

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

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DATE ENTERED

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC

Reginald A. Fessenden House

AND/OR COMMON

45 Waban Hill Road

2 LOCATION

STREET & NUMBER

45 Waban Hill Road

NOT FOR PUBLICATION

CITY, TOWN

Newton

VICINITY OF

4th

CONGRESSIONAL DISTRICT

STATE

Massachusetts

CODE

25

COUNTY

Middlesex

CODE

017

3 CLASSIFICATION

CATEGORY

- DISTRICT
- BUILDING(S)
- STRUCTURE
- SITE
- OBJECT

OWNERSHIP

- PUBLIC
- PRIVATE
- BOTH
- PUBLIC ACQUISITION**
- IN PROCESS
- BEING CONSIDERED

STATUS

- OCCUPIED
- UNOCCUPIED
- WORK IN PROGRESS
- ACCESSIBLE**
- YES, RESTRICTED
- YES, UNRESTRICTED
- NO

PRESENT USE

- AGRICULTURE
- COMMERCIAL
- EDUCATIONAL
- ENTERTAINMENT
- GOVERNMENT
- INDUSTRIAL
- MILITARY
- MUSEUM
- PARK
- PRIVATE RESIDENCE
- RELIGIOUS
- SCIENTIFIC
- TRANSPORTATION
- OTHER

4 OWNER OF PROPERTY

NAME

Mary Sullivan

STREET & NUMBER

45 Waban Hill Road

CITY, TOWN

Newton

VICINITY OF

STATE

Massachusetts

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE,
REGISTRY OF DEEDS, ETC

Middlesex Registry of Deeds, Southern District

STREET & NUMBER

3rd and Ottis Streets

CITY, TOWN

Cambridge

STATE

Massachusetts

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

None

DATE

FEDERAL STATE COUNTY LOCAL

DEPOSITORY FOR
SURVEY RECORDS

CITY, TOWN

STATE

93

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input checked="" type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input checked="" type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input type="checkbox"/> GOOD	<input type="checkbox"/> Restored	<input type="checkbox"/> ALTERED	<input type="checkbox"/> MOVED DATE _____
<input type="checkbox"/> FAIR	<input checked="" type="checkbox"/> Unrestored		
	<input type="checkbox"/> UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

45 Waban Hill Road, the home of Reginald A. Fessenden from 1919 to 1932, is located in the Chestnut Hills section of Newton, Massachusetts. The three story brick-stucco building was constructed in 1919. The building is a venacular example of domestic architecture and does not follow an immediately recognizable architectural style. Some features of the building are a tiled roof, a hooded entrance, an unusually large chimney, casement windows, and a general lack of symmetry in the massing. The interior is characterized by a central hall floor plan. There is no indication that it is of any architectural importance or significance.

Reginald Fessenden moved to 45 Waban Hill Road in 1919. During his life Fessenden moved very often. Although this house is associated with the last 12 years of his life, he lived here longer than anyplace else. Fessenden also owned property in Bermuda where he spent much of his time in the last years of his life, but 45 Waban Hill Road remained his principle residence until his death in 1932.

The building's integrity is whole. No alterations or changes have been made to either the exterior or the interior of the building since the Fessenden period. Awnings over the windows in the east elevation are a slight intrusion.

97

8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input checked="" type="checkbox"/> SCIENCE
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input type="checkbox"/> TRANSPORTATION
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> COMMUNICATIONS	<input type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS/GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)
		<input type="checkbox"/> INVENTION		

SPECIFIC DATES 1919-1932 BUILDER/ARCHITECT unknown

STATEMENT OF SIGNIFICANCE

Reginald Aubrey Fessenden was born October 6, 1866, at East Bolton, Quebec, Canada, the son of a clergyman. As a child Fessenden became a voracious reader and was especially fascinated by stories of invention and inventors. Although his parents did not disapprove of his reading, they feared that the boy would be carried away by the romance of invention. In the hope that a rigorous education would turn their son's interest to more serious subjects than invention, the Fessenden's sent him to private schools. In 1918 he graduated from Bishops College in Lennoxville, Quebec.

In 1884 Fessenden left home to accept a position in Bermuda as principal of a local institute. In Bermuda Fessenden decided that his vocation was still to become an inventor and in 1886 he moved to New York City. There he found employment with the Edison Machine Works as a tester. A year later Thomas Edison recognized Fessenden's abilities and promoted him to the position of chief chemist. Fessenden worked in Edison's laboratory for three years. While there he discovered an insulating material that was both flexible and fireproof.

In 1890 Fessenden moved to Pittsfield, Massachusetts, as chief electrician of the Westinghouse Electric and Manufacturing Company. He remained in Pittsfield for only two years before moving to Purdue University as a professor of electrical engineering. A year later he accepted an offer to fill the newly created chair of electrical engineering at the Western University of Pennsylvania (later University of Pittsburgh). Fessenden taught at the University of Pittsburgh until 1900, when he decided to join the United States Weather Bureau. His ten year stay in academia had given him the opportunity to study and to conduct research. It was during this time that he turned his full attention to the science of wireless telegraphy. By the time he left Pittsburgh, he was familiar with the subject and had already formulated ideas relevant to radio broadcasting.

Arriving in Washington in 1900, Fessenden worked for the United States Weather Bureau for only two years. In 1902 he left the government employment to form the National Electric Signalling Company. Between 1902 and 1910 he worked with the company as its chief engineer. It was during this period that he made the discovery for which he is best remembered, the transmission of speech and music. In 1910 the financial backers of the National Electric

94

9 MAJOR BIBLIOGRAPHICAL REFERENCES

G. L. Archer, History of Radio, (New York, 1938).
 Helen M. Fessenden, Fessenden, Builder of Tomorrows, (New York, 1940).
 "Reginald A. Fessender," Dictionary of American Biography, 21, (New York, 1944).
 Ormand Raby, Radio's First Voice: The Story of Reginald Fessenden (Toronto, 1970).

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY less than one acre

UTM REFERENCES

A	19	321090	4689600	B			
	ZONE	EASTING	NORTHING		ZONE	EASTING	NORTHING
C				D			

VERBAL BOUNDARY DESCRIPTION

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE

Mr. James Sheire, Historian

ORGANIZATION

Historic Sites Survey - National Park Service

DATE

8/6/75

STREET & NUMBER

1100 L Street NW.

TELEPHONE

CITY OR TOWN

Washington

STATE

D.C.

12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL X

STATE

LOCAL

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

FEDERAL REPRESENTATIVE SIGNATURE

TITLE

DATE

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DATE

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

ATTEST:

DATE

KEEPER OF THE NATIONAL REGISTER

98

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CONTINUATION SHEET

ITEM NUMBER 8 PAGE 2

Signalling Company fired Fessenden. In the following years he worked for various organizations as a consultant, but his principle occupation was that of a private inventor. Although he made numerous inventions between 1910 and 1928, he lived throughout this period on the edge of poverty. In 1928 after a lengthy court fight the National Electric Signalling Company reached a settlement with Fessenden for their use of his patents. The money allowed Fessenden to live out the rest of his life in comfort. He died July 22, 1932, at his winter home in Bermuda.

The major determinant in Reginald Fessenden's position in the history of science and invention in the United States is his contributions to radio. By the time Fessenden turned his full attention to the study of wireless communication around 1890, the basic scientific discoveries pertaining to electromagnetism had been made. Such men as James Clark Maxwell and Heinrich Hertz had already made the pure science discoveries that men such as Fessenden filled in. By the 1890's numerous scientists in Europe and the United States were at work on the practical application of Hertz's discovery of radio waves. In 1895 Guglielmo Marconi was the first to transmit and receive Hertzian waves without the use of wire. Marconi introduced the age of wireless telegraphy. Fessenden's first and most significant contribution to radio was the improvements he made in transmitters. In 1904 he invented the rotary spark gap transmitter for use in radio telegraphy. In 1901 he applied for a patent for a high frequency alternator for the generation of continuous waves that would make possible the transmission of the human voice. In 1906 at Brant Rock, Massachusetts, Fessenden built an 80,000 cycle per second alternator which he used to make the first transmission of music and speech. (He had in 1900 made an imperfect voice transmission in Washington.) As Marconi introduced the age of wireless telegraphy so Fessenden introduced the age of wireless telephony. In addition to his discovery of the transmission of music and speech, Fessenden was responsible for a wide range of other technical innovations covering almost all of radio. In 1902 he was the first to demonstrate the heterodyne principle whereby two separate frequencies are combined at the receiver to produce one audible frequency. He also made improvements in antenna and countless other individual items in radio's complex apparatus. When Fessenden died in 1932, the New York Times obituary writer quoted Elihu Thomson as saying of Fessenden, "He was the greatest wireless inventor of the age, greater than Marconi."¹

¹New York Times, July 24, 1932, p. 22.

95

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ITEM NUMBER 8 PAGE 3

In all Fessenden was responsible for over 300 inventions. In addition to those directly associated with radio he held patents to such things as a gyrocompass, an early sonar system, a quiet airplane motor, and a gun sight. During a period when he was almost completely without funds, he even turned to inventing such things as aluminum tea bags and an electric violin.

Although Fessenden possessed a thorough knowledge of the physical principles of electromagnetism, he was not interested in extending the knowledge of physics. He was above all an inventor. He devoted his energies to applying physical principles in the creation of technological innovations. Fessenden worked alone without the support of a large institution or organization. He always thought that inventive creativity was the work of the lone inventor and not the result of institutional team research and development. Because his work was in the field of telecommunications, he, like Edison, Langmuir, Armstrong, and de Forest, became involved in lengthy legal disputes over patent rights. Fessenden was usually successful in these battles. In a broad sense Fessenden, whose academic education ended at the age of eighteen, belonged to the heroic age of radio invention, a time when inventors working alone with spark gaps, crystals, alternators, and heterodynes created the basic technology for exploiting electromagnetism to transmit tones, speech, and music through the air.

96