"WORLD'S FIRST RADIO PROGRAM" by Lowell Norris is the title of an article in the December issue of "Yankee" magazine. It concerns Prof. Fessenden's Xmas Eve broadcast of 1906 when he startled early wireless operators by broadcasting a Xmas carol over his station at Brant Rock.

The location of this pioneer station can still be found at Blackman's Point overlooking the ocean at Marshfield, Mass. One can still see remains of the 8 x 8 concrete base which supported the unusual 420 foot steel tower. With a little searching one may find a few shattered insulators or the 4 anchor bases and possibly the remains of one of the buildings.

We might mention that we are currently celebrating Fessenden's "100th Birthday" having been born in 1866. Also of interest is the fact that the base insulator for the steel tower was made in Victor, N.Y. - only 5 miles from Holcomb !!
NEW GEAR AT A.W.A.

An outstanding piece of equipment was recently acquired by the A.W.A. for display purposes. It is Dr. E.F.W. Alexanderson's original disc scanning television transmitter! The entire unit weighs close to 1 ton and is temporarily stored in W2GB's warehouse. The Nipkow disc was first used in 1926 and has 24 lenses. After later modifications, it was used in 1928 for regular programming. In addition to the huge scanning mechanism, there are several other units including parts for the television camera plus components for disc color scanning! We have not as yet had an opportunity to carefully examine this equipment; however, we realize we may have the oldest television transmitter in the country. We're indebted to Col. Weir (KE2POI) for this valuable piece of equipment. Both he and W2KTY promise to get it in operation (?) once we have suitable quarters.

Another piece of equipment recently received is a ½ kw. quench gap commercial spark transmitter from W2Q0 through a Mr. Mulder. This item formerly belonged to 2PE and is quite different from other commercial transmitters in the Museum. In addition, Lou sent up a nice collection of early spark apparatus including 3 unusual keys - - all from the estate of 2PE. We hope to have pictures of these items in a later issue.

Although we haven't seen them yet, Ray DeVos, W2TAM, is sending 2 early postwar television sets for display. One might question the historical value of these sets but we can assure you they're not easy to come by. One is a 3" Pilot and the other is a 5" Hallicrator. Both are in excellent condition with new tubes and work perfect. You may have an opportunity to see them since they will be on exhibit in the Franklin Institute at the 1966 A.W.A. Meet.

CROCKER-WHEELER MG SET - is a new item at A.W.A. After much transporting and patient waiting by the owner, we finally picked it up and now have it here at the museum. It is the property of Pete Borsi and was made toward the end of WWI or shortly after. A 500 cycle job, we plan to use it on various transmitters - both spark and CW - in order to tape record authentic signals the way they were 45 years ago. The big problem at the moment is finding a good 110 volt D.C. power source. More on this later.

WANTED - small size BC sets such as Crosley 50. E.E. Brunt, 6465 Sterling Ave., Detroit, Michigan, 48202
The Audion.

The Audion, while very sensitive, is as yet in an undeveloped stage, as practically no two instruments work alike and they also lose their sensitiveness in time.

It was found, over twenty-five years ago in Germany, that if a metallic plate and a filament were sealed side by side in an evacuated globe, a current could be passed from the filament to the plate while the filament was lighted, but not otherwise. After a long series of tests it was discovered that the hot filament emitted a flow of ions which carried the current from filament to plate. This flow is exactly analogous to that in the gas flame and in the arc, but for a long time it was not considered that it could be used as a nearly ideal wave detector.

After several notable steps of development by different workers, the device now known as the Audion was produced. This has been modified and so changed in the course of its growth that there are now some six or more distinct varieties. In all these the operating principle is the shattering of a column of conducting gas by a received electrical impulse. But, unlike the flame and arc detectors, the gas column is protected from air currents by the globe of the Audion lamp, so it is evident that the great difficulty mentioned above has been eliminated.

The most sensitive type so far designed is called the Grid Audion. This is usually a six-volt low candle-power incandescent lamp with a tantalum filament, having a small platinum plate (about 10x15 millimeters) fastened approximately three millimeters from the filament, and a "grid" bent from rather large (say number twenty-two) platinum wire placed nearly midway between the two. The filament is lighted by three small storage cells, fig. 45, whose output is varied by a rheostat having continuous smooth adjustment. From the positive terminal of this storage battery a wire is led to the adjustable high voltage battery of the telephone circuit, as shown in the diagram. The two leads from the tuning apparatus are respectively connected to the grid and to the negative side of the storage cells.

It has been definitely stated that the Audion is a potential operated device. But on the same authority it is said that the Audion is dependent for its response upon the total energy received, so the class to which the apparatus really belongs is somewhat hazy.

It is undoubtedly true that the Audion, when in its best condition, is highly sensitive and that it is therefore well suited for wireless telephony. But unfortunately the sensitive condition is extremely difficult to find and still more difficult to maintain. Some Audion-tubes show an extraordinary sensitiveness at first, but quickly grow dull when in use. Other lamps are nearly worthless from the beginning, and some remain sensitive very long.

**BRITISH COLLECTION**

How many A.W.A. members purchased items from a collection offered for sale in Portsmouth, England? The list included a very early magnetic detector, an 1876 Wheatstone-Morse recorder, etc., plus many early books. Any problem with import duty or shipping?

**HISTORICAL RESEARCH**

Frank Matejka, W1MT, 14 Tuscarack Road, Reading, Mass. would like to correspond with someone who has a 1917 File of the MONTHLY SERVICE BULLETINS issued at that time to members of the National Amateur Wireless Association....
The photos on these pages cover one of the most unique museums in the country - the National Telegraph Museum at the home of Stu Davis, W4ZC/K20BJ in Union, New Jersey. Here the visitor will find himself in an old time telegraph office as it existed 80 years ago, hear the click of Morse instruments and admire rare landline equipment. This unusual creation is the result of many years collecting and planning by Stu, old time telegrapher and Morse Historian. Unlike most science museums, much of the equipment is in actual operation. Historical items include a War Department telegraph office of the 1850's, equipment used by the U.S. Army Signal Corps during the Spanish American War, an early British Army needle telegraph used in India, etc.

One of the highlights of the whole exhibit is a switchboard system which is at least 50 years old. It can handle 16 lines and 10 instruments simultaneously and was obtained from the Chicago Northwestern Railroad Office in Sioux City, S.D. Included with the equipment is Stu Davis adjusting a relay. If plans materialize, this equipment will be in the nationwide circuit commemorating Morse's Birthday (April).

Note the old time kerosene lamps - a real antique collector's item. Of special interest to the landline collector is the Yetman transmitting typewriter at the left.
Partial view of the Museum. In another area is the ham shack which includes some nice looking Collins gear, RTTY equipment, keys, etc. — but no microphones!

Switchboard is an 1898 phone, which used a horn for a summons instead of a bell.

Messages came into this board passing through single-line repeaters which were used to strengthen the signal along the line, thus making possible long distance telegraphy. W2C/R2OBJ's collection includes an Athenan repeater which he believes to be the only one in existence today. It is now on loan to the Toledo, Ohio, Morse Telegraph Club's Associated Wire Service.

Included in the collection is a Yetman transmitting typewriter which sends the original Morse characters through the wires. There are only two of these in existence today.

Stu tells us that a message a minute was required of the men who manned the "A" wires. Eighty-five messages per hour were regularly handled at speeds as high as 70 words per minute by the fastest operators. OM Davis reports that some idea of traffic volume can be gained from the records of the Western Union's Chicago office of 1902. This office averaged more than two million messages a month, handled by a staff of 800 telegraphers.

According to Stu, it took a good five years of training before an operator could become efficient. He feels that although economic forces are bringing about the almost complete disappearance of Morse operators, their trade introduced a basic underlying art.

The Curator of this interesting museum has had many exciting experiences during the years as a Western Union, Seaboard Airline Railway and AP Operator. Among these was his transmitting on the top of a telephone pole in 1926 during a New England hurricane. As a Western Union aide to the White House press corps during the Pres. Franklin D. Roosevelt administration, he was aboard on many official trips and spent a good deal of time at Campobello. He also transmitted press copy on the Hauptmann trial and the sinking of the Squalus at Portsmouth, New Hampshire.

If you plan to visit this outstanding museum, be sure and write or telephone well in advance for appointment.

Stewart Davis, 1149 Weber St., Union, New Jersey, 07083

SWAP: catalogs, callbooks, magazines, certificates, books, etc. Want early wireless sets and parts. Harry Cap, 190 Beach St., Bridgewater, Mass.
In this day and age of lotsa money it is difficult to find one using homebrew gear. In fact, it is embarrassing to admit during a QSO you’re not using the latest model BCNW-2 or a K9 super. The only exception to this are a few hardy W6 and USF pioneers who still enjoy home construction.

So - if you don’t mind being an odd-ball, why not go on the air with a real early homebrew transmitter? Of course this will lessen your opportunity to buy DX qsls as you shoot for the 400 mark on the DXCC Honor Roll or go on SSB and continually repeat “By golly, by golly” but look at the fun you can have!

First - all components should be pre - WWII. This isn’t really too difficult; however, as you push backward in time your problems multiply - particularly in the tube field. 1920 is the edge.... Prior to that just about everything was spark and the F.C.C. frowns on this mode of transmission. One of the oldest transmitters to go on the air recently was built by W6EB using one time famous 1DM circuit. A one tube self-excited oscillator using an old W2, repeater tube, I worked him on 160 CW and was surprised at the stable clean note. Input was around 1 watt which is more than sufficient to work locals.

I might warn you now - don’t get any ideas about placing a self-excited rig on the air running much power because of harmonic radiation. And while on the subject, it is almost a must to have an isolated antenna tuner to minimize harmonic radiation. There is a beautiful high power 1928-30 meter rig in the club museum using a single 852 at 2000 volts on the plate. One evening of operation would provide a nice assortment of O.O. cards, F.C.C. citations and numerous calls from the neighbors!

Now, how to play it safe! Stick to 80 or 160 meters. Old tubes don’t care for high frequency operation and work well on these bands, in fact, the high inter-electrode capacity of some early triodes is desirable since it prevents spurious oscillations. Unless QRP, the transmitter should be a MOSA. Oscillators before 1927 should use rugged hi-C tank circuits such as a hartley. After 1927 you can use a crystal oscillator and retain authenticity. RF amplifiers are no problems except neutralization was unknown in the early 1920’s - we neutralized our 1922 rig anyway!

General rule for tubes: Use UV-201 or 202 before 1925 and UX-210 for later years. For high power amplifiers - try a UV-203(A) or 211. In tuning up the
Circuit of W2AN's 1929 transmitter. This transmitter can be heard regularly on 80 CW and 75 phone. The phone frequency is 3918 kc. until such time we can grind one lower in the band. You can't miss the CW signal - primary keying is used! A special qsl will be sent to all those who work the station.

transmitter never use original tubes - they're too valuable. One can buy inexpensive substitutes. Barry Electronics sell Type 10 tubes for only 40¢. Another UX-210 substitute is the VT-25 selling for the same price. Present day 21L's and 845's make good replacements for checking the amplifier except one may have to juggle the bias or neutralizing slightly.

Parts for low power transmitters can usually be found in the collector's junk box. High power components are another story; however, most old timers can locate a large double space tank condenser and a plate blocking condenser - the only two items you can't make or substitute too easily.

The power supply is another story. As a starter, we suggest you use whatever is handy around the shack. Locating old power transformers, filter condensers and bleeder that are still good is difficult. This holds true with early rectifier tubes unless you care to make up 30 or 40 slop jar rectifiers like I did for the club's 1922 transmitter.

To stay in style it must be breadboard of course. This also makes it easy to lay out and mount the various parts and at the same time lessens insulation problems. I might add that I've had no TVI problem in spite of open construction. This obviously may not hold true if you're in a fringe area.

Receiving is easy. If you can't dig up an old SW-3 for the 1920-34 station, you can always whip together a detector and 1 step audio in short order. The latter combination holds true for 1920½ watt old time transmitter used by W2ETY. Made in a cigarbox, it uses a single UX-199!
layouts of course. There's only one problem with this type receiver - strong signals easily block a regenerative detector. This problem is not so great on CW but can create an impossible situation on voice. Interesting enough, one can copy SSB quite well with this type detector providing you have a firm grip on the tuning and regeneration controls.

Antenna? You're on your own but don't overlook the old fashion multi-wire flat top. String up 3 or 4 wires about a foot apart on a crossarm or make a cage. Remember, as you increase the radiation surface you have to shorten the length. In other words, the old 136 foot for 80 CW may become only 120 feet, etc.

In conclusion, don't build supposedly a 1921 or 1922 transmitter and fire it up on 80 - the amateur was still playing around on 150 to 200 at this time and I find the 202 doesn't like this low wavelength. Stay away from loop modulation, ICW and RAW A.C. on the plate (who am I kidding?) and keep a modern super nearby to check your frequency and as a standby in case you lose your contact with the 201-A regenerative detector!

Old time stations on the air:
In addition to W2AN, W2EB and W2ETY, all of whom have temporary transmitters on the air, we have several A.W.A. members who operate regularly with oldtime equipment. There is Jack Nelson, W2FW in Schenectady, N.Y. who can be heard regularly on 80 CW with a 210 xtal osc. and 210 P.A. All components are of 1929 or 1930 vintage. Jack uses a homemade(!) super using 24, 56, 58 and 2A5 tubes. On occasions he tunes up on 160 where he uses a FB7 -X for rx.

K8IKO out in Worthington, Ohio is currently on 80 and 80 with a single 210 in a hartley - and so far -- no QSO reports! Henry uses a regenerative receiver with an old HRO for standby. Then of course, we have Phil Hatfield, W9GFS, running high power with 211's in his 1929 station described in the No.3, Vol. 5 issue of the OTB. W5VA has a rockcrusher with 2A4's but we don't know whether Frank is on the air with it. W32XR., W2IE and K2AXE are in the process of building stations.

RECORDER ON THE SODIUM TUBE --

In the days of homemade broadcast receivers, I met Donie and spent a morning at his place on the beach in Connecticut. Few people know what is inside of the SODIUM ION tube, since the glass was frosted. The tube itself was tubular 1/4 inch or a little more in diameter and about 1 1/2 inches long. On the outside was wrapped a heater to heat up the sodium. The tube was quite variable in characteristics, between one sample and another, but a "good" one was a remarkable detector. While Radio Editor of the Boston Evening Transcript, I designed and described the "T-C" receiver (parts later marketed by Samson Electric Co.) which consisted of a tuned, neutralized RF amplifier, Sodium Detector, the tuned stage used as reflex first audio and one stage of audio amplifier.

(Recollection on the Sodium Tube --)

KEEP THE BULLETIN GOING

Send us info on latest magazine or book reviews, historical notes, latest gear in your collection, want 'ads', photos etc. The Bulletin is a historical radio newspaper and we constantly need new material to keep it going. . . .
Collectors and historians frequently find the need for a quick reference to determine early "SCR" numbers. Listed below is a partial list. Some are quite rare whereas others were fairly common on the surplus market in the '20s.

SCR-51 ½ kw. quench gap set used by Navy for reconnaissance work with planes. Usually supplied with 500 cycle generator mounted on wing of plane.

SCR-53 A "Y" type antenna unit used for training purposes for both transmitting and receiving.

SCR-54 Receiving set with crystal detector.

SCR-55 Vacuum tube detector used with the SCR-54 in place of crystal.

SCR-56 Spark gap buzzer type transmitter. Used for airplane training purposes.

SCR-57 Interphone set between pilot and observer.

SCR-59 Radiotelephone receiver. Same receiver as in the SCR-68.

SCR-60 Radio wavemeter.

SCR-61 Field type radio wavemeter.

SCR-64 Spark transmitter equipped with a quenched stationary gap and a non-synchronous rotary gap.

SCR-65 Spark gap buzzer type transmitter used for airplane work.

SCR-66 Radio telephone set for airplane consisting of 2 tube transmitter using VT-2's and 3 tube receiver using W11's.

SCR-69 Tube transmitter used primarily for instruction work.

SCR-70 One tube regenerative receiver.

SCR-71 Ground telegraph sending buzzer.

SCR-72 Two stage vacuum tube amplifier.

SCR-74 A very simple spark set with open gap and untuned inductance used for ground work.

"T" TYPE ANTENNA - - is something of the past for commercial work - - but this old standby came into emergency use at KNX 50 KW. BC transmitter (Los Angeles) recently after the 500 foot vertical came down. Stringing up some wire between (2) 115 foot wooden poles with a vertical wire dropping from the center, the station was back on the air 1922 style.

"OLD TIMERS - A TREASURY OF ORAL HISTORY" - - is the title of a series of recorded talks recently broadcast over the University of Michigan's radio station WUMN and WUMT. The recordings were made at last year's OT Nite held at Dearborn Science Museum and covers the early experiences and reminiscing of old timers WKM, W3AX, WJUU, WCRM, W5CT and W6DG.

MIGNON CO. of Elmira, N.Y. - who can give us full info on this early company? Bill Travers would like to know and so would several others. A manufacturer of excellent receivers (tuners) pre-WWI, they continued after the war and for a brief period made early BC sets. Then for a long time little was heard of Mignon. He had a small place in Rochester for awhile and after WWII we understand he manufactured stethoscope machines in Lima, N.Y. (late 40's) - only 5 miles from Holcomb! He then disappeared after the P.C.C. moved in and banned his product because the unshielded self-excited oscillators were creating interference (?). Of German descent, we are told he was an unusual and brilliant person. There are many stories regarding his activities during WWI. We all would like to know more about this early pioneer.

AUTHENTICATE HISTORICAL MATERIAL

Too frequently we see historical material which SUPPOSEDLY was part of the equipment at some historical station or used by some early pioneer. Other than "say so" - there is very little to prove its historical value - not even an identification tag!

One can recognize early equipment and usually determine when and who made it but - - if it had been used by de Forest, Armstrong, Fessenden or some other early pioneer - - or if it was part of the original equipment at South Wellfleet or Tuckerton - - the historical value of this same piece of equipment would increase tremendously.

We therefore urge everyone to attach a tag or some other means of identification to each historical item stating its origin, historical significance, names, dates and signature - - and if convenient, have it notarized.

As an example: Pioneer Great Lakes operator Nelson Holt, recently gave the A.W.A. a large 0-200 ammeter. A sworn notarized statement accompanied the meter stating it had been used on the switchboard of the old Clark Wireless Telegraph Station at Buffalo, N.Y. between 1904-12. Without this notarized statement it would be just another old meter.

IEEE HISTORICAL COMMITTEE - AWA member Chas. Williams, W7AN was recently appointed as a member of the Historical Committee of the IEEE. W7AN is a fellow of the Institute and a member of the Seattle Section. In this capacity he will be the West Coast representative. He already has been commissioned to prepare a wireless history of the Northwest and Alaska for the Seattle Section.
Although we don't always agree with W2NSD's Editorials, we will vouch for his magazine "73". As an example, in addition to the usual good technical material in the January issue, there was an excellent article by W2AAA on early DX history culminating in the famous 1923 Trans-Atlantic contact between Deloy and Schnell/Reinartz. Frank dug up some fine photos for his article -- so we join in and print a picture taken recently by Jack Williams, KEJFV, on one of his trips to the French Riviera.

Jack tells us that Leon hasn't been active for years; however, the famous call of SAB has never been re-issued!

GOING TO SAN FRANCISCO? Be sure and visit the Hallmark Museum -- located at the Elks Club, 556 Post St., San Francisco, Calif. (34102) ... We give the full address because we want you to be sure and write in advance (or telephone EX-2-6600) to be sure the Curator Floyd Lyons is at home. Floyd, as you know, is a purser, and is frequently at sea. The visitor will find an outstanding collection of early tubes and light bulbs as well as gear. In addition you will see one of the top collections in the country of variable condensers and coils......

BEAUTIFUL COLOR PICTURE -- appeared in the December issue of MONTSANTO magazine showing Roland Bourne, W1ANA operating a 1907 amateur station. The picture was part of an article describing amateur radio.

OLD TIMER'S NITE
Ford Science Museum, May 7
Dearborn, Michigan
QCSA Luncheon at noon
Dinner and entertainment in P.M.
Monument Honors Historic IBCG

Here is QST Report of 1950 Dedication of famous IBCG Memorial, Greenwich, Conn.

Old-time amateurs, notable of the radio industry, and civic officials turned out en masse on October 21st to dedicate an imposing monument marking the site of amateur station IBCG, star performer in the ARRL Transatlantic Tests of December 1921. Sponsored by the Radio Club of America, whose members built and operated the history-making station, the memorial is located on a special plot of land contributed by the town of Greenwich, Conn. The dedication address was delivered by Dr. Orestes H. Caldwell, former Federal Radio Commissioner, and the memorial was accepted for the town by First Selectman Wilbur M. Peck. During the ceremony bronze medallions were awarded to the six operators of the station, Major Edwin H. Armstrong, George E. Burghard, Ernest V. Amy, John F. Grinan, Minton Cronkhite and Walker P. Inman, and to Paul F. Godley, operator of ARRL's listening post in Scotland.

IBCG enjoyed an enviable reputation during its brief existence. It was one of the super ham stations of the era, especially designed and built for the attempt to put a short-wave signal across the Atlantic during the Transatlantic Tests. The dé luxe layout was the Radio Club of America's answer to Mr. Godley's plea, "Please build a station that will get over...!" The transmitter was a master-oscillator affair with three Type UV-204 "P" tubes in the final, running 900 watt input on the "short wave" of 206 meters. The antenna, strung between masts 105 and 75 feet high, was a T cage with a radial counterpoise. A Paragon RA-10 regenerative tuner with separate amplifier was used for receiving.

The overwhelming success of the Tests is a bright spot in the history of amateur radio. Twenty-eight stations were heard by "Paragon Paul" and his assistant, Inspector Pearson, who maintained a vigilant watch in a tent on the bleak coast at Ardrossan, Scotland. However, one signal stood out above the rest... "strong and steady" enough, in fact, to transmit the first message across an ocean on "worthless" short waves. Editor Warner, chronicling the Transatlantics in February, 1922, QST, described the feat of IBCG in the following words:

"IBCG seems an easy winner as the star station. In addition to being heard all over the map they got thru a coherent message on broadcast, at 3 a.m. GMT on Dec. 12th, which was acknowledged by Godley by cable to this office. The first transatlantic message ever sent read as follows:

"No. 1 NY to GB to Paul Godley, Ardrossan, Scotland; hearty congratulations. Burghard, Grinan, Armstrong, Cronkhite, Godley"

The IBCG memorial, and principals in its dedication. L to r: Paul F. Godley, ea.22X; Major Edwin H. Armstrong, ea.2YK; George E. Burghard, W2GERC; First Selectman Wilbur M. Peck; Dr. Orestes H. Caldwell; Ernest V. Amy, ea.3YK; IBCG operators John F. Grinan, Minton Cronkhite, and Walker P. Inman were unable to attend the ceremonies.
This picture was taken in the Auckland Museum of Transport and sent to us by John Stokes. He tells us the museum is relatively new but encompasses a wide range of subjects - from aircraft and agriculture equipment through to photography and steam engineering. At the left of the picture one can see a rare Marconi multiple tuner c. 1912. In the center is a Radio Communication Company (R.C.C.) type BA-39 tuner and at the far right is a large induction coil.

The above photograph shows the tubes at the Auckland Museum of Transport. This picture was likewise sent to us by John Stokes, A.W.A. member in New Zealand. John's hobby is collecting tubes; however, he has a nice collection of broadcast sets started. In the tube line, John can show you everything from early de Forest audions to a complete set of Raytheon rectifiers - EH, BA, BR and CE -1! - as well as a vast assortment of British, German and other foreign makes......

COMMUNICATION STAMPS - John, K2VZB, reminds us that the amateur radio historian should not overlook collecting communication stamps. Various issues include ones with radio towers, telegraph keys, radios, etc. As an example, Australia has a nice one with a telegraph key on it. In addition, don't forget the DIY stamps and the International Telecommunication Union series. To date, John has collected over 153 different communication stamps!
INJUSTANCE TO AUTHOR - In the last OTB under the heading DE FOREST EARLY AUDIONS comments were made to the effect the author of the magazine article had neglected to mention pre-audion development by Fleming, etc.

This has been called to our attention and a quick glance of the article proved correct - - HOWEVER -- what we didn't know was that the author, a well qualified historian (Paul Watson, WJBO), had covered this material in an earlier article -- assuming the two would appear within a few months of one another as a series.

The lengthy time lapse between publication proved unfortunate for all and is known as "the Editor's perogative". They have the power to accept and reject articles - - and publish them when they please.

IMPORTANT NOTICE

After much consideration, we've decided to send all future Bulletins FIRST CLASS MAIL. This decision was prompted for several reasons.

Word comes in that the volume of mail in ALL classes has increased tremendously in recent years and the Post Office finds it difficult to cope with the situation. Under the circumstances, 2nd and 3rd class mail is frequently set aside and not delivered for lengthy periods of time - particularly around the holidays. It took W2ICE 11 days to receive his Winter Bulletin - a distance of only 60 miles!

Other disadvantages to 3rd class mail are: It is not forwarded in event of address change and we cannot include a written note or letter in the envelope.

When the bulletin had less number of pages we used 1st class mail; however, since the increase in the number of pages, it was found necessary to use 3rd class to keep the postage cost down.

What does all this mean to you? Effective immediately the postage will become 10¢ per issue or an increase of 2¢ a year. Henceforth your dues will be $2.75 instead of $2.50. . . . enuf sed.

"THE EARLY DAYS OF RADIO" is the title of an exceptionally well written story in February issue of Atlantic magazine. Tales of early broadcasting by onetime Chief Engineer Carl Dreher of WJZ. Highly recommended for your historical files.

(TM Ted Hannah, K3CUI)

A.W.A. CALENDAR

National A.R.R.L. Convention
Boston, Massachusetts
Friday Evening, April 22
"THE FIRST AMATEUR"
Revised version of the club's popular show covering the history of wireless from 1896 to 1921.

Lincoln Cundall, W2AJY
Saturday Afternoon, April 23
Premiere showing of the club's "GOLDEN TWENTIES"
Past moving entertainment covering the golden era of radio from 1919 to 1929. Bruce Kelley, W2ICE/QCP

A.W.A. Equipment on display as usual

WESTERN NEW YORK HAMFEST
A.W.A. Open House, Holcomb, N.Y. on Friday Evening, May 13 and Sunday Morning, May 15. The popular "OLD TIGER'S LUNCHEON" will take place at noon, May 14 at Hamfest Headquarters. (See QST for all details)

ANNUAL SUMMER MEET
Saturday Evening, Aug. 20
Holloway House, East Bloomfield (in conjunction with the New York "Pageant of Steam")

ANNUAL NATIONAL MEET
Franklin Institute, Philadelphia, Pa.
Saturday and Sunday Sept. 24/25

FALL MEET
Saturday Evening, Oct. 22
Holloway House and Club Museum

ANNUAL BUSINESS MEETING
Nov. 12, QTH: K2JA, Pittsford, N.Y.

FL/NAA - the note in the last OTB brought a reply from Bad Fischer (Westfield, N.J.) telling how he use to copy FL and NAA when in mid-atlantic using only an old Navy SE-143 receiver with galena detector. NAA would come in on 2500 and FL on 2600 meters. He sees signals from the Eiffel Tower station were unlike the high pitch NAA signals in that they sounded like a clock ticking as "tock-tock-tock" on the second....

It is too bad that someone never record signals from these old stations - or did they ? We've had many requests for old time signals and all we can provide are present day tape recordings made from low power transmitters. We have quite a variety however: Ford spark coils, straight gaps, non-sync and sync rotaries, quench, MAC, BCM, - and 120,240,500 cycle, etc...
EDITORS' NOTE

MISTAKES. Because they're too blasted much trouble to correct, we include a certain number of mistakes in each issue of the OTB - - a misspelled word, an inappropriate word, a grammatical fault, a typographical error, etc. This is to prove we're human, like everybody else. It makes the XYL shudder (she's an English Major) - - but she must learn, too, that there's no such thing as a perfect spouse. One kind of error, though, we work hard to avoid and that is an error in fact. Don't bother writing if we misspell a common word, But DO take us to task if we don't get the facts straight such as names, calls, dates on historical data, etc. - - W2ICE

LATEST NEWS RELEASE : : : :

BERKHAMSTED, ENGLAND (Sept. 19,1926)
At a hotel here last evening twenty couples danced to radio music which could not be heard by the spectators. Each dancer carried a concealed crystal set receiver and wore inconspicuous headphones. The sight of the folks dancing looked almost mad to all who did not know of the experiment.
(See "Radio Broadcast" magazine, January issue, 1927, page 280)

ATWATER-KENT MODEL 5A pictured in the last OTB drew considerable comment. The most interesting came from Mel Comer. Mel tells us they were made up special, one to a distributor. The set was made to use three UV-201's and two UV-202's. While in the development stage, several were tried with a Sodion detector.

BIG NEWS : : :

The 1966 ANNUAL HISTORICAL MEET will take place Saturday and Sunday, Sept. 24 and 25th at the Franklin Institute Philadelphia, Penna.

The A.W.A. is highly honored that this famous scientific organization recognizes our amateur historical group. The Institute is one of the oldest schools of learning in the country and maintains one of the foremost science museums in the world. The location is ideal since the majority of AWA members live in the W-1-2 and 3 areas. Complete details will appear in the Summer Bulletin. In the meantime - - place a big circle on your calender around the weekend of Sept. 24th.....
NIKOLA TESLA'S GALENA

By El Cummings, ex-IWP

Back in 1925 I worked for the Franklin Machine Company of Providence, R.I. At that time, Franklin also owned and operated the Harris Corliss Steam Engine Company and the George H. Corliss Engine plant.

At the Geo. H. Corliss plant, in an un-used building, piled near a heap of scrap metal, I spotted an old open core transformer. The beautiful mahogany case had been smashed, apparently with a sledge hammer and left a wrecked mess.

I rounded up an old timer and bringing him to the spot, asked him how the thing got there. What he told me follows:

"Prior to Franklin ownership, the plant was run by American & British Mfg. Co., who also ran a plant in Bridgewater, Connecticut." The old timer went on to say, "In the early 1900's, the A&B Company contracted Nikola Tesla to erect wireless stations at Bridgeport and Providence. The idea being to establish communication between them, sell stock and lay ground work for a wireless communication system."

The old gent then led me to a nearby office and there on an old bench against the wall, I saw a huge piece of galena weighing close to 4 pounds. "The galena," my friend said, "just had to be part of Tesla's supply because he just couldn't conceive what use engine makers would have for it. Most likely this office was the station."

He could give me no further information on the project since it petered out like many others of the time. I can't prove any of this but I still have the galena which I mounted on a base (see photo) plus one of the secondary sections from the old transformer.

PIONEER STATION AT MARION, MASS. - - -

W1MI tells us that many of the VIP components used at this early Marconi Station (later RCA/Air Force) were shipped for use at VIP stations WWL (20 kc.) and WWB (50 kc.) at Fort Collins, Colo. As mentioned earlier, we believe one of the Alexandererson alternators was trucked to the Smithsonian. More on this later.

MORE ON COL. GREEN (mentioned in last Bulletin) The Colonel died around 1936 and the 1938 hurricane did considerable damage to the estate including the private airport and balloon hangar. When his sister died, M.I.T. received the estate who used it for meteorological research. It was sold last year to a religious order.

If you're interested in the Colonel's mother, Hetty Green, suggest you buy the book titled "The Day They Shook the Plum Tree". (Available as a paperback). Another book published earlier is titled "Hetty Green, the Witch of Wall Street".

HONEYCOMB COILS are apparently still available. As a result of the article in October, 1962 QT on how to build a receiver to copy VIF NAA - - 300 sets of honeycomb coils were sold at $9.95 per set by the Coto-Coil Co. of Providence, R.I. (Tax Ed Cummings)

OHM'S LAW

The most common of all electrical equations - few know of its origin.

G.S. Ohm published his original paper in Berlin, May 1, 1827 under the title "The Galvanic Chain, Mathematically Treated". A long winded document of 40 pages written in the 19th Century style, the average student would find it unwieldy and difficult to interpret; however, Ohm clearly perceived the cause - and - effect relationship of what we call voltage and current.

Ohm worked under tremendous handicap since it was a time when there were few if any electrical instruments and only minute sources of electrical energy of unreliable origin. The most complete work on the subject may be found in a book published in 1892 by Dr. E. Lommel at Leipzig, Germany. A resume is written in "Weston Engineering Notes", Vol.7, No.2 (E. Young)

XMAS CARDS - - we were swamped around the holidays with a dozen projects including getting the bulletin out - - hence, very few, if any, Xmas cards found their way to the Holcomb mail box - - BUT - - we did appreciate the many nice cards that were received and the XYL (Helen) read each one over and wanted to know all about the sender!
Here is a photograph of another of the several authentic station setups at W5VA. In case you don't know - the C.R.L. Paragon and Ampligon receiving gear on the table is extremely rare. Not too clearly visible is an Acme spark transformer between the table and black case condenser. How's DX Frank?

UNITED WIRELESS vs CLARK WT & T CO. - Nelson Holt well remembers the scrap between these two companies when they operated on the Great Lakes. Jamming one another was the order of the day! Fortunately, Nelson saved many of the old Buffalo newspapers (1909) relating several incidents including an account of a trial. Real good historical material.

RADIO NOW - Frank Pagano writes that many of the old stores have moved to new locations (N.Y.C.). As an example: Blen will leave their old store and continue at their new site of 52 Warren St. On a recent visit to the old Cantor store Frank discovered 700 type 227 tubes in a loft - most all of which were oddball brands...

SCOTT ROOM - The Englands (Los Angeles) now have 15 Scott receivers - from the 1931 two dial set (plug-in coils) to the deluxe Model 320-B made just after the war. This beautiful receiver collection deserved special attention - and what happened? Back in the fall their daughter married leaving an extra room in the house...you guessed it - her room is now the SCOTT ROOM!

While on the England's - word comes in from those who have visited Curly and May - that their radio museum is rapidly becoming one of the largest on the West Coast...material covers everything from BC sets to commercial and amateur gear....plan to visit it if in "6" land.

MOVIE FILM WANTED

The Office of the U.S. Coast and Geodetic Survey is planning to make a movie in the very near future covering the development of radio and its application to their work.

They are extremely interested in borrowing short clips of movie film - either 16 or 35 mm. - any length of early commercial wireless stations prior to 1920 and particularly of old NAA. In fact, any movie film of NAA would be appreciated. So if you know where such film is available - if only a few feet, write:

Fergus Wood, Chief, Scientific Documentation Group
U.S. Department of Commerce
Coast and Geodetic Survey
Washington Science Center
Rockville, Maryland (20852)

EVEREIT BRANT would like to correspond with other A.W.A. members via tape. Address: 6465 Sterling Ave., Detroit, Mich.
Old Time Ads are free to A.W.A. members. Material must be over 25 years old and we have the right to restrict length of copy. Send 'ad' to W2ICE.

WANTED - Stromberg-Carlson and E.H. Scott receivers and literature for same for period between 1922-1944. Will swap. Russ Worthy 861 Western Ave., West Lynn, Mass. 01905

SALE or SWAP: Many UX-201A's, CX-301A's, Also mint Atwater-Kent Mod. 33 with tubes. Ken Conrad, W2IIIE, 5482 Crittenden Rd., Akron, N.Y., 14001

WANTED - Atwater Kent 24 De luxe, 37 without shielded aerial cable wire; 56; 57; any model breadboard; Federal 57,135, 141,200, Orthosonic type "B", "O" or "K". Prefer to pay cash. Frank Pagano, 1835 West 7th Street, Brooklyn, N.Y., 11223

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SWAP - need April 1926 QST. Will trade 2 other 1926 issues for April copy. Bill Devitt, W2EZV, 2112 Turk Hill Rd., Fairport, N.Y.

FOR SALE - rare original A.B.R.L. Station Appointment License (8½ x 11") issued in 1915. Very historical. Suitable for framing. Jessie York, Box 130, Downsville, N.Y.

FOR SALE - 14 vacuum tubes, all purchased before 1924, most in 'teens. 2 Radio- trons, 1 MB Moorhead Lab., 3 Audiotrons (1 in socket), 1 Vac 00B, 1 de Forest VT-21, 1 Airiotron, 1 VT-1, 1 marked TM 113 in socket adapter, 2 tubes with no markings, etc. Nelson Holt, 969 Center St., East Aurora, N.Y.

FOR SALE - large collection of early receivers, mostly AC but some battery AKs, Crosleys and Radiola. Also have speakers, parts and hundreds of tubes all tested in boxes. Mrs. Stella Duva, Underwood, Minnesota, 56586

NEED De Forest items for Museum in de Forest's home town. Art Trauffer, 120 Fourth St., Council Bluffs, Iowa.

WANTED - Popular Electricity magazine's Wireless Club Roster issue or photostat of my membership between 1909 and 1914. Gladly pay your price. Ben Lazarus, W2JB 173 West 70th St., New York, N.Y. 10024

SWAP - many BC sets for tubes, books, magazines or ham parts. I have nothing of interest for the advance collector. Henry Wenden, K5DXO, 92 East South St., Worthington, Ohio, 43085

These two photographs were sent to us by Ted Duval, ex-3DW/EM, and show a receiver he made for 3CDQ in 1927. Elizabeth (Liz) wanted a light portable receiver which she could take on her trip to Europe. With this in mind, Ted made up this beautiful commercial like 2 tube job using (2) WD-11's, plug-in coils and Burgess batteries. A full description appeared in QST.....

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SWAP or will buy old railroad gear such as lanterns, bells, whistles, etc. Have tubes. Vern Thompson, W3JW, 1403 So. 4th St., Effingham, Ill.

SWAP several 1920-21-22 QSTs for August 1919 issue. Bruce Kelley, Holcomb, N.Y.

SWAP or SELL old gear and parts. Send list of wants or offers.

Phil Weingarten, 6761 Alderton St., Forest Hills, L.I., N.Y. 11374

SALE - for cash, have "extra" copies of old wireless books. Send S.A.S.A. for list. Frank Shannon, W3QR, Apt. 10-A 4015 Bayshore Blvd., Tampa, Fl., 33611

SALE - beautifully constructed loose-couplers. Write for details.

Harold Greenwood, WOMEA 407 West Media, Glendora, Calif. 91740

WITH THE COLLECTORS

FRANK PAGANO - along with Bill Laverty filled their cars with old gear from the estate of ex-QRE. (Thanks to tip from Lou Hardy). The loot included a G.E. "F" xmt tube, 1913 E.I. Catalog, de Forest D-12 receiver, Kellogg receivers, National MB-30, etc. From other sources Frank added a Pada 460-B, Grebe CR-12, de Forest 7A, etc.

TOM TURNER (KEV/6) is restricted somewhat due to Staff work at Naval Hospital but we note he has a 1925 St. James superhet, a Grimes Inverse Duplex, Grebe MU-1, a Melodye, etc., plus a Scott 15 tube super using a Wunderlich detector...good going Tom!

MISS WORTHY - sticks to classic BC sets for home listening. He is currently working on a Kellogg 507 (6 tube TRF) but says it is a real tough one to align.

EARL and MAY ENGLAND - have enlarged their early amateur section with a Thor. 1 kw. xfmr., Mexco and Murdock components, etc. New in the receiver line is a Radio Compass receiver SE-1220A, de Forest T-200 multi-wave tuner, P-300 Ultra-audion det., a P-200 2 step audion amplifier as well as a nice Marconi CA-294.

JOHN BAIN (KEVZ) - in addition to his many collecting hobbies, John found time to pick up a LT-10 Loop Tuner, a Kennedy 281 with 521 (2) stage amplifier, a W.E. 14A amp. and Model 4/3A telephone set plus many other items including 1/2 dozen bulbs.

MAURICE STAHL - our tube and bulb collector in Ohio may have slowed down a little for good reason - he is currently building a full size pipe organ in his basement. Consisting of 500 pipes ranging from 3/8 inches to 9 feet long - the entire unit will fit into a room only 14 x 21 feet! A tremendous project - we wish him luck!

ED CUMMINGS - has just about completed a replica of his first station 1KP circa 1912. With the addition of an E.I. phone condenser and a Mexco spark gap, Ed's station is about ready to go on the air!

BOB O'NEILL (KE2XZE) - in addition to several new pieces of gear, Bob located quite a few copies of early "MODERN ELECTRICS" plus a nice assortment of QSTs of the '20s, and an old static machine in a maple cabinet with glass window!

ED RASER (KE2ZI) - in addition to the rare IP-76 mentioned in the last OTB, Ed also obtained a rare IP-77 and a beautiful marble base "Perikon" detector. All of this gear was obtained through the V.W.O.A. (United Fruit Co., Tropical Radio Telegraph Co. Warehouse). A story on the IP-76 will appear in a future OTB.

Radio/TV Station WHEC recently celebrated their 40th Anniversary. To commemorate the event, the Manager of the station set up a large window display of 1925 broadcast sets. You guessed it - all the equipment in the window came from the club's museum.....

HENRY WIKEN (KS1KO) recently found a copy of the RADIOGRAM (June 1915). This rare booklet was published by the Mignon Wireless Corp. of Elmira, N.Y. and contains many pictures of early wireless stations including Hiram Percy Maxim's.

KEN CONRAD (W2IIE) now has a Grebe rotary gap, Acme 1/2 kw. spark transformer plus several other transmitting items in his collection. In the receiver line he has added a GREBE RORQ, Clarifier, Aeriola Sr., National FB-7, etc.

VERN THOMPSON (W9JW) reports he now has well over 1500 tubes mounted for display purposes. It would appear that Vern is the top tube collector in the mid-west!

CHARLIE CLEGGON (San Jose, Calif.) has been real busy with work but not busy enough to locate a nice Kennedy. Chances are this will not be placed on the shelf with the other gear but on the desk for operation.

YATES ROSS (Utica, N.Y.) is re-building his shop and hopes to have all new shelving and display area by summer. More from him later.

TOM PAXF (W6GEP) isn't missing a trick up their in Minneapolis. He adds a mint Kennedy 110 with amp., a Leutz 6 Unit Silver Ghost! , de Forest D-7 and D-10 receivers, W.E. 25B amp., a Kilbourne and Clark 2 stage amp. and many other choice items.

VANCE PHILLIPS (W6GO) spent sometime in Hawaii recently. He had a good time but sein old gear picking was nil - hi!

R.H. SCOTT RECEIVERS FOR SALE - a 23 and a 30 tubes Job. L.H. Houckens, Miami University, Oxford, Ohio (45056)
CONVERTED SPARK TRANSMITTERS

Here are a couple photos of a typical WWI spark transmitter that was changed over to CW in the mid-twenties. This particular unit was converted by the "Great Lakes Marine Radio Service" of Cleveland and was used by AWA member John Swallow, W2SVA, ex-3DY Canadian and KPIH, KFLJ, WEDI, WCB, KNO, WTKO, etc.

John tells us it was common practice to do this since many of the original components were usable including the 500 cycle power source which gave a nice note. From the photos we see a Weston filament voltmeter and milliammeter and of course the pair of 204s. The latter were frequently used in a self-rectifying circuit eliminating a costly rectifier and filter system...

DESTROYING MARCONI 10" SPARK COILS

We know these headlines would catch your eye! This is what our new member R. Mc V. Weston (Reigate, England) witnessed several years ago while visiting a London junkyard!

He recalls that there must have been 20 or 30 of them - all being smashed with a large sledge hammer! -- all unused and of WWI vintage.

A.W.A. NEWS

CW NET: Add the following to the CW net -- W2IM (Art)
W2AN (Bruce)
W2RAU (Bob)
W2CF (Bert)

In the future, the net will operate on or near 3582 kc. There are two reasons for this: QRM is rather heavy at times on 3525 kc. and W2AN's old time "y" cut crystal is ground for this frequency (hi). W2QY and K2MP will continue handling the Net at 8 PM on the FIRST WEDNESDAY each month. Speaking of W2AN, the regenerative receiver works fb on CW but not too good forfone. Always give W2AN a long call since there is a need to re-tune after each transmission. You can't miss the signal - primary keying is used!

PHONE NET: continues regular operation the 1st and 3rd Tuesday of each month at 8 PM and every Sunday noon on or near 3900 kc. W2ICE is Net Control when SSB is used and W2AN for AM using old gear. The 1929 phone transmitter is currently operating on 3918 kc. -- the only old time crystal available. Anyone have a pre-war one between 3800 and 3890 kc. ?

INTERESTING BOOK -- recently received from Joe Marsey, W2UDV, is one printed in England (1907) by James Brakine titled "HANDBOOK OF WIRELESS TELEGRAPHY" (320 pages). Unlike many other books of the period, it covers in detail all early "wireless systems", tests made and the results. We highly recommend it to the historian gathering publication material.

ANNUAL SAMUEL F.B. MORSE BIRTHDAY DINNER

Saturday, April 23rd

This yearly event will take place throughout the country by various Chapters of the Morse Telegraph Club. Old time landline telegraphers in upstate New York area are advised to write Will Andrews, W2ONE, if they plan to attend the Joseph Henry Chapter Dinner in Albany.