

## H-Gram 075: A U.S. Navy vs. Soviets Dogfight, 18 November 1952

29 November 2022

### 70th Anniversary of the Korean War

U.S. Navy vs. Soviets Overwater Dogfight: Lieutenant E. Royce Williams against Seven Mig-15 Jet Fighters, 18 November 1952

I am way behind on updating the events of the Korean War (and 50th anniversary of the Vietnam War) and more will follow. However, the 70th anniversary of the overwater dogfight between U.S. Navy carrier jet fighters and Soviet air defense force jet fighters over the Sea of Japan on 18 November 1952 is particularly noteworthy. In this action, then-Lieutenant E. Royce Williams engaged in one of the most incredible and unique feats of aerial combat in the entire Cold War and in U.S. Navy history. This action was the only overwater dogfight of the Korean War, and the only dogfight between jets of any U.S. service and Soviet jets flying from bases in the Soviet Union during the Cold War. Flying a F9F-5



U.S. Navy F9F Panthers, c. 1950 (80-G-428335).

Panther straight-wing jet fighter, Williams was outnumbered six to one for most of the engagement by faster, more maneuverable Soviet MiG-15 swept-wing jet fighters (it was two against seven at the very start). There is good reason to believe that Williams was responsible for the loss of at least three and probably four of the Soviet fighters. Williams then brought his badly damaged jet back to an amazing recovery on his carrier. Key details of this engagement remained classified for many years, and there was no conclusive confirmation of the full extent of the Soviet losses until after the fall of the Soviet Union. As a result, Williams was only awarded a Silver Star, although there are ongoing efforts even

today to have it upgraded to a Medal of Honor. For more on this engagement, please see attachment H-075-1.

#### A Short History of U.S. Navy Accidents

I originally prepared the attached paper at the request of Admiral Samuel Paparo (commander of U.S. Pacific Fleet), but I believe it may have wider applicability. In our quest for ever-better safety, it may be useful to understand just how inherently dangerous service in the Navy has been going all the way back to the Revolution-as well as just how extraordinarily good, by historic standards, our record has been since about 1990. Prior to that, accidents on the scale of John S. McCain (DDG-56) and Fitzgerald (DDG-62)-or worseoccurred almost on an annual basis, sometimes even more frequently. This would include 27 Navy ships lost with all hands due to non-combat causes, many of those lost without a trace. It includes at least 23 submarines lost due to accident, most with their entire crews. It includes numerous ordnance accidents, including seven major turret explosions, multiple ammunition ship immolations, and a burst gun that killed the Secretary of State and Secretary of the Navy. In the early days of the 20th century, the Navy averaged about 250 sailors per year killed in shipboard accidents and by disease, and as the number of disease deaths decreased, deaths as a result of aviation, submarine, and on-duty vehicle accidents increased. It wasn't until the 1960s that the frequency of these kinds of deaths began to decrease. It was worse in wartime. In World War I, 431 Navy personnel were killed in combat and over 4,000 in accidents (plus over 5,000 dead of the Spanish Influenza-we did much better during the recent pandemic). In World War II,

the service lost 36,950 killed in action and 19,781 to accidents, including 8,184 killed in aviation accidents.

The attached paper contains a reverse chronology of major accidents (or weatherrelated losses) going back to 1900-it gets pretty mind-numbing in the 1960s and earlier. My points are the following. One, we should never forget the sacrifices of so many sailors who gave their lives, even in peacetime, to learn lessons the hard way that make the fleet far more safe today. Two, while we should never cease striving to do better, I believe the Navy has cause to extoll our safety record of the last 30 years. Three, if we ever let up on the emphasis on safety, things could be a whole lot worse (and have been, in the past). For more on this, please see attachment H-075-2.

As always, you are welcome and encouraged to disseminate H-grams widely. Previous H-grams can be found here [https://www.history.navy.mil/about-us/leadership/director/directors-corner/h-grams.html].

# H-075-1: A U.S. Navy vs. Soviets Overwater Dogfight, 18 November 1952

H-Gram 075, Attachment 1 Samuel J. Cox, Director NHHC November 2022

On the morning of 18 November 1952, the three U.S. fleet carriers of Task Force 77 were operating in the Sea of Japan, closer to Vladivostok than ever before (about 80 nautical miles southward), striking targets in and around the North Korean port of Hoeryong. The port had previously been a sanctuary for North Korean forces as it was right across the border from the Soviet Union. Early that afternoon, seven Soviet MiG-15s, in two divisions, subordinate to Soviet air defense forces, launched from Unashi Airfield near Vladivostok and were vectored by their ground-controlled interception (GCI) controller to interdict and attack U.S. Navy aircraft operating in vicinity of the carriers. Note that during the first years of the Korean War, Soviet "volunteer" pilots were secretly flying MiG-15s with North Korean markings from sanctuary bases in Chinese Manchuria, but these engagements were confined to an overland strip in western North Korea-"MiG Alley"-along the Yalu River, and rarely involved Navy aircraft. In fact, these aircraft were under orders not to cross over United Nations lines, or fly over water, out of concern a downed or captured Soviet pilot would blow the secrecy of the operation. However, the aircraft that engaged U.S. Navy aircraft that day were unequivocally Soviet,



A Soviet-built MiG-15 is shot down by a Navy fighter over Korea. This photo is dated 17 March 1953, at a time when no enemy planes were shot down by U.S. Navy pilots. Thus, this *may* be one of the MiG-15s shot down on 18 November 1952 by VF-781 F9F-5s from *Oriskany* (CVA-34) (80-G-483656).

flying from a Soviet airfield, under Soviet control, and with orders to attack U.S. Navy aircraft.

In response to radar warning of approaching aircraft, four F9F-5 Panther straight-wing jet fighters of VF-781 were launched in foul weather from carrier Oriskany (CVA-34) to intercept. Although the "-5" was latest and greatest Navy jet fighter, it was still outclassed by the faster (by 100 knots), faster rate-ofclimb, more maneuverable, and heavierarmed swept-wing MiG-15. The Panther's advantage was its better gunsight system. After breaking through the thick overcast at about 12,000 feet into clear air mass, all four aircraft sighted seven contrails of the Soviet jets. However, the division leader, Lieutenant Claire Elwood, experienced a fuel pump warning light. He and his wingman, Lieutenant (j.g.) John Middleton, were ordered to return and orbit over the carrier.

Lieutenant E. Royce Williams continued to climb along with his wingman, Lieutenant (j.g.) Dave Rowlands, temporarily losing sight of the MiGs as the Soviet aircraft descended from contrail altitude. With no further warning, Williams and Rowlands were jumped from the right by an echelon of four MiG-15s on a firing pass, while three other MiGs approached from the left. Williams immediately maneuvered and hit the trailing MiG (Rowlands's guns never fired). Rowlands chose to follow the damaged MiG down and out of the battle just as the three other MiG-15s joined in the fight. This left Williams alone against six adversaries. His only hope of survival was to fly tight level-altitude turns (if he had tried to climb or dive, or steady up on a MiG, the other MiGs would have nailed him). In the process of constant turns, Williams took brief shots at any MiG that crossed his sights, expending all 760 20mm rounds and hitting at least two more MiGs and probably a third.

Finally, a MiG hit Williams with a 37mm cannon round that blew a big hole in his wing root and perforated the jet with over 250 smaller shrapnel holes (had the hit been a few inches in either direction, it would have been fatal). As Williams dove for the cloud deck and temporary safety, Rowlands rejoined the fight (without guns). Middleton climbed back into the engagement to down one MiG, or more likely, finish off one already damaged by Williams since that MiG was already smoking and barely maneuvering and the Russian pilot immediately ejected. Williams then had to get his badly damaged jet onto the carrier or into the frigid Sea of Japan. He was subsequently fired on briefly by U.S. destroyers, but not hit. To maintain control of his aircraft, he could not drop below 170 knots (normal recovery speed for an F9F was

105 knots). On the heaving deck, he still hit the 3-wire, a near-perfect landing. (His damaged plane was not dumped over the side as stated in some accounts, but was repaired and returned to service).



*Oriskany* (CVA-34) moored at Sasebo, Japan, on 27 October 1953—nearly a year after the events described here. She has a deckload of aircraft, including AD Skyraiders, F9F-5 Panthers, F9F-6 Cougars, and F2H-3/4 Banshees. Note that some planes are painted light grey. *Wisconsin* (BB-64) is in the background (80-G-642739).

The fact of this engagement was not a secret. In fact, there were confidential ONI Intelligence reports and even a reasonably accurate public account in Stag magazine (in 1953, written by the VF-781 skipper), but all referred to "enemy" aircraft or just "MiGs." What remained top secret for decades was the confirmation by a National Intelligence Agency (NSA) radio intelligence detachment secretly embarked on heavy cruiser Helena (CA-75) that these were Soviet air defense force jets, under Soviet GCI guidance, ordered to attack U.S. aircraft, and that at least three and probably four Soviet jets were lost.\* (Williams was officially given credit for one down, one damaged. Middleton was credited with one down, and Rowlands was credited with one damaged-without firing a shot). It wasn't until the end of the Cold War that Russian sources (which are not prone to

exaggerate their own losses) revealed that at least four (and possibly five) Soviet pilots were killed in the engagement: at least three during the fight and one while trying to get his damaged jet back to base.

Neither the top secret radio intelligence, nor the Russian information, was available to the drafters of Williams's Silver Star citation. Like many combat awards (including Butch O'Hare's Medal of Honor in 1942), Williams's award citation is historically inaccurate. This usually occurred because the awarding authority didn't have the enemy side of the story. So, instead of being recognized as the most successful carrier jet fighter pilot of the Korean War, Williams is just one of 221 U.S. Navy personnel to be awarded a Silver Star during the conflict.

The account above is my best assessment of what happened. There are inconsistencies among U.S. after-action reports, award citations, intelligence reports, Williams's own account, outside accounts, and Russian accounts that make this a complex sequence of events to recount accurately.

Captain Royce Williams, USN (Ret.), is still alive at age 97, with a memory that is still clear as a bell. It was an honor and a delight to speak with him a few months ago as I continued research on this event.

\* NSA was established on 4 November 1952, and this was described as the first such "NSA" operation, probably carried out by Naval Security Group personnel in a detachment from Kamiseya, Japan, under a (new) NSA hat. This would not have been the first radio intelligence operation conducted from a ship.



Aboard Forrestal (CVA-59), crewmen battle compartment fires from the after flight deck in an attempt to check the series of fires and explosions raging through the after sections of the ship. These were due to an initial blast that occurred when heavily armed and fueled aircraft were being prepared for launch during operations in the Gulf of Tonkin, 29 July 1967 (USN 1126632).

# H-075-2: A Short History of U.S. Navy Accidents and Non-Combat Losses

H-Gram 075, Attachment 2 Samuel J. Cox, Director NHHC November 2022

By historic standards, the safety record of the U.S. Navy since 1990 has been extraordinarily good. The collisions of *Fitzgerald* (DDG-62) and *John S. McCain* (DDG-56) broke an unprecedented streak of no major fatal accidents since a steam valve rupture on *Iwo* 

Jima (LPH-2) in 1990 that killed 10. Prior to about 1990, accidents of that magnitude occurred almost on a yearly (or more frequent) basis dating back to the founding of the Navy. Some of the factors cited in the recent collisions, such as undermanned, overtasked ships with deferred maintenance and fatigued crews, have actually been the norm, also dating back to the founding of the Navy. (Commander-in-Chief, U.S. Fleet, Admiral James O. Richardson's description of the Fleet in 1939 is virtually the same as it is today, for example.)

Even in non-combat situations, U.S. Navy operations have always been inherently very

dangerous, with losses of ships and especially crews very commonplace, usually due to the elements. However, disease and ordnance and machinery accidents accounted for many casualties. NHHC tracks over 3,000 U.S. Navy shipwrecks (one-third sunk as targets) and over 14,000 aircraft wrecks—a majority of these comprise non-combat losses.

In 1781, the Continental Navy sloop *Saratoga* was lost in a gale with all hands (about 80). It was the first of at least 27 U.S. Navy ships lost with all hands (many of those ships lost without a trace) due to non-combat causes, the last being *Scorpion* (SSN-589) in 1968. The last surface ship lost without trace was the tug *Conestoga* (AT-54), with 56 crewmen, in 1921 (her wreck was identified in 2015). The frigate *Constitution* recorded her first fatalities at the start of her second voyage in 1799 (falls from the tops or overboard).

Throughout the 1800s, losses were frequent, some with high casualties, such as frigate Insurgent, which vanished in September 1800 with 340 crewmen, or screw sloop-ofwar Oneida, sunk in a collision off Yokosuka, Japan, in 1870 with a loss of 125 crewmen. There were other major ship losses with fortunately few or no casualties, such as steam frigate Missouri, the newest, largest, and most technologically advanced ship in the Navy at the time, which burned and sank at Gibraltar in 1843. Another notorious accident was the explosion of the "Peacemaker" gun on screw sloop-of-war *Princeton* in 1844 that killed the Secretary of State, Secretary of the Navy, and only by luck missed President John Tyler.

The Navy did not begin systematically keeping records of non-combat deaths until about 1900. Between then and World War I, non-combat deaths in the Navy varied

between 250 and 350 per year. Early in the century, diseases such as tuberculosis and pneumonia, as well as food poisoning and drowning, accounted for many. However, as those types of deaths began to decline in the 1920s, they were balanced by increased fatalities in submarines, aviation, and vehicle accidents. Throughout that period, shipboard deaths due to steam ruptures, boiler explosions, coal dust explosions, oil fires, ammunition accidents, malfunctioning machinery, electrocution, and similar accidents accounted for 100 or more deaths per year.

The advent of armored turrets proved to be an increased hazard to gun crews in peacetime (albeit a godsend in wartime), and major internal turret explosions occurred with distressing regularity: *Massachusetts* (Battleship No. 2), 1903; *Missouri* (Battleship No. 11), 1904; *Trenton* (CL-11), 1924; *Mississippi* (BB-23), 1924 and 1943; *Saint Paul* (CA-73), 1952; *Newport News* (CA-148), 1972; and *Iowa* (BB-61) 1989. The explosions usually killed all or most of the gun crew.

Submarine duty was particularly hazardous. The first U.S. submarine, *Alligator*, was lost in a storm off Cape Hatteras in 1863. Since that time, at least 23 U.S. submarines have been lost to accidents, frequently with all or most of the crew, beginning with *F-4* in 1915 (all 21 crewmen lost). Of 52 submarines lost during World War II, at least six were lost due to noncombat accidents (not counting circularrunning torpedoes or "friendly" fire) and another eight are simply unaccounted for, usually listed as "presumed mine strike," but accidents cannot be ruled out.

Deaths due to accident significantly increase during wartime. In World War I, the Navy lost

431 men due to enemy action and over 4,400 due to accidents and disease (plus another 5,027 to Spanish Influenza). In World War II, the Navy lost 36,950 men killed in action and 19,781 killed in accidents and non-combat causes (another 5,500 died from "natural causes"). Within these wartime numbers were 3,173 killed in aerial combat and 8,184 killed in aviation accidents, which gives an indication of the inherent added dangers of naval aviation. Even in Vietnam, of 2,556 Navy names on the Vietnam Veterans Memorial, only 1,631 were killed in combat—the rest were due to "operational" causes.

Six U.S. Navy surface ships have been sunk by accident since World War II: Solar (DE-221), 1946; Chehalis (AOG-48), 1948; Benevolence (AH-13), 1950; LST-561, 1952; Hobson (DMS-26), 1952; and Frank E. Evans (DD-754), 1969. Four Navy submarines in commissioned status have been sunk by accident since World War II: Cochino (SS-486), 1949; Stickleback (SS-415), 1959; Thresher (SSN-593), 1963; and Scorpion (SSN-589), 1968. Guitarro (SSN-665) sank at the pier while under construction in 1969, but was raised and repaired. Two decommissioned submarines sank under tow.

## U.S. Navy Accidents Resulting in Deaths of Seven or More Military Personnel, 1900-2022

Note: Use of seven deaths as threshold is purely arbitrary in order to show fatal accidents equivalent or worse than USS *Fitzgerald* in 2017. Lowering the threshold to three does not change the list between 1990 and the present, but it does result in a very extensive increase in the list of accidents prior to 1990. Most fatal accidents since 1990 have been aircraft with one or two deaths, or single man-overboards.

#### Reverse Chronology

2017, 21 August: 10 killed, destroyer *John S. McCain's* collision with merchant tanker, near Singapore

2017, 17 June: 7 killed, destroyer *Fitzgerald*'s collision with merchant ACX *Crystal*, off Japan

2002, 8 May: 7 killed, collision of two T-39 trainers, Pensacola, Florida

1999, 9 December: 7 killed, amphibious assault ship *Bonhomme Richard* CH-46 helicopter crash, off Point Loma, California

1991, 21 March: 27 killed, mid-air collision of two P-3 Orions, off San Diego

1990, 21 December: 21 killed, carrier *Saratoga*, ferry capsized, Haifa, Israel

1990, 31 October: 10 killed, amphibious assault ship *Iwo Jima*, steam valve rupture, Arabian Sea

1989, 19 April: 47 killed, battleship *lowa*, turret explosion, off Puerto Rico

1983, 17 June: 14 killed, P-3 crash, Kauai, Hawaii

1983, 1 May: 15 killed, C-131 crash, St. Johns River, Jacksonville, Florida

1982, 3 April: 11 killed, carrier *Dwight D. Eisenhower*, C-1A COD crash, Crete

1981, 26 May: 14 killed, carrier *Nimitz*, EA-6B crash on flight deck, off Florida

1981, 26 February: 16 killed, Navy C-130 crash, South China Sea

1980, 19 April: 7 killed, P-3 crash, Samoa

1977, 17 January: 49 killed, *Trenton* and *Guam*, *LCM*-6 collides with merchant ship, Barcelona, Spain

1975, 22 November: 8 killed, 47 injured, carrier *John F. Kennedy's* collision with cruiser *Belknap*, off Sicily, Italy

1973, 11 December: 6 killed, 38 injured, carrier *Kitty Hawk*, machinery room fire, South China Sea

1973, 5 February: 7 killed, 5 injured, destroyer *Basilone*, boiler explosion, off Virginia Capes

1972, 1 October: 20 killed, 38 injured, heavy cruiser *Newport News*, turret explosion, Vietnam

1969, 2 June: 74 killed, destroyer *Frank E. Evans* (sunk–stern half remained afloat) collision with carrier HMAS *Melbourne*, South China Sea

1969, 15 January: 28 killed, 343 injured, carrier *Enterprise*, flight deck fire, off Oahu, Hawaii

1968, 22 May: 99 killed (all hands), nuclear attack submarine *Scorpion* sunk, near Azores

1967, 29 July: 134 killed, 161 injured, carrier *Forrestal*, flight deck fire, South China Sea



*Oriskany* (CVA-34) fire, 1966: A-4E Skyhawks damaged by the fire are stored on the ship's flight deck after the blaze was extinguished. The fire, which killed 44 crewmen, occurred off Vietnam on 26 October 1966 (USN 1121680).

1966, 26 October: 44 killed, 156 injured, carrier *Oriskany*, fire, South China Sea

1964, 26 November: 12 killed, P-2V crash, Alaska

1964, 17 November: 10 killed, P-3 crash, Argentia, Newfoundland, Canada

1963, 10 April: 129 killed (all hands), nuclear attack submarine *Thresher* sunk, off Cape Cod, Massachusetts

1961, 23 January: 7 killed, carrier *Saratoga*, fuel oil fire, Aegean Sea

1960, 19 December: 46 killed, 150 injured, carrier *Constellation*, shipyard fire, Brooklyn

1960, 10 July: 11 killed, 20 injured, destroyers *Ammen* and *Collett* collision, Newport Beach, California

1960, 25 February: 38 killed, VR-1 R6D midair collision, Rio de Janeiro, Brazil

1954-60: Although devoid of major accidents, this period of transition to jet aircraft was characterized by a very high operational loss rate of planes and pilots to flight-deck crashes and other mishaps—the era of spectacular ramp strikes.

1954, 26 May: 103 killed, 301 injured, carrier *Bennington*, catapult explosion/fire, off Rhode Island

1954, 21 January: 24 killed, landing craft collision, Inchon, South Korea

1953, 15 October: 37 killed, 40 injured, carrier *Leyte*, catapult hydraulic fire, Boston

1953, 28 April: 11 killed, carrier *Bennington*, explosion, off Cuba

1952, 24 September: 176 killed, carrier *Wasp* and destroyer *Hobson* (sunk), collision, Atlantic

1952, 8 August: 14 killed, PBM Mariner crash, Shikoku, Japan

1952, 7 August: 13 killed, PBM Mariner crash, Philippines

1952, 6 August: 9 killed, carrier *Boxer*, hangar deck fire, Korea

1952, 21 April: 30 killed, heavy cruiser *Saint Paul*, turret explosion, Korea

1952, 2 March: 12 killed, *LST-561* foundered, Korea

1951, 16 September: 7 killed, carrier *Essex*, flight deck crash and fire, Korea

1951, 14 May: 36 killed, seaplane tender *Valcour*, collision and fire, Virginia Capes

1951, 24 May: 19 killed, liberty launch capsized, Newport, Rhode Island

1950, 25 August: 18 killed, hospital ship Benevolence rammed and sunk, San Francisco

1949, 25 August: 7 killed, submarine *Tusk*, washed overboard during rescue of crew of sinking submarine *Cochino*, off Norway

1948, 2 June: 31 killed, liberty launch capsized, Norfolk, Virginia

1948, 16 February: 8 killed, liberty launch capsized, southern France

1946, 30 April: 7 killed, destroyer escort *Solar*, ammunition explosion, Earle, New Jersey

1945, 5 December: 27 killed, flight of 5 TBM Avengers disappeared, PBM Mariner SAR flight exploded, off southeastern Florida

1945, 11 October: 73 killed, 49 injured, various ships, typhoon, Buckner Bay, Okinawa

1945, 29 January: 255 killed, ammunition ship *Serpens*, ammunition explosion, Guadalcanal, Solomon Islands

1944, 18 December: 790 killed, 80 injured, destroyers *Monaghan, Spence, Hull* sunk in typhoon, Pacific

1944, 10 November: 372 killed, 371 injured, ammunition ship *Mount Hood*, ammunition explosion, Manus Island, Papua New Guinea

1944, 13 September: 248 killed, destroyer *Warrington*, lost in hurricane off Florida



Naval Magazine, Port Chicago, California: Damage resulting from the 17 July 1944 ammunition explosion. This view looks north, showing the wreckage of Building A-7 (Joiner Shop) in the center and the destroyed ship pier beyond. Note bulldozer and damaged automobiles in the foreground, railway crane at left, and scattered pilings (NH 96823).

1944, 17 July: 320 killed, ammunition explosion, U.S. Naval Magazine, Port Chicago, California

1944, 4 July: 42 killed, submarine *S-28*, sunk due to unknown cause, off Oahu, Hawaii 1944, 21 May: 163 killed, 396 injured, six LSTs destroyed in ammunition explosion, Pearl Harbor, Hawaii

1944, 3 January: 138 killed, 60 injured, destroyer *Turner*, ammunition explosion, New York harbor

1943, 20 November: 43 killed, 19 injured, battleship *Mississippi*, turret explosion, Gilbert Islands

1943, 12 June: 42 killed, submarine *R-12* sunk by accident, off Key West, Florida

1942, 18 February: 204 killed, destroyer *Truxton* and cargo ship *Pollux* run aground in storm, Newfoundland

1942, 24 January: 46 killed, submarine S-26 accidentally rammed, Gulf of Panama

1941, 19 June: 33 killed, submarine *O-9* sunk during deep submergence test, off Portsmouth, New Hampshire

1941, 2 January: 11 killed, PBY Catalina crash, San Diego

1939, 12 May: 26 killed, submarine *Squalus* sank during test dive, off Portsmouth, New Hampshire

1938, 2 February: 11 killed, two PBY Catalinas collided, off California coast

1938, 5 January: 7 killed, PBY Catalina crash, off Point Loma, California

1933, 4 April: 73 killed, 3 injured, airship *Akron* crash, off Barnegat, New Jersey

1928, 17 December: 39 killed, submarine *S-4* rammed and sunk, off Cape Cod, Massachusetts

1926, 10 July: 19 killed, 39 injured, ammunition explosion by lightning, Naval Ammunition Depot, Jersey City, New Jersey

1925, 25 September: 33 killed, submarine *S*-51 sank after collision, Block Island, Rhode Island

1925, 3 September: 14 killed, 2 injured, airship *Shenandoah* crash, Ohio

1924, 20 October: 14 killed, light cruiser *Trenton*, turret explosion, Virginia Capes

1924, 12 June: 48 killed, battleship *Mississippi*, turret explosion, off San Pedro, California



Wrecked destroyers on Honda Point, California, soon after the night of 8 September 1923, when they went ashore in a fog. In the foreground is *Chauncey* (DD-296) with *Young* (DD-312) capsized astern. *Woodbury* (DD-309) is in the center distance, with *Fuller* (DD-297) faintly visible behind her (NH 84822).

1923, 8 September: 23 killed, 15 injured, 7 destroyers ran aground and wrecked, Point Honda, California

1921, 25 March: 56 killed, tug *Conestoga* disappeared after departing San Francisco

1920, 11 June: 9 killed, patrol vessel *PE-8* sunk in squall, Delaware Bay

1919, 19 July: 8 killed, minesweeper *Richard Bulkeley*, accidentally sunk by swept mine, North Sea

1918, 9 December: 10 killed, armored cruiser *Brooklyn*, coal dust explosion

1918, 9 October: 12 killed, destroyer *Shaw* collides with HMS *Aquitania*, Atlantic

1918, 4 October: 25 killed, collier *Herman Frasch* sank after collision with tanker, off Nova Scotia, Canada

1918, 27 August: 18 killed, sub chaser *SC-209* mistaken for submarine and sunk, Atlantic

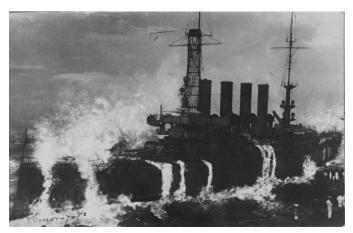
1918, 17 April: 17 killed, freighter *Florence K*, ammunition explosion killed naval armed guards, Atlantic

1918, 4 March: 306 killed (all hands and passengers), collier *Cyclops* disappeared, off St. Kitts, Caribbean

1918, 26 February: 40 killed, tug *Cherokee* foundered in gale, off Fenwick Island, Delaware

1917, 17 December: 19 killed, submarine *F-1*, sunk in collision, San Diego

1917, 21 December: 21 killed, destroyer *Chauncy,* sunk in collision, Atlantic west of Gibraltar



Memphis (Armored Cruiser No. 10) driven ashore by tidal waves at Santo Domingo, Dominican Republic, 29 August 1916 (NH 99960).

1916, 29 August: 41 killed, 204 injured, armored cruiser *Memphis*, wrecked by freak waves, Santo Domingo, Dominican Republic

1915, 25 March: 21 killed, submarine *F-4* sank, battery failure, off Honolulu, Hawaii

1915, 21 January: 9 killed, armored cruiser *San Diego*, boiler explosion, San Diego

1910, 27 March: 8 killed, armored cruiser *Charleston*, gun explosion, Cavite, Philippines

1905, 21 July: 65 killed, 40 injured, gunboat *Bennington*, boiler explosion, San Diego

1904, 13 April: 34 killed, battleship *Missouri*, turret explosion, Caribbean

1903, 16 January: 9 killed, battleship *Massachusetts*, powder explosion, Atlantic

For the most thorough accounting of U.S. Navy non-combat casualties, see the NHHC document "Casualties: US Navy and Marine Corps Personnel Killed and Injured in Selected Accidents and Other Incidents Not Directly the Result of Enemy Action." [https://www.history.navy.mil/content/history/nhhc/research/library/online-reading-room/title-list-alphabetically/c/casualties-usnavy-marinecorps-personnel-killed-injured-selected-accidents-other-incidents-notdirectly-result-enemy-action.html]

For an accounting of Navy ships lost to weather, see NHHC document "U.S. Navy Ships Lost in Selected Storm/Weather Related Incidents." [https://www.history.navy.mil/content/history/nhhc/research/library/online-reading-room/title-list-alphabetically/u/us-navy-ships-lost-in-selected-storm-weather-related-incidents.html]

For an accounting of U.S. Navy surface ship accidents since World War II, see H-Gram 071 for an overview and H-071-2 for a complete list.

For a list of U.S. Navy non-combat submarine losses, see H-Gram 019 for an overview and H-019-3 for a complete list.

For an accounting of U.S. Navy ordnance accidents, see H-Gram 029's H-029-5.

For an accounting of U.S. Navy ships lost with all hands (non-combat), see H-Gram 060 for an overview and H-060-2 for a complete list.