ANTENNA PROBLEMS
# NATIONAL HISTORICAL RADIO CONFERENCE

SMITHSONIAN INSTITUTION, WASHINGTON, D.C.

September 22, 23, 24
1972

Conference Headquarters
MARRIOTT TWIN BRIDGES MOTOR HOTEL, U.S. 1 (Virginia side of river near airport)

<table>
<thead>
<tr>
<th>FRIDAY P.M.</th>
<th>Group dinners</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Marriott)</td>
<td>Old Old Timers Club Meeting</td>
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<table>
<thead>
<tr>
<th>SATURDAY</th>
<th>Chartered buses to Smithsonian</th>
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<tbody>
<tr>
<td>(Smithsonian)</td>
<td>Special Luncheon</td>
</tr>
<tr>
<td></td>
<td>Programs for old time operators, radio historians</td>
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<tr>
<td></td>
<td>and collectors</td>
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<td></td>
<td>Old Receiver Contest</td>
</tr>
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<td></td>
<td>Outstanding exhibits and tour for ladies</td>
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<table>
<thead>
<tr>
<th>SATURDAY P.M.</th>
<th>Annual Banquet and Awards</th>
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<tbody>
<tr>
<td>(Marriott)</td>
<td>Entertainment</td>
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<table>
<thead>
<tr>
<th>SUNDAY A.M.</th>
<th>Huge swap session</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Marriott)</td>
<td>Bring your old equipment, receivers, tubes and magazines</td>
</tr>
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<table>
<thead>
<tr>
<th>Master of Ceremonies:</th>
<th>Ed Redington, W4ZM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-ordinators:</td>
<td>Elliot Sivowitch, K3RJA (Smithsonian)</td>
</tr>
<tr>
<td></td>
<td>Bruce Kelley, W2ICE</td>
</tr>
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</table>

MAKE MOTEL RESERVATIONS NOW! (Special rates to A.W.A. Members)

Conference Program and Registration Cards will be mailed AUGUST 15th

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GAROD RADIO CO. was founded in 1922 by two partners: GARDiner and RODman. Gardiner was originally in the jewelry business and Rodman an electrical engineer. Their first product was a cleverly designed crystal set which they called a "Heliphone". Tube sets were manufactured later.

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**A Reminder**

Old time advertisements printed on these pages are fill-ins for historical reference and a bit of nostalgia. These companies no longer exist! Please do not write the Editor complaining your letter was returned from the Wm. B. Duck Co. and stamped: ADDRESS UNKNOWN.
ANYONE FOR 1580 METERS?

by Carl Lundgren, W2AZQ and Robert Morris, W2LV

Many members of AWA are interested in wavelengths of six hundred meters and up. However, many have been disappointed in recent months in listening to the lower frequencies to find few identifiable signals below 200 kHz. Most signals heard now in the LF and VLF ranges are radio teletype transmissions, mainly from famous old navy radio stations.

There is however, in the range just below 200 kHz, activity which can be monitored with conventional receivers and headphones, and in which interested members of AWA can participate. This is a low power communications service authorized by Part 15 of the FCC Rules and not requiring a license from the Commission.

Subpart E - Low Power Communication Devices states in paragraph 15.201a: "A low power communication device may be operated on any frequency in the bands 10 - 490 kHz, 510 - 1600 kHz and 26.97 - 27.27 MHz." A communication device operating in these ranges must not radiate signals exceeding quite small values of field strength, given in a table.

Alternatively, paragraph 15.203 states: "In lieu of meeting the radiation limitation stated in 15.202, a low power communications device operating on a frequency between 160 and 190 kHz need only meet the following requirements:

a. The power input to the final radio frequency stage (exclusive of filament or heater power) does not exceed 1 watt.

b. All emissions below 160 kHz or above 190 kHz are suppressed 20 db or more below the unmodulated carrier.

c. The total length of the transmission line plus the antenna does not exceed 50 feet."

These rules were probably created to accommodate industrial paging systems, television studio cueing systems, radio controlled garage door openers, etc., all requiring good reliability over short ranges. Interest in the use of the low frequencies for QRP communication over greater distances may have started about ten years ago with the suggestion in CQ Magazine by Dick Hilpert, W2HEY, that experimental communication might be attempted by amateurs in the LF and VLF ranges. By 1967 WA4GHK and K4NTD had set up facilities to conduct tests at 166.25 kHz and were successful in transmitting a signal that could be heard 200 miles away during lulls in the usually high static.

Since 1968, many others, including one group of mostly radio amateur experimenters in New York, New Jersey, Connecticut, Pennsylvania, Massachusetts, and Virginia have become actively interested and have conducted tests resulting in CW and FSK telegraph contacts over distances of 20 to 300 miles. Short range contacts have also been made by AM and SSB telephony, and by teletype. Most of the operation in the New York-New Jersey area has been on, or very near, 189.5 kHz. This is about 4.5 kHz below Nanucket Consolan Station TUK and about 4 kHz above a powerful RTTY station, NSS.

These low frequencies are not as-
signed to the Amateur Service and some consider it inappropriate, if not contrary to rules, to use their amateur call letters for identification. Accordingly, personal "signs consisting of up to three letters have been used, both with hand-sent and automatic transmission, to identify each experimental station. The latter signals, which sound very much like the aircraft range and beacon stations above 200 kHz, are usually referred to as "beacons".

Because of the wording of the rules, most antennas used for LF transmitting are 50 foot insulated verticals with as many and as long ground radials as possible. ("RM" at Sparta, N. J. uses 30 radials, 60 to 75 ft. long). The transmitter, consisting of small receiving tubes and large coils and capacitors, is usually located at the base of the antenna. It is necessary to be especially careful to eliminate harmonics since these fall into the aircraft and maritime bands.

The antenna for reception can be either the transmitting antenna, suitably switched to the receiver or a much longer wire if space is available. Surplus low frequency receivers such as the RBL, RDZ, RAK-6 and 7, BC-344 and BC-453 have been used satisfactorily. Special crystal controlled converters together with a high frequency communication receiver have also been designed and used successfully. (See QST, Sept. 1968). The important characteristics of the receiver are the narrow bandwidth necessary to exclude noise, and good amplification linearity to minimize cross modulation products. Filters of less than 100 cycles width are desirable. A broad, yet linear receiver, followed by audio filtering (e.g., cascaded FL-8 range filters) can be very effective. There are potentialities for substantially improved methods of reception which have been only partially explored. Synchronous or coherent detection methods at small information bandwidths can afford considerable signal advantage over uncorrelated noise. There are other sophisticated methods particularly applicable to the LF range which have yet to be tried.

All known low power LF communications have been by vertically polarized surface waves exhibiting a nominal inverse distance characteristic of signal strength. (One tenth the signal strength for ten times the distance). This is in direct comparison to the much greater reduction in strength at the higher frequencies which approximates inverse distance squared. The latter characteristic also applies for horizontal polarization at the low frequencies. Figure 1 shows the average

![Figure 1: Field Strength - 200 kHz for One Milliwatt Effective Radiated Power](image)

**Fig. 1**

**Vertical polarization at ground level**

**Horizontal polarization 100 feet high**

**Sea water**

**Poor soil**

**Good soil**

**DB Above 1 microvolt per meter**

**Distance - Miles**
"NID" Transmitter at Oakland, Fla.
The transmitter tube and circuitry are built on the upper 4" coil form. Note the 10" diameter loading coil and the base of vertical antenna (right). A rotisserie motor (left) drives the "NID" automatic keyer.

Field strength of 200 kHz for one milli-watt of effective radiated power with both horizontal and vertical polarizations. It should be pointed out that power level in a practical system will be somewhat less than shown in Figure 1 due to extremely low antenna efficiency. The radiation resistance of a 50 foot vertical is approximately forty milliohms (0.04 ohms), which, with a ground resistance (and loading coil loss) of 25 to 100 ohms, means that radiation is measured in microwatts.

In spite of these handicaps, the writers and other experimenters interested in investigating LF propagation have been successful in communicating during the winter months with signal readability of 4 to 5. "FL" (W2HEY) near Port Jefferson, Long Island, puts 20 word/minute signals into New Jersey at distances of 70 to 90 miles, in spite of very poor soil conductivity. W2RRA near Syracuse, N.Y. has received LF signals from "J" (K2ANR) in Riverhead, L.I. and "TH" (W2AZQ) in Colts Neck, N.J., distances of over 200 miles. Most activity in the NYC area is on weekends at mid-day when static is low. At such times "beacons" signing "Q", "TH", "K", "RM", "AL", "QM", "J", "JK", and "FL" can be heard. Two-way contacts are frequently made after the automatic "beacon" is shut off. There are at present four members of AWA actively interested in experimental LF operation.

If one has an interest in putting his knowledge and skill against difficult odds to achieve communication reminiscent of early wireless with others of similar interest;--if he is blessed with a "quiet" rural location suitable for a vertical antenna with ample radial ground system;--if he has a collection of old mica and large variable capacitors, large Litz-basket-weave coils, variometers, etc., which he would like to put back into actual use; then, such a person could very well enjoy putting together and operating an experimental LF station.

MAKE PLANS NOW!
to attend the Annual Historical Radio Conference, weekend Sept. 23. Outstanding programs, friendship and a great time!
Bring the ladies too for they will find Washington a fascinating place: museum, art galleries, the New Kennedy Center, etc.

Headquarters: TWIN BRIDGES MARRIOTT across the river near the airport. Remote from Washington but only a few minutes by chartered bus.

ANTIQUE WIRELESS ASSOCIATION MUSEUM
HOLCOMB, NEW YORK 14469

Member:
AMERICAN ASSOCIATION OF MUSEUMS
Affiliate:
AMERICAN RADIO RELAY LEAGUE

The A.W.A. provides facilities for member's equipment and a photographic workshop for the amateur historian.
Open for special events or by advance appointment between May 1 and October 31. No charge.

TELEPHONE: 315-667-7469 or 716-663-0856
Club Radio Station: Amateur W2AN
OLDE TYME HAM ADS

OLD TYME ADS are FREE to members who are interested in collecting and restoring historical equipment as an amateur. They are not to be abused.

RULES FOR ADS:
1. Material must be over 25 years old.
2. Ad MUST be written on separate sheet of paper --- not part of letter. For acknowledgement -- send S.A.S.E.
3. Give full address, zip number and call letters (if any).
4. AWA will not print repetitious ads or ones indicating regular sale for profit.
5. The Association is NOT responsible for any transaction.
6. AWA retains the right to reduce size of ad.
7. All ads must be received 5 weeks prior to mailing date.
8. Mail to Antique Wireless Assn. Main Street, Holcomb, N.Y. 14469

FOR SALE: DeForest portable diathermy unit, 300 watts, 15 meters, made in DeForest Labs, Los Angeles. Nearly new condition. Color photo 50¢. Make offer. Frank Atlee, K4FI, 92-31st Ave., St. Petersburg Beach, Fla. 33706

SWAP/BUY the following tubes made for Collins Radio in the late 30's -- tubes number C-100A, C-100B or C-100C. Howard Schrader, 60 Lillie Street Princeton Junction, N.J. 08550

FOR SALE: fine hardware, fasteners, brass and steel screws, nuts, bolts, knurled brass nuts, old time binding posts, etc. Also ceramic insulators and guying accessories. Walt Stresser, W9MLR, 29716 Brilarbank, Southfield, Michigan 48076

TRADE: Atwater-Kent Mod. 19, Western Electric 13-A amp, A.W. Bowman & Co. spark gap and coil. Write: Joe Dursey, 4606 Covington Rd., St. Wayne, Ind. 46884

NEED badly: to complete set of "Modern Electrics" magazine, July 1913 issue. Will trade other issues or purchase. T.L. Hayes, W6AX, 21120 Sullivan Way, Saratoga, Calif. 95070


NEED urgently for R-4 Northern Electric receiver -- peanut tubes "N" or type 215. Any help appreciated. Chas. Bridges, Box 338, Port Colborne, Ontario, Canada

SWAP: Arborphone table model, Era table model S,5 5 tube BC set, Kutsen HT2A (2 tube set), Ozarka 7 tube 3 dial, RCA and Brunswick console. Want D.E. mike and AK parts. Send S.A.S.E. to W4Z0, 32682


NEED: books, magazines, manuals, etc. on early radio, phonographs, recordings, programs, technical information, etc. Give name, year and price. Jim Cranham, 9820 Silver Meadow, Dallas, Tex. 75217

SWAP: have rare tubes, early QSTs and wireless books, SW-3, etc. Want AK-12 Everett Berry, 1919 Beal, Lansing, Michigan 48910

FOR SALE -- all in original cartons: variocouplers, phone condensors, rheostats, 43 plate condensors (Marbucks), Amplifex loops, Baldwin reproducers (for phone) and horn drivers, Selden DSC wire, Amplion folded horns, unusual cabinets. Write Badger, W6RW, 341 La Mesa Drive, Menlo Park, CA 94025

SWAP: old time transmitting tubes 203A, 838, 845, 865 and others plus old BC parts, dials, condensors, AFT, etc. Need xtal sets, speakers, magazines or what have you. George Ayers, W6FXY, 3302 N. 9th, St. Joseph, Mo. 64505


WANTED: Early books, publications on wireless prior to 1920. Also early equipment. By Hernandez, WALLW, River Rd., RFD 1, Essex, Conn. 06446

FOR SALE: Rare W.E. SCR-57 airplane interphone (1948 inspection tag) Bell for $25 or trade crystal sets or parts. Leslie Boisen, 501 N. East Street, Indianapolis, Ind. 46204 (317-537-2220)
Federal 220 transformers to restore 1923 Clarion plus #374 A.F.T. mae by American Trans. Co. Write-Keith McManus, 2901 Camp St., Natchez, Miss. 38920

Restoring IP-76. need variable condensers, knobs, large silver dials and any spare parts. Larry Whitlock, WALNN, Box 104, Bridgeport, Conn. 06752

What are the condenser values in Radiola 25 catacomb? particularly ones across IF xfr. windings. Art Harrison, 1021 Falcon Dr., Columbia, Mo. 65201

Loop, spkr. grill & spkr. driver unit for DeForest D-17. Have VT-24's which are new for sale at $2 each plus postage. Bob Helis, Box 1616, Estes Park, Colorado 80517

Want to buy: old radio and wireless magazines, catalogs, books as well as early wireless equipment. Prefer to pay cash but will trade. Erv Rasmussen, WQYM, 164 Lovell St., Redwood City, Calif. 94062


For Sale: schematics for most radios made between 1920 to 1950 at $0.50 per copy. Also original Instruction Manuals with schematic, connections, etc. for Radiola 3, 3-A, 18, 33, Radiola Bal. amp., Westinghouse 57 at $2 per booklet. N.C. Batsch, 278 Sutherland Drive, Toronto 352, Ontario, Canada

Information and spare parts for True-Tone battery receiver Mod. D-935/D936. All letters answered. William Gibbs, 4460 Paul Jones Lane, Virginia Beach, Va. 23462

Sell or Trade: several duplicate radio receivers or will trade for molds used in casting lead figures, toy cars, etc. for children. Dave McKenzie, KG8VJ, 1200 West Euclid, Indianapolis, Ind. 50225

Accurate tone dials, AFT for Federal Mod. 61. Robert Carroll, 1785-G Arlin Place, Fairborn, Ohio 45324


For sale: moving and must sell large collection of tubes, sets, magazines, books, parts, etc. Write for list to: Bill Laverty, 118 N. Wycombe, Lansdowne, Penna. 19050

MUSICAL MUSEUM

Furthering our roster of museums to visit, AWA adds the MUSICAL MUSEUM located on Rte. 128, Deansboro, N.Y. about 14 miles southwest of Utica.

Unlike most passive museums, this is an ACTIVE museum where the visitor is engulfed in hundreds of musical instruments all capable of being played!

Twelve rooms in a modest group of buildings house everything from rare musical boxes and clavichords to a huge band organ from a carousel -- and of course Edison's earliest phonographs and a collection of radios.

The radio section is relatively small compared to other objects of interest. The author was particularly charmed with a huge room filled with a wide variety of automatic player pianos and orchestrions...all of which at times would be playing at once. A deafening din of the roaring '20s.

The museum is open daily from 10 A.M. to 5 P.M. Is there a technical or communication type museum in your area not mentioned in a previous OTB? If so, write AWA telling us about it.
OLD TIME TRANSMITTER CONTEST

Once again the AWA Olde Tyme Xmyter Contest was a huge success. This year more members participated, more QRM was created, more contacts were made, more OT xmtr's were on the air, more friendly comments were exchanged and more fun was had by all! Only one fact didn't change--W2LV was again the winner! Bob Morris again proved that he could fish the pond faster and cleaner than the rest of you fellows.

Top Ten

2. W2BGN, New Hartford, N. Y. 1930 205D-205D-211D 100W.
3. WØTRF, Hopkins, Minn. 1938 307PP 50W. 40&20 1938 6L6-6L6 25W.
4. W1PEG, Groton, Vt. 1936 6L6-6L6-809PP 120W.
5. W2QY, Rochester, N. Y. 1937 6AG7-807 50W.
6. W8BBM, Conneaut, Ohio 1968 TR-4
7. W2EB, E. Bloomfield, N. Y. 1929 1929 210-210 20W.
9. W2ARX, Penfield, N. Y. 1930 TNT 201-A 2W.
10. W1DMD, Lakeville, Mass. 1951 Ranger II 75W.

This year 40 and 20 were added to permit long haul contacts. As expected, activity was limited but rewarding QSO's were made with W0JF, KH6ADR (W6SAI), W0TRF, etc. Bob, W2LV, spent all Wednesday morning winding coils when he learned of KH6ADR QSO's. Bob and Dick both nearly wore out their coils and switches chasing the hot ones.

Sleepy heads missed a choice newcomer in W7JY on 80. Warren logged stations way into the first district during the 2nd and 3rd hour and worked several the 3rd, 4th and 5th hour. His DX worked: W1PEG and heard W1DMD.

Stats

| Number of participants | 34 |
| Number of Old Time Xmtr's | 16 |
| 80 meter contacts | 466 |
| 40 meter contacts | 44 |
| 20 meter contacts | 32 |
| Total individual contacts | 542 |

Oldest Transmitter- 1927 W2AFE and W2JF

Highest Power- 1936 KH6ADR 150 w.
Lowest Power- W2ARX, W9EWH 2 watts
Simplest Transmitter- W2ARX with 1 tube, 201-A

If W8BBM had an Old Timer Xmtr he would have placed 3rd.
Another choice bit of DX was Bill Orr, W6SAI who was on vacation in Hawaii, KH6ADR fed 150 watts into an indoor dipole. His real problem is QRM from JA and UA0 who are S9 plus almost 24 hours a day.

Harry, W2ARX, used one UV201-A in a TNT at 2 watts input. He threatened to use a 199 next year or bury his antenna! He is a QRP artist and the uninitiated ask "What is a 201-A?" They think it's an Xotic Xistor.

About operating conditions-- Cliff, W2AFE, writes on QRM, "Kinda had to laugh. About 7:10 Thursday eve I heard the following: I never heard a mess like this, let's QSY, VE3AFW' (and I guess he did). Poor guy with a sked, I guess!" Wonder what our Canadian friend would have said if his sked had been for Wednesday, the first hour of the contest when traffic was six times more dense.

Look in the junk box, OM, and start construction of an OT rig now. Join in on our 4:00 PM net for a test and the latest.

Are we going to have another Party next year? You bet your sweet 202 we are! In fact we might have another this Fall on Fone. 80? or 160? Many members are interested and Yardley, WØJF, (of QST fame) says short antennas work fine on 160 as well as on 80. Watch the OTB for details.

All "AWA QSO Parties" or, if you will, "Contests are NOT just for the old time equipped station. Everybody is welcome to join in the delicious fun. Remember the record of the melee that were played at the Canandaigua Conference last year? If you do, you won't miss another Bash. Its beautiful just listening to the old notes and the skill of the operators behind them.

73, W2BGN

1927 Transmitter at W2AFE using 210 crystal osc. and 210 P.A.
## Results AWA Old Time Transmitter Contest, 1972

<table>
<thead>
<tr>
<th>Participant</th>
<th>Year Xmtr</th>
<th>Contacts</th>
<th>Total</th>
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<td>27</td>
<td>41</td>
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<td>W1PEG</td>
<td>36</td>
<td>21 2</td>
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<td>39</td>
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<td>4 N</td>
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<tr>
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<td>27</td>
<td>63</td>
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## What's New

**ANTIQUE WIRELESS ASSOCIATION**

- **KE8S**: W2IJC, W2DJW, E. Berry, Lauren Peckham
- **RECEIVERS**: W2CZT, E. Berry, W2PZC
- **MICROPHONES**: WØFX, W2MPM, E. Berry
- **MISC.**: K2OFC, K2LBB, W2PZC, E. Berry
- **TUBES**: Howard Schrader
- **TRANSMITTER**: W2PZC
- **MAGAZINES & BOOKS**: W4ZM

## Hawaii's Tallest Towers

**THE** tallest man-made structures in the Hawaiian Islands, 1500-foot twin antenna towers, were recently completed at the Lualualei Naval Radio Station on the western side of Oahu. The towers provide the latest link in the U.S. Navy's Communication System.

**MAY 1972**

**IMPORTANT!**

Annual dues are now $4.50
HISTORY OF THE AMERICAN MARCONI COMPANY

Thorn Mayes, W6AX

The American Marconi Wireless Telegraph Company was the first wireless company to be formed in the United States. When it was incorporated in 1899, Marconi had received signals a distance of 30 miles. When Radio Corporation of America took over American Marconi just 20 years later, wireless was a worldwide communications media. Of the many wireless companies formed over this period, only the American Marconi lived for the entire time and for the last seven years had a virtual monopoly of wireless communications in this country.

Why was American Marconi so successful where many others had failed and why after gaining practically the entire business, did it go out of existence in 1919? A review of its history will give answers to these and other questions.

Material for this history up to 1912 came from many books and magazines. Starting in 1912, "Wireless Age" published by American Marconi provided much data but this history was made possible by information and help from Bob Palmer, W7RD. Others who were most helpful were Lloyd Espenchied, Gerald Tyne, Ed Raser, W2ZI, L. M. Clement, K3AA, Bruce Kelley, W21CE, Commander Richard Johnstone, K6FZ, and Warren Green, W7JY.

July, 1897, Marconi formed the Wireless Telegraph and Signaling Company in England for the purpose of building and installing wireless on lightships and in lighthouses along the English coast for by then he had demonstrated that he could work over a distance of 15 miles which was sufficient for this duty.

In the fall of 1899, he brought equipment to New York to report the American Cup yacht races. By this time he felt so sure that he could span the Atlantic, with a more powerful transmitter, that he formed the American Marconi Wireless Telegraph Company under the laws of New Jersey, with an authorized stock of two million shares, five dollar par value. 600,000 shares went to Marconi with 350,000 held by the English company. The company was formed for the purpose of using Marconi patents in the United States.

Early in 1900 the name of the English company was changed to the Marconi Wireless Telegraph Company and in July, Marconi decided to build his transatlantic station at Poldhu, England. Dr. J. A. Fleming was given the job of designing the transmitter which was to be one hundred times more powerful than any used so far, an input of 25 kilowatts. R. N. Vyvyan was in charge of installation.

Marconi specified an inverted cone antenna of 200 vertical wires supported by a ring of 20 masts 200 feet high.

South Wellfleet on Cape Cod was selected as the location for the station to receive the Poldhu signals and Vyvyan was sent there to build a duplicate of the Poldhu station.

A gale in September destroyed the Poldhu antenna which was replaced with a fan design, two 150 foot high masts located 150 feet apart supporting a messenger cable which carried 50 wires spaced three feet apart.

Marconi now realized his circular antenna was weak structurally so decided to go to St. Johns, Newfoundland with his receiving gear and use a kite supported wire. This location was almost 1000 miles closer to Poldhu then South Wellfleet. It was a wise decision for the day before the party sailed for St. Johns, Vyvyan cabled that the South Wellfleet antenna had been destroyed in a storm.

Marconi, Kemp and Padget arrived at St. Johns December 6th. They soon settled on a site in an abandoned Army building located on a hill overlooking the city. The distance to Poldhu was 2000 miles and the greatest distance they had covered so far was 225 miles.
but Marconi was confident the test would be a success. They were delayed by a severe winter storm but Thursday the 12th they succeeded in getting a kite up 400 feet that was fairly stable with its 400 feet of antenna wire. The lead was connected to the instruments about the time Poldhu was to start sending that day. Marconi put the receiver to his ear then handed it to Kemp asking if he heard anything. Kemp stated that he heard the pre-arranged signal of three dots several times, Marconi confirmed that he had also.

Their experiment was a success, wireless waves had spanned the Atlantic! The New York Times of December 15, 1901 printed, "Wireless Signals across the Atlantic, Marconi says he received them from Poldhu, England."

The first equipments installed by the American Marconi Company were made in mid-1901 on the Nantucket Light Ship and a shore station at Siasconset on the east coast on Nantucket Island. The sets consisted of battery powered 10 inch spark coils and coherer receivers. First messages were exchanged between these stations, which were 40 miles apart, August 12, 1901. Siasconset first gained fame when it reported the collision of the ships Republic and Florida in dense fog off Nantucket Island, January 23, 1909 with Jack Binns the operator on the Republic.

During 1902, duplicate antenna systems were built at South Wellfleet, Poldhu and Glace Bay, Canada. They were inverted cones of 200 wires each, supported by four lattice towers 215 feet high. Tests were carried on between these three stations for several years.

While in New York in 1899, Marconi met a prominent lawyer, John Bottomly who was interested in wireless. When the company was reorganized in 1902, Bottomly became General Manager, Secretary and Treasurer. He held the General's position until it was taken over by E. J. Nally in 1913 and continued as Secretary-Treasurer thru
1918. Bottomly's broad experience and good judgment were responsible for carrying the company thru the trying times of 1913. The Annual Report for 1910 states that the company had lost money each year.

David Sarnoff was hired as office boy in September 1906. Later he stated that when he arrived, the company was operating four land stations and had their equipments on four ships with a total of less than 25 employees.

American Marconi used British designed gear until 1910 when they started to originate their own parts arrangements but as they had no manufacturing facilities, most of the parts came from England.

The early transmitters used a ten inch spark coil connected to antenna and ground across a spark gap. Starting in 1901, a high voltage condenser was added across the spark gap and in 1904 a tuning helix to tune to the desired wavelength.

Until 1904 the coherer was the standard detector as the Marconi magnetic detector developed in 1902 was not used in the United States until 1904. Some early stations had the transmitting helix connected so it could be used for both transmitting and receiving, others had tapped loading coils to tune the receiving circuit. Multiple tuners were not available until 1909.

John W. Griggs, former Governor of New Jersey and Attorney General under McKinley, became President of American Marconi in 1905, a position he held until the company was taken over by R.C.A. in 1919. Fredrick Sammis became Chief Engineer in 1908. He was not a creative engineer so little development was done until American Marconi took over the excellent engineering group from United Wireless in 1912.

Marconi had an American patent on the non-synchronous rotary gap and Fessenden had the patent on the synchronous gap. The two companies made an agreement in 1912 and immediately American Marconi began to use rotary gaps.

As there had been flagrant infringements of the Marconi wireless patents, the Marconi Company in 1910 initiated several suits. The decision reached in the famous case, Marconi Wireless Telegraph Company vs British Radio Telephone and Telegraph Company, handed down in December 1910 by Lord Justice Parker, was used as the basis for settling many other worldwide similar court actions.

The Marconi Company claimed the defendants use of autotransformers for connecting to the aerial and ground circuit was an infringement of their patent number 7,777. Lord Justice Parker after hearing a number of technical witnesses, stated that he felt the Marconi patent was being infringed.

A suit had been filed against the United Wireless Company and the English decision was applied in this case. The following notice from the April, 1912 issue of Modern Electrics give the result:

"As a result of a merger which has been brought about between the Marconi Wireless Telegraph Company and the United Wireless Telegraph Company, when the suit of the former company against the latter company for alleged infringement of patent rights came up in the United States District Court on March 25th 1912, the United Wireless Company entered no defense and consented to the granting of a decree in favor of the Marconi Company."

"As a further result of the merger, all stations and contracts of the United Wireless Company will be taken over by Marconi. This involves about 500 ship and land stations in the United States."

The Marconi Company purchased the assets of United for $700,000 and sold them to the American Marconi Company. United actually delivered to American Marconi 50 land stations, as 20 stations that were not profitable had been closed, and 400 marine sets as 100 had been removed from ships not paying their rentals. American Marconi at this time had 5 land stations and 40 marine installations so their total was now 500.

By 1908, 1500 KW spark transmitters had been installed at Glace Bay and the Clifden, Ireland stations and point-to-point communication between them was dependable for at least 20 hours per day. The 35 KW set at South Wellfleet
was too weak for transatlantic work so was used as a relay station to Glace Bay for European messages and for marine traffic.

Wireless was rapidly developing into a major business and almost overnight, the American Marconi Company changed from a relatively small company with little more than ten percent of the communications business in the United States to a virtual monopoly.

The efficient United Engineering Department under Harry Shoemaker as Chief Engineer, that came over to American Marconi, had their work cut out for them as new regulations which went into effect in 1912 required extensive changes in every land and ship station. Shoemaker was made Chief Development Engineer with the immediate charge to make the design changes necessary to meet the new specifications. These changes included—

1 - Add 10 inch spark coil sets on all ships for emergency operation.
2 - Add secondary to tuning helix to give inductive coupling with sharper wave.
3 - Add transmitter loading coils to get to 600 meters as most of the United operation had been on 450 meters.
4 - Add provision for operating on 300 meters.
5 - To meet the new decrement requirements, better contact had to be made with the Leyden jars and in many cases, a rotary gap had to be substituted for the straight gap.

In 1913 the type "A" tuning helix was developed which had a secondary coil that could be tipped to reduce the output of the set. This design met the regulation of reduced power when within five miles of a Government station as well as giving a sharper wave. All United jar racks were made of wood with the jars sitting on metal plates resulting in a poor contact so a complete new line of cast iron and aluminum racks were introduced in 1913.

Wireless Age for March 1913 carried this item, "More than 800 Wireless Equipments in three months. Sets have been installed on 40 trading vessels. 250 ships have been equipped with auxiliary sets. 413 ships have been refitted with tuning apparatus as well as 50 shore stations. These were nec-

Fig. 1 American Marconi #103 Tuner
300 to 900 meters

essary to fulfill the requirements of the existing wireless laws."

The Annual Report for 1912 contained the following material:

"A two percent dividend was declared on American Marconi stock, the first paid by any American wireless company based on earnings.

American Marconi now has their equipments on over 450 ships of the American Merchant Marine, which with 50 shore stations give a total of over 500.

High power stations in Belmar New Jersey and Wales for transatlantic operation should be completed by year end. Transpacific stations in San Francisco and Honolulu are well along in construction and negotiations are in progress for stations to operate between New York and Stavanger, Norway.

The company acquired land, built and equipped a 20,000 square foot factory in Aldene, New Jersey, near Roselle Park, for producing wireless equipment for our needs and for sale."

Marconi policy had been to lease sets rather than sell but David Sarnoff had by now reached a position of authority in the company and he realized the importance of producing gear to sell to the Navy and other users. With the Aldene factory in production they, for the first time had the capacity to produce for sale so the Navy was advised of this change in policy and Navy orders were soon received.

After completing the design changes necessary to bring United and Marconi transmitter performance in agreement with the new laws, Shoemaker tackled
the urgent job of developing more sensitive and selective receivers.

From 1913 to 1919, the company developed a total of 21 receivers.
number 101 to 121 but only the main production sets will be covered here.
The first of these improved receivers, the 101 was built in 1913 for use
in major land stations equipped with 5 KW transmitters. It covered the range
of 200-7500 meters. The design was copied from the United 'E' tuner but with
the loose coupler behind the panel with all controls coming to the panel front.
Approximately 25 sets were produced.

Also in 1913 the number 103, figure 1, was produced primarily for marine
use. It was similar to the British Marconi Valve Tuner and was assembled
from English built components. Instead of the Fleming Valve, it used a
carborundum detector with provision for using Ceruicide crystal that had just
been developed by American Marconi, that was as sensitive as Galena but
more stable, tuning range was 300-900 meters.

The United marine receivers were mostly United D tuners which with the
looped antenna connection covered 200-2000 meters. These were recon-
structed to use aerial and ground which increased their coverage to 3,000
meters. Some of the D tuners were still in use until World War I.

The following items are from the Annual Report of 1913—

"Number of messages handled increased from 228,000 in 1912 to
379,000 in 1913.

The high power station at Belmar,
New Jersey has been delayed in com-
pletion but will be in operation in four
to six weeks, the California and Hawaii
stations soon after.

Cape Cod, not New York, is select-
ed as the western terminus of the Nor-
wegian circuit, Stavanger the eastern.

Alaska communications are now
handled by the United States Govern-
ment and rates are high. The decision
has been made to build several high
power stations in Alaska to work di-
rectly with Seattle and Astoria.

The dividend for the year was passed
due to heavy non-recurring expenses:

A - Dismantling ship and shore stations

from United that are not now needed.

B - Cost of changes necessary to up-
grade shipboard and shore transmitters
to meet new Government specifications.

The United States Ship Act of 1912
requires all ships carrying 50 or more
people to be equipped with wireless
capable of communicating over 100
miles, with a trained operator to man-
ge the set. This has appreciably in-
creased the number of shipboard in-
stallations, the need for more sets,
and trained operators. Your company
immediately set up a training school
in New York City for producing new
operators and retraining old ones."

Late in 1914 the P-4 panel type
transmitter, 2 KW-500 cycle with
quenched and synchronous gap was
developed. All controls for tuning and
wave-changing were brought out to the
front panel. Bob Palmer says this was
the first really good American Marconi
set from the standpoint of ease of
operation, performance, and compact-
ness.

Early in 1915 the 106 receiver,
figure 2, went into production as an
improvement over the 101 and fitted
into a smaller cabinet. It was design-
ed primarily for marine use with a
tuning range of 200-3500 meters. Soon
afterward, the P-4 was superseded by
the P-8, figure 3, with minor changes.

The P-8 transmitter with the various
models of the 106 receiver became the
standard marine equipments and were
produced in quantities for all types of
ships during World War I. After
R.C.A. was formed, General Electric
took the tools and dies from Aldene to
Schenectady and continued to build
both units until the end of the spark
era. Although originally built with
crystal detectors the 106 was later
modified to use tube detector.

In mid 1915, Roy Weagant replaced
Fredrick Sammis as Chief Engineer.

WAR DECLARED APRIL 6, 1917.

All commercial and amateur wire-
less stations were closed or came
under Navy control on April 7. The
Navy took over 53 coastal stations
from American Marconi and immedi-
ately closed 28. Of their 540 ship sets,
370 were on ocean going vessels so
were taken by the Navy. Approximate-
ly 170 installations on small coastwise vessels and tugs were left with the Marconi Company.

No commercial traffic was permitted except thru stations controlled by the military except in Alaska. The Bolinas California-Kahuku Hawaii circuit was operated by the Navy, also the Marion, Massachusetts and New Brunswick, New Jersey stations. Chatham was discontinued October, 1918 and Belmar, New Jersey, February, 1919 as a more efficient transatlantic receiving station had been built at Bar Harbor, Maine.

American Marconi was out of business from an operating standpoint but a great need existed for wireless gear for the war effort. The Aldene plant from May thru August 1917 was increased by 40,000 square feet and employment jumped from 200 to 700 employees.

The first large contract was for 400 type CM296A-1/2 KW-500 cycle spark transmitters for submarines at 2,500 dollars each, a million dollar contract. Orders for several hundred 2 and 5 KW transmitters for use on battleships and destroyers soon followed.

A 1 KW set was developed for the Navy, built on a two-piece panel, radio frequency section on top, power supply on the bottom. Hundreds of these sets, modified so they could be separated into two units were built for the Army and foreign governments as field sets carried on carts. A small portable 1/2 KW-900 cycle set was built in large quantities for use by landing parties.

Near the end of the war, they developed their only tube set, the SE-1100, a 200 watt unit designed for seaplane use. Using two General Electric 250 watt tubes, it had a range of 60 miles by phone, 150 miles on CW or ICW.

Equipment sales amounted to five million dollars in 1917, seven million in 1918. Wireless Age for January, 1918 gives the following yearly income for American Marconi. 1914-150 thousand; 1915-177 thousand; 1916-260 thousand and 1917-609 thousand dollars. The company paid a five percent dividend for 1917.

ARMISTICE SIGNED
NOVEMBER 11, 1918

Of the 370 ships taken over by the Navy in April 1917, 40 had been sunk by November 1918.

Special Order number 73 of December 3, 1918 addressed to all officers in charge of American Marconi Telegraphs, stated—

"The American Marconi Wireless Telegraph Company has sold to the United States Navy Department all of its coastal stations as listed below—45 in number. This company has also sold to the United States Navy Department its wireless apparatus on ship stations as listed—a total of 330. The sale of the above named ship and coastal stations is effective November 30, 1918. After this date, the United States Navy Department will own and operate the stations above mentioned and will furnish and employ the necessary personnel." Signed David Sarnoff, Commercial Manager American Marconi Company.

The company was paid $789,500 for the above stations.

The American Marconi Company was left with its three high power stations Bolinas, Marion and New Brunswick, all being operated by the Navy, plus equipments on 170 small ships and its plant at Aldene, New Jersey.

Wireless Age for February, 1919 carries the following item:—

"The War Trade Board has lifted the ban on the use of radio by commercial vessels in the Pacific and Atlantic Oceans west of the 40th meridian. This restores the use of radio to conditions existing before the war."

Bob Palmer says that pre-war, many ship owners were not happy with leasing their wireless sets from American Marconi but they had trouble
getting service from the Navy during the war period so when restrictions were removed, they requested American Marconi sets instead of the Navy units. He says that 1919 was a hectic year for Marconi in trying to keep up with this demand. Approximately 150 vessels during that year had their Navy sets replaced with Marconi units and in many cases Navy-owned P-8 transmitters were removed and a Marconi P-3 transmitter reinstalled.

The President on July 11, 1919 approved the return of radio stations to their former owners effective March 1, 1920. Most of the land stations were never returned as many were no longer needed and by that time the commercial companies had built new modern stations. Most of the shipboard sets had been converted so the Navy scrapped the majority of the stations that were taken over at the start of the war.

Because of the importance of wireless in the war, it was generally felt that the United States commercial communication system should be owned by an American company. American Marconi had not pushed the sale of its stock in the United States so a majority was foreign owned, a large block by the parent company. This fact caused bitter feelings against the company.

The Marconi timed spark 300 KW stations were now obsolete as the arcs of much lower power outperformed them. During the war, a 200 KW Alexander alternator developed by General Electric was installed by the Navy in the New Brunswick station. It outperformed the 500 KW arcs and was the most powerful station in the world. Marconi had gone to Schenectady to see the alternator. He had witnessed its performance at New Brunswick and wanted exclusive rights to their use after the war. This move the Navy intended to block.

Wireless Age of November, 1919 carried an article on the proposed formation of R. C. A. which included a memo to the American Marconi stockholders from John W. Griggs president since 1905. This memo in part follows. It explains company objectives and why it should be merged into R. C. A.

"The principal aim and purpose of the Marconi Wireless Telegraph Company of America during all the period of its existence, has been the establishment and maintenance of transoceanic communication. Although the company has done no inconsiderable business in minor branches of the Wireless art, such as the equipping of vessels, the operation of ship to shore traffic, the collection of royalties, and the manufacture of wireless apparatus, yet these by the management have always been considered as incidental to the greater and more profitable business of long distance communication.

We have found that there exists on the part of the officials of our government a very strong and irrevocable objection to your company because of the stock interest held by the British Company. Consequently your company has found itself greatly embarrassed in carrying out plans for an extensive transoceanic traffic, and unless the British Marconi interest in your company is eliminated, your President and Board of Directors believe it will not be possible to proceed with success on the resumption of its preparations for a world wide service when its stations shall be returned to it, as they will be in the near future.

In a word, we are satisfied and convinced that in order to retain for your company the proper support and good will of our own government it is necessary that all participation in its stock, as well as in its operations on the part of any foreign wireless company must be eliminated.

Having these considerations in mind, your officers have lately undertaken to remove the objections of the government and to do away with the threatened embarrassment of which we have spoken.

Certain long distance and other radio devices and systems have been developed by General Electric Company. Some of these devices and systems promise to be of great value in transoceanic radio communication.

A corporation has been formed called the Radio Corporation of America which has entered into an agreement with General Electric concerning pres-
equal in number, to the shares held in the present company."

A shareholders meeting of the American Marconi Company was held November 20, 1919 at which time the proposed agreements were passed and a five percent dividend was declared.

Beside its operating organization, Aldene plant, patents, etc. American Marconi transferred to R.C.A. ownership of its three high power land stations and installations on approximately 350 ships.

Wireless Age of May 1920 carried this note—"Stockholders of the American Marconi met April 6th and voted to dissolve the company. This concludes the plan whereby the assets of American Marconi Wireless Telegraph Company are to be taken over by R.C.A."

---NOTICE---

The OLD TIMERS BULLETIN is published approximately four times a year at Holcomb, N.Y. by and for members of the Antique Wireless Association, Inc., a non-profit historical society chartered by the Board of Regents of the State of New York as an educational organization. This publication does not accept paid advertising nor is it liable in any way in any buying or selling transaction entered into by its readers as a result of its contents. The Old Timers Bulletin is available only as part of the Antique Wireless Association membership fee and its issuance is subject to change as to frequency, content and size from time to time.
ASSOCIATION NEWS

NEW JERSEY AWA SUMMER MEET cancelled due to lack of time to make preparations for announcement in Bulletin. The local group are still interested in having a get-together somewhere in Northern Jersey. More info later.

LEWIS CLEMENT (K3AA) -- one of the few remaining great pioneers will be A.W.A. Honorary Guest Speaker at the forthcoming Conference. Ot Clement's career could easily fill this bulletin----suffice to say, he touched base on just about every phase of radio for a period well over 60 years.

UNITED WIRELESS TYPE "E" and a rare coherer/decoherer set were found by Tim Christen--of all places--in a downtown San Francisco "hippie" shop...How lucky can you get?

AL GERMOND is another amateur historian taken up with the current interest in 50th Anniversary of his local broadcast station. AL is with W1AX founded in 1923 and was formerly with KFRR and pioneer station WDO.

RALPH YEANDLE (W1K) finds himself in the same position with WGY. Ralph is assisting the Schenectady group in setting up a historical display of early WGY equipment plus early receivers made by General Electric. Of particular interest is the first crystal used in WGY’s transmitter dating 1925. Like others, the G.E. station used a modulated oscillator when they first went on the air. Some followed with MOPA before the jump to xtal control.

RARE SCOTT RADIO MOVIE FILM showing manufacturing Scott radios in the Chicago factory about 1934 was recently acquired by Jack Rhodes (Victoria, British Columbia). Jack just returned from a five month trip to Fiji, New Zealand and Australia. He placed an ad in several New Zealand newspapers for Scott receivers--results were not too exciting but he did enjoy visiting AWA members John Stokes (Auckland) and Fin Stewart in Sidney, Australia.

HISTORIC MARCONI MAGNETIC DETECTOR and spark transmitter used at Battle Harbor, Labrador station has been completely restored by Frank Turano. This equipment was in use at the time of Admiral Peary’s expedition to the North Pole in 1909.

AMRAD/WG1 -- A recent fire at Tufts College (Medford, Mass.) destroyed the building that housed the old AMRAD Broadcast Station WGI. The 300 foot tower, weakened by the 1938 hurricane, has long since disappeared. AWA member Dunce Thompson pioneered at this station 50 years ago.

KEY COLLECTORS and historians interested in telegraph equipment will welcome an article on the subject in a future Bulletin. The author, Lou Morneau, will also give an illustrated talk on the same subject at the Conference. Members have been wanting information on this subject and we can’t think of anyone more qualified than WB6BBO/W3HRE.

A.W.A. was represented at the South-Eastern ARRL Convention held at Miami back in the winter when Al Canning, WB4HIAK displayed a nice assortment of old time gear at the QCWA Booth. The exhibit attracted many number of AWA members and in some incidents provided first time acquaintance.

The convention was well attended and old timers gathered to reminisce about the Boston Key, Deforest items and early crystal sets. Miami proved fruitful for Al since he picked up several receivers including a rare SE-143.

INDIANA HISTORICAL RADIO SOCIETY held its quarterly meeting in Fort Wayne April 23. It was an all day affair with attendance approaching 100. In addition to receivers and material brought in by members, the Magnavox Company Museum loaned equipment making it an exceptional display to the public. In fact, the event warranted local TV and newspaper coverage.

Members had a great time swapping old gear and auctioning off pieces not wanted. A.W.A. membership is a prerequisite. Interested in joining? Write: Gary Vork, 2505 Kickapoo Dr., Lafayette, Indiana, 47905

de Forest AUDIIONS
RADIO TUBES
DE FOREST RADIO CO.
PASAI, N. J.
The Association recently (April) provided a panorama of historical radio pictures at the Rochester Professional Engineering Exhibition. The selection included pioneer broadcast stations, Naval NAA and early Marconi equipment. The huge pictures acted as a backdrop to modern equipment on tables in the foreground.

Several thousand amateurs visited the A.W.A. Antique Gear Booth at the Western New York Hamfest (May) manned by Lauren Peckham and staff. Visitors included A.R.R.L. President Dannals and Directors from Atlantic, Hudson and Canadian Divisions.

SPECIAL BOARD MEETING

A Board Meeting was called by Pres. Breisford April 20th for the purpose of discussing plans for the forthcoming Annual Historical Conference. The occasion was highlighted by the presence of Ed Redington from Springfield, Virginia, who volunteered to act as coordinator and Master of Ceremonies. See advance announcement elsewhere in OTB.

Lauren Peckham reported progress of the Permanent Museum Committee. As anticipated -- the big problem was lack of funds. A detail report of their findings will be given in a future Bulletin.

Membership has increased and renewals running better than 99%. It was pointed out few organizations can claim practically 100% return on dues notice or their publication retain original value!

WHICH WAS BEST?

Recently, when reviewing a number of radio magazines published in the mid and late 20’s, the writer was struck by the wide variety of names given to newly developed radios and circuits. The advancing state of the art demanded better sensitivity, selectivity and control of regeneration. Result: new ideas and circuits would appear almost monthly -- some bearing the name of the inventor and others derived from the technical characteristics of the circuit. Here are a few of the names I jotted down:


Jack Rhodes, Victoria, B.C.
Canada

FOOTHILL MUSEUM

making great progress. A recent personnel change plus renewed interest will soon make this California museum one of the finest electronic museums in the country. With the Perham Foundation as the nucleus, seven large electronic firms have contributed funds well over $150,000 enabling the project to go forward at the Foothill College. Much of the material to be exhibited will be of West Coast origin: DeForest artifacts, Federal arcs, etc. Target date for opening: January, 1973 (Bob Fabris)

New Jersey Summer Meet cancelled
The OLD TIME RECEIVER CONTEST is now a permanent part of the Annual Historical Radio Conference program. Since we've just about run out of different type classifications, it has been decided to have permanent groups in the future plus one or two additional which will change each year. Henceforth, including the 1972 event, awards will be given to the best three receivers in each of the following classes:

I REGENERATIVE RECEIVER (one to five tubes).
II TUNED R. F. RECEIVERS (two or more stages of R. F. plus detector and audio).
III SUPERHETERODYNES -- any type.

BASIC RULES
-- Receivers (or components) must have been made before 1940. They may be factory, kit or homemade.
-- Judging will be based on unusual design, rarity and appearance.
-- Entries must have not received a previous AWA Award.

Added "Class" for 1972
IV Best piece of WWI MILITARY EQUIPMENT -- receiver or transmitter.

More details and judge's names in next BULLETIN.

50TH ANNIVERSARY NOW IN ORDER

Seems W1TH’s 50th Anniversary QSO mentioned on page 16 in last OTB has started something. Others are now trying to locate someone they may have worked in 1922 (or before) to join the list. The interest is such that A.W.A. will start a new column titled "50TH ANNIVERSARY QSO". W2BGN has volunteered to keep it up-to-date. If you can repeat your original contact of 50 or more years ago (anytime before 1923), send Ken the following info: --- year of initial contact --- month and year of most recent QSO --- original call letters of original stations --- original equipment used at both stations

Present contact may be on either CW or SSB -- spark prohibited. Exact date (month and day) not required for initial contact. Send to:
Ken Gardner, W2BGN
42 Oakdale Ave. S.
New Hartford, N.Y. 13413

50TH ANNIVERSARY QSO LISTING

W1TH (8TS) and W9CQ (9CP)
Dec. 10, 1921-1971

W2AFE (8AF) and W2YI (8KJ)
April 8, 1922-1972

W6IM (6R) and W6SRI (6KF)
Dec. 1910 - Dec. 1971

W2AXX (8AXX) and W1TH (8TS)

WARNING: Several readers report questionable dealings by a fellow historian/collector. This is regrettable. It is complained that the alleged culprit is not licensed and never attented an AWA Meet. But a ham ticket and attendance at AWA Meets does not of itself guarantee one’s morals. Further, many of our most respected collectors are non-amateurs. AWA cannot police the honesty of all within its ranks. As a practical matter it’s up to each of us to use common discretion and to know with whom we are dealing...

Psalm of Radio

Radio is my hobby; I shall want no other.
It maketh me stay home at night.
It leadeth me into much trouble.
It draweth on my purse.
I go into paths of debt for its name's sake.

Yea, though I understand it perfectly,
it will not oscillate.
Its concerts and speeches, they comfort me.
Yet it will not work in the presence of mine enemies.
I anoint the coils with shellac;
But the tube spileth over,
Surely the radio bug won't follow me
for all the days of my life,
For if it does I will dwell in the
house of poverty forever.

(The above Psalm was published many years ago in WORLD WIDE WIRELESS magazine. The author was identified only by his initials "J.B." He must have been a frustrated BOL.)
Clarence Dengler, W2LK, presented Grand Old Man Award
by Chuck Brelsford, K2WW

The Antique Wireless Association presented its first annual Grand Old Man Award to Clarence E. Dengler, W2LK, at the April 7, 1972, RaRa meeting.

The selection for the 1972 Grand Old Man Award is one who has been an amateur continuously for almost 60 years. He started in the game before WWI. This was the time when a license was not necessary providing your signals did not go beyond the state line. This was no problem since he was using a Ford spark coil -- good DX was about 12 miles.

He obtained his first license in 1919 and joined the newly formed Rochester Radio Club two years later. He has been a member of the Rochester Radio club and the one that followed, the Rochester Amateur Radio Association, for a total of 51 years!

He has served in various capacities, provided much written material and programs for the clubs and is currently a board member of the Antique Wireless Association.

He is grand daddy of Rochester broadcasters having been with WHAM when it first went on the air in the early twenties. He pioneered in public safety radio having built the first police radio station in the county in 1931. He has received both civic and national awards in this field and is currently National Historian for the Association of Public Safety Communications Officers.

A.W.A. CALENDAR 1972

NATIONAL HISTORICAL RADIO CONFERENCE
September 22-23-24
Smithsonian Institution
Washington, D.C.

FALL MEET AND DINNER
Saturday, Oct. 21
Holcomb, N.Y.
(Dinner reservation necessary)

ANNUAL BUSINESS MEETING AND ELECTION
November 12, 1972
2 P.M.
Home of Henry Blodgett, W2UTH
Victor, N.Y.

"C" BATTERY (need for grid bias) was conceived by pioneer Fritz Lowenstein.
RECENT RADIO and ENTERTAINER OBITUARIES
by Al Germond

BILL STERN, well known sportscaster 11-19-71

JOHN PATT (66 yrs.) past president NAB, member BC pioneers, WDAF, past president Goodwill Station WJR, etc.

ZEN CONFREY (76 yrs.) pianist and composer, 11-22-71. Featured in famous 11-12-24 Aeolian concert when Whiteman introduced Gershwin's "Rhapsody in Blue". He performed his own composition "Kitten on the Keys".

MARY CUTTING (84 yrs.) widow of Dr. Fulton Cutting of Colonial Radio and Cutting and Washington Co.

LEO FITZPATRICK (77 yrs.) Charge of WDAF in 1922. Appointed by Hoover to old FRC, Manager of WJR, W GAR. He gave Father Coughlin his start in 1926 over WJR.

HARRY LANTRY (85 yrs.) pioneer broadcaster in Spokane area 2-16-72

ANN PENNINGTON 11-4-71 Star in Ziegfeld Follies and George White Scandals. Popularized dance "Black Bottom".

GABRIEL HEATTER 3-30-72, well known news commentator.

CHARLES SINGER (69 yrs.) early commercial operator, Chief Engineer of WOR, and Vice-President of United States Underseas Cable Corp. (March 26, 1972)

PORTABLE TUBE EXHIBIT
Members are frequently asked to provide a historical exhibit at the local hamfest or radio show. Receivers pose no problem but tubes do. Lauren Peckham solved this problem by making a special case with cover (see photo). The case contains variations of the 201, Moorehead, French tube, Audio Tron, WD-11-12, VT-1-2, WE-215-A and variations of the 159 --- all popular with the average old timer. The tubes are firmly mounted so they cannot be too easily removed.

NEWS BIT IN BROADCAST FIELD
Pioneer ZENITH FM station WEFM was recently sold to Boston-base group. WEFM is one of the few remaining original FM stations having started in 1940 on the old FM band. Zenith, along with Stromberg-Carlson, General Electric and others pioneered Maj. Armstrong's FM system.

MILTON CROSS (now 74 years old) is now celebrating his 40th year as "Voice of the Opera". His first Met Opera pickup was Dec. 25, 1931. Other radio activities date back into the 20's.

HERBIE MINTZ may be the oldest continuous platter chatter. Currently at WAVS, Ft. Lauderdale, Fla., he started on the air 50 years ago at KYW, Chicago (Feb. 12, 1922) and has been announcing ever since!

ACME APPARATUS COMPANY
186 Massachusetts Ave., Cambridge, Mass.
Transformer and Radio Engineers and Manufacturers.
ACME for amplification
WLW 50TH ANNIVERSARY

Powell Crosley began broadcasting with a 20 watt transmitter in April 1921 using the call 8CR. Amateurs and broadcasters were practically synonymous in those days.

This small amateur effort led to the first WLW transmitter designed and built by Dorman Isreal, student at the University of Cincinnati. Call letters were changed to WLW from 8CR on March 2, 1922. This 100 watt transmitter used four UV203 tubes, two as oscillators and two as Heising modulators. The program was picked up with a phonograph horn mounting a telephone dispatcher's microphone at the small end. Operation was on 833 kilocycles.

Not until 1927 was Crosley granted a clear channel on 700 kilocycles.

Through the years, Crosley had many transmitters built and in 1932 he was granted an experimental license with a power of 500 KW and call letters W8XO. Quite a finish to that 20 watt start! Of course another achievement was the 831 foot vertical tower that is still in use today.

New Members

who are or have been in the communication field.....

WALTER COBB, W3CO (ex-3CO, 2JX, 3PJ) I. I. & T. Labs
BERT GAMBLE, W52G (ex-5JJL) Stat. KFKY
GUY MARTIN, W6DLY, Pres. Electromechanism, Chief Radio oper. F.B.I., WWII
HARRY WILLIAMS, W4IMI (ex-5JUI, 9JZCA) Bendix Corp.
ALBERT SCHWARTZ (Lincolnwood, III.) Motorola and Belmont Radio
WALLACE VOLKMAN (Belmont, Calif.) Alfred Electronics
GEORGE BADGER, W6RXW Emac Corp.
FRANK OWEN (winston-Salem, N.C.) Engineering, Western Electric
CHARLES MAASS, W2RTV (ex-6AKH) Radio Marine Corp., B.T.L./W.E.
S.S. Leviathan, etc.
ROBERT SHOOK, Ph. D., Historian, Victoria College, Texas
PAUL KORNEK, K4DWJ (ex-W6NEW, K5RHJ) Engineering General Electric Co.
WILLIAM NAIL, Director of Public Relations, Zenith Radio Corp. V.O.A., W5BM
ROBERT MUTHAMS (Calumet City, Ill.) Electronic Technician
CHARLES LARK, U.S. Navy, Naval Radio
WALTER JACKSON, W5ZKA, Mgr./V.P. of Electronics Center
REX MUNGER, W4LIP, former Sales Manager of Taylor Tube Corp., Merchant Marine WWI, Stations NAT, NBA, etc.

Radio and Television Growth

Stations on the Air ... to January 31, 1972

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Source: KIA and Federal Communications Commission

SILENT KEY

FOUNDER OF ADAMS-MORGAN COMPANY PASSES AWAY

Alfred P. Morgan of Upper Montclair, N.J. died April 22, 1972 at the age of 82. He was former president of the Adams-Morgan Co., Inc. maker of the famous Paragon receiver and transmitter line. He and Paul Godley pioneered and developed early shortwave equipment. He was a holder of many patents and author of a series of boy books on chemistry, radio and electricity. (Serge Krauss)
KNOWN HOLDERS OF COMPLETE SET OF QST

Richard Baldwin, W1RU
John Beck, VP2AAA
E. Laird Campbell, W1CUT
Ted Dames, W2KUW
Fred Elser, W6FB
Joe Fleming, W4KL
Al Gowan, WØPHR
Wayland Groves, W5NW
Art Jablonsky, WØBK
Art Marcy, W4ID
Jim Millen
Wayne Nelson, W4AA
Henry Priebe, Jr.
Ed Raser, W2ZI
Erv. Rasmussen, W6YPM
Louis Rizoli, W1AAT
Howard Schonher, W4RZL
A. G. Wentzel, W2HX
Franklin Wingard, W9EWH
Sumner Young, WØCO
ARRL Headquarters - Office
ARRL Headquarters - Bank vault

These are the known sets of originals. There are perhaps others but somewhat doubtful. It is possible there may be some changes in the above since Mr. Rizoli was advertising his set some time ago. I do not know if it changed hands or not and a letter to Louis apparently did not reach him.

Also, Mr. Jablonsky was advertising his set for sale several months ago and may possibly have disposed of it.

There are several known almost sets with one or two of the 1918 issues missing and there are a few sets where completion was accomplished through reproduction. The names of any additional holders would be very much appreciated.

Al Marcy, W4ID

"JARS"

Sometime ago (OTB 7-2-18) reference was made by W1DM to origin of capacity and a unit of measurement known as JARS.

John Stokes (Auckland, New Zealand) felt AWA members would like to see a condenser with such markings and sent this photograph. As noted, the condenser has a capacity of "10 JARS" at 500 volt D.C. Test. The Pattern No. refers to the Admiralty No. He tells us the Government used "jars" instead of microfarad as late as 1933.

SOME TIPS FOR COLLECTORS
from Lane Upton

I have some suggestions which may be worth passing on to others:

1) I found the waterless hand cleaner (type used by auto mechanics) to be a tremendous help in cleaning up units, especially for such things as knurling and knob grooves. I use it with an old toothbrush. Try it on the back-side of plastics as it might soften, although it has not affected any materials for me, yet.

2) For xtal cat whiskers I use .014" music wire. It can be formed into any shape and will remain there. When winding spring shapes don't forget to allow for spring-back by winding smaller than required.

3) I have found the following to work real well in removing scratches and gouges from panels, providing you are willing to work (it takes a lot of "elbow grease"). 1) Sand down the area until smooth. 2) Smooth down the area with 400 wet or dry paper, then repeat with the same paper using oil. 3) Rub out the area with automotive finish rubbing compound. 4) Polish out the entire panel using an automobile cleaner-polish.
RARE JENKINS RADIOVISOR

One of the rarest TV sets seen in recent years was uncovered by Everett Berry. It is a Jenkins Radiovisor made in 1929 and described in the February, 1930 issue of RADIO-CRAFT Magazine.

The set has two moving parts: a 48 hole scanning drum and a "selector" shutter. The picture shows the set removed from the cabinet. The nameplate states: Serial #265, Model No. 210-B. The lamp is a DeForest VISION 601 with 4 prongs.

DID BELL INVENT THE TELEPHONE?

A newspaper was received from Frank Pagano carrying a well written (and documented) article on the life of Antonio Meucci. The facts would seem to indicate that Meucci had perfected the telephone well before Alexander Graham Bell.

The inventor worked on his project while in Cuba which he left in 1830 for New York. Patents, claims and litigations are quite involved. Suffice to say, the author/reporter states Meucci transmitted the human voice 27 years before Bell. A most interesting article about an obscure inventor who unfortunately did not have resources to support his claims which may have been valid (?). He died in Staten Island, N.Y., Oct. 18, 1889.
As reported in the March OTB, Warren W7JF, prepared for the Old Time Zmtr contest. He was there with bells on and QSOed W6JF, WØTREF, W8BKMM, W8AQ, W9EWH, W2WS/2, W2BGN, W1PEG and K2LBB.

KH6ADR (Bill Orr, W6SAI) was worked by W2BGN, W2EB and WØTREF on 20.

W9EWH with his 11l 2 watter turned in a nice score. He got S9 reports right up there alongside the 100 watters and banged thru the QRM. FB Frank.

Last year Dick, WØTREF, did the traditional winter antennajob. Now we learn that Jack, W4JT, wins the Silver Icicle. Cold in Virginia?? He made the contest with one strung up 10 feet above ground! Antenna not Icicle!

Bill, W8EGT, reports his 1937 Zmtr completed and now on a dummy antenna for tests. Such sophistication wasn't known in early wireless. One simply hooked the antenna on and snifffed for smoke.

WØJF and W2ARX, both CW men, want a contest on the original "Antique" band, 160 meters. Bruce is itching to put the beautiful old W2AN into fone competition. W2EB can run SSB, AM and CW on 160 with old equipment. W6SAI is planning a 160 fone net this fall with a modulated osc. W6RXW has a dandy loop modulated rig in the works. W6ZO can modulate his 210 TNT. WØJF works the East coast frequently on Marconi or short antennas (see his antenna articles in QST). W2BGN knows where there are two old RCA Magnetic Modulators. W2YBK finally found the parts for his 1937 transmitter and is now heard occasionally on 80 CW -- a special circuit using a single 6L6.

WØJF holds the record for Western DX (Japan) with his OT Xmtr but W2LV claims the honors for Eastern DX. His OT80 wait PP210's have worked HB3NL, EI9J, GM3IGW, VP7KY, VP9BY and KV4FZ. All on 160 meters. Bob has a nifty 70 foot vertical antenna with plenty ground radials.

W1PEG writes that aluminum and aluminum covered steel electric fence wire works FB for antennas. It is cheap and available at most farm stores. Remember when we used to use iron wire in Wireless days. Joel, W2YL, then 8HJ swore it worked better than copper, according to W4ZM.

A real antique came on the 4:00 PM 3584 net recently, a real live UV202 at the hands of Fran, W2BJI, in Manlius, N.Y. It is the only active 202 we have heard lately and all on the net advised him to watch it. It sounded beautiful singing away in its Hartley. We are waiting to hear it again!

The 4:00 PM net is a clearing house for 189 kc. LF work. W2LV tells about LF activities elsewhere. A fone call smoked W2RAA out recently. He was the DX champ for reception of the LF QRP rigs. Ed lost this 120 foot vertical in the wind and has been inactive for some time. Now that he knows the gang are actually working two way up there, we bet it won't be long before he is heard from. W2BGN and W2EB need an intermediate relay point! So far W2EB has been heard QSA at Geneva by W2AFE.

WA1BSP, W2HEY and W2FW have also joined the 4:00 PM gang. Jack is in Schenectady and had a real nice sounding OT crystal control job. He rushed off to dinner so we will get the details of his operation later.

Change In Address?

Mail information to the Treasurer
who handles current mailing list.
(NOT the Secretary)
L. A. CUNDALL, W2QY
69 BOULEVARD PKY
ROCHESTER, N. Y. 14612
GOOD READING

CONTACT AT SEA
by Peter Schroeder, W1PNY

now available at $7.75 less 25% to A.W.A. members. This popular book on the history and activity of commercial marine radio operation has been reduced from the original price of $14.00. A specialized and relatively low printing warranted the original high price. Available from:

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70 Lincoln Street
Boston, Mass. 02111

POPULAR ELECTRONICS/ELECTRONICS WORLD

These two magazines have combined into one with the January issue Vol. 1, #1. The result is questionable. Technical material is good. As an example, the February issue carried an interesting article titled TUNER FOR THE NEGLECTED BAND 160 - 190 KC.

Reports on hi-fi equipment and write-ups of general interest gave promise but what bugged most subscribers was the advertising -- particularly the heavy card mail return inserts which were interspersed throughout the magazine. These proved extremely annoying to the point where some say they will not renew their subscription. One reader carefully removes each one and mails without filling in hoping someone will get the hint (postage is prepaid).

This may be the end of the line for Hugo Kernstäd's once popular RADIO NEWS first published in 1919. (RADIO NEWS became ELECTRONICS WORLD)

THE HIGH MAN
by Milton Lehman

If you like scientific reading you'll find this book on Goddard, the Father of Rocketry, a fascinating one. Subject matter ranges from physics to rocket science with a smattering of electronics for he also developed some unusual radio tubes.

FOR A DIME AND A BOXTOP
by Robert Hawkins

March, 1972 issue "DB" Sound Engineering magazine

Perry Ferrell called our attention to this well written article covering early radio serials and their "giveaways."

I could care less about a "Little Orphan Annie Mug" mailed by Ovaltine and other miscellaneous items which radio advertisers wooed the younger generation 30 to 40 years ago -- but the author's opening paragraph telling of the early history prompted me to read the entire story.

It was well worth reading. Bob covered the field: from an early 1921 Vincent Lopez broadcast "giveaway" to the 1940 peak of radio serials when sponsors were saturating the air with "send a dime and a boxtop and we'll send you -------!"

An interesting article for the radio historian who wants to read about another collecting interest. The author is an A.W.A. member and on the staff of KVI, Seattle, Washington. In addition to collecting early radio "giveaways", Bob also collects early microphones.

RADIO ASTRONOMY and Amateur Radio
by WHZEB, May, 1972 issue of "73".

The author introduces the Layman to a fascinating science starting with historical background covering the work of Karl Jansky and AWA member Grote Reber. The article is well illustrated and provides the average reader background if he wishes to continue his interest in radio astronomy. Copies of "73" magazine may be obtained from the publisher at Peterborough, New Hampshire.