



1853

## Sir George Cayley, The Father of Aeronautics

Albert Elliot

In 1853, Brompton Dale, near Scarborough, witnessed the world's first successful manned aeroplane flight. The flying machine was the invention of Sir George Cayley, of Brompton Hall, west of Scarborough. The hapless lone passenger or 'pilot' was Caley's harassed coachman, who became - reluctantly - the first person ever to take to the sky in a heavier-than-air machine. The wooden-framed aeroplane, manned (although not piloted), was towed off by a galloping horse and flew for about 275 metres across to the far side of the Dale, carrying the terrified coachman. Cayley's 10-year-old granddaughter, Dora, was an eyewitness on this momentous occasion and left us a brief but fascinating first-hand account of the glider's flight:

"Of course everyone was out on the high east side [of Brompton Dale] and saw the start from close to. The coachman went in the machine and landed on the west side at about the same level. I think it came down rather a shorter distance than expected. The coachman got himself clear, and when the watchers had got across, he shouted, "Please, Sir George, I wish to give notice, I was hired to drive, and not to fly". That's all I recollect. The machine was put high away in the barn and I used to sit and hide in it (from Governess) when so inspired."

Little did the coerced coachman, nor the amazed observers in attendance on that day, realise the great historic significance and future impact of that first flight. Cayley's incredible feat would change the world forever and lead directly to the commonplace modern-day phenomenon of air travel: thousands of jet aeroplanes daily crisscrossing the world's skyways carrying millions of passengers to far-flung corners of the globe. All this aerial activity can be traced directly back to that singular event in 1853 when Sir George's 'new flyer' lifted into the air and 'sailed away in graceful and stable flight' a relatively short distance across Brompton Dale. Mankind was airborne!

As well as being the creator of the first aeroplane, Sir George Cayley – also deservedly given the epithet 'A Yorkshire Genius' - was the source of many other ideas and inventions, such as the spoked tension wheel (forerunner of the modern bicycle wheel), a 'helicopter', artillery shells, land drainage systems, a continuous track mechanism (forerunner of the systems later used for the military tank and caterpillar tractor), an amphibious vehicle, agricultural machinery, fire safety curtains in theatres, train buffers, seat-belts for passengers, a self-righting lifeboat, a new type of pen nib, a new kind

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of parachute, an internal combustion engine (using gunpowder as the motive power!), and an anemometer for measuring the speed of air currents in mines. His 1809 design sketch for the aerofoil section of a wing, said to be based on the shape of a trout, is almost identical to the low-resistance aerofoil sections of today.

Such was his fecund mind that when the son of one of his tenants lost his right hand, Sir George set about designing and making him an artificial one. Dr Roget (famed for his Thesaurus and friend of the inventor) persuaded Cayley to present George Douseland, the recipient of the prosthetic hand, at a reception which Prince Albert attended. Douseland was said to have received a royal handshake from Queen Victoria's husband who clasped his iron hand when it was offered. Remarkably, the false hand weighed only one pound eleven ounces, only six ounces more than his natural hand.

A compassionate man, Sir George was an enlightened and benevolent landlord. He was the first to instigate a cottage allotment scheme for his tenants, who were each allowed a generous half-acre plot on which to grow food and produce for their families. A humanitarian, he always showed concern for the welfare of his fellow men. Ahead of his time, he suggested safety legislation that pre-dated by far the plethora of Health & Safety legislation that was to come.

Sir George Cayley was a truly remarkable Yorkshireman - undoubtedly a genius - who is only in recent times receiving the full credit that his many achievements deserve. Amongst the earliest to give him due recognition were a group of people much keener than his coachman to take to the skies. In 1975 they founded the 'Sir George Cayley Sailwing Club' for those who partake of the 'joy of free flight' by hang-gliding and paragliding in Yorkshire.



### Find out more

The Yorkshire Air Museum, Elvington, York YO41 4AU,  
has a life-size replica of the original sailplane,  
<http://yorkshireairmuseum.org/>

The Royal Aeronautical Society has articles, a podcast and digitised copies of Sir George Cayley's notebooks,  
<https://www.aerosociety.com/>



*Sir George Cayley's workshop, Brompton Hall*



*Sir George Cayley*



*Replica of Cayley's glider*



*Plaque, Brompton Hall*