Updated copy 04/08/2013 (BAC).

Preface

My name is Bruce Clark and I was born a few years after the closing of the Belfast RCA Radio Relay Station. Visual remnants and verbal conversation of the station were a part of my young years. My father was very familiar with the station and used to hunt rabbits on the property. The first time I went with him we stopped at the transmit building to rest. We sat on the wooden platform walkway for a while. Then while he was smoking his pipe, I found an opening up through the floor into the building. I briefly saw papers strewn about, and some large metal disks before my father called me out of the building. We then hunted following the long wire (Beverage wave) antenna down to the 40-acre field.

Through the Great Depression and World War II as I was growing up, I was never far from seeing evidence of the radio station. I think this connection motivated me to become a ham radio operator. I went on to a life in broadcasting and electronics. Two of the many radio hams I met were Earle White (W1KNJ), and Leslie Salisbury (W1GPB). Leslie (Les) gave me a listener reporting card from the old Belfast RCA station. He told me his Uncle Frank Smith had been one of the RCA engineers. It was my understanding that there were three of these reception cards. Each card covered a separate week of 1926.

Years went by and my interest in the Belfast RCA station started peaking. I came across the old reception card and took it to the Belfast Historical Society April 2000 meeting. People there were very interested and placed the card into the Belfast Museum. I started asking questions about the RCA station, and getting few answers, but after the Great Depression and World War II memories were fading. Research was going at a slow pace until I got a call from Harold Nelson of Newport, Maine. Harold had been researching the old AT&T station and ran into a link to the Belfast RCA station. Harold had found some aerial photographs at the USDA. We formed a loose research group with Megan Pinette, President of the Belfast Historical Society. I met with Josephine (Merriam) Grady, a Historical Society member. Josephine's family had boarded RCA engineer John H. Mundo while he was working on the Morrill, Maine (Beverage) wave antenna. Josephine as a child knew John well and had vivid details to tell.

The original late 1923 (Beverage) wave antenna was 10 miles long (actually 52,610 feet); it went out to Black Brook near Moody Mountain in South Searsmont. The 1926 completed antenna array consisted of three 10-mile antennas spaced six miles apart. This is documented in the Republican Journal newspaper. The 20-foot wide antenna swaths are very visible in 1939 aerial photographs at the USDA office in Belfast.

At the start, late in 1921, RCA purchased an existing ship-to-shore station operated by International Radio and Telegraph. RCA started revamping the site early in 1923. Then AT&T started a station not far from the RCA station. Initially they were competitors with complaints of radio interference. Then AT&T moved to Houlton, Maine building a station there. AT&T returned to Belfast at a later date after RCA purchased AT&T stock. RCA had started using A&TT long lines to take the European radio messages and programs received to New York. (It was found that the RCA radio link with New York was causing much of the interference)

It is not the scope of this book to go into great depth. The evidence found however guides the information presented.

Republican Journal newspaper clips will be noted as (RJ) and the date to conserve space.

Bruce A. Clark, K1FZ

Belfast, Maine 04915

2006.

Belfast RCA radio station research thank you list.

Researchers who contributed years of their spare time are Harold Nelson, and Megan Pinette.

Researchers who contributed many hours/months of their time are Marion Anderson, Ted Bartlett, Nolan Gibbs, Josephine Grady, Betsy Paradis, Harry Smith, and Bob Stover.

Contributors: items, information.

Ted Bartlett, Delmont Clark, Josephine Grady, David Pendergast, Donald Pendergast, Megan Pinette, Gary Philbrick, and Charlotte Salisbury.

Proof reading-Henry Stover.

Book number 6 of 7 is a gift to the Edward J Reynolds House, Volunteers Of America. David McAfee and Mark Monroe have provided excellent cooperation with the RCA research group.

Thank You,

World wide they wondered if they could span the oceans with radio (long wave wireless). First Marconi got the single letter "S" across the Atlantic, then a group of American Amateurs in CT. got a real Morse code contact across the Atlantic.

1 September 1920 US Department of Commerce Radio Service Bulletin #41 (Updates to the 6/30/1920 list) issued call sign 1XR Belfast, Maine. International Radio Telegraph Company

3 September 1920 RJ Page # 5 Representatives of the International Radio and Telegraph came to Belfast and started making test at the Dutch house. (Now the Eunice Palmer house) on Congress Street and the Reed Farm on Northport Avenue. They made contact with Halifax, NS and some ocean-going ships.

14 October 1920 RJ. A carload of equipment arrived at the Dutch house. The previous occupants moved to Carmel, Maine.

21 October 1920 (From the Bangor Daily News). "Belfast to Have Wireless Station. It is expected to be ready in a month. Belfast October 21, Much interest centers in the wireless plant which is to be erected in Belfast by the International Radio and Telegraph Company of New York and Pittsburgh. The location chosen is that of the Congress Street farm formerly of the Dutch brothers and it is an admirable one. Vice-president Kintner of the company was in the city recently, and with Orrin J. Dickey, the local agent, laid out the site of the big mast, and the buildings that are to be erected, and made arrangements to push the work along. Already a crew of men are digging pits for the big cement piers, which will be six feet square and on which the steel mast, rising to a height of 150 feet will be set. Mr. Dickey has started a crew of men clearing the wood from the property, and the same will be done with the underbrush. It is being proposed to remove everything from the farm in the line of trees and bushes aside from the orchard. The steel mast is here now and Mr. Gage the construction man from New York has arrived to take charge of the erection of the mast as soon as the piers are completed.

They will have four masts and four buildings, with at least six operators and a telegraph operator. The main building which is to be erected at once, will be 36 x 26 feet in size and will be well arranged. The wireless room itself will be sound proof. It is expected the plant will be in readiness for operation in about one

month, as a large crew of men will be put upon it and the work will rushed to completion."

4 November 1920 RJ. "Busy times at Congress Street. A contract with E.E. Babcock for construction of an operating building that will have cement foundation and cement floors. The work is progressing for setting the cement bases and radio mast. There are three guy wires for each radio mast. Bases and anchors are six feet deep and six feet square. A new foundation has been laid under the Dutch house and one of the bungalows. Elijah Ritchie and his wood cutting crew have been living in one of the bungalows and stripping the wood lot and pasture. E.D. Forbes, Chief Engineer and E.G. Gage, construction agent of New York have been spending time here."

24 February 1921 RJ "International Radio and Telegraph began operation midnight Thursday. Manager Hazlebaker has four operators and expects eight or ten will be needed later."

24 February 1921 RJ. "Real Estate agent Orrin Dickey was purchasing land for the Radio Station. They now have purchased 400 acres between Congress Street and Northport Avenue."

3 march 1921 RJ Page 5 column 4 "Twenty men are employed clearing tracts of land. The Lowe lot is purchased through the company agent Orrin J. Dickey The plant is working well and a message is taken from San Diego, Calif."

24 March 1921 RJ "International radio & Telegraph has purchased the land of the Herbert Black farm on Lincolnville avenue".

7 April 1921 RJ Page 5 column 3. A story about Orrin Dickey supervising a crew of men clearing land and brush burning.

18 August 1921 RJ Page #1 Column 3. A story about Frank Smith falling and breaking his arm. (Smith will become a handyman for RCA in 1923, then work as an engineer)

17 September 1921 RJ There was a woods/brush fire near the radio station.

21 September 1921 RJ "Radio Corporation of America purchased the International Radio and Telegraph station at Belfast. Work in progress will be completed. Orrin Dickey will stay on with RCA in the same capacity. They expect to communicate with steam ships. RCA will use other than Westinghouse Wireless apparatus due to a stock conflict."

23 September 1921 Deed of RCA purchase. Volume 340, page 269. Registry of Deeds, Waldo County.

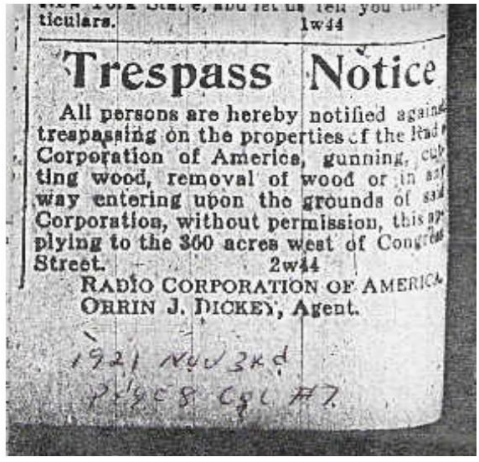
6 October 1921 RJ "Mr. And Mrs. David Sarnoff, General Manager of RCA in New York came to Belfast, staying at the Windsor Hotel". Chief Operator Hazelbaker was hired by RCA and went to New York.

14 November 1921 Station 2LO in London, England was licensed. This station will play a part in later RCA Belfast history.

RCA purchased the Congress Street wireless shore station from International Radio and Telegraph 21 September 1921. Real estate agent Orin J. Dickey became the caretaker and legal representative of the Radio Corporation of America at Belfast. Activity to convert the shore station to an experimental station began early spring 1923.

November 3, 1921 RCA posted a trespass notice to protect their investment

From the Republican Journal newspaper.



ticulars. 1w44

Trespass Notice

All persons are hereby notified against trespassing on the properties of the Radio Corporation of America, gunning, cutting wood, removal of wood or in any way entering upon the grounds of said Corporation, without permission, this applying to the 360 acres west of Congress Street. 2w44

RADIO CORPORATION OF AMERICA.
ORRIN J. DICKEY, Agent.

1921 Nov 3rd
Page 8 Col #7

Work began early in 1923. H.P. Hassner was the start up Engineer-in-Charge. Assigned engineers were Albert B. Moulton, Carl Erikson, Richard Mathes, and Samuel W. Dean. Frank L. Smith was hired as a handyman, becoming an radioman in a short time.

Experts in their fields started arriving.

Hugo Leutenitz- Radio transmitters, electrical systems.

Clarence Hansell-Relay transmitter, antenna research.

Harold Beverage was the overall antenna manager making occasional Belfast visits.

The Marconi Cable Company was hired to install the 10-mile wave antenna with L.B. Smith of England supervising. Orin Dickey was getting land use easements from the local farmers toward Moody Mountain in Searsmont where the first 10-mile antenna ended at Black Brook. Easements are in the Waldo County Registry of Deeds under the Marconi Cable Company name.

Samuel Dean and his family were settling in at Lower Condon Street. His wife was selling their first daughter's (Frances Dean) outgrown stroller. Samuel became Engineer-in-Charge and was on duty at the time history was made, March 14, 1925.

RJ 30 August 1923, page 8, column 6.



and Head of the Tide, a gray squirrel neckpiece. Finder please notify
MRS. MARTHORN DOAR,
Tel. 313-12 Belfast, Maine.

A Baby Stroller

FOR SALE

in very good condition. For particulars apply to MRS. S. W. DEAN,
1w35p Foot of Condon Street.

For Sale

Kitchen Range, nearly new, a three burner oil stove and a buffet. Call 124-3, or at 29 Congress Street. tf25

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5

15 February 1923 RJ page #5. A text message was sent from England to find the best receiving location in North America. Earle B. White (Later call sign W1KNJ) of East Belfast won the contest by getting the most letters correct.

4 March 1923 RJ Page #5. “H.E. Leuteritz at Belfast, station to be permanent. Mr. H.E. Leuteritz, assistant marine engineer of the Radio Corporation of America with offices in New York City, has been here with the arrival of spring or as soon as the snow will permit operations on the local grounds. It is the intention of the Corporation to develop the Belfast plant and make it a permanent affair, one of the best outside of their New York plant. Five of six engineers in radio work are expected to arrive about the first of May, most of them to be permanently located here. The present plans are to devote the Belfast plant to experimental work in radio particularly in connection with European countries. Practically all the work of the summer planned with this station will be of a foreign nature.”

5 July 1923 The US Department of Commerce issued the license for Belfast, Maine. 1XAO, wavelength 1800-3000. Station controlled by RCA, New York. Radio Service bulletin #5 July 1923 as a special land station. Note: This is the call that will stick with Belfast through to the end, even though there are issues for other wavelengths and services.

17 July 1923 RJ Page #5, column #1. Richard Mathes of Minneapolis, MN employed at the Radio Plant on Congress Street came very close to drowning while canoeing near the Battery shore. Hanging on to the over turned boat he screamed for help. Alfred Maddocks, painting his house on shore, is credited with the rescue.

19 July 1923 RJ “Work is progressing at the radio station on Congress Street. There are now nineteen men employed under expert engineers. An antenna ten miles in length under construction will be grounded at Moody Mountain in Searsmont.

The station is said to have one of the best locations in the country".

2 August 1923 RJ (#1) "Now messages can be scrambled over Radio Telephone for privacy thanks to Bell Telephone. David Sarnoff says, "All the world rests upon the interchange of intelligence". With the growth and spread of radio, even into isolated communities, humanitarian, educational, and social possibilities come into view hitherto envisioned through no other agency".

6 September 1923 RJ Page #5. "The work of installing the new Radio Station antenna on the plant of the Radio Corporation of America beginning at the Congress Street grounds and extending over nearly forty farms in the direction of Belmont is nearly completed." (They go on to talk about an RCA antenna in Hawaii).

22 November 1923 RJ Page #5 Orrin J. Dickey shipped the household goods of Mr. & Mrs. Hazelbaker to Brooklyn, New York. Hazelbaker is now in charge of the Brooklyn branch of RCA. They had been living in Chatham, Massachusetts on Cape Cod.

31 January 1924 RJ A story of Capt. Albert W. Stevens, US air service taking aerial pictures last September (1923) over Belfast on a trip to Orono.

For a better understanding, we need to include information as to AT&T activities. At first there was competition and interference due to close physical proximity. AT&T owned NE T&T Co. RCA purchased AT&T stock and the parties started cooperating. RCA used many NE T&T poles in Belfast and nearby towns for their Beverage antenna specialty transmission lines.

14 February 1924 Page #5 column #3. "Belfast may have another wireless station. Harper and Delong of American Telephone and Telegraph Company are looking at Belfast for a possible station. They are staying at the Dexter Clements house on Congress

Street". (Known In 2005 as The Ambassador) They made mention of the RCA receive antenna.

28 February 1924 Page #4 column # 3. "Central Maine Power cuts the power for three minutes so that AT&T Engineers, now in the Dexter Clements house, to make electrical connections."

20 March 1924 RJ Page #5, column # 5. "AT&T still at work at the Dexter Clements house. They are looking as a possible office, a house in City Point".

24 April 1924 RJ Page #1. AT&T Purchased the Phillips farm on the Woods Road in south Belfast. (Now known as the Graffam farm- recently purchased by White Cap Builders) Two carloads of equipment arrived.

From the 1924 World wide Wireless: "RCA Engineer-in-Charge S.W. Dean and his staff have listened regularly for the English broadcasting stations and at the same time have adapted the Belfast experimental crystal-controlled short wave transmitter to telephone relaying."

22 May 1924 RJ page #8 column #1 "John Henry Mundo married Mabel Burns Philbrick May 19th 1924 by Rev. W.F. Skerrye." Note: Josephine Merriam Grady of Morrill & Belfast knew John Mundo the popular new RCA engineer well. John was working as a woodcutter on a new Beverage antenna swath going through Morrill and was boarding at the Merriam home. John was promoted to an engineer after they found he knew Morse code from the Navy in World War I. Josephine said, "John married shortly after being promoted from woodcutter to engineer."

Belfast 1920's Transmitting building.

The long wave tuning coil and mast are to the right of the building.

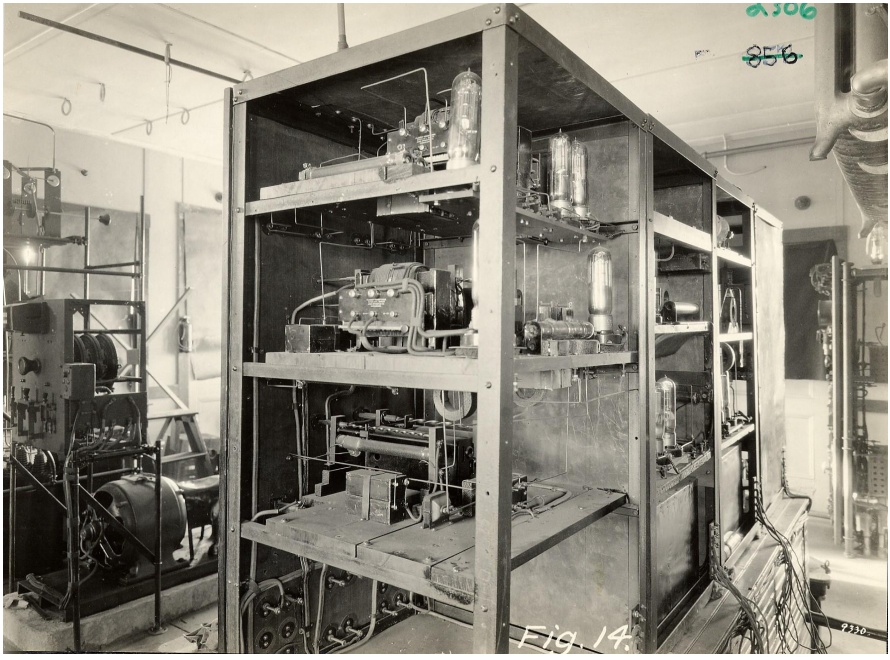
Photograph early 1924, before the barn in the back ground, lean-to addition. This barn is to the right of the tuning coil and behind the transmission line support pole in this photograph..

From the Republican Journal 1926 trade edition.



8A

Belfast 1920's RCA transmitter building. This photograph may not be copied. From The George H. Clark Radioana Collection, Archives Center, National Museum of American History, Behring Center, Smithsonian Institution.



8B

Belfast 1920's first receiving building. Photograph is from the Maine DOT. This photograph was taken in 1962 when the Belfast bypass road was under construction. The building was bulldozed

after documentation. Some items have been recovered from the cellar indentation.



View of camp at rear of armory from old wood road looking northerly.



Belfast 1920's first RCA receive building interior. This photograph may not be copied. From The George H. Clark Radioana Collection, Archives Center, National Museum of American History, Behring Center, Smithsonian Institution. This photograph taken circa spring 1924, prior to receiver upgrades.

8 July 1924 RJ Page 2. New England Week. Radio made itself known. Stations banned together to broadcast events to the Nation.

10 July 1924 RJ Page #5, Column #2. There was a Bush/Woods fire near the 40-acre field. The fire department got water from the Water Works upper river. (Note: The Moody mountain Beverage antenna went past the East end of the 40 acre field.

17 July 1924 RJ Page 5 column 1. "There was a fire at the Charles Littlefield wood lot on the Picture Road and the rear of the Dyer farm on Belmont Avenue." These locations show up in the Marconi Cable Company easements. The purpose of the easements is not known at this time.

11 September 1924 RJ Page #1." Experimental Radio test are being made at the Belfast plant. Very satisfactory night and day test are being made at the Congress Street plant of the Radio Corporation of America. Commercial work is being done with European stations in connection with extensive experimental work. In the force of experts here at present are Harold Beverage, the inventor of the Beverage antenna, C.W. Hansell who has been abroad for some time and recently returned from England, L. B. Smith connected with the Marconi Company in London, A. B. Moulton and Richard Mathias, who has been here for some time at the plant, are on the working force in Belfast. RCA is making test with European stations with extensive experimental work. Harold Beverage is present with C.W. Hansell, L.B. Smith connected with the Marconi Company in London, Albert B. Moulton and Richard Mathes."

The US Department of Commerce Bulletin 90 dated October 1, 1924 issued additional licenses for RCA Belfast, Maine. WOU wavelength 1610, and WIR wavelength 1750. Another unused license for RCA Belfast 1XAP was ordered as to strike out removal.

16 October 1924 “Belfast people hear the address over the radio of President Coolidge. The Broadcast is heard in the US, Canada, England, and Scotland. This tells us how wonderful are the achievements of science in our time.”

24 November 1924 New York Times (Monday) “Trans-Atlantic test begin tonight: America and Europe on air for an hour each.”

25 November 1924. Amateurs reported bits of programs received.

30 December 1924 City of Belfast, Maine birth record. RCA engineer-in-charge at the time of the historical event, Samuel W. Dean, and his wife Ida Mae Dean had their second child.

December 30, 1924
Baby: Helen Mae Dean
2nd Child, White
Attending Doctor: Dr. Carl Stevens
Father: Samuel W. Dean
Birthplace: Cambridge, MA
Mothers Maiden Name: Ida Mae Hoge
Birthplace: Throckmorton, TX

22 January 1925 RJ Page #5 Column 2 “The many people of Belfast and vicinity interested in radio pleasures are in hopes that the concerted action of Central Maine Power company, Samuel W. Dean now in charge of the Congress Street branch of the Radio Corporation of America and radio dealers will remove or better control the disturbance now so common here. A number of theories are being worked out and it is hoped that the “Buzz” will be eliminated."

13 March 1925 RJ. “ Radio from London blurred by static. Only stray fragments carried for Broadcast by RCA. The experiment was conducted from 8:20 to 9PM. 2LO London was sent to 5XX in Chelmsford where it was re-broadcast on 1600 meter wavelength. It was picked. Up at a RCA Lab near Van Cortland Park where they attempted to broadcast on the 455 Meter wavelength. Static drowned out all but a few snatches of sound.”

14 March 1925 New York Times excerpt “Music played at the Savoy, heard plainly across the Atlantic. Sent to 2LO to Maine. Re-broadcast from here and again by WJZ. FIRST SUCESSFUL DOUBLE RELAY”. There are twelve phonograph recordings of the break through event recorded by Brunswick Recording Laboratories at 799 Seventh Avenue.”

While many news sources reported this history-making event, World Wide Wireless 1925 reported. “Great credit for the accomplishment of this extraordinary feat goes to the staff of the Belfast Station, Messrs, Dean, Ashmore, Maylott, Smith, and Mundo, to whom has fallen the greater part of the work connected with the experiment”.

19 March 1925 RJ Page #1 (14 March event covered by a weekly newspaper that was in news stands the following Thursday) “Big Ben of London fame was heard in Belfast Saturday evening. This event was enjoyed by Belfast listeners when the Congress Street plant of the Radio Corporation of America relayed to New York the program from the high power station 2LO, London, England. The music of the Hotel Savoy, London, dance orchestra, and the wireless trio were very distinctly heard. Some of the selections were “Moonlight and You”, and “The Stars and Stripes Forever”. Very distinctly were heard the words, “This is England, saying good night to America”. The real thrill was caused when the chimes of the largest clock in the world, Big Ben in the tower of the House of Parliament, seemed near at hand. The Sunday papers from New York and Washington announced that the program was received very clearly in those cities as relayed from Belfast. S.W. Dean in charge of the Congress Street station said he was pleased that the local people were able to enjoy the concert and clock chimes. He also said the conditions Saturday evening were the best of the entire season “

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23 August 1925 RJ Page #1 “An Associated Press dispatch from Rugby England under the date of August 5th had the following account of the wonderful station from which radio messages are received directly at the Congress Street plant of the Radio Corporation of America: Six times as high as the Nelson Monument in Trafalgar Square, London and the 12 masts of the new British wireless station here, through which is anticipated telephonic communication with all parts of the British empire will be effected.” “There is an electric lift inside each mast to carry men to he top in 15 minutes. There is also a ladder up which the top of the mast can be reached in half an hour. The mast is supported on porcelain insulators and can rock on a joint at the base. In a high wind the top of the mast sways to the extent of eight feet.”

17 September 1925 RJ Page #5, Column #1. “Mrs. George Jennings and two little children left Monday for Boston where they will spend the winter with Mr. Jennings. They have sub-leased the small house at the corner of Charles and Spring Streets to Mr. and Mrs. John Mundo who have moved in “

26 November 1925 Page #5, Column #1. “James H. Jones of Arlington, Mass formerly of Belfast, was a passenger on the S.S. Venezuela from San Francisco, Calif. to New York. He sent to his brother Fred D. Jones of this city, a copy of Federal Radio News. It included a paragraph featuring the gigantic radio station at Belfast and stated that it is used in rebroadcasting important radio programs from Europe.”

10 December 1925 Page #5, Column #1 "Samuel W. Dean of New York for some time an Engineer with the Radio Corporation of America at the local plant on Congress Street and later with the American Telephone and Telegraph Co. at the Phillips farm so called on the Woods Road, has gone to Houlton where he is employed by the latter company. Mrs. Dean and their two children accompanied him to Houlton, Maine." (Note: There is now proof of the late 1925 Dean to Houlton move. Dean & family was listed in New York as were Belfast RCA Engineers as per the 1930 Census.

31 December 1925 RJ Page # 1 "Belfast station to receive radio program from London January 1. All interested in radio will be glad to learn that Belfast for the second time is to receive a musical program from London, England to include the striking of Big Ben if the local weather conditions are favorable. All who heard the program last year were delighted with its quality and the wonderful clearness with which it was received. The striking of the clock, the largest in the world, was clearly heard as our own town clock can be heard from down town. Listeners in on Friday January 1st at 6:45 PM, if conditions are favorable when the immense plant of the Radio Corporation of America on Congress Street will receive directly from England, will hear the program as it is broadcast to Bound Brook, New Jersey and thence to all parts of the Untied States and Canada. The program this year will as last year contain the national pairs, the Star Spangled Banner and God Save the King."

1926 A Magazine by RCA listed Short Wave Stations of the World, documented 1XAO Belfast, Maine 5354 KCS and 1XAO Belfast, Maine 2677 KCS.

7 January 1926 RJ Page #1 Column #6. “Belfast Radio Operators Hear Big Ben and music rebroadcast to NJ”

“Belfast radio operators were exceptionally fortunate in receiving the English program of the News Years greetings, the chimes of Big Ben and the dance orchestra music received at the immense plant on Congress Street of the Radio Corporation of America as it was relayed from Belfast to Bound Brook, N.J. under the direction of Ernest V. Amy in charge herein one Belfast home a one tube radio began picking up the music much earlier than the hour specified 6:45 PM. The principal selection of the Star Spangled Banner and God Save the King Were heard remarkably clear, from 7:30 to 8 o’clock the tones were more distinctly heard than its first concert in 1925.”

4 February 1926 Page #5 Column #2. “Monday evening Belfast people were fortunate hearing very distinctly the programs relayed by the Radio Corporation of America from its Congress Street plant. Here was peculiar combination of the latest American jazz and the moderate tones of “Big Ben”. Tuesday evening the conditions were far from favorable.”

8 April 1926 RJ Page #4, column # 4&5. Radio Corporation to build brick building on Congress Street. “The Radio Corporation of America which has several buildings at its large plant on Congress Street and another on its property on the Marsh Road will the coming season build an operating station south of the bungalow on Congress Street grounds. The ground will be graded and 11,000 feet of roadway made for a curved driveway to the station. The building will be 69x46 feet, two stories, and a basement. It will be of brick and concrete with a slate roof, copper gutters, and iron stairs. The plans have been sent here from the New York office of the company for bids by local contractors.”

RCA Belfast brick building receiving room. (Second receiving building).

Photograph and text excerpts are from the AWA Journal October 05 Vol. 46/03 Page 46-49.

“Because the incoming frequency was in the band from 15 to 22 Kilohertz, the coils in the amplifiers were bank-wound inductors whose mutual coupling was controlled by moving the coils on tracks behind the panels. (Figure 4 pictures the receivers at the Belfast, Maine station).”

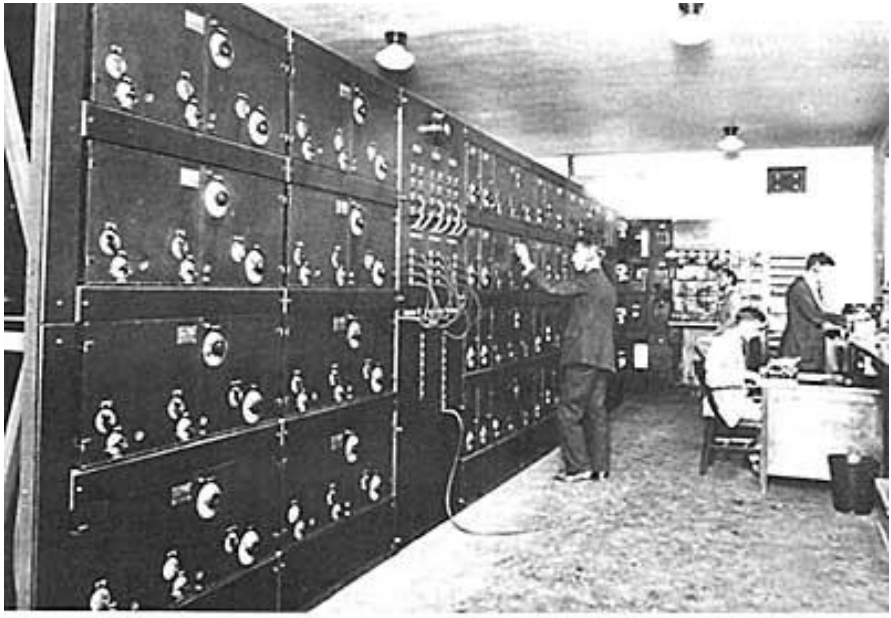


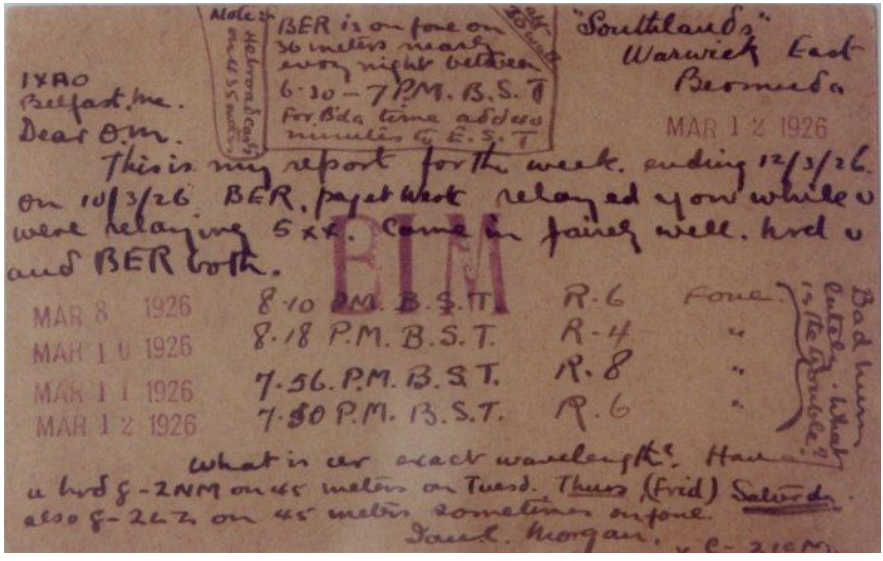
Figure 4. Rows of Receivers at the Belfast, ME Station

14A

2006 photograph.



2nd RCA receiving building. Built in 1926, it was in full use by 1927. There were rows of receivers, each one tuning to a specific frequency. The building originally had a slate roof with copper gutters. In 1941 the Belfast Armory was constructed to include this building.


"Southlands"
Warwick East
Bermuda
MAR 12 1926
1XAO
Belfast. Me.
Dear O.M.
Note: Heterodyne Cycles on 45 55 meters
BER is on fone on 36 metres nearly every night between 6·30 – 7 P.M. B.S.T For Bda time add 60 minutes to E.S.T
This is my report for the week ending 12/3/26. On 10/3/26 BER. pyet what relayed you while u were relaying 5 XX. Come in fairly well. hrd u and BER both.
BTM
MAR 8 1926 8·10 P.M. B.S.T. R·6 Fone.
MAR 10 1926 8·18 P.M. B.S.T. R-4 "
MAR 11 1926 7·56. P.M. B.S.T. R. 8 "
MAR 12 1926 7·50 P.M. B.S.T. R.6 "
Bad luck Cutler. What is the trouble?
What is ur exact wavelength. Have u hrd 5-2NM on 45 metres on Tuesd. Thurs (Frid) Saturday also 5-2LZ on 45 metres sometimes on fone.
Yours. Morgan.
5-2NM


POST CARD
BERMUDA
THE ADDRESS ONLY TO BE WRITTEN ON THIS SI
BERMUDA
HALF PENNY
Radio Corp of America
Radio Station 1XAO
Belfast
Me.
USA
1XAO

14D

20 May 1926 RJ Page #1, Column #8 “The Radio Corporation of America is making rapid strides in the building of the receiving station on Congress Street. Work has begun on reservations recently acquired from Belfast to Brooks for another transmission line for the extensive antennae that has already been built.”

17 June 1926 RJ Page #1, Column #8. “Belfast Radio Plant Now a Permanent One. The experimental work in Belfast and vicinity which has been carried on for several years by the Radio Corporation of America has been completed and the company has decided to make it a permanent plant. The Belfast is conceded to be one of the best equipped and best located in the world. The property building includes the Congress Street plant with a large brick building under construction. A fine sub-station has been built on the Marsh road and many acres surround it cleared leaving a handsome white birch grove. Extensive antenna lines have been run through the towns of Belmont, Searsmont, Northport, Waldo, Morrill, Montville, and Brooks. The Publicity his station of the Radio Corporation of America will give the State through Belfast will be of a high order and far reaching.“

9 September 1926 RJ page #5, Column #1. “C.B. Holt who is representing Wright and Wyllie with the Williams Oil-O-Matic heater has recently sold one for the new brick building for the Radio Corporation of America.”

5 May 1927 RJ page #1. “Belfast is now a transoceanic radio center. Radiograms received from all parts of Europe to relay to New York City. (Special to the Journal). History repeats itself in radio as in everything else. Young Marconi some decades ago, while seeking to ascertain the feasibility of transoceanic wireless or radio, chose the Newfoundland coast as the nearest and best site for the reception of signals originating in England. Later Marconi established a station in Nova Scotia, and still later at Wellsfleet, along the narrow arm of Cape Cod. More recently, transoceanic radio has been handled from the north shore of Long Island, far to the south, with powerful transmitters for flinging dits and dashes to Europe and to South America, side by side with super sensitive receivers for intercepting dots and dashes originating overseas to the east and to the south. Yet today, as the result of actual test and careful survey, radiomen have determined the Maine coast as the most suitable locality for long distance reception. Hence the Belfast receiving station of the Radio Corporation of America marks the return of transoceanic radio reception to the northeastern coast of America, which is virtually steeped in transoceanic radio history.

In addition to its activities in the fields of radio broadcasting and radio service to ships at sea the Radio Corporation of America, or RCA for short, maintains an elaborate and extensive system of direct radio telegraphic service to Great Britain, France, Germany, Sweden, Norway, Holland, Poland and Italy, to the east as well as Argentina and Brazil to the south. On the Pacific coast there is direct radio service to Hawaii and to Japan with an extension to Java.

Plans are underway for an early extension of the service to other countries., among them Chile, Columbia, and Venezuela in South America and China, French Indo-China and the Philippines in the Far East. The transoceanic radio service based on reliable and speedy handling of radiogram messages represents marked economy for users of transoceanic telegraphic communications.

Radio engineers are ceaselessly striving for better, faster and still more economical transoceanic service. As part of these efforts, there has been construction at Belfast an automatic relay station to intercept European radiograms under the most favorable conditions and to relay them to the main traffic office at 66 Broad Street, situated in the very heart of New York City.

Why Belfast should have been selected as the virtual center of international affairs is neither a great or deep mystery. It appears that extensive test proved to RCA engineers that the reception of European signals was very much better at Belfast than at Riverhead on Long Island, where the main receiving station is located. A survey of thunderstorms during the last decade made by the U.S. Weather Bureau indicates that there are twice as many thunderstorms at Riverhead as at Belfast. A very bad thunderstorm center in New England lies between Riverhead and Belfast, and so affects the reception at the former point whether receiving direct from Europe, or via radio-relayed signals from Belfast. Also, while Belfast is nearly north of Riverhead, it lies almost directly on the great circle route from Riverhead to Europe, and is 300 miles nearer the distant transmitters than Riverhead. For this last mentioned reason, the European signals are at least 30 percent louder at Belfast.

The ideal combination of less static with stronger signals naturally makes Belfast a desirable radio site, and it was in order to take advantage of this fact that the RCA organization established the receiving station here.

A land station constructed in 1920 by the International Radio and Telegraph Company, for working with transoceanic liners, had been absorbed by RCA and steps were taken in May 1923 to remodel it into a suitable relay station. By September of that year the station was regularly employed to relay European signals to Riverhead, and from that point over existing telegraph lines to the traffic office in New York City. It will be noted that the 300 mile span from Belfast to Riverhead was bridged by short-wave radio link.

The short wave radio relay was achieved by means of a 6000 watt transmitter, which in combination with the associated radio receiver comprised virtually one unit, self operated, for the automatic retransmission of signals. Instead of signals being delivered to headphones of loudspeaker, they were put out into space as relay signals.

During the first summer of operation, the Belfast station proved quite satisfactory and was called upon to relay almost continuously. Hundreds of messages were received daily through this relay station, which could not have been handled so readily through the direct reception at Riverhead.

It was the Belfast station, too, that played an important role in re-broadcasting the British radio programs in the United States. Music picked up by the powerful Daventry station in England, then hurled across the Atlantic and intercepted at Belfast, followed by short wave retransmission to the RCA Laboratory in New York City. Thence by direct line to the control room of WJZ, and once more retransmitted, this time on the usual broadcast wavelengths.

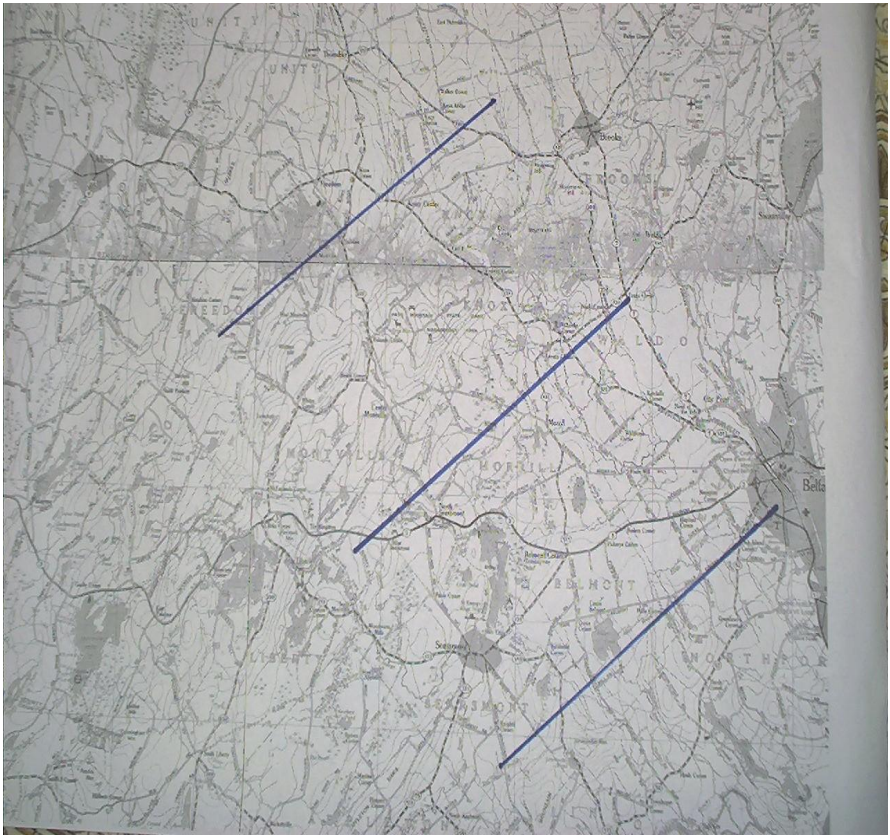
Encouraged by the excellent results at Belfast, the RCA engineers decided upon making Belfast an important communications center, with direct wire link to the traffic office in New York City, instead of short wave radio line to Riverhead as heretofore.

As part of this program a new station on Congress Street was opened up for traffic a short while back. The new station is of brick and concrete construction, entirely fireproof, and certainly the last word in receiving station design. It has the capacity of sixteen radiotelegraph channels.

The specialty transmission line for one of the Beverage antenna passed over the Delmont Clark property in Brooks, Maine. These antennas were abandoned when RCA closed in 1929. Many of the poles and insulators disappeared during the great depression. Delmont took down some wire, insulators, and poles that were used at the time of rural electrification. Delmont still had a few poles and insulators in his barn, and donated this transmission line insulator to the Belfast Museum.



The approximate locations of the three large ten-mile long Beverage wave antenna spaced six miles. This was the finished European receiving antenna. Specialty transmission lines brought the signals from Brooks, and Waldo to a sub-station on the Marsh Road in Belfast. From the sub station signals were processed then sent to the newly built brick receiving building on Congress Street.



The building at present houses twelve complete long wave receiving sets, operating on wavelengths from 8000 to 23000 meters, and in addition contains a complete power plant consisting of battery motor generator-generator equipment for supplying A, B, and C voltages to the vacuum tubes of the receivers. It is also equipped with oil heating steam plant and its own water supply.

The function of the new station, as with the previous facilities, is to pick up radio telegraphic signals from European stations. The signals are first picked up on a uni-directional triple broadside antenna, consisting of three antennas each nine miles long, and spaced six miles apart throughout their parallel spans, for the greatest possible efficiency in long wave reception. The triple broadside antenna at Belfast is a highly directional one, covering only a small angle covering of receiving signals from European countries, beginning with Norway to the North and sweeping down to Italy on the south.

The antenna system known as a Beverage wave antenna is quite unique so far as lay radio knowledge and practice is concerned. It is the invention of H.H. Beverage, who rather appropriately hails from North Haven, Maine, and is now on the engineering staff of the RCA organization. This type of antenna is employed at all RCA transoceanic receiving stations. For European signals in the case of the Belfast installation, this antenna provides the effect of antenna nearly a thousand feet high, or twenty times as high as the average antenna used for receiving broadcast signals, yet is only twenty feet high itself, and strung along on poles very much after the fashion of a rural telephone line.

Of interest to the lay reader is the fact that a multiplicity of receiving sets are worked on one Beverage antenna, each set provided with wave trap and filters so that signals from the desired transmitter are taken off the antenna and built up by radio frequency amplifiers for subsequent detection and radio amplification.

The radio signals intercepted by the long wave antenna are brought to the Belfast station building over transmission lines, which each signal is tuned in by its respective receiver and then relayed over leased telephone lines to the central office of the Radio Corporation of America in New York City. At the latter point the signals are automatically recorded on high speed recorders, while inked paper tape with its wave line passes by the operator seated before a typewriter on which the dits and dashes are transcribes into letters and words, sentences and finally into complete radiograms.

To handle the volume of traffic going through the Belfast station alone including radiograms from Norway, Sweden, Great Britain, Germany, France, Holland, Poland and Italy, requires a permanent staff of ten men."

14 July 1927 RJ Page #1 "Radio Disturbance cleared up here. Engineer H.P. Hassner of the Radio Corporation of America has been here looking up radio interference. Through the co-operation of the Central Maine Power Company the trouble has been practically cleared up in the city at the present time."

28 March 1929 Page #1. "American Tel. & Tel. Co to reopen Phillips Farm as Experimental Station. They have purchased lumber from Cooper and Cooper and work is under way."

(AT&T said that the greater part of the air interference came from RCA and using a telegraphic wire to New York instead of air channels solved the problem.)

Note: Alden Graffam's parents purchased the farm in 1935. Alden reported years later that they had two collinear antennas 100 feet long up on two long wooden platform spaced about 20 feet. There was a tuning building at the center of the array.

7 October 1929 Republican Journal ran a story that the Belfast Radio station will close.

15 October 1929 (Date of story) Bangor Daily News page 15.

"BIG RADIO STATION AT BELFAST TO BE ABANDONED.

The big receiving station of the Radio Corporation of America at Belfast covering many acres and representing a large investment was closed down yesterday and its engineers ordered to Riverhead, Long Island N.Y. This will remove several families from Belfast and the closing of the big plant is deeply regretted. No reason can be learned at the station as to why this closing has taken place, but as equipment here is for a long wavelength and today practically everything is for a short wave-length, this may have something to do with the change."

"The Radio Corporation of America came to Belfast in 1923, built a small plant and started experimental work. It soon began to branch out, bought acres and acres of land in Congress Street leading far into the woods on either side and built a number of buildings to house it apparatus and offices. This point was said to be the nearest to ships as they turned into the lanes crossing the Atlantic and the experimental work went on.

When this station a few years ago was known as XAO (Note: the actual call sign was 1XAO) it picked up the first European broadcast from England relaying it to New York and other points. It was then for the first time Big Ben was tolling the midnight hour in London while it was 7 o'clock here. The broadcast picked up at Belfast went over the country and gave the little city on the Penobscot a nice bit of advertising."

"In 1927 the station began to do commercial work and that had continued up to the present time, the code from Europe picked up and transmitted and telephoned to New York over leased wires direct from the station. During the six years the station has been in operation, probably 75 or more engineers have been here from time to time, many of them with their families, fine citizens whose departure is deeply regretted. While there have been times when a dozen or more men have been here, at any one time there are but four engineers on duty.

Hedley Morris who has been in charge for some time was ordered to Massachusetts a few weeks ago. J.W. Ashmore has since been in charge and will close the station. He will be here a week or two closing up after which with his wife and children will go to Riverhead as will John Mundo and family and C.W. Erickson. One man will be left as caretaker, Frank L. Smith, a local man. Belfast has been rather proud of the big station said to be at one time the largest in the country and it is hoped that it will not be completely abandoned."

27 October 1929 RJ Page 1. "RCA Station Here Closed Last Saturday. Work done here will be carried on at Riverhead, L.I.

Reports, which for some time have been current that the Congress Street station of the Radio Corporation of America., later changed to R.C..A. Communications, Inc., is to be closed have proven correct. A short time ago H. J. Morris, who had been in charge of the plant for several years, was sent to Marion., Mass., and left recently with his wife and infant child. He was succeeded here by J. W. Ashmore, who recently moved into the Rollins house on Congress Street.

Mr. Ashmore received orders to close the plant last Sunday night, look after the books of the corporation and the buildings and place Frank L. Smith as a caretaker of the premises, which he has done.

Mr. Ashmore, J.W. Walker and J.H. Mundo, with their families and Carl Erikson will leave soon for Riverhead, Long Island, N.Y. where work formerly done by the Belfast plant will be carried on.

The Belfast plant was opened by R. C. A. in 1923 and used for experimental work until 1927, when commercial operation was started in February. Since then European signals have been picked up here and translated into audible code which was relayed over leased telephone wires to New York.

The Belfast plant was fully equipped in 1926 with its large brick building for use on long wavelengths. Since then short wave lengths have come into use and make the Belfast plant useless to the corporation for commercial purposes.

It was this station that the first broadcast was received in this country from England a few years ago, when the striking of Big Ben was heard all over the country, being relayed from the Belfast plant. The property, representing a big investment, covers many acres with modern buildings and a (sic)13-mile antenna.

The men employed at the plant will not discuss what they think may become of the property here. They and their families regret leaving Belfast and the many friends they have made here."

5 May 1941 Frank L. Smith ex-RCA Engineer, a long time resident of Belfast, took a job as Park Policeman at the City Park.

31 May 1941 RJ page 1. Excerpt. Work Progressing On New Belfast Armory. Former Radio Corp. of America building nucleus for new industries" Although there is no military squad to fill it, due to the calling into service of the National Guard, work continues on the new and up-to-date Belfast Armory off Congress Street here.

Situated adjacent to the huge 300-acre Belfast Municipal Airport, now rapidly moving into shape under the onslaught of big power graders, the armory is on an ideal site to be of use in defense work. It could easily house an aviation squadron, and while its large drill hall does not have doors wide enough to admit airplane wings, it could be used for a repair shop.

However, the work that goes on is fitting the armory for men. Its drill hall is being flood lighted. It has a floor that would put to shame many a dance hall. And a feature is a combination target gallery and dining hall.

How did the State come about putting up an armory at that strategic point near the Belfast Airport? Actually the airport is being put up near the armory. And to begin with, a modern building was already on site. A modern steel and brick structure with many windows, locker rooms, showers, and washrooms was there on Congress Street almost at the city limits and in the middle of a field.

What was it doing there and who owned it? What was it used for?

The building early in 1940, empty and unused might have been called a monument to a transitory period in the development of the science of radio communications, for it once was the key station and laboratory of the Radio Corporation of America, used to experiment in Trans-Atlantic telephone and wireless work."

"The two and half story brick building housed the equipment used in experiments and helped blaze the path of steady and clear communications with Europe."

Note: Late in 1929, after the stock market crash, RCA closed the Belfast plant. Most of the engineers went to Riverhead, Long Island, New York.

So the building was left there in the field for nine years. Sixty thousand dollars worth of land and buildings lay idle and unused.

Just before the Belfast National Guard unit left for Fort Blanding, Fla., where they are now in training, the city government conceived the idea of the armory. They bought the RCA property, buildings, and land for $ 5000 or thereabouts and deeded the plot to the State on condition that an armory, which is State property, should be constructed at the site.

Last fall, Walter B. Milton of Augusta, contractor, began working at the location. The new armory, rather than destroy the old RCA building, makes use of it as officers quarters, and showers and locker rooms. It is built to conform in architecture with the RCA part, so the appearance is that the whole unit is of the same construction.

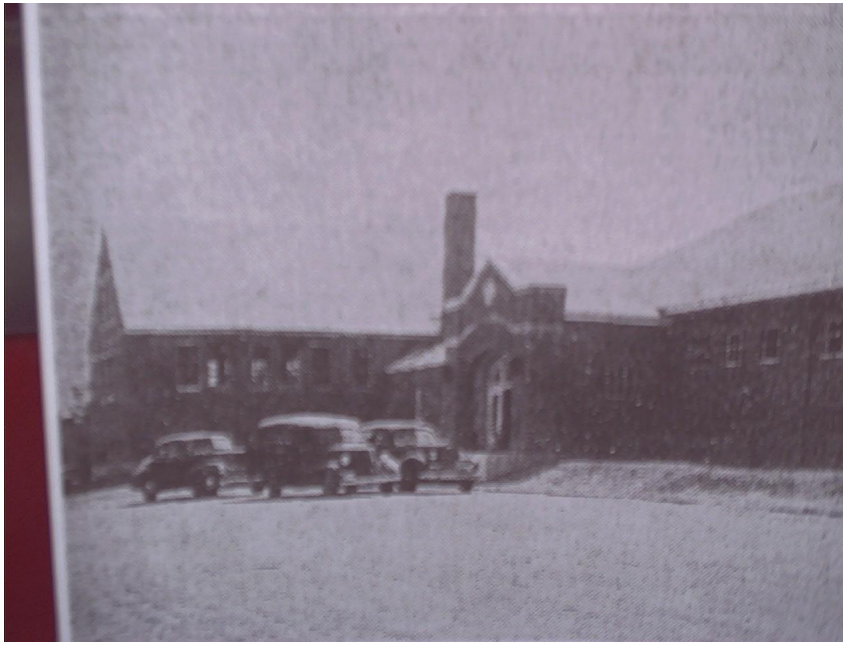
Because RCA housed so much equipment of electrical nature, there is plenty of facilities in it for the installation of equipment using that type of power, and an electric kitchen will be a feature. A sliding door gives access from the kitchen to the mess hall, which uses folding tables, allowing the mess hall to be a target range when not used for eating. Steel plates and sand bins stop the bullets on the range.

New heating plants will serve the two buildings, which are now joined together, and a six car garage can house either officers cars or army trucks. A large door on the northwest corner of the drill hall will give access to guns or cars if necessary, and another door opens along decorative main entrance on the front of the building.

Luck has been with the contractor Milton so far in the work on the armory because most of the material was ordered last Fall before the pressure was put on by defense necessities, and consequently the equipment has come through and been installed. But at present the kitchen work is being held up slightly by lack of a sink which is expected to arrive at any time."

By: J.A. Moore. Portland SundayTelegram.

From the Portland Sunday Telegram July 27, 1941. " A view of the Belfast Armory showing the main door of the building in the center, and left the old RCA laboratory which has been incorporated as part of the building."



Unidentified antenna start page.



Ted Bartlett, K1DPD (sk) and Nolan Gibbs, K1ALX inspect a brass cable clamp found while digging up a back stay anchor. (Belfast Reservoir WGS84 datum 44-25-10N 069-46-40W.)



The mystery antenna, most likely the South American Beverage wave antenna, back stay was buried deep. At the end we found a wooden cross arm still in good condition. This cross arm was treated with much creosote. Two back stay anchors were found. We recovered this one for the Belfast Museum.



Harry Smith of the Belfast Water District found the copper wire ground system at the Upper Reservoir.



Belfast Reservoir back stay date.



More ground wire found at the Belfast upper dam water reservoir.

Belfast Reservoir unidentified antenna.

We noticed a swath in the 1939 aerial. The swath went from the RCA brick receive building, constructed in 1926, to the Belfast upper dam reservoir. Short waves were in use by 1926 in Belfast.

We were unable to find any wire along the swath, but locals had collected RCA copper antenna wire for years.

Poles used by RCA were untreated and cut from trees on the lot. We did find some possible rotting on the ground. No insulators or cross arms found.

A ground wire system was found at the water edge of the reservoir. We also found a multiple turn coil of wire with a large tree growing through its center.

We found 2 back stay anchors. The ground system and backstay anchors are at the narrows part of the water supply.

Directly across the reservoir AT&T had established a receiving station collecting propagation data. Checking the AT&T side of the reservoir we could not find any evidence of a crossing. (In the 1939 aerial photograph there is an opening of vegetation in the direction of the AT&T building.)

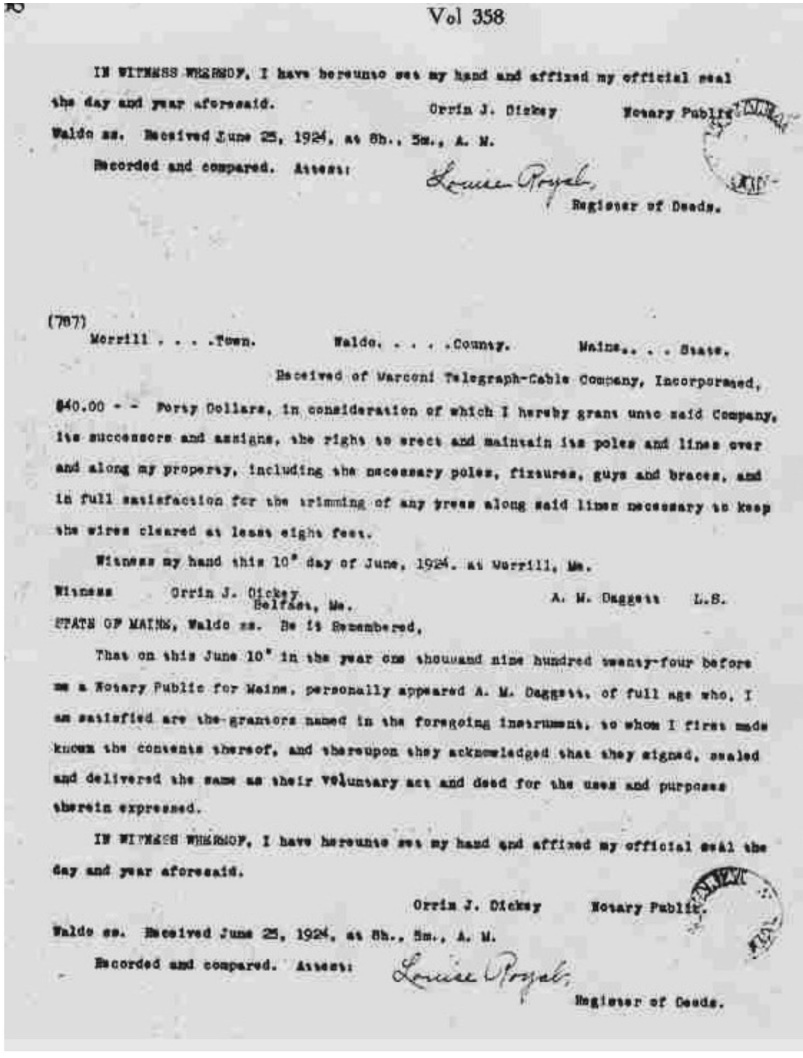
The reservoir is no longer the main water supply for the city of Belfast. Harry Smith of the Belfast Water District drained the water so we could inspect the riverbed. No evidence was found.

At Brooks, Maine, backstays were used when a specialty transmission line connected to the Beverage wave antenna and made a 90-degree direction change. (Part of the 3 Beverage antenna array)

Checked for a possible 90-degree turn reason for the backstays. There is a trace of a westerly swath to the general area of the ground system. We were unable to find any evidence of the antenna.

Artifacts from this unidentified antenna can be seen at the reservoir or Belfast Museum.

A 1924 easement for the Belfast RCA Beverage receiving antenna. Orin Dickey was talking with farmers, and performing the legal work. Farmers were paid from a few dollars to hundreds of dollars if they held out. The antenna had to go in a straight line This easement was for the 2nd Beverage antenna originating near the junction of route 7 and 131 in Waldo. It ended up 10 miles in West Searsmont. It went through Morrill, Maine becoming known as the Morrill Beverage antenna. RCA had a work contract with the Marconi Cable



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IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year aforesaid. Orrin J. Dickey Notary Public

Waldo ss. Received June 25, 1924, at 8h., 5m., A. M.

Recorded and compared. Attest: Louise Royal, Register of Deeds.

(767)

Morrill . . . .Town. Waldo. . . . .County. Maine. . . . State.

Received of Marconi Telegraph-Cable Company, Incorporated, $40.00 - - Forty Dollars, in consideration of which I hereby grant unto said Company, its successors and assigns, the right to erect and maintain its poles and lines over and along my property, including the necessary poles, fixtures, guys and braces, and in full satisfaction for the trimming of any trees along said lines necessary to keep the wires cleared at least eight feet.

Witness my hand this 10th day of June, 1924. at Morrill, Me.

Witness Orrin J. Dickey Belfast, Me. A. M. Daggett L.S.

STATE OF MAINE, Waldo ss. Be it Remembered,

That on this June 10th in the year one thousand nine hundred twenty-four before me a Notary Public for Maine, personally appeared A. M. Daggett, of full age who, I am satisfied are the grantors named in the foregoing instrument, to whom I first made known the contents thereof, and thereupon they acknowledged that they signed, sealed and delivered the same as their voluntary act and deed for the uses and purposes therein expressed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year aforesaid.

Orrin J. Dickey Notary Public.

Waldo ss. Received June 25, 1924, at 8h., 5m., A. M.

Recorded and compared. Attest: Louise Royal, Register of Deeds.

Company, part of RCA .

Two of the three Beverage antennas used by RCA in Belfast were located some distance away. Signals were brought to Belfast by specialty transmission line. That transmission line consisted of two parallel number six wires supported by Hemingray 72 insulators. The insulators were mounted on poles that could be

easily mistaken for telephone. The author holds a cross arm found at the old RCA site in 2005. It is believed to be from a specialty transmission line pole.



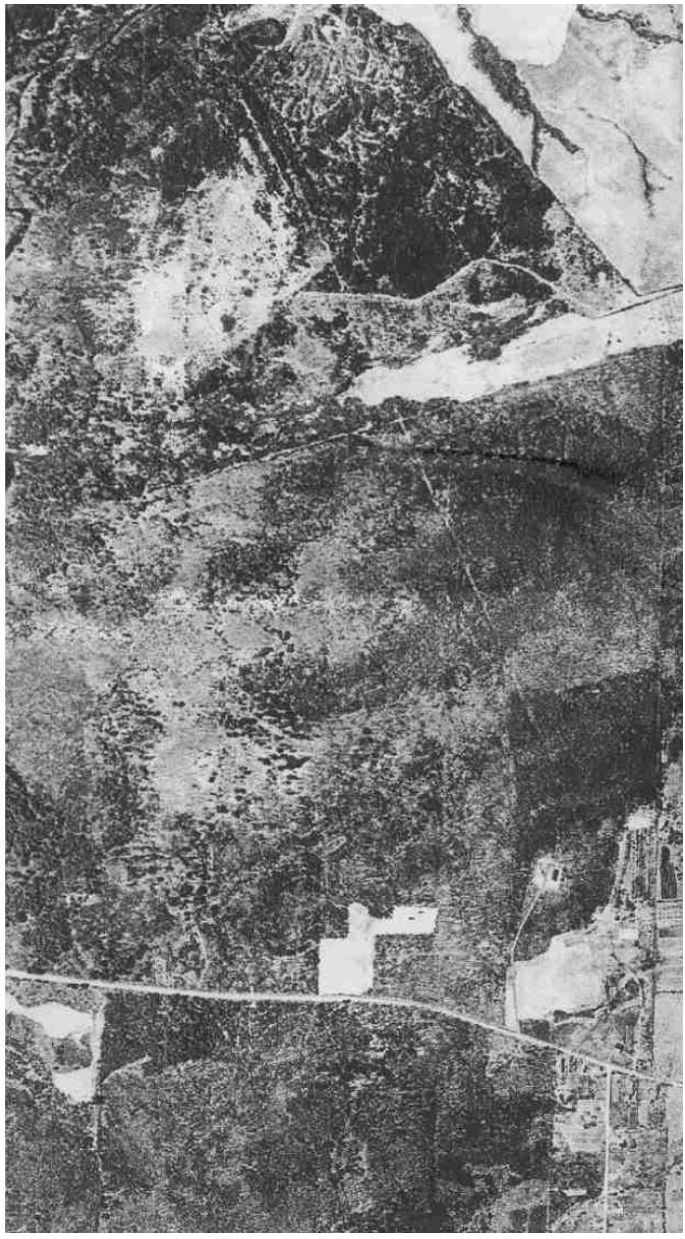
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Copper screening shielding from the original RCA receiving building. In 2005 it was found buried at the north end of the cellar indentation.

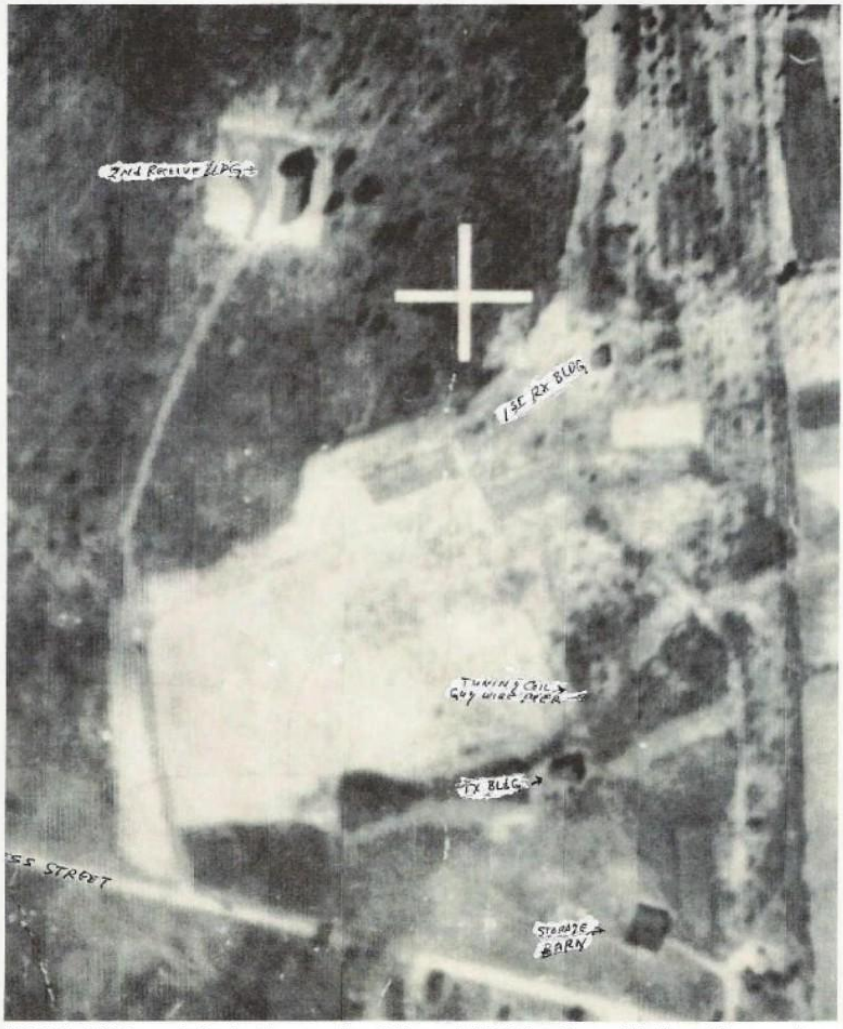




Cross arm from the original RCA receive building. In 2004, it was found buried at the southwest end of the cellar indentation.



The diagonal streak at the top center is the Moody Mountain Beverage antenna path still visible in the 1939 aerial photograph.



USDA 1939 aerial photograph of the old RCA site, with location notes.

Circa late 1925 wide angle RCA Belfast radio relay station photo print.

Photograph notes:

David Pendergast was the stepson of John Ashmore who was the engineer in charge at the time of the Belfast RCA relay station closing. David told me that the old barn in the background was used to store many support poles, cross arms and wire. The lean–to, was added to the barn about 1924, was used to store a large number of insulators. David said there were racks that went the length of the lean-to, which had every description of insulator. They were stacked from ground level up to about six feet in height. When viewing the barn, for identification the lean-to has the most accumulation of snow on the roof.

The building close to a tower in the photograph was the transmitter site. There was four antenna mast, each 150 feet in height. Three formed a triangle with the fourth mast in the triangle center.

Please note the long wave-tuning coil has had its flat ½ inch wide copper wire strap removed. A box (relay/tuning network) is in the center of the vertical wooden supports. This change over to transmitting on short waves came after Clarence Hansell built a crystal controlled automatic receive to transmit relay radio.

At the left of the photograph there is a support pole. The station at first was considered temporary. Poles were made from trees cut on the lot.
To the right of this pole, guy wires can be seen coming down to one of the large concrete 6 x 6 foot piers. On April 28, 2006 we found this pier anchor with its large iron ring. It still had a length of guy wire attached. We have a photograph of this guy wire anchor with a tag listing the GPS coordinates.

We found another antenna guy anchor with the cables still attached. This cable is on display at the Belfast Museum. It is likely that a crane was used to take the mast down. Mast once connected to the crane, guy wires could be cut to save removal time.

The white house on the right side of the photograph is on the other side of Congress Street. This house appears to have an “outhouse” in the front yard. This is actually an antenna tuning building. Short poles can be seen going to that location. Under high magnification, a wire can be seen going to a pole to the right of this house.



RCA Belfast wide angle photograph. This photograph may not be copied
From the George H. Clark Radioana Collection, Archives Center, National Museum of American History, Behring Center, Smithsonian Institution.



Frank L. Smith John Henry Mundo Carl William Erikson

Transmitter Building 1XAO Belfast 1924. "Sugar Willie" "WE"

Photograph courtesy of Don Pendergast, and the Belfast Maine Museum.



S.W. Dean Unknown F.L. Smith

Photo taken at the transmitter building front door platform 1924/early 1925.



Still visible is this part of the old dirt road that went to the 1920's radio site looking west from the Dutch/Palmer house. Left was to the old storage barn.

Bearing slightly to the right went to the original receiving, and transmitting buildings.



Above is a insulator in use at RCA Belfast circa 1925.



This insulator has damage from years of wind wear against the connected wires. It was likely connected between the tall 150 foot antenna masts.



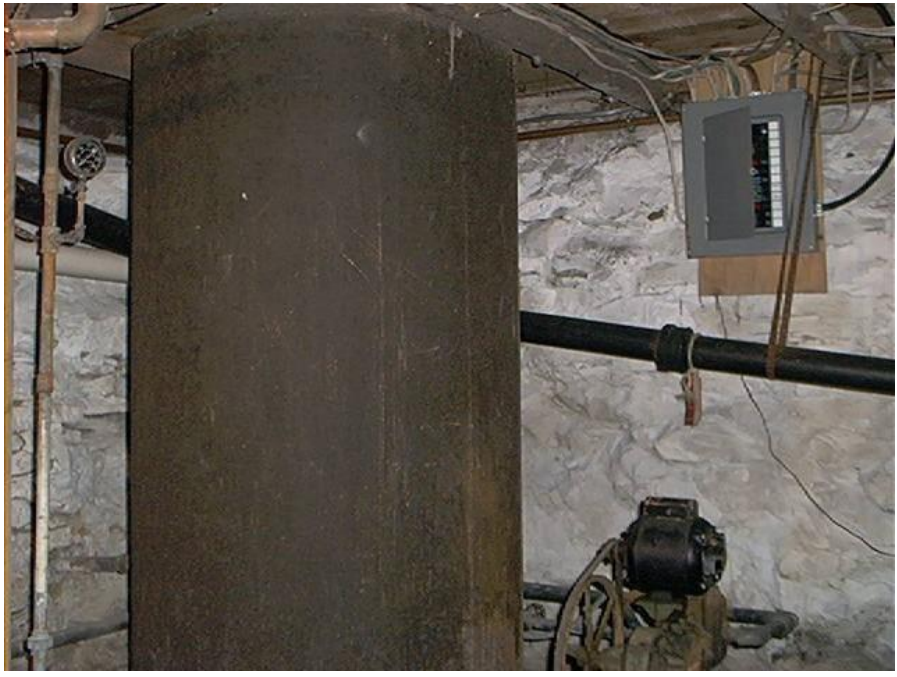
Bob Stover checks out a ground strap on a transmit antenna guy wire anchor. 44-24-47N , 069-00-23W

This fire hydrant was used in the 1920's by RCA for fire protection. It is located just south of the Dutch/Palmer house on Congress Street.



This large water tank, pump, gages, and pipes was connected to a well, and fire hydrant to provide site fire protection. Many items, except the high pressure pump, are still in the basement location. The mounting hardware for the missing pump is still there.

The house, known as the Dutch house, was purchased in 1920 by International Radio and Telegraph Company. RCA purchased the site in 1921.
The house became an office for RCA, and home for the Frank Smith family. Mrs. Smith cooked at the house and delivered meals to the on duty engineers.



R

R C A Communications Inc 97 Congress 419
Radcliffe C A grain Front 391-W
Residence 22 Miller 461-M
Railway Express Agency Inc 1 Water 92-W
Ramsdell Aubrey L r 16 Cedar 415-W
Ramsdell Nellie H Miss r 124 High 141
Ramsey L I r Northport Me 177-13
Randall Wm M dry goods Main 559
Residence 26 Church 234-W
Read H S r 4 Grove 21-M
Read Norman r Court 271
Red Cross Rooms Main 109-M
Redman Percy B Mrs r Hunt rd 73-4
Republican Journal 66 High 56
Rhoades Charles E r 18 Franklin 169-M
Rhoades Hosea r Miller 628-M
Richards Gladys R Mrs r 20 Miller 390
Ridley Roy G r Swan Lake av 193-R
Ritchie Arthur lawyer Main 113-W
Residence 3 Church 567
Ritchie Elijah r 171 High 560
Robbins Alonzo H r Alto 641-W
Robbins Arthur r Miller 583
Robbins Ethel r Searsport av 506-M
Robbins Robert M r East Belfast Me 581-W
Roberts C B Mrs r Bayside Me 576-M
Roberts Emery J r 116 Waldo av 75-12
Roberts Frank H r Swanville Me 635-R
Roberts George r 118 High 84-6
Robertson Benjamin r Poors Mills rd 476-M
Robertson Daniel I r Swan Lake av 110
Robertson James C r 63 Congress 891
Robertson James W r Northport av 209-M
Robertson Minnie Shaw r 3 Vine 515-21
Robinson A C r Lower Congress 179-4
Robinson Mae r Belmont av 322-W
Robinson Thomas r 46 Waldo av 503
Robinson's Dept Store 44 Main 512-M
Res Charles Robinson 3 Court 179-6
Rogers C C r Robbins rd 163-M
Rogers Levi L r 69 Union 189-M
Rogers Renworth R r Searsport av 325
Rogers William A r 64 Union 176-15
Roleson D J r Park rd 592-21
Roleson Roscoe r City Point Me 365
Rollins Robert r 47 Congress 359
Ruben I W r 16 Crosby 36-M
Rumney Russell r 52 Congress 497-R
Russ Robert r 2 Bell 422-M
Russell Donald R r 46 Bay View 344
Ryder Frederick T Mrs r 23 High 344

S

Sanborn M A r East Belfast Me 378-M
SANDERSON A W garage 51 High 500
Residence 61 Cedar 635-J
Sanderson Esther r 3 Charles 498-M
Sanderson Linwood r Charles 498-W
Sanker J A r Belmont av 158-W
Savage James F Rev r 47 Court 90
Sawyer Delbert R r 32 Waldo av 587-M
Sawyer Edgar W r 61 Anderson 605-W
Sawyer George W r 65 Cedar 142-M
Scott Muriel H r 157 High 689
Scribner Percy r Swanville Me 76-5
Seekins Herbert L Mrs r 12 Congress 617-M
Seeley Frank r Elmo rd 452-4
Shaw Harry A r East Belfast Me 431
Shaw Maurice P r 117 Waldo av 171-W
Shea Thomas E r Bayside Me 202-W
Sheldon Chester A grocer East Northport Me 72-22
Sheldon Coleman Mrs r 20 Condon 622-W
Sheldon Nellie Mrs r 116 Waldo av 648-M
Sheldon Rosetta Mrs r 18 Waldo av 367-W
Shell Eastern Petroleum Products Inc Water 389
Shell Filling Station High 508
Sherman Chas E r 40 High 29
Sherman E A leather board East Belfast Me 5-W
Residence 4 Church 25
Sherman George L r Lincolnville rd 435-5
Sholes Roy E r 156 Waldo av 428
Shorey Clyde r 46 Cedar 613
Shute Alfred E r 30 Waldo av 412-R
Shute Donald r 130 Waldo av 494-W
Shute Ralph D r 142 Waldo av 494-M
Shute & Shorey garage High 99
Shute Stephen S L r Park 208
Sidelinger Tom H r 5 Vine 458
Simmons Chas H r Belmont av 179-13
Simmons V A r 11 Franklin 633-W
Skerrye W F Rev r 26 High 430
Sleeper J L Mrs r 3 Church 246-M
Sleeper W F r Saturday Cove Me 74-12
SMALL FOSTER D surgeon 168 High 98
Small Loren r Swan Lake av 506-R
Small Nathan H r 29 Miller 354-M
Smalley Ella I r 4 Belmont 212
Smileys Apparel Shop
call Portland Forest 30
Smith D W r 68 Cedar 328-W
Smith Frank r Miller 625-J
Smith Frank L r 97 Congress 419
Smith Guy A dentist 83 High 676
Smith Henry r 2 Northport av 54
Smith Leonard C r 14 Court 473
Smith Olin E r Belmont av 564-21
Smith Otis B public car Cross 85-W
Residence 8 Spring 85-R
Smith & Rogers automobiles 122 High 66
Smith's Market meats 131 Main 272-R
Snow Harry C r 6 Belmont av 411-W
Snow Inez A r 8 Union 249-M
Snow Ralph r 7 Vine 209-J
Southard Roy H r Belmont rd 452-21
Southworth Edith r 50 Cedar 468-M
Spear Donald E r Lincolnville av 521
Spinney C E r 7 Union 341-W
SPINNEY F G tailor Main 600
Residence 65 Anderson 423-W
Sprague Emery G r 37 Congress 74-6
Sprague W H r Northport Me 79-M
Spring Street Garage Spring 31
Standard Oil Co of New York 80 High 101
Stanhope R B veterinarian Wash 269
Stantial A B r 83 Waldo av 63
Stantial Arthur E greenhouse Searsport av 595-M
Staples J E r 161 High 382-W
Staples Lenara L Mrs r Charles 243-W
Staples Lynwood H r Swan Lake av 168
Staples Wm H r Swan Lake av 246-J
Starrett E Lena r The Battery 425-M
Starrett Frederic D r Condon 384
State Dept of Public Welfare 71 Church 368
State Sand & Gravel Co Belmont av 602-W
Stephen's Beauty Shoppe 115 High 691-W
Stephenson D F grocer 0 High 691-M
Stephenson Elmer r 0 High 15
STEVENS CARL H surgeon 1 Court 87
STEVENS EUGENE L surgeon 38 Church 553
Stevens Herbert M r 48 Cedar 435-22
Stevens Mason I r Northport Me 91-M
Steward Maud r 1A Cedar 199-W
Stevens Richard E r Bayside Me 625-R
Stickney Care Mrs r Miller 583

WILLARD Willard STORAGE BATTERIES BATTERIES
SHUTE & SHOREY
BUICK SERVICE STATION
ARMCO CULVERTS AUTOMOBILE ACCESSORIES
WRECKING SERVICE
High and Bridge Sts.
Tel. Belfast 99
GOODYEAR TIRES

The Dutch/RCA/Palmer house as it looks in 2006. International Radio and Telegraph Company built a ship-to-shore station in 1920 on the site after conducting test in the house. RCA purchased the site, which included a large tract of land and buildings late in 1921. Frank Smith, who became an RCA radioman, lived in the house from late 1922 to many years after the RCA closing. The house was the Smith home, RCA office, and a site fire control building.



Ernest V. Amy

RCA

Belfast, Maine.

This group includes some of the amateur radio operators that made the first two way Morse code contact across the Atlantic Ocean. The call sign was 1BCG. Ernest V. Amy went to work for RCA in Belfast Maine circa May 1923. He became the engineer-in-charge December 11,1925 to May 1, 1926.

Amy is pictured in the back row, at the extreme left side. Many of the radio pioneers appear in this photograph. (Edwin Howard Armstrong is in the front row extreme left.)
For more information, there is documentation about Ernest V. Amy on the Internet.



John Wilmer Ashmore

RCA

Belfast, Maine.

John Wilmer Ashmore
John Ashmore was born in Philadelphia Pennsylvania October 11, 1897. His mother, Lillian Ashmore was living in Atlantic City, New Jersey in 1921.

His first service was on the vessel WM. N. Page June 27, 1919.
His Marconi service 2nd record indicated that he entered service Feb. 4th 1921 License # 22298 first grade issued at Baltimore. MD. He worked on the vessel Sunbeam for or licensed by the Marconi Company. (Please note the photo copied document. The notice to the operator is by David Sarnoff.)

April 17, 1924 he started work for RCA in Belfast, ME under S.W. Dean, engineer in charge. His registered code speed on his Department of Commerce Number 4159 issued 2/4/21 was 25 words per minute. He worked in Belfast until November 2, 1927.

He returned to Belfast in 1929, becoming engineer in charge, to close the station late in the year. Radio equipment was shipped to Riverhead, New York. Transmit antenna masts were taken down. From evidence found, guy wires were cut about 5 feet above the anchor piers. (This may indicate that they were taken down with a crane.) The ten-mile long Beverage receiving antennas were not removed and were abandoned.

John joined the US navy reserve, and joined the Masonic lodge while he was closing the station. He was living on Congress Street with his wife and children.

Years later in the 1950's John returned to Belfast. He looked up Frank Smith's daughter Doris. She had been previously married to a man named Pendergast. After a time John and Doris were married.
The connection to John's new wife provided a link to Don Pendergast. Don had John Ashmore's records in his attic safe in Northport, Maine**.**

Note:
I requested photographs from the Smithsonian Institution. These were for a Marconi short wave directional antenna. One of the photographs had two engineers testing an antenna. One of the engineers was John Ashmore. The Marconi Wireless Telegraph Company was researching short waves in 1923. It would appear that John had changed from ship wireless operator to working in the Marconi antenna research laboratory circa 1923.

My view of John Ashmore

John looked upset and rater bruised in his 1921 photograph. Working on shipboard can be tough. Cruise ships are not the only ones that can be dangerous. He looks much happier later in his RCA photographs.

I had conservation with John's daughter, stepson, and step nephew. They gave me the information they could remember.

John learned to be very precise and to keep documentation records. He kept records daily and upon retirement had volumes stacked high covering his entire desk. These volumes were off limits to everyone.
His family said he would check everything to a high degree. Like, if he had to go to the store, he would check his car over. Check gas, oil, tire pressures, and may wipe the motor down with a rag. It was suggested these journal book volumes may be available, and I could find a wealth of useful information.

Lets back up a little, John was well liked and enjoyed working for RCA very much. He could be depended to do the job as instructed. He liked Belfast a lot and made frequent visits to Frank Smith's residence. Frank became his father in law in the early 1950's.

After retirement John wanted to go to Riverhead for a visit with his old friends. He asked his stepson David to come along. David said John got his best dress suit on and away they went. As they entered the Riverhead building, everyone stopped work and gathered around him. David said "they treated him like a King doing everything short of bowing down."

In 2004 I was getting excited, hoping to find all of John's documentation as to the day by day activities at RCA Belfast. I called John's daughter who I had been told had them. She told me that her mother had despised the time lost on the books, and also the books. She said, on the day John died, she burned every last book.

John may have suspected something could happen. Because, he left his Medical records, licenses, retirement papers and military papers at the Donald Pendergast house in Northport, Maine. (Records I found)

Port of Port Arthur, Tex.



John Wilmer Ashmore

(Signature of seaman to be written across lower left-hand corner of photograph.)



(Left thumb print.)

NAME JOHN WILMER ASHMORE

Nationality U.S. Citizen

Place of holder's birth Pennsylvania

Place of father's birth "

Place of mother's birth "

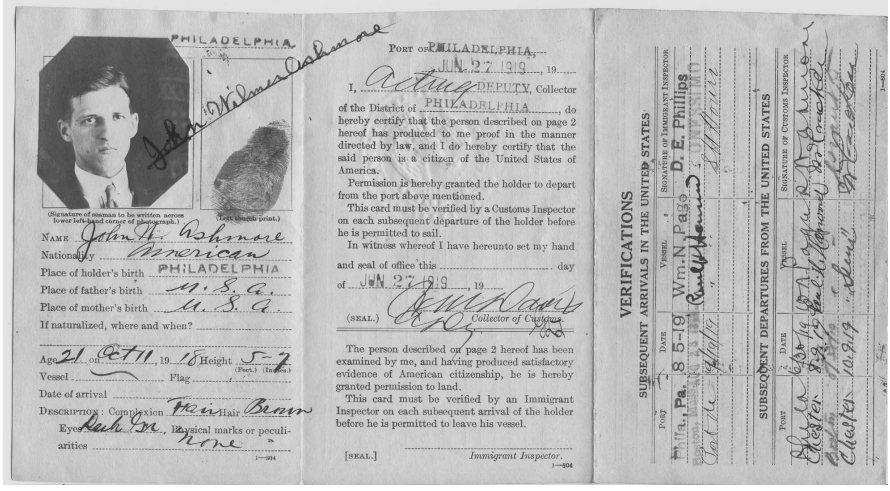
If naturalized, where and when? - - -

Age 24 on Oct. 11 19 21 Height 5 (Feet.) 7 (Inches.)

Vessel SUNBEAM Flag Am.

Date of arrival Oct. 7, 1921

5/10/2005



PHILADELPHIA

John H. Wilmore Johnmore

(Signature of seaman to be written across lower left-hand corner of photograph.) (Left thumb print.)

NAME John H. Wilmore
Nationality American
Place of holder's birth PHILADELPHIA
Place of father's birth U. S. A.
Place of mother's birth U. S. A.
If naturalized, where and when?

Age 21 on Oct 11, 19 18 Height 5-7 (Feet.) (Inches.)
Vessel Flag
Date of arrival
DESCRIPTION: Complexion Fair Hair Brown
Eyes Dark Gr. Physical marks or peculiarities None

1—924

PORT OF PHILADELPHIA,
JUN 27 1919, 19

I, Actg DEPUTY, Collector of the District of PHILADELPHIA, do hereby certify that the person described on page 2 hereof has produced to me proof in the manner directed by law, and I do hereby certify that the said person is a citizen of the United States of America.

Permission is hereby granted the holder to depart from the port above mentioned.

This card must be verified by a Customs Inspector on each subsequent departure of the holder before he is permitted to sail.

In witness whereof I have hereunto set my hand and seal of office this day of JUN 27 1919, 19

(SEAL.) Collector of Customs.

The person described on page 2 hereof has been examined by me, and having produced satisfactory evidence of American citizenship, he is hereby granted permission to land.

This card must be verified by an Immigrant Inspector on each subsequent arrival of the holder before he is permitted to leave his vessel.

[SEAL.] Immigrant Inspector.

1—924

VERIFICATIONS

SUBSEQUENT ARRIVALS IN THE UNITED STATES

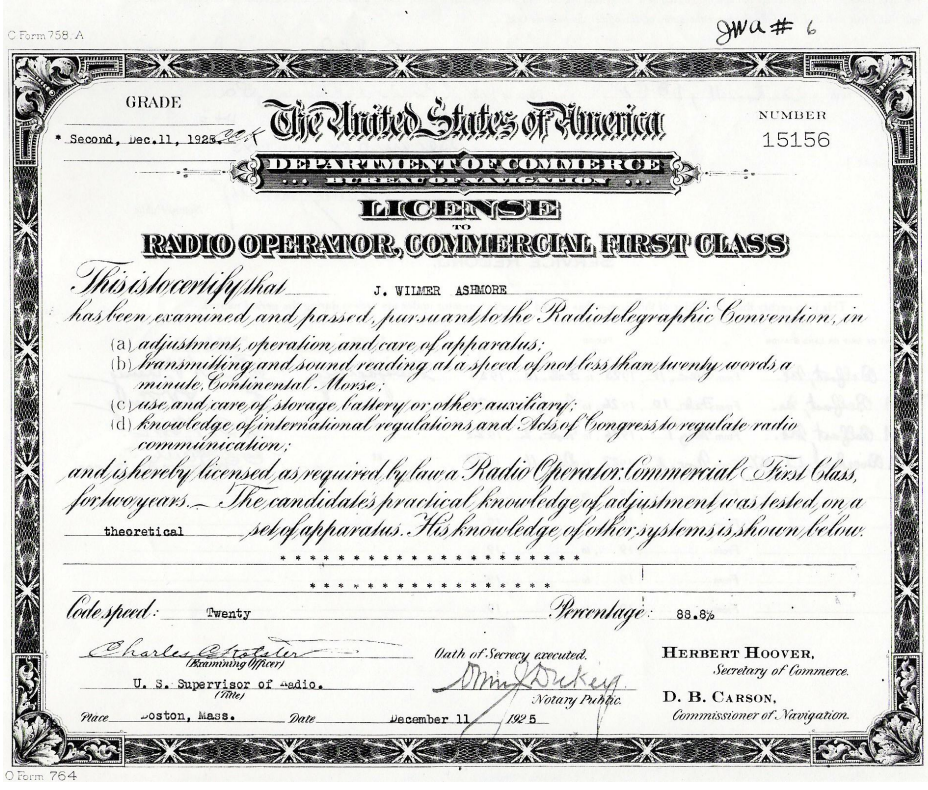
Port	Date	Vessel	Signature of Immigrant Inspector
Phila., Pa.	8-5-19	Wm. N. Page	D. E. Phillips
Gal. Tex.	4/6/20	Rutlandian	[illegible]

SUBSEQUENT DEPARTURES FROM THE UNITED STATES

Port	Date	Vessel	Signature of Customs Inspector
Phila. Pa.	8-5-19	Wm. N. Page	[illegible]
Chester, Pa.	8-6-19	Rutlandian	[illegible]
Phila. Pa.	10-2-19	Chalfont	[illegible]

1—924

John Ashmore's license compliments of Don Pendergast and the Belfast Museum.



C Form 758. A

JWA # 6

GRADE

Second, Dec. 11, 1925.

The United States of America

NUMBER

15156

DEPARTMENT OF COMMERCE

BUREAU OF NAVIGATION

LICENSE

TO

RADIO OPERATOR, COMMERCIAL FIRST CLASS

This is to certify that J. WILMER ASHMORE

has been examined and passed, pursuant to the Radiotelegraphic Convention, in

(a) adjustment, operation and care of apparatus;
(b) transmitting and sound reading at a speed of not less than twenty words a minute, Continental Morse;
(c) use and care of storage battery or other auxiliary;
(d) knowledge of international regulations and Acts of Congress to regulate radio communication;

and is hereby licensed as required by law a Radio Operator, Commercial First Class, for two years. The candidate's practical knowledge of adjustment was tested on a theoretical set of apparatus. His knowledge of other systems is shown below.

* *

* * * * * * * * * * * * * * * * * * *

Code speed: Twenty Percentage: 88.8⅔

Charles E. Chatelain
(Examining Officer)

U. S. Supervisor of Radio.
(Title)

Oath of Secrecy executed.

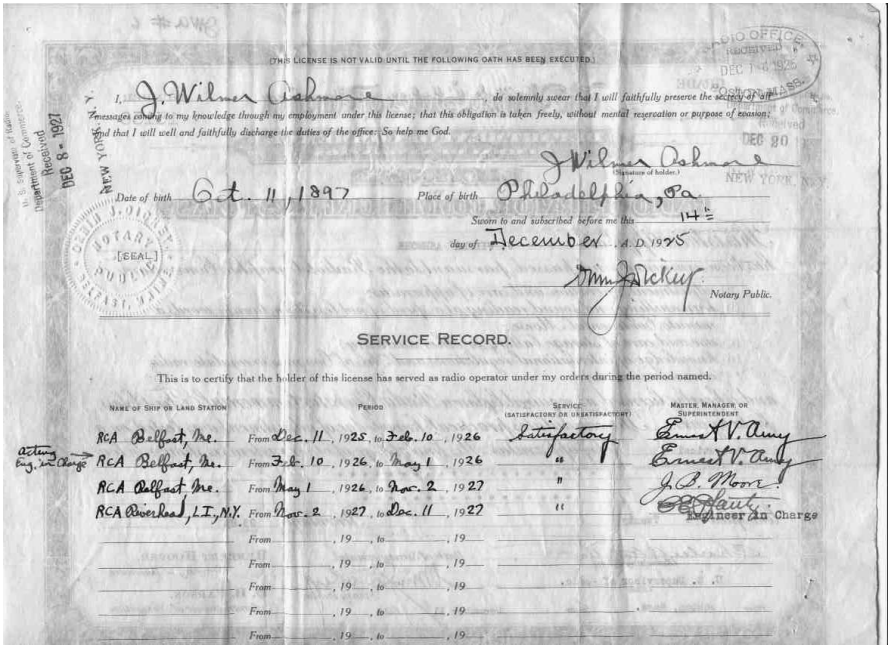
Mina L. Dukey
Notary Public.

HERBERT HOOVER,
Secretary of Commerce.

D. B. CARSON,
Commissioner of Navigation.

Place Boston, Mass. Date December 11 1925

C Form 764



[THIS LICENSE IS NOT VALID UNTIL THE FOLLOWING OATH HAS BEEN EXECUTED.]

I, J. Wilmer Ashmore, do solemnly swear that I will faithfully preserve the secrecy of all messages coming to my knowledge through my employment under this license; that this obligation is taken freely, without mental reservation or purpose of evasion; and that I will well and faithfully discharge the duties of the office. So help me God.

J. Wilmer Ashmore
(Signature of holder.)

Date of birth Oct. 11, 1897 Place of birth Philadelphia, Pa.

Sworn to and subscribed before me this 14th day of December A. D. 1925

Wm. J. Dickey
Notary Public.

[SEAL]

U. S. Supervisor of Radio, Department of Commerce, Received DEC 8 - 1927

RADIO OFFICE, RECEIVED DEC 14 1925, U. S. Supervisor of Radio, Department of Commerce, Received DEC 30

SERVICE RECORD.

This is to certify that the holder of this license has served as radio operator under my orders during the period named.

NAME OF SHIP OR LAND STATION	PERIOD	SERVICE (SATISFACTORY OR UNSATISFACTORY)	MASTER, MANAGER OR SUPERINTENDENT
RCA Belfast, Me.	From Dec. 11, 1925, to Feb. 10, 1926	Satisfactory	Ernest V. Amy
Acting Eng. in Charge RCA Belfast, Me.	From Feb. 10, 1926, to May 1, 1926	"	Ernest V. Amy
RCA Belfast Me.	From May 1, 1926, to Nov. 2, 1927	"	J. P. Moor
RCA Riverhead, L.I., N.Y.	From Nov. 2, 1927, to Dec. 11, 1927	"	E. E. Haut, Engineer in Charge
	From ____, 19__, to ____, 19__		
	From ____, 19__, to ____, 19__		
	From ____, 19__, to ____, 19__		
	From ____, 19__, to ____, 19__		
	From ____, 19__, to ____, 19__		

Samuel W. Dean

RCA

Belfast, Maine.

Samuel W. Dean was the engineer-in-charge at the time of the historical radio broadcast in Belfast.

For scholarly use:
From Harvard University records: Do not publish without Harvard permission.

May 1923 Secretaries second report. Samuel Winthrop Dean.
Born: at Cambridge, Mass August 29, 1897
Son Of: Francis W. and Lydia C.H. (Cushing) Dean.
Prepaired at: Lexington High School, Lexington, Mass.
Married: Ida Mae Hoge, at Honolulu, T.H. November 24, 1920
Child: Frances Elizabeth, born March 19, 1922.
Occupation: Radio Engineer
Permanent Mailing Address: 4 Elliot Road, Lexington, Mass.

I left college in April 1917, and became engaged in radio work being conducted for the Government by a Cambridge concern. In June 1916 was called to active duty in the Naval Reserve as Radio Electrician, and was later promoted to Ensign. In July 1919 I entered the employ of the Radio Corporation of America, and was transferred to Marshall, Calif. And later to the Hawaiian Islands. I have been located either in Hawaii or California for the past three years. In August 1922, I returned to Lexington, Mass., and am now again attending Harvard.

Excerpt from the Harvard 1929 secretaries report:
In the fall of 1922, I returned to Harvard to complete my studies interrupted by the war. In 1023 I received the degree of A.B. as of 1919, and entered the employ of the Radio Corporation of America. After two years of development work at their Belfast, Maine experimental station, I entered the employ of the American Telephone and Telegraph Co. in 1925, being employed at their Houlton, Maine radio station until 1927, when I was transferred to their New York office. During this period I was engaged in development work on the Transatlantic Radio Telephone System In 1925 I was one of the authors of a paper, “Radio Relaying,” presented before the Institute of Radio Engineers, and am also one of the authors of a paper, “The Receiving System for Long-Wave Transatlantic Radio Telephony,” presented before the same institute in 1928.

Excerpt from the Thirteenth anniversary report 1944.
Samuel Winthrop Dean
Died Jan. 8, 1931 Boston, Mass.
Radio communications was Winthrop Dean’s lifelong interest. When, but nine years old he had amused his schoolmates by installing a microphone in a bird’s

nest near the window, and leading wires to a reproducer in the schoolroom, so that .the conservation of the feathered family was repeated---with alarming magnification---for the benefit of the class. Later he built his own headphone set, secured a license as an amateur radio operator, joined the Independent Wireless Company of Medford, and became a charter member of the American Radio Relay League. He also qualified for a commercial operator's license and spent some of two summer vacations as a radioman at sea. In 1914 he was elected a Junior Associate of the Institute of Radio Engineers. At Harvard many of his spare hours were devoted to research work in the Cruft High Tension Laboratory, although he also took part in the productions of the Harvard Dramatic Club.

On the outbreak of the war Winthrop had enlisted as a reservist, but was not called to active duty immediately. Instead he was removed from college and placed as a civilian engineer in a firm producing radio equipment for the armed services and our allies.

In June 1919, Winthrop went to work for the Radio Corporation of America, a company then being organized at the request of the government to take over the American end of all international radio communication channels. With this concern he worked in New York, Seattle, California, and Hawaii where he installed and supervised long distance radio receiving stations, and stratified some of his desire for traveling. In Hawaii, he met and married Ida Mae Hoge.

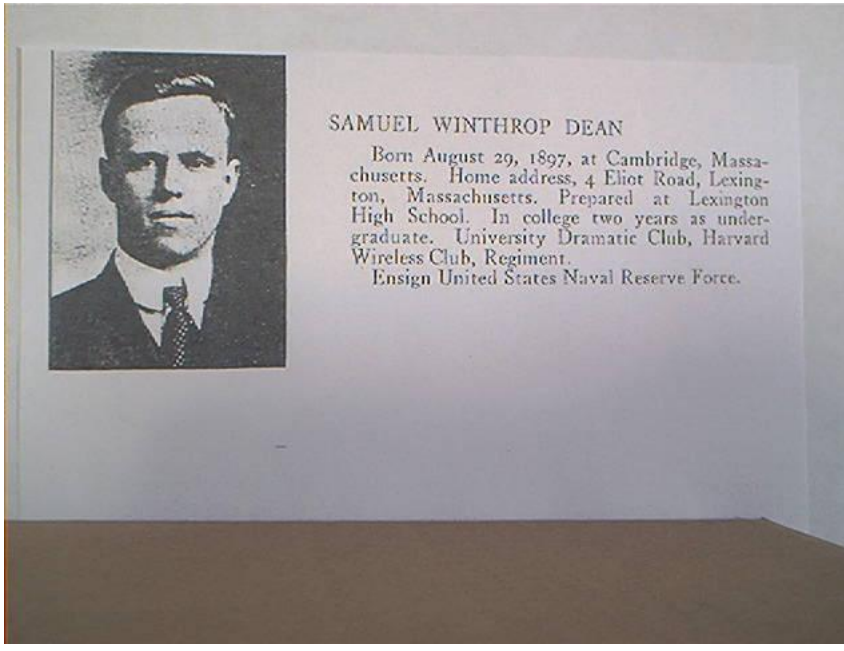
In 1922 he returned to Harvard and after a year of study received the degree of A.B. (honoris causa) in June 1923. There after, he went back with the Radio Corporation of America and with them did two years of development work at their Belfast, Maine, experimental station. In 1925 he joined the American Telephone and Telegraph company and was employed at their radio station at Houlton Maine, where he collaborated in the design and installation of the first commercial transatlantic telephone system. During this time he published a number of scientific papers.

In 1928 Dean was lent by his employers to the British Post Office and worked at St Andrews, Scotland, for nearly a year. Shortly after his return home he developed a common cold which was followed by general streptococcus infection, finally in an abscess of the lung.

"Those of us who truly knew Winthrop Dean," wrote our classmate, Thomas T. Hopes, "counted his friendship a precious possession. Always inquiring, he was not didactic; pleased to present a point convincingly, he was yet more eager to be convinced him self of some new thing; ready to teach, he was keenly anxious to learn. With a driving interest in one subject, physics, he gathered around him a Harvard a small group of disrespectful but devoted admirers.

The members of that group found him an example of true devotion to science, of generous cooperation of honest, un-self conscious workmanlike thinking, which permanently influenced their lives. In this influence, as in his accomplishments, he lives yet. Can any man achieve a finer immortality than the double one of the incorporation of his ideas in the history of a science, and the preservation of his methods and character in the grateful recollection of his friends.?"

HARVARD NINETEEN NINETEEN CLASS ALBUM.



SAMUEL WINTHROP DEAN

Born August 29, 1897, at Cambridge, Massachusetts. Home address, 4 Eliot Road, Lexington, Massachusetts. Prepared at Lexington High School. In college two years as undergraduate. University Dramatic Club, Harvard Wireless Club, Regiment.

Ensign United States Naval Reserve Force.

From the April 29, 1930 census: Brooklyn, New York.

Dean, Samuel W., Head of household, male, white, age at last birthday 32,age at first marriage 23; birthplace-(person, father, mother) Massachusetts; citizenship-yes; occupation- engineer, electrical.

Dean, Ida M. Wife-h, female, white, age at last birthday 31, age at first marriage 21, (person and father born in Texas, mother born in TN.) citizen-yes.

Dean, Frances. Daughter, female, white, age last birthday 8, (person birthplace-California; father's birthplace-Mass.; mother's birthplace-Texas)

Dean, Helen. (P-10), Daughter, female, white, age last birthday 5, (person birthplace Maine; father's birthplace Mass.; mother's birthplace Texas.)

Ida Mae Dean's death record.
Birth date 07/10/1898. Mother's maiden name-Davis, father's last name- Hoge, sex-female, birthplace-Texas, death place-Los Angeles, and death date 02/08/1988.

Clarence W. Hansell

RCA

Belfast, Maine.

This excerpt is from the David Sarnoff Library, Pioneering in Electronics.
http://www.davidsarnoff.org/kil-chapter01.htm

"At the time of the Marconi discovery and test, Hansell, Lindenblad and Peterson were preparing to test the possibility of relaying European long-wave signals from Belfast, Maine to Long Island by means of a short wave system operating at frequencies from 120 down to 140 meters. Peterson was in fact, en route at the moment to Chatham, Mass., to make improvements on the short-wave transmissions from Belfast. This test soon confirmed the (p.20) conclusion of the Marconi transatlantic experiment. From this point on, long distance communications by short –wave became the major concern of the RCA group and of the communications business.

The growing activity was now crowding the research and engineering facilities at Riverhead. In 1925, a new laboratory was established at Rocky Point, Long Island to study problems in transmission. The question of reception remained in the hands of the group at Riverhead. The transmitter work fell largely under the active supervision of Hansell, who already had made a pioneering contribution in the application of quartz crystals for the precise frequency control at the Belfast transmitter equipment.-Apparently the first commercial use of this now standard technique."



Excerpt from the antenna special on hard-core-dx.com
Norval Dwyer interviewing Harold Beverage and H.O. Peterson.

(Dr. Harold H. Beverage)

BEVERAGE: Yes, but before we get to that, I want to see if Dr. Peterson can help me out. After the Marconi 32 meter work, which started the shortwave revolution in the fall of 1924. I want to go back a little bit and bring in something that Dr Hansell did. This station we had in Belfast, I mentioned, we relayed signals down to Riverhead and then sent them over wire lines into New York. Hansell built a shortwave transmitter that worked on 100 meters, which was around the wavelength that Marconi and Frank Conrad had been playing with. One of the great difficulties there was that things were very unstable. They would wobble all over the place and selected fading would make it mushy sounding. Dr Hansell went to my good friend, of the General Radio Company. Eastman gave him the watch crystal. He applied that to this transmitter with some tricks to keep the thing from feeding back and making it self-oscillate. He had the first transmitter of appreciable power with crystal control. The inventors of quartz crystal were Dr. Cady and Dr. Pierce of Harvard. I think that Dr. Pierce had a small crystal-controlled oscillator in the laboratory. This was the first time a quartz crystal had been used to control a transmitter on the air with some power. It is now 100%, every transmitter in the world practically is crystal controlled. It was an outstanding breakthrough. After the short waves got going, everybody was trying to build a shortwave transmitter and receiver too. Hansell thought that if 32 meters get through well in daytime, 15 meters ought to get through better. So he proceeded in 1926 to build the highest frequency transmitter that had ever been built with any appreciable power. It was to work on 15 meters. The thing was rather amazing because it worked on 15 meters and the antenna was about a half a wavelength long which would be 25 feet.

Clarence Hansell kept an extensive notebook while at Belfast. The Belfast Museum has a photocopy of this notebook. There are some 45 pages of information about wave antennas, and experimental transmitting test results. The Moody Mountain (Beverage) wave antenna data is included.

At the 1st receiving building indentation in 2004 we found the Hansell copper-weld wire that was used for his 1924 Belfast experiments. These experiments are documented in a copy of his notebook at the Belfast Museum. Green wire patches are traces of copper oxide.



Donated by Mrs. Clarence W. Hansell in 1970

"Clarence Weston Hansell was born on January 20, 1989 at Medaryville, Indiana. As a country farm boy he attended the one elementary school of White Post Township, Pulaski County, and the Medaryville high school, from which he graduated in 1915. He attended Purdue University, receiving the Bachelor's of Science degree in Electrical Engineering in 1919 and an honorary Doctorate of Electrical Engineering in 1952.
From the age of thirteen he served during the summer vacations as a farm hand on various Indiana farms. In 1917 he spent the summer as a lathe operator for Ross Gear and Tool Company in Lafayette, Indiana. In the summer of 1918 he took an operators training course with the Commonwealth Edison Company in Chicago. In the fall of the same year he was enrolled in the student Army Training Corps of the U.S. Army, stationed at Purdue University, until after the end of the first World war.

After graduation, from June 1919 to May 1920, he was employed to the test training course of the General Electric Company at Schenectady, N.Y., during a portion of which time he was in charge of factory test of Alexanderson high frequency generators. Urged by the U.S. Navy, the General Electric Company organized and incorporated the Radio Corporation of America for the U.S. application of the Alexanderson's generators.

From may to September 1920 he was in the Radio Engineering Department of the General Electric Company, engaged in testing and placing in service trans-oceanic radio transmitting stations for the Radio Corporation of America. Some of the work was done at the former Marconi station, located on the Raritan River between New Brunswick and Bound Brook, New Jersey.

From September 1920 until 1929 he was employed by the Radio Corporation of America, during which time he was engaged in developing and placing into service the transmitting facilities with which RCA established its world-wide public service radio comm8nications business. His activity was taken over by RCA Communications, Inc. in 1929 and then by RCA Laboratories in 1942."

Richard E. Mathes

RCA

Belfast, Maine.

Richard E. Mathes worked at the Belfast RCA radio station in 1923 and 1924 from the Republican Journal newspaper coverage.

July 17, 1923 page 5, column 1, Republican Journal stories.

"Richard Mathes of Minneapolis, Minn., employed here at the radio plant on Congress Street, came very near drowning Monday while canoeing off the Battery shore. When about 60 yards form shore he upset the canoe and fell overboard. He knew nothing about salt water and could not swim. Hanging on to the overturned canoe he screamed for help, and Alfred Maddocks, who was painting on the Day Cottage, went to his rescue in a row boat. Residents at the Battery state that Mr. Maddocks used the best of judgement in rescuing the young man, and is deserving of praise. Mr. Mathes was in the water about three quarters of an hour before he attracted the attention of people on shore."

From a Social Security death search: Richard E. Mathes birth was 28 April 1902, and death was 6 July 2004. Last residence was Nokomis, Sarasota, Florida. Social Security number was 081-30-2268, issued in New York.

From the Harold Beverage history: R. E. Mathes was listed on the team of some of the most able communications research men and engineers in the radio field.

Betsy Paradis, Belfast Library archives, contacted the library in Sarasota, Florida. Richard Mathes obituary was found.

"Richard Mathes, 102, Nokomis died July 6, 2004. Born April 28, 1902 in Minneapolis, he moved to Orlando in 1961 from Pennsylvania and then to Sarasota in 1969. He graduated from the University of Minneapolis, and was a research engineer before retiring. He served as a commander in the Navy during World War II, and after retiring was a member of the Navy reserve and Coast Guard Auxiliary. He was a member of the Wood Carvers Association, and was a Protestant.

Survivors include daughters Jane E. Brown of Nokomis, and Phyllis A. Miller of Pleasant Valley, Conn: five grandchildren: and four great-grandchildren.

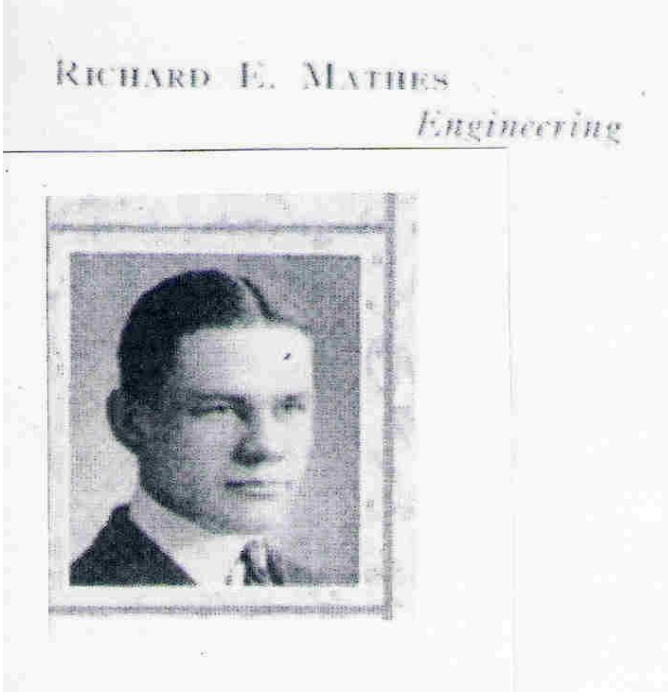
National Cremation Society, Venice chapter, is in charge."

Betsy at the Belfast Library contacted the University of Minnesota. Information from Karen Klinkenberg.

"In regard to your request for information about Richard E. Mathes, the Minnesota Technology, a magazine written by students in the University's Institute of Technology has listed in its index, entries for R.E. Mathes and the author of three articles. The one your patron might be most interested is titled:

“Pictures by Radio—Another Seventh wonder: Flashing pictures across the ocean, by R.E.Mathes, E ’24. Photoradio Engineer, Pacific Division, Radio Corporation of America. The article also features a photo with a caption “General View of the San Francisco Photoradio Installation. R.R. Mathes is in the photo inspecting one of the machines.

Richard Mathes is in the RCA Belfast 1XAO seven engineers group photograph taken in 1924.



Carleton F. Maylott

RCA

Belfast, Maine.

We were trying to find the descendants of Carleton Maylott. Ran the name as a search on the internet. Results came back as:

Carleton Maylott W2YE 1993. Served as Vice President for Chapter #65 and held the QCWA Century Club award. An Electrical engineer, technical writer, and teacher. His radio experience goes back to the heyday of the giant RCA shore stations along the East Coast where as a student in 1925 he helped to break in a Trans-Atlantic radio station. In 1927 worked on primitive overseas reception of TV pictures. Worked at Cornell Aeronautical Labs, Sylvania Electronics, and Bell Aircraft.

Note: Maylott was the RCA receiver expert sent up from Riverhead to help with the Historical broadcast.

I ran the call sign W2YE on QRZ and found Carleton's son, now licensed, has his father's call sign. We made phone contact and exchanged information. I obtained his fathers photograph for the Belfast Museum. He said "my father rarely went without his glasses as in this photograph." He said in a 2007 email that his father often spoke of being at the receiver controls at Belfast when the chimes of Big Ben was first broadcast in America.

Maylott at Riverhead practicing his receiver tuning
January 26, 1925, just before going to Belfast, Maine



John B. Moore

RCA

Belfast, Maine.

We have limited knowledge of John B. Moore, but what we do have is interesting.

An excerpt from a Harold H. Beverage interview with Nebeker March 16-17, 1992.

(This incident took place at Riverhead, Long Island, New York.) BEVERAGE:" Oh, yes Mr. Taylor was a wonderful man to work for, and I will tell you a little funny story. One of my men, John B. Moore, was a labor union man. When RCA had a party, he says, "don't go, Don't go !" They're trying to put something over on us" Then one time he came in and said they wanted to form a labor union for the research group. Which I opposed very much because that didn't fit research people. You give the big salaries to the big inventors, not just how long they're been hanging around. So Moore wanted me to have Mr. Taylor set up a labor union for the research group. Of course I discussed it, and Mr. Taylor agreed that it was not appropriate for the research group. So one day Moore came to my office and said "Did Mr. Taylor approve the labor union?" I said "No he did not." He said, "Mr. Taylor is a nincompoop!" (chuckling) Well Mr. Taylor was the nicest man I ever knew. And to have my boss—Have Mr. Taylor—called a nincompoop (I don't know what that is) made me so mad, that for the first time I laid my hands on anyone. I took him by the collar and the belt on his pants and shoved him out of my office. (Chuckling) I'd never laid my hands on anybody before, but to call the nicest man I ever knew a nincompoop, well I just---(Chuckling) Oh it passed over all right, but I just couldn't stand him when he called my boss a nincompoop."

Next we find from John Ashmore's license that J. B. Moore has, at Belfast, signed Ashmore's service records starting May 1st 1926 as Manager. (Belfast engineer-in-charge. (Ashmore went back to Riverhead November 2, 1927, returning to Belfast in 1929 to close the station)

From the January 19, 1928 RJ. John B. Moore gave a talk to the Belfast Rotary Club at the Windsor Hotel.

The only other reference made to John Moore in the RCA organization was in A reunion at KPH in California. (Many Belfast RCA engineers went to work in California during the Great Depression). The reunion was held at Point Reyes, California in December 1979. There is a group photograph with a young fellow listed as John Moore, who may possibly be the son of our John B. Moore.

Hedley B. Morris

RCA

Belfast, Maine.

Hedley B. Morris
He became the engineer in charge at RCA Belfast after John Moore. He stayed on until October 1929 until John Ashmore took over to close the plant down. Hedley was sent to the Marion, Massachusetts facility.

Hedley did not have any children. At the time of printing we do not have his photograph.

From the San Rafel, CA Independent Journal 7-2-77.

Obituaries:
"Hedley B. Morris

Private funeral has been held for Hedley B. Morris of Carte Madera. Morris 77 died yesterday after brain surgery. He had fallen late Thursday while walking his dog.

Morris was born in Oakland. He was a graduate of the University of California at Berkley.

He was an employee for the Radio Corporation of America for 44 years and served as a construction engineer in Hawaii before retiring in 1971.

Morris was in the navy during both wars. He was commander of the navy radio station at Wahiawa, Hawaii during World War II and after the war was a member of Gen. Douglas Mac Arthur's staff in Tokyo. He retired at the rank of Captain.
Returning to RCA in 1950,Morris worked a number of locations through out the world including 5 years in Cuba. He transferred to Hawaii in 1959.

Morris was a life member of Masonic lodge 371 in Honolulu. He was also was a member of the Marin County SIRS.

He is survived by his wife of 51 years, Gladys Morris of Cote Madera, and his sister, Lucy Spencer of Oakland.

The family prefers memorial contributions to Shriner's Hospital for Crippled Children in San Francisco or a favorite charity."

Albert B. Moulton

RCA

Belfast, Maine.

Albert B. Moulton

We identified six of the seven engineers in the group photograph taken in the fall of 1924. The remaining engineer would have to be Albert B. Moulton. He came to Belfast in May of 1923, and stayed on until the 1929 The person in the photograph, we have been listing as unknown, is a thin person that has his arms crossed This same person is in a later circa 1927 photograph taken at the new receiving building. This rules out other engineers, and he must be Albert Moulton.

We do not have an absolute ID for Albert Moulton. We would like to have a family verification or a photograph with his name

We were not able to find out much about Albert Moulton.
The 1930 census for Queens, State of New York: Moulton's birthplace was listed as Massachusetts and occupation: engineer, radio. His wife was listed as Ray L. born in Oregon. Her occupation was listed as secretary, real estate. No children were listed. Albert was 34 years old at the time of the census, his wife 30 years old.

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Many RCA engineers went to California coastal stations in the 1930-depression period. Albert Moulton was no exception. Photograph crops are listed earliest date first. The last photograph of Moulton is not at Belfast, but KPH, RCA California.

From the Belfast RCA seven engineer photograph fall 1924.

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This Cropped photo is from the Antique Wireless Association Journal 2006
Interior of the new brick receiving building circa 1927.





From the KPH California web page circa 1930's.

John Henry Mundo

RCA

Belfast, Maine.

John Henry Mundo was born January 29, 1900 in Boston, Massachusetts, the son of John and Alberta (Smith) Mundo.

John joined the navy, at an early age, in World War I. While John was away, his mother remarried a man from Belfast, Maine and moved there.
John received a commission and became the youngest officer in the navy at the end of the war. His navy tour of duty over, John moved to Belfast to be near to his family.

He found work-cutting wood in Morrill, Maine. He found room and board at the home of Herbert and Abby Merriam. The wood cutting work was for the Marconi Cable Company part of the Radio Corporation of America.
A swath was being cut was for the center Beverage antenna of a. 3-element antenna array.

Evenings, John was brushing up on his navy Morse code and wireless radio. Josephine,(now Mrs. Chester Grady) one of the Merriam children, in 2005 said "John married Mabel Philbrick shortly after he went to work as an engineer for RCA." John and Mabel were married May 10, 1924. (This date has helped to establish the time of RCA photographs where John was present.)

From the 17 Sept. 1925 RJ newspaper. Mr. and Mrs. John Mundo have moved into a house on the corner of Charles and Spring Street. A family member on Mabel's side of the family said, "John and Mabel moved from apartment to apartment trying not to be next door to his mother".

John also had worked at the Marsh Road sub-station that processed signals from the Morrill and Brooks Beverage antennas. Josephine and her family stopped for a short visit, one day when they saw his car there.

The Mundos had a daughter Connie born while they were in Belfast. When RCA Belfast closed late in 1929, John and family went to the RCA station at Riverhead, New York. Shortly he was assigned to the Point Reyes station in California. He stayed there until the outbreak of World War II. John's navy commission was activated for the tour of duty. John told a family member;
At one point there were unidentified code signals at the Panama Canal. The canal was used to move American warships from ocean to ocean. These signals became of great concern and he was assigned to find them. He went to the canal on the secretive battleship X. John found the source of the signals, which were Russian who were on our side during the war. He picked up his career at RCA at the end of the war.

After retirement John and family moved back to Belfast. He moved into the Knight apartments on Waldo Avenue. He had a dog-named Chummy. Wherever John went he always returned to Belfast.

John loved playing poker at the Belfast American Legion His friends there said he also loved playing golf and beach combing, They said he had received medals for his war time service, and a special American Legion award honor.

John's Connie married a top executive of the Standard Electric Company in Rockland. In his lifetime John had six grandchildren, 7 great grand children, and one great, great grandson. John had moved to Rockland for a while to be close. Later, John was in a nursing home in Camden. He spent his final days at Togus Veteran's hospital.

John's daughter, Connie had passed away when I tried to find her in 2004. The grandchildren do not have knowledge of John's RCA work.

26 February 1993. "John Henry Mundo 93, of Augusta, formally of Belfast died 26, 1993, at the Veterans home, Augusta after a long illness. He was born in Boston, Mass, January 29, 1900, the son of John and Alberta (Smith Mundo Jr. He was a Navy veteran of World War I and World War II and had been a member of been a member of the American Legion in Belfast since World War One. He had worked for RCA for over 40 years as a Radio Engineer in Riverhead, N.Y., and Point Reyes Station in California. He loved beach combing and was an avid Golfer. He is survived by one daughter Connie Mundo of Rockland: Six grand children, seven great grand children, and one great, great grandson.



Frank L. Smith

RCA

Belfast, Maine.

Frank L. Smith was born in Ellsworth, Maine, and moved to Belfast at a young age.

When RCA purchased the wireless radio station in 1921, Orin Dickey became the caretaker. The RCA site included a 97 Congress Street house that became vacated. Frank Smith and his family moved into the house before 1923. Frank went to work for the Radio Corporation of America as a handy man. Frank's family said, "He could take on almost any task." He soon became a Radio Corporation of America radio man.

The 97 Congress Street house and the Smith family became a focal point for the engineering staff. Frank's wife, Adelaide started cooking meals, and delivered them to the on duty engineers. Visiting RCA personnel could stay in a spare room or in a close by bungalow. There was another bungalow, known as the bunkhouse, located slightly north of where the brick receiving building was built in 1926. This bunkhouse is evident in a Belfast Water Department map, a Republican Journal clip, information from engineer John Ashmore's relatives, and an early aerial photograph.

Frank is pictured in three circa 1925 Belfast photographs.

Frank stayed on as the caretaker after the 1929 RCA closing until the 1940 City of Belfast sale of the RCA site. (The 97 Congress Street house was sold to Frank.)

From the May 1, 1941, page 5, column 1 RJ. "Frank L. Smith, the special police at the City Park, is now there daily on the general cleaning up of the grounds, roads, and buildings. The park will soon be open to the public as usual".

Circa World War II. The Salisbury family with Frank Smith dismantled the RCA barn, and lean-to as it was deemed an unsafe structure. (Information from David Pendergast, Frank Smith's grandson). Up to a thousand insulators went into the countryside and dump.

1954 Frank's daughter Doris married John Ashmore, a second marriage for both.

1 July 1958 RJ. Frank L. Smith ex-RCA engineer died at a Bangor Hospital. Belfast record shows his death as 6-30-1958. He is survived by his wife Adelaide E. (Salisbury) Smith, Two daughters, Mrs. Doris Ashmore of Riverhead, L.I. N.Y. and Mrs. Elizabeth Simpson of Mansfield, Mass. Five grandchildren, three great grandchildren and two nieces and a nephew. Adelaide lived until1978. They are buried at Grove Cemetery in Belfast. Little is known of the Belfast work these engineers provided. Research is ongoing.



H.P. Hassner,

Hugo E. Leuteritz,

John Harvey Walker

RCA

Belfast, Maine.

Hugo E. Leuteritz was in Belfast before the others, who arrived in May 1923. He was at Belfast for a short time. Much information and a photograph is available on the Internet After he departed Belfast. He went on to developed aircraft direction finding which allowed most night and poor weather flights.

H.P. Hassner came to Belfast from RCA New York, and was the start up engineer–in–charge. He returned to New York after Samuel Dean became the engineer-in-charge. Hassner returned to Belfast later to work with Central Maine Power Company to reduce radio interference. He did not return again The Social Security death index list very few individuals with the name Hassner. Only two males are listed with the name Hassner, Irving and Louis. Both are listed as New York.

John Harvey Walker arrived in Belfast circa 1926. We found a California death notice. We recently sent the fee for his obituary search. Results are pending.

Research is on-going. Information and artifacts found are given to the Belfast Museum, which is the best place to obtain updated information.

Research team member Megan Pinette is also President of the Belfast Historical Society. Megan is showing some of the artifacts on display at the Belfast Museum.



Research team member Harold Nelson of Newport. Harold is getting ready to tell the media about the old 1920's RCA radio station.



Added 1924 RCA Belfast Maine group engineer photograph.



Left to right: Clarence W. Hansell, Richard E. Mathes, Ernest V. Amy, Unknown. John W.Ashmore, Frank L. Smith, John Henry Mundo. Transmitter building walk way late 1924. Photograph complements of Don Pendergast of Northport & the Belfast Museum.

Glossary

Morse code messages were sold by the word. A word was 5 letters. It became necessary to count the number of letters to determine the word charge.

Due to the Morse code transmission time/charges, operators came up with many abbreviations for a growing list.

Some of the more widely used Morse code abbreviations.

Ant antenna

B4= before

CU= see you

CUL= see you later

CW= continuous wave

Fone= phone or radiotelephone

GND= ground

HRD= heard

OM= old man (if you did not know the other operators name.)

R= roger/understood

REC/RCVR= receiver

RPT= report

SKED= schedule

TX/XMTR= transmitter

TNX/TKS= thanks

TT= that

TU= thank you

U= you

QTH= location (or address if on land)

QRM= man made interference

QRN= static/nature made interference

QSP= I will relay/will you relay

QRS= send more slowly

QRT= stop sending/I will stop sending

QRX= wait a minute/moment

QSY= change frequency/I will change frequency

For signal reporting, 0 to 9 was used for readability, strength, and tone quality. Lower number being worsts highest the best. In later years, readability became 0 to 5.

As radio developed, new words came into being, or existing words took on new electronic meaning. Words like radio, tube, antenna, aerial, regeneration, and grid leak.

Amplitude modulation-Early voice and program audio varied the transmitter output power at an audio rate. Audio was in two side bands, one each side of the carrier frequency.

Battery supplied voltages were "A" low voltage for lighting the tube filaments, high voltage "B" for powering up the plates of tubes, Last but not least a "C" low voltage that was electrically positioned with the negative toward the tube grid to bias its operation. RCA Belfast was still using batteries in the late 1920's to avoid hum on the received signal. Power supplies at that time had less than necessary hum filtering.

Grid leak-An early resistor used to cause a negative bias to a tube grid.

Hum-Unwanted 60 cycle A voltage getting on a signal. RCA Belfast had complaints of hum that likely came from a transmitter power supply.

Long wave-Radio waves like ripples on a pond are measured from crest to crest. Radio in the 1920's used wavelengths that were very close to 10 miles between crests.

Receive antenna-Harold Beverage discovered that long wire antennas close to the ground when pointed correctly, gave much improved reception. This antenna became known as a Beverage antenna.

Regeneration-The re-amplification of a signal to increase its level. The adjustment control was difficult to set. If too much regeneration was used the radio would oscillate and cause interference to other radios in the neighborhood.

Single side band- Power was being wasted in the second sideband that could be eliminated. Clarence Hansell built a single sideband transmitter at Belfast

To find out more about the RCA station in Belfast visit the Belfast Museum. Permanent exhibit, recording of the Trans-Atlantic broadcast and, many photographs, maps and documents.

10 Market Street
Belfast, Maine 04915
Tel: (207) 338-2497
Email: belfastmus@yahoo.com

Mid-June – September
Tuesday through Saturday, 11am to 4 PM
or by appointment.