



THIS DAY IN NAVAL SAFETY HISTORY

APRIL 19, 1989

USS IOWA (BB-61) EXPLOSION ESTIMATED \$13 MILLION IN DAMAGES

EVENT: At approximately 9:50 a.m. on April 19, 1989, 47 USS Iowa (BB-61) crewmembers were killed when the World War II-era battleship's No. 2 turret exploded during a fleet exercise 260 nautical miles northeast of Puerto Rico. The cost to repair damages exceeded \$13 million.

Captain Fred Moosally was in command when Iowa departed its Norfolk homeport on 13 April 1989 to participate in FLEETEX 3-89, with Commander Second Fleet Vice Admiral Jerome Johnson embarked. The day's exercise began 9:30 a.m. 19 April 1989, when Iowa was located 260 nautical miles northeast of Puerto Rico in the open ocean for a main battery gun shoot.

The first gun in Turret No. 1 misfired and the Turret No. 1 muzzle was elevated in an attempt to clear the gun. Navy rules called for a halt to the exercise until the misfire is cleared. Instead, Turret No. 2 was ordered to load. The right and left guns were ready to fire but the middle gun room reported "We have a problem here. We are not ready." The next turret intercom transmissions were not clear, but some crew reported hearing "oh my god the powder is smoldering" and "there's a flash."

The deadly explosion occurred when five bags of smokeless powder propellant prematurely ignited in the open chamber of the center 16-inch gun (turret) of the battleship. The blast unleashed a 3000 degrees Fahrenheit fireball instantly killing everyone in the area.

In the seconds after the explosion, the ammunition magazines adjacent to the 16-inch gun were immediately flooded with seawater in an effort to prevent secondary explosions which could've sunk the ship.



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Around 3:30 p.m., some 5 1/2 hours after the blast, the U.S. aircraft carrier Coral Sea (CV-43) reached the Iowa. Helicopters ferried the dead and injured to the Coral Sea's medical facilities and to hospitals in Puerto Rico. It took Sailors 8 hours to extinguish the blaze. Fortunately, the fire did not set off the powder bags in the other two guns.

The Iowa was patched up and six weeks later, proceeded on its deployment, wrapping up in December 1989. The ship decommissioned in October 1990 and now serves as a floating museum in San Pedro, California.

LESSONS LEARNED/PREVENTATIVE ACTIONS: In mid-July 1989, the investigating officer submitted his report endorsed by the Chief of Naval Operations and publicly released September 1989. The following are the report's significant conclusions: 1) None of the guns in turret II had fired any rounds that morning; 2) The crew of the center gun was having a problem; 3) An improper propellant/projectile combination and an inappropriate number of powder bags had been loaded into the gun; 4) The propellant charge had been rammed 21 inches too far into the gun's chamber; 5) The explosion started between the first two propellant bags; 6) The explosion forced the projectile more than 3 feet into the barrel where it became lodged; 7) Most personnel manning the turret were not properly qualified to perform their assigned tasks; and 8) A defect in the gun or propellant had not caused the explosion.

Major lessons that continue to apply to today's Sailors:

- Conduct safety briefs on station prior to all ammunition events.
- Conduct proper buddy checks to ensure any spark producing items are not in the vicinity of handling areas.
- Conduct misfire procedure drills/training for both hot and cold gun conditions.
- Review and know the terms of cook-off, hang fire, cease fire, check fire, and bore clear/not clear. Ensure these are part of the safety brief.
- Ensure proper training of ammunition handlers.
- Ensure watch bills are created based on qual cert program data.