

## Activity Option 1: Great People in Flight (50 mins)

Kids will use facts they learn to develop short presentations to share with their family and friends. Encourage them to be creative!

### Materials:

- Internet Access

### Bring with You:

- Great People in Flight Sheets (if no internet)

### Step 1 (5 minutes)

Inform the student they are going to be creating entertaining news stories about some great people who have influenced flight. Allow each student to select one of the names below:

- |                        |                      |
|------------------------|----------------------|
| 1. Amelia Earhart      | 5. Sally Ride        |
| 2. Leonardo da Vinci   | 6. Buzz Aldrin       |
| 3. The Wright Brothers | 7. Charles Lindbergh |
| 4. The Tuskegee Airmen | 8. Igor Sikorsky     |

### Step 2 (10 minutes)

Ask the student to utilize a search engine to begin their research and capture notes on their student handout. If technology is unavailable, give the student their fact sheet found in **Great People in Flight** fact sheets packet (p.5-18). Have student use **Student Handout 1** to capture notes.

Some facts they should be looking for are:

- Years this person was alive
- Where they were born and where they worked/lived
- How they influenced flight
- How life has changed because of them
- Two or three interesting facts

### Step 3 (15 minutes)

Instruct student that it is time to have some fun creating a two minute newscast and interview about their famous person. Have the student use their imagination about how they would play each role below:

- **Producer(s)** – The student will lead their “team” in using the facts they have found to develop a fun and creative script for the great person(s) they have selected.
- **Desk Reporter(s)** – The student will be “in-studio” reporters and will introduce themselves, their news station name.
- **Field Reporter(s)**—The student will tell the audience where they are located and interview the Historical Figure(s) about their influence on flight and/or flight exploration.
- **Historical Figure(s)** – The student will act as the historical figure(s) they researched.

Instruct student to use this time to practice their newscast. They can use the ***Student Handout 2*** to review a sample script outline to help them prepare and create their own. Encourage student to be funny and satirical.

- **Satire** – the use of humor, irony, exaggeration, and/or sarcasm to tell a story.

### Step 4 (15 minutes)

Each student should present their newscast. They can record on a computer or phone.

### Step 5 (5 minutes)

- Ask the student to share a new fact learned today.
- Thank them for a GREAT job!
- Let them know how much you learned and enjoyed doing the project with them.

## Student Handout 1 - Notes

Name of the person: \_\_\_\_\_

Where were they born? When? \_\_\_\_\_

What did this person have to do with flight? \_\_\_\_\_

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Were they the first person to do something? What was it? \_\_\_\_\_

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Interesting Facts:

#1: \_\_\_\_\_

#2: \_\_\_\_\_

#3: \_\_\_\_\_

## Student Handout 2 – Script Outline

Below is an example outline for your two minute newscast. The producer(s) can help your team stay on time – using their hands to count down from 10 seconds if time is about to run over.

### Lead In (DESK REPORTER) – 20 seconds

- Introduce the newscast
  - ✓ Ex: *"Thanks for watching the 6 o'clock news on Channel 4"*
- Introduce the field reporter(s) and where they are
  - ✓ Ex: *"In the field today, we have \_\_\_\_\_ covering our story on \_\_\_\_\_"*

### Interview (FIELD REPORTER/HISTORICAL FIGURE) –90 seconds

- Introduce the Historical Figure
- Do a brief interview to gather the following information from the Historical Figure:
  - ✓ If they were the first to do something? What was it?
    - Ex: *"I heard you were the first to \_\_\_\_\_. What did that feel like?"*
  - ✓ Their major contribution to flight
    - Ex: *"What would you say is your greatest accomplishment?"*
  - ✓ 1-3 Interesting facts
    - Ex: *"When did you first \_\_\_\_\_?" "What influenced you to \_\_\_\_\_?"*
  - ✓ Thank the Historical Figure
  - ✓ Return to the news desk reporter

### Closing (DESK REPORTER) – 10 seconds

- Thank the Field Reporter and Historical Figure
- Close out the newscast for the audience
  - ✓ Ex: *"Thank you for watching the 6 o clock evening news program on Channel 4. See you tomorrow night."*

# AMELIA EARHART

- She was born on July 24, 1897, in Atchison, Kansas.
- She worked a variety of jobs, including photographer, truck driver, and stenographer at the local telephone company, and managed to save \$1,000 for flying lessons.
- Earhart started flying lessons in January 1921. Six months later, she purchased a secondhand bright yellow Kinner Airster biplane which she nicknamed "The Canary." On October 22, 1922, Earhart flew the Airster at an altitude of 14,000 feet – setting a record for female pilots.
- On May 15, 1923, Earhart became the 16<sup>th</sup> woman ever to be issued a pilot's license by the Fédération Aéronautique Internationale (FAI).
- Earhart began to rise to celebrity status after she was offered the opportunity to be the first woman to fly (or be flown) across the Atlantic Ocean. The flight took off from Canada on June 17, 1928, and landed exactly 20 hours and 40 minutes later in the UK. She did not pilot the aircraft but garnered significant attention and even a ticker-tape parade in New York and a reception with President Calvin Coolidge at the White House.
- Although Earhart had gained fame for her transatlantic flight, she endeavored to set an "untarnished" record of her own. In August 1928, she was the first female aviator to fly solo across the North American continent and back.
- As Earhart rose in celebrity fame, she began endorsing products and eventually had her own fashion and luggage lines. All the endorsements helped her finance her flying.
- In 1929, as an associate editor at *Cosmopolitan* magazine, she was among the first aviators to promote commercial air travel through the development of a passenger airline service.
- She, along with Charles Lindberg, invested time and money in setting up the first regional shuttle service between New York and Washington, D.C. She was a Vice President of National Airways, which conducted the flying operations of the Boston-Maine Airways and several other airlines in the northeast.
- While today it might seem that Earhart was engaged in flying "stunts," she was, with other female flyers, crucial to making the American public "air minded" and convincing them that "aviation was no longer just for daredevils and supermen."
- On February 7, 1931, Earhart married George Putnam. Earhart's ideas on marriage were liberal for the time as she believed in equal responsibilities for both "breadwinners" and pointedly kept her own name rather than being referred to as Mrs. Putnam.
- In 1932, Earhart flew solo from Harbour Grace, Newfoundland, and landed in Dulmore, Northern Ireland. She had intended to fly to Paris but had contended with strong winds, icy conditions and mechanical problems. She became the first woman to fly solo nonstop across the Atlantic and received the Distinguished Flying Cross from Congress, the Cross of Knowight of the Legion of Honor from the French Government and the Gold Medal of the National

Geographic Society from President Herbert Hoover.

- Earhart continued to make solo flights across the world and participate in long-distance air races. She set seven women's speed and distance aviation records in a variety of aircrafts.
- After more than a year of planning, Amelia made her first attempt to fly around the world in 1937. It had been done before, but she was attempting to take a longer flight than had been previously accomplished. The attempt ended shortly after it began due to mechanical failures of her aircraft.
- Earhart attempted again, departing Miami on June 1, 1937, and made numerous stops in South America, Africa, India and Southeast Asia before arriving in Lae, New Guinea, on June 29, 1937. At this stage, about 22,000 miles of the journey had been completed, and 7,000 remained.
- Along with her navigator, Fred Noonan, the aircraft disappeared July 6, 1937, after attempted communications with the United States Coast Guard's ship the *Itasca*, who was there to help guide the pair to land at Howland Island in the Pacific.
- At the time, search efforts were rudimentary, and some of the search was based on erroneous assumptions and flawed information. Search efforts ended July 19 and covered 150,000 square miles.
- Many searches over the years have occurred, along with many theories of what happened and where the plane and remains may be located. In 2012, a research group located items they believe to be consistent with the crash off the northwest reef of Nikumaroro – an island 400 miles away from Howland Island.
- Earhart is generally regarded as a feminist icon. Her shyly charismatic appeal, independence, persistence, coolness under pressure, courage and goal-oriented career along with the circumstances of her disappearance at an early age have driven her lasting fame in popular culture.
- Earhart's accomplishments in aviation inspired a generation of female aviators, including the more than 1,000 women pilots of the Women Airforce Service Pilots who ferried military aircraft, towed gliders, flew target practice aircraft, and served as transport pilots during WWII.

## APOLLO 11

- Apollo 11, the spaceflight that landed the first humans on the moon, was launched on July 16, 1969, and landed on the moon on July 20.
- There were three American crewmen; Neil Armstrong, Buzz Aldrin, and Michael Collins. Armstrong and Aldrin walked and explored the moon, while Collins piloted the command spacecraft alone in lunar orbit until Armstrong and Aldrin returned to it.
- The Saturn V rocket carried and launched the Apollo spacecraft.

- The Apollo spacecraft had three parts: 'Columbia', a command module, with a cabin for the three astronauts, and the only part that landed back on Earth; a service module, which supported the command module with propulsion, electrical power, oxygen, and water; and a lunar module, 'Eagle,' for landing on the moon (which itself was composed of two parts).
- After traveling 240,000 miles in 76 hours, Apollo 11 entered into a lunar orbit on July 19. On June 20<sup>th</sup>, at 4:17 p.m, the craft touched down on the southwestern edge of the Sea of Tranquility. Armstrong immediately radioed to Mission Control in Houston, Texas, a now-famous message: "The Eagle has landed."
- At 10:39 p.m., five hours ahead of the original schedule, Armstrong opened the hatch of the lunar module. As he made his way down the module's ladder, a television camera attached to the craft recorded his progress and beamed the signal back to Earth, where hundreds of millions watched in great anticipation.
- At 10:56 p.m., as Armstrong stepped off the ladder and planted his foot on the moon's powdery surface, he spoke his famous quote, which he later contended was slightly garbled by his microphone and meant to be "that's one small step for a man, one giant leap for mankind."
- Aldrin joined him on the moon's surface 19 minutes later, and together they took photographs of the terrain, planted a U.S. flag, ran a few simple scientific tests and spoke with President Richard Nixon via Mission Control in Houston.
- Armstrong spent about two and a half hours outside the spacecraft, Aldrin slightly less, and together they collected 47.5 pounds (21.5 kg) of lunar material for return to Earth.
- Among the items left on the surface of the moon was a plaque bearing two drawings of Earth (of the Western and Eastern Hemispheres), an inscription, and signatures of the astronauts and President Nixon.
- The inscription read: "*Here men from the planet Earth first set foot upon the Moon, July 1969 A.D. We came in peace for all mankind.*"
- Three new minerals were discovered in the rock samples collected by the astronauts: armalcolite, tranquillityite, and pyroxferroite. Armalcolite is named after Armstrong, Aldrin, and Collins.
- Neil Armstrong carried a piece of wood from the Wright brothers' 1903 airplane's left propeller and a piece of fabric from its wing.
- Many nations honored the first manned moon landing with special features in magazines or by issuing Apollo 11 commemorative postage stamps or coins.
- There would be five more successful lunar landing missions, and one unplanned lunar swing-by, Apollo 13 (whose lunar landing was aborted due to technical difficulties). The last men to walk on the moon, astronauts Eugene Cernan and Harrison Schmitt of the Apollo 17 mission, left the lunar surface on December 14, 1972.
- The Apollo program was a costly and labor intensive endeavor, involving an estimated 400,000 engineers, technicians and scientists, and costing \$24 billion (close to \$100 billion in today's dollars). The expense was justified by Kennedy's 1961 mandate to beat the Soviets to the moon and, after the feat was accomplished, ongoing missions lost their viability.

# THE WRIGHT BROTHERS

- The Wright brothers, Orville (1871 – 1948) and Wilbur (1867 – 1912), were two American brothers, inventors, and aviation pioneers who are credited with inventing and building the world's first successful airplane and making the first controlled, powered and sustained human flight, on December 17, 1903.
- They gained the mechanical skills essential for their success by working for years in their shop with printing presses, bicycles, motors, and other machinery.
- Their bicycle shop employee, Charlie Taylor, became an important part of the team, building their first airplane engine in close collaboration with the brothers.
- In May 1899, Wilbur wrote a letter to the Smithsonian Institution requesting information and publications about aeronautics. Drawing on the work of Sir George Cayley, Chanute, Lilienthal, Leonardo da Vinci and Langley, they began their mechanical, aeronautical experimentation that year.
- At the outset of their experiments they regarded control as the unsolved third part of "the flying problem." They believed knowledge of the other two issues—wings and engines—already existed. They were determined to find a better method of balance and control.
- Many earlier experimenters believed that air currents were too swift and unpredictable for human reflexes. Therefore, an aircraft had to be inherently stable for the pilot to be able to maintain control. Because of the Wrights' extensive experience with the bicycle—a highly unstable but controllable machine—they saw no reason why an airplane could not be unstable yet controllable as well.
- The Wrights realized that if the wing on one side of the aircraft met the oncoming flow of air at a greater angle than the opposite wing, it would generate more lift on that side. In response, that wing would rise, causing the aircraft to bank. If the pilot could manipulate the wings in this way, he could maintain balance and turn the aircraft as well.
- In order to angle the wings in opposite directions, they conceived the elegant concept of twisting, or warping, the wings structure itself, a method they called wing-warping.
- The Wrights combined their wing-warping control concept and the structural design of the Chanute-Herring glider in their first aircraft, a biplane kite with a 5-foot wingspan, built in July 1899.
- Once built, the Wrights needed a site with wide-open spaces and strong, steady winds to test their glider. A local weather station recommended Kitty Hawk, North Carolina, for their testing.
- Over the next few years, the Wright brothers tested a couple of variations of the glider. In 1901 they created a wind tunnel and conducted preliminary tests on as many as 200 different wing shapes.
- The experiments helped them to determine key values in calculating lift and drag. This allowed them to select the most efficient wing for the aircraft they wanted to build.
- In 1902, they tested a new glider with a true three-dimensional system of control. This three-axis control system was their single most important design breakthrough and was the central



aspect of the flying machine patent they later obtained.

- In its final form, the 1902 Wright glider was the world's first fully controllable aircraft.
- In 1903, the brothers modified their design to incorporate an engine they developed, propellers and their pilot control system.
- The first flight, by Orville at 10:35 AM on December 17, 1903, covered 120 feet and lasted 12 seconds. It was the first powered, heavier-than-air machine to achieve controlled, sustained flight with a pilot aboard.
- The brothers' fundamental breakthrough was their invention of three-axis control, which enabled the pilot to steer the aircraft effectively and to maintain its equilibrium. This method became and remains standard on fixed-wing aircraft of all kinds.
- The story of Wright brothers embodies the American ideal of hard work overcoming all obstacles. Wilbur and Orville Wright were not just lucky bicycle mechanics but succeeded because of study and scientific experimentation. It is not simply about building the first plane but rather about how they scientifically solved the problem. It is also a story about those who inspired, and those who aided the brothers, during and after their dream came to life.

# THE TUSKEGEE AIRMEN

- The Tuskegee Airmen is the popular name of a group of African-American military pilots who fought in World War II. They were the first African-American military aviators in the United States Armed Forces.
- During World War II, many U.S. states and the American military were still racially segregated. The Tuskegee Airmen were subjected to racial discrimination, both within and outside the army.
- C. Alfred "Chief" Anderson earned his pilot's license in 1929 and became the first African-American to receive a commercial pilot's certificate in 1932 and, subsequently, to make a transcontinental flight. Anderson is also well known as the pilot who flew Eleanor Roosevelt, wife of then U.S. President Franklin D. Roosevelt, convincing her to encourage her husband to authorize military flight training at Tuskegee.
- All black military pilots who trained in the United States trained at Moton Field, the Tuskegee Army Air Field, and were educated at Tuskegee University, located near Tuskegee, Alabama. From 1941-1946, some 1,000 black pilots were trained at Tuskegee.
- In 1941, the War Department and the Army Air Corps, under pressure, constituted the first all-black flying unit, the 99th Pursuit Squadron, nearly six months prior to the Japanese attack on Pearl Harbor.
- The 99th Pursuit Squadron was activated at Tuskegee on July 19, 1941, nearly six months prior to the Japanese attack on Pearl Harbor. (In the 1930s, fighter planes were called "pursuit planes," hence, the Pursuit Squadron. During World War II, the term was replaced with "fighter squadron.") After completing their training, in the late spring of 1943, the men were sent to North Africa, which the Allies had invaded in November 1942.
- In February 1944, the 100th, 301st, and 302nd Pursuit Squadrons (Fighter Squadrons), comprising the 332nd Pursuit Group, began flying combat operations in Italy as part of the Twelfth Air Force. In April, they were transferred to the Fifteenth Air Force near Foggia, Italy, and, in July, the 99th Pursuit Squadron was transferred to their group; previously, it had flown as part of a predominantly white fighter group and had already won two Presidential Unit Citations.
- Their primary missions were to escort bombers striking targets in Southern Europe. Eventually, they would fly as far as Berlin. The Airmen's success in escorting bombers during World War II – having one of the lowest loss records of all the escort fighter groups, and being in constant demand for their services by the Allied bomber units – is a record unmatched by any other fighter group.
- The 99th Squadron distinguished itself by being awarded two Presidential Unit Citations (June-July 1943 and May 1944) for outstanding tactical air support and aerial combat in the 12th Air Force in Italy, before joining the 332nd Fighter Group.
- The 332nd Fighter Group had also distinguished itself in June 1944 when two of its pilots flying P-47 Thunderbolts discovered a German destroyer in the harbor of Trieste, Italy.

- The 332nd Fighter Group was awarded the Presidential Unit Citation for its' longest bomber escort mission to Berlin, Germany, on March 24, 1945. During this mission, the Tuskegee Airmen (then known as the 'Red Tails') destroyed three German ME-262 jet fighters and damaged five additional jet fighters.
- In 1948, President Harry Truman enacted Executive Order No. 9981 directing equality of treatment and opportunity in all of the United States Armed Forces, which in time led to the end of racial segregation in the U.S. military forces.
- The U.S. Congress authorized \$29 million in 1998 to develop the Tuskegee Airmen National Historic Site, with the University, Tuskegee Airmen Inc. and the National Park Service serving as partners in its development. To date, a mere \$3.6 million has been appropriated for the Site's implementation.
- On March 29, 2007, the Tuskegee Airmen were collectively awarded a Congressional Gold Medal at a ceremony in the U.S. Capitol rotunda. The medal is currently on display at the Smithsonian Institution.
- Thurgood Marshall, the Supreme Court justice, got his start defending Tuskegee bomber trainees.
- On December 9, 2008, the Tuskegee Airmen were invited to attend the inauguration of Barack Obama, the first African-American elected as President. More than 180 airmen attended the January 20, 2009, inauguration. One of them summed up the feeling, "The culmination of our efforts and others was this great prize we were given on Nov. 4. Now we feel like we've completed our mission."

## SALLY RIDE

- Sally Kristen Ride (1951 – 2012) was an American physicist and astronaut. She joined NASA in 1978 and became the first American woman in space in 1983. She remains the youngest American astronaut to have traveled to space, having done so at the age of 32.
- Ride graduated from Stanford University with a bachelor's degree in English and physics, and earned a master's degree and a Ph.D. in physics at Stanford.
- In addition to being interested in science, she was a nationally ranked tennis player.
- Ride was one of 8,000 people who answered an advertisement in the Stanford student newspaper seeking applicants for the space program.
- During her career, Ride served as the ground-based capsule communicator (CapCom) for the second and third space shuttle flights and helped develop the space shuttle's "Canadarm" robot arm.
- On June 18, 1983, Ride became the first American woman in space as a crew member on the space shuttle, *Challenger*, for NASA's 7<sup>th</sup> Space Shuttle Mission, called STS-7.
- She was preceded into space by two Soviet women, Valentina Tereshkova in 1963 and Svetlana Savitskaya in 1982.

- The five-person crew of the STS-7 mission deployed two communications satellites and conducted pharmaceutical experiments. Ride was the first woman to use the robot arm in space and the first to use the arm to retrieve a satellite.
- Prior to her first space flight, she was subject to media attention due to her gender. During a press conference, she was asked questions like, "Do you weep when things go wrong on the job?" Despite this and the historical significance of the mission, Ride insisted that she saw herself in only one way—as an astronaut.
- Her second space flight was in 1984, also on board the *Challenger*. She spent a total of more than 343 hours in space.
- Ride had completed eight months of training for her third flight when the space shuttle *Challenger* disaster occurred. She was named to the Rogers Commission (the presidential commission investigating the accident) and headed its subcommittee on operations.
- Roger Boisjoly is the engineer who warned of the technical problems that led to the *Challenger* disaster (the Space Shuttle Challenger broke apart soon into its tenth mission). After all his colleagues shunned him, Ride was the only public figure to show support for him when he went public with his pre-disaster warnings. Following the investigation, Ride was assigned to NASA headquarters in Washington, D.C., where she led NASA's first strategic planning effort and founded NASA's Office of Exploration.
- In 1987, Ride left her position in Washington, D.C., to work at the Stanford University Center for International Security and Arms Control.
- In 1989, she became a professor of physics at the University of California, San Diego (UCSD), and director of the California Space Institute.
- From the mid-1990s until her death, Ride led two public-outreach programs for NASA — the ISS EarthKAM and GRAIL MoonKAM projects, in cooperation with NASA's Jet Propulsion Laboratory and UCSD. The programs allowed middle school students to request images of the Earth and moon.
- She was the president and CEO of Sally Ride Science, a company she co-founded in 2001 that creates entertaining science programs and publications for upper elementary and middle school students, with a particular focus on girls.
- Ride had a life partner, Tam O'Shaughnessy, an American children's science writer and former professional tennis player. Out of the seven books Ride wrote or co-wrote, the pair wrote six of those acclaimed children's science books together, with the goal of encouraging children to study science.
- Ride was the first known LGBT astronaut.
- Ride died on July 23, 2012, at the age of 61, seventeen months after being diagnosed with pancreatic cancer.
- Ride received numerous awards. She was inducted into the National Women's Hall of Fame and the Astronaut Hall of Fame and was awarded the NASA Space Flight Medal twice.

*Ride on Challenger's mid-deck during STS-7 in 1983*

- In 2013, the Space Foundation bestowed upon Ride its highest honor, the General James E. Hill Lifetime Space Achievement Award.
- On May 20, 2013, a "National Tribute to Sally Ride" was held at the John F. Kennedy Center for the Performing Arts in Washington, D.C. On the same day, President Barack Obama announced that Ride would receive the Presidential Medal of Freedom, the highest civilian award in the United States.
- In 2014, Ride was inducted into the Legacy Walk, an outdoor public display that celebrates LGBT history and people, in Chicago, IL.

## BUZZ ALDRIN

- Edwin Eugene "Buzz" Aldrin Jr. (born January 20, 1930) is an American engineer and former astronaut, and the second person to walk on the Moon, following mission commander, Neil Armstrong.
- He was the Lunar Module pilot on Apollo 11, the first manned lunar landing in history.
- The nickname "Buzz" originated in childhood: the younger of his two elder sisters mispronounced "brother" as "buzzer," and this was shortened to Buzz. Aldrin made it his legal first name in 1988.
- In his youth, Aldrin was a Boy Scout and earned the rank of Tenderfoot Scout.
- Aldrin graduated high school in 1947 and turned down a full scholarship offer from the Massachusetts Institute of Technology, and went to the United States Military Academy at West Point, New York.
- Aldrin graduated third in his class at West Point in 1951, with a Bachelor of Science degree in Mechanical Engineering.
- He was commissioned as a Second Lieutenant in the United States Air Force and served as a jet fighter pilot during the Korean War. He flew 66 combat missions in F-86 Sabres and shot down two Mikoyan-Gurevich MiG-15 aircraft.
- After the war, Aldrin was assigned as an aerial gunnery instructor at Nellis Air Force Base in Nevada, and next was an aide to the dean of faculty at the United States Air Force Academy, which had recently begun operations in 1955.
- In 1963, Aldrin earned a Doctor of Science degree in Astronautics from the Massachusetts Institute of Technology.
- His initial application to join the astronaut corps was rejected on the basis of never having been a test pilot. Eventually, he was accepted into the third astronaut class in October 1963.
- After the deaths of the original Gemini 9 prime crew, Elliot See and Charles Bassett, Aldrin and Jim Lovell were promoted to backup crew for the mission. The main objective of the revised mission (Gemini 9A) was to rendezvous and dock with a target vehicle, but when this failed, Aldrin improvised an effective exercise for the craft to rendezvous with a coordinate in space.

- He was confirmed as pilot on Gemini 12, the last Gemini mission and the last chance to prove methods for extravehicular activity (EVA). He set a record for EVA, demonstrating that astronauts could work outside spacecraft. His experience led to him being chosen for the crew which made the first lunar landing on Apollo 11.
- On July 21, 1969, Aldrin became the second astronaut to walk on the Moon. Aldrin's first words on the Moon were "Beautiful view." Then, in response to Armstrong asking, "Isn't it magnificent?" he responded, "Magnificent desolation."
- After leaving NASA in July 1971, Aldrin was assigned as the Commandant of the U.S. Air Force Test Pilot School at Edwards Air Force Base, California.
- In March 1972, Aldrin retired from active duty after 21 years of service, and returned to the Air Force in a managerial role, but his career was blighted by personal problems.
- His autobiographies *Return to Earth*, published in 1973, and *Magnificent Desolation*, published in 2009, both provide accounts of his struggles with clinical depression and alcoholism in the years following his NASA career. His life improved after he recognized and sought treatment for his problems.
- In 1987, he founded the Space Studies graduate program at the University of North Dakota.
- Later, he produced a computer strategy game called Buzz Aldrin's Race into Space (1993). To further promote space exploration, and to commemorate the 40th anniversary of the first lunar landing, Aldrin teamed up with Snoop Dogg, Quincy Jones, Talib Kweli, and Soulja Boy to create the rap single and video, "Rocket Experience," with proceeds from video and song sales benefitting Aldrin's nonprofit foundation, ShareSpace.
- Aldrin has voiced parody versions of himself in two of Matt Groening's animated series: *The Simpsons* episode "Deep Space Homer," in which he accompanies Homer Simpson on a trip into space as part of NASA's plan to improve its public appearance, and the *Futurama* episode "Cold Warriors." In 2011, Aldrin appeared as himself in the film *Transformers: Dark of the Moon*.
- Aldrin appeared as himself in the *Big Bang Theory* episode, "The Holographic Excitation," which aired on October 25, 2012. Aldrin also lent his voice talents to the 2012 video game *Mass Effect 3*, playing a stargazer who appears in the game's final scene.
- For contributions to the television industry, Aldrin was honored with a star on the Hollywood Walk of Fame.



# CHARLES LINDBERGH

- Charles Augustus Lindbergh (1902– 1974) was an American aviator, author, inventor, military officer, explorer, and social activist. As a 25-year-old U.S. Air Mail pilot, Lindbergh emerged to world fame due to a nonstop flight in 1927, from New York to Paris.
- After quitting college in February 1922, Lindbergh enrolled as a student at the Nebraska Aircraft Corporation's flying school in Lincoln, NE
- Two months later Lindbergh flew for the first time in his life on April 9, 1922, as a passenger.
- A few days after his first flight, Lindbergh took his first formal flying lesson. Then just 20 years old, he was never permitted to fly solo during his time at the school because he could not afford some of the expenses.
- In order to gain more flight experience and earn money for additional instruction, Lindbergh spent a few months traveling the Midwest as a wing walker and parachutist with traveling airshows. He also briefly held a job as an airplane mechanic.
- In May 1923, after taking a short break from flying, Lindbergh took off from Americus, Georgia, on his first solo cross-country flight. He spent much of the rest of the year doing more airshows as a daredevil (called “barnstorming”) under the name of “Daredevil Lindbergh.”
- In March 1924, Lindbergh was ordered to report to Brooks Field to begin a year of military flight training with the United States Army Air Service. Lindbergh graduated first overall in his class in March 1925, thereby earning his Army pilot’s wings and a commission as a 2<sup>nd</sup> Lieutenant in the Air Service Reserve Corps.
- Lindbergh later noted that he considered this year of Army flight training to be the critically important one in his development as both a focused, goal-oriented individual and as a skilled and resourceful aviator.
- In the 1920s, hotel owner Raymond Orteig was offering a prize of \$25,000 (\$304,503.75 as of 2017) to the first pilot to make the journey from New York to Paris without making any stops.
- Lindbergh took off from Roosevelt Field in Long Island, New York, on May 20, 1927. Flying a monoplane named *Spirit of St Louis*, he crossed the Atlantic Ocean.
- During his flight from New York to Paris, he faced many challenges, including skimming over both storm clouds at 10,000 ft. (3,000 m) and wave tops as low as 10 ft. (3.0 m), fighting icing, flying blind through the fog for several hours, and navigating only by the stars (whenever visible).
- Lindbergh landed at Le Bourget Field near Paris after 33.5 hours in the air. During his groundbreaking trip, he had traveled more than 3,600 miles. His book on the legendary flight entitled *We* (1927) became a best seller.
- A crowd estimated at 150,000 spectators stormed the field, dragged Lindbergh out of the cockpit, and literally carried him around above their heads for nearly half an hour.
- Lindbergh dedicated much of his time to promoting the field of aviation. Traveling around the country, he flew his famous plane to different cities where he gave speeches to large crowds

and participated in parades.

- Nicknamed "Lucky Lindy" and "The Lone Eagle," he became an international celebrity and tried to use that fame to help aviation and other causes in which he believed. He promoted both commercial aviation and Air Mail services in the United States and the Americas.
- In 1929, he married Anne Morrow, who he also taught how to fly a plane. After settling in Hopewell, New Jersey, they gave birth to their first child, Charles Augustus Jr. At 20-months-old, the boy was kidnapped from their home in 1932. The crime made headlines around the world.
- The Lindberghs paid the \$50,000 ransom, but sadly their son's body was found in the nearby woods weeks later. The police traced the ransom money to Bruno Hauptmann, a carpenter with a criminal record, and arrested him for the crime.
- To compound Lindbergh's grief, the ensuing trial of his son's accused killer became a media frenzy. Hauptmann was convicted and later executed in 1936.
- The couple moved to England and France to escape the constant media attention. Around this time, Lindbergh did some scientific research, inventing an early type of artificial heart with a French surgeon.
- He also continued his work in aviation, serving on the board of directors for Pan-American World Airways and acting as a special advisor at times. He also worked with Henry Ford on bombers and acted as an adviser and test pilot for United Aircraft following the attack on Pearl Harbor.
- In his later years, Lindbergh became a prolific prize-winning author, international explorer, inventor, and environmentalist.
- Lindbergh died of cancer on August 26, 1974. He is credited with helping to usher in the age of commercial aviation. His incredible acts of courage continue to inspire others.
- In 2002, his grandson, Erik Lindbergh, recreated the flight that made his grandfather famous.

## IGOR SIKORSKY

- Igor Ivanovich Sikorsky (1889 – 1972), was a Russian-American aviation pioneer in both helicopters and fixed-wing aircraft.
- He built the first four-engine plane in 1913 and, after decades of development, would craft the first working helicopter, with its first test flight in 1939.
- Igor Sikorsky was born in Kiev, Russian Empire (present-day Ukraine), and was the youngest of five children.
- When he was young, Igor had a great love for art, especially the life and work of Leonardo da Vinci, and the stories of Jules Verne (a French novelist best known for his adventure novels).



- In 1900, at age 11, he became interested in natural sciences. Sikorsky began to experiment with model flying machines, and by age 12, he had made a small rubber band-powered helicopter.
- At age 19, he was studying engineering. He learned in that year of the accomplishments of Wright Brothers' Flyer and Ferdinand von Zeppelin's 'dirigible' (airship). He later said of this event: "Within twenty-four hours, I decided to change my life's work. I would study aviation."
- He studied aeronautics in Paris, the center of the aviation world at that time. Sikorsky met with aviation pioneers to ask them questions about aircraft and flying.
- His special goal was to develop a craft that could hover over one spot or fly in any desired direction; a helicopter.
- In 1909, he developed his first helicopter but was unable to get it to lift off from the ground. After more models and testing, he was unable to make his helicopter work successfully and opted to pursue designing planes.
- He soon earned his pilot's certificate from the Imperial Aero Club of Russia and demonstrated his S-5 plane in the Russian Army maneuvers near Kiev.
- A seemingly minor incident, in which a tiny mosquito clogged a fuel line and caused Sikorsky to make a forced landing, led Sikorsky to the idea of using several engines to increase his airplane's reliability, an unorthodox and radical concept at the time.
- Sikorsky proceeded to build a gigantic, four-engine, cabin type biplane of outlandish size for the times. It soon earned the nickname of the 'Grand.'
- In May 1913, Igor made the first test flight of the Grand. Many had told him that such a huge airplane would never fly, but his convictions paid off. After developing aviation's first four-engine plane, Sikorsky built an even larger four-engine airplane, the 'Ilia Mourometz.'
- During WWI, Sikorsky's Ilia Mourometz was converted into a bomber that became the backbone of the Russian aerial offensive against the Germans.
- When the Bolshevik Revolution swept Russia in 1917, Sikorsky decided to leave his native land and fled to Paris in the summer of 1918.
- He began to design a large bomber for the United States Army Air Service, but the Armistice ending World War I put a stop to his work.
- A few months later, Sikorsky culminated a life's dream when he immigrated to America. He had no friends in the United States and only \$600 in his pocket. He had been inspired to come because he believed that a man with valuable ideas had a chance to succeed in the US.
- In 1923, Sikorsky formed the Sikorsky Manufacturing Company in Roosevelt, New York.
- Although his prototype was damaged in its first test flight, Sikorsky persuaded his reluctant backers to invest another \$2,500. With the additional funds, he produced one of the first twin-engine aircraft in America.
- Sikorsky built a twin-engine amphibian airplane that proved to be a very practical and serviceable craft. Almost immediately, Pan American Airways used the planes to pioneer its new air routes to Central and South America.

- Before long, Sikorsky was invited to build a very large sea-going air transport plane for Pan Am to pioneer in the transoceanic field. His majestic American Clipper would go on to become the second of the new type of aircraft that Sikorsky contributed to aviation.
- In 1931, Charles Lindbergh flew the maiden voyage of the aircraft. His aircrafts allowed commercial crossing of both major oceans, creating American air routes across them.
- The helicopter had been a personal goal for more than three decades when he began to design his new craft in the spring of 1939, using ideas that he had thought about for the past ten years. By September, it was ready for its first tests.
- Sikorsky's final VS-300 rotor configuration has proven to be one of the most popular helicopter configurations, being used in most helicopters produced today.
- The Sikorsky Aircraft Corporation in Stratford, Connecticut, continues to the present day as one of the world's leading helicopter manufacturers.
- Sikorsky was inducted into the National Inventors Hall of Fame and the Junior Achievement U.S. Business Hall of Fame in 1987.