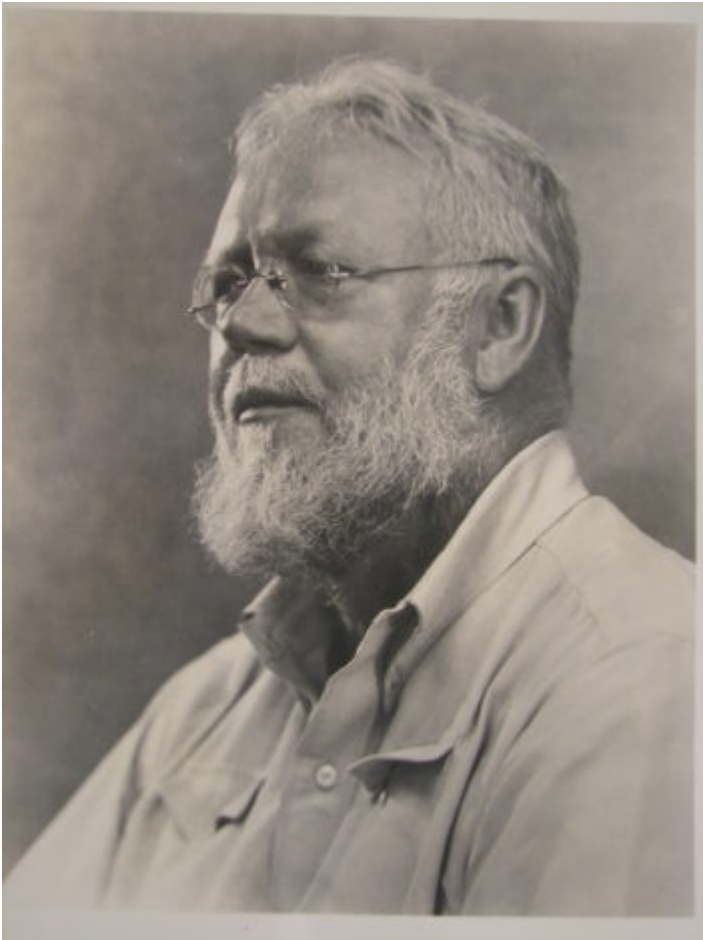


Fessenden: World's First Broadcaster?

That's what the history books have proclaimed for decades. It is what I'd like to report as we near the 100th anniversary of that event, so dear to those of us in broadcasting. Oh, if were it that simple.

BY [JAMES E. O'NEAL](#)

[HTTPS://WWW.RADIOWORLD.COM/NEWS-AND-BUSINESS/FESSENDEN-WORLDS-FIRST-BROADCASTER](https://www.radioworld.com/news-and-business/fessenden-worlds-first-broadcaster)



Winter was just starting to make itself felt in New England. It was Dec. 24, a classic dark and stormy night along the Atlantic Seaboard. Radio room operators on ships were busy copying the endless, fuzzy dits and

dahs of code from the big brute-force Marconi spark stations of the early 20th century.

Suddenly they heard something else under the code — faint, but definitely audible: a voice. Someone was talking! Listeners couldn't believe it. They hastily summoned relief operators to don headphones and called ship captains to the radio rooms to witness the event.

You may have read that 2006 marks the 100th anniversary of the first broadcast of speech and music. If we believe the Internet and history books, it happened something like the events described above.

But is the story true?

At Brant Rock, Professor Fessenden, a tall, 40-year-old man in business attire, pulled out his pocket watch and looked at it nervously. The appointed time was near. He stroked his beard.

Spread about him in the room were large machines of unusual construction, coils of wire, large condensers, a panel board, motors and a multitude of meters. Fessenden moved to a large knife switch dominating the control panel. He murmured a silent prayer and closed it.

The building lights dimmed as a large motor broke the silence and began to come up to speed. Fessenden looked intently at the motor and the assemblage of belts and pulleys attached to it.

The drive train concluded with a pulley on the shaft of a specially built alternator. The unusual machine connected to all of this picked up speed — 3,000, 5,000, 10,000 rpm. Fessenden felt the floor of the small building shake as the alternator climbed through its “critical” frequencies, smoothing out as it passed each. He assured himself the

belts would hold and that the unit would make 20,000 rpm or more without flying apart.

Sometime during my high school or college years in the 1960s, I was told that inventor Reginald Aubrey Fessenden had, in 1906, assembled a primitive AM radiotelephone transmitter and placed it on the air in the evening hours of Dec. 24 at his experimental communications station at Brant Rock, Mass. He transmitted music and speech on that occasion. Thus, the story went, he was the first ever to “broadcast.”

Fessenden watched the array of meters and gauges, paying special attention to oil pressure and bearing temperature. This was a one-of-a-kind experimental machine; everything had to be monitored carefully. Finally the requisite speed was reached and everything seemed to be holding.

The professor looked at the indication on the large hot-wire RF ampmeter and double-checked the wavemeter.

It was time.

He stepped to the telephone-type carbon microphone, which was beginning to radiate heat from the amps of antenna current passing through it. He cleared his throat, leaning away from the mic. Then, in his best voice, he uttered a greeting to the world at large, informing anyone who could hear that he was Reginald Aubrey Fessenden and that this was to be a broadcast of speech and music.

He then started an Edison cylinder recording of Handel’s “Largo.” At the conclusion of the record, the professor opened a Bible and read scripture, describing the birth of Christ. There followed a moment of silence as he motioned his wife and a friend toward the microphone; but

they backed away, suddenly frightened. Perhaps they felt the heat radiating from the mic; perhaps it was a case of nerves.

But the show had to go on. Fessenden pulled out his violin and played his next planned piece, “O Holy Night,” while singing a chorus loudly enough to be heard over the violin. He then wished everyone a most happy Christmas and advised listeners that he would be transmitting again in one week, on New Year’s Eve.

He moved slowly away from the microphone and pulled the knife switch, letting his machinery coast its way back to silence. The only sound that remained was of sleet pelting the building’s windows. A faint smell of ozone mixed with hot machine oil filled the air.

Broadcasting had been born.

That’s what the history books have proclaimed for decades. It is what I’d like to report as we near the 100th anniversary of that event, so dear to those of us in broadcasting.

Oh, if were it that simple.

Milestone

Earlier this year I was asked to prepare a story commemorating the anniversary. I started the project by reviewing written accounts of the historic event.

I immediately noticed the similarity of all such descriptions: the music selected, the scripture reading, the first recorded case of “mic fright” and the invitation to listen for another such broadcast a week later. In some cases, the account was not attributed. Authors who did offer attribution cited a 1940 biography, “Fessenden: Builder of Tomorrows,” penned by his widow Helen.

The events at Brant Rock, if they did occur, would have been a milestone in the history of mankind. In one evening, Fessenden apparently had staged the first radio broadcast and had become the first radio announcer, scriptwriter, disk jockey, program director, staff musician, studio engineer and chief engineer. It is a claim worth substantiating.

(We set aside here the question of whether “broadcasting” can include wired transmission. Today we accept the term to include people sitting in a CATV studio reaching consumers in a wired fashion; if so, Fessenden, De Forest, et. al. are out of the running by at least a decade, because concerts, news and other content were “broadcast” to significant groups of telephone subscribers in the 1880s and 1890s, especially in Europe.)

In the register of historic wireless broadcast events, Christmas Eve 1906 was important. There must be sources or records to corroborate it.

Quiet accomplishment?

So I started digging.

I researched Boston and New York newspapers published during and after the last week of 1906. They yielded nothing. Susan Douglas, writing in her comprehensive history of early radio, “Inventing American Broadcasting 1899–1922,” similarly concluded, “There is no record of Fessenden notifying the press, and the demonstration received no newspaper or magazine coverage.”

However, the inventor could have had a reason for not inviting press or issuing news releases.

My next step was to conduct a study of Fessenden and his business activities.

The professor, we find, was a supremely self-assured and temperamental individual. He was physically large and had an ego to match. His personality could be described as bombastic, type A, arrogant, insulting and demanding in the extreme. He is said to have told one of his more important employees, several times, “Don’t try to think, you don’t have the brains for it.”

This man is not likely to have hidden his accomplishments under a bushel; nor did he do so with other achievements.

Regardless of how he conducted himself in front of workers and business associates, there’s little doubt Fessenden was intelligent and gifted. In his lifetime (1866-1932), he was issued hundreds of patents and laid the foundation for many things we take for granted or attribute to others. An example is the principle of the heterodyning of two signals. Fessenden not only set forth the principle, he coined the term “heterodyne.” He received a patent for it in 1902.

Fessenden was born in Quebec and migrated to Bermuda at the age of 18 to begin a schoolteacher’s career. After a couple of years, he realized that this was not his calling and came to the United States, eventually finding employment with none other than Thomas Edison. He rapidly worked his way through the Menlo Park ranks to the position of chief chemist. Fessenden also held a position as engineering professor at Purdue University in Indiana and what is now the University of Pittsburgh.

For a time he was employed by the U.S. Department of Agriculture’s Weather Bureau. It was here that he initiated early experiments in radiotelephony. That job ended in a dispute with his boss over patent rights.

Sometime thereafter he went into partnership with two Pittsburgh businessmen to form the National Electric Signalling Company, NESCO. It constructed several wireless stations, with its main operations at Brant Rock and Machrihanish, Scotland. One objective was to provide reliable transatlantic wireless communication and possibly take business away from undersea cable telegraph services. Brant Rock also served as an experimental laboratory for Fessenden.

It was during his association with NESCO that he achieved one of his goals.

Fessenden did not accept the conventional wisdom that radio waves could be propagated only by “shocking” the ether via a spark discharge across an antenna; he theorized that a continuous or sine wave would be much more efficient and would allow the transmission of speech and music.

There were no vacuum tubes with which to create a continuous oscillation. Fessenden thought creatively and had constructed by General Electric a special high-frequency alternator that could operate substantially above power line frequencies. His first successful machine could operate at 80 kHz and produce a few hundred watts. Amplitude modulation was achieved simply by inserting a carbon microphone in series with the antenna lead.

Through most of his career, Fessenden also was an inveterate writer. He discovered Scientific American early and delighted in submitting manuscripts and letters documenting his work. His submissions for publication became more numerous as he went along. He was a frequent contributor not only to Scientific American but to The Electrician, Electrical Review, Electrical World, Radio News, Science, and Transactions of the American Institute of Electrical Engineers. There are

approximately 200 published works penned by Fessenden; these span radio and electrical engineering but also chemistry, mathematics, economics and history. He even wrote articles for the Christian Science Monitor.

No records

If Fessenden was such a prolific writer and enjoyed “blowing his own horn,” where are the printed reports of the Christmas Eve and New Year’s Eve broadcasts of 1906? Even lacking contemporary press reports, there must be some corroborating evidence to back his story.

According to later accounts, Fessenden a few days before the event had transmitted via radiotelegraph a general call to make sure he had an audience. He wrote 25 years later: “This broadcast was advertised and notified three days in advance of Christmas, the word being telegraphed to the ships of the U.S. Navy and the United Fruit Co., which were equipped with our apparatus that we intended broadcasting speech, music and singing on Christmas Eve and New Year’s Eve.”

This should be relatively simple to check in the National Archives; but in response to my inquiry the staff reported they have no U.S. naval radio logs from 1906.

Note Fessenden’s comment about “stations equipped with our apparatus.” In 1906, not all wireless stations were equipped to demodulate AM radiotelephone signals. Just a few years before, the Branley “coherer” had been state of the art for detecting radio signals. This was a small tube filled with a loose mixture of fine metal particles. In the presence of RF, the particles clumped or “cohered,” and the resistance of the device drastically decreased. This principle typically was used to close a relay and at the same time activate a “striker” to tap the tube so that clumped particles automatically would be loosened and

ready to clump again when the next burst of RF came through. In short, the coherer was a “digital” device and could not demodulate AM.

The coherer was part of the “standard” Marconi wireless installation at that time, thus ruling out reception of Fessenden’s radiotelephony at Marconi installations.

(Another available Marconi detector could detect AM: the magnetic detector, or “Maggie.” However, it was notable for its lack of sensitivity, so much so that stations had to be practically in line of sight with one another for the “Maggie” to respond.)

The ships Fessenden mentions were using his electrolytic detector, the “baretter,” or a pirated version of it. This device could demodulate AM. Other wireless stations had this technology; Lee De Forest created his own version, the “spade” detector. He used it in De Forest wireless stations and sold it outright, in violation of Fessenden’s patent. (An injunction against De Forest’s actions ultimately led to his development of the first triode vacuum tube, the “audion.”)

Fessenden accused the U.S. Navy of not only using the baretter without paying him royalties but also of manufacturing knock-off devices.

So we know that on Christmas Eve 1906, U.S. Navy vessels and United Fruit stations were equipped for AM reception; we know too that De Forest stations also could have received Fessenden’s transmissions. However my search for logs for such operations was unproductive.

The Hart log

In digging for radio logs from that period, I did study a fascinating document at the Smithsonian Institution. This is a journal or logbook kept for nearly three years by a Francis Hart. It begins on Sept. 6, 1906; the

last entry was made on Oct. 3, 1909. Though not a widely known source, it has been mentioned by Susan Douglas and other historians.

Little is known about Hart; but we can deduce that he was an early wireless enthusiast and had a lot of time on his hands to “listen in.” He could read code and knew quite a bit about radio. There’s no indication he owned a transmitter, so he can’t really be called a radio amateur or “ham.” Today he would probably be termed an SWL or shortwave listener; in 1906 no one was using shortwaves. It was all 500 kilocycles and below then. Perhaps the best term that can be applied to Hart is DXer.

Hart lived at Sayville, N.Y., about 160 miles from Brant Rock. His journal is a valuable resource, perhaps the only surviving log of wireless activity conducted around the time of Fessenden’s radiotelephone work.

The logbook begins with several pages of listings for all known ship and shore wireless stations and gives their two-letter call identifiers; there was no FCC or FRC to issue call signs then. Included are U.S. Navy vessels, De Forest wireless stations, Marconi stations and those of other early adopters of wireless communications, the Standard Oil Company and United Fruit. NESCO’s Brant Rock station — identifier “BO” — and the Machrihanish, Scotland station — “LK” — are entered.

Almost every day during the period, Hart started a new entry with a rubber stamp date on the book’s sewn-in pages. Most entries are in the form of the identifiers of the commercial stations he hears working each other. Occasionally the identifiers are interspersed with comments about static, radio propagation, the weather and anything timely or unusual that he hears.

It was a strange feeling, wearing the required white gloves and carefully turning through pages that Hart innocently constructed but which have become an interesting and important firsthand look at early radio history.

Nothing there

Hart was listening on Christmas Eve. There are two entries for Dec. 24, 1906. Both are made without commentary. Neither bears the BO identifier.

Ditto the Dec. 31, 1906 entry. He overheard more stations on that New Year's Eve, but they did not include Brant Rock.

As noted, Fessenden's later account of 1906 mentions that he had gone on the air with a "general call" radiotelegraph message three days before Christmas to advise radio operators to be sure to "tune in" BO on Christmas Eve for a program of music and speech. Hart's entries for Dec. 20-24 make no mention of this event either.

Hart could have been guilty of napping, having a meal or perhaps going to the bathroom when Fessenden sent his message. However, if Fessenden had made such a transmission, those who did hear it would, for some time thereafter, have been involved in a general discussion of the message and passing it on to other radio operators. In light of this, it's difficult to believe that Hart could have completely missed hearing not only about the broadcast but about Fessenden's promo.

It's reasonable to assume not everyone with a radio receiver heard the Christmas Eve broadcast. However, what a hot topic it would have been to those who did. It's inconceivable that listeners would remain silent about having been "ear witnesses" to such an event. Yet the Christmas Day entries in Hart's log do not document this. There's nothing out of the ordinary logged from Dec. 25 until well into 1907.

If Fessenden had transmitted special programs of music and speech on Christmas Eve or New Year's Eve, these events would have sparked a tremendously large "buzz" for days thereafter among the community of land and sea radio operators.

Bullet points

But what is truly remarkable about the 1906 story is this: Not only is there no mention in the press at the time; there is also apparently no mention of it for the next 26 years.

Fessenden ended his career with NESCO in 1910 under conditions that were less than ideal. He continued to conduct research, write and invent until his death. In the 1920s we find several written accounts of a "first broadcast" from Brant Rock. But none give the date as 1906; nor is Christmas Eve mentioned.

In 1924, Fessenden was asked by the editor of Radio News magazine, Hugo Gernsback, to write an autobiographical series of articles. The series was titled "The Inventions of Reginald A. Fessenden." It is not an easy read. It begins in January of 1925 with Fessenden discussing the philosophy of invention. With the article, the magazine published what we would call a box of bullet points. These numbered items list the inventions that Fessenden felt were his most important.

The fifth bullet is the entry "Wavechute" — what we know today as a counterpoise or ground plane — and "broadcasting of speech and music — 1907."

Nowhere in this article or in the series of articles is there any mention of Christmas Eve or New Year's Eve broadcasts. Fessenden gives the date as 1907; his "broadcasting" apparently was not done until then.

De Forest

Concurrent with the Fessenden articles, Gernsback also printed a series of biographical articles on Lee De Forest. In the June 1925 issue, the De Forest article states: “But the short transmission of music from the Telharmonium over four blocks to the towers of the Times building remains the first actual broadcasting incorporating the present connotation of the word ever successfully carried out.” (Italics from the original manuscript.)

The Telharmonium was a sort of forerunner to the Hammond organ. It was a musical, mechanical invention by the Cahill brothers, constructed of a number of AC generators, operating at differing frequencies, with outputs selected by a piano-type keyboard. The Cahills had wanted to connect the device to the telephone system and broadcast concerts to subscribers. The phone company was much opposed to any sort of “alien” connection to company lines (no Carterphone Decision yet), and would not grant permission.

The brothers heard about De Forest’s success in transmitting music and speech with an “arcphone” type of transmitter early in 1907 and solicited his helping in distributing their musical interludes around the New York City area.

De Forest, in his 1950 autobiography “Father of Radio,” says that in late 1906 he designed his “first crude carbon arc transmitter.”

“I recall that it was on the last day of that year that [John V.L.] Hogan picked up in the Audion and telephone receiver across the room the first words spoken into a microphone connected to my arc transmitter, then fed from a 220-volt direct-current source. All my radiotelephone work up to 1923 employed this transmitter.”

De Forest states that in February of 1907, he was broadcasting with his new transmitter “for the benefit of any wireless operators who might hear it, asking such listeners to telephone my laboratory in the Parker Building.” He also set up a similar transmitter in the office of the Cahill Telharmonium Co. at Broadway and 45th Street and fed it from the musical instrument located there.

De Forest reported that he was getting reception reports from “sundry wireless men.” One of these was George Davis, chief electrician at the Brooklyn Navy Yard. De Forest said Davis was called in by one of the wireless operators there to put on headphones and listen to the speech and music being received, because “the operator was of the opinion that he had had a little too much beer at the corner and wished to have himself reassured.”

Davis heard the same thing and called De Forest’s studio. He asked, “Am I drunk or crazy, or are you sending out some talk and music over that wireless of yours?” Davis later became a board member of the Radio Corporation of America.

De Forest proclaims in the 1925 Radio News article that he originated the world’s first broadcast of speech and music.

Of course, inventors often dispute who was first. As the Fessenden and De Forest articles span multiple issues of Radio News, we may assume Fessenden would have seen the De Forest claim and taken it to task in the form of a letter to the editor. But Fessenden never rebuts De Forest’s claim to priority in any of the subsequent issues.

The Navy Yard was not the only place where De Forest radiotelephone transmissions were being received. Francis Hart was hearing them too and made the following entry in his log on March 20, 1907.

“Music at 5:27 from de Forest’s — good 3rd time.”

This is the first indication in Hart’s log of the reception of any speech or music. On May 9 of that year he wrote:

“De Forest’s blooming telephony buzz raised the deuce with the L.W. & everything else.”

LW was the identifier of the Navy ship the Washington.

Unlike Fessenden’s purported broadcast, the De Forest radio broadcasts were noted in the press. The New York Tribune reported on May 15, 1907, “There is music in the air about the roof of the Hotel Normandy these days. A good deal of it is being collected by Lee de Forest’s wireless telephone, ready for distribution to possible purchasers.”

Hart doesn’t report hearing Fessenden’s radiotelephone transmissions until early in 1908. On Feb. 11 that year, he logged:

“Wireless phone at Jamaica & other must be at Brant Rock, Mass. — phone very clear except for a rasping noise that mingles with the voice & is hard to (?). I managed to get the following & could probably have obtained more, except for ‘q’ and etc.:

‘How’s that now’

‘Open up a little more.’

‘You came in louder than yesterday’

“Could hear music as plain as voice from weaker station but couldn’t make out words from other station although they came in fair.

‘Go ahead now for 5 mins.’

‘We’re all right if you will only, go ahead now.’”

The evidence presented by the Hart log indicates that while he could — and indeed did — hear Fessenden transmitting speech and music, he did not hear any such transmissions on Christmas Eve or New Year’s Eve, 1906.

Newspaper clippings

There is a voluminous collection of Fessenden material in the North Carolina State Archives: letters, memos, photographs and magazine and newspaper clippings. I sampled that collection. Three newspaper clippings that were part of the Fessenden estate bear special notice.

The first clipping is dated Aug. 7, 1924 and appeared in the Long Island Daily Press. It is in the form of a letter to editor. A David Hardenbrook in Jamaica, N.Y., wrote on Aug. 5 in response to an article published the previous day regarding the first radio broadcast.

He states that the credit is generally given “to Reginald A. Fessenden, the eminent scientist and inventor of more radio patents which are in use than any other inventor.” He continues, “Also, Jamaica will go down in history for the first long distance broadcasting from Brant Rock, Mass. in 1907, by Dr. Fessenden.”

Reader Hardenbrook says he found a book in the Jamaica library by a Dr. Goldsmith, “Radio Telephony,” that states that “broadcasting was performed as far as Jamaica, where a mast of 180 feet high was used.”

Hardenbrook went on to say he had learned that Fessenden lived in Boston and went to see him. The visitor apparently was treated cordially and noted that Fessenden was working on a new invention called the pherescope, Fessenden’s term for a television. The visitor spent enough

time with Fessenden to be fully briefed on Fessenden's life history and major accomplishments.

Hardenbrook concludes his letter with a mention of John V. L. Hogan, another early wireless pioneer, who had worked as a boy for De Forest. Hardenbrook wrote that in a book compiled by Ehrick Hausmann, Hogan gave Fessenden credit for broadcasting speech and music to Jamaica, N.Y., in 1907.

If a broadcast did take place in 1906, Fessenden apparently did not inform Hardenbrook during his visit. There is no follow-up to Hardenbrook's letter to set the matter straight.

Along with the Long Island Daily Press clipping is a front-page story clipping from the Fergus (Canada) News-Record of April 29, 1926, titled "Great Inventor Spent Boyhood In Fergus." This story about Fessenden is one of the "local boy makes good" genre and notes that Fessenden had made 300 inventions including the wireless telephone, the "heterodyne principal" (sic), relay wireless and "the first broadcasting in 1907."

The material in this article all appears to have been supplied by Fessenden. There is no follow-up "letter to the editor" in the files indicating a correction of the date by Fessenden.

A third clipping in the Fessenden collection is from the Nov. 6, 1927 Boston Sunday Globe. The story is the feature article in the radio section of the newspaper and puts Fessenden front and center, with a picture of him at his Chestnut Hills home near Boston. He is shown with one of his latest inventions, "the talking violin."

The article states that "Few people, however, realize that another man, also of Yankee descent, invented a wireless telephone and that his

broadcasting station — first in the world — was at Brant Rock, near Marshfield.” The article continues, “Twenty years have passed since the station was erected at Brant Rock.” Give that article was published in 1927, that also would put Fessenden’s radiotelephone work in 1907, not 1906.

Based on Fessenden’s Radio News article and these newspaper clippings, a strong case is made for 1907 as the date for his first attempts at broadcasting. Neither Christmas Eve nor New Year’s Eve are mentioned.

So when does 1906 enter the picture?

The 1932 letter

It appears the legendary date stems from a letter written by Fessenden from his home in Bermuda in 1932, about five months before his death. The letter is dated Jan. 29, 1932 and is in the Smithsonian’s Clark Collection.

It was addressed to S.M. Kintner, a former associate of his, then vice president of the Westinghouse Electric and Mfg. Co. In it, Fessenden discusses several of his inventions before going into detail his broadcasting activities. This is apparently in response to a question asked earlier by Kintner.

Fessenden first refers to a demonstration of the transmission of speech and music in a “program given to Dr. Kennelly, Prof. Elihu Thompson, the engineers of Western Electric and A.T. &T. and other companies, and the editors of several of the New York papers.”

Although Fessenden does not mention a date, this is an obvious reference to a public demonstration of radiotelephony conducted on Dec.

21, 1906 between Brant Rock and another NESCO station in Plymouth, Mass.

Indeed, this could well qualify as the first broadcast of speech and music; however, it was intended only to demonstrate the capabilities of Fessenden's apparatus to an invited audience. Fessenden addresses this in his letter to Kintner by stating, "By broadcasting I suppose that you do not mean the transmission of speech, music and singing to other stations of the same firm which is sending but to receiving stations operated by other firms than the sending station, and also programs advertised or notified in advance." He makes the distinction between a technical demonstration and an actual attempt at reaching the "masses" via the airwaves.

Fessenden continues: "If, however, you do not call this a broadcast, then the program sent out Christmas Eve and New Year's Eve, 1906 would be the first broadcast. This broadcast was advertised and notified three days in advance of Christmas, the word being telegraphed to the ships of the U.S. Navy and the United Fruit Co., which were equipped with our apparatus that we intended broadcasting speech, music and singing on Christmas Eve and New Year's Eve.

"The program on Christmas Eve was as follows," he went on. "First a short speech by me saying what we were going to do, then some phonograph music. You will find a photograph showing the phonograph used in the article in the Transactions of the American Institute above referenced to and also in the American Telephone Journal, the music on the phonograph being Handel's 'Largo.' Then came a violin solo by me, being a composition by Gounod called 'O, Holy Night,' and ending up with the words 'Adore and be still' which I sang one verse of, in addition to playing the violin, though the singing, of course was not very good. Then came the Bible text, 'Glory to God in the highest and on earth

peace to men of good will,' and we finally wound up by wishing them a Merry Christmas and then saying that we proposed to broadcast again New Year's Eve."

Fessenden goes on to say that the New Year's Eve broadcast was similar to the Christmas Eve transmission, with different music and someone else singing. He concludes the letter with mention of reception of the Christmas Eve program from as far away as Norfolk, Va., and from "some places down in the West Indies" for the New Year's Eve broadcast. Fessenden invites Kintner to "check the logs of U.S. war vessels and United Fruit vessels."

The account and dates given in this letter are extracted by Helen Fessenden and appear, lightly edited, in Chapter 15 of her 1940 biography of her late husband.

It would appear that the Kintner letter is the origin of the 1906 Christmas Eve broadcast story. Nothing appears in the press or in Fessenden papers I've examined that mention this broadcast prior to January of 1932.

Fessenden's health had begun to fail by this time, which could cast doubt on the veracity of his statements.

(Interesting too is his comment on "a composition by Gounod called 'O Holy Night'." That work was not composed by Gounod. The music was by Adolphe C. Adam and the words supplied by Placide Cappeau; the translation to English was by John S. Dwight. Gounod is known for his "Ave Maria." Why this discrepancy has not been questioned by Fessenden biographers is unclear.)

Meanwhile, October of 1931 saw the launch of Broadcasting magazine, today's Broadcasting & Cable. December of that year would have been

the 25th anniversary of the Fessenden broadcast; we'd expect a publication dedicated to broadcasting news to note the event. There were two issues published in December; neither contains mention of the 25th anniversary of broadcasting or of Fessenden. The second issue does contain a fairly long article about Marconi.

A search of other radio-related magazines from December 1931 fails to turn up any mention of a 25th anniversary commemoration.

Pioneer debate

Is there anything that might strengthen Fessenden's "deathbed" claim?

In the Smithsonian's George H. Clark Collection is a memorandum written by Clark that captures opinions from John V. L. Hogan, H.E. Hallborg and Authur Van Dyck, all radio pioneers, as to what methodology was used and what year the Fessenden Christmas Eve and New Year's Eve broadcasts took place. The memo is dated Dec. 16, 1936.

Van Dyck thought Fessenden had used "multiple arc" and a water-cooled microphone. He adds that it was possible an alternator had been used. No date is given.

Hogan is certain that an alternator was used and "the date might have been 1906."

Hallborg expresses his certainty that an alternator was used along with a water-cooled microphone and that the date was 1906.

Clark sums up the issue by saying, "Thus it is well assured that it was an alternator; also that it was a water-cooled microphone that was used. The date 1906 is confirmed by my records, but must be finally checked" (my emphasis).

There is no indication that Clark managed to verify the date to satisfaction.

Dec. 21 demonstration

There is another angle in this story that may shed some light.

NESCO was formed as a moneymaking organization with an eye toward establishing a transatlantic communication service. Fessenden served as its chief scientist and manager while two Pittsburgh businessmen bankrolled the operation.

Early in its existence, Fessenden erected two nearly identical radiotelegraph facilities, those at Brant Rock and Machrihanish. Each was equipped with spark wireless transmitters and each had an identical 420-foot vertical antenna — the first insulated-base, series-fed vertical radiators.

Construction was finished in 1906 and testing commenced. Things were looking good until a windstorm toppled the Machrihanish antenna on Dec. 6. This apparently was the result of failure to follow procedures in attaching guy lines.

The Machrihanish facility was never rebuilt.

The collapse of the antenna, occurring as it did in the first week of December, must have played heavily on Fessenden. The demise of the Scotland station changed the business model of NESCO and it was up to Fessenden to devise another plan to keep the company in business. (He earlier had made a case to his business partners to try to market equipment, but that proposal did not tempt them.)

Fessenden had been touting his radiotelephony as an adjunct to wired telephone service and on Dec. 11, he issued his invitation to engineering

heads from Bell, Western Electric and others to attend a demonstration on Dec. 21 of his system of radiotelephony.

This demonstration did take place and was well documented by Fessenden, unlike the supposed Christmas Eve event. His first reporting appears in the Jan. 19, 1907 Scientific American. He mentions some of the dignitaries present, describes the equipment, references his past work in radiotelephony and describes the transmission of both speech and phonograph records.

The Christmas Eve event would have taken place just days after the demo. But Fessenden does not report it.

He writes again about his work in 1908 for the American Institute of Electrical Engineers. This report was published again that year in the Annual Report of the Board of Regents of The Smithsonian Institution. This is a comprehensive description of virtually everything Fessenden had accomplished along the lines of wireless telephony, includes many pictures and spans more than 30 pages of text.

There is not one word about the Christmas Eve and New Year's "broadcasts."

What happened?

At this point, all surviving evidence points to the conclusion that Fessenden's 1906 Christmas Eve broadcast did not happen.

I really wanted to believe that Fessenden did what was claimed. Given the resources available to him in terms of an operational high-frequency alternator, methodology for AM modulation technology and an antenna system, he certainly could have done the broadcast. His Dec. 21, 1906 demonstrations proved that he could transmit speech and music.

However, all evidence points to the Christmas Eve event as being a contrived story.

Fessenden was no “shrinking violet.” He was proud of his accomplishments, almost continuously writing about them for publication. He loved to blow his own horn.

Had he made these seminal and historical transmissions, he would have made sure the world knew about them in detail, at the time they happened. He would not have waited a quarter of a century, and only months before he died, to do so.

Now we enter into conjecture. Is it possible that in the last months of his life, Fessenden recalled the Dec. 21, 1906 demonstration of his system, unintentionally spread it into Christmas Eve and embellished it “just a bit?” This time Fessenden was not writing a letter to a magazine or newspaper editor. It was his assumption that only Kintner would read it. He could have had no idea that eight years later, his wife would reproduce a copy he retained and that this would be the basis for a wonderful tale about the first chapter in broadcasting. Or perhaps he wasn’t concerned with the history books and what he revealed to Kintner was the product of a tired body and mind. Or our speculation may be wrong and some other explanation can be found for the utter lack of contemporary documentation to justify Fessenden’s claim to history.

Conclusion

Let us summarize our reasons to doubt:

No press reports at the time, or for a quarter-century after. No mention for decades by an inventor who knew how to promote himself and wrote hundreds of articles about his work. No mention in a contemporary log and no known logs elsewhere, whether official naval logs or otherwise.

No commemorations 25 years later. No challenge to De Forest's published competing claim. No followup to Clark's finding that the year needed to be verified; no consensus as to the date among the group cited by Clark. No mention of 1906 once the year 1907 began to be cited.

Any one of these objections can be explained away. Taken together, they form a powerful counterargument.

The question of the year also might be considered a minor discrepancy except that the evidence seems to point to De Forest being first with what we would consider broadcasts in the spring of 1907.

Fessenden was a great man. It is not my desire to discredit his many accomplishments. However, it appears his claim to this particular historic "first" hangs on a single letter penned late in his life, which laid out a story that has been parroted many times since. This should not guarantee automatic entrance into the "broadcasting hall of fame" and the title of world's first broadcaster.

Perhaps somewhere out there, locked in a trunk, is a diary kept by Fessenden or one of his associates. Perhaps the Brant Rock station log survives in a second-hand bookstore. I leave it to future historians to find such evidence and prove me wrong.

The author acknowledges the assistance of Elliot Sivowitch, Smithsonian Institution curator (retired); Hal Wallace, Smithsonian Institution curator; Jane Johnson, librarian, Charlotte (N.C.) Public Library; Jim Haynes, retired engineer and educator, and his wife Pamela O'Neal, who worked with him in plowing through Fessenden files and writings. He also thanks the staff members of the Smithsonian's Archives Center and the North Carolina State Archives.