



ENGINEERS & INVENTORS



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**....and the impact
their inventions and
discoveries have
made on our
everyday lives**



LEONARDO

DA

VINCI



Born 15 April 1452 – Florence, Italy

Died 2 May 1519 – Amboise, France

**A man of many skills— including inventor,
engineer, mathematician, scientist,
botanist, painter, sculptor.**

**He is credited with conceptualising ideas
for flying machines; an early parachute ;
armoured fighting machine (tank) and
concentrated solar power.**



ISAMBARD KINGDOM BRUNEL



Born 9 April 1806 - Portsmouth

Died 15 September 1859 - London

**Mechanical and civil engineer
Ground-breaking designs and
ambitious constructions.**

Innovative, ingenious

**Building bridges; tunnels; railway lines;
steamships; dockyards**

**His designs revolutionised modern
engineering and public transport**

(SS Great Britain)

(Box Tunnel)

(Great Western Railway)



THOMAS TELFORD



Born: 9 Aug 1757 - Eskdale, Dumfriesshire

Died: 2 Sept 1834 - London

Civil Engineer, architect, stonemason

First President of Institution of

Civil Engineers

Prolific designer of highways, bridges,

tunnels, harbours, canals



RUDOLF

DIESEL



Born: 18 March 1858—Paris France

**Died: 29 September 1913— Disappeared at sea
in the English Channel**

German inventor and mechanical engineer

Invented the diesel engine

Studied thermodynamics



JOHN BOYD DUNLOP



Born 5 February 1840, Dreghorn, Ayrshire

Died: 23 October 1921—Dublin, Ireland

Veterinary surgeon by profession

Developed the pneumatic tyre

Developed pneumatic tyres for his son's tricycle—impressed with the results so he developed tyres for a bigger bicycle. He was granted a patent in 1888, not realising another Scot Robert William Thomson of Stonehaven was granted a patent for a pneumatic tyre in 1847.

His commercial production of cycle tyres began in Belfast in 1890—but production of car tyres did not begin until 1900, after his retirement.

He never made any fortune from his invention.



JAMES

WATT



Born: 19 January 1736 - Greenock

Died: 25 August 1819 - Birmingham

Inventor and mechanical engineer.

Improved on Newcomen's steam engine

Developed technology of the steam engine and its uses in manufacturing—advancing the Industrial Revolution.

Developed the concept of horsepower

The SI unit of power—the 'watt' - was named after him

Worked very successfully in partnership with William Murdoch and Matthew Boulton



ALEXANDER

GRAHAM

BELL



Born 3 March 1847—Edinburgh, Scotland

Died 2 August 1922—Nova Scotia, Canada

Scientist, inventor and engineer.

**Credited with developing the first practical
telephone.**

**Also made significant developments in
optical telecommunications, hydrofoil
and aeronautics.**

**One of founders of
National Geographic Society**



SIR
BARNES
WALLIS



Born: 26 September 1887 - Ripley Derbyshire

Died: 30 October 1979 - Effingham Surrey

Scientist, Engineer, Inventor

Invented the 'bouncing bomb' in 1942-43

**Originally trained as a marine engineer, and
moved on to airship and aircraft design**

He worked for Vickers then

Vickers-Armstrong and latterly

British Aircraft Corporation



GEORGE WESTING- HOUSE



Born: 6 October 1846 - New York

Died: 12 March 1914

Entrepreneur and engineer

Invented the railway airbrake

**Was a rival of Thomas Edison in the
implementation of the American**

electricity system

**His system was based on the alternating
current –AC—used today.**



ROBERT MOOG



Born: 23 May 1934—New York City

Died: 21 August 2004 - Asheville, N Carolina

American pioneer of electronic music

Inventor of the Moog synthesiser.

**Had degrees in physics and electronic
engineering and a PhD in engineering
physics**

**Founded two companies manufacturing
electronic musical instruments.**

**He created the first voltage-controlled
subtractive synthesizer to utilize a keyboard
as a controller in 1964.**



GUGLIELMO MARCONI



Born: 25 April 1874—Bologna, Italy

Died: 20 July 1937—Rome Italy

Inventor and electrical engineer

**Pioneering work on long-distance radio
transmission**

**Developed a radio telegraph system and is
often credited with inventing the radio**



SIR

CHRISTOPHER

COCKERELL

Born: 4 Jun 1910—Cambridge

Died: 1 June 1999—Hythe

English engineer

Best known for inventing the Hovercraft

Read mechanical engineering at Cambridge University—and later went back to study radio and electronics.

He also developed a wave power hydraulic device.



Air Commodore

SIR

FRANK

WHITTLE



Born: 1 June 1907— Earlsdon, Coventry

Died: 9 August 1996 — Maryland, USA

RAF engineer

**Credited with developing the turbojet
engine.**

Submitted first patent in 1930



STEVE JOBS

&

STEVE WOZNIAK



Born: 24 Feb 1955—San Francisco

Died: 5 Oct 2011—Palo Alto, California

Co-founder of Apple Computers Inc

CEO of Pixar Animation Studios

**Pioneer of the microcomputer revolution of
the 1970s**

&

Born 11 August 1950—San Jose, California

**Inventor, electronics engineer and
computer programmer**

Co-founder of Apple Computers Inc



SIR

JAMES

GOODFELLOW



Born: 1937—Paisley, Renfrewshire

**Inventor of the concept of the PIN
(personal identification number)**

**Contributed to the development of
the ATM (automatic teller machine)**



JOHN SHEPHERD- BARRON



Born: 23 June 1925—Shilong, India

Died: 15 May 2010, Inverness, Scotland

Pioneered the development of the cash machine, also known as the ATM (automatic teller machine)- 1967



SIR

JOHN

HARRINGTON



Born: 4 August 1560—Kelston, Somerset

Died: 20 Nov 1612—Kelston, Somerset

English courtier to and godson of Queen Elizabeth 1, author and translator

Popularly credited with inventing the first flush toilet in 1596

Is also the reason that a toilet is often referred to as a 'John'

The first prototypes were very expensive and had to be custom built into people's homes—including the Queen's!



JOSEPH

FRY



Born: 1795—London

Died: 1879—England

Developed the chocolate bar in 1847

**Discovered a way to mix the ingredients of
cocoa powder, sugar and cocoa to
manufacture a paste that could then be
moulded into a chocolate bar.**



Dr C
HUNTER
SHELDEN



Died: 2003 Pasadena

American neurosurgeon

Invented the modern retractable seat belt in cars 1959

Also proposed passive restraints (like today's airbag); reinforced roofs, rollbars and door locks.

(Subsequently in 1959 US Congress passed legislation requiring all automobiles to meet certain safety standards.)



Sir TIM BERNERS- LEE



Born: 8 June 1955—London

**English computer scientist
Inventor of the World Wide Web 1989**



CLARENCE BIRDSEYE



Born: 9 Dec 1886—Brooklyn, New York

Died: 7 Oct 1976—New York

**American inventor, entrepreneur and
naturalist**

Founder of the modern frozen food industry

**Invented a way to ‘flash-freeze’ foods that
produced fresher, better tasting results.**



JOHN WALKER



Born: 1781—Stockton-on-Tees

Died: 1 May 1859—Stockton-on-Tees

English chemist

Invented the friction match 1827.

Refused to patent his invention and others like Isaac Holden, also developed a similar product.



STEPHANIE KWOLEK



WHAT IS AN ENGINEER?

...”a professional practitioner of engineering, concerned with applying scientific knowledge, mathematics, economics and ingenuity to develop solutions to meet economic and societal needs”

“One who contrives, designs or invents; an author, designer..”



Born: 31 July 1923—Pennsylvania USA

Died: 18 June 2014—Wilmington, Delaware

American organic chemist

Invented 'Kevlar' - the first of a family of synthetic fibres of exceptional strength:

poly-paraphenylene terephthalamide

Worked for the DuPont company for over forty years



WHAT IS ENGINEERING?

“...the art and science of the engineer’s profession...the discipline, art and profession of acquiring and applying scientific, mathematical, economic, social, and practical knowledge to design and build structures, machines, devices, systems, materials and processes that safely realise solutions to the needs of society.”



ALICE

PERRY



Born: 24 October 1885

Died: 21 August 1969

Irish civil engineer

**Graduated with first class honours degree in
Civil Engineering from Queen's College
Galway in 1906.**

**Believed to be the first woman to graduate
with a degree in engineering in Ireland or
Great Britain.**



VICTORIA DRUMMOND



Born: 14 October 1894—Scotland

Died: 15 December 1978—Ditchling Suffolk

First woman marine engineer in Britain.

**First woman member of the Institute of
Marine Engineers**

**Served at sea as a marine engineer officer in
World War II in the British Merchant Navy
and awarded for bravery under fire.**



BEATRICE SHILLING



Born: 8 March 1909—Waterlooville, Hants

Died: 18 November 1990

British aeronautical engineer.

During World War II she invented “Miss Shilling’s orifice”, a fix for the Rolls-Royce Merlin engines in the Hawker Hurricane and Supermarine Spitfire fighters which prevented engines flooding in a dive.

She was a famous motor cycle and motor car racer



HEDY LAMARR

Born: 9 Nov 1914—Vienna, Austria

Died: 19 January 2000—Casselberry, Florida

**American/Austrian Hollywood actress of
1940s-50s and inventor**

Born as Hedwig Eva Maria Kiesler

Keen interest in applied science.

During World War II she recognised jamming of Allied radio communication by the Germans was a major problem. With composer George Antheil she developed spread spectrum and frequency hopping technology to overcome the problem. Though the US Navy did not adopt the technology until the 1960s, the principles of her work are now incorporated into modern Wifi and Bluetooth technology.



MARY ANDERSON



Born: 1866—Greene County Alabama

Died: 1953—Monteagle, Tennessee

**American real estate developer, rancher,
viticulturist**

Invented the windshield wiper blade in 1903



Bette Nesmith Graham



Born: 23 March 1924—Dallas, Texas

Died: 12 May 1920—Richardson, Texas

**American typist and commercial artist
The inventor of 'white-out' or typewriter
correction fluid in early 1950s
Later known as Mistake Out and
Liquid Paper
Forerunner of Tipp-Ex**