This early amateur spark station in the Physics Department, Hobart College, Geneva, N.Y. went into operation just before WWI as "B5". After the war it came on the air again by "Doc" Haussmann (seated) and Hank Wheat, ex-BVM, 8ABG, 8CNS (standing). The setup is interesting (and dangerous) since it is typical of one of the better stations of the time. Can you identify all the components? We particularly get a kick out of the homemade non-sink rotary made out of a bicycle drive. Note the heavy oil and oil filled condenser. In the background is a Mignon receiver with one Moorhead projecting out of the panel. At the far upper right is a de Forest RJ detector which for some reason has the Audion socket upside down with a SB mike! (Thx 82APE)

DON WITS (old time DX'er of WNP fame) retired the first of the year from A.R.R.L. Staff. On this occasion the Communication Department presented Don a nice gift -- you guessed it -- a handsome atlas!

RCA NO MORE -- word comes in that Radio Corporation of America may in the future be known simply as RCA CORPORATION...

Radio Story by Al Marcy, W4ID is the true account of one of the outstanding ham stations of the 20's. Pieced together by one who helped build and operate the station, it is a tale that every old timer will enjoy reading. Too lengthy for our news bulletin, A.W.A. will print and make available in some other form at a later date...
New Museum Wing Houses Complete Stations

On this and the next two pages are some views of equipment installed in the new wing recently added to the A.W.A. Museum. This 260 square feet of additional exhibition space has made it possible to set up 3 complete stations -- with room for more. The 1922 station still remains upstairs along with the many spark transmitters. The local public museum may soon be a reality; however, it may take over a year before display facilities will be available.

NEW GEAR IN A.W.A. MUSEUM

receivers: W2AMF, W4HI, W2CM, W2CBE, John Caperton

tubes: K2UBA, W2CM, ex-W2CBE, Bruce Ralston, Fin Stewart, Howard Scrader.

telegraph: W2SC

literature: W2ONE, WALHAU, K2UBA, W2LV, K8IKO, Morris Groder.

misc.: W2AXR, W7JI, John Caperton, Fin Stewart.

View from doorway back into MAIN ROOM.
One of the several new display cabinets can be seen in the foreground housing a "small fortune in tubes".

Entrance from MAIN ROOM to NEW WIND can be seen slightly to left in background.
The "commercial installation" on the north side of the new addition consists of three 1000 watt quench gap spark transmitters (left), an early longwave ship transmitter using vacuum tubes (right) and a Sperry arc transmitter in corner. On the operating table can be seen the familiar IP-500 and 501 receivers. Not seen on the floor is the huge 500 cycle Crocker-Wheeler MG set.

W2QY showing visitors one of the quench gap sets.
W2AN'S modern 1929 amateur station fills one corner of the new building. Not seen are the regenerative receivers. The FB-7X of 1932 vintage is used for monitoring. It is being replaced with a more modern receiver -- a postwar Super Pro obtained from John Caperton. The transmitter is crystal control and runs about 50 watts on 75 fone and 80 CW.

The west side of NEW WING houses a 1929 broadcast station complete with W.B. Type 9-A BC transmitter, monitoring receivers and associated equipment.
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 to 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: 1989 AK secretary/desk cabinet in mint condition. This is the job that houses the AK Model 37/38. George Carter, Box 11167, Winston-Salem, N.C. 27106

FOR SALE: Reprint of 1925 Powel Crosley Jr. "Radio Party" postcard. These were issued as premiums with Crosley Radios. $1.25 per dozen ppd. PO charges added to COD orders. Robert Middleton, 124 Sedgefield Court, San Ramon, Calif. 94583


FOR SALE - several nice early A.C. receivers plus some early transmitting gear. Write me your wants. Bill Laverty, 116 N. Wycombe Ave., Lansdowne, Pa. 19050

SWAP: Stamp collection of U.S. Mint. Trade for choice amateur gear or mint receivers. Stamps worth over $1,000. George Starry, 612 James St., Istrobe, Penna. 15650

SWAP: The Seattle Museum has spare IP-501-A receiver... will swap only for other early commercial equipment. Warren Green, W7JY, 7202 North Mercer Way, Mercer Island, Wash. 98040

WANTED: Factory made Loose coupler such as Duck. Cash or may have something to swap. Peter Rosmann, Box 132, Irvine, Warren County, Penna. 16329


FOR SALE: Western Electric spherical tubes type 108F. Also one W.E. tube #566327, two WE 239A tubes in original boxes. All tubes $3 each. Rodney Schrock, 402 Lincoln St., Somerset, Pa. 15681

LOOKING for small (8") Regina or similar music box -- must be complete but not necessarily restored. Bob Fabris, 3686 Morrie Dr., San Jose, Calif. 95127

SALE: Large quantity of tubes and parts to build BC sets before 1925. Includes tuners, variometers, meters, phone and speakers units, etc. Frank Atlee, K8PT, 92 - 31st Ave., St. Petersburg, Fla. 33706

FOR SALE: Large quantity of CD CAPACITOR magazines between Vol. 4 and Vol. 8 Write: WIIKD, 90 B Warren St., Roxbury, Mass 02119

SWAP: QST magazines for RCA UV-204 (250 watt transmitting tube). Must have spherical bulb and cylinder type plate. Also want Welsh 501 with external plate and Weageson valve. W8EWS, L.J. Schnedorf, 510 Monroe Ave., River Forest, Ill. 60305

FOR SALE: Hard to get minerals such as galena, iron pyrite, zincent, chalcocite. All un-mounted. Bill Taverner, Box 365, Pollock Pines, Calif. 95726

WANTED: One good UX-112A, CX-112A or 171-A tube. Am trying to restore a receiver. Marshall Hownstein, 807 Elm Drive, West Lafayette, Ind. 47906

FOR SALE: A-K tube caps (the type that are painted AK green) at $1.25 postpaid. Want schematic and data on Norden-Houck Admiralty Super 10 A.C. receiver and the Leutz Universal "Phantom" screen grid model. Any info appreciated. John Caperton, 516 Country Lane, Louisville, Kentucky 40207

WANTED: to complete file -- A.W.A. Bulletins: Vol. 1 - #2 and 3, Vol. 2 - #1 and 4, Vol. 3 - #1 and Vol. 7 - #2. Anyone have extra or access that I can zerox? Also want old RX and TX tubes pre 1930 and 521 or 525 Kennedy. Have old "Dictograph System" to trade. SASE please. Walt Cleland, K5WY, 1202 Holly Drive, Richardson, Texas 75080

SWAP/WANT -- looking for Scott Masterpiece or Super XII, Tuner only. Anything made by Guthman (Chicago) 1939. Have a good Grebe CR-12 to swap. George Publow, Box 590, Picton, Ontario, Canada

WANTED: Stage change gang switch for Zenith 3-R or 5-R. What do you need? Yates Hong, 3 Pineview Drive, Utica, N.Y. 13508

WANTED: Two good UV 1716 L.F. transformers (30 kv) as used in the Leutz Model C superhets. Ted Wasmann, K3CUI, 11106 Bybee Street, Silver Springs, Md. 20902

WANTED: old radios, tubes, speakers, etc. Need schematic and parts for Weston #772 VOM and circuit for Mu-Rad Mu-18. Bob Lane, 2603 Independence Ave., Kansas City, Mo. 64124
Spring Meet

60 members and friends attended the local spring "meet" at Lauren Peckham's Amateur Museum. Several newcomers made appearance from out of the area, notably the Guest of Honor, Fin Stewart from Sidney, Australia. Fin will have returned to Australia by the time you read this bulletin. His visit to the States and Canada was quite rewarding in that addition to visiting museums, he had an opportunity to meet many AWA members and on several occasions swap old tubes and light bulbs. He was accompanied by his wife and two small children who deserve considerable credit for putting up with some of the inconveniences as our visitor made his jaunt across the country. They proved to be warm and friendly people -- and like John Stokes (New Zealand), Fin is an ardent tube collector and well informed historian. We hope they can make another trip in the future.

Howard Schrader (of Princeton Tube Collection fame) and Fin Stewart discussing tubes in Lauren Peckham's historical tube museum.

Non-New Yorkers at SPRING MEET (1. to r.): Eduard Deering (Amsterdam, Holland), Howard Schrader and Bob Morris, W2LV (New Jersey), Phil Beisel, WB6MCM (California), Fin Stewart (Australia) and John Drake (Connecticut).
After much looking around, 2 pieces of early feedline was received at A.W.A. Headquarters -- one from W2ILV and another from W3FAR. Some may ask, "Why an old piece of wire?" For good reason. This twisted cable was the father of all modern amateur transmission lines. It replaced the old open feeders used on "zepe", etc., and enabled the ham to run his feedline around corners and even under the rug.

The cable became popular about 35 years ago. The story goes it was named after the inventor's girl friend by the name of Elna Owens! It's kinda hazy after all these years but I believe the cable was manufactured in my old hometown of Rome, N.Y. by General Cable Co. and Bob Graham, W6ILQ, was one of the engineers on the job...

--- W2ICE

WANT: Tuska audio transformers, Roland Matson, KLOKO, Highland Rd., Pinehurst, Mass. 01966


LEON DELOY SAB.

n'est plus...

Le 21 janvier 1969, Léon Deloy, SAB, nous a quittés...

LEON DELOY, SAB IS NO LONGER -- On the 21st of January, 1969, Leon Deloy left us.... The amateurs of the whole world feel sadness as a result of this loss. We lost in him the pioneer and the untested champion of shortwaves who, with the American, Schnei, IDO, dared to upset the existing theories of Hertzian propagation by carrying out for the first time in the world the contact between Nice and Hartford on 100 meters wavelength. This took place in November, 1923.

(The above copy was received and translated by K2JFV. Jack was a personal friend of Leon and was instrumental in obtaining a tape interview and many pictures in his home at Nice, France. This material was used in A.W.A. film show "THE GOLDEN TWENTIES")

NEED KNOBS FOR YOUR OLD RECEIVERS??

Yates Hoag can mold duplicates for most old sets. Write him at:

3 Pineview Drive, Utica, N.Y. 13502
On Review

THE FIRST ELECTRON TUBE by George Shiers March, 1969, SCIENTIFIC AMERICAN.

This article is highly recommended to the electronic engineer and tube historian. Author Shiers has written a thorough treatise on the development of the vacuum tube. He traces the evolution from Edison to de Forest in great detail — but not so deep it would not be understandable to the layman.

The author devotes much of his article to the "Biison effect" and the subsequent Fleming valve — but does not overlook work by lesser known workers in the field such as Preece, Hittorf, Goldstein, Elster and Geitel. We were particularly pleased to see a well planned chronological flow chart illustrating "thermionic emission" development from 1879 (Biison) to 1907 (de Forest). There was also a nice picture of John Ambrose Fleming taken in 1923 holding one of the first valves (very similar to the one in the A.W.A. Museum). Fleming died in 1945 at the age of 96.

We tried without success to find a technical error — a glance at the author's biography told us he is a Senior Member of the IEEE and teacher at Santa Barbara City College — so he is hardly an amateur in the historical game.

Lastly, the eye-catcher was an exceptionally good picture of an 1883 Biison lamp with the added element. A note indicated it was a replica loaned by none other than Vance Phillips — W6GH! (Thanks K3CUI)


A seldom told story of how the newly formed RCA determined the receiving location for their worldwide communication system. The author makes it easy reading and speaks frequently of the part played by Harold Beverage — the technical master-mind behind the huge installation. He tells how Beverage was initiated into wireless as a boy: reading a magazine edited by one Hugo Gernsback titled MODERN ELECTRICALS! We particularly liked a picture taken in 1920 showing Dr. Beverage in the first temporary receiving station — a large tent from which miles of wire was strung. Want a copy of the magazine? Send 50¢ to: Long Island Forum, Box 215 West Islip, N.Y. 11795 (Info from Lee Anderson)

MAN OF HIGH FIDELITY: EDWIN HOWARD ARMSTRONG

A BIOGRAPHY BY LAWRENCE LESSING

Published by Bantam Books, N.Y.C., $1.00 (Paperback) for $1.00 Copes can be obtained or ordered at any book store.

Of all the books written on radio — this is by far the best. The true life story of Maj. Edwin Howard Armstrong, the world's greatest radio inventor, is dramatic from beginning to end. As a boy amateur in Yonkers until his final vindication — one can find some of the most absorbing reading ever printed on the history of radio.

The paperback edition (March, 1969) does not have the photographs as in the original (1956) but does contain an added chapter covering the most recent patent litigation making Armstrong unquestionably the inventor of FM.

The title has a double meaning. To the average person it may mean "high fidelity" broadcasting — but to those who knew this great man it meant "a man of high fidelity and strong character". The original edition, long since out of print, is now selling for $10 to $15 per copy to the collectors. There is reason to believe in time the paperback may also have great value. (Thanks Jose Garcia)
NO PLACE TO GO BUT UP by Richard Humphrey, March POPULAR ELECTRONICS.

A carefully written but casual outline covering the general development of early amateur radio. We say "carefully" since the author's story was meticulously accurate and not usual generalities so frequently found nowadays by amateur authors trying to cash in on the current interest in historical radio. We were also quite pleased to see a new photograph for a change -- one of Don Mix, W1TE, an operator of WFP on the 1923 MacMillan expedition. The author, Richard Humphrey, must be a "ham" although he wasn't identified as such. Let's hope Editor Perry Perrall induces him to write another article in the near future.

A REQUOT FOR RADIO ROW by Gerald Sauskofsky, WJYS, April QST. We've mentioned several times the demise of New York City's "Radio Row"... WJYS gives it the final touch with a cleverly written story of the last days. We particularly liked the old photographs of Cortlandt Street such as the one with the Model T or A in the background. In addition, Sam had a view of the new World Trade Center which is now being built on the site.

"PORTS O' CALL" published by the Society of Wireless Pioneers. Santa Rosa, California.

We had a chance to review the Society's Winter Edition (PORT OF CALL is printed semi-annually) and can find only one word to describe it: fantastic! Editor William Brennan did not compile just another bulletin -- he assembled a book and one of the best we've seen in a long time. The publication is available only to members -- all of whom are or were commercial operators. In fact, the membership requirement is: "Having earned living handling commercial trafficship or shore station."

The Editor has compiled 65 pages of information for the old time wireless operator, historian (and even landlubbers!) Unlike the repetitious and monotonous reminiscing type of articles now flooding various publications by old timers such as "I remember when I got my first job on, --- blab, etc." or, "My first receiver was a crystal set wound on an oatmeal box, transmitter a Ford spark coil, etc., (who cares ?)" the publication has specific information. There are two dandy articles on large ocean liners -- the SS LEVIATHAN and SS UNITED STATES plus spec's on several others which were enjoyable reading even to one who never went to sea. Our old friend Dick Johnstone printed a map of early Pacific Coast Stations and reminded the reader about early call letter assignments; early coastal stations in the East started with "W" such as WCC and WNY whereas East Coast ships started with "K". On the Pacific coast it was the opposite: coastal stations started with "K" such as KPH and ships in the Pacific with "W" (i.e. WNO, etc.)

And closer to home -- Harold Burhop (W2ZL) wrote about "Early Wireless on the Great Lakes" which told us many things normally not in print. Throughout the "book" we saw familiar names and old friends such as Bob Palmer, Dexter Bartlett, Howard Fyle, Frank Getzel and many others. We sincerely hope PORT O'CALL can retain the high informative standards it has set and not lapse into another "I remember when---" type of publication.

We formulate one complaint: not available to non-members. This could be remedied possibly by having a higher handling charge. In our estimation the last copy is worth well over $5. We understand, however, the Society's By-laws have no provision for sale to non-members. Do you have a commercial ticket? Write: WILLIAM BRENNAN, P.O. BOX 530 SANTA ROSA, CALIFORNIA, 95402

(Tnx W2ZL)

LIFE OF A SHIP OPERATOR by Sam Corpe, W6IM, March issue of SPARK GAP TIMES. An authentic account of Sam's experiences as early wireless operator along the Pacific coast in 1911. Amusing and interesting copy for both old timers and landlubbers....

MARINE STATION WCC --- a brief writeup in Morse Telegraph Club's publication DOT & DASHES, Jan. - Feb. '69 issue. It describes the well known RCA Marine station in Massachusetts and tells how they determine the location of a ship. With 65 acres of receiving antennas the operator merely pushes a series of button switches until the correct rhombic antenna produces the strongest signal. Watta ham DX qth! (WZONE)

OLD BOOKS can be found very reasonable if you don't mind looking and getting your hands dirty occasionally in old antique stores and bookshops. Fred Penard (Norwood, Mass.) has concentrated on books printed prior to 1910 and has come up with some beauties -- all for less than $1.00 -- in fact, some for only 50c. Here are some examples: Original books by Tesla, another by Prof. Dolbear titled THE TELEPHONE printed in 1877, WIRELESS TELEGRAPHY by Kerr (1899), plus many others...
CORNER OF JOE PAVEK'S AMATEUR MUSEUM
WLOEP is located at 55 South 12th Street, Minneapolis, Minnesota

WESTINGHOUSE TUBES

The article in the last QTH by Lauren Peckham drew an interesting response from Prof. Newell of Worcester Tech. The writer was one of a small group at Westinghouse's Ardmore Lab where the WD-11 and other tubes were developed almost 50 years ago. Newell tells of research done on tubes with external elements (outside of glass envelope). Apparently these tubes were practical for low power — but as the power increased they would become unstable because of the high RF going through the glass! Prof. Newell worked with Zworykin on many experiments including over 2000 experimental test measurements on filament development. We hope the good professor can attend the 1969 Conference in Rhode Island.

MARCONI TYPE 105 is real rare according to Bob Palmer, W7RD. Little is known of this composite receiver of which very few were manufactured. It may be the first to use a triode tube.

COMING EVENTS

SUMMER MEET
OPEN HOUSE -- A.W.A. MUSEUM
Sunday 1 to 4 P.M.
AUGUST 9th

ANNUAL HISTORICAL CONFERENCE
Oct. 3, 4 and 5th
New England Wireless Museum
East Greenwich, Rhode Island

FALL MEET
Saturday Evening, Oct. 25
Locust Lodge, Ionia, N.Y.

ANNUAL BUSINESS MEETING AND ELECTION
Sunday Afternoon, Nov. 8
QTH: W2UTH, Victor, N.Y.
The New England Wireless Museum

Theme: THE REGENERATIVE RECEIVER

Advance info: Committees are working hard to make this get-together one of the best. With the natural setting of old New England, emphasis will be on antique equipment — everything from early spark transmitters to classic broadcast receivers.

The New England Wireless Museum is located near the home of Bob and Nancy Merriam (W1NTM), East Greenwich, Rhode Island (just south of Providence). Activities will start Friday with main programming and banquet Saturday. Old gear contests and auction Sunday morning. Unlike the formal atmosphere of the three previous "meets", members and their wives will enjoy the casual surroundings the N.E.W.M., which houses a wide and tasteful collection.

PARTIAL PROGRAM:

Guest of Honor: ROLAND BOURNE, W1IANA
(Curator ARRL Museum)

Papers: Peter Schroeder, W1PiNY
   (Author "Contact at Sea")
Bob Morris, W2LV
   (Engineer N.B.C./A.B.C.)

Demonstrations:
   Theremin (RF musical instr.)
      (Lauren Peckham)
   Color TV with scanning disc
      (Joe Marney, W2EMX)
   Tesla coil and Jacob's Ladder
      (Charles Brelsford, K2WW)

Contests: -- Judges --
   George Grammer, W1DF
      (Technical Editor QST)
   Jack Gray, W8JDV
      (Gray's Wireless Museum)

--- Best Homemade regenerative receiver
--- Best Homemade receiver (all types)
--- Best Homemade crystal set
--- Best Factory made receiver
--- Most unusual receiver (to be determined by popular vote.)

All receivers must be over 30 years old (pre-WWII). Homemade receivers include kits. Rules and other information in next Bulletin.

Auction: Joe Pavek, WA6EP

Historical Recording Session with voices of: Armstrong, de Forest, Sarnoff, Dr. Alexanderson, Owen D. Young, Hugo Gernsback, John Heinats, Leon Deloy, Paul Goodley, Jack Binn and many other famous people in both the amateur and professional radio field.

William Dubilier

pioneer inventor and best known to radio historians for the condenser bearing his name. He is still very much alive and active according to an article in the May issue of MODERN MATURITY magazine.

Bill, now 80 years, spends much of his time in his cluttered laboratory/workshop at the rear of his home in Palm Beach. Most notable of his achievements was the development of the mica condenser which completely revolutionized condenser design. (Lou Hardy, W2QQ)

National Museum

MUSEE NATIONAL DU CANADA
MUSEE DES SCIENCES ET DE LA TECHNOLOGIE
1867 St. Laurent Blvd.
Ottawa Canada.

Here is an interesting museum to visit this summer. Although limited in their radio and electronic displays, there are extensive areas devoted to early transportation (railroads, antique cars, etc.), aviation, astronomy, etc. We might add Canadian collectors who are looking for a future home for their equipment should give this museum some consideration....

Write E.A. De Coste, Curator, Communications, at above address.

Speaking of Canada, don't forget the fine museum in the Canadian Bell Telephone Building, Montreal, and the famous historical paper/book collection of Donald McNicol in Queen's University Library at Kingston, Ontario.
WESTINGHOUSE

Pictured above are the most sought Westinghouse receivers. The Aeriola Sr. at left and Junior (right) have the tarnished dials mentioned in the last Bulletin which can be replaced by Roland Matson, KLOKO. At first glance the two Aeriola's appear alike -- but the Senior is a 1 tube regen set using a single WD-11 with a tuning range of 190 to 500 meters. It originally sold for $65.00 and a 2 step audio was available. The Junior was somewhat similar except it was a crystal set and sold for $25.00. Both are highly valued by the collector. The center receiver is also highly treasured by the amateur collector who is currently paying anywhere from $25 to $75 for one -- depending on condition and the heft of their pocketbook. Generally, the Tuner RA (left) and the DA Amplifier (right) are housed in one cabinet -- such a combination is known as Model RC. The two units are seen separately however, and to some is more appealing. The tuner has a wide tuning range -- 180 to 700 meters and with the addition of a special Lead Coil (Model CB) one can tune up to 2000 meters. Several A.W.A. members are known to use these receivers to tune 600 meter marine traffic. One of these receivers when restored and polished make a beautiful collector's piece. Original price was $132.50 or $261.75 complete with tubes, batteries, etc. Quite a tidy sum back in 1922. (Photo by Ted Woolner, W4IABP)

SEATTLE MUSEUM

W7IY, W7OE and W7AN are still supplying and arranging early wireless exhibits in this well known North-western museum. A present display features the old original K2C broadcast transmitter built in 1922 using four WV-202.

FREDERICK KOSTER, inventor of the famous Koster Decimeter, was born in Geneva, Switzerland, 1883....
Much material has found its way to the Club Museum or files within the past few months. Of special interest were several unusual landline instruments from W2OC and a complete FA-10 receiver setup including EF amplifier and Det. plus 2 step audio from W2AMF.

With the current interest in W2AN operation, it was felt necessary to have more modern equipment to monitor the old transmitters since all receivers were 30 years or older. John Caperton came to the rescue with two receivers each around 20 years old -- a HRO and Super-Pro. Since neither could be classified "antique", John was given some old battery BC sets (duplicates) which had been left for swapping purposes and one which belong to W2ICE. We're not sure yet who got the best of the bargain but at least we can check the old transmitters a little better.

An article is being written for QST on "Operation of Old Time Transmitters" under present day conditions. Fellows co-operating on this writeup are all so busy this summer that it would appear it will not be written until sometime this fall. W2AN is currently operating AM on 3990 KC. and various frequencies in the 80 meter CW band.

Another new receiver in the AWA museum is a Marconi Model MSL-5 obtained from a clearing house in Montreal. A regenerative made possibly in the late 30's, it has an unusual tuning range of 1775 to 15.6 KC. (169 to 19,300 m.) in 5 steps! Another unusual feature is a separate crystal detector circuit for emergency work which tunes from 382 to 1090 meters. The regeneration control is very smooth and it brings in VLF like locals. This receiver was originally for sale by Fair Sales in Ohio. The few they had were soon gone but Art Trauffer tipped us off on the Montreal deal.

W2ALS
FRANK A. GUNTER RECEIVES
1969 DE FOREST AUDION AWARD

Frank A. Gunther, President of Radio Engineering Laboratories, was awarded the 1969 DeForest Audion Medal by the Veteran Wireless Operators Association (VWOA). The award, in the form of a triangular gold medal, bears the inscription:

"Presented to Frank A. Gunther, recognizing his many valuable contributions to radio."

The DeForest Audion Award was established as a memorial to the late Dr. Lee DeForest. Mr. Gunther is President of the Armstrong Memorial Research Foundation; Charter-Life Member of the American Radio Relay League; Fellow of the Institute of Electrical and Electronics Engineers and Past President and Fellow of the Radio Club of America.

MURDOCK CORPORATION -- how about it fellows -- who will volunteer to write a brief story on the history of this pioneer company?

NEATRON is an early British tube with a grid and 2 plates devised by J. Scott Taggart.
OK, radio fans, what and where was the first radio station in the world?

If you said, KDKA in Pittsburgh, Pa., you're wrong. Even if you looked in a history book or an encyclopedia and found that same answer, you're still wrong. So is the history book.

We take you now to the study of Gordon B. Greb, a professor of journalism at San Jose State College. Greb is pulling out boxes of historical documents and stories and sifting through dozens of tape recordings.

"There is," he begins, "no doubt at all that the world's first radio station was right here in San Jose and not in Pittsburgh. It was making regular broadcasts 11 years before KDKA ever began."

Greb's statement is the beginning of an interesting story that seems destined to rewrite a page of history.

For more than 30 years, KDKA has been considered the world's first broadcasting station. It made its first broadcast in 1920 and went on to score many legitimate firsts in radio broadcasting. Along the way, the station received reams of publicity.

Yet 11 years earlier, in 1909, Charles David Herrold was quietly and modestly making history. He and an associate hooked up a wireless telephone set to a spark condenser and started talking through a crude microphone.

For miles around, young boys who were practicing their Morse code on crystal sets suddenly heard voices.

"I'll never forget it," Ray Newby, one of Herrold's assistants, told Greb in an interview. "All the crystal operators in San Jose and for miles around were not only thrilled but shocked to hear voices coming over..."

Herrold, intrigued by the concept of transmitting a radio program to a mass audience developed an oscillating arc to replace the inadequate spark condenser, and made more broadcasts in the following weeks and months.

He borrowed phonograph records to play from a local music store. He discussed the day's news stories. He let his baby cry in front of a microphone. He even tried special "remote" broadcasts, including a live play from the local college.

Before long, Herrold was on the air every Wednesday evening, talking and playing records until, as Newby put it, "the mike got too hot to continue."

On the last New Year's Eve before World War I, Herrold planned radio's first spectacular. Listeners were urged to go outside and look for a special flare Herrold was sending up and then come back inside to hear a shot fired over the radio.

The flare went off fine, but the gunshot was too loud and knocked out the station's transmitter. End of spectacular.

At first, the station had no call letters, but when the government began licensing stations, Herrold's station became KQW. Today, the station has become San Francisco's KCBS, the 50,000 watt offspring of the original 15 watt station.

Greb's discovery came about in 1958, when he was adviser to the college's undergraduate chapter of Sigma Delta Chi, a journalism society that makes annual awards in the field of journalism.

"I thought the time had come to honor someone in broadcasting. I recalled seeing an old microphone in
This photograph is frequently associated with Herrold's early broadcast work. It shows his two assistants sitting at a table on which may be an arc transmitter. Herrold is seen in the doorway. The date of the picture appears elusive. Some articles imply it may have been taken in 1909, others in 1913 and the latest was in the recent issue (May, 1969) of COMMUNICATION NEWS, page 4, where it is dated 1920. Who is right??

The more Greb delved into the story, the more authentic it seemed. Besides reading scores of old documents and news stories, Greb has talked with a number of people who were involved firsthand in the pioneer station.

Although Herrold died in 1948, Greb was able to talk with his first wife, Mrs. Sybil True, who verified all of Greb's findings.

Herrold was a Stanford alumnus who was running the moderately successful Herrold College of Engineering and Wireless in downtown San Jose. He was interested in just about everything, his wife related to Greb. "There wasn't a subject he couldn't fluently talk about," Mrs. True said. "He could recite the Bible forward and backward. He could step outside and name every star in the sky. He worked out difficult mathematical problems for his friends. He was a perfectionist in his work. But he never wanted to claim any honors due him. He always wanted to share credit with others."

If all this is true, one asks, why hasn't someone rectified the wrong before this?

Greb has an answer. "The people who write the history books are mostly Easterners. This has been neglected just because it's in the West," Greb claims.

Besides, Greb will tell you, KDKA has a large manufacturing company behind it to publicize the station, while Herrold had only his own resources.

Greb's problem is no longer one of documenting his discovery. The job now is to get his story told. "I guess my next step will be to write a book about the station," Greb says. "But these things don't always move fast," he added. "Remember, it took the world 300 years to recognize Gutenberg as the father of the printing press!"

But then, Gutenberg didn't have a college professor on his side.

---Jerry Arc

Much interest has been shown by both amateur and professional radio historians concerning "the first broadcast" station. We reproduce this article from PACIFIC TELEPHONE MAGAZINE sent by Warren Green, W7JY and reprinted with permission from Maytae Bauer, PIM Production Manager. A.W.A. takes no sides in this controversy (who is first?) -- we print the information and let you draw your own conclusions. More information on the subject can be found in Jane Morgan's fine book ELECTRONICS IN THE WEST.
The Collector

DAVE Mc KENZIE (K3AVJ) sports what maybe a pre-WWII crystal set and a Marconiophone 1 tuber with 2 step audio. A little restoring and they now look like new sets Dave.

GEORGE CARTER (Winston-Salem, N.C.) is building up a nice collection with his 14 year old son as partner. Most receivers are in operation and include a large assortment of AK's, Grebe's, Federal, Paragon, Scott, etc. George designed and built a solid-state power supply from which he can switch to 15 different receivers!

ED BATES (W3ZNI) word comes in from BI and Pauline of their fabulous safari in the far Pacific. We doubt the trip will result in much old gear -- but they are having a wonderful time.

BILL LAYERTY (Lansdowne, Pa.) may now be the owner of a mint Marconi CM-6-954. Bill sold all his early 200 and 201's and is now on the look out for more old gear.

MEL COMER (Ardmore, Pa.) latched onto a 1 EW Marstock "coffin", Bell rotary gap and a swell OT plus Grebe 13 -- now how about that !

CURLY RINGLAND (Los Angeles) finally ran out of room and is now in the process of building a two story 30' x 30' structure with 10 foot walls. Curly is doing all the work himself and when completed it may be one of the finest amateur museums on the coast.

GEORGE SWARRY (Introbe,Pa.) has moved into the telegraph field and has added several W.U, and Bannell relays and sounders to the collection. George says he is fed up with junk receivers that need lotsa restoration. We sympathize...

JACK GRAY (WA7DVF) picked up some unusual measuring equipment recently including a 1927 G.E. oscillograph, a 1890 Siemens Dynamoscope made in Germany and large resistance bridge in mahogany case. Jack also found one of the first pieces of Collins equipment which in time will be quite historical.

BOB PIANAGA (W1HAI) feel ther's a potential for making antique tubes. He cites as an example of a tire manufacturer who made out reasonably well by reviving a line of old high pressure tires. Give it time Bob -- and you will be right...

PAUL REUTER (W4OV) finds great interest in Duck products...since he was a one time employee if "WP". Paul was a handy man -- stock clerk and on occasions ran a Cleveland type automatic screw machine making binding posts, etc.

TED WOOLANS (WA1ABP) proves it is worth while bringing up the old days during a qso. He mentioned during a recent contact his interest in music of the 20s' particularly CLINIQUOT CLUB ESKIMOS and Harry Reser and his banjo. The fellow came right back and said he had worked with the Eskimos and that he was the one that imitated the "dog bark" that opened the program...small world!

HARRY CARVER (Rossville, Ga.) is a new collector in Georgia -- an area where AWA has few members. Harry's interest is primarily BC sets but he plans to expand in other areas.

BENNY WESSEL (K8IKO) is temporarily QRT with his old OT xmt becuze the old HBO cooked out. We hope to start a Net this fall made up entirely of old time transmitters on 30 CW...more on this later.

THORN MAYES (W6AX) just returned from another trip -- this time to Mexico. He has been making some interesting experiments with spark coils -- using modern test equipment he has determined the flux pattern of an induction coil. Thorn has been picking up some real nice stuff in the commercial line to go with his 12" Marconidi spark coil transmitter including a 10G-5 which is in rough shape.

FRANK WILLIAMS (Wayne, Pa.) has a nice writeup in his company's paper G.E. RS "TODAY". Publicity of this type is frequently quite rewarding. I bet Ralph ends up with a half dozen sets as result...

FRANK FADANO (Brooklyn, N.Y.) sent an exceptionally sharp picture of his rare AK-5A of which few exist. Frank sent AWA several cone replacements back in the winter -- trick now is to some member with time to repair several cone speakers in the club's museum.

FRANK KOTT (Laolisville, Pa.) is collecting old TV sets (mentioned elsewhere in OTH). In addition to the huge Dumont pictured on p.9 in the Winter Bulletin, the most interesting is the pre-WWII RCA reflecting mirror type which was used at the World's Fair making it very historical. Frank sent a copy of the "specs" which are equally interesting: 33 tubes with tuning range of 42 to 54 megacycle !

JOHN CAPERSTON (Louisville, Ky.) is still looking for the big ones such as a C.R. Leutz Transoceanic Universal "Phantom" along with several real early tuners and crystal sets plus a British Signal Corp set made in France...sounds like a good one.
GRAY HISTORY-OF-WIRELESS MUSEUM

This is the first book to be published in several years for the radio collector. Originally intended as a guide for one visiting Gray's Museum, it has developed into a reference manual of great value to the radio historian. Jack selects various pieces of equipment in his amateur museum, shows a picture and then proceeds to tell about the equipment and the manufacturer. Grebe, K.I Co., Crosley and others are mentioned. Even the average reader will find the book of interest. Other than for a couple typographical errors, it is an excellent publication and highly recommended. Want a copy? They are available to visitors to the A.W.A. Museum or you can send a check for $2.25 (includes postage and tax) to:

G. J. GRAY

CHURCH AND FRANK STREETS

MASON, OHIO 45040

DEX DREXLY (Rochester, N.Y.) landed several sets for his collection--Stewart-Warner, RCA, etc plus some old test gear and meters. Dex is presently in the process of getting a rig on 50 CW.

WAIST CLELAND (K3WYG) has acquired a good Radiola Regenoflex, mint Kennedy 221, excellent Crosley V, AK 20 and an Ace 3H. Along the transmitting line he added a G.E. mercury arc rectifier in original wooden tip frame -- remember when you had to tilt the thing in order to get it started? Wait would like to correspond with other collectors of old TX jugs...QTH: ck in call bak.

AL MACK (W4ID) in addition to being top collector of old club papers, bulletins and magazines, also has some nice gear to show visitors plus some interesting tubes...Keep Al in mind when in Florida.

VERNE THOMPSON (W5JWW) recently acquired over 200 tubes from a nearby university. Although most were relatively new, there were several unusual ones including a 126 lb. RCA 5552 and a beautiful 7595-B image orthicon. A very conspicuous piece of equipment in Vern's museum is the huge "Goniometer".

JOHN WHITE (ex-3CD) sent some rare pictures taken in 1919 of the three Naval Radio Compass stations in the Delaware Bay area. They will be reproduced in the next QTH and should be of interest since the equipment is different. John was at Cape Henlopen.

ROBERT LANE (Kansas City, Mo.) has been collecting little over one year but already has 30 sets made in the 20's plus a good start on old tubes. Bob is an Optometricist.

BROOK S CROOK (Somerset, Pa.) found an old AK dealer in town and ended up with a car full of old receivers including a 10-B breadboard!

ROSS SMITH (Elkhart, Ind.) is in the process of working up program material to present to ham clubs. He feels more shows should be like Jack Gray's "Crosley Story." YATES NOACK (Utica, N.Y.) has been experimenting and may soon come up with exact duplicate silver dials for the Kennedy 110 and 220. Yates has blown down but as you can see -- the interest is still there.

TED HANNAH (K3CUI) picked up a Clapp-Eastham 8-4 receiver. Ted wonders why Clapp-Eastham equipment isn't shown in Radios Manual...good question unless it is the real early stuff.

LOU BIZOLI (WIAAT) We learn that Lou has just about sold all his old gear and leaving the collecting business. We're sorry to hear this since WIAAT was one of the original collectors in the East and one of the few who really appreciated fine commercial equipment.

ROBERT MARKO (KLOKO) is now an owner of an AK-5 breadboard. He is giving K4PI rough competition as an Atwater-Kent collector since he now has 15 different models. A book on the subject is in the making.

TATE THETREAU (W8FX) has been writing excellent radio history for the Detroit Amateur Radio Assn. Bulletin. He's certainly the right fellow to do it! W8FX is distrubed over disposition of old gear donated to public museums--I guess we all are Tate.

SILAS MAUERS (Elkhart, Ind.) is a real old time radio buff...why? He recently made a crystal set from a Quaker oatmeal box, old nails and screws, improvised switch points, etc. and had the wonderful experience of picking up WXL, New Orleans 700 miles away! A man after my own heart.

DAVID BLANK is another new collector who in a relatively short time has built up a fairly large collection of nearly 40 sets, 1000 tubes plus a small library. Much of the equipment is neatly laid out for visitors to see -- everything from early crystal sets to huge console model Scotts: QTH: 1919 Real, Lansing, Mich.

SILENT KEY -- as we go to press word is received that Bill Moreau, W668BL, ex-W4JRC, husband of key historian Lou Moreau, became a Silent Key.
Rtty

TELETYPE PIONEERING ON OLD WNL, 60 KC. Rochester, N.Y. played an important part in early development of RTTY. This took form in test transmissions from WNL, the A.T. & T. transmitter at Rocky Point, N.Y. in the 58.5 to 61.53 kilocycles, to the A.T. & T. test room on Rochester's North Fitzhugh Street in 1930.

You will recall that about 1922, they had inaugurated the first commercial trans-Atlantic radio telephone service over WNL after the work of Arnold and Espenlaub. SSB with suppressed carrier proved itself out during tests of this equipment and in addition the system was "cryconoped" or "speech inverted" for secrecy. Traffic was at such a high density that there was a long waiting list to Europe. American and British operators were stumped frequently with pronunciations and spelling of names etc. of foreign callers — so to solve this problem a teletype printer system was set up as an overseas order wire.

Radio teletype was discussed with R.A. Heising and others in 1922 when it was successfully established on various circuits over land and sea and the Navy even operated a leg to planes in flight. These transmissions were either concerned with public and official demonstrations or commercial operation to fill a crying need and no time was taken out to obtain qualitative or quantitative data on large scale. This brings us to the Rochester part of the story.

Obviously the percentage of errors on a RTTY circuit is a function of the signal-to-noise ratio. Rochester offered a point where these could be measured and where there were existing wire-line teletype facilities which could be used as a simultaneous and continuous standard of comparison. It was at such a distance from Rocky Point that signals could be adjusted conveniently for comparison with Houlton, Maine (the trans-Atlantic
Ken Gardner, and co-located could thus be setup for predicting any commercial circuit errors vs. noise.

The mighty 50 KW single sideband at Rocky Point was re-adjusted to 700 watts to simulate long haul conditions at Rochester and tests were underway using two tone mark and space system then in use for commercial land wire. Bell Labs supplied receivers, measuring equipment and a beautiful loop antenna for reception in the attic at Pittsburgh Street where your author was privileged to peek. It was fascinating to go downstairs and watch two machines thumping out identical copy, knowing that one was via radio.

After signal-to-noise measurements were made and copy errors checked, analysis showed .1% error at approximately 27 DB signal-to-noise ratio and 1% error at about 22 DB sig to noise ratio. This curve, correlated with Houlton, lead to some interesting results as reported by Bailey and McCann in December, 1931 IRE Proceedings.

For instance, on 60 KC. SSB with 1 KW, transmission could be accomplished thru the year with no errors except during May thru September when they rose to .15% at a distance of 100 miles. Like transmission could be accomplished at a distance of 400 miles with a power of 316 KW. (Ever listen to summer static on the "long waves"? Old timers will remember the "crashers and grinders" that lifted them out of their chairs and after a long watch caused them to hurl the "cans" at the bulkhead.)

Many of us spent hours scanning 600 to 30,000 meters on our honeycomb coil regenerative sets and often with the aid of an auxiliary oscillator listened to the transatlantic traffic on WNL. It was some time before we tumbled to the meaning of that mysterious warble we heard at times between conversations.

Such were the growing pains of HWY without benefit of shortwaves, FM carrier shift keying, pulse re-shaping and other modern benefits which make present day copy almost anywhere practically perfect. The longwaves still have many TWX circuits thumping out copy by the hour over WAA, NIK, NPO, NSS, NPM and a host of other VLF stations that can't be identified because they never transmit straight English. There is even one operating at times around 425 KC. Anybody know who it is? Maybe ship to shore ?? Could be WCC on 436 or WSL on 418 KC. - Ken Gardner, W2GN, x-85CN
Former Chief Engineer WHAM

---

ANTIQUE WIRELESS ASSOCIATION INC.
HOLCOMB, NEW YORK 14469

"An amateur organization devoted to the history of wireless"

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AMERICAN RADIO RELAY LEAGUE
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TELEPHONE: 315-657-7699 or 716-663-0956
BLACKHAWK FILMS
DAVENPORT, IOWA 52806

This company deals primarily in reprints of old time movies. Two films of particular interest to the radio historian are "Screen Souvenirs No. 2" which includes an actual movie of Marconi demonstrating his 1901 transmitter and receiver. The other is a real thriller described below. The films are available in all popular amateur sizes. We've ordered material from this company and find their products reliable.

THE GRIT OF THE GIRL TELEGRAPHER (1912)

featuring ANNA Q. NILSSON, HAL CLEMENTS, GUY COMBS, HENRY HALLEM

Betty is the girl telegrapher. Her fiance is Rowe, the railroad detective. Rowe leaves Oreland for a day elsewhere when a telegram comes in from the Superintendent indicating that "Smoke Up" Smith, a notorious "car thief" has been spotted on the train bound for Oreland. Betty is alert, picks him out of the crowd and gets assistance in taking him captive. He escapes from the baggage room, hijacking a locomotive, and Betty and the engineer take after him in another locomotive. There's some thrilling action between locomotives---and Rowe to the rescue! Real rail thriller!

3,000,000,000th TUBE!!!

That's right -- RCA recently announced the production of its three billionth receiving tube at its Harrison New Jersey plant. The event was hailed by the manufacturer as another "milestone in electronics". The record tube was produced on the same site purchased by Thomas Edison for the manufacture of incandescent lamps. RCA acquired the Harrison plant in 1930 when it started to make tubes for their early Radiolas.

STOLEN -- Burglars lifted $30,000 worth of equipment from AM broadcast station WELW (East Cleveland) back in the winter. Loot included part of the xmr, the auxiliary transmitter, BC controls, mikes and other equipment.... I thought this only happened in amateur circles...

Coto-Coil Inductance Units

The Coto-Coil ad in the last COTB drew a letter from Grote Reber whose hobby is checking old gear. He found the arithmetic correct and the numbers in good order but adds a few suggestions. In the fourth column add "Wave" in blank space under "Natural." Fifth column add "with .0001 mfd" in blank space under wavelength. The numbers in the 5th and 6th columns probably represent range with typical .001 mfd. variable condenser.

Grote made some tests several years ago and was quite surprised at the sensitivity of a regenerative receiver with 2 step audio such as RADA, Radiola III, etc. When oscillating, a carrier of less than one microvolt could easily be picked out clearly using headphones. When not oscillating, a ten millivolt signal at 30% modulation was required.
EXPOSED!

PART II "THE GHOULS"

Another racket called to our attention is this business of "moving in" on the widow of a fellow ham or collector and under the pretense of being a good friend (!) of the late husband, volunteer to relieve her of the good spouse's equipment.

This is a situation that can easily happen since most people procrastinate and don't clearly outline in advance through a will or other means the disposal or value of equipment in event of death. It can occur anytime. As an example: a drunken driver can plow into you -- and that is it! (a drunken driver, by the way, is one who legally kill you and receive a 30 day suspended sentence or a $50 fine!)

Now if you want to be one of these characters -- this is how to go about it. Don't be too greedy -- wait at least one day after the funeral before you move in -- don't delay too long however since another entrepreneur may best you to the spoils. Play on the widow's sympathy -- tell her what a great guy the ON was and how you and he were "old buddies". Don't be too grabby, play it cool, volunteer to help her dispose of his belongings but never suggest an auction where others can get a crack at it too! Don't be stingy -- give her a buck or two and offer to help unload the stuff YOU don't want. A smart operator usually minimizes the value of the good things and plays up the junk... emer sed.

western union

Word just came in that W-U Headquarters will move from their old location on Hudson St., N.Y.C. to a modern building at Upper Saddle River, New Jersey. Of particular interest to historians is the move terminates their museum with all historical equipment being packed for storage. At this writing (May) information is not available where a new museum will be established -- if ever! Guess you'll have to visit N2EH and WA2BO to see landline gear....

A.W.A. FILM SHOWS are still making the rounds according to letters received. These are the historical shows made by the Association and given to the ARRL for loan to clubs. As an example: George Sterling, WA2E, reported he recently saw THE STORY OF DX at a Sarasota Radio Club meeting.

SCIENTIFIC AMERICAN

January 15, 1916

PROGRESS IN RADIO TELEGRAPHY written by John V. L. Hogan, Jr. is an excellent article which appeared in this old issue of Scientific American. Subjects covered in Hogan's report include:

---Development of arc transmitters by Thompson-Duddell and Poulsen, use of high frequency alternator for voice transmission by Fessenden at Brant Rock (1907) and Count Arco's work in 1909 (Telefunken) with voice using arc transmitters. The author also tells of pioneers seldom mentioned: Dr. D. G. McCaa of Lancaster, Penna. and E.G. Gage. He also illustrates the Majorana liquid microphone -- an odd device whereby the diaphragm of a carbon mike changes the flow of liquid which in turn changes the resistance in the transmitting circuit!

Of greater interest was a picture of Lloyd Espenchied and a brief description of the famous voice transmissions from NAA Arlington in which Lloyd was an active participant in Hawaii.

(Bob Plassagan, WALBAU)

BACK ISSUES

The following back issues of the OLD TÉÉRESS Bulletin can be purchased at $1 per copy. Other issues are NOT available. Order direct from Secretary: BRUCE KELLEY, MAIN STREET, HOLCOMB, N.Y.

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(The above offer applies before August 1st. Orders will not be filled after this date.)

METROPOLITAN EDUCATIONAL
TELEVISION
ASSOCIATION OF TORONTO

Our Association provided historical material on Reginald Fessenden for M.E.T.A. television broadcasts April 17th and 24th. A.W.A. sent tapes with spark signals, pictures of Fessenden and various pieces of equipment. The Educational TV Association was very grateful for our assistance.
The Arcturus Radio Co., as it was originally styled, commenced the manufacture of AC type tubes in 1927. Nothing unusual about this as all tube manufacturers were turning their attention towards the new indirect heated tubes at this time. What made it unusual in the case of Arcturus was the fact that the company, unlike others in the field, had not previously manufactured battery type tubes. Thus when commencing the manufacture of AC tubes Arcturus had no prior experience and this may have been the reason for their "new departure" in tube design.

Undoubtedly the most unusual feature of these early tubes was the fact that a carbon filament, or "heater" as it was called later, was used in place of the usual tungsten wire. Although it is on record that carbon had been tried as a filament material by earlier workers such as Fleming and de Forest, to the writer's knowledge it had never been used in tubes with indirectly heated cathodes. Due to the difficulty in making carbon filaments to operate on low voltage, a voltage of 15 (fifteen) volts was chosen as a suitable compromise.

Because these tubes were originally intended for use in "electrifying" existing battery operated receivers, they were fitted with a standard 4 prong UX type base with cathode tied internally to one side of the heater. This made it possible to replace battery tubes in either commercial or home-built receivers without having to change the sockets to 5 pin or otherwise alter existing wiring. For various reasons, this line of tubes was not successful and with hindsight it is possible to say that there were design weaknesses such as absence of "gettering", which resulted in short life. Only one manufacturer, The Sonora Phonograph Company, ever used these 15 volt tubes in production model receivers.

In 1929 the name of the organization was changed to The ARCTURUS RADIO TUBE COMPANY and the manufacture of standard type AC tubes was started using the now familiar "100" style of numbering. Initially, production was concentrated on types 128, 127 and 150. These were extensively advertised as "Long Life Blue Tubes" and were used in large quantity by several receiver manufacturers, chief of whom was the Crosley Radio Corp.

1930 saw the introduction of the "Wunderlich" tube, named after its inventor, Norman E. Wunderlich, an engineer of the company. This was one of the first multi-grid tubes produced and featured two collinear grids for use in a full-wave detector circuit. In its heyday, Arcturus pioneered several advances such as the type 124 quick heating screen grid tube, forerunner of the 224A, the type 551 variable-mu (April, 1931) and the type PZ (May, 1931). The last named was claimed to be the first American power pentode and it preceded the type 247 by a narrow margin. Towards the end of 1932 the use of blue glass, except for Wunderlich tubes, was gradually discontinued and it is pitiful to have to record that during the tapering off period, clear glass tubes were produced with the word "Blue" stencilled in blue paint on the glass bulb.

By 1933 Arcturus had entered the replacement market and had over 60 different types of tubes in production including many battery types. Advertisements of the period indicated export to...
78 foreign countries.

Following the introduction of metal tubes by RCA in 1935, Arcturus brought out a range of metal-glass tubes known as the "Coronet" series. These were basically similar to the "Hi" tubes of other manufacturers but here again it seems Arcturus just had to be different. Not only were the standard metal types duplicated in the Coronet range, but in addition, earlier 2.5 volt types such as 24A, 51, etc., were produced in this range having the standard octal base and sold complete with socket adaptors to enable their use in the appropriate 5 pin sockets of the receiver.

As far as can be ascertained, the company ceased operations early in 1941.

The following is a list of pre-1935 types omitted from the Spring 1968 A.W.A. Bulletin:

<table>
<thead>
<tr>
<th>12 volt types</th>
<th>Sonora equivalents</th>
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<tr>
<td>A22</td>
<td>DB-1 ---- 127</td>
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<tr>
<td>A26</td>
<td>PA-1 ---- A48</td>
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<tr>
<td>A28</td>
<td>RE-1 ---- 150</td>
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<tr>
<td>A30</td>
<td>RE-2 ---- 181</td>
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<tr>
<td>A32</td>
<td>SO-1 ---- 40</td>
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<tr>
<td>A40</td>
<td>SO-2 ---- 150</td>
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<tr>
<td>Detector No.26</td>
<td>Miscellaneous:</td>
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<td>AE, PA, 120, 126N, 216 and the Wunderlich &quot;B&quot;</td>
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</tbody>
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**BAND PASS FILTER**

**Helps Bring in More Distance**

Ever look up an old receiver and find the local BC station coming in all over the dial? This is especially true with early crystal sets and can prove quite annoying. Pete Borsi (WDIII) helped solve the problem at A.W.A. when he sent a pre-tuner described in March, 1931 issue of RADIO WORLD. Although a little more involved than the conventional wave trap, it does a real job. The two variable condensers are of course ganged. A little looking around in your junkbox and you can find most of the parts including a couple old TTF coils.

**WU REPEATS HISTORIC 1869 WIRE**

Exactly 100 years ago, May 10, 1869, Western Union Telegraph Co. sent the following message commemorating the joining of East and West railroads at Promontory, Utah:

"SIR:

"WE HAVE THE HONOR TO REPORT THE LAST RAIL LAID AND THE LAST SPIKE DRIVEN.

"THE PACIFIC RAILROAD IS FINISHED.

"LELAND STANFORD"

The original message was sent to Gen. Grant. The same message was repeated last month from the same location in Morse via W-U...this time to President Nixon. (Thx WCONE)

**W/T TO A.W.A.?**

How about inclosing a self addressed stamped envelope? Sometimes as many as 10 to 12 letters are received in a single day. This makes a difficult situation working with limited time and funds. (In fact, letters from non-members are no longer answered!)

**SEQUEL TO THE "SPIGOT GROUNDING STORY" on page 4 of March, 1969 AWA BULLETIN**

Scene: Service Department operation of a radio sales company in Des Moines, Iowa, 1922.

Cast: Dick Kauffman (K2EMR), serviceman.

A customer who had purchased a new Radiola III (along with antenna kit) entered a complaint that the product had been misrepresented. Nothing was heard in the phones.

I was dispatched to see what amiss. As I approached the house I saw the antenna installation -- a nice job in the clear -- just like the kit instructions prescribed. Entrance was via a window sash feed -- through a flat bushing.

An elderly lady answered my knock and led me to the installation. Everything was hooked up per instructions. When I inquired about the ground, she said, "Oh yes, a good one." and led me around the corner, opened the cellar door and pointed to a huge flower pot on the cellar steps into which she had inserted the ground wire. The black dirt had been watered to insure a good moist earth!
The Western New York Hamfest attracted a record attendance of just under 2000. A.W.A. provided 2 programs plus "Open House" at the Club's Museum.

The New England A.R.L. Convention scheduled at Swampscott was forced to move their location due to a disastrous fire. Attendance was down at the new location in downtown Boston on May 28, but everyone had a good time. Bob and Nancy Messian (W1ME) had their usual fine historical exhibit and the C.O.T.C. had a get-together.

W2NX is planning to bring it to the 1500 to 1600 kc range in Rhode Island.

The NEW ENGLAND A.R.L. Convention at a joint meeting of the Franklin Radio Club and the Potomac group.

Such Sacramento, June 14.

Work has started on the new film show plans to bring it to the 1500 to 1600 kc range in Rhode Island.

Sacramento, June 14.

Work has started on the new film show plans to bring it to the 1500 to 1600 kc range in Rhode Island.

**NEWS ITEMS**

**WHA at the University of Wisconsin may well be the nation's oldest educational broadcast station. They started experimental broadcasts in 1917 and regular schedule in 1919!** A.W.A. salutes this pioneer station and its director James Robertson as they celebrate 1969 ---- their 50th Anniversary.

1500 TO 1600 KC

Poking through an old RADIO-CRAFT magazine (July '36) we ran across an article by Bob Cobaugh, W2NX, describing how to increase the range of a BC receiver to pickup up the four then existing hi-fi stations operating between 1500 and 1600 kilocycles (most receivers stopped around 1500 kc). He describes 3 methods to lower the wavelength: 1. -- open up trimming condensers (easiest method), 2. -- remove a few turns from rf coils and 3. -- slight shift of IF padding condensers. W2NX had good reason for writing this article 31 years ago -- he was and still is an engineer at hi-fi WQXR !

**JOHN V.L. HOGAN** article has been written by Bob Cobaugh, W2NX. The story of this well known pioneer will be available soon. Bob tells us that Hogan's private secretary, Arthur Huntington, died in April. Huntington was 85 and was also an employee of Lee de Forest in the early days.

**FRANK GEISEL - NEW MEMBER**

New members are normally not listed; however, it was felt consideration should be given old-time commercial operator Frank Geisel of Walnut Creek, California. We first heard about Frank in an article written by H. R. Basr, W2ZI, telling of his 1965 California trip when he visited famed commercial station KPH. GM Geisel was again brought to our attention as one of the operators assisting W2NX in making his famous tapes on early spark signals -- Frank's fist was that of an automatic tape machine !

Our new member retired as Manager of KPH in 1967 after 6 years service plus 6 years air sea! (Bl. note: KPH is revered by the West Coast gang the same as old WCC and NAA are by old timers in the East.)

**CLUB BADGES AVAILABLE**

for $1 postpaid. These big beautiful badges are very conspicuous when worn at a "Meet" or hamfest and will immediately identify you as an A.W.A. member. Each badge has a large plastic window where you insert your name, call (if any), hometown, collecting interests, etc. Send $1 to Treasurer W2QY, 69 Boulevard Pkwy, Rochester, N.Y. 14612