

# Eugene Burton Ely Diorama

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FIGURE 1 EUGENE BURTON ELY DIORAMA

On the Second Deck, in a room which used to be the recreation hall for senior officers, we see a diorama which depicts model of an airplane landing on a ship in 1911. The aviator is Eugene Ely, a 25-year-old racecar driver who made a living by performing daredevil stunts in the early 1900s when motor vehicles were novelty items. Airplanes were also novelties, but they were very difficult to control, and no one ever thought of doing aerial acrobatics with them. Eugene Ely bought a wrecked biplane and restored it to flyable condition. In 1910, the Navy was exploring the idea of using airplanes to drop bombs on enemy intruders, and they offered a \$500 reward for anyone who could successfully take-off from a ship at sea, and land it safely on the ground. That amount of money seemed like a fortune to young Eugene, so he accepted the

challenge.

The event was scheduled for November 14, 1910 in Norfolk, Virginia. The plan was for Eugene to take off from an 83-foot platform constructed over the deck of a light cruiser. Then he was to circle the harbor crowded with cheering spectators, and land heroically at the Norfolk Naval Base. The plane was revving its engine, and the holdback was taught, but when the rope was cut, Eugene didn't get the thrust he was expecting, and at the end of his runway his plane dropped down far enough to skim the surface and spray water over his motorcycle goggles, leaving him blinded. Without attempting to do his victory lap, he made a forced landing at the nearest beach. Fortunately, the plane was not damaged and the experiment was considered successful. Eugene was awarded the \$500 prize.

Two months later, the Navy offered another \$500 reward for anyone who could take-off from the ground and land safely on the deck of an anchored ship. This time the stunt was going to be a lot more dangerous. It could not be done over the ocean where the wind and waves are unpredictable. San Francisco Bay was selected as the safest location. The landing deck had to be as long as possible, so they chose the USS Pennsylvania battle ship with a foreword deck clearance that allowed the Navy to construct a wood-plank landing strip 32 feet wide and 127 feet long.

The next problem was to find an engineer who could devise a way to touch down and halt the plane within that short distance without injuring the pilot or damaging the aircraft. For this job the Navy hired an experienced engineer named Hugh Robinson. Mr. Robinson was an acrobat who worked with a traveling circus. His job was to manage all the equipment used to do acrobatics, and he was also responsible for the safety logistics involved in moving the animals and raising and lowering the circus tents. It was he who invented the idea of stretching a rope across the landing deck with a 50-pound bag of sand tied at either end. He used a series of 20 ropes and a hook attached to the axle of the plane. When it caught the first rope, he was dragging 2 sandbags, then 4 sandbags, then 6 sandbags. In this way, he was able to come to a smooth, safe stop. The system worked excellently, and basically it is the same technique we use today on modern carriers.

Now, let's take a look at Eugene's aircraft. Mr. Glenn Curtiss founded the first company to manufacture flying machines, and the aircraft that Eugene Ely owned was a Curtiss Pusher Model D. The Wright Brothers never manufactured aircraft themselves. They made their money manufacturing airplane parts and selling their patents. In 1929 the Curtis Company and Wright Company merged together to form the Curtiss-Wright Corporation, who branched into helicopters and other types of military aviation equipment.

This plane was the best on the market in 1910, but there were many problems to overcome before it could be of value to the Navy. The steering wheel is used to direct the front wheel when the plane is on the ground, but it is useless in the air. If the plane were to



FIGURE 2 EUGENE BURTON ELY,  
OCT 21, 1886 – OCT 19, 1911



FIGURE 3 USS PENNSYLVANIA IN SAN FRANCISCO  
BAY, JANUARY 18, 1911

ever land without the front wheel pointing straight ahead, the plane would most likely crash. The fuel tank is mounted on the wing strut, and the fuel is fed by gravity, which caused many problems before fuel pumps were invented. The radiator is mounted between the pilot and the engine. Overheating was a huge problem before air-cooled engines were designed. The engine block was made of aluminum for lighter weight, and the electrolysis created between the steel bolts and the aluminum block made the aluminum corrode dangerously. Behind the engine was a chain-drive to turn the propeller. Problems were common with chains breaking or derailing. The propeller was made of wood which absorbs moisture, and if one part has more moisture than another, it will cause the propeller to be out of balance. Small wings were placed between the two large wings to act as ailerons. The Wright Brothers held the patent for the wing-warped ailerons.

History tells us that Eugene used a hay hook mounted on the axle of his plane to snag the arresting rope. What the diorama has in the showcase is not really a hay hook, but rather a meat hook. A meat hook is about 6 inches long, and it is used to hold a slab of meat in place while the butcher cuts it. A hay hook is about 18 inches long, and it is used by a farmer to snag a wire to lift the bale without bending over. The hook in the exhibit is actually too short to be used as an arresting hook. By the way, in the early 1900s, after the farmer cut the wire off the hay bale, he would save it to repair just about anything that broke around the farm. In fact, they never used to say that an object *broke*...Instead, they used to say that *it went haywire*.

Eugene made his living as a thrill-seeking stuntman and a flashy showman. Look at the outfit he was wearing. He had a football helmet to protect his head in case he crashed, and was wearing a bicycle inner tube around his chest as a flotation device in case he crashed into the ocean. He did many crowd-pleasing theatrics, and he always made sure that he was surrounded by photographers and journalists. In January of 1911, a reporter asked him if he ever wanted to retire, and he answered: "I guess I will be like the rest of them, keep at it until I am killed." In October of that year, Eugene was doing an air show in at the State Fairground in Macon, Georgia, and the stunt he was attempting to perform was to fly straight upward, flip over, then fly straight downward, and pull out of the dive at the last minute. His timing was late. He flew into the ground and was killed instantly. There are no artifacts remaining to exhibit in museums today, because dozens of ghoulish spectators walked away with all his personal possessions and fragments of the plane that they could carry. This was a tragic end to a brave man. He was 25 years of age.