The Career of Alexander Graham Bell
Chronology

1847

Born March 3 at 16 South Charlotte Street, Edinburgh, Scotland. Family Moved to 13 hope Street when he was 9 months old.

1855-1857

Attended McLaren's Academy, Edinburgh

1857 to 1859

At Royal High School, Edinburgh. In 1858, added Graham to his name to distinguish self from his grandfather.

1860

Spent a year in London with grandfather, Alexander Bell. (Incidentally this was the year when the Pony Express Service from St Joseph, Mo. to Sacramento, Cal. Was started on April 3, 1860. The first Atlantic cable had failed after brief service and the second cable was not laid until 1865-1866.

1862

At about this time, with his brothers, he made a speaking skull. Also, he tried to fashion his dog's growls into words. He learned Visible Speech (Invented by his father, Alexander Melville Bell) and began to appear in public demonstrations of it.

1863

Became a student-Teacher at Weston House, Elgin, Morayshire, England.

1864

Student at University of Edinburgh

1865

Returned to Weston House as full time teacher. By experiments on his own voice cavities, he

determined the nature of vowel sounds. And as a result of this, he learned of Hermann von Helmholtz' formation of synthetic vowel sounds with electrically vibrated tuning forks which led to his own experiments at "telegraphing" sound. Grandfather Alexander Bell died, so the family moved to London, where Graham's father, Melville Bell, took over the grandfather's practice in teaching speech and curing defects of speech.

1866-1867

Became an instructor at Somersetshire College, Bath, England. Here he had a telegraph line form his room to that of a friend. In 1867, Graham's younger brother, Edward Charles, died of tuberculosis.

1868

During this year, Graham had full charge of his father's practice at London, while Melville bell went on an extensive lecture tour in the United States and Canada. Graham also had a special class of deaf pupils at a school conducted by Susannah Hull (herself a pupil of Melville Bell's) at Warwick Gardens. Graham gave lectures on elocution and Visible Speech, and also was a student at University College. He matriculated at the University of London.

1869

Graham was taken into partnership with his father. He continued to teach the class of deaf pupils. At London University, he studied the anatomy of the vocal apparatus.

1870

In this year, Graham's older brother, Melville James, died. Graham bell himself was seen to be in poor health. So his family moved to Canada, landing August 1 and settling, August 10 at Tutelo Heights, Brantford, Ontario.

1871

Transcribed words of the Mohawks in Visible Speech and was made an honorary chief of the tribe. On April 1, he went to Boston for an engagement to teach Visible Speech to the Deaf and demonstrate his methods for teachers of the deaf. Soon after coming to Boston, he met Gardiner Greene Hubbard, champion of teaching the deaf to speak rather than use a sign language.

1872

Opened School of Vocal Physiology, for teachers of the deaf, 35 West Newton Street, Boston.

Received George Sanders, 5, as a special pupil and of course met the boy's father, Tom Sanders, Boston Leather Merchant.

1873

Became professor of Vocal Physiology at Boston University, which post he filled until 1877. Moved to 292 Essex Street, Salem, in order to board in the same house with little George Sanders. Began electrical experimenting there, trying to devise a harmonic telegraph, using at first electrically driven tuning forks, later steel reeds. Toward the close of the year, Tom Sanders and Gardiner Greene Hubbard, within a few days of each other, offered to finance his experiments. Bell brought the men together and they agreed to share the expense.

1874

Met Thomas A Watson, when he took parts of his apparatus to the shop of Charles C Williams, Jr., to be rebuilt. Having become acquainted with members of the faculty of Massachusetts Institute of Technology, he experimented there with the phonautograph and manometric capsule, devices which made wave-line pictures of sound waves. Later at the suggestion of a surgeon, he experimented with the drum and bones of a human ear, mounted to make similar wave-line patterns. His work with the eardrum gave him the idea for his telephone transmitter. During the summer, on vacation at Brantford, he told his father of the theoretical apparatus for transmitting speech. On October 27 of this year, he applied for U S citizenship. In November, he met Mabel Gardiner Hibbard, daughter of Gardiner Greene Hubbard, whom he was to marry. In December, at Brantford for the Christmas holidays, he again talked of the telephone to his father.

1875

"Early in the spring" told Thomas A Watson, "***if I can get a mechanism that will make a current of electricity vary in intensity as the air varies in density when sound waves are passing through it, I can telegraph any sound***even speech." In February, he described his theory to Joseph Henry, Secretary of the Smithsonian Institution at Washington. Henry encouraged him to work it out further before letting it become public. In March, having applied for a patent on his Harmonic Telegraph, he demonstrated that apparatus to the president and electrician of the Western Union Telegraph Company. This patent was issued on April 6, 1875. On June 2, The Harmonic Telegraph reed "froze", Bell heard the sound of Watson's efforts to free it and realized his theory of transmitting speech was practicable. He set Watson to making telephones. In September after months when his time was divided between the Harmonic Telegraph and the Telephone, he began writing the specifications for his telephone patent. In November, he became engaged to Mabel Hubbard.

1876

On February 14, the application for Bell's first telephone patent was filed. On March 7, the patent

was issued. On March 10, the telephone carried its first complete sentence, " Mr Watson, come here, I want you!". On Sunday, June 25, occurred the Dom Pedro incident at the Philadelphia Centennial Exposition. On October 9, came the first two-way telephone conversation, Boston to Cambridgeport and on November 26, the "first long distance call", Boston to Salem, both over borrowed telegraph lines. Bell was awarded the Philadelphia Centennial gold medal for his telephone and also for his exhibit on Visible Speech. During 1876, he also took out patents on an "improvement in telegraph receivers" and on an "improvement in generating electric currents". These were for his Harmonic Telegraph on which he was still working. Very few people at this time foresaw any great future for the telephone. To account for the skeptical state of mind, it is only necessary to recall that the Western "frontier" still existed - the day on which Bell exhibited his telephone at Philadelphia was also the day of the massacre of Custer and his men at Little Big Horn.

1877

The second of the basic telephone patents, on refinements of his apparatus, was issued January 30. On April 4, the first true telephone line, form Charles C Williams' home in Somerville to his office in Boston was put into operation. On July 11, Graham Bell was married to Mabel Hubbard. They sailed for England, the first week of August. In England, Bell was awarded the James Watt silver medal for his invention of the telephone by the Royal Cornwall Polytechnic Society.

1878

In the United States, a few telephones were operating in pairs on private lines as the year began. The first commercial switchboard in the world was opened at New Haven, January 29, with eight lines. In England, endeavoring to urge establishment of a telephone service, Bell wrote his letter to the "capitalists of the electric Telephone Company" at London. In November, he returned, disappointed, to America. In both England and America, Bell services were developing by now, but were suffering from competition by telephones that infringed on Bell's basic patents. On March 19, he was issued a secondary patent on "an improvement in speaking telephones."

1879

The infringing interests withdrew from the telephone business November 10, in a legal settlement of the Bell company's suit against them and the Bell service got a firm foothold and began to grow. Patents were issued on improvements in the telephone on March 11 and October 21. Bell was working at this time, with Watson and others, to overcome difficulties encountered under actual service conditions.

1880

Bell received form the government of France, the Volta Prize, which brought with it an award of

50,000 Francs, then worth about $10,000. Bell used the money to establish at Washington, D. C., the Volta Laboratory. While in England, he had become interested in the possibility of talking over a light beam, and the first production of the Volta Laboratory was the Photophone, which he worked out with the assistance of Sumner Tainter, a maker of optical instruments at Washington. This was followed by the Spectrophone, which was an offshoot of the Photophone. During the year, Bell received an honorary degree of Doctor of Philosophy from Gallaudet College, for his work in the interests of the deaf. The Photophone patents were issued on December 7. Earlier in the year, July 20, another telephone patent was issued in Bell's name. After this year, Bell had no regular connection with the telephone service.

1881

From July to September, Bell worked on the Electric Probe and Induction Balance in an effort to save the life of President James A Garfield, who was wounded by an assassin, July 2, and died September 19. Also, in this year, Bell began work with Sumner Tainter and Chichester A. Bell, a cousin, on wax phonograph recording inventions. These ultimately were successful in improving the reproduction of sound as compared with the metal foil recordings made by Edison's phonograph, invented in 1877.

1882

Graham Bell gave $ 50,000 to establish the publication, "Science," which later became the official organ of the American Association for the Advancement of Science. He was admitted to U. S. Citizenship November 10.

1883

In this year, Bell finished his memoir "Upon the Formation of a Deaf Variety of the Human Race," which was presented before the National Academy of Science, November 13.

1884

The first patents on wax recording were issued to ell's associates. Following certain negotiations and the organization of a manufacturing corporation, the patents were sold. Bell used the money the money he received as his share to establish the Volta Bureau to work in the interests of the deaf. Toward the close of the year, bell made a notable plea before the National Education Association for the opening of day schools for the deaf.

1885 to 1890

During this period, he bought Beinn Bhreagh, near Baddeck, Nova Scotia, as a summer home. He

received the honorary degree of Medicine from the University of Heidelberg for his invention of the electric probe in 1886. In May 1886, He was issued further patents on recording and on transmitting and recording sound by radiant energy. In 1888, he was invited to England by a Royal Commission appointed to study the condition of the deaf, and gave exhaustive testimony before it, based upon his experience and an extensive study of conditions in America. He began his sheep breeding experiments in 1890. Also in 1890, he inspired establishment of the American Association to Promote the Teaching of Speech to the Deaf. He became its president and, altogether, financed it with some $300,000 in donations.

1891 to 1895

Gave $5,000 to finance the flight experiments of S. P. Langley, in 1891; also $5,000 to establish the astrophysical observatory of the Smithsonian Institution. October 18, 1892, he opened the New York-Chicago long distance telephone line. In 1894, he brought the body of James Smithson, founder of the Smithsonian Institution, from Genoa to Washington. About 1895, he began his man-lifting kite experiments at Baddeck.

1896-1900

In 1896, Bell witnessed and photographed the flight of Langley's experimental flying machine. He became president of the National Geographic Society and received the honorary degree of Doctor of Laws from Harvard College. He became a member of the board of regents of the Smithsonian Institution, in 1898, and began service as a trustee of the Clarke School for the deaf, at Northampton, Mass. He volunteered and was appointed a special agent (without pay) for the 12th Census of the United States, 1990, in order to tabulate facts about the deaf.

1901 to 1905

Published the "Tetrahedral Principle of the Kite Structure," 1903. Awarded medal by the Louisiana Purchase Exposition at St. Louis, 1904. On April 12, 1904, took out a patent on "an aerial vehicle."

1906 to 1910

With Mrs Bell, he founded the Aerial Experiment Association, 1907. He was awarded the John Fritz Medal, by a group of national engineering societies, in 1907: and in the same year received the degree of Doctor of Science form the University of Oxford. A patent on a device for constructing the frame of "an aerial vehicle, " was issued to him June 11, 1907. The Aerial Experiment Association succeeded in making the first public flight of a heavier than air machine, March 12, 1908, when F. W. Baldwin, the "Red Wing," took off from the ice of Lake Keuka near Hammondsport, N. Y. Another machine, piloted by Glenn Curtiss, won the Scientific American prize in July of that year. Bell traveled around the world in 1910.

1911 to 1915

Was issued patent for the aileron to establish lateral balance of airplanes in 1913. Awarded the David Edward Hughes medal by the Royal Society, 1913: the Thomas Alva Edison medal by the American Institute of Electrical Engineers, 1914. January 25, 1915, opened the first transcontinental telephone line from New York to San Francisco. On this occasion, he talked part time over a replica of his original telephone, connected through the original wire over which the first sentence was transmitted.

1916 to 1920

Received degree of Doctor of Laws from Queen's University, Kingston, Canada, 1916. In 1917, Canada unveiled a memorial to him at Brantford. In 1918, he published a book based on his statistical researches, "Duration of Life and Conditions Associated With Longevity. " in 1920, he was made a Burgess and Guild Brother of his native city of Edinburgh, and received keys to the city.

1922

Four patents on the :hydrodrome, hydroaeroplane and the lie" were issued to Bell and F. W. Baldwin, March 28. On August 2, Alexander Graham Bell died at Beinn Bhreagh, in Nova Scotia. During the burial services on August 4, telephones throughout the Bell Systems were silenced for two minutes.