

Impact of leonardo da vinci's inventions



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Engineering Drawings

To be a proficient engineer, it requires a person to develop and possess various skill sets. The understanding of the various concepts and knowledge presented to them is crucial as well as it would allow them to apply it to their work as a practicing engineer. Some engineers may consider their best tools to be a piece of paper and a pencil. Possessing the ability to graphically communicate their ideas by sketching or drawing them, allows some of these ideas to come to life. Best known for his paintings of the Last Supper and Mona Lisa, Leonardo Da Vinci was more than just an artist, he was also an inventor and to some he is considered to be the world's most famous engineer. His fascination for knowledge and his ability to bring his ideas to life shows that he is the epitome of an engineer. Only at the age of fifteen is when Leonardo was progressing in advancing his artistic skills under his teacher, Andrea Del Verrocchio. By 1482, Leonardo had chosen to move to Milan, Italy from Florence (which at the time was considered to be a more militaristic city than Florence), to work for Duke Ludovico Sforza as a military engineer. From there, Leonardo was able to innovate the war machines used by the military at the time. He essentially paved the way for some of the common weapons used in the modern day military.

One of his war machine inventions was called the 33-Barreled Organ. Leonardo got the idea for this weapon when he saw that a cannon's shot may not be as accurate and took quite some time to reload in battle. He figured that if a soldier could reload the weapon and fire at the same time, it would prove to be much more effective in the battlefield. The gun's design consisted of a wheelbarrow like structure with big wheels and attached to it

in the middle were the thirty-three guns split into three rows, which meant eleven shots were possible with just one row. It also had a rotating wheel to allow one row to fire while the other was being prepared for the next round. Leonardo's idea for this barreled gun was it is now seen as the machine gun in modern day military.

Another military innovation from Leonardo was the Armored Car, also known as the military tank in modern times. Leonardo thought to himself that if the soldiers could get closer to the enemy frontlines as well as their artillery that meant no soldier could stop their attack and would be forced to scatter. The armored car featured multiple cannons around the vehicle, thus giving the soldiers inside a firing range of three-hundred and sixty degrees. The shape of the vehicle consisted of a cone with a view port for a soldier to direct the vehicle's motion. However, it was discovered there was an issue within the vehicle that would not allow it to move in a forward motion. Some suggested that " da Vinci might have sabotaged his own design to discourage the war machine from ever being built." (" Leonardo da Vinci's Armoured car invention," 2008).

As Leonardo was developing other war machines, he had decided to take an existing idea and improve on it for use on the battlefield. He took the soldier's average crossbow and decided to create a giant version out of it. Leonardo had claimed that this weapon was the best way to terrify the enemy. The Giant Crossbow was measured to stretch as far as 27 yards across the field. It consisted of six wheels, three on each side, to ensure mobility during the battle. It also had to be made of thin wood to allow the crossbow to have some flexibility. But the issue was, where Leonardo would

create large enough arrows for use in battle. Instead, the crossbow launched large pieces of stone and at times, flaming bombs. To launch the object, it required the soldier to wind back the bow and then use a mallet to push the pin out of place for the weapon to fire.

Leonardo had also improved another commonly used weapon during the war. In his observations, he found that the cannon's shot may not be accurate and was too slow to reload after each shot. This meant that if the shot missed, the soldiers would be lacking in damage. He also found that the cannon lacked sufficient mobility in the battle. He designed instead a faster and more lightweight version of the cannon. But it did not just consist of one cannon, it included three cannons. Due to how lightweight it was, it made mobility on the battlefield much easier for the soldier. This also meant that the soldier could fire multiple shots at once as well and at a much faster rate compared to its predecessor.

Seventeen years later, Leonardo's time as a military engineer under the rule of Ludovico Sforza had come to an end once the French had invaded Milan. This left Leonardo to pursue other projects and come up with new inventions while travelling to other cities. Leonardo ended up designing an invention known as the "ornithopter" or known as the flying machine. His inspiration for this machine came from birds and kites. He had hoped one day the average man could fly as high as them in the sky. He specifically studied how the birds would use their wings to fly and would apply the concept into his design. However, it would become quite more apparent that the design of the wings, resemble the wings of a bat. The wingspan of the ornithopter was beyond thirty three feet. The material he used in the design of the wings

consisted of pine and raw silk. This allowed the wings to be light and allow it to be easily carried by the wind. He would then have the pilot sit in the center between the wings and push a pedal in an alternating fashion while the machine flapped its wings.

But Leonardo's interest in flying did not stop there, he had come up with another invention. This time, Leonardo came up with the Parachute, not specifically the one seen in modern day, but the early sketch of a parachute. His idea of the parachute would come from a tent made of linen, sewn together to make sure all its openings were not letting air through and it would have a wooden frame which allowed the person to attach some rope to it to be able hold on. He believed at the time, that this device would allow a person to be able to jump from nearly any height without injury. But, at the time there were not any extremely high up places that were viable enough to be used for testing. It was not until the year 2000, when a known daredevil by the name of Adrian Nicholas decided to try Leonardo's design of the parachute. Critics doubted his design would work and would put Adrian's life at risk. But after jumping from 3000 feet above ground, Adrian proved that Leonardo's design was successful. He also discovered that the ride to be smoother than the ripcord parachute found in modern times. But, the weight of the parachute was a concern since it could potentially injure the user as they land.

Near the end of the fifteenth century, Leonardo had come up with another invention that was seen once again as ahead of his time. Using gears, pulleys, and cables, he was able to create a robot knight. By taking a knight's suit and fitting it with the gears, pulleys, and cables, he was able to

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give the suit the ability to move various parts such as the arms and legs using different pulley systems within the suit. It could also perform human like actions such as sitting down and standing up, moving its head, and opening its mouth piece. But since then, Leonardo's full drawings could not be found together, but rather, scattered designs in his notebooks. However, in 2002 a NASA roboticist by the name of Mark Rosheim took Leonardo's design and was able to create a prototype out of it. As he was building the prototype, he discovered how Leonardo designed the robot to be easily built. This truly showed how Leonardo was a man ahead of his time. This allowed people in modern times now to take inspiration from Leonardo's Robotic Knight and to apply similar concepts to what is created today.

It would be quite challenging to imagine life without some of the designs that Leonardo Da Vinci had created which helped pave the way for some of the modern day inventions. One may question what the world would be like in terms of technological and architectural advances had people neglected his work or he chose to not share his ideas. One can come to the conclusion that Leonardo Da Vinci was more than just an artist, but he was also an innovator that was way ahead of his time.

References

ENGINEERING. COM. (2006, October 12). Leonardo da Vinci > ENGINEERING.

Com. Retrieved from [http://www. engineering.](http://www.engineering.com/Library/ArticlesPage/tabid/85/ArticleID/34/Leonardo-da-Vinci.aspx)

[com/Library/ArticlesPage/tabid/85/ArticleID/34/Leonardo-da-Vinci. aspx](http://www.engineering.com/Library/ArticlesPage/tabid/85/ArticleID/34/Leonardo-da-Vinci.aspx)

Leonardo da Vinci's Armoured car invention. (2008). Retrieved

from [http://www. da-vinci-inventions. com/armoured-car. aspx](http://www.da-vinci-inventions.com/armoured-car.aspx)

<https://assignbuster.com/impact-of-leonardo-da-vincis-inventions/>

Wight, C. (2009, March 4). Leonardo da Vinci - from inspiration to innovation. Retrieved from [http://www. bl. uk/onlinegallery/features/leonardo/leonardo.html](http://www.bl.uk/onlinegallery/features/leonardo/leonardo.html)

Universal Leonardo: Leonardo da Vinci online > welcome to universal Leonardo. Retrieved from [http://www. universalleonardo. org/](http://www.universalleonardo.org/)

What is Leonardo's robotic knight invention? Retrieved from InnovateUs, [http://www. innovateus. net/innopedia/what-leonardos-robotic-knight-invention](http://www.innovateus.net/innopedia/what-leonardos-robotic-knight-invention)