

A GREAT BRITON

WILLIAM THOMPSON

26 June 1824 - 17 Dec 1907

MUCH HAS BEEN WRITTEN ABOUT THE GREAT SCIENTIST WILLIAM THOMPSON 1ST BARON LORD KELVIN OF LARGS.

It is impossible to do justice to one of the country's leading scientists of the day in such a short article. Those wishing to know more about Thompson's life and work need only turn to our national museums for examples of his work or the numerous publications that cover his immense and diverse contribution to the world of science and technology.

His many findings include the discovery in 1848 of absolute zero (minus 273.15°C) named the Kelvin scale in his honour and additional work on thermodynamics which today continue to find importance in the field of superconductors.

Born in Belfast, the son of a mathematics and engineering teacher, he spent his formative years being educated in Glasgow (where his father was appointed professor of mathematics in 1832), London, Germany, Paris, Cambridge finally settling back in Glasgow University.

By 1847 he had gained a reputation as a maverick scientist often challenging the results of many well established scientific theories both old and new.

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SCIENTIST TO MARINE ENGINEER

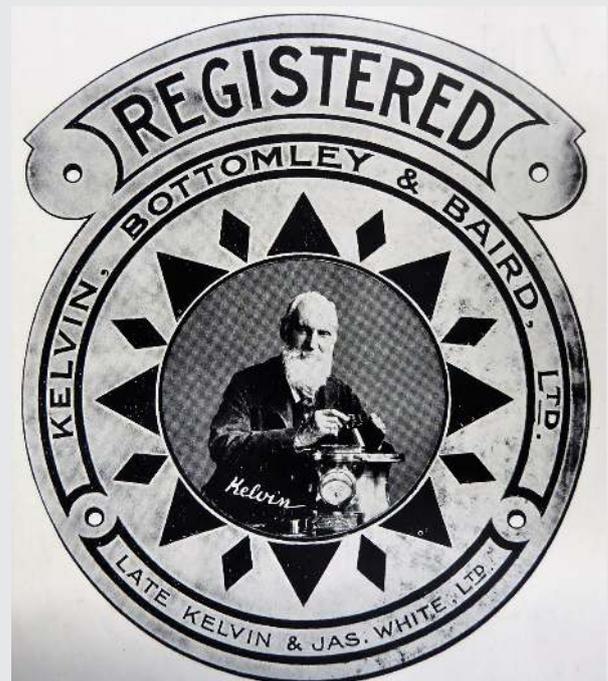
Thompson's links with the maritime industry formed in 1857 when he became involved in the laying of the first transatlantic cable between Ireland and Newfoundland by HMS Agamemnon. Unfortunately after 380 miles of this first voyage the cable broke and in an age without deep sea submarines or diving equipment, the cable was abandoned at a great financial cost.

Kelvin joined the Atlantic Telegraph Company in 1858 and in the same year developed a complete system for transmitting and receiving signals down a submarine cable using a 'Mirror Galvanometer' for transmission and a 'Siphon Recorder' for reception.

Thompson developed a wide ranging knowledge of electrical transmissions resulting in the calculations that we today take for granted as bandwidth.

Having redesigned the construction of the cable, and after a number of unsuccessful attempts, he was part of the team that completed the first transatlantic cable system in 1886. He was knighted as Sir William Thompson in November of the same year by Queen Victoria for his work on the project.

In 1870 he purchased a 126 ton schooner called **Lalla Rookh** which he used for both business and pleasure. An unqualified entry on the internet shows that when sailing in the Great Lakes, USA, a vessel bearing the same name ran aground twice causing some damage to the vessel. Could this be a clue to one of Kelvin's next maritime investigations?

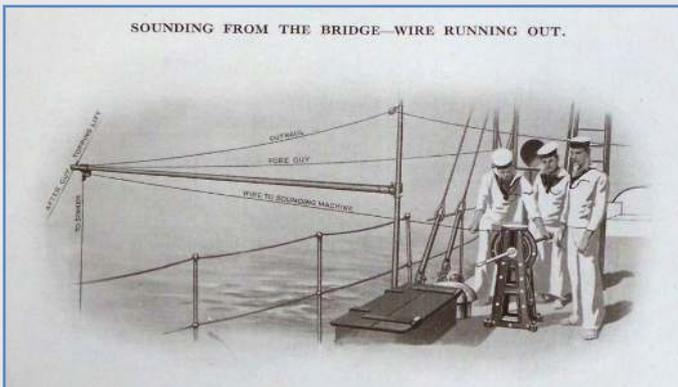


The Kelvin registered trademark.

In the 1950's Kelvin Hughes commissioned the building of a new motor launch that was used for testing depth sounders and other equipment, in honour of Lord Kelvin, this research boat was name Lalla Rookh II

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Thompson continued with both his scientific and maritime work including the introduction of a new method of taking depth readings using a mechanically controlled piano wire, this allowed depth measurements to be taken whilst the vessel was in motion replacing the centuries old method of using rope which could only be reliably used when a vessel was not sailing.



The Patented Kelvin Mechanical Depth Sounding Machine.

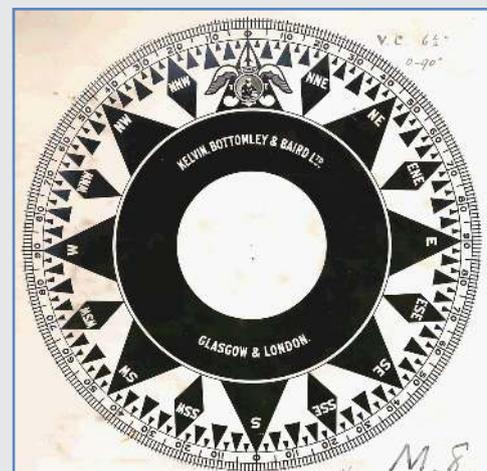
Thompson's inventiveness, problem solving skills and quest for improvement saw his work branching out into numerous fields including:

- The invention in 1872 of a mechanical tide predicting machine that was used around the world.
- The improvement of astronomical clocks with different dials detailing the relative positions of the sun, stars and planets.
- The shape of atoms where his hypothesis was generally accepted but disproved 20 years later.
- The calculation of a Tetrakaidechedron, a 14-sided mathematical model to represent a three-dimensional shape with the least surface area. Updated versions of these calculations were used in the planning of the Birds Nest stadium built for the 2008 Beijing Olympics.

THE COMPASS BINNACLE

During the 1880's, Thompson started work on a new system of adjustment of a ships compass or binnacle that compensated for the magnetic deviations caused by the newly emerging metal hulled ships.

Naval ships of the time were increasingly metal in construction so using all his contacts and considerable lobbying powers, he managed to gain acceptance and use of his Ship's Binnacle by the UK Admiralty.



An early compass card.



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These first ship compasses were manufactured by a long term business partner of Thompson's in Glasgow called James White. In 1890 Thompson took ownership of the company and renamed it Kelvin & White Ltd and was later joined in this venture by his nephew James Thomson Bottomley.

This set the company bearing the name 'Kelvin' on a long and successful path through history that finds the company today manufacturing navigation equipment for both naval and commercial shipping as well as land based security and surveillance applications.

Sir William Thompson was elevated to the bar as 1st Baron Lord Kelvin of Largs in 1892, the first ever scientist to achieve this accolade.

He chose the name Kelvin to celebrate the river that ran past his laboratory located in the grounds of Glasgow University.

In 1904, the growth of the company continued as they opened their first London offices close to their then rivals Henry Hughes & Sons.

Kelvin remained a celebrated scientist in both the United Kingdom and the Americas but he never moved away from Glasgow. Having worked tirelessly in the advancement of science and technology, been published in more than 650 scientific papers and applied for over 70 patents the great scientist died at his home Netherhall Mansion in Largs on the 17th December 1907.



Kelvin & James White, Limited 1910 catalogue.

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Such was his importance that he was buried in Westminster Abbey, London next to the famous scientist Sir Isaac Newton. A stained Glass window was installed in his memory paid for by donations from engineers in Great Britain and America. The window bears his coat of arms and Lord Kelvin's heraldic motto "**Honesty without fear**".

A very lengthy obituary concluded that:

He was a tireless worker and preserved to the end of his life a vivid interest in every advance in science and every new application of knowledge to practical needs. The noble simplicity and dignity of his character gained for him the affection and respect of his students, whilst all who had relations with him were impressed by the charm of his personality.

After his death, the company bearing his name continued to flourish. In 1913, Kelvin & James White Ltd underwent a change of name becoming Kelvin, Bottomley and Baird Ltd (occasionally shortened to KBB). They continued trading until just after WWII when the forces of Henry Hughes & Sons and Kelvin, Bottomley and Baird merged into one company called Marine Instruments Ltd later becoming Kelvin Hughes.



BARON KELVIN.

Lord Kelvin's coat of arms.



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BIZARRE FACTS:

DESTROYING OXYGEN

Will the human race and all animal life soon be left without air for breathing?
Will the world come to an end in the general asphyxiation of every living thing?

Lord Kelvin, the greatest authority today in mathematical physics, asserts that the oxygen supply of the world will be exhausted within the next five centuries.

Oxygen is the real force of the atmosphere so far as man and nearly all air-breathing animals are concerned.

Lord Kelvin has sounded an alarm which has created more discussion in scientific circles than any other pronouncement since Darwin put forth his 'Origin of Species.' No satisfactory reply has so far been offered.

It is admitted that, theoretically, the oxygen in the atmosphere is diminishing. Every bucketful of coal in a furnace and every stick of wood in a cook stove burns up a portion of the world's supply of breathing air. How long will the oxygen hold out?

Is there any way in which the extravagant waste of the world's atmosphere can be checked?

The above is an extract from an 1898 UK news article reporting that Lord Kelvin had calculated that 'free' oxygen would run out in 400 years. If you're worried, don't be as that is not until the year 2298.

This revelation by Lord Kelvin was treated by the UK and American press in a sensational fashion that would not look out of place in today's tabloid newspapers. Science now recognises that other forms of oxygen creation exist however; Lord Kelvin's theory was not **fully** disproved until as recently as 1986.