Arts and Entertainment

Amusement Parks

Carousel patent was granted on July 25, 1871, to Willhelm Schneider of Davenport, IA. It was a two-story carousel and not very successful or practical.

Roller coaster was invented by Lemarcus Adna Thompson, a former Sunday school teacher, and put in operation in June 1884 by the L.A. Thompson Scenic Railway Company at Coney Island, NY (now part of New York City). It traveled along a wooden and steel track 450 feet long at a speed of six miles per hour. The cars started from a peak and ran downgrade, the momentum carrying the cars up an incline. The passengers got out, the attendants pushed the train over a switch to a higher point on a second track, and the passengers returned. The highest drop was only 30 feet. Thompson obtained a patent on January 20, 1885, on a roller-coasting structure and another patent on December 22, 1885 on a gravity switchback railway. The first high-speed roller coaster was The Cyclone, which opened at Coney Island on June 26, 1927. Its one-and-a-half minute ride hit speeds of up to 60 miles per hour.

Mechanized shooting gallery that was fully automatic was invented in 1890 by Charles Wallace Parker of Abilene, KS, whose first sale was made to Leon Brownie of Houston, TX.

Ferris wheel was invented in 1892 by George Washington Gale Ferris, a railroad and bridge engineer. It was erected on the Midway at the World's Columbian Exposition in Chicago, IL, in 1893. It consisted of 36 cars, each capable of holding 60 passengers. The highest point of the wheel was 264 feet. The total weight of the wheels and cars was 2,100 tons, of the levers and machinery 2,200 tons, and of the passengers per trip 150 tons.

Shoot-the-chutes was built by Captain Paul Boyton and opened on July 6, 1895, at the amusement park at Coney Island, NY (now part of New York City). Each passenger toboggan held 16 persons. The inclined railway was 80 feet high with a 50 percent grade to the surface of a large body of water.

Roller coaster with a loop-the-loop was a centrifugal railway invented by Edwin Prescott of Arlington, MA, who received a patent for it on August 16, 1898. It was known as Boyton's Centrifugal Railway and was installed at the amusement park on Coney Island, NY (now part of New York City), in 1900. It had a 75-foot incline and a 20-foot-wide loop.

Skee-ball alley was built in 1914 by the National Skee-Ball Company of Coney Island, New York City, and the first battery was operated by William A. Norwood in April 1914 at the Coney Island amusement park.

Theme park was Santa Claus Land, a Christmas-themed park in Santa Claus, IN, founded by retired businessman Louis J. Koch. The park, which opened on August 3, 1946, offered rides, food treats, an antique toy collection, and a wax museum, as well as a Santa Claus impersonator. The name was changed to Holiday World in 1984.

Hybrid zero gravity drop water slide was opened in 2014 at Six Flags Over Georgia. Called Tsunami Surge, it features a 54' drop, 125' long whirlpool bowl, and 45' high zero gravity wave wall. Four people can sit in its cloverleaf-shaped tube. Tsunami Surge pumps 400,000 gallons of water per hour. The ride was manufactured by ProSlide Technology, Inc.

Log flume water ride was opened at Six Flags Over Texas in Arlington in 1963. Riders speed glide through a river on "El Aserradero", then experience a nosedive over the falls at the conclusion of the ride. A second flume was added in 1968 due to the popularity of the first.

Daily operating monorail in the Western Hemisphere was Disneyland's Alweg Monorail System, which opened on June 14, 1959 as an attraction in *Tomorrowland*. It featured two trains each with three cabins and a bubble top in front. Two

years later, in 1961, the monorail was extended to reach the Disneyland Hotel. Vice President Richard Nixon and his family were among the dignitaries in attendance.

Theme park built on hill was Universal Studios Hollywood. It features an Upper Lot and Lower Lot, built into the landscape of the hilly terrain. The studio opened to the public in its current form on July 15, 1964, when a modern-day tour commenced, a throwback to 1915, when Universal City opened and tours of films being made were available.

Theme park with multi-level outdoor escalator was universal Studios Hollywood. The theme park's Upper Lot and Lower Lot are connected to each other by a series of escalators, from which you can get an incredibly panoramic view of the area around Hollywood. In addition to various attractions, the Upper Lot level features CityWalk, which is an entertainment and dining district within the theme park. To help guests who drive to the studios, the parking garages feature sections named after characters from universal films.

Theme park to dedicate a large area to the culture and food of countries from around the world was EPCOT Center at Disney World. This area is called World Showcase and contains eleven pavilions built around a manmade lake. The countries include, Canada, France, Japan, China, England, Germany, Morocco, Mexico, Italy, Norway, and the United States. These days, the park goes by the name EPCOT. The acronym is derived from the phrase Experimental Prototype Community of Tomorrow, coined by Walt Disney himself in the 1960's as the Disney World concept and project were taking shape. EPCOT opened to the public on October 1, 1982.

Theme park to dedicate a large area to technology was EPCOT Center (now simply EPCOT) at Disney World in Florida. The section is called Future World and features pavilions focused on how things are created, science, technology, and related areas. Some of the pavilions and attractions included within EPCOT's Future World are Spaceship Earth, Innoventions, Universe of Energy: Ellen's Energy Adventure, Mission: SPACE, Test Track, Imagination!, The Land, and The Seas with Nemo and Friends (including an aquarium). Some of these pavilions include several attractions within them, such as The Land, which offers a boat tour through a working greenhouse, as well as a simulated aerial tour of California.

Theme park resort to offer multiple lodging options was Walt Disney World in Florida. Realizing that its guests have a variety of budgets from which they work, Disney offers people staying on its property everything from budget to luxury hotels. On the lower end of the pricing spectrum, guests can choose from thousands of rooms at several hotels. These include the All-Star Sports, All-Star Music, All-Star Movies, Art of Animation, and Pop Century hotels The next level up are considered moderate hotels These include Coronado Springs, Caribbean Beach, Port Orleans Riverside, and Port Orleans French Quarter. On the upper end of pricing, Disney guests can stay at the Wilderness Lodge, Animal Kingdom Lodge, the Contemporary, Polynesian, and Grand Floridian hotels, as well as the Boardwalk, Yacht, and Beach Club hotels between Epcot and Disney's Hollywood Studios. Disney's famous monorail goes through several hotels, including the Contemporary, Grand Floridian, and Polynesian There is transportation to the theme parks to and from all of these hotels Guests staying at these hotels can have things purchased in the parks sent back to their hotels without carrying the items around all day

Theme park to provide its own transportation network was Walt Disney World in Florida. Many times, the sheer size of Disney World has been compared to cities such as San Francisco As a result, Disney developed a very comprehensive transportation network traversing the Disney property in Florida Not only is there a very large fleet of buses going from the hotels to the four major parks, but there are also riverboats, monorails, and small boats taking guests around the huge property. One monorail is dedicated to a route between the Magic Kingdom and the Contemporary, Grand Floridian, and Polynesian hotels. A second monorail connects from the Magic Kingdom to the Transportation and Ticket Center, which is also the location for buses connecting to the hotels as well as to the vast parking area The

third monorail goes from the Transportation and Ticket Center to Epcot

Theme park featuring animals to build a hotel into the property was Walt Disney World in Florida. The Animal Kingdom Lodge was incorporated into Animal Kingdom park, providing multiple vantage points for observing giraffes, zebras, and other animals. Animal Kingdom Lodge is designed to look like an African safari lodge. It includes three restaurants and a quick service restaurant. The restaurants - Boma, Jiko, and Sanaa, use African flavors and other spices.

Theme park attraction to be based on the blockbuster movie *Frozen* was announced in September 2014. It will be located in EPCOT at Walt Disney World in Florida, and will replace the Maelstrom boat road at Norway's pavilion. It is expected to be completed and opened to the public in 2016.

Theme park to coordinate with major airlines to facilitate guest travel was Walt Disney World in Florida. This innovation is called Magical Express. The key feature is that Disney guests who are flying from other cities can tag their luggage so that when it arrives at Orlando International Airport, it is directed straight to the guest's hotel. The guest takes a free shuttle bus from a designated area of the terminal to their hotels. For the trip home the process is reversed. Depending upon the time of the return flight and the airline, guests can even check in for the flight at their hotels.

Female Imagineer was Harriet Burns, who joined Disney Studios in 1955 as a prop and set painter for the Mickey Mouse Club, She helped design and build the famed Mickey Mouse Clubhouse. Burns shared a workstation with Fred Joerger, who built models for WED Enterprises (WED = Walt Elias Disney), which would become Walt Disney Imagineering. Burns would soon design buildings and attractions for Disneyland alongside Joerger. Burns and Joerger, along with Wathel Rogers, formed the WED Model Shop team. Burns's models were instrumental in the creation of Sleeping Beauty Castle and the Matterhorn Bobsleds in Anaheim. Burns also designed and painted the set and figurines for the submarine ride, applied individual feathers to animatronic birds in the Enchanted Tiki Room, and created the birds for the film version of Mary Poppins. Burns designed models for classic attractions, including Pirates of the Caribbean and the Haunted Mansion. She also was on a Disney team that created attractions for the 1964 World's Fair in Queens, New York, including Great Moments with Mr. Lincoln, and the Carousel of Progress. Burns also was the first woman to have a window display on Main Street in Disneyland in her honor.

Theme Park attraction to use Audio-Animatronics technology was the Enchanted Tiki Room, which opened to the public on June 23, 1963. Disney received a patent for this technology. The attraction featured music in a polynesian setting with characters in the form of macaws with French, Irish, Mexican, and German accents. The cast includes over 150 talking, singing, and dancing birds, as well as lifelike flowers, magic fountain, tiki drummers, and tiki totem poles. The Sherman Brothers, known for their songwriting prowess, penned The Tiki Tiki Tiki Room.

Human Audio-Animatronic figure was President Abraham Lincoln for the Great Moments with Mr. Lincoln exhibit at the 1964 World's Fair in Queens, New York. In the exhibit, our 16th President stands up and delivers part of the Gettysburg Address, which had recently passed its 100th anniversary. Disney imagineers have been working on taking Audio-Animatronics to the next level in the form of Autonomatronics, The first such figure, Otto, can see, hear, and sense someone's presence, have a conversation, and react to guest emotions.

Disney Park in Mainland China will be Shanghai Disneyland, expected to open at the end of 2015. It is being built in three phases, with the first being a Disneyland type of park. It will be built on a property covering 963 acres in the Pudong section of Shanghai, ultimately covering three times the size of Hong Kong Disneyland. The Walt Disney Company owns 43% of the project and a Shanghai joint venture owns the remaining 57%. The Enchanted Storybook Castle will be the centerpiece of the park when it is completed, with an immersive experience

under development. Plans are also underway for a Mandarin version of the Lion King musical.The Garden of the Twelve Friends will feature oversized murals representing the Chinese zodiac signs, featuring beloved Disney characters.

"I'm going to Disney World" commercial appeared after the New York Giants beat the Denver Broncos 39-20 in Super Bowl XXI in 1987. Phil Simms, the Giants quarterback and game Most Valuable Player, had agreed a coupe of nights before the game to do the commercial if the Giants won. With about a minute left in the game and the final result no longer in doubt, Simms was standing on the sidelines and instructed to say "I'm going to Disney World!" and "I'm going to Disneyland!" three times each.

Disney Cruise Line ship, the Disney Magic, sets sail, offering guests the opportunity to add cruises to their Disney World vacations or to take the cruises as stand-alone vacations. The first itineraries were in the Caribbean. Eventually, other destinations, including Mexico, California, Alaska, Canada, Europe, Hawaii, and others would be added. One unique feature was a dining room where animation images would change over the course of a dinner.

Disney *MagicBand* to be available to guests launched in 2014 after a testing period. It is based on radio frequency (RF) technology. Guests are able to open the door to their hotel rooms with these bracelets, as well as gain entrance to the theme parks. FastPass+ information also can be loaded onto the MagicBands. PhotoPass also is available via the MagicBands, with guests managing the photos taken throughout the parks by Disney World photographers. Payment also can be linked to the MagicBand. They are available in seven colors, hypoallergenic, adjustable to fit children's wrists, waterproof, and designed to withstand heat and cold. Disney was awarded ten patents for the MagicBand.

Art

Cave paintings known to have been made in what is now the United States were painted in caves near the Pecos River in southwest Texas circa 1970 B.C.E. The caves had been inhabited for more than 3,000 years when the paintings were made, and continued to be inhabited until the arrival of the Spanish in the 16th century. The date of the paintings was established using a technique developed by Marvin Rowe, Marian Hyman, and Jon Russ of Texas A&M University that separates organic materials in the paint from inorganic substances in the rock.

Artist to come to America was Jacques Le Moyne de Morgues, a cartographer attached to the French Huguenot expedition to Florida under René Goulaine de Laudonnière.They sailed from Havre de Grace, France, on April 20, 1564, and reached Florida (then called New France) on June 22, remaining until September 20, 1565, when the Spanish destroyed their settlement and killed its inhabitants. Le Moyne's work consisted principally of scenic and historical views.

Painting of an American scene by a European painter was painted near what is now St. Augustine, FL, on June 27, 1564, by Jacques Le Moyne de Morgues, a cartographer who accompanied the French Huguenot expedition to Florida under René Goulaine de Laudonnière. The work, titled *Laudonnierus et Rex Athore ante Columnam a Praefecto Prima Navigatione Locatam Quamque Venerantur Floridenses*, was painted in gouache and metallic pigments on vellum. It shows Laudonnière being welcomed by a party of Native Americans led by Chief Athore.

Artist in the English colonies was the English painter and cartographer John White, who came to North Carolina in 1585 as part of Sir Walter Raleigh's expedition. He recorded Native American life in his paintings and made maps of the coast as far south as Florida. He returned in 1587 as governor of Raleigh's Roanoke colony, which disappeared while White was back in England getting supplies. Among the vanished colonists was Virginia Dare, the first child of European descent known to have been born in America, who was White's grandchild.

Woodcut was a likeness of the Reverend Richard Mather, the leader of Congregationalism in the Massachusetts Bay Colony, made just prior to his death in April 1669. The engraver, John Foster, cut away from the surface of a flat

wooden block those parts which were to appear white in the print, leaving the actual design in raised outline on the block. The print was 5 by 6 inches.

Self-portrait from the English colonies known to exist was painted circa 1670 by Captain Thomas Smith, a Puritan mariner of Boston, MA. The painting, in a style taken from Dutch portraiture, shows Smith resting his hand on a skull, which in turn rests on a poem that discusses Smith's own death.

Engraving of any artistic merit was a line-engraving copperplate portrait of Increase Mather, made in 1701 by Thomas Emmes. It was used as a frontispiece to a sermon, "The Blessed Hope," published in Boston, MA, in 1701 by Timothy Green for Nicholas Boone.

Pastelist was Henrietta Johnston of Charlestown, SC, who was active between 1707 and 1720. She worked with colored chalk. Her subjects were principally colonial women of South Carolina. Her most celebrated piece of work, done in 1718, was a portrait entitled *His Excellency Robert Johnson Captain General, Governor and Commander-in-Chief in and over His Majesty's Province of Carolina*.

Painter to obtain a public commission was Gustavus Hesselius. His painting *The Last Supper*, an oil on canvas, 117.5 inches wide and 35 inches high, was commissioned on September 5, 1721, by the Vestry of St. Barnabas' Church, Queen Anne's Parish, Prince Georges County, MD. It was put in place as an altarpiece on November 26, 1722. Hesselius was paid "£17 currt. money" for the painting and installation. It was also the first important commission in America for a painting with more than one figure.

Mezzotint engraving was a portrait of Cotton Mather about 13.5 by 10 inches, made by Peter Pelham in 1727.

Artist of importance to be born in America was John Singleton Copley, the great portraitist, who was born in Boston, MA, in 1738, and emigrated to England in 1774. He painted many of the prominent people of his era, including Samuel Adams, John Adams, John Quincy Adams, John Hancock, and the King and Queen of England. He is credited with more than 269 oil paintings, 35 crayons, and 14 miniatures.

Historical print engraved in America was *A Prospective Plan of the Battle Fought Near Lake George*, which presented a bird's-eye view showing the march of troops at the left, the camp and battle at the right, and Forts William Henry and Edward in the upper right-hand corner. It was a hand-colored line engraving by Thomas Johnston after a painting by Samuel Blodget, and was printed by Richard Draper in Boston, MA, in 1755.

Caricature was Nathaniel Hurd's *The True Profile of the Notorious Doctor Seth Hudson*, published in 1762 in Boston, MA. It depicted Dr. Hudson in the pillory and Howe, his assistant, at the whipping post, in punishment for forging paper money.

Commercial artist who was successful was Matthew Pratt, who painted signboards in Philadelphia, PA, in 1768. From 1764 to 1768 he had been an art student in London, where he studied under the American expatriate artist Benjamin West.

Engraving to achieve popularity was *The Bloody Massacre Perpetrated in King Street, Boston, on March 5, 1770*, which was engraved, printed, and sold by Paul Revere. It depicted the shooting of five Americans in Boston, MA, by British troops—the famous Boston Massacre—and has appeared in countless children's textbooks and general works on American history.

Artist of American birth to head the Royal Academy of London was Benjamin West, who became president of the Royal Academy on March 24, 1792, succeeding Sir Joshua Reynolds. Born on October 10, 1738, near Springfield, PA, he went to Italy in 1760 for three years of study and afterward settled in London, where he gained fame as a painter of historical subjects. In 1772 he became historical painter to King George III.

Professional illustrator was Alexander Anderson of New York City. A trained physician, he was also a highly skilled wood engraver

who illustrated hundreds of books, periodicals, and newspapers. The earliest engravings of Anderson's to be published appeared in 1794 in Arnaud Berquin's children's book *The Looking-Glass for the Mind*. Anderson's engraving of Father Time appeared on the cover of the *Farmer's Almanac* in various forms and re-engravings for 190 years.

Professional portrait painter who was African-American was Joshua Johnson (or Johnston), a free man, possibly a former slave, who worked in Baltimore, MD, between 1795 and 1825. More than 80 of his portraits are known to exist, most of them depicting individuals or families from the city's mercantile elite.

Landscape painter of renown was Thomas Cole, born in 1801 in England and recognized as the founder of American landscape painting. The leader of the Hudson Valley School of artists, Cole specialized in painting the scenery of New York State. His later works were often done in a grandiose neoclassical style.

Lithograph was *A Water Mill*, by Bass Otis of Philadelphia, PA, published July 1819 in the *Analectic Magazine*.

Painting movement was the Hudson River School, a group of American landscape painters who were active between 1825 and 1875. Their main subject was the Hudson River Valley and other grand vistas of the American landscape. Among the most important members of the school were Thomas Cole, Albert Bierstadt, Asher Brown Durand, Samuel Finley Breese Morse, and Frederic Edwin Church.

National organization of artists was the National Academy of Design, whose first president was the inventor and artist Samuel Finley Breese Morse. It was organized on January 18, 1826, by 15 members of the New York Drawing Association, which had been formed on November 8, 1825, in New York City.

Etcher of skill was William Dunlap of New York City, a painter who studied under Benjamin West in London and whose success in 1830 inspired others to practice the art of etching. He was also a prominent playwright and historian.

Marble statuary group was *The Chanting Cherubs*, designed in 1830 by Horatio Greenough for James Fenimore Cooper. The subject was suggested by a portion of a Raphael painting but incurred hostility because of the nudity of the figures.

Sculptor to obtain a federal commission was John Frazee. A federal appropriation of $400 was granted to him on March 2, 1831, for a bust of John Jay for the Supreme Court, Washington, DC.

Sculptor of renown was Hiram Powers of Vermont, who got his start as a sculptor in a waxworks museum. His chief sculptures were produced from 1835 to 1873. In addition to neoclassical statues entitled *Eve Disconsolate, Greek Slave, Proserpine, Il Penseroso, A Californian*, and *An American*, he made busts of George Washington for Louisiana, of John Caldwell Calhoun for South Carolina, and of Daniel Webster for Boston. His busts of Benjamin Franklin and Thomas Jefferson were installed in the Capitol in Washington, D.C. He also made busts of John Quincy Adams, Andrew Jackson, Chief Justice John Marshall, Martin Van Buren, and other distinguished Americans.

Art magazine of merit was *The Illustrated Magazine of Art*, which contained "selections from the various departments of painting, sculpture, architecture, history, biography, art-industry, manufactures, scientific inventions and discoveries, local and domestic scenes, ornamental works, etc." It was published by Alexander Montgomery in New York City from January 1853 to December 4, 1854. The first issue contained 60 pages.

Chromolithograph was made in 1861 of John Banvard's painting *The Orison*, which depicted the interior of the St. Eustace convent in Italy. It was 16 by 24 inches and was chromolithographed by Sarony, Major and Knapp. Proofs were $10, prints $5.

Halftone engraving was made by Stephen Henry Horgan and appeared in the *New York*

Daily Graphic on March 4, 1880. It was entitled *Scene in Shantytown, NY*. The basis of the invention was a screen gradated from transparency to opacity.

Abstract paintings by a modern artist were the work of Arthur Dove, born in Geneva, NY. In 1910, he created a series of six paintings on linen, such as *Nature Symbolized, No. 1*, that took their inspiration from landscape but showed no clearly recognizable representational forms.

Modern art exhibition of importance opened at the 69th Regiment Armory in New York City on February 17, 1913. The controversial exhibition, organized chiefly by the American modernist painter Arthur Bowen Davies, scandalized the public with such avant-garde works as Marcel Duchamp's *Nude Descending a Spiral Staircase*. More than 250,000 visitors received their first look at paintings by Paul Cèzanne, Paul Gauguin, Vincent van Gogh, Edward Hopper, Henri Matisse, John Marin, Charles Sheeler, and others.

Cover of the *Saturday Evening Post* by Norman Rockwell appeared on the issue dated May 20, 1916. It depicted a boy pushing a baby carriage past a group of jeering pals. Rockwell, a native New Yorker who became famous for his anecdotal scenes of small-town American life, painted 319 more covers for the magazine. The last appeared in 1963.

Native American art exhibition of importance was the Exposition of Indian Tribal Arts, a traveling show assembled by artist John Sloan and writer Oliver La Farge in 1931. The highlight of the show was the collection of Navajo textiles of the Classic Period, worth up to $1,000 apiece at the time. The first major museum show of Native American art took place in 1940 at the Museum of Modern Art, New York City.

Exhibition of the *Mona Lisa* in the United States took place on January 8, 1962, in the National Gallery of Art, Washington, DC. The painting, Leonardo da Vinci's masterpiece of 1506, was owned by the Louvre, in Paris. The loan of the painting was arranged by First Lady Jacqueline Kennedy and André Malraux, the French minister of culture. On the first day, 2,000 dignitaries were allowed to view the painting. The exhibition was opened to the public on January 9 and received 518,535 viewers during its three-week stay. The *Mona Lisa* was then moved to the Metropolitan Museum of Art in New York City, where it was seen by 1,077,051 visitors.

Major solo show of work by an African-American artist was a 90-piece exibition of the paintings of Henry Ossawa Tanner, co-sponsored by the National Collection of Fine Arts and the Frederick Douglass Institute. It opened in Washington, D.C., in 1969 and traveled to seven other major American museums. Tanner painted genre scenes depicting African-American life and scenes from the Bible.

Light sculpture created with a cityscape was *Night/Light*, created by artist James Pelletier to commemorate the centennial of the invention of the light bulb by Thomas Edison. The sculpture involved a dozen office buildings along the East River waterfront in lower Manhattan, each of which was provided with a pattern of windows to illuminate. The result, which lasted for three hours on the night of October 21, 1979, was a display of geometrical forms that were reflected in the river.

Sale of an American painting at a price comparable to that of European paintings took place at an auction at Sotheby's, in New York City, on December 1, 1999. The painting was *Polo Crowd*, a 1910 Microsoft founder Bill Gates, who paid $27,502,400, a record price for a painting by an American artist.

Broadcasting: Radio, Television, Cable, Satellite, Streaming

FM (or frequency modulation) radio broadcasting began in the 1930's. Edwin Howard Armstrong, an inventor and engineer, set up an experimental station, W2XMN. In the Unites States, FM radio stations broadcast between the frequencies of 87.8MHz and 108MHz. These frequencies were assigned on June 27, 1945, just before the end of World War Two.

AM (or amplitude modulation) radio broadcasting was developed primarily between 1900 and 1920. Those who developed the AM con-

cept did not anticipate how popular AM radio would be for broadcasting music and voice into people's homes, although the first voice transmission was made by Canadian researcher Reginald Fessenden on December 23, 1900.

Commercial AM radio station to broadcast was KDKA in Pittsburgh, Pennsylvania. It took place on November 2, 1920, the day Warren Harding defeated James Cox in the Presidential election. Listeners to this brand new medium learned the election results before newspaper readers did. Frank Conrad, who worked for Westinghouse, had been asked to set up a radio station to help the company sell its radios.

Basic cable network was WTCG, launched by Ted Turner and his Turner Communications Group via satellite in 1976. This "superstation" was based in Atlanta, Georgia. The call letters were later changed to WTBS (for Turner Broadcasting System). Ted Turner enjoyed watching the Atlanta Braves team he owned when he was sailing in Massachusetts.

Cameras & Photography

Use of high dynamic range (HDR) in digital photography took off pretty much at the same time that digital was replacing film. The Massachusetts Institute of Technology (MIT), which developed the technique for digital cameras, applied for a patent for it At its simplest, HDR combines multiple exposures of the same image into a single photograph with a broader range of luminosity.

Appearance of camera obscura, which is Latin for "darkened room", was in ancient times, believed to be between 470 and 390 B.C.E. The Chinese philosopher Mozi observed that the image from a camera obscura is flipped upside-down because of the way light travels in a straight line from its source. Around the same time frame, the Greek philosopher Aristotle would add to this body of knowledge by observing a solar eclipse and the Greek mathematician Euclid would contribute his observations as well. Essentially, with camera obscura, a pinhole camera would project an image via an optical device onto some sort of screen or wall. The device would have a small hole on one side.

Significant improvement in the brightness and clarity of camera obscura occurred in the 1500's. This advancement resulted from enlarging the pinhole and using the lens of a telescope.

Use of chemicals to capture photographic images can be attributed to German Professor Johann Heinrich Schulze, who discovered that silver chloride and silver nitrate darken where there is light and thus capture temporary photographic images. In a 1724 experiment, Schulze discovered that if you mix silver, nitric acid, and chalk, less light will be reflected as compared to untarnished silver, and the side of the flask exposed to sunlight will darken. Schulze was unable to preserve the images, but his work laid the foundation for later advancements. His experiments led to the accidental discovery of the first photo-sensitive compound.

Person to achieve some success in capturing images on paper and white leather coated with silver nitrate was Thomas Wedgwood, the son of a famous English potter. In capturing the silhouette images of objects, Wedgworth noticed that sunlit areas darkened rapidly while areas in shadow did not.

Preserved photograph and perhaps first photocopy was created by Nicéphore Niépce in the 1820's. He created the first permanent image through a process known he called "heliography", from the French words for "sun drawings". Ultimately, Niépce made prints using plan paper, ink, and a printing press, but the plates used to make the prints were created photographically via the heliography process.

Forerunner of the darkroom was created by Henry Fox Talbot in1834. Talbot created negatives (permanent images) using paper that was soaked in silver chloride and fixed with a salt solution. Positive images were created by contact printing onto another sheet of paper.

I**mages created with highly polished silver-plated copper,** coated with silver iodide and developed with warmed mercury were by Louis Daguerre in 1837. He was awarded a state pen-

sion by the French government in exchange for the publication of his methods and the right for other French citizens to use the Daguerrotype process. Daguerre had been searching for a way to capture the fleeting images he saw in his camera obscura.

Solid attempt at color photography was led by Scottish physicist James Clerk-Maxwell, using red, green, and blue filters over black and white photographs. The photos were turned into lantern slides via this "color separation" technique. As important as these discoveries were, Maxwell would gain even more fame for his work on electromagnetic radiation was considered to be as important as Isaac Newton's discoveries. Maxwell's Equations are important for students of physics to know and understand. Maxwell's name often is mentioned in the same breath as Newton and Albert Einstein.

Coverage of a war by a photographer was by Mathew Brady. He and his team produced about 7,000 negatives during the American Civil War. Undoubtedly, this gave birth to the concept of photojournalism. Brady also would gain fame through his portraits of well-known people.

Use of the "dry plate" process, using an emulsion of gelatin and silver bromide on a glass plate was created by English doctor Richard Leach Maddox in 1871. Dr. Maddox had already become prominent for his efforts in the area of photomicrography, essentially photographing minute organisms under a telescope. Seven years later, in 1878, dry plates would begin to be manufactured commercially.

Half-tone photograph to appear in a daily newspaper was in the *New York Graphic*. That same year, George Eastman, at age 24, would start up his Eastman Dry Plate Company in Rochester, New York. Some have noted that although Paul McCartney's late wife was a photographer and her maiden name was Eastman, there was no relation to George Eastman, despite popular belief to the contrary. Many consider Eastman to be the father of popular photography and the inventor of motion picture film. The Eastman Kodak Company was formed in 1892. The International Museum of Photography and Film opened in 1949.

Kodak camera was launched in 1888. It featured a twenty-foot roll of paper, enough to create 100 circular photos 2.5 inches in diameter. The new camera was marketed to the public with the phrase, "You press the button - we do the rest." This would be the beginning of snapshot photography. In 2014, after about a century of leading the way in photography, Kodak is reinventing itself as a result of the impact that the transformation to digital photography has had on the public.

Kodak camera with a roll of film instead of paper appeared in 1889. This transparent roll of film was perfected by George Eastman and the research chemist he employed. This film also would pave the way for Thomas Edison's invention of the motion picture camera in 1891.

Kodak"Brownie" camera made available to the general public was in 1900. The camera cost $1 and the film that was needed for it to work cost 15 cents. A series of Brownie cameras would follow. The Brownie made photography affordable for most people.

Device to self-develop film without the use of a darkroom was created by Kodak in 1902. With the Kodak Developing Machine, even amateurs could process their own film.

Non-curling film was introduced by Kodak in 1903. For the next three decades, this would set the standard for amateur photographers.

Cellulose-acetate film would be introduced by Kodak in 1908. This was much safer than the cellulose nitrate film that was previously used and which was highly flammable. Kodak was able to commercially produce the acetate-based safety film.

Camera using a 24x36mm frame and sprocketed 35mm movie film was launched by German microscope manufacturer Leitz. The camera was created by Leitz employee Oscar Barnack.

Iteration of Nikon took place in 1917 when three optical companies combined to form Nippon Kogaku K.K. Fifteen years later, in 1932, the company would market camera lenses under the Nikkor brand name. The Nikon brand name for cameras would commence in 1946.

Leica camera was introduced by the Leitz manufacturing company in 1924. It was the first high quality 35mm camera.

Strobe photography demonstrations took place at the Massachusetts Institute of Technology (MIT) in Cambridge, Massachusetts, led by Professor Harold "Doc" Edgerton. Edgerton would become famous for some of his photographs, such as capturing individual droplets of milk, the many stages of a golf swing, bullets going through an apple and through a playing card, and more. His work on strobe photography would pave the way for innovations in flash photography, sonar, and deep-sea photography (most notably used by explorer Jacques Cousteau.

Fuji Photo Film becomes available in 1934. Four years later, Fuji also would manufacture and sell cameras and lenses. For many years, Fujifilm was one of the top competitors to Kodak film. In 2014, Digital photography reigns supreme.

Multi-layered color film was introduced in 1935-1936 with Kodak's introduction of Kodachrome. It would become the first commercially successful color film for amateur photographers. In the 1970s, Paul Simon, one half of the world famous singing duo Simon and Garfunkel, would record A very popular song called Kodachrome, which even referenced Nikon cameras.

Polaroid instant black-and-white film was sold in 1948. Fifteen years later, in 1963, Polaroid would begin selling instant color film as well. Due to the major impact of digital photography, Polaroid filed for bankruptcy in 2001. Scientist Edwin Land co-founded Polaroid, and gets most of the credit for the success of the instant camera. It is interesting that in 2014, instant images in many ways appear to be back in vogue. We now here all the time about people taking "selfies" with their smartphones. These, of course, are shot with digital cameras instead of film, but in many ways the concept is similar, instantly seeing your photos.

Digital camera was produced by film pioneer Kodak in 1975. It was created by Kodak's Steve Sasson. Kodak arguably failed to capitalize on the digital photography industry it helped spawn with its innovation as consumers moved away from film over the ensuing four decades. In a similar way, Xerox often is credited with having developed the concept of the graphical user interface. Apple, of course, helped perfect this concept when it unveiled the Macintosh computer in 1984. In 2014, digital cameras are around, but smartphones have become more popular than point-and-shoot cameras. For the serious amateur or the professional photographer,D-SLR's have replaced film cameras. Some camera stores do still carry film, but it is now a specialty item.

D-SLR camera designed from the ground up was released by Nikon in 2001 with the launch of its 2.74-megapixel D1. The cost at the time was around $6,000. Lenses were interchangeable. While there are still D-SLR cameras in this price range, there are many such cameras that are priced significantly lower and are thus more within reach of photography enthusiasts. Additionally, the point-and-shoot camera, which have become very popular due to its light weight and convenience, has in many ways in 2014, been replaced by smartphones, virtually all of which feature a camera that can take an incredible number of photos. In fact, A new word has been coined. It is called the "selfie", which essentially means including yourself in a photo, whether by yourself or with other people. The iPhone, for example, allows you to take photos in front of you or in your own direction. Sharing photos online is undoubtedly one of the most popular things that people do with their smartphones. Photo sharing sites are very popular as well, with individuals constantly posting photos online. Facebook, Pinterest, Flickr, Yelp, and other apps often feature posted photos. In 2014, both D–SLR's and smartphones can shoot video. This has made YouTube, which of course is owned by Google, one of the most popular online tools.