

A Race to the Top

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According to various internet sources, February 14 has three things that can, or if you prefer, *should* be recognized—National Organ Donation Day, Valentine's Day and the creation of George Washington Gale Ferris, Jr.

Now, pray tell, what did this man do that would cause us to recognize him some 155 years later? George Jr. was born on February 14, 1859, in Galesburg, Illinois, a town that was named after one of its earliest settlers, Presbyterian minister George Washington Gale. George's grandfather, Silvanus Ferris, and George Washington Gale were longtime friends and early settlers to this western Illinois community. Apparently, their friendship was such that Silvanus named his son George Washington Gale Ferris and he, in turn, named his son George Washington Gale Ferris, Jr. The fact that George Jr. can trace his given names to early Illinois pioneers is not the reason that his birthday is being recognized this February. There is more to the story.

At the age of five, Ferris's father moved the family from Illinois and headed west, bound for California. However, by the time they reached Nevada, their available funds had been sufficiently depleted that they realized they could not reach California. With their remaining resources, the family was able to purchase land near Carson City, Nevada, where they farmed. His father's interest in planting new species of trees evolved into a career in landscaping. He is credited with the landscape design of the Nevada state capitol grounds.

After several years in Nevada, the family was able to achieve its original goal and moved to California where George Jr. completed his secondary school education at California Military Academy in Oakland. He then applied for and was admitted to Rensselaer Polytechnic Institute in Troy, New York, where he received his degree in civil engineering in 1880. Upon graduation, he settled in New York City and began his career of designing bridges throughout the industrial Northeast and Midwest. Eventually he opened his own firm in Pittsburgh, G.W.G. Ferris & Company, that ultimately grew to have branch offices in New York and Chicago. By all accounts, he was recognized as a capable engineer who focused on steel structures and seemed destined to remain a successful designer of bridges, tunnels and trestles.

His journey to fame began in 1891 when he was among a number of other eminent engineers who were invited to a dinner in Chicago by Daniel H. Burnham, the director of the World's Columbian Exposition, also known as the Chicago World's Fair, commemorating the 400th anniversary of Columbus' voyage to America. It was slated to open in May 1893, and at the dinner Burnham expressed his conviction that the assembled American engineers could create a structure that would surpass the 1,063-foot focal point of the 1889 Paris International Exposition, the Eiffel Tower. It was at this dinner that George Washington Gale Ferris, Jr., proposed the construction of a towering moving wheel constructed of steel.

Not surprisingly, his offer was not immediately embraced; in fact, many at the dinner did not believe that Ferris's wheel was feasible. A variety of other proposals were submitted, but in the end the proposed wheel was accepted with the proviso

that Ferris had total responsibility for funding the project. This approval was granted in late November 1892, less than six months prior to the scheduled opening of the Exposition on May 1, 1893. Undaunted, Ferris, using his own money and credit, began to order steel for the project and to sell stock in a company created to fund the cost of materials and construction of his wheel.

The construction of his steel wheel was a gigantic undertaking. To begin such a project in the middle of a Chicago lakeside winter offered a significant challenge that was exacerbated by temperatures dipping below zero and gusting winds off Lake Michigan that created many days with sub-zero wind chill readings.

The sheer size of the wheel created its own challenges. The steel wheels themselves each had a circumference of 825 feet and rotated on a 45-foot axle weighing 56 tons. The axle was supported by two steel towers rising 144 feet from the ground. The towers were secured in concrete pits 30 feet deep.

In spite of these challenges, construction proceeded without significant problems and on June 21, 1893, the giant steel wheel was officially opened to the public. The finished wheel stood 266 feet tall and held 36 cars, each with room for 60 passengers—for a total capacity of 2,160. The total ride of 20 minutes included two cycles of the wheel and offered spectacular views of the 150 buildings of the Exposition, the city of Chicago and Lake Michigan.

Ferris's design and construction of the wheel proved to do all that he had claimed it would. The wheel functioned flawlessly from its initial trip to the closing of the Exposition in October 1893. During the 19 weeks it was in operation, an estimated 1.4 million people experienced a ride on the giant wheel at a cost of fifty cents per person (a significant sum in 1893). Ferris's wheel proved to be the "crown jewel" of the Chicago World's Fair.

Fate was kind to neither this regal steel wheel nor its brilliant designer. After the Exposition closed, the wheel remained unused until it was dismantled, moved and reconstructed on the north side of Chicago with expectations of the new owners that it would attract visitors and pay their investors a handsome profit. When this did not materialize, it soon became useless and unattractive to its neighbors and was finally sold to another group that took it apart and moved it to St. Louis where it was reconstructed and used in that city's Louisiana Purchase Exposition of 1904. At this Exposition, it provided another three million riders a spectacular view and ride. After this Exposition ended, the wheel eventually became an eyesore to the local residents, and finally on May 11, 1906, it was reduced to a pile of scrap by 200 pounds of dynamite.

The fame George W. G. Ferris, Jr. experienced was short-lived. After the close of the Exposition, he saw the proliferation of smaller versions of his wheel at amusement parks, but these reproductions produced little cash for the inventor. He focused his energy and his ever-depleting resources on schemes to build bigger wheels, which attracted no buyers. Early in 1896, his wife left him, he lost his home and he moved to a low-priced Pittsburgh hotel. His downward spiral ended on November 21, 1896, with his death in Pittsburgh Mercy Hospital at age 37.

Little did Daniel H. Burnham, or any of the engineers assembled at that 1891 dinner in Chicago, realize the impact that this giant wheel would have throughout the world. There was no dispute that it outdid the impact of the Eiffel Tower in the 1889 Paris International Exposition. That was clearly noted at the Paris Exposition of 1900, which opened with an exact replica of the Ferris wheel, creating the same excitement that the original had in Chicago—and none of the millions of riders would have believed that their ride on that 26-story wheel would ever be eclipsed.

Long after his early death, Ferris's dream of building bigger wheels has become a reality. In 2000 the London Eye laid claim that, at 442 feet, it was the world's tallest Ferris wheel. That claim was surpassed in 2006 when China's The Star of Nanchang became the world's tallest at 525 feet.

Today the Singapore Flyer, at 541 feet, is the world's tallest Ferris wheel, but there are two more in the works that will move the Flyer down a couple of notches. One of those is the 625-foot New York Wheel on Staten Island, with construction to begin early this year and a slated completion on Labor Day 2016. Even taller, in Dubai, United Arab Emirates, is the 689-foot Dubai Eye, expected to open in 2015.

Who knows when this race to the top will end? Stay tuned.

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