up the receiver on a recent trip to New York - it took over 15 minutes to unload the various components from Earle's Plymouth! The receiver was the ultimate in its class. A huge ornate console, it housed a TEF receiver using 201-As, loop antenna and elaborate cone speaker on top. Must be seen to be appreciated. We'll try and have a photograph in a future bulletin.....

NEW GEAR ON DISPLAY AT A.W.A.

- W1 transmitter - Dr. Russell Hanselman.
- W1 telegraph buzzer set - W2TJH
- W1 tuning unit - W7JY
- DeForest BC receiver - Frank Pagano.
- Printed material - W2ONE
- Catalogs - W3YA, W2QIE
- Books - W2AE, K2DQ, W4ZM

ERV RASMUSSEN, W6YFM, well know west coast historian and collector. The foto shows only a few of the nice pieces of gear owned by Erv. Not seen at the left is a complete modern station fully equipped with Collin's gear. He is quite active in amateur circles and is frequently called on to provide exhibits and talks on early radio....



EARLY FLEMING VALVE - as a result of our "modest" announcement in the last bulletin about the Fleming valve in the club's museum - several have written for more info. It is understandable since we have never seen or heard of a tube that old in this country. It was sent directly to us by officials of the British Marconi Co., Chelmsford, England. The valve was made in 1905 and has a 12 volt carbon filament which is indicated by a plate screwed to the base...and the filament is good too! The plate is an aluminum cylinder. We will try to have a photo of it in a future bulletin; however, in the meantime, one may look up Jerry Tyne's "Saga of the Vacuum Tube", Part 4, Figure 16. The tube in question is "D" at the far right.

NEW LOCATION for WJOP's museum and ham station will provide Joe more room and better display for visitors in Minneapolis. Joe suggests the A.W.A. sell its stationary at cost. Good idea! All those interested - drop Kelley a line and if there is sufficient interest we'll check into the cost....

MONUMENT at Battery Park, New York City in honor of wireless operators who lost their lives at sea was unveiled May 12, 1915 (V.V.O.A.)

OLD TIME ADS

Each member is entitled to one ad per issue without cost. All material must be over 25 years old.

WANTED- RCA equipment catalogs (1921-1923) titled "Radio in the Home" showing tubes, transformers, etc. John Knight, W6YY, Mount Wilson, California

SWAP -all kinds of gear for IP-501A... also looking for "Columbia, gem of the Ocean crystal" galesa. Gene Kerns, 235 W. Galea St., Milwaukee 1, Wis.

WANT - books on tubes as well as tubes and electric light bulbs. Vern Thompson, W9JW, 1403 S. 4th St., Effingham, Ill.

SWAP - RCA tubes in original cartons - types 22, 32, 34, 81 and 2E7 for what have you? Ken Conrad, W2IE, 5482 Crittenden St., Akron, N.Y. 14001

WANT - 1916 issues of "Everyday Mechanics" (small size magazine) - also looking for April 1917 "Everyday Engineering". Will make good swap or cash. Bill Gould, W2NP, 926 Woodgate Ave., Elberon, New Jersey

INFO WANTED on WILLIAM MARSHALL. I have some fixed condensers in mahogany cases, fancy switches, etc, some dated as early as 1895 and made in N.Y.C. made by Wm. Marshall. Does anyone have info on this manufacturer? J.W. Stedenfeld, W2TB, 26 Gibson Place., Washington, New Jersey

SWAP all kinds of gear - want RJ-4 detector unit and CML Zenith job. Also looking for "Pacific Radio News" of 1920 and 1921. Erv Rasmussen, W6YFM P.O. Box 612, Redwood City, Calif.

WANT W.E. microphones and other equipment (W.E.) Also interested in early speakers, etc. Pay cash. Curtiss Schafer, 725 Lake Ave., Racine (3), Wisconsin

SWAP Freed-Eisenmann Model NR-5 broadcast receiver for what have you? John Baum, W2VEB, 969 Douglas Ave., Wantagh, Long Island, N.Y.

FOR SALE- QST complete to date - best offer. Also antique radio collection. Send large S.A.S.E. for listing. Phil Weingarten, 67-61 Alderton St., Forest Hills, N.Y.

NEW COLLECTION to come to our attention is one owned by J.W. Stedenfeld, W2TB. "Stedy" is not an ardent collector but he has managed to build up a nice collection of about 25 receivers plus many other items. He tells us the Antique Dealers in his area are now beginning to stock old broadcast receivers!

Incident in a "Lost Cause"

A plea for the substitution of the Continental Code for the Morse Code in the U.S., both in landline and wireless, was made by George Gray Ward, vice president of the Commercial Cable Company, in the May 16, 1914 issue of Telegraph and Telephone Age. The occasion for Ward's concern was the increasing number of errors coincident with the adoption of "meaningless" cipher code words in telegrams and cablegrams. Whereas plain language text allowed an operator to guess or infer correctly when he was in doubt about a letter. Cipher code words left him in the dark. It was easy to misread Morse "C" for "ie" or to misread "O" for "ee" when receiving conditions were not good or somebody was sending with his feet. While Ward admitted that Continental could be misread, too, he stated that elimination of the spaces called for in several Morse letters would at least reduce the hazards by that amount.

Ward was pretty serious about it all and even talked it all over with Lord Kelvin. "In the opinions of many with whom I have discussed this question, including the eminent authority on all questions pertaining to telegraphy, the late Lord Kelvin, the Continental alphabet is by far the safer, and is also the quicker mode of transmitting code messages by sound. In fact, Lord Kelvin, in a discussion I had the honor of having with him on this question, stated to me that he could prove mathematically that the Continental code is faster than the American code."

As we all know, Continental did finally become the standard for wireless, but in landline, the boys were reluctant to give it up. Few, if any, gave Continental a serious try in spite of much strong argument in its favor.

TELEPHONE GEAR of WWI may be added to WVA's collection in the future. In the meantime, Frank tells us he has a beautiful photo album of early Wireless Speciality equipment including pictures of all the early IP-76 series, Perikon detectors, IP-89, 102, 105, 106, 109, 111, 112, 120, 156, etc.

ATWATER-KENT - WJOP reports that he now has almost a complete collection of Atwater Kents up to the A.C. period. In fact, Joe has one receiver that he can't identify in the Atwater-Kent series. It is a breadboard job (bakelite) and is not listed.

MICHIGAN - "Tate", W8FX, is still contributing to the various museums in the Detroit area. An IP-175 went to the Michigan Historical Museum at Lansing, several miscellaneous pieces to the Dearborn Museum and an authentic switch (from WIC "Rogers City") for the replica of WICA at the Great Lakes Museum.

Without a doubt, Michigan has more for the radio historian to see than any other state - both in number of museums and quantity of equipment !

LAST VISITORS at the club's museum before the heavy snow set in were Warren Davis, W7JY from Seattle, and Harold Swart, W8MC from Flint Michigan. W7JY really knew his stuff - he recognized just about everything in sight - from a minute piece of wolleston wire to a rare telegraph key ! W8MC has been with us many times and always enjoys looking at the stuff...on this occasion he stayed for dinner and witnessed the operation of the 1000 watt AM rig at WJCE....(Harold is 90% CW ex 10% SSB - he didn't know there were AM extra left !)

NEWSPAPER - article in Milwaukee paper paid off for Gene Kerns - he picked up a rare Cutting-Washington 3 tube regen receiver and an early 4 tube AK - for nothing !

BAIRE RCA TV RECEIVER

W9JW will swap the above television receiver for old radio tubes. The set is in excellent condition and has historical significance. It bears the serial number '1' and was presented to Major Lennox Loer at the 1939 World's Fair by RCA. Will accept any reasonable offer. For other info, write:

Vern Thompson, W9JW
1403 South 4th St., Effingham, Ill.



Friendship Amateur Radio Club

Westinghouse Family Day
October 14, 1963

W8XK/3

Westinghouse Defense and Space Center
Columbus, Ohio

8XK QSL CARD

Everyone, of course, recognizes the call W8XK as the original call 8XK of famous pioneer broadcast station KWGA. The call was used by Dr. Frank Conrad during all his initial broadcasts. To commemorate this pioneer work, the FCC authorized the use of W8XK to Westinghouse employees on their "WESTINGHOUSE FAMILY DAY", Sept. 14, 1963.

The above card was sent to us by Bruce Boyd, W3WA, Westinghouse Engineer. He says the call caused quite a stir when heard by the "gang" on 20 and 40 meters since many had not heard the call on the amateur bands for over 40 years! (7020 kc. CW and 14310 kc. USB)

PROGRAM MATERIAL - there is now available to club members a new 30 minute slide show with commentary on magnetic tape titled "A.W.A. REVISIT". The show should be of interest to the amateur historian, collector and old timer - it is not recommended for the general public since it is doubtful whether the average person would be familiar with the terminology used...The slides are standard 35 mm. size mounted in glass and the tape is recorded at 7 1/2". Interested? No cost except postage - write the Secretary.

The photographic group are currently re-vising 2 shows and working on a new one titled "The Boaring 20's". This material will be available for Banquets and other large gatherings.

ONE KILOWATT SPARK transmitter being assembled by Bill Travers makes five large spark transmitters for his collection. Bill also reports picking up a BC-131 (looks like an IP-500) to add to his collection of DeForest, Marconi and I.P. gear. Running short of space, he now concentrates only on commercial equipment plus Kennedy, Federal, E.I., Tusk and Murdock in the regular line.

DEARBORN OF NITE - is tentatively set for May 30th. This is later than usual; however, it appears to be the only week-end open....more on this later.

F.C.C. PETITION - it seems to be the Fad nowadays to get on the bandwagon and be pro "this" or anti "that". We therefore advise all A.W.A. members to watch with great interest a petition we've heard about which proposes re-establishing spark transmissions which were banned in 1923.

This proposal, if filed and accepted, is not as ridiculous as it may first appear. With the ever increasing poor quality TV programs and the boring trash on radio, it is quite likely we wouldn't even be asked to observe "Quiet Hours". There would be the need, however, for the amateur to sharpen up his signal a bit (decrement) and probably the straight gap and Ford spark coil would be prohibited.

A problem may be getting the rotary spark set to resonate on VHF frequencies. However, for local work this should pose no great problem since recent tests with the club's 1000 watt sink rotary spark transmitter gave fairly good continuous signal level all the way from 2 thru 200 meters!

This remarkable range will eliminate the need for band-switching transmitters and be a boon to the many "appliance operators". Like all petitions, it will meet some objection - most likely from the amateur who does not know the code (it is difficult to voice modulate a spark transmitter). We'll follow the proposal with great interest and would appreciate information on its progress.

SILENT KEY - Theodore R. McElroy, 6Z world champion telegrapher in the 1920's and 1930's, passed on in November at his home in Littleton, Mass. During WWII McElroy manufactured gear for military service, however, his name will always be remembered as the "Champ"...He held the telegraphers' world championship from 1920 to 1933, regained it in 1935 and held it until the competition was discontinued in 1939..... (Thx- Jim Burns, W3KOU)

BOMANZA! John Baus, K2VZB, recently hit the jackpot when he purchased 4 dozen 201-A's in original cartons at 5¢ each!! He also picked up a box of Walco Lamps at 10¢ each. Goes to prove there is more fun in this game when you find a "buy" - than just sit back and pay the long price. (Something like working DX with a QRP rig vs a kilowatt or 6 element rotary)

PAUL NIPKOW (of Germany) invented the television disc in 1884!

FRED PARSON'S MODEL OF "CC"

South Wellfleet, Cape Cod, Mass.

Much has been written about this pioneer wireless station built by Marconi at the turn of the century. El Raser wrote about his trip to the site in 1962 and we mentioned the celebration this past summer which WLES and W2EM participated - now we have some interesting pictures to show you.

The top picture is Fred's model which is on display in a small building near the original site. This beautiful replica is constructed to exact scale of 1/8 inch to the foot and even includes plank walks, guy wires, deadeyes and little men!

Next are two of the several rare interior pictures that W2EM unearthed. First is the transmitter with the oscillation transformer above and the large bank of condensers below. At the lower left (and not too clear) is the rotary gap. The other picture shows the old kerosene engine and alternator.

The last picture is, of course, an exterior shot taken about 1904. Note the resemblance to Fred's model.

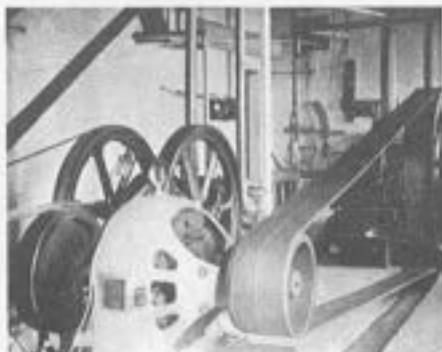
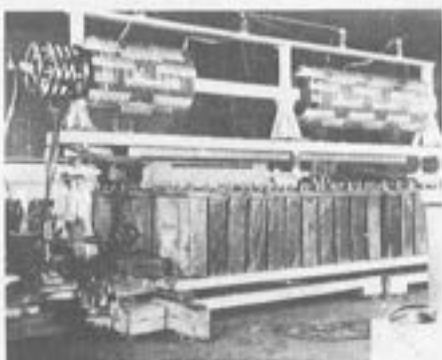
Present restoration work consists of excavating the few remaining foundations and planting rows of beach grass in an attempt to halt destruction by the elements. One should not fail to visit the station site in the area. It is easy to find on Route 6.

- - Lincoln Cundall, W2QY

OAKLAND OF NITE - another success with large turnout (Oct. 4). The speaker this year was Herb Bassett (W6SB) with Tom Campbell (W6EDW) General Chairman. The Oakland Radio Club have new headquarters and are the lucky holders of a real old time call...you guessed it... W6OT!

RARE CLARK RECEIVER - is latest piece of historical equipment at Jack Gray's museum in Ohio. The receiver is one of the rarest we've heard about recently. Of 1906 vintage, it is mounted in an oak cabinet, has 2 electrolytic detectors, 2 slide loose couplers, large brass switches, etc. One can even see spots where the acid was spilled over 50 years ago! (Don't confuse this Clark of Great Lakes fame with Kilbourne and Clark of Pacific coast - B.)

AVAILABLE - reproductions of the "A115-WORTH PACIFIC COAST WIRELESS TELEGRAPH DIRECTORY" at cost - only \$2.50 The book is dated June 1, 1911 and a treasure for the OT historian. Also available will be reproductions of the "LIST OF STATION, A.R.R.L." 1st Edition, (1914) Write: Ery Rasmussen, W6YPM, P.O. Box 612, Redwood City, Calif.



(B. note: W2EM specializes in the history of pioneer longwave stations. He has an excellent library, hundreds of photographs and knows his subject well. Drop him a line for info you can't find elsewhere....)

by Floyd Lyons

There is a hobby in this country which cannot be extinguished. We are speaking of light bulb collecting. This writer knows of only five serious, private collector-historians in the field (one lives in Australia).

There are still many interesting light bulbs to be collected, although the early ones are becoming more and more extinct. Of course, the Edison bulbs take on primary interest. To be added to this "Academy of Light" are some other famous name-brands such as Maxia, Sawyer-Man (fore-runner to Westinghouse), Thomas-Houston (later to be General Electric), Schaefer, Heisler and Bernstein, to name but a few. There were, roughly, a dozen light bulb companies flourishing in the U.S. by 1890. Competition was keen, and by 1900 these were narrowed down, mainly to the present-day major companies.

The first question asked by a visitor to my amateur museum is "How does one determine the age of a light bulb?" There are many broad, general rules of thumb. Here are but a few to remember:

Prior to 1898, all bulbs were elongated or short pear shape. Inside frosting did not commence until 1925. Generally speaking, the pinch top (tip) was discontinued about 1915. All lamps were rated by C.P. up through 1905. Bamboo, hairpin shaped filaments were used exclusively up through 1893. The filaments were fastened to the lead-in wires by platinum and nickel clamps in 1880; by copper plated 1881-1886 and carbon paste was then used up to 1915.

Rectangular labels were pasted on the glass envelope up to about 1900 with information as to C.P. and Patent Rights thereon. Round labels were in vogue after the turn of the century and usually included C.P. and voltage ratings.

Plaster of paris was used in the base as insulation up through 1899; white porcelain was used in 1900 only and the present day black glass has been in use since 1901.

As stated above, these are general rules. The more technical subjects such as "getters", stem-seals and filament types have been omitted here due to lack of space. The writer is interested in hearing from anyone who likes to "talk" light bulbs.....in the meantime - good hunting.

(Ed. note: We're delighted to print this interesting article. Light bulbs preceded the vacuum tube and all pioneer tube manufacturers turned to the light bulb expert for help with their



RARE DOUBLE FILAMENT BULB

in Floyd's collection. Made in 1904, it has an unique feature- by pulling the string one can obtain 3 settings - 1 C.P., 16 C.P. and out !

first tubes. Light bulb history definitely has a place in our historical bulletin. Floyd promises to give us Part II in the near future. His address is: Floyd Lyons, Elk's Club, 456 Post St., San Francisco, Calif.

"CALLING CQ" by Clinton DeSoto is a book not too many are familiar with - good copy for the amateur book shelf.

Along the same line - there is another titled "CQ or in the Wireless House" by Arthur Train (The Century Co. printed in 1912) Both of these rare books are in John Baum's library. Jack has sent us a list of other little known wireless books which we'll print in the next issue.

REPLICA OF PIONEER ANTENNA used by Karl Jansky in his initial work (1932) has been completed and will be erected at the National Radio Astronomy Observatory in Green Bank, West Virginia.

Jansky's antenna is unlike the parabolic "dish" used by pioneer Grote Reber a few years later (mentioned elsewhere in this bulletin.) Based on the design principles of the Bruce Antenna, it is 95 feet long, wooden framework and dozen of metal tubes. Jansky is the "Father of Radio Astronomy" and Reber the child who followed and made definite measurements....(txx to K2Dq)

FABULOUS BOOK COLLECTION: One of the largest collection of historical radio books in North America is located in the Queen's University Library at Kingston, Ontario, Canada. A separate room has been set aside and houses all the books, manuscripts, newspaper clippings, magazines and other material belonging to the late Donald McNicol.

We have the catalogue itemizing this valuable collection and find it fascinating reading. The material covers such subjects as: early wireless, history of landline telegraphy, television, biographies, magazines, etc. As an example to show how extensive this collection is - we find listed a portfolio titled: "Telegraph and Radio Sending and Receiving Contests from 1868 - 1933". (a collection of newspaper clippings and magazine clippings plus photos.)

The library is open weekdays and with permission, outsiders may view the collection. It is suggested the visitor write in advance to obtain permission.

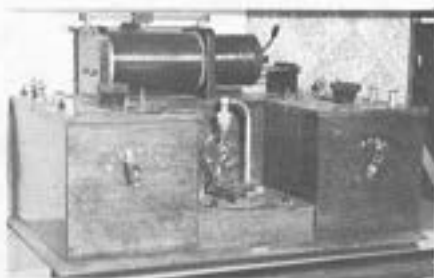
DX CONTEST - a few fellows have written telling about their DX results using early receivers (See page 3, Vol. 4, #1), however, some feel their short haul DX leaves them out of the competition. We still want to hear from you regardless of the distance. Tell us what you are using and what you hear.....

BROADCAST RECEIVER COLLECTORS - one of the choicest references you can find is "Everyman's Guide to Radio". It consists of 4 volumes with pictures of most early broadcast sets as well as condensers, rheostats, coils, tubes, etc. of the mid twenties. These 4 volumes are priceless and are not to be confused with a single volume of the same title which came out about the same time.

RETIREES (lucky fellows!) Clarence Dangler, W2LK (Chief, Rochester Police Radio), Ed Raser, W2ZI (New Jersey State Police Radio), Dr. C.J. Staud, K2DQ (Vice-President and Director of Research, Eastman Kodak Co.), Harold Swart, W3MCC (Chevrolet Div., General Motors)..... Ken Conrad, W2IIE (Chemist, Buffalo, N.Y.)

NEW GEAR - at W2ZI includes some real choice items: a Marconi 10" spark coil, a beautiful American DeForest "Symtonizer" tuner made in 1905 and a Telefunken Model E-4 ship receiver with plug-in crystal detectors and pancake tuning coils. Ed promises to send photos.....

75 METER BAND was used as early as 1917 when German submarines used this low wavelength to elude Allied listening posts!



CABINET AUDIO RECEIVER

This rare receiver is part of Fred Penard's collection in Norwood, Mass. The receiver was purchased in June, 1913 by the Boston Edison Co. to receive NAA time signals. The left hand variable condenser is in series with the loose coupler primary and the right hand variable in series with the audion grid. The audion panel slides in grooves and contains the socket, porcelain rheostat and 2 switches. It is 21" long, 12" deep and 12" in height.

MIGNON RECEIVERS are hard to find - particularly those prior to 1920. Bill Lavery recently picked up one and the A.W.A. have two of about 1921 vintage. Mignon manufactured all his gear in Western New York and was in business until a few years ago at which time he was making diathermy machines!

CRYSTAL DETECTORS, 1919

(See next three pages)

Many A.W.A. collectors have in their collections equipment made by WIRELESS SPECIALITY APPARATUS CO., founded in 1906 by Pickard and Farnsworth. We reproduce here three interesting pages of the WSA 1919 catalog, showing the status of the crystal detector at this relatively late date. During WW1 the company became one of the world's leading manufacturers of commercial gear, including the famous I-P receivers. Following the war, it came under the RCA "setup" and finally stopped manufacturing transmitters and receivers in 1929. The old Atherton St. plant in Roxbury, Massa. still stands.

WILCO, WILTY and others are all former employees of the company.

IV. CRYSTAL DETECTORS

ONE of the most important achievements of the WIRELESS SPECIALTY APPARATUS COMPANY is linked closely with its origination and development of radio detection devices. The first radio detector in service was the coherer. This device was highly unreliable and recorded strays equally well with signals. An attempt was made to produce an aural method of reception. This led to the development of the magnetic and electrolytic types. Neither was satisfactory.

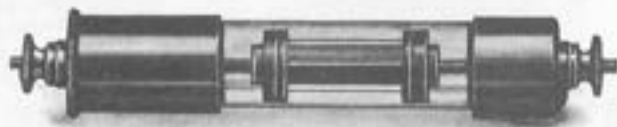
The former required a mechanical system for its operation, the latter required a corrosive liquid and was subject to "burn-outs." The crystal detector which was invented by Mr. Pickard completely displaced all other types of radio detector and revolutionized the method of radio reception. The discovery of its action came about in an interesting way. In 1899 Mr. Pickard was using his design of carbon-steel detector which consisted of steel needles laid across carbon blocks. On May 29, 1902, he discovered quite by accident that when the local battery was cut out the detector still operated. This caused him to systematically investigate the phenomena, and resulted shortly afterward in the invention of the first practical crystal detector. One of the minerals used in this detector at the earliest date was the iron ore magnetite.

Thousands of minerals and furnace products were procured in a search conducted for the purpose of discovering all the materials that would serve the purpose of rectifiers in radio receiving circuits. This investigation, therefore, was conducted in the same manner as Edison developed the incandescent lamp. Some two hundred and fifty were found to make operative detectors used with metal contacts or in combination with other minerals. Thirty-one thousand two hundred and fifty different pairs were tested. Among these are the well-known silicon and galena, combinations of silicon and antimony, and bornite and zincite (Perikon).

Mr. Pickard first marketed his detector in 1906 when the nearest practical device was the "electrolytic."

Crystal detector reception is universally used, since it is of elementary simplicity, does not require local energy for its operation, and has an indefinite life. The WIRELESS SPECIALTY APPARATUS COMPANY, through the ownership of Mr. Pickard's patents, completely controls the manufacture, use and sale of all operative forms of crystal detectors, their circuits and accessories.

The standard detectors shown in the following pages are those wherein the crystals and mechanical means of adjustment have proved to be best out of the thousands of combinations tested. The mechanical design and finish of these detectors represents twelve years' cumulative experience and technique in the manufacture of this article. The crystals are chosen after careful and exhaustive laboratory tests, confirmed by actual operation on antenna signals. Only a small fraction of 1% of the materials tested actually pass the tests and are offered for sale.



PICKARD CARBON STEEL DETECTOR, 1902

SILICON DETECTOR, TYPE I-P-200

THE principal advantage of the Silicon Detector is the permanence of its adjustment under the influence of high voltages induced across it by static or local transmitters.

The blunt contact point is of antimony. The crystal is of special furnace silicon. The silicon is embedded in soft alloy held in a cup by a set screw. The contact pressure between the silicon and the antimony is obtained by the variation of a spring holding the antimony point and controlled by a hard-rubber-capped thumb screw. The point of contact on the crystal is varied by the motion of two micrometer screws, which slide the face of the silicon crystal under the antimony point.

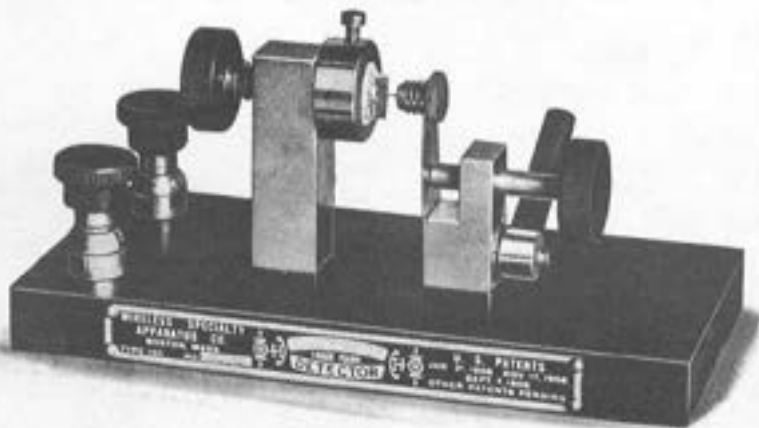
This unit is mounted on a substantial bakelite dielecto base, which is supported by four rubber feet.

Size, $5\frac{1}{2}'' \times 4\frac{1}{2}'' \times 2\frac{1}{2}''$ Weight, 10 ounces



SILICON DETECTOR

GALENA DETECTOR, TYPE I-P-201



THE Galena Detector is especially sensitive and requires an extremely fine regulation of pressure between a metal point and the galena crystal, together with a rigid method of locking the sensitive adjustment. When a proper contact has been secured, the Galena Detector is the most sensitive of all crystal detecting devices. This type of detector, as shown in the photograph, is provided with a compound spring adjustment that has proven highly successful in practice.

Size, $5'' \times 2\frac{1}{4}'' \times 2\frac{1}{2}''$ Weight, 10 ounces

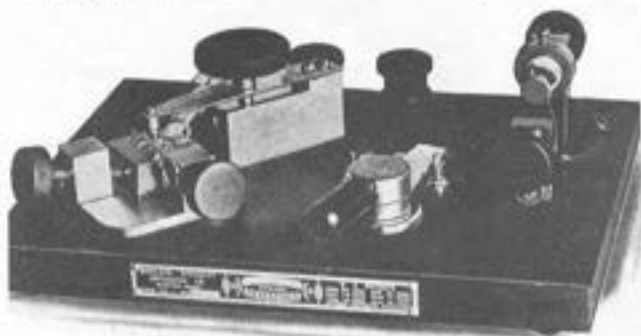
COMBINED SILICON AND GALENA DETECTOR, TYPE I-P-202

A SINGLE-STAND combination of the silicon detector and the galena detector is provided for securing reliability of operation. This combination insures successful reception of signals through heavy static, by means of the silicon, and long-range operations in cases of light atmospherics, by means of the galena.

The detectors are mounted on a single bakelite dielecto base, with a three-point switch, allowing operation of either detector at the operator's will, or the short-circuiting of both detectors, during transmission. The base is mounted on four rubber feet, to eliminate vibration.

This detector is standard with THE GREAT WHITE FLEET.

Size, 7 3/8" x 5 1/2" x 2 1/2"
Weight, 2 pounds



COMBINED SILICON AND GALENA DETECTOR

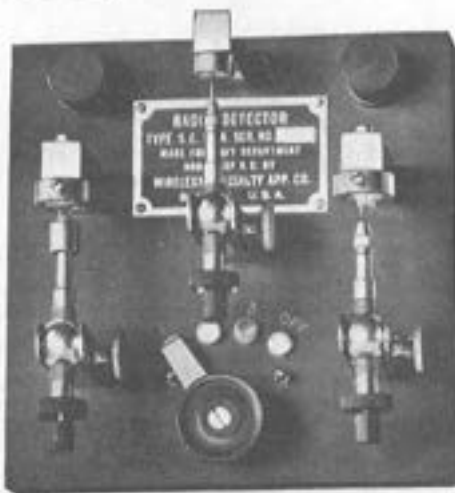
TRIPLE CRYSTAL DETECTOR, TYPE I-P-203

A TRIPLE detector combination has been designed to give the maximum possible freedom from both electrical and mechanical disturbances.

The detectors are all adjusted by our compound plunger spring contact mechanism. The degree of contact pressure and the permanency of adjustments are insured by simple clamping screws. A four-point switch permits the connection of any desired detector in the circuit on receiving, or the open circuiting of all the detectors on transmission. This arrangement protects the detector during transmission and makes readjustment after transmission unnecessary.

The United States Navy uses this type exclusively.

Size, 5 3/4" x 5 1/2" x 2 1/2" Weight, 2 1/2 pounds



TRIPLE CRYSTAL DETECTOR