

## 100 YEARS – 100 WOMEN ENGINEERS

### Meet the Top 100 Historical Women in Engineering

*A list of 100 women engineers from history is released today as part of a project to celebrate the achievements of women in engineering over the past 100 years.*

Exactly a century ago, in 1919, an organisation called the Women's Engineering Society was formed to inspire, support and encourage women to become engineers, technicians, electricians, motor mechanics, construction workers, pilots, machine shop operatives, draughtswomen ... and every other type of engineer you can think of. In this centenary year, we celebrate the many women who excelled – often against the odds – in these professions which often deliberately excluded women. The 100 Years of Women in Engineering campaign has identified the top 100 women engineers who have been influential in the UK in all engineering fields, who lived at some time between 1919 and 2019, and who are no longer with us.



The list includes founders of the Women's Engineering Society such as Rachel Parsons and Laura Annie Willson MBE, and its first secretary, Caroline Haslett DBE, as well as presidents of the society, including the pilot and engineer Amy Johnson and the founder of the Electrical Association for Women, Mabel Matthews. It includes well-known women from the Second World War period such as Tilly Shilling, who developed the valve that prevented Merlin engines stalling when diving; and Hilda Lyon, who developed the 'Lyon Shape' used for the airship R101.

In the words of judge Nina Baker, who was part of a recent heritage project to erect a blue plaque to commemorate the life of Hilda Lyon in Market Weighton, *"It would be lovely if local heritage groups could pick up some of these women and celebrate their lives through the Heritage Blue Plaque scheme in the same way as Hilda Lyon and Laura Annie Willson have been commemorated during the past year."*



The list also includes groups of women, including the unnamed construction workers who rebuilt Waterloo Bridge during the Second World War, also known as the Ladies' Bridge, which opened in 1945, and the women of Bletchley Park whose stories are coming to light at the moment.

Among more recent examples are Baroness Platt of Writtle, who has been a champion of Women in Science and Engineering, and whose work contributed to the establishment of the WISE campaign in 1982; and Elizabeth Killick, the first female fellow of the Royal Academy of Engineering, who died in August 2019.

The list coincides with publication of a book charting the early years of the Women's Engineering Society. *Magnificent Women and their Revolutionary Machines* by Henrietta Heald tells the stories of these pioneering women and their influence on the engineering landscape during a discouraging time for women in this male-dominated profession, when – in spite of their tremendous work in munitions factories during the First World War – a successful attempt was made to outlaw the employment of female engineers.

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Prominent physicist Jess Wade describes 'Magnificent Women' as a "*remarkable tribute to the pioneers who paved the way for modern Britain*", serving as a reminder of "*how far women have come, and a source of inspiration for how far we still need to go*".

According to Dawn Bonfield, chair of the panel that chose the 100 Women, and Past President of the Women's Engineering Society:

*"It has been inspiring to learn more about these magnificent women who were pioneers in their field and had to contend with not only a legal system which prevented their participation, but an engineering profession which made it very difficult for women to succeed in the workplace. Despite these hostile conditions, many women did thrive, and that makes their stories even more compelling. Thankfully our profession has changed enormously in the past 100 years, and we can celebrate our progress through learning more about the achievements of our predecessors."*

The stories of women from our science and engineering history are slowly emerging and being added to Wikipedia and other websites such as the [Magnificent Women](#) website, in an attempt to reclaim our engineering heritage, and use these inspiring stories to encourage future generations, where the percentage of women in engineering is still only 12%. The majority of these women on the list now have an online presence, but there is still much more work to do.

### Notes

- The Top 100 list was compiled by a list of judges after a period of public nomination through the website [www.magnificentwomen.co.uk](http://www.magnificentwomen.co.uk). The judging panel was made up of Dawn Bonfield, Nina Baker, Henrietta Heald, Anne Locker, Gordon Masterton and Will Whittow. Details can be found here <https://www.magnificentwomen.co.uk/top-100-women.html>
- The criteria for inclusion in the list was that the women should be British, or have been influential in Britain during the period, have lived at some point between 1919 and 2019, and they must be deceased.
- The images above show Amy Johnson; Hilda Annie Willson, Caroline Haslett and Margaret Partridge (L to R); and the blue plaque erected for Hilda Lyon in Market Weighton.
- The Women's Engineering Society is a membership organisation which was established in 1919 and still exists today to encourage, inspire and educate women in engineering. [www.wes.org.uk](http://www.wes.org.uk). Its centenary campaign includes a Centenary Trail which aims to add the details of many of these women engineers to a map of the UK, and feature them all on Wikipedia.
- Much of the content and images that accompany the biographies of these women was sourced from the archives of the Institution of Engineering and Technology <https://www.theiet.org/publishing/library-archives/the-iet-archives/>
- This campaign was coordinated by Dawn Bonfield MBE, on behalf of the not-for-profit company, *Magnificent Women*. [www.magnificentwomen.co.uk](http://www.magnificentwomen.co.uk)
- 'Magnificent Women and their Revolutionary Machines' by Henrietta Heald is an Unbound publication and is released on Thursday 19 September 2019.
- To see the full list, with biographies, visit [www.magnificentwomen.co.uk](http://www.magnificentwomen.co.uk)
- Images and short biographies to accompany this press release can be found and downloaded here <https://www.magnificentwomen.co.uk/top-100-women.html>
- For further details please contact Dawn Bonfield, [dawnbonfield@btinternet.com](mailto:dawnbonfield@btinternet.com) Tel. 07881905520

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### Top 100 Historical Women in Engineering (in alphabetical order)

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| <ul style="list-style-type: none"><li>• Adelaide Anderson (1863-1936)</li><li>• Annette Ashberry (1894-1990)</li><li>• Hertha Ayrton (1854-1923)</li><li>• Marjorie Bell (1906-2001)</li><li>• Cleone de Heveningham Benest (1880-1963)</li><li>• Lilian Bland (1878-1971)</li><li>• Bletchley Park Women (1940c)</li><li>• Frances Bradfield (1895-1967)</li><li>• Dorothy Donaldson Buchanan (1899-1985)</li><li>• Frida Bull (Mrs Dunlop) (1900-1986)</li><li>• Anne Burns (1915-2001)</li><li>• Henrietta Bussell (1917-1996)</li><li>• Marjem Chatterton (1917c-2010)</li><li>• Letitia Chitty (1897-1982)</li><li>• Ella Collin (1903-1973)</li><li>• Kathleen Cook (1910-1971)</li><li>• Blanche Thornycroft (1873-1951)</li><li>• Dorothy Cridland (1903-1987)</li><li>• Lettice Curtis (1915-2014)</li><li>• Caroline Maude Davis (1890-1972)</li><li>• Elsie Davison (nee Muntz) (1910-1940)</li><li>• Delia Derbyshire (1937-2001)</li><li>• Jeannie Dicks (1895-1980)</li><li>• Edith Mary Douglas (1877-1963)</li><li>• Winifred Drinkwater (1913-1996)</li><li>• Victoria Drummond (1894-1978)</li><li>• Emily Dunn (nee Harris) (1901-1967)</li><li>• Gertrude Entwistle (1892-1961)</li><li>• Joy (Jonathan) Ferguson (1915-1974)</li><li>• Mary Isolen Fergusson (1914-1997)</li><li>• Marie Gayler (1991-1976)</li><li>• Elizabeth Georgeson (1895-?)</li><li>• Lillian Gilbreth (1878-1972)</li><li>• Muriel Glauert (nee Barker) (1892-1949)</li><li>• Pauline Gower (1910-1947)</li><li>• Anne Greaves (1901-1948c)</li><li>• Helen Grimshaw (1904-1987)</li><li>• Winifred Hackett (1906-1994)</li><li>• Isabel Hardwich (1919-1987)</li><li>• Caroline Haslett (1895-1957)</li><li>• Hilda Hewlett (1864-1943)</li><li>• Frances Heywood (1902-1994)</li><li>• Doris Hirst (1903-1988)</li><li>• Peggy Hodges (1921-2008)</li><li>• Verena Holmes (1889-1964)</li><li>• Hilda Hudson (1881-1965)</li><li>• Daphne Jackson (1936-1991)</li><li>• Amy Johnson (1903-1941)</li><li>• Eily Keary (1892-1975)</li><li>• Elizabeth Kennedy (1886c-1958)</li></ul> | <ul style="list-style-type: none"><li>• Elizabeth Killick (1924-2019)</li><li>• Elizabeth Laverick (1925-2010)</li><li>• Margaret Law (1928-2017)</li><li>• Sheila Leather (1898-1983)</li><li>• Minnie Lindsay (1897-1953)</li><li>• Hilda Lyon (1896-1946)</li><li>• May Maple (1914-2012)</li><li>• Kate Maslen (1920-2002)</li><li>• Mabel Matthews (1879-1970c)</li><li>• Monica Maurice (1908-1995)</li><li>• Marion McQuillan (1922-1998)</li><li>• Maxine 'Blossom' Miles (1901-1984)</li><li>• Veronica "Ronnie" Milligan (1926-1989)</li><li>• Lady Margaret Moir (1864-1942)</li><li>• Madeleine Nobbs (1914-1970)</li><li>• Lucy Oldfield (1925-1989)</li><li>• Claudia Parsons (1900-1998)</li><li>• Rachel Parsons (1885-1956)</li><li>• Katharine Parsons (1859-1933)</li><li>• Margaret Partridge (1891-1967)</li><li>• Alice Perry (1885-1969)</li><li>• Dorothy Pile (1902-1993)</li><li>• Ruth Pirret (1974-1939)</li><li>• Jane Plant (1945-2016)</li><li>• Beryl Platt (Baroness Platt of Writtle) (1923-2015)</li><li>• Dorothée Pullinger (1894-1986)</li><li>• Molly Quennell</li><li>• Margaret Rowbotham (1883-1978)</li><li>• Dorothy Rowntree (1903-1988)</li><li>• Mary Roxburgh (1896-1973)</li><li>• Barbara Sabey (1928c-2013)</li><li>• Lesley Scott Souter (Born 1917)</li><li>• Gwendolen Sergeant (1926-1979)</li><li>• Anne Gillespie Shaw (1904-1982)</li><li>• Eleanor Shelley-Rolls (1872-1961)</li><li>• Beatrice Shilling (1909-1990)</li><li>• Karen Spärck Jones (1935-2007)</li><li>• Dorothy Spicer (1908-1946)</li><li>• Nora Stanton Barney (1883-1971)</li><li>• Jean Taylor (1924-1999)</li><li>• Mary Thompson Irvine (1919-2001)</li><li>• Constance Tipper (1894-1995)</li><li>• Theresa Wallach (1909-1999)</li><li>• Waterloo Bridge Builders (1939-1945)</li><li>• Maria Watkins (1918c-2010)</li><li>• Johanna Weber (1910-2014)</li><li>• (Misses) Weinling</li><li>• Laura Annie Willson (1877-1942)</li><li>• Rose Winslade (1919-1982)</li><li>• Mary Lee Woods (Mrs Berners-Lee) (1924-2017)</li></ul> |
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### *Milestones for Women in Engineering taken from the book ‘Magnificent Women and their Revolutionary Machines’ by Henrietta Heald*

- 1898 **Hertha Ayrton** becomes the first female member of the Institution of Electrical Engineers. In 1904 she is the first woman to read a paper on her work at the Royal Society. In 1906 she receives the Hughes Medal of the Royal Society – another first.
- 1906 **Alice Perry** is first woman in Europe to graduate with a degree in engineering, from Queen’s College, Galway, Ireland. [DB has 1908]
- 1910 The Anglo-Irish journalist and pioneer aviator **Lilian Bland** is the first woman in the world to design, build and fly an aircraft – the Bland Mayfly.
- 1910 **Rachel Parsons** is the first woman to take the Mechanical Sciences Tripos at Cambridge University. The sisters **Elsie and Eily Keary** follow in her footsteps. All three enter Newnham College.
- 1911 **Hilda Hewlett** is the first British woman to earn a pilot’s licence, a year after opening the first flying school in Britain, at Brooklands motor-racing circuit in Surrey.
- 1917 **Eily Keary** is the first woman to be elected a Fellow of the Royal Aeronautical Society. She is researching aeronautics at the William Froude National Tank at the National Physical Laboratory, Teddington, Middlesex, where she stays for 14 years.
- 1917 In the year in which the Order of the British Empire honours are instituted, engineer and businesswoman **Laura Annie Willson** is awarded an MBE.
- 1919 **Elizabeth Georgeson** becomes the first female engineering graduate in Scotland. She goes onto become an expert in fire safety in mines, at the Safety in Mines Research Laboratory.
- 1919 The Women’s Engineering Society is founded by **Katharine and Rachel Parsons** and several others, with **Caroline Haslett** as secretary.
- 1919 **Rachel Parsons, Eily Keary and Blanche Thornycroft** are the first three women admitted as associate members of the Royal Institution of Naval Architects.
- 1920 **Cleone de Heveningham Benest**, who was calling herself Miss Clayton Griff at the time, and **Dorothee Pullinger** are the first female associate members of the Institution of Automobile Engineers.
- 1921 **Margaret Partridge** sets up her electric power supply company, M. Partridge and Co., Domestic Engineers, offering to install electrical power in rural homes in southwest England.
- 1921 **Victoria Drummond** is the first female member of the Institute of Marine Engineers.
- 1921 **Letitia Chitty** is first woman to graduate from Cambridge University with first-class honours in the Mechanical Sciences Tripos. She goes on to become a noted aeronautical and structural engineer.
- 1922 Galloway Engineering Company starts manufacturing the Galloway car designed by **Dorothee Pullinger** specifically for women drivers. She also races Galloway cars successfully in Scottish time trials.
- 1924 The Electrical Association for Women, proposed by **Mabel Matthews**, is founded to pioneer the use of electricity in the home. **Caroline Haslett** is appointed director.
- 1924 **Verena Holmes** becomes the first female associate member of the Institution of Mechanical Engineers and of the Institution of Marine Engineers, having worked for the New London Ship and Engine Co.
- 1925 **Annette Ashberry**, founder manager of Atalanta Ltd, an all-female engineering company, is the first woman to be admitted to the Society of Engineers, a learned body.
- 1926 **Dorothy Rowntree** is first woman to qualify as a naval architect, gaining her BSc Engineering Naval Architecture from the University of Glasgow and worked with her father, who was a Lloyds’ ship surveyor.
- 1927 **Dorothy Buchanan** is the first female member of the Institution of Civil Engineers and works on Sydney Harbour Bridge. She becomes part of the design team at Dorman Long, based in Middlesbrough, for the Tyne Bridge in Newcastle.
- 1930 **Amy Johnson**, the first woman to qualify as a ground engineer, makes the first solo flight by a woman from England to Australia.
- 1931 **Verena Holmes** is the first woman admitted to the Institution of Locomotive Engineers, and registers her 11th patent.

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- 1933 **Elizabeth Kennedy**, managing director of J. B. Stone & Co., machine tool manufacturers, wins an award from the Institution of Electrical Engineers for her paper 'An analysis of the cost of electrical supply and distribution in Great Britain'.
- 1936 **Anne Shaw**, an expert in industrial efficiency and motion studies, becomes the first woman member of the Institution of Production Engineers.
- 1940 Air Transport Auxiliary (ATA) is formed by members of the Women's Engineering Society, including **Pauline Gower** who becomes its commandant. During the Second World War it employs 166 female pilots.
- 1940 Thousands of women worked as codebreakers at **Bletchley Park** during the Second World War.
- 1941 **Netta Harvey** becomes one of only four women to be trained as shipyard electricians on Clydeside. She wires ships under construction at Harland and Wolff and later at John Brown & Co.
- 1944 **Verena Holmes** is the first female member of the Institution of Mechanical Engineers.
- 1945 Completion of **Waterloo Bridge** in London – known as the Ladies' Bridge because it was largely built by women.
- 1947 **Caroline Haslett** is the first female member of the British Electricity Authority (later the Central Electricity Authority).
- 1947 **Helen Maurice**, electrical engineer, with the rank of lieutenant-colonel, is part of a British intelligence mission to Germany to inspect certain specialised industries. From 1951 to 1979 she is managing director of Wolf Safety Lamp Co.
- 1951 **Lesley Scott Souter**, electrical engineer, becomes team leader at General Electric Co., working on properties of germanium for radar and TV. She was the first woman to receive a BSc in Engineering at Glasgow University, in 1940.
- 1957 **Molly Fergusson** is the first female Fellow of the Institution of Civil Engineers. In 1948 she was appointed Britain's first female senior partner in a civil engineering firm, Blyth & Blyth.
- 1958 **Irene Ferguson**, a chief experimental officer at the Air Ministry and former ATA pilot, transitions to become Jonathan Ferguson. Jonathan's civil service employers move him onto the male pay grade.
- 1959 **Kathleen Booth** publishes *Programming for an Automatic Digital Calculator*, an early book on computer design and programming. She is the designer of one of the world's first three operational computers.
- 1961 **Lucy Oldfield** is presented with a glass slipper to commemorate her year as chairman of the London section of the Society of Glass Technology. She works at General Electric Co.'s Hirst Research Centre in Wembley, Middlesex.
- 1983 **Barbara Sabey** is awarded the Imperial Service Order for her contribution to road safety during a 40-year career at the Transport and Road Research Laboratory, where she was recruited as a young physics graduate in the 1940s.
- 1984 **Baroness Beryl Platt** established [WISE – Women into Science and Engineering](#) - whilst at the Equal Opportunities Commission to highlight the career opportunities for girls and women in science and engineering professions.
- 1985 **Daphne Jackson** Trust established, to provide fellowship funding for women in STEM to return to work after career breaks.
- 2019 [Women's Engineering Society](#) celebrates its centenary