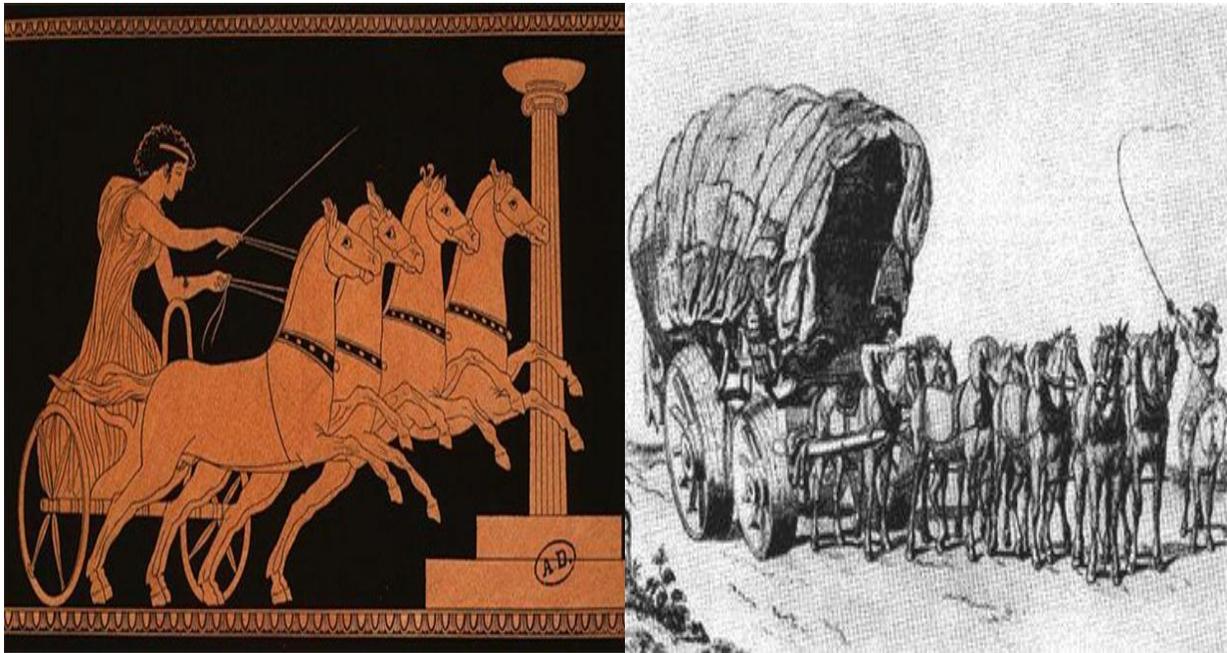


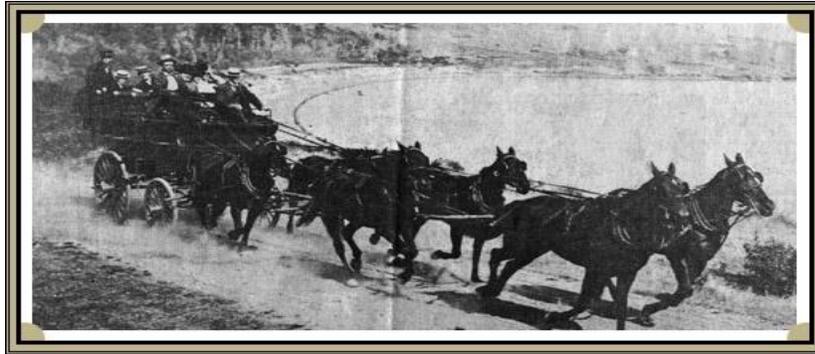
“TRANSPORTATION AND HORSE POWER”

Since the beginning of time, the human race has needed to travel. Whether it was to find food or to find better living conditions, the first form of transportation was by foot. Unfortunately, going everywhere by foot or carrying heavy loads by hand was time consuming and often burdensome. People easily saw the benefits of using four legged animals for aiding in that burden.

The most popular animal to be domesticated and the second form of human transportation was the horse around 3500 BC. The horse became one of man’s most prized assets and made life easier as well as more productive since work and travel time was cut in half. After the invention of the wheel around 2000 BC, horses became even more useful as they were taught to pull chariots and then later to pull large wagons.



As things seem to always progress with humans and horses, speed became an infatuation to reach one’s destination. Stage coaches were developed in the early 1800’s to make traveling faster by making frequent stops in various locations to change out horse teams. Each coach was typically pulled by a team of four to six horses who after trotting or loping a long distance would get tired and need rest.

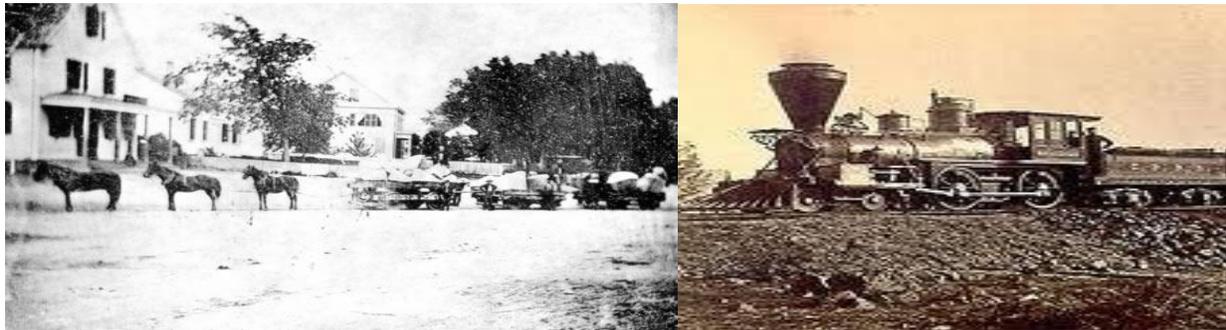


The number of horses that pulled each coach made a significant difference in the speed at which they could travel. A coach with only four horses could not match the speed or pulling power of another coach that was pulled by six horses. In comparison of this difference in power and speed, an engineer by the name of James Watt used horses to establish the amount of power needed by a machine to do a specific workload. His determinations were widely accepted and the term “horse power” was implemented. Thus, a machine has a greater ability to perform if it has a higher number of horsepower.

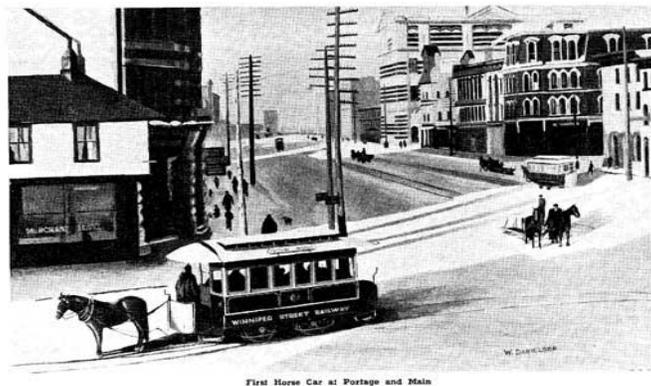
To explain horsepower further, James Watt calculated that a strong horse could pull with a force of around 180 pounds. He had the work horse follow a circle with a circumference of $2 \times \pi \times$ a radius of 12 feet, or 75.398 feet. The horse made 144 trips around the circle in one hour, or 2.4 trips per minute, which was calculated at a set speed of around 181 feet per minute. James Watt used that information to convert a horse’s torque, or leverage for pulling the workload. He multiplied 180 pounds \times 181 feet and then rounded the answer to 33,000 pounds per minute or 550 pounds per second. That calculation became the accepted norm for 1.0 horsepower. The formula reads: $\text{Horsepower} = 6.2831853 \times \text{RPM} \times \text{Torque} / 33,000$. However, this formula can be reduced to: $\text{Horsepower} = \text{Torque} \times \text{RPM} / 5252$. Thus, a basic explanation states that horsepower is an engine’s ability to successfully do work on a per minute basis.

After the steam engine was introduced in 1765, railroads began to commercialize the American landscape. Horses helped pull heavy loads and drag wooden beams and metal across the country. As various trains were being built and locomotive engines perfected, horses pulled heavy boxcars along the tracks to deliver and transport goods and materials from one place to

another. Tracks were constructed across the land and transportation moved to a higher level of convenience.



Railroads were not the only form of transportation on tracks though. Horses were used to pull trolley cars through town for many years while the electric trolley cars were still being built and/or paid for.



Ideas began to turn from horse drawn coaches and wagons, ships, and automobiles as travel over land and sea was mastered. Ideas soon developed around the desire to travel by air. The Wright brothers, who are famous for being obsessed with flying, began to develop successful glider flights around 1902. Their first successful piloted flight with a powered aircraft was in 1903, but the flight ended in a minor crash. Regardless of setbacks, air travel had been established and grew into a large world wide effort. By the 1920's airlines offered flights for passengers to travel from one airport to another making horses almost obsolete for travel.

When astronaut Neil Armstrong first stepped foot on the moon on July 16, 1969 space travel only moved transportation ideas one step farther. The idea of transportation by horse

became more obsolete. Today, many people use horses for simple pleasure rides down a trail or for racing and show. Fortunately, there are still groups of ranches that use horses for transportation as they round up cattle and move herds from one place to another for shipping. These groups of horses are known as a Remuda. Thus, the horse is still a large part of our farm and ranch population, and provides a valuable transportation resource.