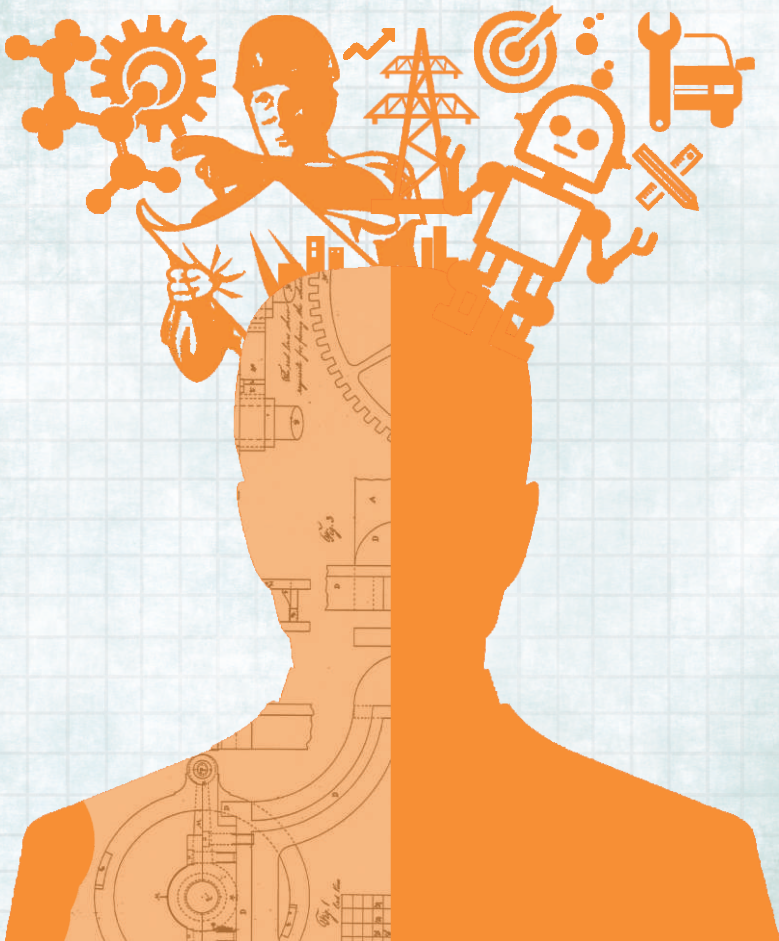
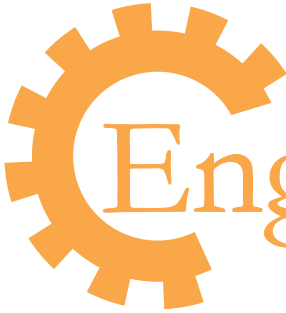




S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY CAMPUS

Engineering Wonders





Engineering Wonders

In our routine life, we use or see many engineering things around us, but we may not be aware of interesting facts related with those things. In this booklet, interesting engineering facts, which may not have been heard before, are included. We have tried to put various facts of different branches of engineering. We hope that these facts will be helpful to students and will ignite some interest and motivate the students to do something new in the field of technology for our country and the world.





Interesting Civil Engineering facts

1. In the 18th century, the term “civil engineering” came into use to describe engineering work that was performed by civilians for nonmilitary purposes.

2. British engineer John Smeaton is named as the world's first modern-day civil engineer. Smeaton built Eddystone Lighthouse in



England in the year 1882 and he had declared himself the first civil engineer. It is noteworthy that the history of the Indian architecture is 3300 years old.

3. Civil engineers also help to preserve the environment by assisting in the cleaning up of existing pollution and planning ways to reduce future pollution of air, land and water.





4. The first civil engineering degree to be awarded to a woman was granted by Cornell University to Nora Stanton Blatch in 1905.



5. The longest street in the world is Toronto's Yonge Street, listed as 1,178 miles (1,896 km) in length — roughly the distance from San Diego, California, to Seattle, Washington. Guess who built it? Civil Engineers!





6. The Panama Canal is considered an engineering marvel. Proposed first by the ruler of both, the Spanish Empire from 1516 and the Holy Roman Empire, King Charles V, the 48 mile long man-made canal connects the Atlantic Ocean and the Pacific Ocean. During the construction more than 43,000 people were working. The canal is one of the world's busiest sea ports.



7. Akashi-kaikayo bridge in Japan connects the island of Awaji to Kobe city. It is the world's longest suspension bridge. This 3911 meter long bridge was built in 10 years by 2,00,000 people and

181000 ton steel and 14 lakh cubic meter concrete were used in the bridge have length such that it can be wrapped seven times around the earth!





8. The Burj Khalifa stands at 828 meters (2,716.5 feet) tall, soaring over Dubai. It's three times as tall as the Eiffel Tower and nearly twice as tall as the Empire State Building. Aside from holding the World Record for being the tallest building in the world, Burj Khalifa holds six other World Records: tallest freestanding structure in the world, highest number of stories in the world, highest occupied floor in the world, highest outdoor observation deck in the world, elevator with longest travel distance in the world, and tallest service elevator in the world.



The weight of the concrete is equivalent to 100,000 elephants. Every year 15 million gallons of water are collected sustainably. It has the longest single running elevator, which is 140 floors. The tip of the sphere of the Burj Khalifa can be seen up to 95 kilometers away. At the peak of construction, 12,000 workers worked on the building per day.





9. Civil engineers participate in the constant rebuilding of the hotel. It is now 22 years old and is rebuilt every year in a short amount of time.



10. The rollercoaster, located in Cedar Point, Ohio, reaches a height that is longer than a football field (310 ft) and a velocity that is faster than a cheetah (92 mph).





11. The Chesapeake Bay Bridge-Tunnel was considered to be "One of Seven Engineering Wonders of the Modern World." The Chesapeake Bay Bridge-Tunnel opened as a two-lane highway in 1964.



Thirty-five years later in 1999, the southbound side opened, making it a four-lane highway.

12. The Great Pyramid of Giza is the oldest of the Ancient Wonders of the World and the last one that remains largely intact.





13. On September 8, 1900, a hurricane sent an 8-foot high wave crashing into the city of Galveston, Texas. This hurricane killed 6,000-8,000 people and is considered to be the worst natural disaster in U.S. history. After the hurricane, the city asked retired Army engineer Henry Robert to design a seawall that would be seven miles long and seventeen feet high.



14. The Mormon Tabernacle in Salt Lake City, Utah is an amazing engineering and acoustic accomplishment. The Mormon Tabernacle's unique shape is so acoustically sensitive that

a pin dropped in the pulpit can be clearly heard at the back of the hall - 170 feet away!

15. There are enough roads in the U.S. to stretch from the earth to the moon 8 times! The U.S. interstate system has a total length of over 46,000 miles, but that is only a small fraction of the total number of roads in the country. Transportation engineers have helped to build almost 4 million miles of road in the United States..





16. The Great Wall of China is the longest structure ever built by humans. The Great Wall of China stretches around 6300 kilometer (3915 miles) in length. If you measure the length of all the different sections of wall, the distance is more like 22000 kilometer. The first parts of the wall were built over 2000 years ago.



17. Located on the Champ de Mars in Paris, France, the Eiffel Tower is one of the most well known structures in the world. The Eiffel Tower was originally built as the entrance arch for the World's Fair in 1889. It is named after Gustave Eiffel, whose company was in charge of the project.





18. Water slide – one of the most popular game in water parks, are designed by Civil Engineers!



19. The tunnel across Manche Channel is regarded as one of the greatest construction in the modern world. The idea of building a tunnel across Manche Channel had been mentioned since the



18th century but not until 1970 that it became a practical project. However, it was left untouched for nearly 20 years. The project kicked off in 1986 and was finished in 1994.



20. The Leaning Tower of Pisa (Torre pendente di Pisa) is a bell tower in Pisa, Italy. The Tower of Pisa is world famous for its prominent tilt to one side. The tower's foundations were built on soft subsoil which had difficulty supporting the tower's weight (14,500 ton). When the second storey was started the lean became noticeable and only got worse as construction continued. Originally the tower leaned at an angle of 5.5 degrees. After restoration work between 1990 and 2001 this angle was reduced to 3.97 degrees.



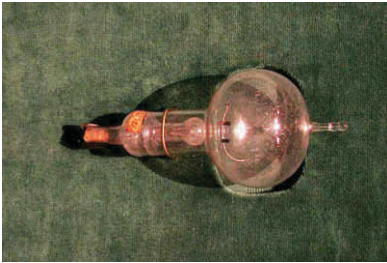


Interesting Electrical Engineering Facts

1. Founded in 1892 through a merger of Edison General Electric Company, Schenectady and Thomson-Houston Electric Company of Lynn, Massachusetts, General Electric had its headquarterd based in Connecticut, US while both the operating plants were based in New York.



The picture shows Edison's advertising offered to rent the light bulbs for Christmastime use!



2. The electric light, one of the everyday conveniences that most affects our lives, was not “invented” in the traditional sense in 1879 by Thomas Alva Edison, although he could be said to have created the first commercially practical incandescent light. He

was neither the first nor the only person trying to invent an incandescent light bulb. In fact, some historians claim there were over 20 inventors of incandescent lamps prior to Edison's version. However, Edison is often credited with the invention because his version was able to outstrip the earlier versions because of a combination of three factors: an effective incandescent material, a higher vacuum than others were able to achieve and a high resistance that made power distribution from a centralized source economically viable.



3. Only 10% of the energy used by a traditional light bulb generates actual light. The other 90% of the energy creates heat.

4. The oldest light-bulb in continuous use was installed before the Wright Brothers took flight, is 112 years old, and is still as beautiful as the day she was born. In



fact, it's likely the oldest electrical device in continuous use period. Take a moment and consider just how much the world has changed around this one, singular device.



5. The Three Gorges Dam is a hydroelectric dam that spans the Yangtze River by the town of Sandouping, located in Yiling District, Yichang, Hubei province, China. The Three Gorges Dam is the world's largest power station in terms

of installed capacity (22,500 MW).

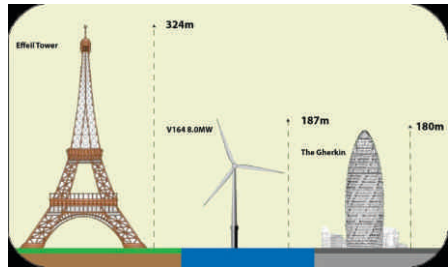
6. In 1888, Charles Brush, an Ohio-based engineer, built a 60-foot tower with a 56-foot rotor to generate up to about 12kW of electricity. This was the first wind mill.

The tallest wind turbine in the world has rotor tips that reach over 200 meters (656 feet) above the ground. The Vestas V164 has a rated





capacity of 8 MW, has an overall height of 220 m (722 ft), a diameter of 164 m (538 ft), is for offshore use, and is the world's largest-capacity wind turbine since its introduction in 2014.



7. The Olmedilla Photovoltaic (PV) Park in Spain uses 162,000 flat solar photovoltaic panels to deliver 60 megawatts of electricity on a sunny day. The entire plant was completed in 15 months at a cost of about \$530 million at current exchange rates. Olmedilla was

built with conventional solar panels, which are made with silicon and tend to be heavy and expensive.

8. Tokyo Electric Power Co.'s (TEPCO) Kashiwazaki-Kariwa plant in Japan is currently the world's largest nuclear power plant, with a net capacity of 7,965MW.



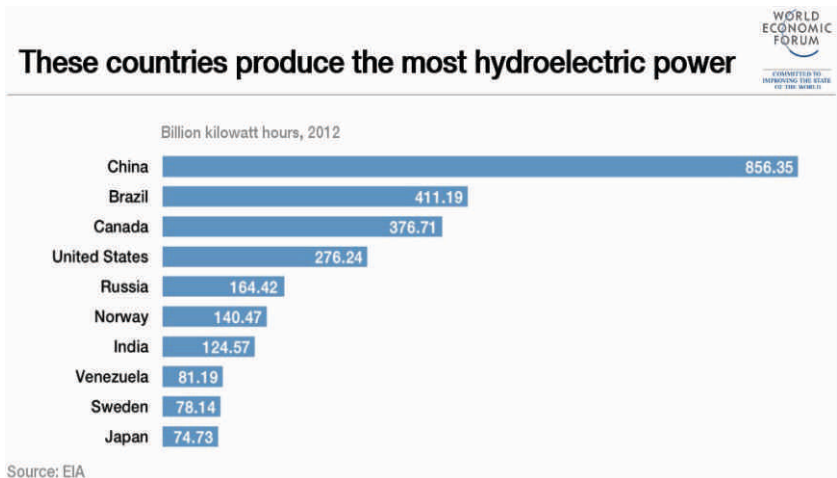


9. Ever wondered why a bird does not get electrocuted sitting on a power line? That is because both feet are on one power line. As soon as a part of its wing or one foot touches another power line, a circuit would be created flowing through the body of the bird, causing electrocution.



The reason is very simple. For anyone to get electrocuted current has to pass through it. And for current to pass through it there has to be a potential difference across it. When a bird sits on the High voltage wire it is essentially sitting on a single point and does not have any potential difference across it.

10. China is the world's largest producer of the hydroelectricity.





11. Hydropower is an environmental friendly and renewable energy source. 99% of all power production in Norway comes from hydropower.



12. Fireflies produce light using chemical energy from their food. This light is even more efficient than that of one light bulb. Other creatures possess this magic too, like the deep sea squid and glow worms. An

electric eel on the other hand, does not glow, but it can provide a shock of 600 volts, that is double the 220 volts which can be safely plugged into a socket in your home.

13. One bolt of lightning has enough electricity to supply 200000 average size homes!





14. The Statue of Liberty was the first lighthouse to use electricity in 1886.

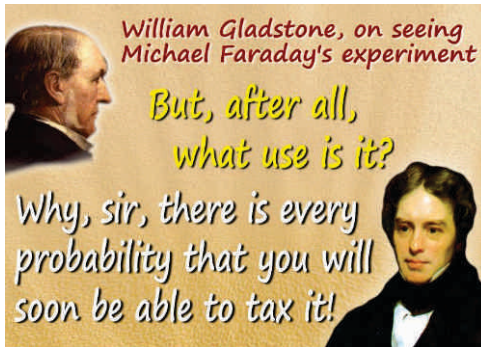


15. Alessandro Volta was the one who discovered that when two strips of different metals were placed in sulfuric acid and connected to a simple wire, electricity flowed. Thus, he invented the first electric battery. The term “Volt” was named in honor of Volta.





16. In 1850, William Gladstone asked the scientist Michael Faraday why electricity was valuable. Faraday answered, "One day sir, you may tax it."



17. At 7:30 p.m. on April 24, 1913, American President Woodrow Wilson pressed a button at the White House to turn on 80,000 light bulbs at the Woolworth Building, a publicity stunt befitting the opening of the world's tallest skyscraper. The Woolworth required 87 miles of electrical wiring and its own power plant.





18. Around local midnight time on April 8, 2015, astronauts aboard the International Space station took this photograph of Paris, often referred to as the “City of Light”.



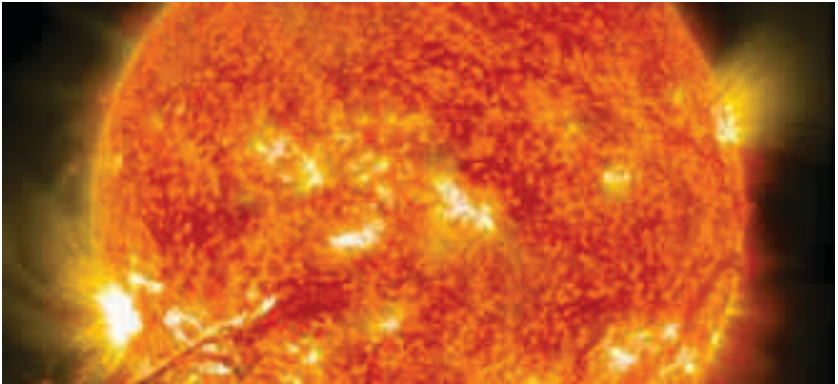
19. The first electric light in India was lit in Calcutta in 1879 and then in 1881. With Calcutta Electric Lighting Act in 1895, Kilburn & Co. obtain the license of electrification in Calcutta as an agent of Calcutta Electric Supply Corporation Limited. The Calcutta Electric Supply Corporation Limited was registered in London.





On 17 April 1899, the first thermal power plant of The Calcutta Electric Supply Corporation Limited was commissioned at Emambagh Lane near Prinsep Ghat heralding the beginning of thermal power generation in India.

20. Sufficient amounts of sunlight reach the earth every minute to satisfy the entire worlds' energy demands for a year.



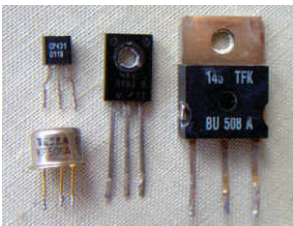


1. The world's first mobile phone call was made on April 3, 1973, when Martin Cooper, a senior engineer at Motorola, called a rival telecommunications company and informed them he was speaking via a mobile phone. The phone Cooper used, if you could call it that, weighed a staggering 1.1 kg and measured in at 228.6x127x44.4 mm. With this prototype device, you got 30 minutes of talk-time and it took around 10 hours to charge.



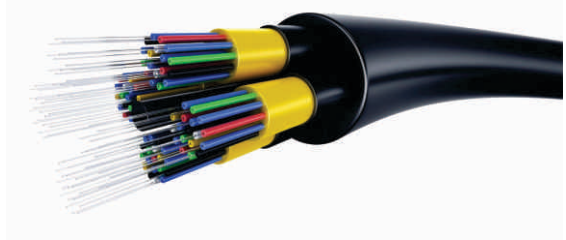
In 1983, Motorola released its first commercial mobile phone, known as the Motorola DynaTAC 8000X. The handset offered 30 minutes of talk-time, six hours standby, and could store 30 phone numbers. It also cost £2639 (\$3995).

2. A transistor is a solid-state electronic device used to control the flow of an electric current. The term solid-state refers to devices that take advantage of special properties of solids. (It usually refers to devices made of semiconducting materials.) Since they were invented in the 1940s, transistors have come to revolutionize modern communications. They are found in an enormous variety of electrical devices, ranging from popular consumer items such as home computer games, pocket calculators, and portable stereos to the complex electronic systems used by business and industry. More than a billion transistors are manufactured every second!





3. Fiber optics are good because they use less energy and are better for the environment than electrical wires. They are also very resistant to weather.



4. The Internet is the fastest-growing communications tool ever. It took radio broadcasters 38 years to reach an audience of 50 million, television 13 years, and the Internet just 4 years.



5. To solve the problem of sharing information at Large Hadron Collider at CERN, he created the World Wide Web. He did this single-handedly, unlike most other scientists. And he did not patent it. The man behind this information explosion is Tim Berners-Lee.



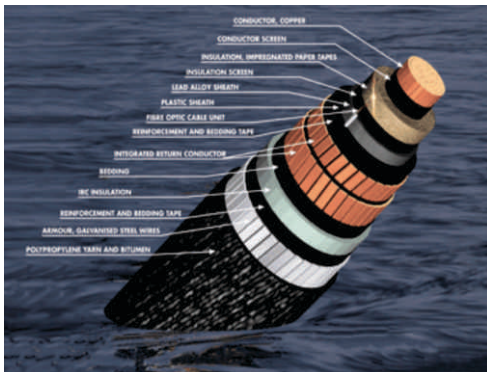


6. The first e-mail from space was sent in 1991. The crew of STS-43 Atlantis used Apple's early AppleLink software on a Macintosh Portable to transmit the following:

“Hello Earth! Greetings from the STS-43 Crew. This is



the first AppleLink from space. Having a GREAT time, wish you were here... send cryo and RCS! Hasta la vista, baby... we'll be back!"



7. A submarine communications cable is a cable laid on the sea bed between land-based stations to carry telecommunication signals across stretches of ocean. A submarine communications cable is a cable laid on the sea bed between land-

based stations to carry telecommunication signals across stretches of ocean.





8. Submarine cables are laid using special cable layer ships, such as the modern René Descartes, operated by Orange Marine.



9. Isamu Akasaki, Hiroshi Amano and Shuji Nakamura were awarded Physics Nobel Prize of 2014 for having invented a new energy-efficient and environment-friendly light source – the blue light-emitting diode (LED). In the spirit of Alfred Nobel the Prize rewards an invention of greatest benefit to mankind; using blue LEDs, white light can be created in a new way. With the advent of LED lamps we now have more long-lasting and more efficient alternatives to older light sources.

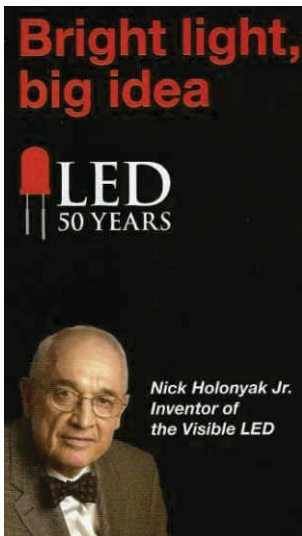




10. Apollo 11 landed two men on moon. The combined power of all the computers in Apollo 11 is much less than the power of today's mobile phone!



11. Nomophobia is the fear of being without your mobile phone or losing your signal.



12. The first visible LED was invented in 1962 by Professor Nick Holonyak who then worked for General Electric.





13. The first remote intended to control a television was developed by Zenith Radio Corporation in 1950. The remote, called "Lazy Bones", was connected to the television by a wire. A wireless remote control, the "Flashmatic", was developed in 1955 by Eugene Polley.



14. By the 1920s, when amplification made television practical, Scottish inventor John Logie Baird employed the Nipkow disk in his prototype video systems. On 25 March 1925, Baird gave the first public demonstration of televised silhouette images in motion, at Selfridge's Department Store in London.

15. Guglielmo Marconi: an Italian inventor, proved the feasibility of radio communication. He sent and received his first radio signal in Italy in 1895. By 1899 he flashed the first wireless signal across the English Channel and two years later received the letter "S", telegraphed from England to Newfoundland.





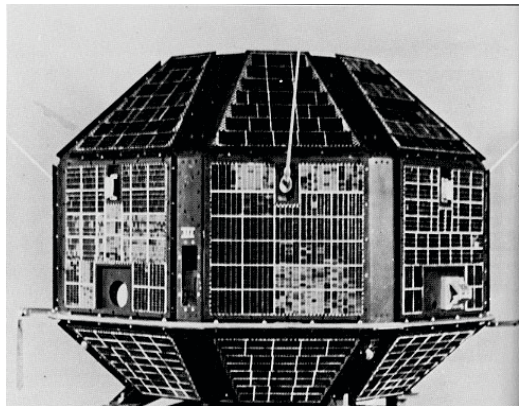
16. Radio-frequency emissions from cell phones, laptops and other electronics can occur at the same frequencies used by aircraft communication, navigation and surveillance radio receivers. These emissions could cause fluctuations in navigation



readouts, problems with other flight displays, and interference with air traffic communications.



17. The Atari Portfolio was released in 1989 and was the world's first palm top computer. Two years later it appeared in the film Terminator 2, where it was used by John Connor to hack an ATM and retrieve the key to the vault in the Cyberdyne lab.





18. India's first satellite, the Aryabhata, was launched by the Soviet Union on 19 April 1975 from Kapustin Yar using a Cosmos-3M launch vehicle. This was followed by the Rohini series of experimental satellites which were built and launched indigenously.



19. The International Space Station is about the size of a football field and weighs 827,794 pounds! So how did we get something so big into space? In pieces! Fifteen different countries from all around the world provided parts and assembled the station.

The International Space Station (ISS) is the largest artificial satellite currently orbiting Earth.



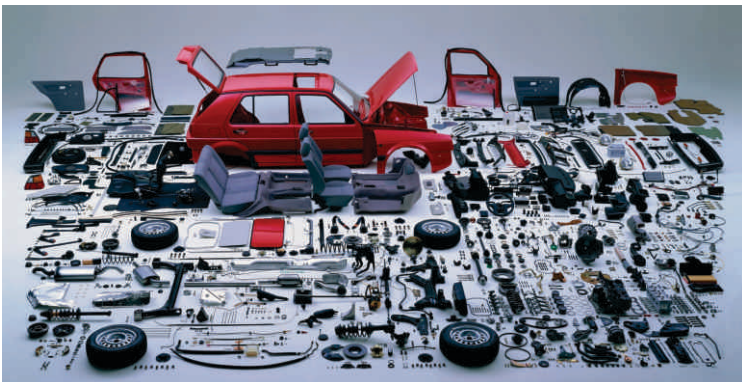


Interesting Automobile Engineering Facts

1. The first engine powered car was built in Mannheim, Germany by Karl Benz in 1885. Between 1888 and 1893 they sold a whopping 25 units.

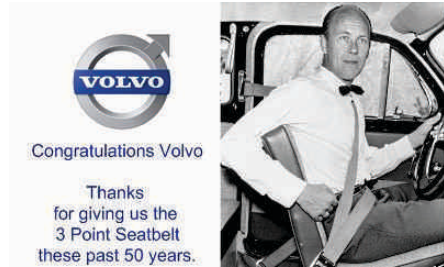


2. A single car has about 30,000 parts, counting every part down to the smallest screws.





3. Sweden's Volvo made the three-point seatbelt design patent open and available to other car manufacturers for free, in the interest of safety. It saves one life every 6 minutes.



4. At the Ford Motor Company the assembly line was first adopted in the department that built the Model T's magneto, which generated electricity for the ignition system. Previously, one worker had assembled each magneto from start to finish. Under the new approach, however, each worker performed a single task as the unit traveled past his station on a conveyer belt. "The man who puts in a bolt does not put on the nut," Ford explained. "The man who puts on the nut does not tighten it."



Henry Ford designed his first moving assembly line in 1913, and revolutionized the manufacturing processes of his Ford Model T. This assembly line, at the first Ford plant in Highland Park, Michigan, became the benchmark for mass production methods around the world.





5. 92% of all new sold cars in Brazil use ethanol as fuel, which is produced from sugarcane.



6. In 1938, crash tests were first carried out by Audi. These tests gave the company an idea about how the car would behave in case an accident occurred. Without realizing it, the company had set a precedent for all other car manufacturers.





7. In 1971, the cabinet of Prime Minister Indira Gandhi proposed the production of a 'People's Car' for India - the contract of which was given to Sanjay Gandhi. Before contacting Suzuki, Sanjay Gandhi held talks with Volkswagen AG for a possible joint venture, encompassing transfer of technology and joint production of the Indian version of the 'People's car', that would also mirror Volkswagen's global success with the Beetle.

However, it was Suzuki that won the final contract since it was quicker in providing a feasible design. The resulting car was based on

Suzuki's Model 796 and went on to rewrite automotive history in India as the Maruti 800.



8. Tata Motors made their first passenger vehicle, an SUV named Tata Sierra in 1991. See the picture below of Mr. Ratan Tata, Chairman and MD of Tata motors, launching the Tata Sierra in May 1991.

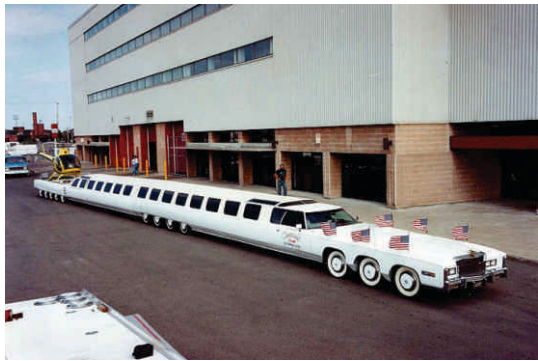


9. The American Dream Limo is owned by car collector and designer Jay Ohrberg of Burbank, California, USA. It is considered as the world's longest car. Jay Ohrberg designed his monster limo himself and now hires it out through his hire car company. This incredible limo is currently in the Guinness Book of World Records as the longest car in the world. Basically it is designed for Hollywood movie





to display and show films. The 30.5 m or 100 ft long limo with 26 wheels has many features including a swimming pool with diving board and a king-sized water bed. It is specially designed to drive as a rigid vehicle or it can be changed to bend in the middle. Even it has two driver's compartments one at each end to help whilst back which allows easily the landing of helicopter. There is also a satellite dish on its top.



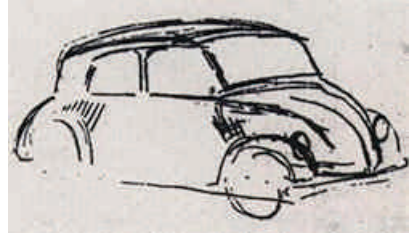
10. Though the first car race was held in Paris in the year 1894, it was in 1898 that first race car was built by Camille Jenatzy. He later became the first person to drive an automobile at a speed higher than 62 mph.

11. In 2005, Mercedes offered an advanced feature called Night View Assist Plus which pinpoints pedestrians and highlight them on a dashboard display. In 2009, BMW offered the same system with an upgrade that allowed the driver to see pedestrian movement. A warning appeared on the dashboard if the distance between the car and pedestrian reduced.





12. Interestingly, the automobile history also has Adolf Hitler in it. He ordered Ferdinand Porsche (founder of Porsche car company) to manufacture a Volkswagen (Literally – People's Car in Germany). This car today is known as Volkswagen Beetle.



The above image is the surviving sketch from the year 1930, said to have allegedly drawn by Hitler himself and it looks similar to the production version of the first Volkswagen Beetle.



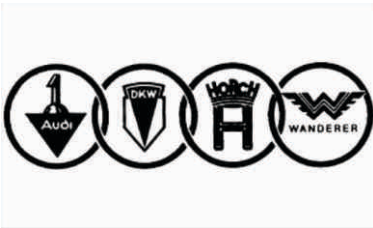
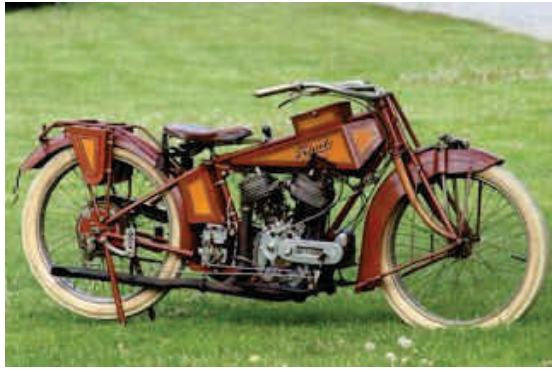
13. La Marquise is the world's oldest running automobile, as of 2011. It is an 1884 model made by Frenchmen De Dion, Bouton and Trépardoux. The car was a quadri cycle prototype named for de Dion's mother. It sold in 2011 for \$4.6 million, a record price for an early automobile.

14. The height of the world's lowest street-legal car is 19 inches. The 'Flatmobile' was built by Perry Watkins from Buckinghamshire.





15. The “Traub,” the rarest motorcycle in the world, was found behind a brick wall in Chicago in 1968, and still runs to this day. An examination from Dale Walksler, the current owner, reveals it can be dated back to 1916. The engine's technology was well ahead of its time, and even some mechanisms on it had never used on any other American motorcycle.

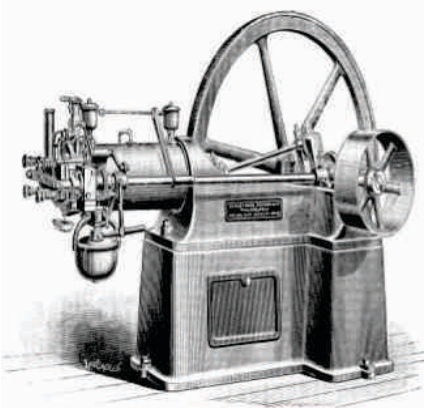


16. The Four Rings in the AUDI Logo represent the FOUR companies of AUTO UNION. By 1932, the name fiasco between Horch the man, and Horch the company was water under the bridge. Horch (the company) and

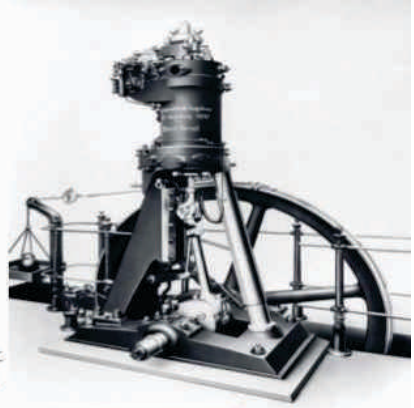
Audi entered an agreement along with two other German car manufacturers, DKW and Wanderer, to form Auto Union. The four rings, which Audi still uses today, originally represented the four companies of Auto Union.

17. One of the most important landmarks in engine design comes from Nicolaus Otto who in 1876 invented an effective gas motor engine -- the first practical alternative to the steam engine. Otto built the first practical four-stroke internal combustion engine called the "Otto Cycle Engine," and when he completed his engine, he built it into a motorcycle.

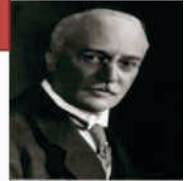




Nikolaus O. Otto And
The Otto Engine

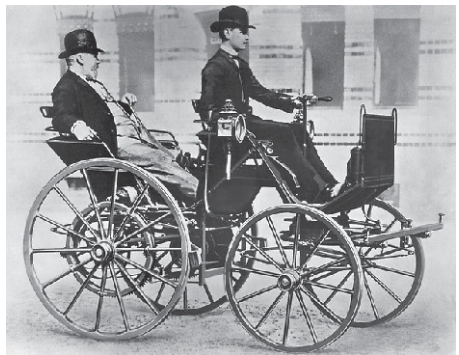


Rudolf Diesel And
The Diesel Engine



The engine that bears his name set off a new chapter in the industrial revolution, but Rudolf Diesel initially thought his invention would help small businesses and artisans, not industrialists.

18. In 1885, Gottlieb Daimler invented a gas engine that allowed for a revolution in car design. On March 8, 1886, Daimler took a stagecoach and adapted it to hold his engine, thereby designing the world's first four-wheeled automobile.

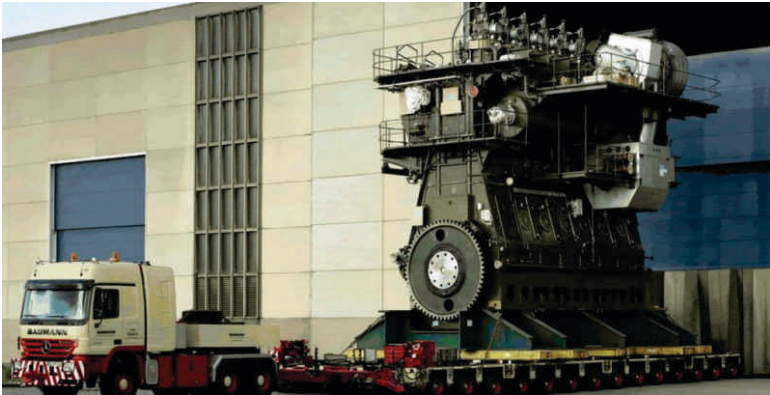


19. The world's largest and most powerful diesel engine in the world today. Built in Finland, the RT-flex96C's fourteen cylinders can





deliver 80080 KW of power or enough to power an entire suburban town. The engine weighs 2,300 tons, and it's 44-feet tall and 90-feet long – more than a four-story building.



20. Ferruccio Lamborghini famously owned a Ferrari 250GT, which he took in to be serviced at the Maranello headquarters after realizing that the clutch was identical to the one being used on his production line. He politely asked Enzo Ferrari for a replacement part, who replied "You're just a silly tractor manufacturer, how could you possibly know anything about sports cars?" Like any red blooded Italian, he spit on the floor, walked out and started designing his own sports car. Four months later he unveiled the Lamborghini 350GTV.





1. The word 'Computer' originally referred to a person not to a machine. The word "Computer" was first recorded as being used in 1613 and originally was used to describe a human who performed calculations or computations. The definition of a computer remained the same until the end of the 19th century, when the industrial revolution gave rise to machines whose primary purpose was calculating.



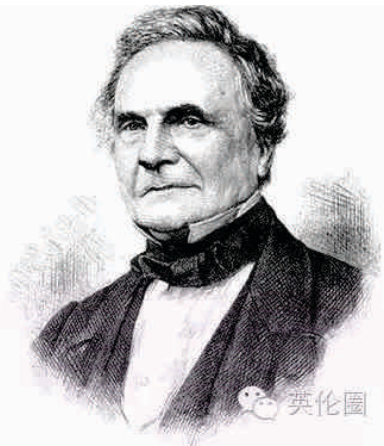
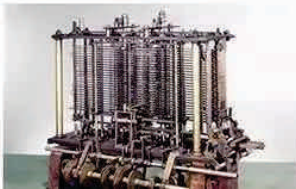
2. In 1837, Charles Babbage proposed the first general mechanical computer, the Analytical Engine. The Analytical Engine contained an Arithmetic Logic Unit (ALU), basic flow control, and integrated memory and is the first general-purpose computer concept. Unfortunately, because of funding issues, this computer was also



Charles Babbage

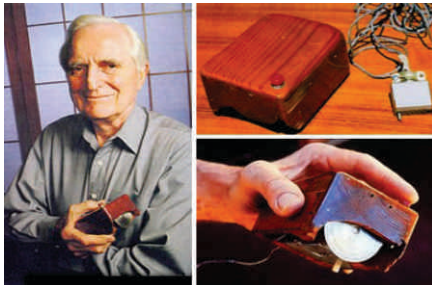
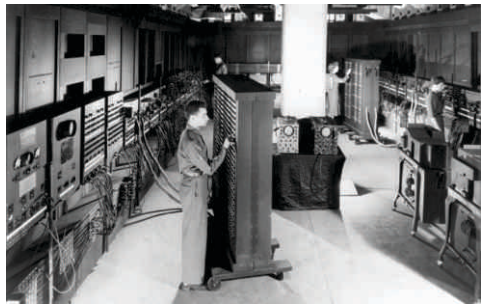
(December 26, 1791 – October 18, 1871)

Inventor & Founder of Computers



never built while Charles Babbage was alive. In 1910, Henry Babbage, Charles Babbage's youngest son, was able to complete a portion of this machine and was able to perform basic calculations.

3. Name of the first electronic computer was ENIAC (Electronic Numerical Integrator And Computer). It was massive as it weighed 27 tones and it was spread over 1800 sq. feet.a



4. Doug Engelbart invented the first computer mouse in around 1964 which was made of wood.





5. Economists estimate that only around 10 percent of the world's currency exists as physical cash. The rest exists only on a computer hard drive, in electronic bank accounts around the world.

6. HP, Google, Microsoft and Apple have one very interesting thing in common – they were all started in a garage.



7. Ajay V. Bhatt is an Indian-American computer architect who helped define and develop several widely used technologies, including USB (Universal Serial Bus), AGP (Accelerated Graphics Port), PCI Express, Platform Power management architecture

and various chipset improvements.

Ajay Bhatt rose to global celebrity as the co-inventor of USB through an Intel 2009 TV advertisement.

Ajay Bhatt was born in India on 1957. He completed his graduation from Maharaja Sayajirao University of Baroda. He completed his master's degree from The City University of New York, United States.





8. Melissa computer virus affected about 20% of world's computers. Melissa creator, David L. Smith, was sentenced for 10 years in jail.



9. The term Google is a misspelling of the word 'Googol' (which is a huge number; 1 followed by 100 zeros)!

What is Google

Google was chosen for its resemblance to the word googol
a number consisting of a numeral one followed by a hundred zeroes

$$1 \text{ googol} = 10^{100}$$

$$1 \text{ googolplex} = 10^{\text{googol}} = 10^{10^{100}}$$

googolplex is the Largest Number in Universe that you can never write on paper, dont believe try it !

10. The first computer company was the Electronic Controls Company and was founded in 1949 by J. Presper Eckert and John Mauchly, the same individuals who helped create the ENIAC computer. The company was later renamed to EMCC or Eckert-Mauchly Computer Corporation and released a series of mainframe computers under the UNIVAC name.

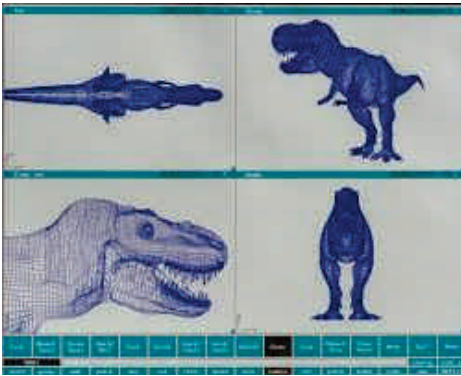




11. As of June 2016, the fastest supercomputer in the world is the Sunway TaihuLight, in mainland China, with a Linpack benchmark of 93 PFLOPS, exceeding the previous record holder, Tianhe-2, by around 59 PFLOPS. It tops the rankings in the TOP500 supercomputer list.

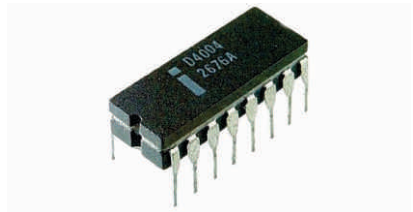


This supercomputer is built using domestic chip technology without using US chips.



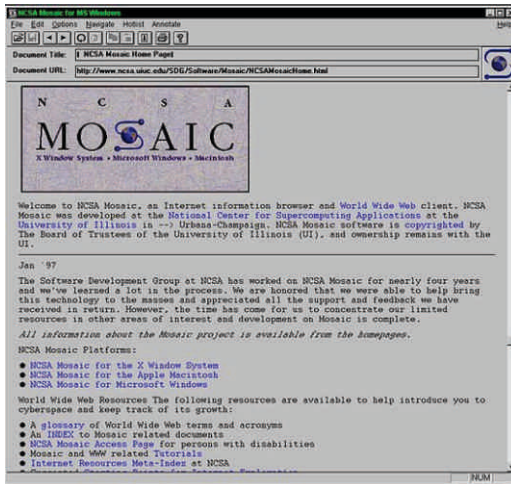
12. Computer engineers, in conjunction with animators, have created special effects in movies such as "Jurassic Park," "Forrest Gump," and "Interview with the Vampire". Through "morphing" technology, images are digitally mastered to appear realistic.

13. Microprocessors were key to the development of the modern computer.





14. Mosaic was the first popular web browser which was released in 1993.



15. The first hard drives were bigger than fridges!



16. CAPTCHA is an acronym for “Completely Automated Public Turing test to tell Computers and Humans Apart”.





17. Anyone who uses a computer is probably familiar with Wikipedia, but did you know that this word is formed from the Hawaiian word, wiki (meaning "quick") and the word encyclopedia.



18. WhatsApp was founded in 2009 by former Yahoo! employees Brian Acton and Jan Koum. They both had appeared for job interview at Facebook and Twitter, but were declined!!

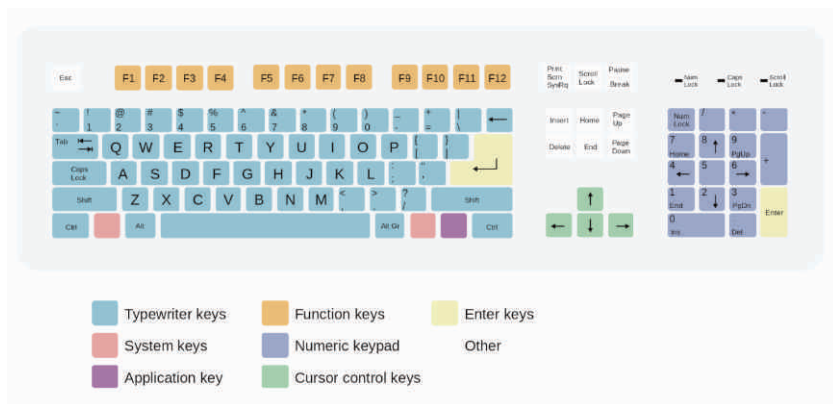


19. Sundar Pichai is a computer engineer and the current CEO of Google Inc. Born in Chennai, India, Pichai was bright and creative from a young age. Having received his education from some of the most prestigious institutions in the world, he worked in engineering and product management at Applied Materials and in management consulting at McKinsey & Company before becoming a part of Google. Pichai is well-liked by his colleagues and is dubbed as the “man behind Google's most important products.





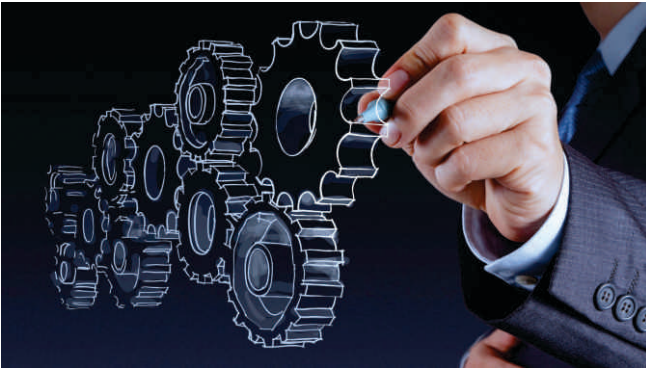
20. TYPEWRITER is the longest dictionary word that can be typed using keys in only one row on your standard QWERTY keyboard.



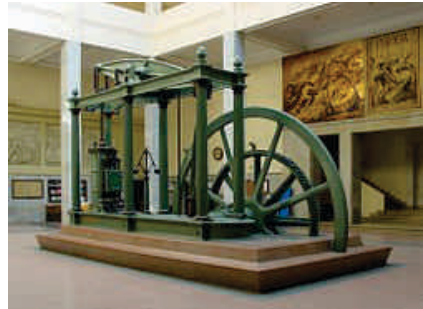


Interesting Mechanical Engineering Facts

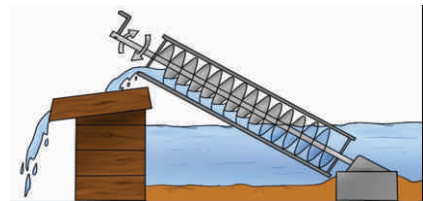
1. Mechanical engineering emerged as a field during the industrial revolution in Europe in the 18th century; however, its development can be traced back several thousand years around the world. Mechanical engineering science emerged in the 19th century as a result of developments in the field of physics.



2. The Watt steam engine, a major driver in the industrial revolution, underscores the importance of engineering in modern history. This model is on display at the main building of the ETSIIM in Madrid, Spain.

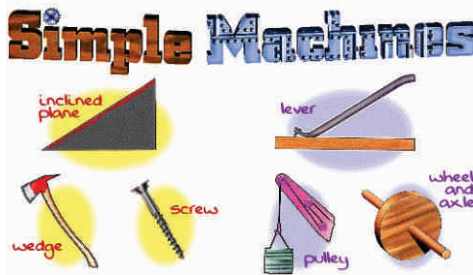


3. 'Archimedes' screw was operated by hand and could efficiently raise water.





4. The first time the idea of "simple machines" was recognized around 3rd century BC, by Archimedes, the Greek philosopher. His main focus was lever, pulley, and screw and he was also the first to grasp the concept of mechanical advantage in the lever.



5. Taisun (Taishan is the name of the biggest mountain of the Shandong province) is the world's strongest crane and has a safe working load of 20,000 metric tons (22,046 short tons).[1] Taisun is designed and built for the installation of very large modules in semi submersibles and FPSO projects and located at Yantai Raffles Shipyard in Yantai, Shandong Province, China. The crane holds the three heaviest lifts of all time: 20,133 metric tons, 17,100 tons and 14,000 tons.





6. The Liebherr LTM 11200-9.1, built by the German company Liebherr Group, is the most powerful mobile crane ever built. It also has the longest telescopic boom in the world, which extends fully to 100 meters. It's set on a double cab truck and can lift 1200 metric tons – that's nearly 700 automobiles.



That's real pound-for-pound power for its category, but ultimately not the strongest crane in the world when compared to stationary cranes.



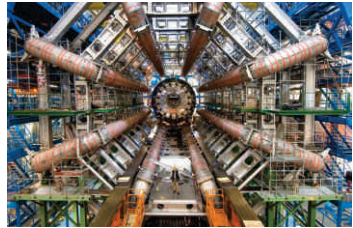
7. The German Johannes Gutenberg invented the printing press around 1440. Key to its development was the hand mold, a new molding technique that enabled the rapid creation of large quantities of metal movable type. Though others before him — including inventors in China and Korea — had developed movable type made from metal, Gutenberg was the first to create a mechanized process that transferred the ink (which he made from linseed oil and soot) from the movable type to paper.

With this movable type process, printing presses exponentially increased the speed with which book copies could be made, and thus they led to the rapid and widespread dissemination of knowledge for the first time in history. Twenty million volumes had been printed in Western Europe by 1500.





8. The largest machine in the world was created to study the tiniest composition known: the structure of the atomic nucleus. Nuclear accelerators are nothing new. They were first invented in the 1930's for investigating the many aspects of particle physics. The Large Hadron Collider (LHC) is seventeen miles in circumference and is buried 574 feet under the ground, near Geneva, Switzerland.



9. While the Large Hadron Collider is the largest underground machine, the world's second largest machine is chewing up surface above the ground. The Bagger 293 is a brute built for titans. Built in Germany in 1995, the giant bucket wheel excavator stands 315 feet tall and 740 feet long,

and weighs in at 31 million pounds. This multi-ton Tessie uses five operators to push her along, and can move 8.5 million cubic feet of earth per day.

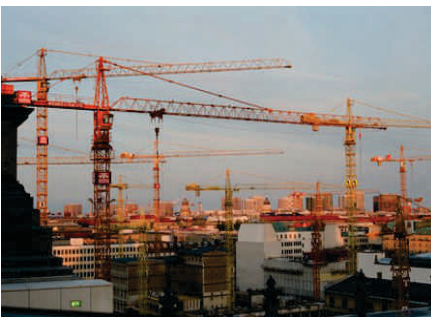
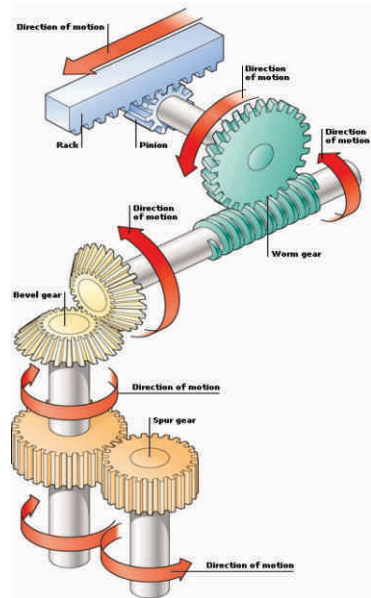
10. Prelude FLNG is the world's first floating liquefied natural gas platform as well as the largest offshore facility ever constructed. The Prelude is being built by the Technip / Samsung Consortium (TSC) in South Korea for a joint venture between Royal Dutch Shell, KOGAS, and Inpex. It is 488 metres





(1,601 ft) long, 74 metres (243 ft) wide, and made with more than 260,000 tonnes of steel. At full load, it will displace more than 600,000 tonnes.

11. Different kinds of gears do different jobs. Spur gears multiply speed or force. Bevel gears change vertical movement into horizontal movement. Worm gears change the direction of horizontal movement. Rack and pinion gears change rotation into back-and-forth motion. Gears such as these can be used to transmit power to many different parts of a large machine.



12. The crane machine got the name 'crane' because it resembles, in shape and structure, the well-known tall long-legged and long-necked bird that has the same name – Crane. These birds are larger when compared with other birds and inhabit every continent except Antarctica

and South America. They are also the tallest flying living birds in the world.

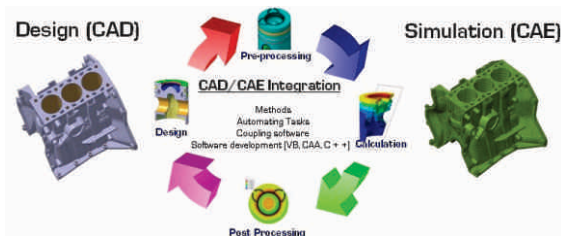




13. The very first human-made crane which was mainly used in the construction process for lifting heavy materials, was invented by the ancient Greeks. By studying the Greek architecture that dates back to 500 BC, the archaeologists from all around the world have found enough evidence to conclude that, for the construction of the ancient wonders, like the Greek Parthenon, a machine like cranes were used.



14. Many mechanical engineering companies, especially those in industrialized nations, have begun to incorporate computer-aided engineering (CAE) programs into their existing design and analysis processes, including 2D and 3D solid modeling computer-aided design (CAD). This method has many benefits, including easier and more exhaustive visualization of products, the ability to create virtual assemblies of parts, and the ease of use in designing mating interfaces and tolerances.





15. Born to a Syrian Christian family in Calicut, Verghese Kurien, the milkman of India, had his first tryst with milk production in Anand, upon his return from the US after completing a Masters in Mechanical Engineering in the year 1949.



16. Anil Kumble born 17 October 1970, is a former international cricketer and former captain of the Indian cricket team. A right-arm leg spin (leg break googly) bowler, he took 619 wickets in Test cricket and remains the third-highest wicket

taker—only behind Muttiah Muralitharan and Shane Warne—as of 2015. Kumble graduated B.E from Rashtreeya Vidyalaya College of Engineering (RVCE) in Mechanical Engineering in 1991–92.

17. Sergei Konstantinovich Krikalev (born August 27, 1958) is a Russian cosmonaut and mechanical engineer. As a prominent rocket scientist, he is a veteran of six space flights and ranks third to

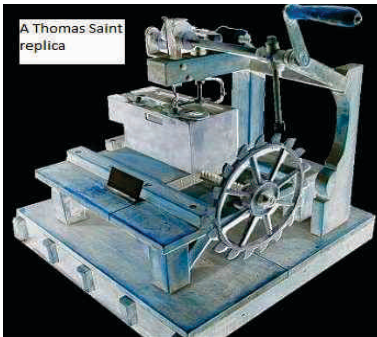




Gennady Padalka and Yuri Malenchenko for the amount of time in space: a total of 803 days, 9 hours, and 39 minutes. He retired from spaceflight in 2007 and is currently working as vice president of Space Corporation Energia.



18. Early examples of gears date from the 4th century BCE in China (Zhan Guo times - Late East Zhou dynasty), which have been preserved at the Luoyang Museum of Henan Province, China. The earliest gears in Europe were circa CE 50 by Hero of Alexandria,[4] but they can be traced back to the Greek mechanics of the Alexandrian school in the 3rd century BCE and were greatly developed by the Greek polymath Archimedes (287–212 BCE).



19. In 1790, the English inventor Thomas Saint invented the first sewing machine design, but he did not successfully advertise or market his invention. His machine was meant to be used on leather and canvas material.

20. The electric motor makes mechanical energy from electrical energy while a generator performs the opposite.





“વિજ્ઞાનીઓ મહાન આવિષ્કારોનાં સ્વપ્ન નિહાળે છે અને ઈજનેરો તેને ચરિતાર્થ કરે છે.”

“એક માનવીનો ચમત્કાર બીજા માનવી માટે ઈજનેરી કૌશલ્ય છે. અલૌકિક એ વ્યર્થ શબ્દ છે.” – રોબર્ટ એ. હીનલીન

“માનવજાતનો વિકાસ વાસ્તવમાં ઈજનેરી કૌશલ્યની કથા છે. જે કુદરતની શક્તિઓને માનવીના કલ્યાણ માટે કાર્યાન્વિત કરવાની સખત પરિશ્રમભર્યા સંઘર્ષની ગાથા વર્ણવે છે.”

“વિજ્ઞાન માટે પ્રતિક્ષા કરતાં એન્જિનિયરીંગ વધુ મહત્વનું છે.” – બીનોઈ મનડેલબ્રોટ





**S.P.B. PATEL
ENGINEERING COLLEGE**
SAFFRONY INSTITUTE OF TECHNOLOGY CAMPUS



S.P.B. PATEL ENGINEERING COLLEGE

Near Shanku's Water Park, Ahmedabad-Mehsana Highway, Mehsana.

At & Post : Linch District : Mehsana -384435

☎ 9825040838, 7046461000

✉ info@saffrony.ac.in 🌐 www.saffrony.ac.in