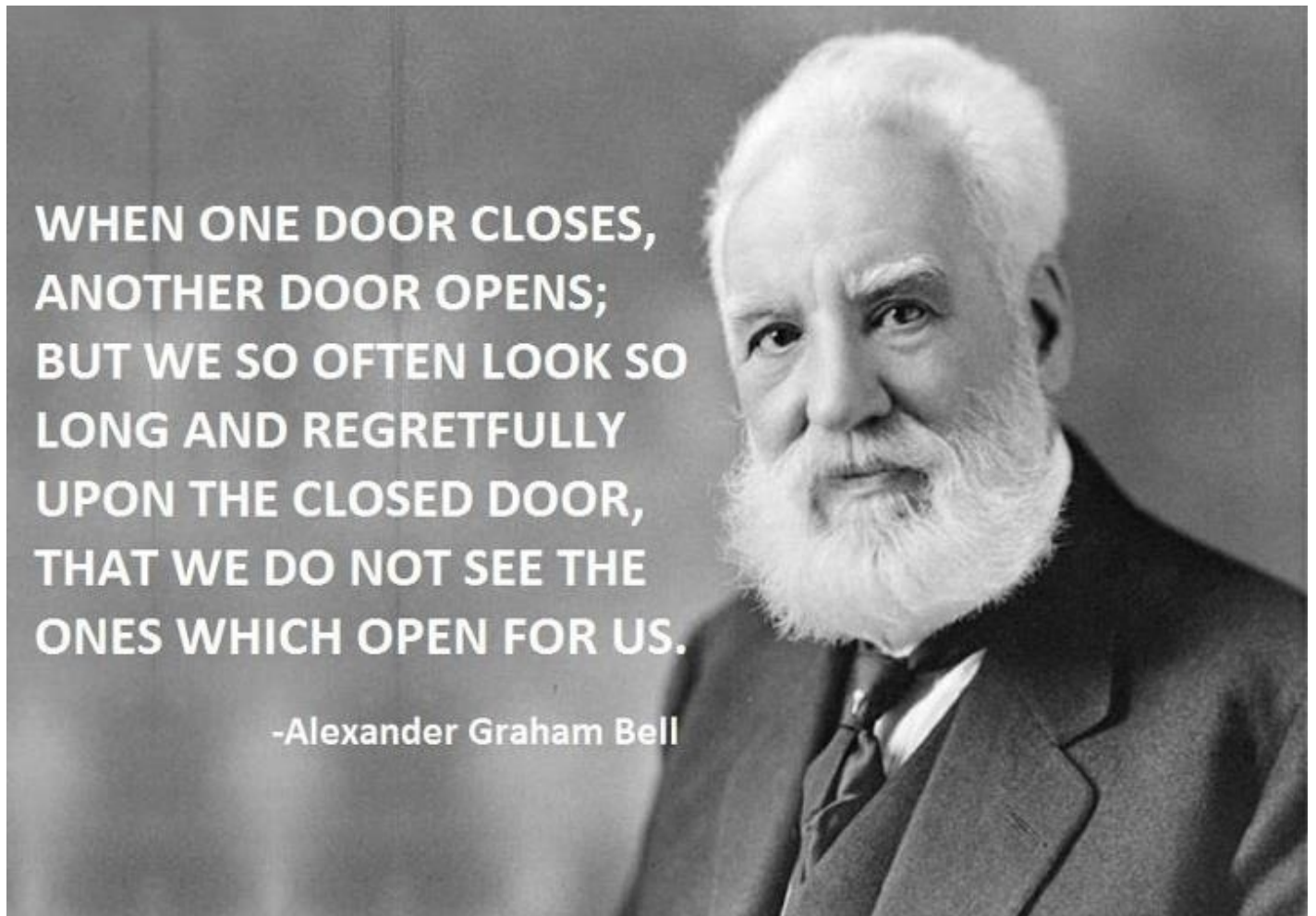




AVIATION PIONEERS - WHO ARE THEY? ALEXANDER GRAHAM BELL

News / Personalities



Telephone, photophone, metal detector, hydrofoils, aeronautics.....

Alexander Graham Bell (March 3, 1847 – August 2, 1922) was a Scottish-born scientist, inventor, engineer and innovator who is credited with inventing the first practical telephone.

Bell's father, grandfather, and brother had all been associated with work on elocution and speech, and both his mother and wife were deaf, profoundly influencing Bell's life's work. His research on hearing and speech further led him to experiment with hearing devices which eventually culminated in Bell being awarded the first US patent for the telephone in 1876. Bell considered his most famous invention an intrusion on his real work as a scientist and refused to have a telephone in his study.

First invention

As a child, young Bell displayed a natural curiosity about his world, resulting in gathering botanical

specimens as well as experimenting even at an early age. His best friend was Ben Herdman, a neighbor whose family operated a flour mill, the scene of many forays. Young Bell asked what needed to be done at the mill. He was told wheat had to be dehusked through a laborious process and at the age of 12, Bell built a homemade device that combined rotating paddles with sets of nail brushes, creating a simple dehusking machine that was put into operation and used steadily for a number of years. In return, John Herdman gave both boys the run of a small workshop in which to "invent".

From his early years, Bell showed a sensitive nature and a talent for art, poetry, and music that was encouraged by his mother. With no formal training, he mastered the piano and became the family's pianist. Despite being normally quiet and introspective, he reveled in mimicry and "voice tricks" akin to ventriloquism that continually entertained family guests during their occasional visits. Bell was also deeply affected by his mother's gradual deafness, (she began to lose her hearing when he was 12) and learned a manual finger language so he could sit at her side and tap out silently the conversations swirling around the family parlour. He also developed a technique of speaking in clear, modulated tones directly into his mother's forehead wherein she would hear him with reasonable clarity. Bell's preoccupation with his mother's deafness led him to study acoustics.

Aeronautics

In 1891, Bell had begun experiments to develop motor-powered heavier-than-air aircraft. The AEA was first formed as Bell shared the vision to fly with his wife, who advised him to seek "young" help as Bell was at the age of 60.

In 1898, Bell experimented with tetrahedral box kites and wings constructed of multiple compound tetrahedral kites covered in maroon silk. The tetrahedral wings were named *Cygnets* I, II and III, and were flown both unmanned and manned (*Cygnets* I crashed during a flight carrying Selfridge) in the period from 1907–1912. Some of Bell's kites are on display at the [Alexander Graham Bell National Historic Site](#).

Bell was a supporter of [aerospace engineering](#) research through the [Aerial Experiment Association](#) (AEA), officially formed at Baddeck, Nova Scotia, in October 1907 at the suggestion of his wife Mabel and with her financial support after the sale of some of her real estate. The AEA was headed by Bell and the founding members were four young men: American [Glenn H. Curtiss](#), a motorcycle manufacturer at the time and who held the title "world's fastest man", having ridden his self-constructed motor bicycle around in the shortest time, and who was later awarded the [Scientific American Trophy](#) for the first official one-kilometre flight in the [Western hemisphere](#), and who later became a world-renowned airplane manufacturer; Lieutenant [Thomas Selfridge](#), an official observer from the U.S. Federal government and one of the few people in the army who believed that aviation was the future; [Frederick W. Baldwin](#), the first Canadian and first British subject to pilot a public flight in [Hammondsport](#), New York, and [J.A.D. McCurdy](#)—Baldwin and McCurdy being new engineering graduates from the [University of Toronto](#).

The AEA's work progressed to heavier-than-air machines, applying their knowledge of kites to gliders. Moving to Hammondsport, the group then designed and built the Red Wing, framed in bamboo and covered in red silk and powered by a small air-cooled engine. On March 12, 1908, over [Keuka Lake](#), the biplane lifted off on the first public flight in North America. The innovations that were incorporated into this design included a cockpit enclosure and [tail rudder](#) (later variations on the original design would add ailerons as a means of control). One of the AEA's inventions, a practical wingtip form of the [aileron](#), was to become a standard component on all aircraft. The *White Wing* and *June Bug* were to follow and by the end of 1908, over 150 flights without mishap.

had been accomplished. However, the AEA had depleted its initial reserves and only a \$15.00 grant from Mrs. Bell allowed it to continue with experiments. Lt. Selfridge had also become the first person killed in a powered heavier-than-air flight in a crash of the [Wright Flyer](#) at [Fort Myer, Virginia](#), on September 17, 1908.

Their final aircraft design, the [Silver Dart](#), embodied all of the advancements found in the earlier machines. On February 23, 1909, Bell was present as the *Silver Dart* flown by J.A.D. McCurdy from the frozen ice of Bras d'Or, made the first aircraft flight in Canada. Bell had worried that the flight was too dangerous and had arranged for a doctor to be on hand. With the successful flight, the AEA disbanded and the *Silver Dart* would revert to Baldwin and McCurdy who began the Canadian Aerodrome Company and would later demonstrate the aircraft to the Canadian Army.

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