A brief history of elevators

4,000BC	■ Pulleys and winches used in the city of Ur in Chaldea.
2,600BC	■ The Egyptian builders of the Pyramids are reputed to have used lifting systems to manoeuvre materials.
2,500BC	■ Stonehenge in Wiltshire built requiring the movement of materials.
1,500BC	■ The Egyptians erect huge Obelisks requiring the movement of materials.
*ca*350BC	■ Aristotle describes the crank, pulley and block in 'Mechanical Problems'.
*ca*250BC	■ Archimedes discovers the law of leverage.
26BC	■ Vitruvius writes about burdens being raised as early as 236BC.

1203:	■ Ass powered drum drive elevator installed in Mont St Michel, Brittany, France.
1383:	■ Rudolf von Ems' 'Chronicle of the World' shows a tread wheel being used to transport materials for the building of the Tower of Babel.
1724:	■ Jacob Leupolds 'Theatrum machinarium' devotes one volume of this nine volume piece of work to 'the scenario of winches'.
1743:	■ Flying chair, invented by Velayer, installed in Versailles Palace, France for Louis XV.
1800's:	■ The industrial revolution creates the need for elevators and becomes the mother of invention. Teagles became common in mills etc.
1830:	■ First hydraulic goods elevators used in English factories.
1835:	■ Teagles in common use in England.
1844:	■ First reference to a Teagle in statutory instruments.
1850:	■ Henry Waterman of New York developed a steam driven freight elevator.
1850:	■ Simple mechanical control of elevators invented.
1851:	■ First use of the word "lift" to transport persons, Great Exhibition, London, England.
1852:	■ Elisha Otis developed the first safety gear.
1853:	■ First use of the word "elevator" to transport persons, Harper's Magazine.
1854:	■ Elisha Otis demonstrates his safety gear at the Crystal Palace exposition.
1857:	■ Elevators installed by Elisha Otis in Haughwout store, New York, USA.

A brief history of elevators (cont)

1861:	■ Elisha Otis dies.
1867:	■ Leon Edoux exhibits the first hydraulic elevator in Paris.
1872:	■ Baldwin of Chicago designed the first indirect acting elevator.
1875:	■ Hydraulic power began to supplant steam power.
1878:	■ Otis company invent the high speed hydraulic elevator.
1880:	■ Waygood & Co installs a hydraulic elevator in Charing Cross London, England.
1880:	■ Werner von Siemens exhibits the first electrically powered elevator at the Palatinate Exhibition in Mannheim, Germany.
1887:	■ First electric drum elevator by William Baxter, Baltimore, USA.
1889:	■ First electric elevator installed in Demarest Building, New York, USA.
1890:	■ Attendant & car switch control invented.
1893:	■ The Ward Leonard system is invented.
1893:	■ The subject of elevator safety becomes an issue. The Berlin police regulations publish the first rules governing elevator operation.
1894:	■ Otis company install first electric single automatic pushbutton elevator.
1895:	■ Car switch control available.
1899:	■ The Prussians introduce elevator regulations.
1900:	■ Resistance control applied to AC motors.
1903:	■ Gearless traction elevators developed with 1:1 and 2:1 roping.
1904:	■ First gearless traction elevators installed in Duane Street power station, New York and Majestic Theatre, Chicago, USA.
1920:	■ Attendant/Dispatcher control invented.
1925:	■ First collective traffic control installed in St Luke's Hospital, Chicago, USA.
1926:	■ Unified regulations for the operation of elevators introduced for the German states.
1950:	■ Group control invented.
1956:	■ An elevator running at a speed of 6.0 m/s exhibited at the Hanover Fair. This was the fastest in Europe at the time.
1967:	■ The Moscow TV tower became the tallest building in the World at 350 metres and was served by 4 elevators.
1970:	■ Hall call allocation traffic control algorithm invented by Closs at UMIST, Manchester, England.
1975:	■ Microprocessor based group control established.

A brief history of escalators

1859: ■ First escalator patent granted to Nathan Ames. The design was never built.

1892: ■ Jesse Reno designed and patented a moving inclined ramp.
■ G.H.Wheeler invented and patented a flat step moving stairway with a handrail. Again, this design was never built.
■ Moving stairway installed at the World fair ground, Chicago, USA.

1895: ■ The Wheeler design was developed by C.D.Seeburger and Otis.
■ Reno moving stairway installed as a pleasure ride at Coney Island, Brooklyn, New York, USA.

1896: ■ Four more Reno escalators sold to the Siegal Cooper Department Store in New York, USA.
■ The Reno escalator installed at Coney Island was moved to the New York end of the Brooklyn Bridge and entered passenger service.

1898: ■ Charles Seeburger buys the patent for the unsuccessful Wheeler escalator.
■ Seeburger officially creates the name "escalator" which is registered by Otis as a trade mark and permitted Otis to be the only company to spell escalator with a capital E. The name escalator was derived from a combination of the Latin name for stairs "scala" and elevator.
■ Reno inclined escalator installed in Bloomingdale Brother Department Store, New York, USA.
■ The Sovex organisation install the first moving stairway in London at the Harrods Department Store.

1899: ■ Otis build the first Seeburger design in their Yonkers factory, USA
■ A Reno machine was installed in London's Crystal Palace and one penny was charged for the ride.
■ Seeburger joins Otis.
■ A musical hall song entitled "up the sliding stairs" was written by Mr W Dempsey.

1900: ■ Reno design installed at 59th Street Station, New York, USA with a 24ft rise and forming a pair but had no handrail between them.
■ Paris exposition: two Seeburger/Otis design escalators exhibited.

1901: ■ Both of the escalators exhibited at the Paris exposition were returned to the USA. One was installed in the Gimbels Department Store in Philadelphia and the other in Chicago.
■ The first moving stairway installed at a British Railway Station (Seaforth, Liverpool).

1902: ■ Maceys Department Store, New York place an order for a bank of four escalators.

A brief history of escalators (cont)

1906: ■ Reno built his spiral moving stairs at Holloway Road Underground Station, London.
■ The first escalator installation in Germany is installed at Wertheim, Berlin.

1911: ■ The Reno electric stairway and conveyors organisation was taken over by the Otis company. Otis then became the only company manufacturing escalators World wide.
■ London Transport installs its first escalator at Earls Court Station.
■ By now over 50 Seeburger escalators had been installed World-wide.

1916: ■ Otis install their first office environment escalator in the Union Arcade Building in Philadelphia.

1922: ■ An amalgamation of the Seeburger and Reno design was created.

1930: ■ Escalator first used as a term in the American A17.1 safety code.

1932: ■ Ten escalators installed in the Wall Street Tower, New York, USA.
■ Six escalators installed in the Rockerfeller Centre, New York, USA.

1938: ■ The first seagoing escalators are installed on the "Nieuw Amsterdam".
■ Narrow gauge step type cleats introduced.

1941: ■ Otis alter their design to extend the handrail beyond the comb plates to assist in access and egress and to reduce accidents.

1946: ■ The escalator exhibited at the 1900 Paris exposition is withdrawn from use after 46 years of service at the Gimbels Department Store, Philadelphia, USA.

1950: ■ Otis lose title to the name escalator as it was deemed to have become a common term.
■ Otis responds by registering the name Escal-aire for escalators with glass balustrades.

1951: ■ First escalator manufactured by Eggars (Model FT51).

1955: ■ The escalator installed in 1900 at 59th Street in New York was removed.

1957: ■ Patent issued for a conventional escalator.

1987: ■ Tragic escalator fire at London Underground's Kings Cross Station kills 31 people and results in the Fennell Report.

Records:

■ The World Trade Centre in New York City has the largest number of escalators installed for a single building, 74 by Otis.

■ Moscow Metropolitan Railway System has a record rise of 60 m for one escalator.