2018

National U.S. Navy Aircraft Carrier Month

TALKING POINTS

When a crisis occurs the first question that comes to everyone's mind is:
"Where is the nearest aircraft carrier?"

Goal

- To explain and interest students in the importance and value of U.S. Navy aircraft carriers by sharing your experience aboard a carrier and your knowledge of the major advances in flying and the unique value of these complex and technologically advanced ships.
- Through the school program, we aim to foster an interest in STEM (Science, Technology, Engineering, Math) and the U.S. Navy by highlighting the vast variety of rewarding, well-paying professional paths aboard a carrier.

Why is November Aircraft Carrier Month?

- November is filled with historic anniversaries in the development of naval aviation and the important role aircraft carriers have played in defending our country and providing medical assistance, water and food to the victims of disaster.
    - **November 14, 1910:** Naval aviation was born when Eugene Ely launched from the deck of a U.S. Navy ship in a Curtiss Model D
    - **November 5, 1915:** LCDR Henry C. Mustin made the first catapult launch from a ship.
    - **November 11, 1924**: LT Dixie Kiefer made the first *night* catapult launch from a ship.
    - **November 17, 1924:** USS *Langley* (CV 1), converted from the collier USS *Jupiter* (AC 3), became the first operational aircraft carrier in the U.S. Navy.
    - **November 25, 1961:** The first nuclear-powered aircraft carrier, USS *Enterprise* (CVN 65), was commissioned.
    - **November 9, 2013:** The first of the next generation of aircraft carriers, USS *Gerald R. Ford* (CVN 78), was christened.
    - **November 14, 2013:** USS *George Washington* (CVN 73) provided medical supplies, food, and water to the victims of Super Typhoon Haiyan in the Philippines
- National U.S. Navy Aircraft Carrier Month is a celebration of the accomplishments and contributions of U.S. Navy aircraft carriers in defending the freedom of the United States and protecting the security of the Nation and its allies, responding to crisis and spurring technological innovation.
- In the National Defense Authorization Act for Fiscal Year 2018, there's a Sense of Congress regarding aircraft carriers:
    - "It is the sense of Congress that – (1) United States aircraft carriers are premier sea-based power projection platforms and have served the Nation's interests in times of war and peace, adapting to the immediate and ever-changing nature of the world for over 90 year; and (2) **aircraft carrier contributions and heritage should be celebrated.**"

What is an Aircraft Carrier?

- An aircraft carrier is a warship that is an airport at sea.
- Like an airport it has a runway, but much shorter.
- It can launch and land airplanes at any time of day and in any kind of weather.
- Powered by two nuclear reactors, which are refueled only once during a fifty-year lifetime.
- Top speed 35 mph

- 5,000+ crew – ship's company & air wing
- Floating airfield which can support and maintain 75 aircraft – operates 24 hours a day

What makes up an aircraft carrier?

- Powered by two nuclear reactors
- Top speed 35 mph (30+ knots)
- About 5,000 sailors and pilots
- 75 aircraft: helicopters, jets and turboprops
- Operated 24 hours a day
- At least four meals a day
- Below deck is an entire city, complete with living spaces, dining halls, a radio and television station, a barber shop, a library, gymnasium, a hospital and dentist office, shops, and a post office.

What are the roles and responsibilities on an Aircraft Carrier?

- There are about 5,000 Sailors who work within the air wing (those who fly or maintain the aircraft) and ship's company (everyone from dentists to chefs to navigators and meteorologists).
- People wearing different colored shirts have different jobs on the flight deck:
    - **Brown:** "Plane Captains" who service and take care of aircraft.
    - **Blue:** Plane handlers, help move aircraft around the deck, operate elevators and tractors.
    - **Green:** Maintain the ship's catapults, arresting wire equipment and squadron aircraft.
    - **Purple:** "Grapes," fuel the aircraft.
    - **Red:** Firefighters and crew who handle weapons.
    - **White:** Medical personnel, safety observers and Landing Signal Officers (LSOs), who control and grade pilot landings and make sure the deck is clear.
    - **Yellow:** Aircraft directors and "Shooters" (catapult officers).
    - **White/Black:** Inspector.
- Ways to serve on an aircraft carrier:
    - **Enlist in the Navy**: To enlist in the Navy, a minimum of a high school diploma or GED is required. Enlisted personnel can pursue careers as Navy SEALs, Flight Support, Mechanics, Nuclear Operators, Cryptologic Technicians (decipher communications), Aviation Rescue Swimmers, Explosive Ordnance Disposal Technicians, Information Systems technicians, Medical Support, Law Enforcement and more.
    - **Become an Officer**: To be a Naval Officer, a minimum of a Bachelor's degree is required. Naval Officers can pursue careers as Aviators, Flight Support, Nurses, Physicians, Surgeons in addition to all of the careers listed above.
        - Types of Naval Officers aboard an Aircraft Carrier:
            - Air Officer: Responsible for all aspects of operations.
            - Operations Officer: Supervises the training, operations and readiness of all air wing squadrons.
            - Maintenance Officer: Monitors and coordinates the maintenance of air wing assets.
            - Weapons Officer: Advises operators on loading, handling and expenditure of the weapons employed by the air wing.
            - Intelligence Officer: Provides event briefs/debriefs and in flight aid

in support of exercises and/or operations.

STEM (Science, Technology, Engineering, Math) and Aircraft Carriers

- STEM-related fields are projected to add over one million new jobs by 2020, so it is important that students are prepared for the future job market.
- The Navy will continue to need STEM professionals to maintain and further advance the state of the art technology that powers these "floating cities."
- STEM fields include:
    - Ocean landing, robotics and future technology, sonar and echolocation, the science of nuclear power, GPS and navigation, oceanography and meteorology, the science of diving, nuclear propulsion engineering, naval aviation and more.
- Additional resources for communicating about STEM are available here: http://www.navystemfortheclassroom.com/

Ford-Class Aircraft Carriers

- USS *Gerald R. Ford* (CVN 78) is the first new design for an aircraft carrier since USS *Nimitz* (CVN 68), which was commissioned in 1975.
- Equipped with two newly designed nuclear reactors.
- Has 250 percent more electrical capacity than previous carriers.
- These carriers can load weapons and launch aircraft faster than ever before.
- Building these aircraft carriers takes generations of experience, hundreds of thousands of man-hours, years of planning and determination.
- To design the new *Ford*-class aircraft carriers, a full-scale 3D model of each part was created using virtual reality before the actual part was manufactured.

How do planes launch and land on carriers?

- It's impossible for high-performance planes to take off by themselves on the short runway, so a giant catapult under the deck pushes the plane to give it an extra boost into the air.
- Planes go from zero to 165 mph in two seconds to launch from an aircraft carrier.
- Since planes only have a 500-foot runway to land on, a pilot needs to snag the plane's tailhook, on the bottom of the plane, on one of the steel wires that run across the deck.
- These wires and the tailhook bring a plane from 150 mph to a complete stop within 320 feet.
- The *Nimitz*-class aircraft carrier can land one and launch two planes every 37 seconds.
- Jets use about 1/10 of the space they would normally need to take off from an aircraft carrier.
- There is a hangar below the deck for aircraft to be repaired. The aircraft enter and leave the hangar deck with the help of massive elevators along the edge of the flight deck.

What does an Aircraft Carrier do?

- **Humanitarian assistance/disaster relief**
    - Carriers can help victims of hurricanes, floods and earthquakes
    - Evacuate patients by helicopter
    - Provide air traffic control
    - Treat people with a 50-bed hospital manned by six doctors, surgeons and dentists
    - Transport large amounts of food, water and medicine
    - Serve 18,000 to 20,000 meals per day

    - Turn 400,000 gallons per day of ocean into pure drinking water
- **Provides a movable military base**
    - 4.5 acres of US territory
    - Can strike at enemies or defend our friends
    - Operates from international waters
    - No need to get permission from other nations
    - Can deter others from hostilities
- **Part of a Carrier Strike Group:**
    - Carrier
    - Guided missile cruiser
    - Guided missile destroyers
    - Attack submarine
    - Supply ships

Aircraft carriers during earthquakes, floods or other emergencies can provide

- Enough space to support a crew and air wing of roughly 5,000 personnel and a command staff of more than 100 personnel.
- A food services department capable of serving 18,000 to 20,000 meals per day.
- A well-equipped, 50-bed hospital manned by six doctors, including a surgeon.
- A dental clinic with five dental officers capable of caring for as many as 70 patients per day.

History of U.S. Navy Aircraft Carriers:

- For over 70 years, aircraft carriers have been employed in every major conflict and many smaller ones, including World War II, Korea, Vietnam, Grenada, Lebanon, Libya, Operation Desert Storm, Afghanistan, Iraq and the fight against terrorism.
- Some of the most significant battles of World War II took place at sea. Carriers were responsible for delivering planes to battles, helping the Allies to win:
    - Battle of the Coral Sea (May 4-8, 1942), the first time aircraft carriers engaged each other, as well as the first in which neither side's ships sighted or fired directly upon the other. The U.S. lost more ships but stopped the Japanese from invading New Guinea.
    - Battle of Midway (June 3-6, 1942), the U.S. was outnumbered but was able to defeat the Japanese thanks to aircraft launched from carriers. This battle has been referred to as "the most stunning and decisive blow in the history of naval warfare."
- **1910:** Eugene Ely, first flight from a ship and the birth of Naval Aviation.
- **1911:** Ely makes the first successful shipboard landing of an aircraft.
- **1924:** U.S. Navy's first aircraft carrier, USS *Langley* (CV 1), was converted from a ship originally designed to carry coal.
- **1927:** The *Lexington*-class aircraft carriers, USS *Lexington* (CV 2) and USS *Saratoga* (CV 3), were commissioned. These ships were originally designed as battle ships and converted to aircraft carriers.
- **1934:** USS *Ranger* (CV 4) commissioned. The first ship of the U.S. Navy to be designed and built from the bottom up as an aircraft carrier.
- **1961:** The first nuclear-powered aircraft carrier, USS *Enterprise* (CVN 65) commissioned. The ship can travel for 25 years without refueling.
- **1975:** USS *Nimitz* (CVN 68) commissioned, lead ship of the current class of 10 aircraft

carriers.

- **2013:** The first of the next generation of aircraft carriers, USS *Gerald R. Ford* (CVN 78), was christened.
- **2014:** Jets from the USS *George H.W. Bush* (CVN 77) carried out the first American airstrikes against ISIS.
- **2017:** USS *Gerald R. Ford* (CVN 78) was formally commissioned and is expected to make its first deployment in 2020.

Aircraft Carrier Facts

"We're an 11-carrier Navy in a 15-carrier world." - *Rear Adm. Thomas Moore, Program Executive Officer for Aircraft Carriers, 2014*

- Aircraft carriers are designed and built to last for 50 years.
  The United States Navy has the world's largest aircraft carrier fleet, with eleven in service and two under construction:
  - USS *Nimitz* (CVN 68), Bremerton, Washington
  - USS *Dwight D. Eisenhower* (CVN 69), Norfolk, Virginia
  - USS *Carl Vinson* (CVN 70), San Diego, California
  - USS *Theodore Roosevelt* (CVN 71), San Diego, California
  - USS *Abraham Lincoln* (CVN 72), Newport News, Virginia
  - USS *George Washington* (CVN 73), Norfolk, Virginia
  - USS *John C. Stennis* (CVN 74), Bremerton, Washington
  - USS *Harry S. Truman* (CVN 75), Norfolk, Virginia
  - USS *Ronald Reagan* (CVN 76), Yokosuka, Japan
  - USS *George H.W. Bush* (CVN 77), Norfolk, Virginia
  - USS *Gerald R. Ford* (CVN 78), Newport News, Virginia
  - USS *John F. Kennedy* (CVN 79), Newport News, Virginia (under construction)
  - USS *Enterprise* (CVN 80), Newport News, Virginia (under construction)
- Aircraft Carrier: 1,092 feet long, 252 feet wide
- Aircraft carriers are 4.5 acres of sovereign U.S territory enabling the U.S. to reduce its dependency on other nations while it pursues its national security interests.
- Aircraft carriers enable U.S. forces to carry out operations from international waters, avoiding the complications of securing fly-over rights and land-basing rights from other nations.
- Aircraft carriers are a modern, very mobile U.S. military base complete with airfield, hospital and communications systems from which the United States can strike at its enemies.
- One U.S. aircraft carrier has a more powerful air force than 70% of all countries.
- The U.S. and France are the only nations who have ever built a nuclear-powered aircraft carrier.
- In 1929, an aircraft carrier (USS *Lexington* CV-2) helped power the city of Tacoma, WA for a month.
- The average age of Sailors on an aircraft carrier is usually younger than 20 years old.

"The supercarrier is both a symbol of American military supremacy and an actual instrument of American hard, power." – *CMDR Michael Nordeen, USN*