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## **Naval Accidents 1945 - 1988**

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[Note: Some changes in formatting and page number have occurred in converting this report from an older DOS-version of Wordperfect 5.1 to Word for Windows 98]

## Introduction

The sinking of the Soviet Mike class submarine and the explosion and tragic loss of life aboard the battleship USS **Iowa** (BB-61) in April 1989 are reminders that peacetime naval accidents are a fact of life. Since the end of World War II, the world's navies have had over 1,200 documented major accidents, resulting in dozens of ship sinkings, hundreds of explosions and fires, costly repairs and early vessel retirements, and major loss of life.<sup>1</sup> The accidents have occurred in shipyards and ports, in harbors and coastal waters, and on the high seas throughout the world. Many of the accidents were spectacular and are well known. The majority, however, are obscure and little publicized.

A comprehensive historical record of naval accidents does not exist. Official secrecy, particularly that of the Soviet Union, as well as sporadic news media interest in reporting routine accidents, are major impediments to compiling a complete record. Without full documentation, it is difficult to determine fluctuations or variations in the frequency or types of accidents. Changes in the naval accident rate, furthermore, are not necessarily related to higher or lower operating tempos. No doubt safety practices, damage preparedness, ship control technologies, and aids to better seamanship have improved greatly since World War II, but this has not eliminated serious mishaps.

Naval accidents occur in a unique environment. The oceans can be violent and unrelenting. The nature of naval operations, maneuvering in close quarters in a borderless medium, the presence of explosives and other combustible materials, the fact that ships are dangerous places, full of moving machinery and electrical equipment increases the potential for accidents, whether brought on by "acts of God" or human error. There are also numerous accidents (U.S.-Soviet, western-Soviet, and others between unfriendly nations) which have resulted from aggressive or even hostile maneuvering, a reminder that routine seagoing activity carries with it unequalled potential for crisis or crisis escalation.

It must also be noted that the U.S. Navy and the Soviet Navy, and to a lesser degree British, French, and Chinese navies, routinely operate warships and submarines with nuclear weapons aboard. All five nations also have nuclear-powered ships. This brings an added dimension to naval accidents, namely the potential for nuclear weapons or reactors being damaged, destroyed, or lost. The number of nuclear weapons and reactor accidents is a well-guarded secret of the military establishments, but the information available indicates that numerous serious accidents have taken place. This report concludes that there are some forty-eight nuclear warheads and seven nuclear-power reactors on the ocean floor as a result of these accidents.

The purpose of this study is to establish a database of information about naval accidents, and then to investigate that record in order to assess the risks of naval activity during peacetime and crisis periods. This assessment will help answer questions about public safety surrounding the controversial nuclear ship visits to foreign (and domestic) ports. Finally, while naval arms control focuses on the large issues of the types and numbers of nuclear weapons, the day-to-day costs and potential dangers are little recognized or understood, and the long-term implications of naval nuclear propulsion are hardly even raised.

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<sup>1</sup> This report does not include accidents or damage to ships resulting from wars or military conflict, although it does include operating accidents that occurred during those conflicts which were not a result of hostilities.

## Overview

This report documents 1,276 accidents of the major navies of the world between 1945 and 1988. By frequency of occurrence, 406 accidents involved major surface combatants (not including aircraft carriers), 359 involved submarines, 228 involved aircraft carriers, 182 involved logistic support ships, 142 involved minor military ships, and 75 involved amphibious warships (see table 1). Seventy-five accidents were actual sinkings, 60 of military vessels, and 17 of civilian boats. The accidents have resulted in over 2,800 deaths, with U.S. and Soviet fatalities constituting about 65 percent of the total. The majority of accidents occurred in the Atlantic Ocean (624, or 49 percent), not including the Mediterranean Sea, 318 (or 25 percent) occurred in the Pacific, 110 (9 percent) occurred in the Mediterranean Sea, and 34 occurred in the Indian Ocean.<sup>2</sup>

Of the 1,276 accidents, 799 have involved naval ships of the United States. This preponderance of U.S. accidents does not mean a higher accident rate than other navies, particularly the Soviet Navy. Many hundreds more Soviet accidents are known to have occurred, but due to inadequate data and excessive secrecy, we have been unable to document their specific dates or circumstances.

The accidents are divided into 12 major categories by cause (see table 2):

- **Collisions:** The most prevalent type of major accidents has been collisions, of which there have been 456 documented cases, 190 between military ships, 184 between naval vessels and civilian ships. There have been 51 collisions involving aircraft carriers. There have also been 36 confirmed snaggings of submerged submarines by fishing trawlers or nets, and 82 collisions by ships with docks during mooring or unmooring, or with unidentified objects.

- **Fires:** There have been 267 documented major fires aboard ships, although many more are suspected as having taken place. In addition, hundreds of minor fires have occurred at sea, during ship construction and overhauls. These have by and large not been included in the chronology. Fires are by far the most prevalent cause of ship damage, but their regular occurrence precludes a comprehensive statistical analysis. According to official Navy statistics, from 1973 to 1983 there were an average of 148 fires per year on U.S. ships or at shore bases.<sup>3</sup>

- **Groundings:** There have been 130 documented groundings of ships and submarines, either surface ship groundings on sandbars, rocks, and reefs, or submerged bottomings of submarines. Some of the groundings have been quite serious. For instance, the grounding of the nuclear-powered ballistic missile submarine **USS Nathanael Greene** (SSBN-636) in the Irish Sea on 13 March 1986, ultimately led to a decision to retire the submarine early.

- **Explosions:** There have been 114 documented explosions and other ordnance mishaps, including ammunition explosions, and explosions which were the result of fires. Between 1985 and 1988, the U.S. Navy had at least 49 ordnance detonation accidents and hundreds of ordnance malfunctions on its surface vessels (see table 3).

- **Equipment failures:** There have been 98 documented accidents involving major material failures and equipment mishaps, not involving propulsion equipment.

- **Sinkings:** There have been 75 documented sinkings as a result of accidents, either of military ships, or civilian ships struck by military ships. This includes 27 sinkings of submarines.

<sup>2</sup> A lesser number of accidents occurred in the Arctic and Antarctic (2 percent). The remaining 170 accidents (14 percent) occurred in unknown locations, because information was not available. Since the majority of these accidents are British, it is assumed that most occurred in the Atlantic.

<sup>3</sup> George W. Schiele, "Letting Our Bridges Burn," Proceedings (December 1988): 125.

The most spectacular recent sinking during the 1945-1988 period was the missile explosion and subsequent scuttling of a Soviet Yankee I class ballistic missile submarine off the coast of Bermuda in October 1986. The Yankee submarine disaster is now joined by the sinking of the Mike attack submarine in April 1989, although this accident is outside the period covered by this report.

- **Weather conditions:** There have been 65 documented accidents involving adverse weather conditions, affecting 107 different ships. An example of a recent weather-related accident was a freak wave which crashed over the deck of the nuclear-powered aircraft carrier USS **Carl Vinson** (CVN-70) on 16 August 1986, sweeping seven men overboard.

- **Propulsion accidents:** There have been 59 documented propulsion accidents involving engines or boilers, nuclear reactor accidents, and accidents involving the leaking of fuels or primary coolant water, either at sea or in dockyards.

- **Ordnance accidents (non-explosive):** There have been 54 documented major ordnance accidents which did not result in explosions. These are accidents relating mostly to the handling and movement of weapons, or misfired or aimed weapons.

- **Aircraft crashes on ships:** There have been 34 documented serious accidents that have occurred when aircraft or helicopters have crashed on takeoff or landing from aircraft carriers, amphibious assault ships, or other surface warships.<sup>4</sup> The greatest number of crashes occurred in 1981. On 9 September 1986, a helicopter crashed on the deck of the amphibious ship USS **Saipan** (LHA-2), killing nine. On 17 July 1988, A French Navy nuclear capable fighter-bomber crashed onto the deck of the aircraft carrier **Clemenceau**, killing the pilot.

- **Floodings:** There have been 27 reported cases of flooding, mostly of submarines, mostly a result of open hatches and access panels.

- **Miscellaneous:** There have been 80 miscellaneous accidents, involving ships capsizing and going adrift, gas leaks, ships hitting stray mines or torpedoes, friendly aircraft or ordnance striking ships, accidents involving civilian interference, and cases of sabotage or arson.

## Nuclear Weapons Accidents

In the early 1950s, U.S. naval vessels began carrying nuclear weapons, followed by Soviet vessels in the late 1950s.<sup>5</sup> Since then, nuclear systems have become commonplace aboard major surface warships and submarines, bringing a nuclear dimension to many accidents. Naval nuclear weapons now number 15,000 to 16,000. It is difficult to calculate how many accidents have involved nuclear weapons, particularly in the early years when nuclear weapons were first being incorporated into naval forces. There is, however, ample evidence that numerous accidents have occurred involving nuclear weapons (see table 4). There are also approximately forty-eight nuclear warheads and seven nuclear-power reactors on the bottom of the oceans as a result of

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<sup>4</sup> LCDR Dave Parsons, USN, "Naval Aviation Safety: A State of the `Union" Perspective," *Wings of Gold* (Summer 1988): 39. In 1987, the Navy and Marine Corps had 74 "class A mishaps" (defined as at least \$500,000 in property damage, a permanent disabling injury, or a death), 51 by the Navy and 23 by Marine Corps aviation. In the 74 mishaps, 73 aircraft were destroyed and 66 personnel lost their lives. Fifty percent of the mishaps in 1987 had pilot error as the primary cause factor. The 1987 rate contrasts with 1958, when 524 aircraft were destroyed in 1,106 accidents. During most of the 1960s, an average of about 300 aircraft were lost per year to non-combat related causes. This average fell below 200 in the 1970s.

<sup>5</sup> Nuclear weapons were introduced into the U.S. Navy in December 1951 when the aircraft carrier USS **Philippine Sea** (CV-47) completed tests at San Diego of assembly capabilities of nuclear bombs.

various accidents (see table 5).

Aside from secrecy, the other problem in comprehending the extent of naval nuclear accidents results from the way the navies define an "accident." Official bureaucratic definitions differ from what the public or a lay person might think of as an accident, and so by a definitional sleight of hand the navies can claim that a nuclear weapons accident has not occurred. A nuclear weapons accident (also called a "Broken Arrow"), according to U.S. Navy instructions, includes:

- a. Nuclear detonations or possible detonations other than war risk detonations.
- b. Non-nuclear detonation or burning of a nuclear weapon.
- c. Radioactive contamination.
- d. Seizure, theft or loss of a nuclear weapon or nuclear component, including jettisoning.
- e. Public hazard, actual or implied.<sup>6</sup>

There are two additional lesser types of accidents which are also defined by the U.S. Navy: a nuclear weapons "incident" (or "Bent Spear") and an "unexpected event" (or "Dull Sword"). A nuclear weapons incident is defined as an incident which does not fall into the category of a nuclear weapons accident but:

- a. Results in damage to a nuclear weapon or component requiring a major rework, complete replacement, or examination/recertification by the Department of Energy (DOE).
- b. Requires immediate action in the interest of safety.
- c. May generate adverse public relations (national or international) or premature release of information.
- d. The potential consequences are such as to warrant interest or action by the recipients of Bent Spear messages.

An unexpected event is a still lower accident category which is neither a Broken Arrow or a Bent Spear, but which fits one of the following criteria:

- a. The possibility of detonation or radioactive contamination is increased.
- b. Errors are committed in the assembly testing, loading or transporting of equipment which could lead to a substantially reduced yield, increased dud probability, or to unintentional operation of all or part of a weapon's arming and/or firing sequence.
- c. The malfunctioning of equipment and material which could lead to a substantially reduced yield, increased dud probability, or to unintentional operation of all or part of a weapon's arming and/or firing sequence.
- d. Any natural phenomena over which man has no control which results in damage to a weapon or component.
- e. Any unfavorable environment or condition, however produced, which subjects a nuclear weapon to vibration, shock, stress, extreme temperatures, or other environments sufficient to cause questioning of the reliability or safety of the weapon. This includes

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<sup>6</sup> U.S. Navy, Office of the Chief of Naval Operations, "Minimum Criteria and Standards for Navy and Marine Corps Nuclear Weapons Accident and Incident Response," OPNAVINST 344.15 Change 1, 13 June 1983 (released under the Freedom of Information Act).

exposure or suspected exposure of the weapon or major components to electrical or electromagnetic energy which could energize or damage weapons components.

The irony of the official definitions of nuclear weapons accidents, incidents and unexpected events is that the Navy may categorize a minor event as an accident while the public might not. Conversely, other accidents that clearly have grave implications for public safety are not defined as official nuclear weapons accidents.<sup>7</sup> The U.S. Department of Defense acknowledges that 32 nuclear weapons accidents have occurred, including three Navy accidents. In one Navy case (and eight Air Force cases), however, the accident did not even include an actual assembled nuclear warhead, and there were no nuclear materials present, yet it was still reported as an "accident."<sup>8</sup> The Navy accident, for instance, is described as:

On 25 September 1959, "a U.S. Navy P-5M aircraft, assigned to NAS Whidbey Island, Washington, crashed in the Pacific Ocean about 100 miles west of the Washington-Oregon border. It was carrying an unarmed nuclear antisubmarine weapon containing no nuclear material. The weapon was not recovered."<sup>9</sup>

If this qualifies as a nuclear weapons accident, then there are a number of general naval accidents which involved fully assembled nuclear weapons that should be included as well. The most dramatic one uncovered during the research for this report was a collision and subsequent fire between the aircraft carrier USS **John F. Kennedy** (CV-67) and the cruiser USS **Belknap** (CG-26) on 22 November 1975 in rough seas during night air exercises about 70 miles east of Sicily. The collision caused major damage to both ships, as the overhanging flight deck of the aircraft carrier struck the **Belknap's** superstructure, causing fires and explosions which lasted over two hours. Six were killed aboard the **Belknap** and one was killed aboard the **Kennedy**. The collision is one of the best-known naval accidents. The damage to the **Belknap** was so serious that it was taken out of commission for extensive repairs and did not return to the active fleet until 1980. But in all that has been written about the accident, no mention has ever been made of the nuclear weapons present on both ships, or the grave danger which the Navy believed the nuclear warheads aboard the **Belknap** might face as a result of raging fires.

Just minutes after the collision, the commander of Carrier Striking Forces for the Sixth Fleet (Task Force 60) sent a secret nuclear weapons accident "Broken Arrow" message to the Pentagon and higher commands, warning that a "high probability that nuclear weapons on the USS **Belknap** were involved in fire and explosions," but that there were "no direct communications with **Belknap** at this time" and "no positive indications that explosions were directly related to nuclear weapons." In the end, the W45 nuclear warheads stored aboard the

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<sup>7</sup> On 19 January 1966, a W45 nuclear warhead separated from a Terrier surface-to-air missile during loading operations aboard the USS **Luce** (DLG-7) at Naval Air Station Mayport, Florida. The warhead fell about eight feet and was dented, but no other damage occurred. This accident was included in a "Chronology of Nuclear Accident Statements" released by the Department of Defense in 1968 but was removed from the list of nuclear weapons accidents released by DOD in April 1981. In 1974, the Navy changed its definitions of nuclear weapons accidents, significant incidents, and incidents, and this accident was removed from the rolls of accident or significant incident.

<sup>8</sup> Given the early design of warheads, it was a standard safety and security procedure to keep the "capsule" of nuclear material separate from the warhead containing the high explosives. Therefore, a number of early accidents involved unassembled nuclear weapons, where nuclear materials were not present during the accident.

<sup>9</sup> DOD, "Narrative Summaries of Accidents Involving U.S. Nuclear Weapons: 1950-1980," April 1981.

**Belknap** for the Terrier surface-to-air missile system escaped detonation as the fire was contained aft of the launcher and storage magazine. Nuclear weapons stored aboard the **Kennedy** also escaped fires and explosion.

The U.S. Navy and the Department of Defense have failed to acknowledge that nuclear weapons aboard both ships were threatened. The justification for keeping the details about the **Belknap** and **Kennedy** secret is highly political, and relates to the U.S. Navy's policy of "neither confirming nor denying" the presence of nuclear weapons aboard ships. To admit that the two ships had nuclear weapons aboard, the Navy would have to deal with the controversy, if not the restrictions, over port calls where non-nuclear sentiments or policies prevail. The **Belknap** visited Spain, Italy, and Greece, and carried out a patrol in the Black Sea, with its nuclear weapons aboard prior to the accident.

Fear of the political consequences was clearly the reason for secrecy surrounding the two other "official" Navy nuclear weapons accidents (besides the P-5M accident discussed above) which have been acknowledged by the Department of Defense (DOD). The first, presumably the sinking of the attack submarine USS **Scorpion** (SSN-589) between 21-27 May 1968, is described by the DOD as "Spring 1968 / At Sea, Atlantic: Details remain classified." It is well known that the **Scorpion** sank 400 miles southwest of the Azores in more than 10,000 feet of water, killing 99 crewmen. What the Navy is not admitting is that the ship was carrying two ASTOR nuclear torpedoes.

The second accident is even more vivid in terms of the secrecy surrounding routine Navy practice relating to the carrying of nuclear weapons. In 1981, the DOD admitted that it had lost a nuclear warhead at sea in 1965 and described the accident as follows:

December 5, 1965 / A-4 / At Sea, Pacific: An A-4 aircraft loaded with one nuclear weapon rolled off the elevator of a U.S. aircraft carrier and fell into the sea. The pilot, aircraft, and weapon were lost. The incident occurred more than 500 miles from land.

But the details, which have been uncovered in preparing this report, present a different picture. While steaming en route from bombing operations off Vietnam to the U.S. Navy base at Yokosuka, Japan, the aircraft carrier USS **Ticonderoga** (CVA-14) experienced a nuclear weapons accident when an A-4E attack jet loaded with a B43 thermonuclear bomb rolled off the Number 2 elevator, and sank in 2700 fathoms (16,000 feet) of water. The aircraft carrier was positioned about 70 miles from the Ryuku Islands chain and about 200 miles east of Okinawa.<sup>10</sup> Two days after the accident, the aircraft carrier entered Yokosuka, Japan, for a rest and relaxation stop before returning to bombing operations off the coast of Vietnam.

In 1981, when the DOD released its innocuous version of the accident, failing to identify the ship involved and actually lying about the location of the airplane and bomb (even going to the extent of saying that it occurred more than 500 miles from land), it was trying to avoid the political repercussions of admitting that, nuclear weapons were on board aircraft carriers involved in bombing operations during the Vietnam War, that U.S. ships routinely carry nuclear weapons into Japanese ports, and that a nuclear bomb is lying 70 miles off the Japanese coast.

New details were also discovered about several other accidents. On 18 August 1959, the aircraft carrier USS **Wasp** (CVS-18) had a major fire which burned out of control in hanger bay Number 1, necessitating the flooding of the forward magazines, with foam being pumped

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<sup>10</sup> Deck Log of the USS **Ticonderoga** (CVA-14) for 5 December 1965, located at the National Archives.

through the flight deck. Preliminary preparations were also made to flood the nuclear weapons storage spaces, but the commanding officer decided not to do so as the fire was brought under control.<sup>11</sup> Other significant weapons handling accidents included a Bullpup missile accident aboard the USS **Bon Homme Richard** (CV-31) on 10 February 1970, when the missile slipped off its hoist and broke open, spewing toxic gases and liquids;<sup>12</sup> and a failure in the top-side warhead handling hoist for the Talos surface-to-air missile aboard the cruiser USS **Albany** (CG-10) on 16 April 1975.<sup>13</sup> Still, the extent of accidents involving nuclear-armed ships is unclear due to secrecy.

## Nuclear Reactor Accidents

Naval vessels, particularly submarines, began using nuclear reactors for propulsion in 1954, with the commissioning of the USS **Nautilus** (SSN-571). Naval nuclear reactors now number almost 550, with some 360 vessels nuclear-powered. Between 1945 and 1988, there were 212 confirmed accidents involving nuclear-powered vessels, 49 involving ballistic missile submarines, 146 involving attack and cruise missile submarines, 13 involving aircraft carriers, and 6 involving other nuclear-powered surface ships (see table 6).

In July 1983, when the Fund for Constitutional Government published a report by David Kaplan entitled "The Nuclear Navy," the U.S. Navy prepared a response in which it stated "there has never been a reactor accident in the history of the U.S. Naval Nuclear Propulsion Program.... The safety of the Navy's nuclear powered warships is on the record. The Navy stands unequivocally behind that record."<sup>14</sup> This statement is repeated annually when the Navy testifies before the Congress. The most complete statement that could be found was in 1980, when Admiral Hyman Rickover stated, "In the over 25 years of the naval nuclear propulsion program since the Nautilus land prototype first operated, there has never been an accident involving a naval reactor nor has there ever been a release of radioactivity which has had a significant effect on the environment, **on the operators** or the public." (emphasis added)<sup>15</sup> When asked recently if the record remained the same, the U.S. Navy offered this statement, "As of the spring of 1989, the Navy has had over 3,500 reactor years of operation without a reactor accident."<sup>16</sup>

Yet in the research for this report, a submarine accident was uncovered that indicates in fact that the U.S. Navy has had at least one nuclear reactor accident which affected the operators. On 21 April 1973, the nuclear-powered attack submarine, USS **Guardfish** (SSN-612), experienced a primary coolant leak while running submerged about 370 miles south-southwest of

<sup>11</sup> Deck Log of the USS **Wasp** (CVS-18), 18 August 1959, located at the National Archives.

<sup>12</sup> Deck Log of the USS **Bon Homme Richard** (CVA-31), 10 February 1970, located at the National Archives; "Missile Splits -- Emergency on Carrier," *San Francisco Chronicle*, 11 February 1970.

<sup>13</sup> Naval Weapons Evaluation Facility, Command History 1976, p. 7 (released under the Freedom of Information Act); Deck Log of the USS **Albany** (CG-10), located at the National Archives.

<sup>14</sup> U.S. Navy, "Navy Response To Article Entitled 'The Nuclear Navy,'" 20 July 1983.

<sup>15</sup> U.S. Congress, House Armed Services Committee, Naval Nuclear Propulsion Program -- 1980, 18 March 1980, p. 3. Testifying before the House Armed Services Committee in February 1987, Admiral Kinnaird R. McKee, chief of the nuclear propulsion program stated, "Our record continues unblemished. We have had no accidents;" U.S. Congress, House Armed Services Committee, Naval Nuclear Propulsion Program -- 1988, Hearings, 26 February 1987, p. 2.

<sup>16</sup> Statement of Naval Reactors Office, 23 February 1989. According to an earlier Navy statement, "in over 3,100 reactor years of US naval reactor operations there has never been a reactor accident or a problem resulting in fuel damage." Michael White, "Catalogue of faults in UK nuclear subs," *Guardian*, 3 March 1988, p. 1.

Puget Sound, Washington. The submarine surfaced, ventilated, decontaminated, and repaired the casualty unassisted. Four crew members were transferred to the Puget Sound Naval Hospital for radioactive monitoring.<sup>17</sup> The severity of the accident is unclear, but the way it is reported in an official Navy document indicates that it fits the definition of an official "accident." The accident has never been reported in the media, and other official documents about the **Guardfish** do not acknowledge that an accident occurred. According to the deck log of the USS **Guardfish** for 21 April 1973, for instance, the submarine was reported as operating "submerged as before" during the entire day without incident. The command history of the **Guardfish** for 1973 also makes no mention of an accident during the year.<sup>18</sup> Also, the Navy admits to a primary coolant leak aboard the USS **Nimitz** (CVN-68) on 11 May 1979, and the attack submarine USS **Swordfish** (SSN-579) suffered a propulsion casualty of unknown cause on 24 November 1985.<sup>19</sup>

How many other nuclear reactor accidents have really occurred is unknown since assessing the number of nuclear reactor "accidents" hinges once again on the U.S. Navy's narrow definition of what constitutes a nuclear reactor accident.<sup>20</sup> According to one naval regulation, such an accident is defined as

An uncontrolled reactor criticality resulting in damage to the reactor core or an event such as a loss of coolant which results in significant release of fission product from the reactor core.<sup>21</sup>

The U.S. Navy, however, has no qualms about lambasting the Soviet nuclear reactor accident record, stating that there have been numerous serious accidents.<sup>22</sup> "Over the years," the U.S. Navy reported in 1982, "Soviet nuclear submarines have experienced a number of propulsion related casualties, evidenced by the need for outside assistance, including towing."<sup>23</sup> According to the U.S. Navy,

There have been a number of reports from various sources concerning radiation related illnesses and deaths of Soviet nuclear submarine crewmen and workers, particularly in earlier units. Soviet nuclear submarine crewmen have been reported to receive what is

<sup>17</sup> Naval Historical Center, Operational Archives Division, "Chronology of U.S. Naval Events: 1973."

<sup>18</sup> USS **Guardfish** (SSN-612), "Command History: 1 January 1973 to 31 December 1973," 19 March 1974 (released under the Freedom of Information Act).

<sup>19</sup> U.S. Pacific Fleet, "Command History of the Command in Chief U.S. Pacific Fleet: 1 January 1985 -- 31 December 1985," p. 56 (partially declassified and released under the Freedom of Information Act).

<sup>20</sup> See, e.g., David Kaplan, "The Nuclear Navy," (Washington, D.C.: Fund for Constitutional Government, 1983); David E. Kaplan, "When Incidents Are Accidents: The Silent Saga of the Nuclear Navy," *Oceans* (July 1983); and Appendix F of Norman Polmar and Thomas B. Allen, *Rickover* (New York: Simon and Schuster, 1982). Numerous reports have come out claiming, for example, that a disabled submarine reportedly discharged radioactive coolant water into Apra Harbor, Guam, in 1975. According to reporting in the *New York Times*, 20 January 1976, radiation levels at nearby public beaches reached over 50 times the government limit.

<sup>21</sup> U.S. Navy, Office of the Chief of Naval Operations, "Nuclear Reactor and Radiological Accidents: Procedures and reporting requirements for," OPNAVINST 3040.5B, 3 April 1981 (released under the Freedom of Information Act). A "radiological accident" is defined as "A loss of control of radiation or radioactive material which presents a hazard to life, health, or property or which may result in any member of the general population exceeding exposure limits for ionizing radiation."

<sup>22</sup> HASC, Naval Nuclear Propulsion Program -- 1983, Hearing, 4 March 1983, p. 17.

<sup>23</sup> HASC, Naval Nuclear Propulsion Program -- 1982, Hearing, 29 April 1982, p. 18.

referred to as "childless pay" and special treatment for radiation related illnesses.<sup>24</sup>

The most serious Soviet reactor accident involved the **Lenin**, an icebreaker that began operations with three reactors installed on 15 September 1959. According to the U.S. Navy, "There is strong evidence this ship experienced a nuclear related casualty in the 1960s requiring the ship to be abandoned for over a year before work was begun to ultimately replace the three reactors with two."<sup>25</sup> Propulsion casualties are also known to have occurred aboard a Hotel class ballistic missile submarine in 1961 and in late February 1972; aboard a November class attack submarine (which sank on 12 April 1970); an Echo II cruise missile submarine in August 1978; an Echo class attack submarine in August 1980; and the icebreaker **Rossia** in November 1988.

The accident record of the other nuclear powers is even less well known. With only a few nuclear-powered submarines in comparison to the U.S. and Soviet Union, the accident rates are assumed to be less. The Royal Navy claims to have the same "unblemished" record as the U.S. Navy. Yet according to internal Royal Navy statistics, there were 712 "incidents" between 1962 and 1978 involving nuclear power reactors aboard British attack and ballistic missile submarines.<sup>26</sup> Of the first 435 of the 712 report incidents, 205 were caused by mechanical problems, 107 by operator error, and 123 due to electrical faults. Of the 106 reactor "scrams," 29 were caused by operator error.

## Submarine Accidents

The recent sinking of the Soviet Mike submarine has focused attention on the general question of submarine accidents. Major submarine accidents often prove to be the most catastrophic of all naval accidents. Since the end of World War II, there have been 359 major documented submarine accidents, 51 involving ballistic missile submarines and 311 involving attack and cruise missile boats. The frequency of submarine accidents does not appear to have declined as newer technologies were introduced.

In recent years, there have been a number of major accidents. A Soviet nuclear-powered Echo II class attack submarine was spotted on the surface under tow on 13 January 1986, with an evident propulsion casualty. On 13 March 1986, the nuclear-powered ballistic missile submarine, the USS **Nathanael Greene** (SSBN-636), ran aground in the Irish Sea, the extent of damage leading to the vessel being chosen as one of the early Poseidon submarines to be retired to satisfy SALT II numerical limitations. The nuclear-powered attack submarine USS **Atlanta** (SSN-712) also ran aground in the Strait of Gibraltar on 29 April 1986, and the USS Sam Houston (SSN-609) ran aground in Puget Sound, Washington, on 29 April 1988. The diesel-powered submarine USS **Bonefish** (SS-582) suffered explosions and major fires in the Caribbean, killing three, on 24 April 1988.

There have been at least 27 total submarine sinkings since 1945, including five Soviet, four U.S., three British, and four French submarines. Twenty-one submarines have been lost at sea, while six have been salvaged either because the sinkings took place in port or in shallow

<sup>24</sup> *ibid.*, p. 19.

<sup>25</sup> *ibid.*, p. 18.

<sup>26</sup> Michael White, "Catalogue of faults in UK nuclear subs," *Guardian*, 3 March 1988, p. 1; Captain J. Jacobsen, et al., "The Safe Operation of Nuclear Submarines," *Journal of Nuclear Science*, Vol. 5, No. 2; Professor J. Edwards, "Royal Navy Requirements and Achievements in Nuclear Training: Part 2," *Journal of Nuclear Science*, Vol. 4, No. 4.

water. Two U.S. nuclear-powered attack submarines have been lost in the Atlantic, the USS **Thresher** (SSN-593) on 10 April 1963, which imploded and sank in 8,500-foot waters 220 miles east of Boston, Massachusetts, killing 129 crewmen and civilian observers;<sup>27</sup> and the USS **Scorpion** (SSN-589) between 21-27 May 1968, which sank 400 miles southwest of the Azores in more than 10,000 feet of water, killing all 99 aboard.<sup>28</sup> Two diesel class U.S. submarines have also sunk in the postwar era: the USS **Cochino** (SS-345) off the coast of Norway on 26 August 1949, and the USS **Stickleback** (SS-415) off the coast of Hawaii on 28 May 1958.

Five Soviet submarines are known to have sunk by the end of 1988. Sometime in the late 1950s, a Northern Fleet Whiskey class submarine which had been converted as a cruise missile test platform, sank. A Soviet Golf class ballistic missile submarine with three SS-N-5 missiles and nuclear torpedoes sank about 750 miles northwest of the island of Oahu, Hawaii, on 11 April 1968. On 11 April 1970, a November class attack submarine experienced a nuclear propulsion casualty while operating in heavy seas approximately 300 nautical miles northwest of Spain. After failing to rig a tow line to a Soviet bloc merchant ship which was standing nearby, the submarine apparently sank the following day.<sup>29</sup> On 3 October 1986, a missile aboard a Yankee I class nuclear-powered ballistic missile submarine exploded while the submarine was on patrol 880 kilometers east of Bermuda. On 6 October, after being taken in tow, the submarine sank with an estimated 34 nuclear warheads (including two nuclear torpedoes) and two reactors. Two additional Soviet submarine sinkings are also known, one of a Charlie class submarine in the Pacific in June 1983 (which was subsequently raised), and one unconfirmed sinking of a nuclear submarine off the Kola peninsula in 1968.

Other submarine sinkings which have occurred on the high seas include:

- Spanish C-4 submarine (27 Jun 1946),
- French submarine 2326 (5 Dec 1946),
- British submarine HMS **Truculent** (13 Jan 1950),
- British submarine HMS **Affray** (16 Apr 1951),
- French **La Sibylle** (25 Sep 1952),
- Turkish **Dumlupiner** (4 Apr 1953),
- British submarine HMS **Sidon** (17 Jun 1955),
- West German submarine **Hai** (14 Sep 1966),
- Israeli submarine **Dakar** (22 Jan 1968),
- French submarine **Minerve** (27 Jan 1968),
- French submarine **Eurydice** (4 Mar 1970),
- Pakistani midget submarine (2 Jan 1977), and
- a Peruvian submarine (28 August 1988).

Details on other lesser catastrophic submarine accidents -- fires, collisions, groundings, and the like -- are difficult to collect or confirm.<sup>30</sup> For the United States, some recently released

<sup>27</sup> "Blind Hunt for the **Thresher**," *Proceedings* (April 1988): 56.

<sup>28</sup> The cause of the **Scorpion** accident was never determined but it was possibly associated with a collision of the submarine during a storm in Naples, Italy, on 15 April 1968.

<sup>29</sup> HASC, Naval Nuclear Propulsion Program -- 1982, Hearing, 29 April 1982, p. 19.

<sup>30</sup> Virtually no details are available for the submarine forces of non-U.S. or Soviet navies. For the U.K., there have been numerous reports of submarine accidents. A fire, for instance, did put at least one Royal Navy nuclear powered submarine (HMS **Warspite**) out of action for lengthy repairs in recent years.

information indicates that submarine accidents occur with great regularity, even though often no details are revealed to the public as to the specific boats or circumstances. During the five-year period from 1983 to 1987, for instance, according to the Navy, there were 446 reported material damage mishaps in the submarine force, with a dollar loss of \$36.8 million, and 475 operating days lost.<sup>31</sup> A little more than one-third of all material mishaps occurred while ships were on the high seas, and 20 percent occurred in shipyards. The remainder occurred in or around ports.

The major submarine accidents reported during the five-year period from 1983 to 1987 (see table 7) included:

- **Collisions:** There were 56 collisions, 50 by submarines, 6 by submarine support ships. The collisions caused particular damage to submarine sonar domes and propellers. The majority (22 collisions) occurred to ships that were moored or in the process of mooring or unmooring, eight occurred to ships that were moored, 13 occurred in restricted waters, and 13 occurred on the high seas. Seventy-six percent of the collisions occurred while the submarines were on the surface. There were ten collisions by submarines with other submarines.

- **Fires:** There were 149 fires in the submarine forces (113 aboard submarines, 36 aboard support ships); the most frequent type of material mishap accounted for 32 percent of all mishaps. Forty of the fires occurred while ships were in the shipyard, 36 occurred in port, and 37 occurred at sea.

- **Groundings:** The accidents included 12 groundings, including six "at sea" submerged bottomings, five entering or leaving port, and one during mooring/unmooring. According to the report, "All but one of these 12 groundings involved some lack of supervisory involvement, e.g., charts not being updated, inattention to the piloting situation, failure to analyze sounding data, failure to operate the fathometer properly, running too fast for the conditions, and others."

- **Explosions:** There were 85 explosive mishaps, 15 percent occurred during loading and unloading of weapons, and 33 percent occurred during torpedo tube operations. There were 14 non-ordnance explosions,<sup>32</sup> four in the electrical systems, and three related to diesel engine crankcases.

- **Equipment failures:** There were 82 non-ordnance related equipment mishaps, 55 percent of which were as a result of personnel error.

- **Weather conditions:** There were 14 heavy weather accidents, seven while submarines were in port.

- **Floodings:** There were 48 cases of floodings in the various seawater systems, followed by flooding as a result of problems with hatches and escape trunks.

The comparable accident statistics for the Soviet Union are not available. But we can assume that the accident rate is clearly much higher than the documented cases reported here. The former Director of Naval Intelligence Admiral John L. Butts testified before Congress in 1986 that, "Since the early 1950s, the Soviet submarine force has experienced numerous, serious submarine casualties -- sinkings, propulsion failures, fires and navigational accidents."<sup>33</sup> Admiral James Watkins testified as Chief of Naval Operations in 1985 that "In the last ten years, they [the Soviets] have had over 200 submarine accidents, some of which have been very serious."<sup>34</sup>

<sup>31</sup> Naval Safety Center, "Submarine Force: Mishap Statistical Summary, Calendar Years 1983 thru 1987," n.d. (released under the Freedom of Information Act).

<sup>32</sup> Nine explosive detonations are also known to have occurred on submarines between July 1986 and October 1988 as reported in *Mech* (The Naval Aviation Maintenance Safety Review), April-May 1985 to January-February 1989.

<sup>33</sup> HAC, FY 1987 DOD, Part 4, p. 438.

<sup>34</sup> HAC, FY 1986 DOD, Part 2, p. 928. See also SASC, FY 1986 DOD, Part 8, p. 4359.

According to another source, Soviet submarine fires "are far above the norm in proportion to their numbers."<sup>35</sup>

### Dangers of Routine Naval Operations

Naval accidents have been prominently featured in the news media in recent years, not least of which because many have been spectacular disasters. This higher profile is coincidental with increasing public interest about the nuclear arms race, arms control, and accidental war. The peacetime record revealed in this report demonstrates that naval accidents are not rare or isolated occurrences. They are a routine byproduct of seagoing activity and as such should be a pressing issue of public concern.

Accidents and naval disasters are also a byproduct of the use of naval forces in gunboat diplomacy or open warfare. The nature of the navies of the superpowers and most NATO members, particularly the global mobility of modern blue-water navies, facilitates the deliberate placement of combatants and support ships in areas where there are ongoing conflicts. Most recently, we have seen naval vessels of a number of countries involved in attacks in the Persian Gulf. These attacks -- on the USS **Stark** (FFG-31) on 17 May 1987 and the USS **Samuel B. Roberts** (FFG-58) in March 1988 -- carry with them a danger of potential crisis escalation. The attack on the **Stark**, furthermore, as well as the downing of the Iranian civilian airliner by the USS **Vincennes** (CG-49), were further complicated by human error during a crisis.

Permanently mobilized military forces, and the frequent use of naval forces for suasion and political signaling means the intermingling of opposing navies (whether U.S. and Soviet or those of non-superpowers). This is particularly so during crises mobilizations, and has become more common in recent years during wide ranging and intense naval exercises.<sup>36</sup> There have been 23 documented accidents between the vessels of the United States and the Soviet Union, or between the United Kingdom and the Soviet Union. These accidents should provide some insight into the potential costs of routine operations in close proximity to other forces or homelands. The scrape between the USS **Yorktown** (CG-48) and the USS **Caron** (DD-970) and a Soviet destroyer and frigate in the Black Sea on 12 February 1988, the collision in the Sea of Japan between the aircraft carrier USS **Kitty Hawk** (CV-63) and a Soviet Victor I class nuclear-powered attack submarine on 21 March 1984, the possible collision between the nuclear-powered attack submarine USS **Augusta** (SSN-710) and a Soviet submarine in late October 1986, and the reported scrape between the British Royal Navy nuclear-powered attack submarine HMS **Splendid** and a Soviet submarine in early January 1987 in the Barents Sea off Murmansk, are just the latest in a line of such confrontations.

Other accidents are also suspected as having occurred. In 1976, the New York Times reported that there had been "At least nine collisions of nuclear-armed submarines over the past 10 years, many with Soviet submarines."<sup>37</sup> These collisions occurred during U.S. reconnaissance patrols near the Soviet Union, a practice which continues to this day. In addition, there have been a number of submarine confrontations between the superpowers during crises in other parts of the world. According to a recent book of U.S. counterterrorism policy, for instance, a U.S. and Soviet submarine collided in the waters off North Africa when an armada of ships from both

<sup>35</sup> Jim Bussert, "The Safety of Soviet Nuclear Submarines," Jane's Defence Weekly, 18 April 1987, p. 715.

<sup>36</sup> See, e.g., John Lehman, "Things That Go Bump in the Sea," Washington Post, 3 April 1984, p. A13; "Some Bumps in the Night," Newsweek, 2 April 1984, pp. 40-41.

<sup>37</sup> New York Times, 20 December 1976.

sides was mobilized there prior to the bombing of Libya in April 1986.<sup>38</sup>

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After researching and documenting the naval record, the overwhelming conclusion is that accidents will happen, that no amount of engineering or mechanical fixes will eliminate the failures which accompany complex machinery and operations. In narrative after narrative, the common element is human error and fallibility. The human factor cannot be underestimated, particularly where there is constant movement in a medium where weather and oceanographic conditions are unpredictable, and where military ships must contend with increasingly saturated stimuli caused by dense seas and airspace, all complicated by the proliferation of sensors, sources of intelligence information, and rapid communications.

The human factor is not only apparent in errors related to equipment handling or poor command decision-making. There are 31 documented cases of sabotage or arson causing major accidents, 19 of which occurred in the 1970s. There are also other incidents in which disgruntled sailors have been involved in serious criminal incidents aboard ships that did not involve damage to equipment or the ship. For instance, on 11 October 1967, a sailor aboard the USS **Mullany** (DD-528) stabbed 11 men and then jumped overboard about 10 miles off Long Beach, California.

In addition to cases of sabotage and arson, there have been a number of incidents and accidents which were connected to drug use by the ship's crew. In 1976, 37 crewmen of the ballistic missile submarine USS **Thomas Jefferson** (SSBN-618) were removed from the submarine because of a marijuana investigation. Following a crash of a Marine Corps EA-6B electronic warfare airplane while landing on the USS **Nimitz** (CVN-68) on 26 May 1981, killing 14 and injuring 48, a debate was provoked between Rep. Joseph P. Addabbo (D-NY), Chairman of the Defense Appropriations Subcommittee of the House of Representatives and the Navy over whether drug use on board the carrier may have contributed to the accident.

Suicides are also a serious issue. From 1983 to 1987, there were 31 suicide deaths in the U.S. submarine force (20 in the Atlantic Fleet, 11 in the Pacific Fleet), including suicide by one submarine officer.<sup>39</sup> Overall, the Navy lost 79 persons to suicide in 1986, an increase of 23 percent over the average number of suicides in the Navy between 1982 and 1985.<sup>40</sup> The rate of suicides rose from 9.2 per 100,000 in 1984 to 12.4 per 100,000 in 1987.

In an environment where naval accidents occur regularly, and where human mistakes, sabotage, suicide, and drug use are constant problems, the issue of nuclear weapons and reactor safety is an obvious one for a concerned public. Many of the accidents described in this report are affected by the routine presence of nuclear weapons aboard ships and submarines, and the proliferation of nuclear propulsion. Nuclear weapons were aboard the USS **Belknap** when it was operating in the Mediterranean in 1975, including its voyage to the Black Sea near the Soviet Union. Nuclear weapons were aboard the USS **Ticonderoga**, when it was operating in the South China Sea during the Vietnam War, and when it visited Japan for rest and relaxation before

<sup>38</sup> David C. Martin and John Walcott, Best Laid Plans: The Inside Story of America's War Against Terrorism (New York: Harper & Row, 1988), p. 271.

<sup>39</sup> Naval Safety Center, "Submarine Force: Mishap Statistical Summary, Calendar Years 1983 thru 1987," n.d. (released under the Freedom of Information Act).

<sup>40</sup> See LCDR Daniel H. Ottaviano, Chaplain Corps, "Shipboard Suicide Prevention," Proceedings (September 1988): 104-6.

returning to its bombing operations. Today, nuclear weapons are routinely present on all aircraft carriers, logistics support ships, submarines, and most surface warships that have the capacity to carry them.

This routine carrying of nuclear weapons aboard naval vessels has become a much more controversial issue since the break in U.S.-New Zealand relations, and the hardening of the U.S. government's policy of "neither confirming nor denying" the presence of nuclear weapons on ships. In many countries, particularly in Japan and the Nordic nations, the issue has not diminished with the U.S. show of intransigence. In fact, as has been demonstrated by the recent Danish elections and base negotiations between the United States and the Philippines and Spain, the nuclear issue, and increasingly naval nuclear weapons, continue to be of great concern.

The non-nuclear policies of various governments, however, is often expressed as, or advanced as, a safety issue. Questions are raised as to the adequacy of indemnity agreements and commitments in the case of accidents, and of the adequacy of emergency and disaster response plans in ports which regularly host nuclear-powered and nuclear-armed vessels. While this report does not evaluate those issues, no assessment of dangers could be complete without a historical record of accidents which have occurred.

As the nuclear issue has heated up in the 1980s, and as local communities have become more involved in evaluating dangers to themselves, other causes of friction between the navies and the civilian community have become more pronounced. In this report, 185 of the accidents involved civilian ships, while 377 of the accidents occurred in ports, or in harbor or bay areas immediately offshore. A number of collisions and groundings have been the result of the navies' reluctance to rely on local harbor pilots, or other instances of poor cooperation with local authorities. A number of miscellaneous incidents involved airplanes or practice ordnance (missiles or artillery) which accidentally attacked civilian vessels, or land-based homes and businesses. An inert Sidewinder missile struck the civilian oil tanker **Western Sun** on 30 July 1986 during an exercise off Norfolk, Virginia, for instance. On 27 July 1987, U.S. Navy planes conducting night bombing practice near Okinawa, Japan, hit a Malaysian freighter. The Japanese Defense Force diesel submarine **Nadashio** collided with a Japanese sports fishing boat in Tokyo Bay on 23 July 1988, killing 30. An unarmed Harpoon missile from a U.S. F/A-18 fighter accidentally hit an Indian merchant ship some 200 miles northwest of Hawaii on 11 December 1988, killing one. The needs of the military for larger and larger training areas to practice their modern weaponry, and the encroachment of the civilian community on military and naval bases that is occurring worldwide will surely grow as an issue of contention in the future.

Many of the contentious issues clouding military-civilian relations exist and are made vastly more complicated by the existence and abundant presence of nuclear weapons and military nuclear reactors. Official secrecy about nuclear weapons is so ingrained that it impedes the flow of information necessary for public dialogue and debate. But secrecy is not the real issue, nuclear weapons are. Ongoing debates about the environmental effects of nuclear accidents, or the safety of specific nuclear weapons, or nuclear reactors, or nuclear strategies, could go on forever with no resolution, with competing contentions voiced about levels of relative risk and ultimate safety. The forty-eight nuclear warheads and seven reactors sitting on the bottom of the oceans as a result of naval accidents should not provoke the question of whether they are safe or not, but how and why they got there in the first place. Ultimately, society must determine whether the costs are greater than the good which nuclear weapons supposedly provide. An open record of nuclear abuses is a great danger to those who support the nuclear system and the status quo. A fuller airing of the accidents, nuclear testing and research, nuclear diplomacy, nuclear strategies, and

the extent to which nuclear waste and residue has been strewn over countless countries and the seven seas, is shifting the public's views about continuing the nuclear era.

## Chronology of Naval Accidents: 1945 - 1988

02/01/45: In February the USS **Washington** (BB-56) and USS **Indiana** (BB-58) collide in the Pacific.

02/08/45: A U.S. Navy minesweeper sinks after colliding with a U.S. destroyer off Boston Harbor, Massachusetts.

03/17/45: A new submarine floods and sinks after a worker opens a torpedo tube at the Boston Navy Yard.

04/09/45: A U.S. Liberty ship loaded with aerial bombs explodes, setting three merchant ships afire and causing many casualties in Bari harbor, Italy.

04/09/45: The Allied tanker **Nashbulk** collides with the U.S. freighter **St. Mihiel** in fog off Massachusetts, killing 15.

04/23/45: A U.S. Navy PE-56 patrol ship sinks after an explosion off Cape Elizabeth, Maine, killing 49.

05/22/45: Acetylene torch fumes ignite in the hold of a U.S. Navy attack boat, Todd Shipyards, Brooklyn, killing two.

06/21/45: The USS **Franklin** (CV-13) suffers a boiler room fire at New York Harbor during decoration ceremonies; damage is slight.

08/25/45: A French minesweeper explodes near Marseilles, killing five.

09/17/45: The Royal Navy battleship HMS **Vanguard** is damaged by an explosion at Clydebank, Scotland.

10/08/45: The Royal Navy destroyer HMS **Zodiac** suffers an explosion.

10/12/45: The Royal Navy vessel HMS **Loch Eriboll** sinks after colliding with the U.S. merchant ship **Sidney Sharman** in the English Channel off Start Point, U.K.

10/27/45: The Royal Navy tug HMS **Swarthy** sinks in a gale at Spithead, U.K.

11/01/45: A U.S. Navy shore-liberty boat capsizes in San Francisco Bay, California.

11/30/45: The Royal Navy destroyer HMS **Kempenfelt** suffers an explosion.

01/22/46: The Royal Navy cruiser HMS **Cleopatra** experiences an engine room explosion.

01/30/46: The Royal Navy minesweeper HMS **Rhyl** runs adrift.

02/04/46: The cruiser USS **Prinz Eugen** (IX-300) collides with a tug on a pre-test run from Boston to Philadelphia.

02/10/46: The Royal Navy diesel submarine HMS **Saga** collides with the trawler **Girl Lena** at night in the English Channel, sinking the **Girl Lena**.

02/11/46: Fire damages four Royal Navy minesweepers docked at Dover, U.K., threatening the magazine of one.

02/12/46: The lend-lease Royal Navy dock landing ship HMS **Oceanway** is involved in a collision.

02/18/46: A U.S. tank landing ship suffers an explosion of ammunition in Shanghai, China, killing six and injuring 44.

03/01/46: In March the French diesel submarine **Orphee** explodes in Casablanca, Morocco, killing two.

04/17/46: The USS **Wasp** (CV-18) runs aground off New Jersey.

05/01/46: The USS **Solar** (DE-221) is destroyed by an explosion while unloading ammunition at Earle, New

Jersey.

05/14/46: The USS **Franklin** (CV-13) leaks carbon dioxide fumes while at the Brooklyn Naval Shipyard, New York, killing two.

05/30/46: The flagship USS **Estes** (AGC-12) is slightly damaged after a collision with the USS **Los Angeles** (CA-135), off Shanghai, China.

06/27/46: A Spanish C-4 submarine sinks after colliding with the Spanish destroyer **Lepanto** off the Balearic Islands, killing the 46 aboard the submarine.

08/27/46: The Royal Navy destroyer HMS **St. James** sinks a tug during firing practice.

09/24/46: The Royal Navy tanker HMS **Green Ranger** is struck by a torpedo during naval firing practice in Portland harbor, U.K. The vessel is struck below the waterline but stays afloat.

11/06/46: A U.S. Navy launch hits a buoy and capsizes in Portland harbor, U.K.

11/15/46: The USS **Frank Knox** (DD-742) and USS **Higbee** (DD-806) are damaged after colliding off Oahu, Hawaii.

11/20/46: The USS **Antietam** (CV-36) suffers an explosion at the Hunters Point Navy Yard in San Francisco, killing one and injuring 34.

12/05/46: The French submarine 2326, an ex-German U-boat, sinks 20 miles off Toulon in the Mediterranean while carrying out diving tests, killing 21.

12/13/46: The USS **Missouri** (BB-63) is hit by a star shell during target practice in the North Atlantic.

04/04/47: The USS **Ernest G. Small** (DD-838) runs aground off Block Island, Rhode Island.

04/15/47: The Royal Navy battleship HMS **Nelson** is damaged in a collision with the diesel submarine HMS **Sceptre** in Portland harbor, U.K.

05/27/47: The USS **Johnston** (DD-821) and the USS **Torsk** (SS-423) are damaged in a collision off New London, Connecticut.

06/04/47: The Royal Navy diesel submarine HMS **Seneschal** suffers an explosion.

06/12/47: The USS **Valley Forge** (CV-45) suffers an explosion at the Philadelphia Naval Base, injuring 17.

07/01/47: The Italian munitions ship **Panigaglia** explodes while unloading munitions at Santo Stefano, Sardinia, Italy, killing 68.

07/02/47: The Royal Navy diesel submarine HMS **Aurochs** is involved in a collision.

07/17/47: The Canadian destroyer **Micmac** is damaged in a collision with the freighter **Yarmouth County** in Halifax, Nova Scotia, killing five.

09/29/47: The USS **Douglas H. Fox** (DD-779) hits a mine in the Adriatic Sea 18 miles from Trieste, Italy, killing three.

11/24/47: The U.S. Army transport **Clarksdale Victory** is wrecked off Hippa Island near British Columbia, Canada.

02/18/48: A USS **Midway** (CV-41) launch capsizes off Hyeres, France, killing eight.

02/23/48: The Royal Navy diesel submarine HMS **Aeneas** runs aground and is refloated the same day.

03/02/48: The USS **Duncan** (DD-874)

is damaged by an explosion in the Pacific, killing one.

03/11/48: A Royal Navy firing practice inadvertently places fishermen under fire off Walton-on-the-Naze, U.K.

04/19/48: The U.S. Navy drydock **O'Boyle** No. 24 sinks off Cape Hatteras, North Carolina.

06/01/48: A U.S. Navy launch nearing an aircraft carrier sinks in heavy seas off Norfolk, Virginia, drowning 30.

07/13/48: The USS **Portsmouth** (CL-102) runs its prow into a mudbank in the St. Lawrence River but is subsequently refloated.

09/04/48: The U.S. minesweeper No. 46 runs aground off Pigeon Island Light, Lake Ontario, New York.

10/19/48: A liberty boat of the Royal Navy aircraft carrier HMS **Illustrious** sinks in Portland harbor, U.K., drowning 29.

11/25/48: The USS **Chandler** (DMS-9) and the USS **Ozboorn** (DD-846) collide in the Yellow Sea.

02/15/49: The Royal Navy sloop HMS **Sparrow** proceeds to Port Stanley in the Falkland Islands after freeing itself from ice in Admiralty Bay.

02/26/49: The Royal Navy aircraft carrier HMS **Vengeance** is holed by ice during testing of special armament and equipment in the Arctic.

02/28/49: The USS **Taussig** (DD-746) and USS **Marsh** (DE-699) are damaged in a collision during maneuvers in the Pacific.

03/23/49: The USS **Perch** (SS-313) and the USS **Orleck** (DD-886) are damaged in a collision during maneuvers off San Diego, California.

03/26/49: The Royal Navy destroyer

HMS **Broadsword** accidentally discharges an artillery shell over Portsmouth, U.K.

04/15/49: A gun accidently explodes aboard the USS **Hollister** (DD-788) during maneuvers near Pearl Harbor, Hawaii, killing four.

04/23/49: The USS **Fechteler** (DD-870) and USS **Leonard Mason** (DD-852) are damaged in a collision off Oahu, Hawaii, injuring two.

04/30/49: The Royal Navy destroyer HMS **Myngs** is damaged by a practice torpedo during exercises.

05/07/49: Pan-American Airways says anti-aircraft fire from a U.S. carrier task force burst near a plane on a Bermuda-New York flight.

06/01/49: The Royal Navy destroyer HMS **Chevron** is damaged in a collision.

06/03/49: The Royal Navy frigate HMS **Loch Fada** experiences an explosion.

08/02/49: The USS **Livermore** (DD-429) runs aground at Bearse Shoal off Cape Cod, Massachusetts.

08/26/49: The USS **Cochino** (SS-345) explodes and sinks in Arctic seas off Norway, drowning six Navy rescuers and a **Cochino** technician. On 21 September the Soviet publication **Red Fleet** alleges the Cochino was sunk off Murmansk while scouting out military information.

09/22/49: The Argentine minesweeper **Fournier** sinks after striking a submerged rock in the Magellan Straits, killing 77.

10/09/49: The USS **Chehalis** (AOG-48) sinks after an explosion and fire in Tutuila, American Samoa.

11/09/49: The USS **Tusk** (SS-426) is rammed while submerged by the USS **Aldebaran** (AF-10) 175 miles off Labrador, Newfoundland, Canada. The

submarine suffers damage to its periscope and superstructure.

12/31/49: In 1949, a Polish ammunition ship carrying 500 tons of bombs sinks in the English Channel off Folkestone, U.K., after a collision. During 1968 harbor clearing operations the ship explodes with such force it causes earthquake reports as far away as Antarctica.

01/13/50: The Royal Navy diesel submarine HMS **Truculent** sinks after colliding with the Swedish tanker **Divina** ten miles east of Sheerness, U.K., in the Thames Estuary, killing 64.

03/18/50: The net-laying ship USS **Elder** (AN-20) is damaged by an explosion off Kwajalein Atoll in the Pacific Ocean.

04/08/50: A Royal Navy midget submarine explodes in Portsmouth harbor, U.K., killing one.

05/17/50: The USS **General M.B. Stewart** (AP-140) collides with a buoy in Port Said Harbor, Egypt, damaging the ship's propeller.

06/14/50: The Royal Navy diesel submarine HMS **Trenchant** suffers an explosion.

07/15/50: Eight ammunition barges explode in Portsmouth harbor, U.K. On 18 July British officials say sabotage is a suspected cause of the explosions.

07/15/50: The Royal Navy aircraft carrier HMS **Vengeance** drags its moorings and collides with a quayside at Stavanger, Norway.

07/18/50: The USS **Missouri** (BB-63) runs aground in Chesapeake Bay, suffering light damage. On 19 July, the Soviet publication Red Fleet ridicules the grounding of the Missouri.

07/25/50: The USS **Benevolence** (AH-13) collides with SS **Mary**

**Luckenbach** while on a trial run after being taken out of mothballs for service in the Korean War. The **Benevolence** sinks outside San Francisco Bay, California, killing 18.

08/31/50: The Royal Navy boom defense vessel HMS **Barwind** experiences an explosion.

09/15/50: The French weather-observation frigate **La Place** sinks after an explosion while at anchor in the Baie de la Fresnaye near St. Malo, killing 51. The explosion is believed caused by a drifting magnetic mine.

09/16/50: The Royal Navy destroyer HMS **Armada** is involved in a collision.

09/21/50: A torpedo fired from the British naval range at Binkleaves deviates from its course and sinks two sailing boats in Portland harbor, U.K.

09/30/50: The French destroyer **Amyot Dindeville** is damaged by an explosion off Indochina.

10/18/50: The Royal Navy cruiser HMS **Phoebe** is involved in a collision.

10/27/50: The Royal Navy cruiser HMS **Newcastle** experiences a fire in a turret.

11/09/50: The USS **Brownson** (DD-868) and USS **Charles H. Roan** (DD-853) collide in the Atlantic during nighttime fleet maneuvers, killing four.

11/11/50: The USS **Buck** (DD-761) and USS **Thomason** (DE-203) are damaged in a collision in the Korean Bay.

01/16/51: The Royal Navy destroyer HMS **Broadsword** suffers a fire, killing one.

01/23/51: The Royal Navy destroyer HMS **Daring** suffers a fire.

02/12/51: The Royal Navy battleship HMS **Vanguard** is damaged in a collision with the aircraft carrier HMS

**Indomitable** in the Mediterranean.

02/14/51: The Portuguese gunboat **Garo** sinks after colliding with a Portuguese warship off Portugal.

04/16/51: The Royal Navy diesel submarine HMS **Affray** sinks in the English Channel 30 miles north of the Island of Guernsey, killing 75. Possibly the submarine was flooded after its snorkel mast weldment failed. On 22 April all British "A" class submarines are docked pending an investigation of the **Affray** accident.

04/28/51: The Royal Navy munitions ship HMS **Bedenham** explodes in Gibraltar, killing nine.

05/16/51: The small seaplane tender USS **Valcour** (AVP-55) is set afire in a collision with a collier. The fire threatens the ship's magazine.

05/18/51: The USS **Bairoko** (CVE-115) suffers a blast, killing five.

05/19/51: The French tank landing ship **Adour** explodes in Nha Trang, Vietnam.

05/23/51: A stray U.S. Navy torpedo sinks a fishing boat in Narragansett Bay, Rhode Island.

05/24/51: A U.S. Navy liberty launch capsizes at Newport, Rhode Island, killing 19.

06/08/51: The Royal Navy cruiser HMS **Bermuda** suffers an explosion.

08/23/51: The USS **Wisconsin** (BB-64) is freed after grounding on mud flats in New York Harbor.

09/08/51: The Royal Navy battleship HMS **Duke of York** collides with a ferry in the Mersey River, U.K.

10/03/51: The Royal Navy destroyer HMS **Grenville** collides with an Italian vessel.

10/15/51: The U.N. troopship **Kongo Maru** is wrecked by a typhoon off southern Japan.

11/04/51: The Argentine motorship **Maipu** sinks after colliding with the troop ship USS **General M.L. Hersey** (AP-148) in fog in the North Sea off Bremerhaven, West Germany. There are no reported casualties.

11/10/51: The Royal Navy diesel submarine HMS **Thorough** is damaged in a collision.

12/02/51: A converted U.S. Navy landing craft sinks off San Diego, California, killing six.

01/19/52: The Royal Navy destroyer HMS **Chivalrous** is in a collision near Malta.

03/28/52: The USS **Mount Baker** (AE-4) collides with a South Korean freighter, killing 24 South Koreans.

04/26/52: The destroyer minesweeper USS **Hobson** (DMS-26) sinks after colliding with the USS **Wasp** (CV-18) in the mid-Atlantic, killing 176 aboard the **Hobson**. The ships were part of a task force headed for the Mediterranean to join the Sixth Fleet. The collision occurred when the **Wasp** turned into the wind to receive aircraft.

04/26/52: The USS **St. Paul** (CA-73) suffers a powder blast in a gun turret while operating off Korea, killing 30.

05/08/52: The Royal Navy destroyer HMS **Tenacious** is grounded in the River Foyle, Northern Ireland.

06/10/52: The Royal Navy cruiser HMS **Cumberland** runs aground on Tinker Shoal, two miles off Plymouth, U.K.

06/14/52: The Royal Navy diesel submarine HMS **Sleuth** collides with the destroyer HMS **Zephyr** in heavy fog while leaving Portsmouth harbor, U.K. The **Zephyr** suffers flooding in one of its

magazines.

06/14/52: The Royal Navy diesel submarine HMS **Seneschal's** collision with the Danish frigate **Thetis** south of the Isle of Wight is reported. The submarine's periscope and radar mast are damaged.

07/11/52: A blast aboard a French cruiser in Toulon kills one.

08/06/52: An unidentified Royal Navy submarine carries away the fishing gear of the Fleetwood **Queen Alexandria** trawler off the Isle of Man, U.K. The submarine is not damaged.

08/07/52: The USS **Boxer** (CV-21) suffers an explosion and fire off Korea, killing nine.

08/14/52: The USS **Gregory** (DD-802) and USS **Marshall** (DD-676) are slightly damaged after colliding off San Diego, California.

09/25/52: The French diesel submarine **Sibylle** (ex-HMS **Sportsman**) fails to surface after a dive off Toulon, France, killing 46. The submarine is believed to have burst.

10/24/52: The USS **Tigrone** (SS-419) suffers a fire at the Philadelphia naval base, injuring two civilians.

11/12/52: The high speed transport USS **Ruchamkin** (APD-89) is rammed by a tanker 60 miles east of Cape Henry, Virginia, during maneuvers, killing five soldiers. The tanker captain denies he knew maneuvers were being conducted in the area.

11/16/52: The USS **Picking** (DD-685) and USS **Porter** (DD-800) are slightly damaged after colliding in dense fog off Virginia.

11/17/52: The Royal Navy aircraft carrier HMS **Implacable** is mildly damaged by a dockside fire in London.

11/23/52: The USS **Wiseman** (DE-667) strikes a submerged rock in Korean waters, causing damage to her sonar and hull. It proceeds to Sasebo, Japan, for repairs.

11/28/52: An Israeli naval ship disappears during a storm in the Mediterranean.

12/11/52: The USS **Sitkoh Bay** (CVE-86) collides with a freighter in the Pacific, but none are hurt.

01/13/53: The minesweeper USS **Condor** (AMS-5) is heavily damaged by fire.

01/27/53: The Royal Navy destroyer HMS **Dutchess** suffers an explosion while in the U.K., damaging the ship and killing one.

02/03/53: Sabotage inquiries are under way in Devonport, U.K., after damage to the Royal Navy aircraft carriers HMS **Warrior** and HMS **Triumph** is reported.

02/03/53: The Royal Navy aircraft carrier HMS **Indomitable** suffers an explosion while in Malta, killing three.

02/19/53: The USS **Prichett** (DD-561) and USS **Cushing** (DD-797) collide while operating off the coast of Korea. Both ships require dry docking in Sasebo, Japan.

03/05/53: The Royal Navy destroyer HMS **Termagant** suffers a fire.

03/06/53: A bomb dislodged from a plane landing after a combat mission over Korea bounces twice across the deck of the USS **Oriskany** (CV-34) and explodes, killing two and injuring 15.

03/07/53: The Egyptian minesweeper **Sollum** sinks during a storm off Alexandria, killing 54.

04/04/53: The Turkish diesel submarine **Dumlupiner** (formerly USS **Blower**

(SS-325)) sinks after colliding with the Swedish freighter **Naboland** in the Dardanelles. The captain of the **Naboland** is held by Turkish authorities in connection with the incident, and on 11 April Sweden protests his arrest.

04/28/53: The USS **Bennington** (CV-20) suffers an explosion off Cuba, killing 11.

05/13/53: The USS **Wright** (CVL-49) is hit by a target drone off Key West, Florida, killing three.

05/18/53: An unidentified fast patrol boat suffers fires and explosions in Aarhus harbor, Denmark, which slightly damage the Royal Navy vessel HMS **Gay Archer**, moored alongside.

05/20/53: The Royal Navy minesweeper HMS **Coquette** is in a collision.

07/16/53: The Royal Navy destroyer HMS **Vigo** suffers a fire.

07/18/53: The Royal Navy destroyer HMS **Carron** suffers a fire.

08/01/53: In August the USS **Harder** (SS-568) is towed across the Atlantic to New London, Connecticut, by the USS **Tringa** (ASR-16) after breaking down off the east coast of Ireland.

08/25/53: The Netherlands charges that U.S. Navy ships fired on a KLM civilian airliner over the Caribbean Sea. The U.S. State Department later reports anti-aircraft artillery shells were accidentally fired within two miles of the plane.

09/13/53: The Royal Navy destroyer HMS **Delight** is damaged by fire in Glasgow, Scotland.

09/15/53: The Royal Navy destroyer HMS **Contest** suffers a fire.

10/01/53: The Royal Navy destroyer HMS **Diamond** collides with the cruiser HMS **Swiftsure** during exercises.

10/06/53: The Royal Navy minesweeper HMS **Rattlesnake** suffers a gun firing accident.

10/16/53: The USS **Leyte** (CV-32) is badly damaged by an explosion and subsequent fire caused by the accidental ignition of hydraulic fluid on a catapult while moored at Charlestown Naval Yard, Boston, killing 36. The fire takes five hours to extinguish.

12/28/53: The Royal Navy frigate HMS **Amethyst** suffers a fire in its storeroom.

01/18/54: The Royal Navy tanker HMS **Wave Victor** suffers a fire off the Devon Coast, U.K.

01/21/54: A U.S. troopship rams a U.S. Navy landing craft off Inchon, South Korea, drowning 28 Marines.

03/09/54: An Australian destroyer rams a pier when it attempts to dock without tugs in Melbourne, Australia.

03/17/54: A U.S. Navy tank landing ship runs aground at Eleuthera Island, Bahamas.

03/17/54: The Royal Navy destroyer HMS **Zest** suffers a fire.

05/13/54: The Japanese fishing boat **Kine-Maru** sustains damage as a result of shots fired by vessels of the Netherlands, Australia, and New Zealand during target practice in "Area George." The Japanese Ministry of Foreign Affairs later presents a claim against the United States on the grounds that Japan had permitted the use of "Area George" to U.S. forces, but had not approved its use by other countries. The U.S. State Department rejects the claim, saying that "Area George" is located on the high seas and that its use does not require permission from the Japanese government.

05/26/54: The USS **Bennington** (CV-20) is damaged by an explosion and

fire off Newport, Rhode Island, killing 103 and injuring 201.

05/27/54: The Royal Navy frigate HMS **Curzon** runs aground and is later refloated.

07/01/54: The Royal Navy destroyer HMS **Vigo** suffers a fire.

07/14/54: The Royal Navy tanker HMS **Wave Commander** is involved in a collision.

09/03/54: The Royal Navy aircraft carrier HMS **Eagle** is damaged by an aviation fuel-tank blast at the Devonport dock, killing one.

09/16/54: Several weeks before its first sea trials, a small steam pipe in the reactor compartment of the USS **Nautilus** (SSN-571) bursts, filling the area with steam during a test of the steam system while the ship is at the Electric Boat Shipyard in Groton, Connecticut. The test is part of a quality control effort to check the adequacy of the shipyard's inspection system. The incident initially appears to be minor. There are slight personnel injuries and no radiation hazards. However, subsequent investigation shows the situation is more serious. Specifications called for seamless pipe, but ordinary stanchion pipe had been used. All suspect pipe is ripped out and the mistake leads to more stringent quality control measures.

10/08/54: The USS **Laffey** (DD-724) hits and sinks the distressed yacht **Able Lady** while attempting rescue.

10/08/54: The Royal Navy destroyer HMS **Chevron** is involved in a minor collision.

10/24/54: The Royal Navy destroyers HMS **Battleaxe** and HMS **Scorpion** collide during an exercise in the Bay of Biscay. The **Battleaxe** suffers a five-foot-hole in its bow, but is able to return to Plymouth Sound, U.K., unassisted.

10/27/54: The Royal Navy frigates HMS **Relentless** and HMS **Vigilant** collide off western Scotland during night exercises.

10/31/54: The USS **Norris** (DDE-859) rams the superstructure of the USS **Bergall** (SS-320) during war games off Norfolk, Virginia. The **Norris** suffers flooding in five of its compartments and the **Bergall** suffers damage to its superstructure. Both proceed to port for repairs.

11/09/54: A Canadian Navy ship collides with a ferry in Halifax, Canada, killing three.

12/12/54: A Norwegian submarine is damaged by an explosion at Bergen, Norway.

12/15/54: The Royal Navy diesel submarine HMS **Talent**, undergoing a refit, is swept out of a Chatham dockyard by an inrush of water, due to a mistake in estimating the size of the tide.

01/04/55: The USS **Monterey** (CVL-26) is slightly damaged after colliding with a freighter near the mouth of the Mississippi River.

01/07/55: Three U.S. Navy dock-landing craft capsize in heavy seas off Beaufort, North Carolina. Faulty steering gear blamed.

01/12/55: The USS **Power** (DD-839) and USS **Warrington** (DD-843) collide during night exercises off Puerto Rico.

01/14/55: The USS **Tench** (SS-417) is grounded off Cape Henry Lighthouse, Virginia.

01/22/55: The Royal Navy frigate HMS **Flint Castle** experiences a fire.

02/21/55: The USS **Pomodone** (SS-486) is damaged by an explosion and fire caused by excess hydrogen formation during battery charging in the San Francisco Naval Yard, California, killing

five.

03/11/55: A U.S. Navy tank landing ship rams a trawler in Puget Sound, Washington, killing three.

03/18/55: The USS **General R.E. Callan** (AP-139) runs aground at Red Hook Flats, New York Harbor. News reports are censored for 24 hours.

03/18/55: The USS **Cassin Young** (DD-793) is driven aground by high winds at Fall River, Massachusetts.

05/10/55: A small military ship (of unspecified nationality) explodes at Kaohsiung, Taiwan, killing 49.

05/11/55: The USS **Nautilus** (SSN-571) suffers a small leak in a freshwater line in the steam plant as it leaves on its shakedown cruise from Groton, Connecticut, forcing the ship to return to port for quick repairs. The Navy says the leak did not involve the reactor.

05/31/55: The Royal Navy minesweeper HMS **Northumbria** is involved in a collision.

06/02/55: A Yugoslavian naval vessel sinks in the Adriatic Sea, killing 26.

06/17/55: The Royal Navy diesel submarine HMS **Sidon** sinks after a torpedo explosion in the forward torpedo compartment while the ship is in Portland harbor, U.K., killing 13.

07/09/55: The Royal Navy diesel submarine HMS **Sturdy** suffers an explosion.

07/14/55: The Royal Navy cruiser HMS **Blake** suffers a fire.

07/19/55: The Royal Navy destroyer HMS **Chevron** is involved in a collision.

07/27/55: The Danish diesel submarine **Saalen** is gutted by fire in Copenhagen.

08/14/55: The Royal Navy battleship

HMS **King George V** runs aground while being towed into the Firth of Clyde, Scotland.

09/26/55: The Royal Navy aircraft carrier HMS **Hermes** loses power when a marking buoy wedges in a propeller bracket. The ship is towed to Belfast, Northern Ireland.

10/07/55: The Royal Navy frigate HMS **Venus** suffers engine room damage.

10/19/55: The USS **Wisconsin** (BB-64) is grounded for one hour in the East River, New York Harbor.

10/19/55: The Royal Navy cruiser HMS **Ceylon** suffers a fire.

10/31/55: The USS **English** (DD-696) and the USS **Wallace L. Lind** (DD-703) collide in heavy seas during antisubmarine exercises off Norfolk, Virginia. The **English** has 31 feet of its bow bent and broken off and the **Lind** suffers an eight-foot hole. Both head for Norfolk under escort.

10/31/55: A Soviet cruiser hits a mine and sinks sometime in October. Conflicting reports described in the New York Times of 25 April 1956 place the sinking in the Black and Baltic Seas. Possibly the ship is an Italian warship given to the Soviet Union as war reparations, called the **Novosibirsk**.

11/11/55: The USS **Boyd** (DD-544) is towed to port after striking a Japanese freighter off San Diego, California.

11/12/55: A U.S. Navy plane crashes into the USS **Hopewell** (DD-681) during maneuvers off San Diego, California, killing three fliers and two sailors.

11/14/55: The radar ship USS **Searcher** (AGR-4) is damaged by explosions and fire off Cape May, New Jersey, killing three.

11/22/55: Heavy winds damage six U.S. Navy destroyers moored at Newport,

Rhode Island.

11/23/55: Six sailors are killed as a result of a jet landing mishap on the deck of the USS **Ticonderoga** (CV-14) in the Mediterranean Sea.

12/04/55: A British troopship is blown aground by heavy winds in the River Clyde, Scotland.

01/04/56: The Royal Navy frigate HMS **Venus** suffers a fire.

01/06/56: The USS **Basilone** (DD-824) runs aground near Hampton Roads, Virginia.

01/20/56: The USS **James V. Forrestal** (CVA-59) collides with the USS **Pinnacle** (MSO-462) at Norfolk, Virginia, slightly damaging the **Pinnacle**.

01/21/56: The Royal Navy diesel submarine HMS **Artemis** collides with a motor fishing vessel off the Isle of Wight in the English Channel. The submarine is undamaged and continues on exercises.

01/23/56: The Royal Navy destroyer HMS **Scorpion** crashes into the Londonderry, Northern Ireland, dockside.

01/25/56: The Royal Navy minesweeper HMS **Mutine** suffers a fire.

01/27/56: The Royal Navy frigate HMS **Puma** experiences a fire.

02/04/56: The Royal Navy diesel submarine HMS **Scorcher** is damaged in a collision.

02/10/56: The Royal Navy destroyer HMS **Chieftain** collides with the naval tanker HMS **Blue Ranger** in foul weather while en route from Malta to Beirut, Lebanon, and suffers damage to its bows.

02/21/56: The Royal Navy frigate HMS **Eastbourne** suffers an explosion.

03/11/56: The USS **Columbus** (CA-74) and USS **Floyd B. Parks** (DD-884) are damaged after colliding off Luzon, Philippines.

03/18/56: Fifteen ships of a U.S. destroyer fleet break their moorings during a storm off Newport, Rhode Island.

03/18/56: The USS **Willis A. Lee** (DL-4) runs aground off Jamestown, Rhode Island.

04/22/56: The USS **Nautilus** (SSN-571) is snared in the nets of a fishing vessel off the New Jersey coast 140 miles southeast of New York, while running at a depth of 150 feet. The submarine nearly drags the vessel under water, but the **Nautilus** is unaware of the mishap, does not surface, and continues to Groton, Connecticut. The estimated damage is \$1,300 to each vessel.

04/26/56: The USS **Remey** (DD-688) runs aground in the Persian Gulf.

04/28/56: The USS **Nautilus** (SSN-571) suffers a fire caused by a welder's torch, while berthed at New London, Connecticut, during repair of damage caused by snaring of a fishing net on 22 April. The blaze ignites cork insulation and burns paint from the hull. The Navy reports that damage from the fire, the third to break out on the **Nautilus**, is slight.

05/07/56: The USS **Eaton** (DD-510) and USS **Wisconsin** (BB-64) are badly damaged after a collision in fog off Virginia. Commander Varley of the **Eaton** is later court-martialed and found negligent.

05/08/56: The Royal Navy frigate HMS **Redpole** collides with a yacht in Copenhagen, Denmark.

05/10/56: The Royal Navy diesel submarine HMS **Talent** is involved in a collision.

08/04/56: The USS **Windham Bay** (CVE-92) is heavily damaged by fire while in Alameda, California.

08/19/56: The experimental sodium-cooled nuclear reactor of the USS **Seawolf** (SSN-575) suffers a failure in the steam plant during a full power test run while the new ship is at Groton, Connecticut. A leak of sodium-potassium alloy being used as the third fluid in the steam generator aggravates stress corrosion in the system, causing two cracks in steam piping and a leak in a superheater. Makeshift repairs permit the **Seawolf** to complete its initial sea trials on reduced power in February 1957. Due to the difficulties of running a sodium-cooled reactor, the Navy decides to replace the **Seawolf's** sodium-cooled reactor with a water-cooled reactor, and use only water-cooled designs in the future.

09/22/56: The Royal Navy destroyer HMS **Decoy** suffers an explosion.

09/29/56: The Royal Navy minesweepers HMS **Broadly**, HMS **Etchingham**, and HMS **Bisham** are extensively damaged by fire at Portsmouth harbor, U.K.

09/29/56: A shell explodes aboard the USS **Buck** (DD-761), killing one.

10/06/56: The Royal Navy frigate HMS **Keppel** collides with a Torpoint ferry, near Plymouth, U.K.

10/06/56: The Royal Navy frigate HMS **Orwell** is involved in a collision.

10/13/56: The Royal Navy diesel submarine HMS **Anchorite** runs aground in Rothesay Bay, U.K., and is refloated two days later.

10/15/56: During the height of the Suez crisis the USS **Nautilus** (SSN-571) accidentally fires two dummy practice torpedoes at a British merchantman during naval maneuvers in European

waters. The **Nautilus** mistakes the ship for an aircraft carrier on its sonar.

10/23/56: The USS **Antietam** (CVS-36) is grounded for six hours off Brest, France.

11/22/56: The Royal Navy diesel submarine HMS **Scorcher** suffers a fire during exercises.

01/03/57: The Royal Navy coastal minesweeper HMS **Ilimington** suffers a fire.

03/07/57: The USS **Mission San Francisco** (AO-123) suffers explosions and fires when it collides with the Liberian freighter **Elna II** in the Delaware River near New Castle, Delaware, killing ten.

05/15/57: A U.S. Navy A3D Skywarrior aircraft crashes while landing on the USS **Bon Homme Richard** (CVA-31) off San Diego, California, killing three.

05/15/57: The USS **Franklin D. Roosevelt** (CVA-42) reportedly hits a submerged object off Florida. The object is not thought to be a submarine. The Navy later denies that the carrier had hit an object, claiming instead that a propeller had broken.

05/20/57: The USS **Antietam** (CVS-36) crashes into a river wharf in New Orleans, Louisiana. The wharf is heavily damaged, while damage to the carrier is light.

05/21/57: A U.S. Navy experimental X-1 submarine is damaged by a blast at the Portsmouth Naval Shipyard. There are no injuries.

06/08/57: Eleven depth charges explode prematurely off the stern of the USS **Whitehurst** (DE-634) 18 miles off Pearl Harbor, endangering the lives of a Hollywood movie cast on board to shoot a movie scene.

06/19/57: A high-pressure steam line

explodes aboard the USS **Franklin D. Roosevelt** (CVA-42) off Jacksonville, Florida, killing two and injuring five.

07/06/57: The Royal Navy aircraft carrier HMS **Eagle** suffers a fire.

07/13/57: The Royal Navy frigate HMS **Redpole** is involved in a collision.

07/15/57: A Royal Navy destroyer depot ship suffers a fire.

07/18/57: A TNT device aboard the USS **Somersworth** (PCER-849) explodes off Montauk Point, New York, killing three.

07/27/57: The USS **Mauna Loa** (AE-8) suffers a fire off New York. The fire is extinguished before it reaches the ship's 3,500-ton cargo of explosives.

08/07/57: The USS **Cobbler** (SS-344) and USS **Tusk** (SS-426) are slightly damaged after an underwater collision during maneuvers off New Jersey.

08/19/57: The USS **Wisconsin** (BB-64) scrapes its bottom near a sea buoy off Cape Henry, Virginia, during a storm.

08/25/57: The USS **Lenawee** (APA-195) and USS **Wantuck** (APD-125) collide in the Pacific, killing one.

08/28/57: The Peruvian diesel submarine **Iquique** is freed from a sand bar where it had run aground during trials in the Long Island Sound, New York.

08/29/57: The Royal Navy coastal minesweeper HMS **Badminton** is in a collision.

09/01/57: In the first few days of September, the USS **Nautilus** (SSN-571) suffers damage to two periscopes while rising under ice conditions during an exploratory trip under the Arctic icepack. The **Nautilus** returns from under the icepack to the open sea to perform

repairs on the surface. It takes 12 hours in rough seas, freezing temperatures, and gale winds to fix one periscope. The other is damaged beyond repair.

09/05/57: The Royal Navy destroyer HMS **Decoy** runs aground.

09/11/57: The Royal Navy cruiser HMS **Blake** suffers an explosion and fire while in Glasgow, Scotland.

09/12/57: The USS **Wasp** (CVS-18) suffers a second fire while in drydock in Boston, Massachusetts, causing minor damage.

09/20/57: The Royal Navy diesel submarine HMS **Taciturn** collides with a merchant ship during exercises off Brighton, U.K., in the English Channel. No damage is reported.

09/21/57: The Royal Navy destroyer HMS **Delight** is rammed by the Clyde tug **Forager** at the Princess Pier, Greenock, Scotland.

09/26/57: A U.S. Navy A3D Skywarrior crashes while attempting to land on the USS **Forrestal** (CVA-59) during NATO exercises in the Norwegian Sea.

09/29/57: The USS **Purdy** (DD-734) and the British trawler **British Columbia** collide off The Netherlands, sinking the trawler. A small hole is punched in the **Purdy's** hull above the waterline.

10/09/57: The USS **Mission San Miguel** (AO-129) runs aground on a reef in the mid-Pacific.

10/23/57: The USS **Forrestal** (CVA-59) is slightly damaged after a collision with an oiler at sea.

11/16/57: The Washington Post reports that the reactor compartment of the USS **Nautilus** (SSN-571) flooded several days ago after a small leak developed while the submarine was in port in Connecticut. The leak was due to the malfunctioning of a valve, and according

to the Navy caused no radioactive contamination or damage to the power plant.

12/11/57: The Royal Navy minesweeper HMS **Alcaston** loses power.

12/12/57: The USS **Manley** (DD-940) is badly damaged in heavy seas in the eastern Atlantic.

01/10/58: A plane catapult explodes aboard the USS **Kearsage** (CVA-33) off Yokosuka, Japan, killing three.

01/14/58: The Royal Navy boom defense vessel HMS **Barcombe** runs aground off the Island of Oronsay, Argyll, Scotland.

01/18/58: The USS **Essex** (CVA-9) is damaged by fire at sea.

01/31/58: A bomber explodes on the flight deck of the USS **Hancock** (CVA-19), killing two.

02/04/58: The Swedish diesel submarine **Illern** sinks in a shipyard, Malmo, Sweden.

02/12/58: A rocket propelled antisubmarine weapon backfires aboard the USS **Eaton** (DD-510), killing one.

02/16/58: The fuel supply submarine USS **Guavina** (ASSO-362) runs aground in high winds and foul weather after dragging its anchor in San Salvador, El Salvador.

02/27/58: The USS **Tripoli** (CVU-64) is towed to Bremerhaven, West Germany, after running aground in the Weser estuary.

03/03/58: The Royal Navy destroyer HMS **Decoy** suffers a fire.

04/01/58: The USS **Corregidor** (CVU-58) cracks its hull in a storm off the Azores.

04/02/58: The Royal Navy fleet supply

ship HMS **Fort Duquesne** suffers a fire.

04/17/58: The Royal Navy aircraft carrier HMS **Bulwark** is involved in a collision in the Suez Canal.

04/24/58: The USS **Yarnall** (DD-541) is damaged by a dummy torpedo fired by a submarine during practice.

04/25/58: The USS **Nautilus** (SSN-571) springs a small saltwater leak in one of the steam condensers shortly after leaving Groton, Connecticut, as the submarine heads south toward the Panama Canal to transit to the Pacific for its expedition to the North Pole. After passing through the Canal and experiencing a fire (5/4/58), the **Nautilus** puts into Mare Island Naval Shipyard, near San Francisco, California, for repairs. The source of the leak cannot be pinpointed, however, and the ship proceeds to Seattle, Washington. During the trip to Seattle, the captain decides to use the same type of additive that is sold for leaky car radiators to try to repair the leak in the condenser. Upon arriving in Seattle in late May or early June, 140 quarts are purchased and half are poured into the cooling system. The reactor plant is started and the leak stopped.

05/04/58: The USS **Nautilus** (SSN-571) suffers a fire in the insulation around one of its turbines as the ship is running submerged in the Pacific shortly after leaving Panama on its way to its Arctic mission. The insulation had become oil-soaked during the submarine's three years of operation and had caught fire. The fire is put out with minor injuries, but the submarine must surface to ventilate.

05/23/58: The Royal Navy cruiser HMS **Lion** suffers a fire.

05/28/58: The USS **Stickleback** (SS-415) sinks after being rammed by the USS **Silverstein** (DE-534) off Pearl Harbor, Hawaii. There are no casualties. The submarine had lost power and drifted into the **Silverstein's** path.

06/11/58: The trawler **St. Clair** catches a Royal Navy submarine in its net off Land's End, U.K. There is little damage.

06/20/58: The Royal Navy minesweeper HMS **Hound** is involved in a collision.

07/03/58: The USS **Chemung** (AO-30) runs aground 500 yards off Alcatraz Island in San Francisco Bay, California, during a naval procession.

07/06/58: The USS **Caney** (AO-95) loses power during a monsoon in the Arabian Sea, and is in danger for several days until it can be towed by U.S. ships.

07/08/58: A U.S. Navy barge used for research in underwater explosions suffers an explosion and flash fire while in port at Norfolk, Virginia.

07/19/58: The USS **Piper** (SS-409) runs aground on a sandbar off Provincetown, Massachusetts, but is pulled free after seven hours with minor damage.

07/23/58: A fuel tank accidentally falls from a FJ4B Fury fighter being launched from the USS **Ticonderoga** (CV-14) while operating off California, killing two.

07/24/58: The USS **Skate** (SSN-578) suffers damage to its propeller when it collides with the USS **Fulton** (AS-11) while the tender is moored to a pier in New London, Connecticut.

08/22/58: The USS **Prestige** (MSO-465) sinks after running aground off Shikoku, Japan.

09/03/58: The Royal Navy diesel submarine HMS **Amphion** hits a British naval training ship.

09/24/58: The Royal Navy destroyer HMS **Camperdown** suffers a fire.

09/29/58: The Royal Navy destroyer HMS **Hogue** collides with the British trawler **Northern Foam** while trying to

prevent the arrest of the trawler by an Icelandic patrol boat for illegally fishing in Icelandic waters.

10/10/58: The Royal Navy diesel submarine HMS **Andrew** is involved in a collision.

10/14/58: An explosion floods the engineering room of the USS **Saratoga** (CVA-60) at Jacksonville, Florida.

10/21/58: The USS **Rich** (DD-820), USS **Moale** (DD-693), USS **Ellyson** (DD-454), and the destroyer USS **Sumner** are damaged in a severe storm off North Carolina.

10/23/58: The USS **Lindenwald** (LSD-6) is disabled off Greenland when the steering engines fail.

10/23/58: The Royal Navy frigate HMS **Grenville** inadvertently surges forward while preparing to leave Portland harbor, U.K., and collides with the minesweeper HMS **Shoulton** and the submarine support ship HMS **Chaser**.

10/27/58: The Royal Navy frigates HMS **Undine** and HMS **Ulysses** are both damaged above the waterline in a collision off the Ile d'Ouessant, Brittany, France.

11/05/58: The USS **Growler** (SSG-577) springs a leak during a deep-sea dive but surfaces without damage off the Isle of Shoals, southeast of Portsmouth, New Hampshire. The **Growler**, designed for launching the Regulus II sea-to-land missile, was several hundred feet below the surface when the leak developed in an improperly adjusted sonar compartment fitting for an electrical cable.

11/06/58: The Royal Navy destroyer HMS **Alamein** experiences a fire.

11/10/58: The USS **Ranger** (CVA-61) suffers an explosion in the magazine area seven decks below the waterline while off San Francisco, California, killing

two. A careless act by two crewmen trying to obtain gunpowder from the magazine to fuel a miniature ram jet engine they had built caused the explosion. The Navy said the two men were known rocket enthusiasts and were not authorized to be in the magazine area at the time of the explosion. The "relatively minor" damage takes about a month to repair due to the location of the accident.

11/12/58: The Royal Navy diesel submarine HMS **Alaric** collides with a jetty.

11/18/58: The Royal Navy diesel submarine HMS **Rorqual** experiences a fire.

11/28/58: The Royal Navy destroyer HMS **Caesar** suffers a fire.

12/23/58: The Royal Navy frigate HMS **Undaunted** collides with the minesweeper HMS **Maxton** off Cyprus.

12/30/58: The Royal Navy destroyers HMS **Jutland** and HMS **Dunkirk** collide during daytime maneuvers off Malta, causing slight damage.

12/31/58: In the late 1950s, a Soviet Northern Fleet diesel-powered submarine, possibly a Whiskey class submarine, reportedly sinks. The vessel was specially converted to be a test platform for a Soviet cruise missile, which was under development. The submarine went to sea carrying empty missile containers and sank on its return voyage.

01/11/59: The USS **Valley Forge** (CVS-45) is damaged in a storm off North Carolina.

01/28/59: The port propeller of the USS **Skate** (SSN-578) is damaged in a collision with the USS **Cubera** (SS-347).

The accident occurs during routine operations off the U.S. east coast just after the **Cubera** delivered mail to the **Skate** and moved away. The Navy says

nobody was hurt.

03/02/59: A depth charge explodes aboard the USS **Conway** (DD-507) in the Atlantic, injuring two.

03/05/59: The USS **Kenneth D. Bailey** (DDR-713) and the USS **Haiti Victory** (T-AK-238) collide in the Strait of Gibraltar, killing one.

03/16/59: The Royal Navy destroyers HMS **Corunna** and HMS **Barrosa** collide.

04/07/59: The USS **Triton** (SSN-586) suffers a galley fire caused by testing of a deep-fat fryer, while in New London, Connecticut. According to the Navy, the fire spread from the galley into the ventilation lines of the crew's mess. But quick action by crew members "resulted in the saving of the ship's equipment and possible loss of life."

04/09/59: The U.S. Navy announces the USS **Raton** (SSR-270) and the USS **George K. Mackenzie** (DD-836) recently collided during maneuvers in the western Pacific.

04/09/59: The Royal Navy aircraft carrier HMS **Ark Royal** is damaged by fire in Devonport, U.K., while undergoing a refit.

04/13/59: The British admiralty discounts sabotage in three small fires aboard the Royal Navy aircraft carrier HMS **Eagle**.

05/01/59: The USS **Randolph** (CVA-15) suffers a flash electrical explosion at the Norfolk Naval Base, Virginia, killing one.

05/21/59: The Royal Navy boom defense vessel HMS **Barnard** runs aground.

05/21/59: The Royal Navy frigate HMS **Rocket** collides with a buoy.

05/28/59: A U.S. Navy FJ Fury jet

crashes aboard the USS **Essex** (CVA-9) east of Jacksonville, Florida, causing explosions and fire, killing two, and injuring 21.

06/18/59: The Royal Navy submarine depot ship HMS **Maidstone** suffers a fire.

06/30/59: The starboard rudder guard of the USS **Macon** (CA-132) is scraped off in the Welland Canal (connecting Lake Erie to Lake Ontario), delaying shipping for 17 hours.

07/08/59: The Royal Navy cruiser HMS **Birmingham** and destroyer HMS **Delight** collide during exercises off Malta, killing two.

07/11/59: The USS **Gearing** (DD-710) is damaged after colliding with a freighter in Chesapeake Bay.

07/31/59: The USS **Upshur** (AP-198) is heavily damaged by fire at the Brooklyn Army Terminal, New York.

08/11/59: The Royal Navy destroyer HMS **Broadsword** suffers a fire off Iceland.

08/13/59: A Soviet warship, believed to be a destroyer shadowing NATO maneuvers, collides with the West German coastal vessel **Christel** in fog 30 miles off Kiel, West Germany. The Soviet ship reportedly stands by with its engines stopped while the **Christel's** crew works to plug a hole, then steams off when the **Christel** is out of immediate danger.

08/15/59: The U.S. Navy discloses that a ruptured water pipe aboard the USS **Nautilus** (SSN-571) partly flooded a compartment while the ship was submerged off Newfoundland four months ago. No injuries resulted.

08/18/59: The USS **Wasp** (CVS-18) is heavily damaged by an explosion and subsequent fires when a helicopter engine explodes while being tested in

hangar bay Number 1 as the ship is operating 250 miles east of Norfolk, Virginia. The fires and reflashes take over two hours to control. The ship was carrying nuclear weapons. In the first 30 minutes as the fires burned out of control and the forward magazines were flooded, preliminary preparations also were made to flood the nuclear weapon magazine. It was not flooded, however, and 30 minutes later the nuclear weapon magazine reported no significant rise in temperature. But water from the fire-fighting efforts eventually leaked into the nuclear weapon magazine around electrical cables.

08/25/59: A U.S. Navy F8U Crusader jet crashes into the rear of the USS **Independence** (CVA-62) off Norfolk, Virginia, killing one man and causing a fire.

08/27/59: The Royal Navy destroyer HMS **Hogue** is involved in a collision.

08/29/59: The USS **Decatur** (DD-936) suffers an engine room fire while docked in Naples, Italy. The fire is extinguished after two hours during which the ammunition stores are flooded as a precautionary measure.

09/01/59: The Royal Navy diving tender HMS **Deepwater** suffers a fire.

09/29/59: The USS **Bristol** (DD-857) collides with the Italian merchant vessel **Italia Fassio** in fog in the Nantucket Shoals area off Massachusetts. The **Bristol** is slightly damaged.

10/04/59: The USS **Tench** (SS-417) runs aground on a mudbank in Portsmouth, U.K. The submarine is lifted off the mudbank without damage.

10/04/59: The USS **Franklin D. Roosevelt** (CVA-42) collides with the USS **Pawcatuck** (AO-108) during refueling off Virginia. Both vessels are slightly damaged.

10/05/59: The USS **Seadragon**

(SSN-584) on the surface at night during its sea trials collides with a whale, or possibly a large shark, off Portsmouth, New Hampshire, bending one of its propellers. The submarine proceeds to Portsmouth for repairs on its own power using its other propeller.

10/07/59: The Royal Navy frigate HMS **Redpole** collides with an oil lighter, sustaining an eight-foot hole in its bow.

10/15/59: "Apparently intentional" damage to electrical cables of the USS **Nautilus** (SSN-571) is discovered during overhaul at the naval shipyard in Portsmouth, New Hampshire. The Navy says the damage appears to be confined to the electrical system and "does not extend to the nuclear reactor plant." The Navy disclosure of the incident follows an article in the Portsmouth Herald which reports a series of incidents involving "sabotage-type" damage to the craft including fires, cut cables, broken pipes, and other damage to vital parts.

11/04/59: The USS **Willis A. Lee** (DL-4) suffers a fire after an explosion of an anti-aircraft round during exercises off Newport, Rhode Island.

11/06/59: The USS **Threadfin** (SS-410) is rammed by the Greek freighter **Nikolas Mikhalos** at the entrance to the Suez Canal as both ships are exiting to the Red Sea.

11/08/59: The Soviet cruiser **Sverdlovsk** collides with the German coastal vessel **Hilda Rebecca** in the Kiel Canal. The **Sverdlovsk** continues into the Baltic while the **Hilda Rebecca** has to be beached for repairs.

11/09/59: A fire is discovered in the pump room of the USS **Midway** (CVA-41) at the Subic Bay Navy Base, Philippines. Arson is blamed for the incident.

11/27/59: The Royal Navy cruiser HMS **Tiger** suffers a fire.

12/16/59: The USS **Searcher** (AGR-4) reaches Boston, Massachusetts, safely under tow after being disabled at sea for five days with boiler trouble.

01/11/60: An arresting gear cable aboard the USS **Independence** (CVA-62) breaks as an aircraft lands while the ship is operating off the Florida coast, killing one.

02/04/60: Eleven men are swept overboard from the USS **Daly** (DD-519) during sea trials 200 miles off the Virginia coast, killing seven.

02/13/60: The USS **Skate** (SSN-578) suffers "very minor" damage after colliding with a concrete pier at Electric Boatyard, Groton, Connecticut.

02/28/60: In late February in the Atlantic the USS **Triton** (SSN-586), shortly after departure for a submerged global circumnavigation, suffers a leak in a main condenser circulating water pump, necessitating the shutdown of the port reactor for five hours to effect repairs.

03/01/60: In the beginning of March the USS **Triton** (SSN-586), while traveling down the Atlantic, springs a severe leak in its starboard propeller shaft due to loose bolts and an improperly installed water seal.

03/19/60: The USS **Darby** (DE-218) collides with the Swedish ore carrier **Soya Atlantic** off Cape Henry while returning from exercises off the Virginia Capes, killing two.

04/04/60: The Royal Navy diesel submarine HMS **Narwhal** runs aground in high winds off Scotland.

04/07/60: The USS **Shangri-La** (CV-38) suffers an explosion of an air separator operated by a gasoline motor while near Valparaiso, Chile, injuring three.

04/24/60: The USS **Triton** (SSN-586)

suffers a serious casualty in the after torpedo room when a hydraulic line to the stern plane mechanism bursts just prior to the end of its global circumnavigation. Quick action by crew members prevents the accident from getting out of control. The leak is stopped and hydraulic power is restored.

05/25/60: The USS **Saratoga** (CVA-60) collides with the ore carrier **Bernd Leonhardt** off North Carolina. The accident touches off a jet fuel fire on the **Saratoga** which is quickly extinguished.

05/30/60: The USS **Saratoga** (CVA-60) suffers an oil-fed flash fire at the Norfolk Naval Shipyard, Virginia, where the carrier had docked after a collision on 25 May. The fire scorches the vessel's amidships hull.

06/08/60: Sabotage is suspected in an incident involving damage to a shipyard fire hose used on board the USS **Nautilus** (SSN-571) for testing the ship's evaporators while the ship is undergoing overhaul at Portsmouth Naval Shipyard, New Hampshire. The Navy says, "No damage occurred to the ship."

06/14/60: The USS **Sargo** (SSN-583) suffers an explosion and fire in its aft end while docked in Pearl Harbor, Hawaii. The fire starts from a leak in a high-pressure line that was pumping oxygen aboard. The explosion occurs a few moments later. When dock units and boats are unable to bring the fire under control quickly, officers take the **Sargo** a short distance from the dock and deliberately submerge it with the stern torpedo hatch open to put out the blaze. The Navy says the ship's nuclear reactors were sealed off, and there was "absolutely no danger of an explosion from the reactor compartment." The submarine is extensively damaged and is drydocked taking three months to repair. The **Sargo** is the first nuclear ship in the Pacific Fleet and was scheduled to take the visiting King and Queen of Thailand on a cruise the next day.

07/19/60: The USS **Ammen** (DD-527) and USS **Collett** (DD-730) collide in heavy fog off Newport Beach, California. Eleven of the **Ammen's** crew are killed and 20 are injured, and the ship is damaged beyond repair.

08/10/60: The USS **Bennington** (CV-20) and USS **Edwards** (DD-619) collide during refueling 175 miles off California. A Navy spokesman later says that the **Edwards** "apparently lost steering control" and its superstructure smashed into the **Bennington's** Number 3 elevator. The destroyer is extensively damaged while the carrier is only slightly damaged.

08/12/60: The USS **Exultant** (MSO-441) suffers an oil fire in the engine room while operating off Georgia, killing five.

08/24/60: A U.S. Navy minesweeper is swamped at Charleston, South Carolina.

08/28/60: Unexplained engine room damage delays the sailing of the Royal Navy destroyer HMS **Dainty**. Sabotage is suspected.

09/14/60: The Australian destroyer **Anzuc** accidentally fires a salvo into the hull of the Australian destroyer **Tobruk** opening a hole above the waterline during maneuvers off Australia.

11/04/60: The USS **Cree** (ATF-84) is accidentally bombed by a plane from the USS **Coral Sea** (CVA-43) during exercises in the western Pacific.

11/28/60: About this date six men are soaked by reactor coolant while working on the USS **Nautilus** (SSN-571) at Portsmouth Naval Shipyard, New Hampshire. One man accidentally bumped a valve releasing the water onto himself and the others. Clothes and dosimeters were thrown away, making radiation measurement impossible.

12/19/60: Fire breaks out on the hangar deck of the USS **Constellation**

(CVA-64) in the last stages of construction at the New York Naval Shipyard. Reports list 50 dead and an estimated damage of \$45 million. A Navy court of inquiry investigation later finds there were 42 small fires earlier in the year. The fire delays the ship's commissioning by several months to 27 October 1961.

01/06/61: A Sea Vixen helicopter crashes into the sea at night after a deck accident on the Royal Navy aircraft carrier HMS **Ark Royal** while the ship is near Malta.

01/12/61: The Royal Navy diesel submarine HMS **Oberon** runs aground at Rothesay Bay in the Firth of Clyde, Scotland, while maneuvering to tie up to a buoy. The **Oberon** is refloated the next day without damage.

01/14/61: The USS **Johnston** (DD-821) and USS **Kepler** (DD-765) are slightly damaged in a "glancing collision" 200 miles off the North Carolina coast.

01/18/61: The Royal Navy frigate HMS **Brighton** suffers a fire.

01/23/61: The USS **Saratoga** (CVA-60) suffers a fire caused by a ruptured oil line while in the Ionian Sea en route to Athens, Greece, killing seven.

01/27/61: The USS **Ticonderoga** (CV-14) suffers a brief fire when a diesel generator blows up while the ship is at Naval Air Station North Island, San Diego, California.

02/03/61: The Royal Navy diesel submarine HMS **Alaric** strikes a sandbank and is grounded for 20 minutes near Sheerness off the east coast of the U.K.

03/02/61: The USS **Glacier** (AGB-4) and USS **Staten Island** (AGB-5) break free after being stuck in the ice in Antarctica for nine days.

04/12/61: The Royal Navy diesel

submarine HMS **Finwhale** arrives in the Firth of Clyde, Scotland, with a six-by-two-foot hole in her casing caused by heavy seas in a gale as she sailed to the Arctic for underwater tests. A dent on the aluminum casing forward of the sail measures 20 by 6 feet.

04/25/61: A boiler explosion occurs aboard the USS **Intrepid** (CVS-11), injuring 11.

04/27/61: The USS **Diamond Head** (AE-19) is holed above the waterline in a collision with the USS **Independence** (CVA-62) in the Caribbean.

04/30/61: The USS **Baldwin** (DD-624) runs aground off Montauk Point, New York. One sailor is killed and one hurt when a steel cable whiplashes during an attempt to free the ship. The ship is subsequently scuttled.

07/10/61: The munitions ship **Save** runs aground and explodes off Mozambique.

07/21/61: The USS **Angler** (SS-240) is slightly damaged in a minor collision with the freighter **Export Adventurer** during maneuvers with a destroyer 15 miles south of Block Island, Rhode Island.

08/09/61: The USS **Kitty Hawk** (CVA-63) suffers a boiler breakdown involving ruptured tubes at Norfolk, Virginia, just prior to its shakedown cruise.

08/19/61: The Royal Navy destroyer HMS **Broadsword** suffers a damaged boiler.

09/26/61: The USS **Charr** (SS-328) suffers an engine room flood while submerged at 100 feet and operating 150 miles west of San Diego, California. Two sailors seal themselves in the flooded compartment and save the submarine and its 76 crewmen by manning the controls until the submarine surfaces.

09/26/61: A U.S. Navy tanker catches fire and explodes while in port at Morehead City, North Carolina, killing one. Flames from the burning ship threaten seven huge storage tanks containing more than ten million gallons of high octane aviation fuel.

10/16/61: The USS **Randolph** (CVS-15) collides with the Liberian tanker **Atlantic Viscountess** 325 miles east of Charleston, South Carolina. The collision ruptures a gasoline line on the carrier causing a flash fire which is extinguished in less than five minutes.

11/02/61: During its sea trials the USS **Thresher** (SSN-593) docks at San Juan, Puerto Rico. Its reactor is shut down and a diesel generator is started up to provide electricity in keeping with usual docking procedures. But after seven or eight hours of operation the diesel generator breaks down. While sailors work on the generator, electricity is provided by an electric storage battery. The generator takes much longer than expected to repair, however, and so the decision is made to restart the reactor. But, a nuclear reactor takes several hours and considerable electricity to restart, and the **Thresher's** battery is depleted before the reactor becomes critical. With no electricity to keep the ventilation system going, the submarine starts to heat up. Temperatures in the machinery spaces reach approximately 140 degrees. Some men are ordered out suffering from the heat and fumes, and the captain fears the heat and humidity could damage electrical equipment and lead to a general evacuation. Ultimately the problem is solved by hooking up electrical cables to the diesel-electric powered submarine **Cavalla** (SS-244) which is moored alongside early the next morning. With electricity from the **Cavalla**, the **Thresher's** reactor is able to be restarted.

11/06/61: A fire on the newly-commissioned USS **Constellation** (CVA-64) breaks out at sea, killing four and severely injuring nine.

12/05/61: The Royal Navy frigate HMS **Falmouth** collides with the naval auxiliary HMS **Tide Flow** during antisubmarine warfare exercises in Lyme Bay off the Dorset coast, U.K. The **Falmouth** is holed above and below the waterline, but returns to Portland, U.K., under its own power. The **Tide Flow** suffers superficial damage.

12/21/61: A rocket motor aboard the USS **Meredith** (DD-890) ignites and burns on its launcher, causing an intense fire of short duration, while the ship is at Mayport, Florida. The commander of the destroyer squadron to which the **Meredith** is attached says that safety features prevented the rocket from leaving the ship.

12/31/61: In 1961 an accident in the nuclear power plant of an early class of Soviet nuclear-powered ballistic missile submarine (probably a Hotel class) reportedly occurs near the coast of England while ship is returning from a training exercise. Crew members were seriously contaminated and parts of the ship and its missiles were also contaminated when a cooling pipe broke. The level of radiation is reported to have been five roentgens per hour in the space where the pipe broke. After a two-month ventilation of the submarine, a decision is made to transfer the missiles to two diesel-powered submarines for their test launches.

01/06/62: Western intelligence sources report that a submarine belonging to the United States or another NATO power was damaged and forced to the surface by a 20-megaton underwater nuclear test blast set off by the Soviet Union in the Barents Sea. The detonation point is said to have been about 100 miles from the submarine whose commander is quoted as saying, "If we had been much closer we might not have survived."

01/16/62: The Royal Navy aircraft carrier HMS **Ark Royal** suffers propeller damage when it runs aground in

Plymouth Sound on its way through a deep water channel to the Devonport, U.K., dockyard.

01/31/62: The Royal Navy aircraft carrier HMS **Eagle** suffers unknown damage in an accident.

02/03/62: The Royal Navy destroyer HMS **Carron** suffers damage caused by sailors.

02/20/62: The USS **Balao** (SS-285) is snagged by the tow-line of the ocean tug **Torrent IV** while cruising 110 feet below the surface off the Florida coast. The accident damages one of the **Balao's** masthead lights, punches two small holes in the superstructure supporting the periscope, and breaks one radar antenna and damages another. Neither the tug nor the barge under tow receives damage.

03/05/62: An aircraft arresting cable aboard the USS **Forrestal** (CVA-59) snaps while the carrier is en route from Guantanamo Naval Base, Cuba, to Norfolk, Virginia, killing one.

03/06/62: The USS **Monssen** (DD-798) is grounded by a storm at Beach Haven, New Jersey.

03/12/62: The USS **Proteus** (AS-19) suffers a brief fire during a weekend training cruise in the Irish Sea. The fire, which causes only slight damage, apparently started in a pile of rags.

03/21/62: The Royal Navy frigate HMS **Rothsary** rams the Turkish diesel submarine **Gur** in the western Mediterranean during the NATO exercise "Dawn Breeze." Both ships suffer damage and proceed to Gibraltar.

03/26/62: The Royal Navy nuclear-powered attack submarine HMS **Dreadnought** suffers a fire in a cabin while the ship is under construction at Barrow-in-Furness, U.K.

03/30/62: The USS **England** (DLG-22)

suffers an explosion and fire at San Pedro, California, injuring 18 workmen before the fire is brought under control.

04/09/62: The USS **Thomas A. Edison** (SSBN-610) collides with the USS **Wadleigh** (DD-689) during antisubmarine warfare exercises 200 miles east of Norfolk, Virginia. The **Edison's** topside rudder is slightly bent and the destroyer's forward bottom plates are pierced. The **Edison** is repaired at Newport News, Virginia, in several hours while the **Wadleigh** goes into drydock for several weeks. According to a Navy spokesman the collision resulted from a misunderstanding between the two ships and occurred as the **Edison** was surfacing. No one is injured.

04/11/62: Fire breaks out in the rudder section of the USS **Thomas A. Edison** (SSBN-610) at Norfolk, Virginia. The fire is caused by the heat from a workman's acetylene torch and is brought under control within 30 minutes.

04/29/62: A British Gannet aircraft crashes on the Royal Navy aircraft carrier HMS **Ark Royal** while the ship participates in a SEATO exercise in the South China Sea, killing one.

05/03/62: Police investigate damaged electrical cables on the Royal Navy aircraft carrier HMS **Eagle**. Further damage is found the next day.

05/10/62: The USS **Permit** (SSN-594) is run over by the cargo ship **Hawaiian Citizen** while the **Permit** is on a submerged test run near the Farallon Islands 30 miles from San Francisco, California. A Navy spokesman said the only damage to the submarine was a bending of the doors to the conning tower. The crew had to force the doors open to raise the radio antenna to communicate with freighters standing by.

06/03/62: The USS **Thresher** (SSN-593) is damaged in a collision with a commercial tug that was berthing it at Port Canaveral, Florida, receiving a

three-foot gash in the submarine's ballast tanks about a foot below the waterline. The submarine went to New London, Connecticut, under its own power to effect repairs.

06/07/62: The U.S. destroyer USS **Sumner** runs aground off Golfe Juan in the Mediterranean during a windstorm.

06/15/62: The Royal Navy frigate HMS **Blackpool** suffers damage caused by a sailor.

06/25/62: The USS **Tiru** (SS-416) suffers a fire which forces the vessel to make an emergency surfacing 15 miles southwest of Pearl Harbor, Hawaii, with 18 men suffering from smoke inhalation. A malfunction of a practice torpedo in the torpedo room caused the fire.

07/01/62: A U.S. Navy F8U Crusader aircraft crashes into the USS **Ranger** (CVA-61) at sea off California, injuring two.

08/01/62: The Royal Navy destroyer HMS **Battleaxe** collides with the frigate HMS **Ursa** in the Clyde river, Scotland, during the night. The **Battleaxe** is subsequently scrapped.

08/28/62: A British Meteor aircraft hits the mast of the Royal Navy minesweeper HMS **Appleton** while exercising off Malta. The aircraft is piloted safely to Luqa airport, Malta.

08/29/62: The Royal Navy aircraft carrier HMS **Ark Royal** suffers a gale mishap.

09/13/62: A Japanese fishing boat collides with a submarine, believed to be Soviet, and sinks off Northern Japan. The crew of 16 escapes on rafts and rubber boats.

10/04/62: The Royal Navy frigate HMS **Ashanti** breaks down during sea trials in the Caribbean Sea.

10/09/62: A Danish diesel submarine

gets caught in the net of a British fishing trawler. The submarine surfaces with damage to neither vessel and apologies were exchanged.

10/10/62: The USS **Triton** (SSN-586) suffers a fire during repairs in New London, Connecticut. A spokesman for Electric Boat Division of General Dynamics Corporation said there was only minor damage to one compartment and that no one was injured. He said no radioactivity was involved. The cause of the fire was said to be undetermined.

10/13/62: The Royal Navy diesel submarine HMS **Odin** touches the bed of the English Channel at 150 feet five miles south of Portland Bill during a night exercise, damaging the rudder. The submarine is towed back to Portland harbor, U.K.

10/15/62: The New York Times reports that one of six Soviet diesel-powered attack submarines operating in the Caribbean during the Cuban missile crisis experiences mechanical trouble and is unable to submerge except for short periods. On 15 November the Associated Press reports that a Canadian Air Force patrol plane sighted the Soviet submarine off Halifax still unable to submerge. It eventually returns to the Soviet Union on the surface with a trawler escort.

10/25/62: The New York Times reports that well before the Cuban missile crisis a mechanical breakdown occurred in a Soviet diesel-powered submarine in the Gulf of Alaska. The submarine could not submerge and was escorted home by a trawler.

11/05/62: The USS **Keats** (CVS-33) and USS **Mattaponi** (AO-41) are slightly damaged in a collision during refueling off California.

11/14/62: The USS **Wasp** (CVS-18) and the USS **Holder** (DDE-819) collide during refueling while in the Atlantic while taking part in the U.S. quarantine

of Cuba during the Cuban missile crisis.

11/20/62: The Royal Navy aircraft carrier HMS **Centaur** suffers a steam leak in the boiler room, killing five.

11/26/62: The Royal Navy aircraft carrier HMS **Albion** collides with a tug in Aden harbor, Aden. The tug sinks with two missing.

12/03/62: The USS **Keats** (CVS-33) and the SS **Oriana** collide in dense fog off Long Beach, California. The **Oriana** suffers a 20-foot hole near its bow and the **Keats** suffers a 25-foot rip about ten feet aft on the starboard side.

12/14/62: The Royal Navy diesel submarine HMS **Otter** rams a trawler off Plymouth, U.K. The crew of the trawler abandon ship and are rescued by a nearby launch.

12/31/62: During 1962, the engine room of the USS **Skate** (SSN-578) begins to flood after a seawater circulation line fails while the submarine is submerged at 400 feet on the way through Baffin Bay off Thule, Greenland. Seawater sprays in and starts to flood the engine room. The submarine does not lose power and surfaces safely. On the surface, with the water pressure greatly reduced, the flooding is successfully stopped.

01/03/63: The USS **Core** (AKV-41) runs aground in heavy fog off Fort Baker under the Golden Gate Bridge, San Francisco, California.

01/15/63: A jet fighter attempting to land snaps a cable aboard the USS **Constellation** (CVA-64) while the ship is operating in the eastern Pacific, injuring 11, including three whose legs have to be amputated.

02/09/63: In the mid-Atlantic a wave washes over the Number 1 elevator on the USS **Enterprise** (CVAN-65) while the elevator is in the down position. Four men are washed overboard. Two

are rescued, but one later dies.

02/20/63: An aircraft crash aboard the USS **Enterprise** (CVAN-65) sweeps the carrier's deck with fire while it is operating in the Atlantic, killing two.

02/28/63: The USS **Baussell** (DD-845) runs aground off Djakarta, Indonesia, prior to a scheduled visit to that city. The ship is refloated four days later.

03/13/63: The side of the USS **Valley Forge** (CV-45) is slightly damaged by a fire when an oil film on the water is ignited by sparks from a welder's torch at Long Beach, California.

04/01/63: The Royal Navy diesel submarine HMS **Grampus** returns to Gosport, U.K., after spending three weeks under the polar icecap looking for holes in the ice. During the patrol it superficially damages its hull on the ice.

04/01/63: The Royal Navy diesel submarine HMS **Tabard** collides with a wharf damaging its sonar equipment while berthing in Brisbane, Australia.

04/01/63: In April the Royal Navy minelayer HMS **Manxman** runs aground.

04/05/63: The USS **Ranger** (CVA-61) suffers an explosion and fire in the boiler uptakes while en route from Beppu, Japan, to Iwakuni, Japan.

04/05/63: The USS **Great Sitkin** (AE-17) suffers slight damage during a fire of unknown origin while tied up at the Main Ship Repair Corporation in Brooklyn, New York.

04/08/63: An unidentified submarine becomes entangled in the nets of the trawler **Sunappee** off New England and drags overboard about \$3,000 worth of fishing gear.

04/10/63: The USS **Thresher** (SSN-593) sinks in approximately 8,400 feet of water 220 miles east of Boston

while conducting post-overhaul trials, killing all 129 men on board. The Navy Court of Inquiry concludes a flooding casualty in the engine room brought about by a piping system failure in one of the submarine's saltwater systems is the most probable cause of the sinking. The **Thresher** is never recovered.

05/04/63: The Royal Navy destroyer HMS **Diamond** suffers an engine room fire.

05/07/63: A fire occurs aboard the USS **Flasher** (SSN-613) at the Electric Boat shipyard, Groton, Connecticut, killing three and injuring two. Damage to the ship is reportedly negligible. The fire occurred in the trimming tank of the submarine, scheduled to be launched on 14 June.

05/08/63: The submerged Royal Navy diesel submarine HMS **Tabard** collides with the Royal Australian Navy frigate **Queensborough** off Jervis Bay, New South Wales, Australia, during exercises. The submarine suffers superficial damage and a bent fin and returns to Sydney.

05/08/63: The USS **Woodrow Wilson** (SSBN-624) suffers a fire while under construction at Mare Island Naval Shipyard in Vallejo, California, injuring three. The fire causes only minor damage to the **Wilson** and occurs when a heavy cable comes in contact with a switchboard on the submarine.

05/22/63: The Royal Navy destroyer HMS **Devonshire** suffers engine trouble.

05/29/63: A flash fire breaks out in the boiler room of the USS **Blandy** (DD-943) shortly after it arrives in Portland, Maine, to participate in Memorial Day exercises.

06/04/63: The USS **Asterion** (AF-63) and the Japanese freighter **Kokoku Maru** collide.

06/07/63: The USS **Tinosa** (SSN-606)

collides with the USS **John Adams** (SSBN-620) while being moved in the Portsmouth Naval Shipyard, New Hampshire, when a tug towline snaps. The **Tinosa** received, what the Navy said, was a "small dent below the waterline" in the bow.

06/10/63: The Royal Navy diesel submarine HMS **Rorqual** is caught in a trawler's net.

07/04/63: The USS **Salmon** (SS-573) suffers personnel casualties when mercury from a broken thermometer comes into contact with a hot grid, creating toxic mercury vapor, resulting in the intoxication of 14 crewmembers.

07/22/63: The USS **William C. Lawe** (DD-763) rams and sinks a U.S. Navy tug when the tug loses steering control and crosses into the path of the destroyer in the St. John's River near Jacksonville, Florida.

07/27/63: The U.S. freighter **Irish Spruce** strikes the docked USS **Pratt** (DE-363) at Norfolk, Virginia.

07/29/63: The Royal Navy frigate HMS **Leopard** is in a collision.

08/02/63: The USS **Tingey** (DD-539) and USS **Vammen** (DE-644) collide during a Naval Reserve exercise 200 miles off southern California. The **Tingey** is partly flooded from a deep gash in its starboard side and the **Vammen** suffers a damaged bow, but both ships make it back to their homeports.

08/15/63: A F3H Demon aircraft lands on the fouled deck of the USS **Saratoga** (CVA-60) while the ship is operating in the Mediterranean, killing two and seriously injuring nine. Fifteen aircraft sustain damage.

08/19/63: The USS **Constellation** (CVA-64) suffers an arresting gear accident while operating in the western Pacific.

08/27/63: The USS **Grayback** (SSG-574) suffers a serious fire in the after crew's berthing as a result of a casualty to the main propulsion circuit breaker while operating in the northern Pacific, killing one man and injuring five.

09/10/63: The USS **McDermut** (DD-677) collides with the USS **Gregory** (DD-802) during night antisubmarine warfare exercises off southern California. The **McDermut** suffers damage to its bow and the **Gregory** suffers a split in her starboard side to the main deck.

09/21/63: The USS **Grouse** (MSCO-15) runs aground on Cape Ann, Massachusetts. After attempts to free the ship fail, the **Grouse** is destroyed by fire.

09/26/63: Fire breaks out in a fuel system of the Royal Navy aircraft carrier HMS **Centaur** at the Portsmouth naval base, U.K., killing one.

09/27/63: The USS **Barry** (DD-933) accidentally discharges a torpedo into the deck house of the USS **Decatur** (DD-936) moored alongside in Newport, Rhode Island. There are no injuries or significant damage.

10/03/63: The USS **Medregal** (SS-480) is struck by an MK-37 torpedo fired by the USS **Sabalo** (SS-302) during exercises. Damage is not major.

10/09/63: The USS **Caliente** (AO-53) and USS **Nereus** (AS-17) collide in the San Diego, California, operating area during refueling exercises. Both ships are damaged.

10/18/63: The Royal Navy diesel submarine HMS **Porpoise** collides with the aircraft carrier HMS **Centaur** when it is caught by an ebb tide and drifts broadside onto the bows of the berthed carrier while leaving Portsmouth harbor, U.K. The submarine suffers superficial damage.

10/24/63: The USS **Roberts** (DE-749) collides with the Swedish ore carrier **Luossa** inside the Baltimore, Maryland, harbor in dense fog. The **Roberts** suffers minor flooding due to a small gash in its starboard quarter.

11/29/63: A U.S. Navy tanker and a runaway barge each loaded with gasoline collide at New Orleans, Louisiana, putting an eight-foot gash in the side of the tanker.

12/16/63: The USS **Essex** (CVS-9) en route to the United States is struck by two heavy waves while west of the Azores, causing a radar mast to snap. The mast falls to the deck, damaging both the radar and aircraft.

12/20/63: The second Royal Navy nuclear-powered attack submarine HMS **Valiant** suffers a fire at the Vickers-Armstrong Yard at Barrow-in-Furness, U.K., while the ship is fitting out after being launched on 3 December. The fire is in the reactor compartment in a wooden structure where workers change their clothing. Mr. R. M. Nicholson, the shipyard general manager, says there is no nuclear hazard since the core of the reactor was not installed.

01/04/64: The Royal Navy diesel submarine HMS **Trump** tows a yacht.

01/10/64: The USS **Lake Champlain** (CVS-39) loses 41 feet of its catwalk in a storm in the Virginia Capes area.

01/10/64: The Royal Navy diesel submarine HMS **Tiptoe** runs aground in the Clyde River, Scotland, coincidentally right in front of the house of the area's senior naval officer.

01/14/64: The Royal Navy cable ship HMS **Bullfinch** runs aground.

01/24/64: The Royal Navy aircraft carrier HMS **Hermes** suffers a fire, believed to be caused deliberately.

02/09/64: The USS **Blue Jacket** (T-AF-51) collides with the German fishing boat **Coaster Dirk**, killing six of the fishing boat's seven-member crew.

02/10/64: The Royal Australian Navy destroyer **Voyager** sinks after colliding with the Australian aircraft carrier **Melbourne** off New South Wales, killing 82.

02/16/64: An A3J Vigilante aircraft crashes aboard the USS **Hornet** (CVS-12) operating in the Pacific before the barricade could be rigged, killing the pilot and injuring two crew members.

03/03/64: The USS **Newman K. Perry** (DD-883) collides with a sulfur barge in Tampa Bay, Florida, sinking the barge and flooding the destroyer from stem to Frame 8.

03/11/64: The USS **Searcher** (AGR-4), on station off the U.S. east coast, loses a propeller in heavy seas. A Coast Guard ship takes the **Searcher** in tow.

03/27/64: The USS **Antares** (T-AKR-294) suffers a fire 40 miles off North Carolina.

04/01/64: During night flight operations, the Number 3 elevator of the USS **Randolph** (CVS-15) tears loose from its mountings, dropping five men and a S-2F Tracker antisubmarine warfare plane into the Atlantic. Only three men are rescued.

04/02/64: The Royal Navy frigate HMS **Nubian** is in a collision.

04/02/64: The USS **Harlan R. Dickson** (DD-708) runs aground a mile east of Deer Island Light off Boston, Massachusetts. The ship is refloated in two hours with damage to screws, the sonar dome, and plating.

04/04/64: The USS **General Simon B. Buckner** (AP-123) collides with a Liberian freighter in high winds in the

harbor at Upper Bay, New York.

04/16/64: The USS **Mission San Antonio** (AO-119) and a small South Korean fishing craft collide off the west coast of Korea in foggy weather. There is no damage to the tanker and five Koreans are rescued, but two are killed.

05/06/64: The USS **Lake Champlain** (CVS-39) and USS **Decatur** (DD-936) collide in the Atlantic 150 miles east of Cape Henry, Virginia. The **Decatur** sustains heavy damage to its superstructure, but there are no personnel injuries.

05/22/64: The Royal Navy destroyer HMS **Cavalier** is damaged in a collision.

06/03/64: The USS **Lake Champlain** (CVS-39) collides with the Norwegian freighter **Skauvaag** in the Chesapeake Bay. There are no injuries.

06/12/64: The USS **Bon Homme Richard** (CVA-31) suffers a major propulsion system casualty while participating in an exercise about 160 miles southwest of Sasebo, Japan. The casualty results in the loss of 50 percent propulsion capability.

06/12/64: The Royal Navy frigate HMS **Puma** suffers a fire.

06/13/64: Fire damages the hull of the USS **Haddock** (SSN-621) still under construction at Pascagoula, Mississippi. Captain John B. Guerry, supervisor of shipbuilding for the Navy, said no radioactive material was installed in the **Haddock**.

06/13/64: A fire slightly damages the USS **Randolph** (CVS-15) while the ship is in Norfolk, Virginia.

06/26/64: The Royal Navy destroyer HMS **Diamond** collides with the frigate HMS **Salisbury**.

06/28/64: The USS **Sea Leopard** (SS-483) suffers a fire in the forward

engine room during overhaul at the Norfolk Naval Shipyard, Virginia.

07/01/64: The USS **Henry Clay** (SSBN-625) runs aground on a shoal in the mouth of the James River and is pulled free an hour later by two tugs. The submarine was en route from Newport News, Virginia, across Hampton Roads to pick up Deputy Secretary of Defense Cyrus Vance in Norfolk, Virginia. No damage is reported.

07/26/64: A suddenly intensifying storm causes damage to three navy ships anchored in Buckner Bay, Okinawa. The USS **George Clymer** (APA-27) and the USS **Eldorado** (AGC-11) collide after dragging their anchors, and the USS **Weiss** (APD-135) is grounded when the anchor chain parts. There are no injuries.

08/15/64: The Royal Navy depot ship HMS **Tyne** experiences a flooded magazine.

09/05/64: The Royal Navy cruiser HMS **Lion** collides with the frigate HMS **Lowestoft**.

09/11/64: A rocket motor used to boost aircraft explodes aboard the USS **Constellation** (CVA-64) while the ship cruises in the South China Sea, killing one and injuring three.

09/12/64: Flooding damages the command ship USS **Wright** (CC-2), the National Emergency Command Post Afloat, including the steering compartments so that the ship has no rudder control and can only maneuver with the aid of tugs.

09/29/64: The USS **Franklin D. Roosevelt** (CVA-42) sustains damage to its Number 1 propeller during normal operations in the Mediterranean. The USS **Independence** (CVA-62) relieves the **Roosevelt** on Mediterranean duty and it returns to the U.S. to drydock.

09/29/64: An explosion aboard the USS **Sproston** (DD-577) in Pearl Harbor, Hawaii, is caused by a short circuit during work on an indicator light. The propellant in a rocket ignites and the magazine is flooded to prevent further damage. Three people are extensively burned.

10/08/64: Three U.S. Navy officers and three Filipino civilian workers are killed in an explosion and fire aboard the floating drydock AFDM-8 at Guam.

10/13/64: The Royal Navy aircraft carrier HMS **Ark Royal** suffers an electrical fire when an electrical circuit is tested, which in turn ignites some cardboard boxes in a storeroom, while the ship is in a Devonport, U.K., dockyard undergoing a refit.

10/15/64: The Royal Navy frigate HMS **Keppel** suffers damage.

11/03/64: The Canadian aircraft carrier **Bonaventure** suffers an explosion and fire in a refrigeration unit while the ship is undergoing refit in Saint John, New Brunswick, Canada, killing one dock worker and injuring four.

01/09/65: The USS **Ethan Allen** (SSBN-608) collides with the Norwegian freighter **Octavian** in the eastern Mediterranean while at periscope depth. The U.S. Department of Defense says "damage was negligible," no casualties occurred, and both the submarine and the freighter continued on their way after exchanging identification.

01/16/65: The USS **Whitehurst** (DE-634), a Naval Reserve Training Ship, collides with the Norwegian freighter **Hoyander** at the entrance of Vancouver harbor 2,500 yards west of the Lions Gate Bridge, British Columbia, Canada, in dense fog at night as both ships are leaving the harbor. Both ships are grounded and the **Whitehurst** is holed in the stern. The **Whitehurst** is refloated the next day.

02/27/65: A plane from the USS **Midway** (CVA-41) is inadvertently shot down by a USS **Preble** (DLG-15) missile when it overflies the missile range during southern California maneuvers for the "Silver Lance" exercise. The pilot is killed.

04/15/65: The USS **Ranger** (CVA-61) suffers an engine room fire off South Vietnam, killing one.

06/16/65: The USS **Hartley** (DE-1029) collides with the Norwegian merchantman **Blue Master** off Cape Henry, Virginia. Its engine room floods as a result and the **Hartley** is towed to Norfolk, Virginia, by the USS **Kiowa** (ATF-72).

06/20/65: The Royal Navy aircraft carrier HMS **Hermes** suffers damage to a number of gauges while the ship is undergoing a major refit at Devonport, U.K. Sabotage is suspected.

07/09/65: The Royal Navy diesel submarine HMS **Orpheus** is in a collision.

07/13/65: The USS **Medregal** (SS-480) collides with the Lebanese merchant ship **The Rodos** in the South China Sea suffering some damage in international waters 18 miles south of Hainan island. The U.S. Department of Defense says the submarine was on routine operations, but China claims the incident took place within its territorial waters.

07/14/65: The Royal Navy diesel submarine HMS **Tiptoe** collides with the frigate HMS **Yarmouth**.

07/17/65: The USS **Frank Knox** (DDR-742) runs aground on Pratas Reef in the South China Sea while underway to Taiwan. The ship is pulled free on 22 August.

07/21/65: The Royal Navy destroyer HMS **Devonshire** suffers an engine fault.

07/24/65: The fishing trawler **Snoopy** explodes apparently after snagging a torpedo off the North Carolina coast, killing eight.

08/26/65: The USS **Shangri-La** (CVA-38) and USS **Newman K. Perry** (DD-883) collide off Sardinia, killing one sailor and injuring another on the destroyer. The **Perry's** bow is crushed and twisted to starboard. Both are repaired at Naples and return to duty with the Sixth Fleet.

09/22/65: The United Kingdom announces that HMS **Dreadnought**, its first nuclear-powered submarine, will be withdrawn from service due to metal failures which involve hairline cracks in its internal bulkheads. The submarine returns to service on 2 February 1966 modifications are made to the hull.

10/12/65: The USS **Franklin D. Roosevelt** (CVA-42) and the French merchantman **Charles le Borgne** collide off southern France. The carrier sustains little damage and continues its participation in "Lafayette IX," a two-day bilateral U.S.-French exercise in the western Mediterranean. The merchantman sustains minor structural damage and proceeds under its own power to Marseilles escorted by the USS **Douglas H. Fox** (DD-779).

10/13/65: The USS **Barb** (SSN-596) and USS **Sargo** (SSN-583) collide while on maneuvers 15 miles west of Oahu, Hawaii. Minor damaged resulted to the forward end of one submarine and to the mast and sail of the other, but there were no injuries and both ships returned to port under their own power.

10/30/65: The Royal Navy aircraft carrier HMS **Ark Royal** suffers a fire in a boiler room, which causes considerable damage to wiring and other equipment and puts the ship out of operation for three weeks while the ship is undergoing routine overhaul in a Singapore dockyard.

12/05/65: At 2:50 p.m. local time, while the USS **Ticonderoga** (CVA-14) is en route from operations off Vietnam to Yokosuka, Japan, an A-4E aircraft of Attack Squadron 56 loaded with one B43 nuclear weapon goes overboard. The aircraft was being rolled from the Number 2 Hangar Bay to the Number 2 Elevator when it rolled off the elevator with the pilot Lieutenant Junior Grade D. M. Webster and the bomb and sank in 2700 fathoms of water. Searchers fail to find the pilot. The Department of Defense states this accident took place "more than 500 miles from land" when it reveals the accident in 1981. However Navy documents show the accident occurred about 80 miles east of the Japanese Ryukyu Island chain and 250 miles south of Kyushu Island, Japan, and about 200 miles east of Okinawa.

12/06/65: The USS **Bushnell** (AS-15) suffers a major fire in the Gulf of Mexico. The fire is extinguished with the aid of the USS **Penguin** (ASR-12).

12/07/65: Fire breaks out in a machinery room on the USS **Kitty Hawk** (CVA-63) in the South China Sea, killing two and injuring 28. An ammunition magazine is flooded as a precautionary measure.

12/13/65: An aircraft fuel tank ruptures on takeoff from the USS **Independence** (CVA-62) starting a fire 220 miles southeast of Norfolk, Virginia, injuring 15.

12/20/65: The Royal Navy nuclear-powered attack submarine HMS **Dreadnought** suffers a fire in its control room while undergoing repairs at Rosyth, Scotland. It is quickly put out by the crew.

12/31/65: Mid 1960s -- the New York Times (5/25/75) reports that at a mid-1960s briefing on a naval intelligence gathering operation, codenamed Holystone, a U.S. official is shown a photograph of the underside of a Soviet Echo class nuclear-powered submarine apparently taken inside

Vladivostok harbor. He recalls being told the submarine scraped the bottom of a Soviet Echo class submarine and knocked off some of its equipment during this mission. Briefing participants are told this happened at least two other times as well (see 5/25/75 entry).

01/14/66: The USS **General Daniel I. Sultan** (T-AP-120) suffers extensive hull damage and a ruptured fuel tank when it runs aground in shoal water west of Okinawa. No casualties are reported. The **Sultan** is refloated on 15 January.

01/19/66: An "actual nuclear incident" occurs when the nuclear warhead on a Terrier anti-air missile separates from the missile and drops about eight feet on the USS **Luce** (DLG-7) while the ship is docked at Mayport Naval Station, Florida. It is recorded "there were no personnel casualties, and aside from the dent in the warhead, no equipment was damaged."

01/22/66: The missile tracking ship USS **American Mariner** (AGM-12) runs aground off Cape Kennedy, Florida.

01/23/66: A U.S. Navy tank landing ship explodes while docked in Kawasaki, Japan, killing four Japanese workers.

01/27/66: The USS **Wasp** (CVS-18) is extensively damaged during a storm in the Caribbean.

02/04/66: The USS **Brinkley Bass** (DD-887) and USS **Waddell** (DDG-24) are heavily damaged in a collision while forming for operations in the Gulf of Tonkin.

03/11/66: The USS **Summit County** (LST-1146) runs aground while entering the inner harbor at Chu Lai, South Vietnam, puncturing the hull plating and flooding the main engine room.

03/23/66: The Royal Navy frigate HMS **Juno** suffers a fire.

04/05/66: The USS **Alamo** (LSD-33) and USS **Kawishiwi** (AO-146) collide during underway replenishment at sea.

05/21/66: The USS **Coral Sea** (CVA-43) and the USS **Iwo Jima** (LPH-2) brush briefly in San Diego, California, causing slight damage.

05/22/66: The Royal Navy survey ship HMS **Vidal** collides with the freighter **Hong Kong Fair** in the mid-Atlantic. Both are damaged, but stay afloat.

05/27/66: The USS **Mars** (AFS-1) is slightly damaged in a collision with the merchant ship **Seiwa Maru** in dense fog at the entrance to Tokyo Bay, Japan.

06/03/66: The Royal Navy frigate HMS **Galatea** is in a collision.

06/04/66: The USS **Banner** (AKL-25) collides with the Soviet vessel **Anemometer** in the Sea of Japan. Both ships suffer minor damage.

06/25/66: USS **Stalwart** (MSO-493) explodes, burns, capsizes, and sinks at a pier in San Juan, Puerto Rico. The minesweeper is later towed to Norfolk, Virginia.

06/29/66: The Royal Navy destroyer HMS **Cambrian**'s accidental firing on a Hong Kong village is investigated.

08/10/66: Cracks in welds are discovered in the Royal Navy nuclear-powered attack submarine HMS **Valiant** during the final stages of its construction at Barrow-in-Furness, U.K. British steel firms say the cracks do not represent a serious structural failure and are not dangerous to the vessel or its crew.

08/11/66: The Royal Navy cruiser HMS **Tiger** fires a dummy shell into a dock wall.

08/19/66: The USS **Raleigh** (LPD-1) bumps the cruise liner **France** at the Hudson River pier in New York City,

none are hurt.

08/30/66: The Royal Navy diesel submarine HMS **Rorqual** suffers an explosion off Mozambique while en route to Singapore, killing two and injuring 20.

09/01/66: The Royal Navy destroyer HMS **Devonshire** is in a collision.

09/14/66: The West German training diesel submarine **Hai** sinks in the North Sea in 140 feet of water 175 miles northwest of Wilhelmshaven, West Germany, during a storm, killing 19.

09/15/66: The HMS **Resolution**, the Royal Navy's first Polaris nuclear-powered ballistic missile submarine, is launched at Barrow-in-Furness, England. A week later cracks are reported to be found in the steel hull similar to cracks found in other nuclear submarines built in Britain. The cracks occur in thick steel welding. The Navy has known about the cracks ever since it was discovered that the original specification for steel for the submarines was not of high enough standard. The cracks do not mean the submarines will not go to sea, but if there are too many the metal will have to be rewelded. And, if cracks develop quicker than expected, Polaris submarines would require excessive amounts of welding when they come in for refits between patrols.

09/16/66: The Royal Navy destroyer HMS **Relentless** suffers a fire.

10/26/66: A major fire on the USS **Oriskany** (CVA-34) occurs while the carrier is operating off Vietnam. The fire starts when a crewman panics and throws a flare, which had accidentally ignited while being moved, into a storage locker located at the forward starboard corner of Hanger Bay 1. The locker contains some 650 other flares, which ignite in turn. The resulting fire takes three hours to control, kills 44, destroys or damages six aircraft, and puts the carrier out of

action for several months.

11/03/66: The USS **Tiru** (SS-416) runs aground on Frederick Reef in the Coral Sea and is freed on 6 November.

11/04/66: A flash fire occurs in a storage compartment containing oil and hydraulic fluid four decks below the hangar deck of the USS **Franklin D. Roosevelt** (CVA-42) while the ship is on station in the South China Sea, killing seven.

11/10/66: The USS **Nautilus** (SSN-571) collides with the USS **Essex** (CVS-9) while running submerged about 350 miles east of Morehead City, North Carolina, during underway replenishment exercises. Both ships return to port unassisted. The submarine receives extensive damage to its sail area and goes to New London, Connecticut. The carrier sustains an open hull cut in the bow area and proceeds to Norfolk, Virginia.

12/07/66: The USS **Manley** (DD-940) suffers an accidental shell explosion and small fire while in South Vietnam, injuring three.

12/30/66: The USS **Mahnomen County** (LST-912) runs aground at Chu Lai, South Vietnam. The ship is decommissioned and abandoned on 31 January 1967 after four weeks of unsuccessful salvage efforts.

12/31/66: According to raw CIA intelligence reports, around 1966, a leak occurs "in the reactor shielding of a [Soviet] nuclear submarine home based in Polyarnyy" on the Kola Peninsula. "As the submarine entered the port the captain requested permission to proceed directly to the shipyard. Permission was not granted but the captain took the vessel there nonetheless.... A 'special brigade' was formed to repair the submarine and part of the crew was sent to a special center on an island near Murmansk where naval personnel with radiation sickness were sent to be

treated.... Those sent to the island did not come back."

12/31/66: In the late 1960's (1966-67 according to some accounts), the Soviet nuclear-powered icebreaker **Lenin** experiences a reactor meltdown according to raw CIA intelligence reports, or at least a "nuclear related casualty" according to the U.S. Navy. The CIA reports suggest that up to 30 people may have died and many others were affected by radiation sickness. The ship is abandoned for over a year before work to replace the **Lenin's** three reactors with two begins.

12/31/66: According to raw CIA intelligence reports, the Soviet November class nuclear-powered attack submarine, **Leninskyj Komsomol**, burns near the North Pole sometime in 1966-68. "The accident involved crew members being burned inside a bulkhead that was locked from the outside on both sides. The fire was caused by a spark of oxygen and did not involve the propulsion unit." The submarine was saved. The submarine "was one of several submarines which reached the North Pole under ice. The expedition was publicized in the Soviet press at the time without mention of the incident."

01/03/67: The Royal Navy destroyer HMS **Caprice** suffers a breakdown.

01/10/67: The Royal Navy diesel submarine HMS **Amphion** is in a collision.

01/15/67: A U.S. Navy minesweeper is hit by the freighter **Muifinh** in Saigon harbor, South Vietnam, and sinks.

01/15/67: The South Korean destroyer-escort **Chungnam-Ho** and ferry **Hanil-Ho** collide off South Korea, sinking the ferry, killing at least 13, with over 60 missing.

01/27/67: The USS **Essex** (CVS-9) runs aground during training operations five miles off Puerto Rico.

02/02/67: The USS **McMorris** (DE-1036) and USS **Tombigbee** (AOG-11) collide during a training exercise 75 miles southeast of Honolulu, Hawaii, killing two and injuring seven.

02/04/67: The USS **Clamagore** (SS-343) collides with the catamaran **Mango** outside of San Juan harbor, Puerto Rico.

02/11/67: The Royal Navy diesel submarine HMS **Walrus** suffers a fire.

02/15/67: The Royal Navy diesel submarines HMS **Orpheus** and HMS **Opportune** collide at the entrance to Portsmouth harbor, U.K., in darkness and heavy weather.

03/09/67: A U.S. Navy river patrol boat is rammed by a British freighter and split in two in the Saigon channel, South Vietnam.

03/13/67: The Royal Navy destroyer HMS **London** suffers a fire.

03/17/67: A five-inch artillery shell accidentally explodes aboard the USS **Manley** (DD-940), causing a fire and injuring five off Da Nang, South Vietnam.

03/21/67: The USS **La Salle** (LPD-3) and the Israeli freighter **Deganya** are in a minor collision in fog off Cape Henry, Virginia.

03/24/67: The USS **Wasp** (CVS-18) and the USS **Salamonie** (AO-26) collide while refueling east of San Juan, Puerto Rico. No one was injured, but both ships took "moderate damage."

04/20/67: An explosion occurs in a gun mount aboard the USS **Bigelow** (DD-942) operating in the Vietnam area, injuring six.

05/10/67: During joint maneuvers of Japanese and U.S. fleets taking place in the Sea of Japan the Soviet Kotlin class

destroyer **Besslednyi** scrapes the USS **Walker** (DD-517) despite repeated warnings not to get too close. Both ships suffer minor damage.

05/10/67: The Royal Navy destroyer HMS **Hampshire** suffers an explosion.

05/11/67: For the second time in two days a Soviet destroyer and the USS **Walker** (DD-517) collide in the Sea of Japan. This second incident occurs when the Soviet destroyer "turned into and toward" the **Walker**, and, according to the U.S. Department of Defense announcement, the two ships "brushed together." The United States delivers what the Department of State describes as a severe protest over the incident, which again involved a Navy task force conducting antisubmarine warfare exercises.

05/26/67: The Royal Navy nuclear-powered attack submarine HMS **Warspite** suffers a water leak in one compartment while undergoing routine maintenance in Faslane, Scotland. The U.K. Ministry of Defense says the "defect is not connected in any way with her nuclear plant. Her damage is slight and there are no casualties. The leakage of water was brought quickly under control by **Warspite** herself."

05/28/67: A 750-lb. bomb explodes during a loading operation on a Vietnam-bound ship at the U.S. Navy ammunition shipping piers at Naval Weapons Station, Concord, Port Chicago, California.

06/01/67: In June the Royal Navy assault ship HMS **Intrepid** suffers an overheated starboard turbine, necessitating 12 weeks of repair in Devonport, U.K.

06/12/67: The USS **Repose** (AH-16) is superficially damaged and the USS **Tappahannock** (AO-43) is slightly damaged when they collide during routine underway replenishment operations off Vietnam.

06/16/67: The USS **Kitty Hawk** (CVA-63) collides with the USS **Platte** (AO-24) during refueling west of San Francisco, California.

06/21/67: The Royal Navy frigate HMS **Blackwood** is damaged by ice floes.

06/22/67: A steam line ruptures aboard the USS **Raleigh** (LPD-1) as it is being repaired while the ship is moored at Norfolk Naval Air Station, Virginia, killing two.

06/29/67: The USS **Coconino County** (LST-603) loses all propulsion and auxiliary power after suffering two underwater explosions while off-loading near Dong Ha, South Vietnam.

07/23/67: The USS **Greenling** (SSN-614) strikes a buoy off Hingham, Massachusetts. There is only minor damage and little interruption to training.

07/24/67: The Royal Navy inshore minesweeper HMS **Birdham** suffers a fire.

07/29/67: A Zuni rocket is inadvertently fired from one of several aircraft being readied for launch over Vietnam from the USS **Forrestal** (CVA-59). The rocket travels across the flight deck, strikes the fully-fueled drop tank of another aircraft, and explodes. The resulting fire kills 134, damages or destroys 63 aircraft, and puts the ship temporarily out of action.

08/31/67: The USS **Simon Bolivar** (SSBN-641) armed with 16 Polaris missiles collides with the target ship USS **Betelgeuse** (T-AK-260) when practicing a torpedo attack, 70 miles southeast of Charleston, South Carolina. No one is hurt, but the **Bolivar** suffers about \$1 million damage to its periscope and communications antennae. The **Betelgeuse** suffers a hole in its hull. The Navy tells a press conference that the missiles aboard the **Bolivar** were not armed and there was no danger of

explosion or nuclear radiation. The missiles were undamaged the Navy emphasizes. The **Bolivar** surfaces and the crew cuts away a 4-foot-high, 15-foot-long section of the conning tower so the submarine could proceed to port.

09/05/67: The USS **Corporal** (SS-346) collides with the racing sloop **Media IV** in Block Island Sound off Rhode Island. The sloop's owner claims the submarine rammed the sloop and left without offering aid. The Navy says the submarine was stopped dead when hit.

09/10/67: The USS **Wasp** (CVS-18) suffers a fire in the combat information center while in drydock at the South Boston Annex of the Boston Naval Shipyard, causing minor damage.

10/01/67: The Royal Navy assault ship HMS **Intrepid** sails for sea trials, but within 48 hours is forced to return to Devonport, U.K., when a leak develops in a steam pipe, taking five or six days to repair.

10/18/67: The Royal Navy assault ship HMS **Intrepid** suffers a fault in a valve in her main engines, taking several days to repair.

10/26/67: The USS **Lexington** (CVS-16) hits a wharf three times in docking in New Orleans, Louisiana.

10/27/67: The USS **Coral Sea** (CVA-43) suffers a rocket explosion while operating in the Tonkin Gulf, off Vietnam, injuring nine.

11/05/67: The Royal Navy nuclear-powered ballistic missile submarine HMS **Repulse** goes aground in Walney Channel, Barrow-in-Furness, U.K., 30 minutes after her launch at Vicker's shipyard. Seven tugs are required to pull her free. She then docks at the fitting-out berth in Devonshire Dock, Barrow, U.K.

11/12/67: The Royal Navy aircraft

carrier HMS **Victorious** suffers a fire while at drydock in Portsmouth, U.K., wrecking part of the chief petty officers' mess and killing one.

11/21/67: Navy ships arrive at the scene of the grounding of the USS **Clarke County** (LST-601) at Duc Pho, Vietnam, observing that the ship is now perpendicular to the beach with the bow directly into the sea and the stern anchored by two army tanks.

11/24/67: The Royal Navy aircraft carrier HMS **Victorious** suffers a fire, while in Portsmouth, U.K. It is confined to the tobacco store and damage is slight.

11/24/67: The U.S. nuclear-powered cargo ship **Savannah** springs a leak in its reactor auxiliary cooling system off New Jersey. The Atomic Energy Commission and the Maritime Administration say no radioactive materials escaped as a result of the leak. The ship returned to Hoboken, New Jersey, for repairs.

11/27/67: The Royal Navy destroyer HMS **Diamond** suffers a fire.

12/18/67: The USS **Kitty Hawk** (CVA-63) suffers a three-hour fire which was centered in an airplane tire stowage area while the ship is docked in Subic Bay, Philippines.

12/23/67: The USS **Kearsarge** (CVS-33) suffers a fire while docked in Sasebo, Japan, for the holidays, killing three and injuring two.

12/24/67: The USS **Guardfish** (SSN-612) runs aground on a reef in Pearl Harbor, Hawaii. The Navy says the vessel rested on a World War II bomb which turned out to be a sand-filled practice bomb.

12/25/67: The Observer (1/7/68) reports that speculation is circulating that a U.S. nuclear-powered ballistic missile submarine suffered serious damage during maneuvers in northern waters just before Christmas. The U.S. Navy

declines to confirm or deny the reports which come from unidentified sources at the U.S. Naval Base in Rota, Spain, due to security reasons. In London it was suggested the damage was caused by pressure changes during a deep dive.

12/26/67: The USS **Lynde McCormick** (DDG-8) suffers an explosion while in Sasebo, Japan, injuring two.

12/31/67: Before January 1968, the USS **Ronquil** (SS-396) reportedly narrowly avoids capture by Soviet naval forces while engaged in a Holystone intelligence gathering mission. The submarine caught fire near the Soviet coast and was surrounded by Soviet destroyers which attempted to force it to surface. The **Ronquil** eluded the Soviet ships and escaped to safety (also see 5/25/75 entry).

12/31/67: In 1967 a Soviet November class nuclear-powered attack submarine has a mishap in the Mediterranean believed to be related to its propulsion system. The submarine is towed.

01/09/68: The London Times reports that the Royal Navy nuclear-powered ballistic missile submarine HMS **Resolution** recently developed a defect in its electrical generator while on its final trials in the Atlantic before test missile firings at Cape Canaveral, Florida. On 8 January the submarine was on the surface sailing back to Faslane, Scotland, for repairs. U.K. officials said the repairs would not delay the **Resolution's** arrival at Cape Canaveral.

01/11/68: The French trawler **Fomalhaut** snags the Royal Navy diesel submarine HMS **Grampus** in its net in the English Channel. The **Grampus** surfaces and both crews spend more than three hours disentangling the nets.

01/13/68: The Royal Navy diesel submarine HMS **Alliance** runs aground and is stuck for three days on a rocky ledge off the Isle of Wight in the English

Channel.

01/22/68: The Israeli diesel submarine **Dakar** with 52 aboard disappears in the eastern Mediterranean 250 miles off Israel. The USS **Turner** (DDR-834), USS **Conyngham** (DDG-17), and USS **Charles H. Roan** (DD-853) are subsequently diverted to search for the missing submarine, but it is not found.

01/27/68: The French diesel submarine **Minerve** with 52 aboard sinks in the Mediterranean off Toulon.

01/30/68: The USS **Seawolf** (SSN-575) runs aground while submerged approximately 65 miles east of Cape Cod, Massachusetts, and damages its rudder. There are no injuries and the submarine returns to Groton, Connecticut, for repairs.

01/31/68: The USS **Rowan** (DD-782) is slightly damaged when it is struck by the Soviet merchant ship **Kapitan Visiobokov** in the Sea of Japan about 100 miles east of Pohang, South Korea. There are no casualties, but the destroyer suffers a three-foot hole above the waterline in the port bow.

02/01/68: Early 1968 (shortly after the **Pueblo** was seized on 22 January 1968) The USS **Sergeant Joseph E. Muller** (AG-171) loses power and drifts toward Cuban waters under emergency protection of combat air patrol. After several failures, the ship is towed to safety by its escorting destroyer.

02/06/68: The USS **Bache** (DD-470) drags anchor off Rhodes harbor, Greece, in hurricane force winds and runs aground on rocks, splitting the ship from stem to stern, but there are no serious injuries. On 17 February the ship suffers further damage in a two-day storm. The ship is so badly damaged, rather than refloated it is decommissioned on 26 February.

02/06/68: A U.S. Navy rescue ship sinks after being hit by an errant Bullpup

missile launched from an A-4 Skyhawk aircraft during firing exercises near Point Mugu, California. There are no injuries.

03/18/68: The USS **Theodore Roosevelt** (SSBN-600) runs aground while submerged off the coast of Scotland. There were no injuries, but the bow of the submarine is damaged.

04/09/68: The USS **Robert E. Lee** (SSBN-601) snags the nets of the French trawler **Lorraine-Bretagne** in the Irish Sea, causing the trawler to lose considerable amounts of fishing equipment. The submarine is undamaged.

04/11/68: A Soviet diesel-powered Golf class ballistic missile submarine sinks about 750 miles northwest of the island of Oahu, Hawaii, in about 16,000 feet of water, killing approximately 80. In late March 1975 numerous papers carry stories on the CIA's attempt, called "Project Jennifer," to raise the submarine in the summer of 1974 using the specially constructed **Glomar Explorer** deep-water salvage ship. Part of the submarine is raised on 4 July 1974. The submarine was carrying three nuclear-armed ballistic missiles and unnamed official sources are quoted as saying the evidence also suggests that nuclear-tipped torpedoes were on board.

04/13/68: The USS **Independence** (CVA-62) collides with the USS **Wrangell** (AE-12) off South Carolina during underway replenishment, damaging both ships slightly.

04/15/68: The USS **Scorpion** (SSN-589) collides with a barge during a storm in Naples harbor, Italy. The submarine was alongside the barge which was used as a buffer between the submarine and another U.S. warship. The barge and the **Scorpion's** stern came together and then the barge was swamped and went down. The **Scorpion** returned to Naples on 20 April and divers descending to untangle a fishing line from its propeller made a

partial inspection of its and reported no damage.

05/09/68: The USS **Guadalcanal** (LPH-7) is adrift off North Carolina due to a burned out bearing in the propulsion system.

05/27/68: The USS **Scorpion** (SSN-589) sinks about 400 miles southwest of the Azores, killing all 99 men on board. The U.S. Department of Defense reveals in 1981 that in the Spring of 1968 a nuclear weapons accident occurred in the Atlantic, the details of which remain classified. Despite the Pentagon's equivocation, this is taken to refer to the **Scorpion** and, nevertheless, it is generally known that two nuclear-armed ASTOR torpedoes were on board when the submarine sank.

06/03/68: Shells from the Royal Navy frigate HMS **Arethusa** fall into farmland.

06/12/68: The USS **Wasp** (CVS-18) and the USS **Truckee** (AO-147) are badly damaged in a collision during underway replenishment off the U.S. east coast.

06/13/68: The USS **Waldron** (DD-699) and the USS **Kiowa** (ATF-72) collide during operations off the U.S. east coast.

06/15/68: The USS **Cossatot** (AO-77), carrying 130,000 barrels of jet fuel, is badly damaged in a collision with the merchant ship **Copper State** in fog off Santa Cruz, California. The tanker loses 20 feet of its bow.

06/16/68: U.S. Air Force F-4 jets sink a U.S. patrol boat and attack the USS **Boston** (CAG-1) and the Australian destroyer **Hobart** near the demilitarized zone off Vietnam, mistaking the ships for low-flying enemy helicopters.

07/02/68: The Norfolk Ledger-Star reports that several months ago a U.S. nuclear-powered attack submarine collided with a Soviet submarine, causing severe damage to the U.S. vessel

which spent two months in Rota, Spain, for repair. The Navy declined to comment on the story by the paper's military correspondent who quoted a usually reliable source. The reporter noted that it is known that during recent months Soviet attack submarines have lain off overseas U.S. Polaris submarine ports, and that U.S. submarines have been given "wiping off" missions to prevent the Soviet submarines from following the Polaris boats. These missions apparently can get quite rough, amounting to what one officer says is "underwater chicken," with U.S. and Soviet submarines set on collision courses until the "chicken" turns away. "Presumably this is what happened" to the U.S. and Soviet submarines.

07/03/68: The Royal Navy survey vessel HMS **Fox** suffers a gas accident, killing one.

08/01/68: The USS **Caliente** (AO-53) runs aground on a mud bank while entering Auckland Harbor, New Zealand. The oiler is pulled clear with no hull damage.

08/09/68: The USS **Von Steuben** (SSBN-632) collides with the towed commercial tanker **Sealady** about 40 miles off the southern Spanish coast. The **Von Steuben** was submerged when struck or was struck by a submerged tow cable connecting a tug and the **Sealady**. The submarine surfaces immediately and then collides with the towed ship. The submarine sustains minor external damage to the superstructure and main deck.

08/15/68: Two small fires occur aboard the Royal Navy nuclear-powered attack submarine HMS **Valiant** while it is in dock at Chatham, U.K. Damage to the ship is slight and there are no casualties.

08/31/68: An East German naval vessel collides with a Swedish ferry and sinks off Denmark. Six East German sailors are reported missing.

09/08/68: The USS **Douglas H. Fox** (DD-779) suffers a fire en route to Charleston, South Carolina, killing two and injuring six.

09/13/68: A shell goes through the rigging of a trawler in Lyme Bay off Dorset, U.K., during Royal Navy gunnery practice.

10/19/68: The Royal Navy nuclear-powered attack submarine HMS **Warspite** is damaged by ice during exercises in the North Atlantic, suffering slight damage to its conning tower and superstructure. The Royal Navy says there was not risk of "radioactive leakage." The submarine returns to Faslane, Scotland, for repairs.

11/12/68: The Royal Navy diesel submarine HMS **Alliance** suffers a fire.

11/26/68: The USS **Hancock** (CVA-19) and the USS **Camden** (AOE-2) collide during underway replenishment off South Vietnam. There are no injuries but the Camden is slightly damaged.

12/30/68: An inquiry into an explosion aboard the Royal Navy destroyer HMS **Antrim** is held.

12/31/68: Late 1960s -- Reportedly a U.S. government official is briefed about a collision between a U.S. submarine engaged in a Holystone intelligence gathering mission and a North Vietnamese minesweeper in the Gulf of Tonkin. The minesweeper sinks within minutes (see 5/25/75 entry).

12/31/68: According to raw CIA intelligence reports, in 1968, a Soviet nuclear submarine sinks off Severomorsk on the Kola Peninsula, killing all 90 on board. The submarine was overdue from patrol, and after waiting one or two days authorities initiated a search. Divers found the submarine on the bottom of the estuary to the Kolskiy Zaliv. When the submarine was recovered it was determined that all food had been consumed and it was estimated the

submarine had been at the location for 30 days.

01/01/69: During the winter -- the French trawler **Belle Poule** catches the Royal Navy diesel submarine HMS **Porpoise** in its nets off the U.K. or France.

01/14/69: The USS **Enterprise** (CVAN-65) suffers explosions and a fire during its two-and-a-half-day Operational Readiness Inspection 70 miles southwest of Pearl Harbor, Hawaii, killing 28 and injuring 343. The fire starts when a tractor used to start aircraft is backed under the wing of a F-4 Phantom aircraft loaded with Zuni rockets. The tractor has a small jet engine mounted on its rear, the hot exhaust of which is put directly onto a Zuni rocket's warhead. In about a minute the warhead cooks off, spraying shrapnel over the flight deck, puncturing tanks and starting fires. The fires cause other Zuni rockets and 500-lb. bombs loaded on planes and piled on deck to cook off, exploding planes, blowing holes in the solid steel deck, and spilling aviation fuel from punctured fuel storage tanks. The captain of the ship recalls his concern over containing the fire to the aft part of the flight deck, since so little firefighting equipment was on the flight deck, commenting "If the fire had spread to the hangar deck, we could have very easily lost the ship." Despite the lack of equipment the fire is successfully contained and after three hours burns itself out, whereupon the ship proceeds back to Pearl Harbor. Damage includes 15 aircraft destroyed and 17 damaged.

01/22/69: The Royal Navy cruiser HMS **Blake** suffers a fire.

02/19/69: The USS **Chopper** (SS-342) plunges to the sea bottom after suffering a control casualty off Cuba on a routine training mission, injuring two and causing minor damage to the submarine.

05/10/69: The Swedish diesel submarine **Sjoebpjornen** hits the bottom after

diving too fast and suffers slight damage.

05/15/69: The USS **Guitarro** (SSN-665) undergoing final fitting-out at the San Francisco Bay Naval Shipyard at Vallejo, California, sinks in 35 feet of water next to the pier. No fissionable material is on board. The report of the U.S. Congress House Armed Services Subcommittee convened to investigate the accident charges culpable negligence on the part of shipyard workers responsible for the submarine: two civilian work crews pumped water into fore and aft sections of the boat; neither crew knowing what the other was doing.

05/25/69: The USS **King** (DLG-10) suffers a fire in the fireroom while operating off North Vietnam, killing four. The ship proceeds to the Philippines for repairs.

05/26/69: The Japanese fishing vessel **Tayo Maru** sinks after colliding with a Soviet patrol boat which was chasing it off the Kurile Islands, eight are rescued.

05/27/69: The Royal Navy cruiser HMS **Blake** suffers another fire.

06/01/69: The USS **Lowry** (DD-770) suffers a gun explosion during a training mission off Puerto Rico, killing one and injuring eight.

06/01/69: In June a Japanese freighter passing off De-Kastri in the Tartar Strait is severely hit and damaged by dozens of splinters from a Soviet missile, which the Japanese government later identifies as a Soviet SS-N-3 Shaddock cruise missile.

06/02/69: The USS **Frank E. Evans** (DD-754) collides with the Australian aircraft carrier **Melbourne** in the South China Sea approximately 650 miles southwest of Manila, cutting the destroyer in two. The bow section of the **Evans** sinks in about two minutes, killing 74, while the aft section of the **Evans** is quickly secured alongside the **Melbourne**. The collision occurred during the SEATO exercise "Sea Spirit."

06/12/69: The Royal Navy aircraft carrier HMS **Ark Royal** suffers a fire in a Devonport dockyard, U.K., while undergoing an extensive overhaul.

06/13/69: The Royal Navy diesel submarine HMS **Rorqual** bumps into the USS **Endurance** (MSO-435) while docking at River Point pier in Subic Bay, Philippines.

07/08/69: The USS **Cambria** (APA-36) and USS **Shadwell** (LSD-15) collide off Malta during a night exercise.

07/15/69: The USS **Forrestal** (CVA-59) suffers a small, localized fire while the ship is in the Norfolk Naval Shipyard, Virginia.

08/09/69: A Japanese fishing boat collides with a Soviet patrol boat off Hokkaido, killing 11. Japan rejects Soviet claims the fishing boat violated Soviet territorial waters.

08/22/69: The USS **Coral Sea** (CVA-43) collides with a tug and Navy barge in San Francisco Bay, California, injuring one barge crewman.

09/04/69: The USS **Dewey** (DLG-14) suffers an explosion and fire in the boiler room while preparing to sail from Toulon, France; killing three.

09/05/69: The French trawler **Pointe de Barfleur** catches the Royal Navy diesel submarine HMS **Onyx** in its nets about 20 miles north-northeast of Cherbourg in the English Channel. The trawler faced some resistance when it hauled up its nets. A flare was seen shooting up and then the submarine broke the surface. After some explanation the two boats went their way.

09/08/69: The USS **Lexington** (CVS-16) suffers a fire in a boiler room as the ship is in drydock in Boston, Massachusetts, injuring two.

09/08/69: The USS **Intrepid** (CVS-11)

runs aground off Jamestown, Rhode Island, but is freed after two hours.

10/13/69: The Royal Navy nuclear-powered ballistic missile submarine HMS **Renown** collides with the Irish motor vessel **Moyle** as it is surfacing during the night in the Mull of Kintyre off the west coast of Scotland. The U.K. Navy Department says damage was slight and at no time was there a risk of a nuclear explosion. There are no casualties. Apparently the **Renown** was carrying out work-up trials preparatory to going on its first operational cruise in a few weeks, but was not carrying any missiles.

10/30/69: The Royal Navy destroyer HMS **Glamorgan** fires a missile which lands near a farm, causing damage.

10/31/69: Fall 1969 -- reportedly 18 months prior to 31 March 1971 -- a U.S. submarine engaged in Holystone intelligence gathering operations is beached for about two hours off the Soviet Union's coast, creating concern in the U.S. National Security Council because of the possibility of an international incident if the submarine is discovered (see 3/31/71 and 5/25/75 entries).

11/10/69: An unarmed torpedo fired from a Royal Navy submarine on exercise narrowly misses the Clyde ferry **Countess of Breadalbane** in the Loch Long, Scotland. The U.K. Ministry of Defense says the torpedo's mechanism went wrong after being fired correctly on course.

11/14/69: The New York Times (7/6/75) reports the USS **Gato** (SSN-615) collides with a Soviet submarine the night of the 14 or 15 of November 15 to 25 miles from the entrance of the White Sea in the Barents Sea. A crewmember is quoted as saying the **Gato** was struck in the heavy plating that serves as a protective shield around the nuclear reactor, but the ship sustained no serious damage. However the ship's weapons

officer immediately ran down two decks and prepared for orders to arm a nuclear-armed SUBROC antisubmarine warfare missile and three nuclear-armed torpedoes. The accident reportedly occurred during a Holystone operation (see 5/25/75). According to former **Gato** crewmembers their commanding officer was ordered to prepare false reports showing the submarine had suffered a breakdown and halted its patrol two days prior to the collision. The **Gato's** commanding officer refused to comment when he was contacted due to security reasons.

11/14/69: The Royal Navy diesel submarine HMS **Otter** strikes a 20-foot wooden ferry in the Manchester Ship Canal, U.K. The two passengers in the ferry jump into the water when they see the outline of the submarine bearing down on them. The submarine strikes the ferry a light blow, slightly damaging the ferry. The men swim safely to shore. The **Otter** was one of four submarines on a four-day goodwill visit to Manchester.

12/12/69: The USS **Parsons** (DD-949) collides with the Filipino fishing boat **Orient** off southern California. The **Orient** sinks but its crew is rescued.

12/27/69: The ammunition aboard the merchant ship **Badger State** comes loose and explodes when a big wave throws the ship on its side 1,500 miles northeast of Hawaii as it is en route to Vietnam with a cargo of ordnance; 26 are dead or missing. The ship is rocked by explosions and fire for a week, leading the Navy to abandon salvage plans. The ship subsequently is sunk with gunfire.

01/10/70: The Royal Navy nuclear-powered attack submarine HMS **Dreadnought** encounters serious problems at the Rosyth, Scotland, dockyard during the first nuclear reactor refueling at a British yard, delaying the completion of the refit for at least ten months.

01/10/70: A Soviet Foxtrot class diesel-powered submarine loses 20 feet of its bow section in a collision somewhere in the Mediterranean in January. Reports variously attribute the accident to a collision with another Soviet naval vessel or with the Italian liner **Angelina Laura** near the Bay of Naples. The damaged submarine was anchored off Morocco in early February and departed into the Atlantic with an escort on 7 February.

01/10/70: The USS **Shangri-La** (CVA-38) suffers a fire during training off Jacksonville, Florida, when an A-4 Skyhawk aircraft parked on the flight deck ignites, killing one.

01/17/70: The USS **Volador** (SS-490) and the Japanese freighter **Miyahime Maru** are lightly damaged in a collision at the mouth of Tokyo Bay, Japan.

01/21/70: The USS **Yancey** (AKA-93) is driven through a section of the Chesapeake Bay Bridge-Tunnel by strong winds, which tore it from its anchorage near Hampton Roads, Virginia. No injuries are reported on the ship or on the roadway, but the roadway is closed to traffic.

01/29/70: The USS **Nathanael Greene** (SSBN-636) is grounded for seven hours in thick fog in Charleston harbor, South Carolina. The Navy closes the harbor while the submarine is refloated. Officials will not say whether any Polaris missiles are on board, but a Navy spokesman says there appears to be no danger of nuclear leakage or reactor damage. The next day the Navy says the ship suffered no damage.

02/10/70: A Bullpup missile aboard the USS **Bon Homme Richard** (CVA-31) cracks and leaks toxic gases and liquids when its pneumatic hoist fails and drops it on the deck of the weapons magazine while the ship is berthed at Naval Station North Island in San Diego, California. A Navy spokesman says the missile is capable of carrying a nuclear warhead

but was not believed to be armed at the time. Two hundred crewmembers are evacuated from the surrounding areas and the rest of the 3500-person crew stands by to take the ship to sea if necessary as a precaution. The broken rocket motor is safely lifted out of the ship and transferred to the dock.

02/10/70: The USS **Semmes** (DDG-18) is heavily damaged and the USS **Samuel B. Roberts** (DD-823), USS **Charles F. Adams** (DDG-2), and USS **Yellowstone** (AD-27) are slightly damaged when a Greek freighter sideswipes the four ships in Naples harbor, Italy.

02/10/70: Coincidentally, minutes before the Bullpup missile drops in a starboard magazine, an electrical fire breaks out in a port side magazine aboard the USS **Bon Homme Richard** (CVA-31) while the ship is docked at Naval Air Station North Island, San Diego, California.

02/11/70: The Royal Navy diesel submarine HMS **Auriga** suffers a battery explosion while submerged in the Gibraltar area during NATO exercises. Ten people are injured, but the vessel surfaces safely and returns to port.

02/13/70: The USS **Point Defiance** (LSD-31) and USS **Ponchatoula** (AO-148) are slightly damaged in a collision during refueling operations north of Hawaii, injuring three.

03/04/70: The French diesel submarine **Eurydice** explodes and sinks during dive 35 miles east of Toulon, killing all 57 crewmen on board.

03/19/70: The USS **Orleck** (DD-886) collides with the USS **Neches** (AO-47) during underway replenishment off the coast of Vietnam. The **Neches** loses its starboard side replenishment capability.

03/20/70: The USS **McKean** (DD-784) and the USS **Cacapon** (AO-52) sustain minor damage in a collision during underway replenishment off Okinawa.

04/12/70: A Soviet November class nuclear-powered submarine sinks in the Atlantic Ocean approximately 300 miles northwest of Spain. On 11 April the submarine is sighted dead in the water with personnel on deck trying to rig a tow line to two accompanying Soviet ships. By the morning of 12 April U.S. Navy P-3 patrol planes find only two oil slicks on the surface where the submarine had been, and the submarine is considered lost at sea. The accident is believed to be related to a problem in the nuclear propulsion system. After the sinking Soviet survey vessels reportedly guard the area almost continuously for six months. Thereafter routine patrols are conducted until 1979, after which only occasional visits are made.

04/20/70: The Royal Navy frigate HMS **Plymouth** collides with the French frigate **Enseigne de Vaiseau Henry**.

05/19/70: An inquiry is held into a fire aboard the Royal Navy minelayer HMS **Manxman**.

05/28/70: The USS **Daniel Boone** (SSBN-629) proceeding on its initial sea trials collides with the Philippine merchant ship **President Quezon** off Cape Henry, Virginia. The submarine incurs minor damage, but the **President Quezon** receives extensive damage to her bow.

05/31/70: The West German destroyer **Bayern** suffers a gas explosion in an empty munitions storeroom, ripping a hole in the side of the ship, killing one and injuring two.

06/01/70: The Royal Navy oiler HMS **Ennerdale** sinks after running aground in the Seychelles.

06/13/70: The USS **Little Rock** (CLG-4) is in a minor collision with the Greek destroyer **Lonzhi** in the Gulf of Laconia off Greece during the NATO exercise "Dawn Patrol 70."

06/18/70: The USS **Eugene A. Greene**

(DD-711) and the USS **Waccamaw** (AO-109) are in a minor collision in the eastern Mediterranean during refueling operations.

07/08/70: An inquiry is held into the fire aboard the Royal Navy aircraft carrier HMS **Eagle**.

07/17/70: A sailor is found guilty of causing a power failure aboard the Royal Navy frigate HMS **Ajax** .

07/25/70: A fitter at the Chatham Naval Dockyard, U.K., working on the Royal Navy nuclear-powered attack submarine HMS **Valiant** receives a radiation dosage when he accidentally inhales radioactive material. According to the Ministry of Defense, the fitter "feels no ill effects and seems to be well," but is banned for a year from further work involving radioactivity.

07/30/70: Suspected sabotage to the main gearbox of the Royal Navy nuclear-powered attack submarine HMS **Conqueror** in the final stages of completion at the Cammel Laird shipyard Birkenhead, U.K., is under investigation. The shipyard says the damaged gearbox does not affect nuclear safety as it is separated from the reactor compartment.

08/04/70: The USS **Rogers** (DD-876) collides with a Singapore-bound commercial tug in the South China Sea. There are no injuries.

08/19/70: A Soviet vessel reportedly equipped with electronic surveillance gear capsizes in the North Sea, near where NATO ships are maneuvering as part of exercise "Minflotex 70." Before the NATO ships could come to its aid, a Soviet tug took in her in tow. The ship sinks in heavy seas on 25 August.

08/20/70: The French diesel submarine **Galatee** and the South African diesel submarine **Maria von Riebeeck** collide on the surface off Toulon, France, killing four.

09/11/70: The Royal Navy nuclear-powered attack submarine HMS **Dreadnought** suffers an air pipe fault, delaying its sea trials.

09/18/70: The Royal Navy coastal minesweeper HMS **Wolverton** collides with a yacht on which a family was spending its holiday, sinking the yacht at its moorings in Great Yarmouth harbor, U.K. The family leaves the yacht safely.

10/01/70: The Royal Navy aircraft carrier HMS **Ark Royal** suffers faults to its flight-deck machinery and has to return to Devonport, U.K., for unscheduled repairs.

10/14/70: The Royal Navy aircraft carrier HMS **Eagle** is sent into drydock after a collision.

11/04/70: A boiler room explosion occurs aboard the USS **Goldsborough** (DDG-20) six hours out of Taiwan, killing two and injuring four.

11/09/70: A Soviet Kotlin class destroyer and the Royal Navy aircraft carrier HMS **Ark Royal** collide in the eastern Mediterranean. The **Ark Royal** is only slightly damaged, while the Soviet ship is badly scraped along her port side.

11/14/70: The USS **Seawolf** (SSN-575) suffers a breakdown in the engine room main drain south of Guantanamo Bay, Cuba, en route to the Pacific. It surfaces dead in the water and asks for assistance. The USS **Blandy** (DD-943) gets underway to rendezvous and escort or tow the submarine. The next day the submarine is able to correct the problem itself and gets underway on its own power for Guantanamo.

11/16/70: The Royal Navy destroyer HMS **Fife** catches fire during "Lime Jug 70" exercises.

11/21/70: The Royal Navy frigate HMS **Ulster** is damaged by hitting a Swansea,

U.K., quay.

11/28/70: The USS **Sylvania** (AFS-2) and the USS **Concord** (AFS-5) are slightly damaged in a collision in Rota, Spain, when the **Sylvania** attempts under pilot to moor alongside the **Concord**.

11/29/70: Fire breaks out in a baggage storeroom in the stern of the submarine tender USS **Canopus** (AS-34) while it is in the Holy Loch submarine base, Scotland. The Daily Telegraph reports that it was carrying nuclear-armed missiles and that two U.S. nuclear-powered ballistic missile submarines, the **Francis Scott Key** (SSBN-657) and **James K. Polk** (SSBN-645), were moored alongside. The **Francis Scott Key** cast off, but the **Polk** remained alongside. U.S. naval authorities in Holy Loch and London dismiss any suggestion that a nuclear explosion aboard the **Canopus** could have occurred or that "even a remote danger" from missiles or other materials existed. "We have drills and precautions which rule out any danger whatsoever," the London spokesman says. There are precautions against every eventuality in Holy Loch." The fire was brought under control after four hours. Three men were killed and the cause of the fire was unknown. U.S. Navy documents record that "damage was extensive in the small area in which the fire was contained," but "repairs were effected on site and **Canopus** was never 'off the line'".

01/01/71: The USS **Sphinx** (ARL-24) loses power about 120 nautical miles northwest of Okinawa.

01/15/71: U.S. Navy barge loaded with diesel fuel sinks off Puerto Rico and spreads a mile-long oil slick.

01/19/71: The USS **Roark** (DE-1053) is badly damaged by an engine room fire in the western Pacific. The ship is taken in tow by the USS **Towers** (DDG-9) toward Midway Island from whence it will be towed to Pearl Harbor.

01/20/71: The USS **Wasp** (CVS-18) and USS **Chukawan** (AO-100) collide while refueling southwest of Bermuda.

01/24/71: The USS **Hammer** (DD-718) and USS **Camden** (AOE-2) collide during underway replenishment in the Gulf of Tonkin.

02/02/71: The French nuclear-powered ballistic missile submarine **Redoutable** collides with a fishing trawler off Brest, France. The trawler is holed, but the crew is safely picked up by a French navy escort vessel.

02/03/71: The Royal Navy diesel submarine HMS **Opportune** collides with an unidentified merchant vessel in the English Channel while running submerged, receiving slight superstructure damage.

02/12/71: The USS **Great Sitkin** (AE-17) arrives under tow at Roosevelt Roads, Puerto Rico, having lost power off the Virgin Islands when four spring bearings wiped. Sabotage is suspected.

02/19/71: Water breaks into the French diesel submarine **Flore** when a valve of the snorkel device malfunctions as the submarine cruises submerged at a depth of 15 to 20 feet off Toulon. The submarine surfaces, but water had damaged its electrical circuits, and the engines could not be started. The submarine is slowly towed to Toulon through rough seas.

03/01/71: In March the USS **Detroit** (AOE-4) collides with a Navy oiler 70 miles off the South Carolina coast. Damage was slight.

03/26/71: The Royal Navy aircraft carrier HMS **Albion** suffers a fault in a drive shaft bearing and returns to Portsmouth, U.K., for repairs.

03/31/71: The New York Times reports that a U.S. Navy Sturgeon class nuclear-powered attack submarine collides with a Soviet submarine 17

nautical miles off the coast of the Soviet Union while on a secret reconnaissance mission as part of the Holystone submarine intelligence gathering operations (see 5/25/75 entry).

04/03/71: The Royal Navy nuclear-powered attack submarine HMS **Conqueror** suffers flooding due to a failure of material while in a fitting-out basin in Cammel Laird shipyard, Birkenhead, U.K., over the weekend. Firemen and yardworkers spend about 17 hours pumping seven feet of water out of the submarine.

04/21/71: A fire of electrical origin and short duration occurs aboard the USS **John F. Kennedy** (CVA-67) in the Virginia Capes area.

05/01/71: The Royal Navy destroyer HMS **Sheffield** suffers an explosion as it is fitting out, killing several workmen.

05/06/71: The USS **Bigelow** (DD-942) suffers a possible momentary grounding while en route to an anchorage in Aarhus Bay, Denmark, causing minor damage.

05/06/71: The USS **Hanson** (DD-832) collides with the Soviet fleet tug **Diomid** in the Korean Straits, causing minor damage but no injuries. The **Hanson** conjectures the accident was caused by a deliberate attempt by the tug (with an icebreaker bow) to ram the **Hanson**. A sliding collision, however, was the only result.

05/08/71: A Nationalist Chinese fishing boat sinks off Kaohsiung, Taiwan, when it attempts to pass between the tug USS **Molala** (ATF-106) and its tow ARD-22, striking first the bridle and then the bow of the ARD.

06/07/71: The French escort ship **Surcouf** and the Soviet tanker **Busharov** collide in the Mediterranean 60 miles south of Cartagena, Spain, at night, cutting the **Surcouf** in half and killing nine. The front half sinks, but the stern section is taken in tow by the French

destroyer **Tartu**.

06/28/71: The casing of a valve ruptures filling the engine spaces with steam aboard the USS **Trenton** (LPD-14) while the ship is undergoing shakedown training in the Guantanamo Bay, Cuba, operating area, killing four and seriously injuring seven.

07/01/71: The Royal Navy diesel submarine HMS **Artemis** sinks without warning while moored in 30 feet of water at Gosport, England.

07/10/71: The USS **Constellation** (CVA-64) suffers a one-hour machinery room fire while moored at San Diego, California.

07/16/71: An unidentified U.S. Navy ship spills 40,000 gallons of oil off New York, subsequently contaminating the waterfronts of Coney Island and Staten Island, New York.

07/27/71: The USS **Harlan R. Dickson** (DD-708) runs aground off Cape Cod Canal, Massachusetts, after a mechanical failure, but is freed the next day.

08/15/71: The USS **Saratoga** (CVA-60) suffers flooding in an engine room while anchored off Athens, Greece.

08/17/71: The USS **Regulus** (AF-57) is severely damaged when, struck by typhoon Rose, it is torn from its moorings and tossed aground on Kau Yi Chau Island near Hong Kong.

08/20/71: The USS **Saratoga** (CVA-60) suffers another engine room flood shortly after leaving Athens, Greece, where repair from a similar flood of 15 August just was completed.

09/08/71: The Royal Navy diesel submarine HMS **Odin** suffers a fire.

09/26/71: The USS **Holder** (DD-819) runs aground momentarily in Vieques Passage off Puerto Rico. There is no damage.

09/30/71: The Royal Navy diesel submarine HMS **Alliance** suffers a hydrogen buildup and explosion in a battery compartment due to a faulty ventilation system while in Portsmouth, U.K., killing one and injuring 14.

10/11/71: The USS **Talbot** (DEG-4) suffers an engineering casualty and is towed by the USS **Skylark** (ASR-20) to Newport, Rhode Island.

10/15/71: In mid-October the Royal Navy aircraft carrier HMS **Ark Royal** suffers a fire while in Portsmouth, U.K.

10/21/71: The Royal Navy aircraft carrier HMS **Ark Royal** suffers a second fire while in Portsmouth, U.K., taking six hours to control.

10/26/71: The Japanese fishing boat **Minato Maru** collides with an unidentified submarine in the Sea of Japan about 300 miles northwest of Niigata, Japan.

10/30/71: The USS **Benjamin Stoddert** (DDG-22) suffers a four-and-one-half hour fire in the motor generator set room while undergoing overhaul at Pearl Harbor, Hawaii.

10/31/71: The USS **Niagara Falls** (AFS-3) is slightly damaged by a main deck fire while moored at Hong Kong. The fire is later determined to be caused by arson.

11/01/71: The USS **Hardhead** (SS-365) suffers minor structural damage when it is struck by an Italian ferry in the Straits of Messina, off Italy.

12/29/71: The USS **Dace** (SSN-607) inadvertently discharges 500 gallons of water used as coolant for its nuclear reactor into the Thames River at New London, Connecticut, during a routine water transfer between the submarine and the USS **Fulton** (AS-11). The Navy says measurements in the area showed "no increase in radioactivity of the

environment" on the following day and claims the coolant contains a "very small amount of radioactivity." Navy sources at the Pentagon acknowledge there have been a "a few" leakages at the base during such transfers in the past, although none were disclosed, but also none were of sufficient size to endanger anybody. Reportedly the Navy disclosed this accident only when rumors of a nuclear incident started circulating in New London.

12/31/71: On two occasions in 1971 defective U.S. nuclear-powered ballistic missile submarine distress buoys accidentally shot to the surface signalling the submarines had been sunk by enemy action and each set off "a massive U.S. alert," raising the "threat of accidental war." A spokesman for the Pentagon admitted there had been two involuntary releases in 1971, one in the Mediterranean and one in the North Atlantic. But in each case, he said, the submarine informed its home base immediately and "There was no alert of any kind." One release was due to a mechanical problem and one to a human error. The Navy said technical corrections had been made since 1971 to prevent a recurrence of the accidental launchings.

01/16/72: The USS **Albert David** (DE-1050) collides with a North Vietnamese junk in the Gulf of Tonkin and two people from the junk are lost.

01/24/72: The USS **Sea Horse** (SSN-669) is grounded for two hours while outbound from Charleston, South Carolina.

02/01/72: In February the Royal Navy diesel submarine HMS **Alliance's** engine room begins to flood while the ship is submerged during a trial dive off Plymouth, U.K., in the English Channel. The submarine touches the seabed at 122 feet after diving too steeply due to incorrect trimming in response to the flooding. The **Alliance** leaves the bottom after bouncing off the seabed.

02/07/72: The USS **Wahoo** (SS-565) sustains damage to its starboard shaft when it collides with Queens Pier in Hong Kong after being carried by a tidal current.

02/19/72: The hull of the USS **Preserver** (ARS-8) is cracked in three places when it strikes a rock while entering Portsmouth, New Hampshire, harbor during stormy weather.

02/23/72: The USS **Shreveport** (LPD-12) and USS **Nashville** (LPD-13) are slightly damaged in a collision during exercises in the Caribbean.

02/24/72: A U.S. Navy P-3 Orion patrol plane sights a Soviet Hotel II class nuclear-powered ballistic missile submarine on the surface 600 miles northeast of Newfoundland. The submarine had an apparent nuclear propulsion problem which resulted in the loss of all power. Several deaths are thought to have occurred. The next day the U.S. Coast Guard cutter **Boutwell** sights the disabled submarine in company with five Soviet ships. An offer of assistance by the **Boutwell** receives no reply. The Soviet ships start back to the submarine's home base through heavy, stormy seas. On 18 March the submarine is still slowly moving across the north Atlantic now accompanied by nine Soviet ships and the U.S. Coast Guard cutter **Gallatin**. On 5 April, the West German Navy reports the submarine had reached its home waters in the White Sea.

02/25/72: The USS **Beacon** (PG-99) suffers a large hole and an engine room flood after colliding with the Dutch fishing ship **Syriname** east of Cape Maisi, Cuba, and is towed to Guantanamo Bay.

03/15/72: The USS **Joseph Hewes** (DE-1078) loses power about 600 miles east of Jacksonville, Florida, when a main engine line shaft bearing breaks in stormy seas.

03/16/72: The U.S. Navy reports the rare sighting of a Soviet Yankee class nuclear-powered ballistic missile submarine on the surface northeast of Iceland. It was not clear whether the submarine was in difficulty.

04/11/72: The USS **Benjamin Franklin** (SSBN-640) collides with and sinks a tugboat at the General Dynamics Electric Boat Division docks at Groton, Connecticut. The submarine, being overhauled at the shipyard, was not damaged.

04/16/72: Two antiradiation missiles inadvertently fired by a U.S. support aircraft explode near the USS **Worden** (DLG-18) while the ship operates off Vietnam, killing one, injuring nine, and putting the ship out of action. The ship proceeds to Subic Bay, Philippines for ten days of repairs.

06/28/72: The USS **Oriskany** (CVA-34) and USS **Nitro** (AE-23) are in a minor collision during underway replenishment 150 nautical miles east of Da Nang, South Vietnam.

07/06/72: The USS **Guadalupe** (AO-32) sustains damage to its bow, bridge, and fueling probe in a collision with the USS **Alamo** (LSD-33) 30 miles north of Da Nang, South Vietnam, during underway replenishment when the **Alamo's** rudder jams hard left and does not respond.

07/10/72: The computer system of the USS **Forrestal** (CVA-59) is damaged by a fire determined to have been caused by arson while in Norfolk, Virginia.

07/19/72: Damage to the reduction gears of the USS **Ranger** (CVA-61) while in San Diego, California, is determined to have been caused by sabotage.

07/20/72: The USS **Oriskany** (CVA-34) loses a propeller and a section of the propeller's tail shaft while operating in the Pacific, thus limiting the

carrier to three engines.

07/20/72: A sailor who is said to have started fires aboard the Royal Navy frigate HMS **Puma** because the first lieutenant got on his nerves, is sentenced by a Portsmouth, U.K., court-martial.

08/16/72: The Royal Navy diesel submarine HMS **Onyx** suffers a fire started by chemicals while undergoing refit at a Portsmouth, U.K., dockyard, causing slight damage.

10/01/72: The USS **Newport News** (CA-148) suffers an accidental explosion in a gun turret while operating off Vietnam, killing 19, injuring ten (one mortally) and putting the ship out operation.

10/05/72: The USS **Mizar** (T-AGOR-11) and the U.S. Coast Guard cutter **Edisto** collide about 720 miles north of Iceland in the Greenland Sea, as the **Edisto** tows the disabled **Mizar**. Both are disabled and are in danger of being beset by ice.

10/06/72: The USS **Tullibee** (SSN-597) collides with the West German freighter **Hagen** as it is cruising just beneath the surface about 150 nautical miles east of Cape Hatteras, North Carolina, during stormy weather, causing slight damage to the submarine. The collision did not impair the operations of either ship.

10/11/72: The French diesel submarine **La Sirene** sinks at its moorings after emergency bulkheads fail to prevent an inrush of water through an open torpedo tube, no reported injuries.

10/22/72: The USS **Silas Bent** (T-AGS-26) is badly damaged by fire while conducting surveillance off the South Korean coast. There are no casualties and the ship returns to Pusan under its own power.

10/25/72: The USS **Snook** (SSN-592) is slightly damaged when it strikes bottom in Dabob Bay, Washington, while on a

celebration run. The submarine surfaced without any problems.

10/29/72: The USS **Saratoga** (CVA-60) suffers a machine room fire while in port at Singapore, killing three.

10/30/72: The USS **Florikan** (ASR-9) suffers a fire in a forward hold, killing one and injuring another.

10/31/72: While the USS **Mississinewa** (AO-144) is getting underway, sabotage is discovered in the ship's boiler system which is shut down before damage is incurred.

11/03/72: A flash fire in the after fire room of the USS **Henderson** (DD-785) puts the Number 4 boiler out of commission. However, the ship continues operations off southern California.

11/12/72: The USS **Kretchmer** (DER-329) while crossing the Atlantic is forced to divert to Ponta Delgado, Azores, after suffering a series of material casualties.

11/14/72: The Royal Navy frigate HMS **Russell** is damaged in a gale.

11/15/72: The USS **Preserver** (ARS-8) completes a month-long trans-Atlantic tow of the USS **Brumby** (DE-1044) from Greenock, Scotland, to Charleston, South Carolina, after the **Brumby** suffers damage to its steam generators.

12/01/72: According to raw CIA intelligence reports, in December a Soviet nuclear-powered submarine from the Northern Fleet suffers a nuclear radiation accident while on patrol off the eastern coast of North America. The accident involved leakage from a nuclear-armed torpedo in the Mine-Torpedo Department in the forward section of the submarine. Reportedly, "Doors were immediately secured in accordance with regulations and some crew members were trapped within the space where the nuclear

radiation leakage occurred."

12/02/72: The USS **Proteus** (AS-19) experiences a blast in a boiler room while in Pearl Harbor, Hawaii, suffering only slight damage.

12/13/72: The USS **Ranger** (CVA-61) suffers a fire in the main machinery room while the ship operates off Vietnam. The fire takes two hours to control.

12/31/72: According to raw CIA intelligence reports, probably in December 1972 or January 1973 an undetermined accident during Soviet naval operations cripples a Soviet nuclear-powered submarine in the Atlantic. Reportedly, the submarine is towed "at a speed of two to three knots" for six weeks to Severomorsk on the Kola Peninsula, arriving in February 1973. Also, "The crew members trapped in the forward space initially consumed dry rations that were permanently stored in the compartment and later they received food through a small opening from the weather deck. Upon arrival at Severomorsk, crew members were permitted to debark the submarine. Several men died shortly after the accident, others later.... The majority of the submarine crew members suffered from some form of radiation sickness."

01/05/73: The USS **Henry B. Wilson** (DDG-7) while outside Saigon, South Vietnam, suffers an in-bore premature explosion in Mount 51 which destroys a foot of the barrel and injures two crewmen.

01/21/73: The USS **Cascade** (AD-16) experiences flooding and small fires in port at Sigonella, Italy. Sabotage is suspected.

01/22/73: The USS **Batfish** (SSN-681) suffers bottom damage after running hard aground at Charleston, South Carolina, while proceeding to sea. The submarine is pulled free by tugs and returns to the dock.

01/23/73: The Royal Navy fleet auxiliary **Scarab** collides with the Cleddau King ferry at Neyland, Pembrokeshire, Wales. An engineer on the ferry, which crosses the Cleddau River, is hurt when the impact threw him against the engines.

01/23/73: The Royal Navy frigate HMS **Scylla** collides with a Tamas River ferry between Plymouth and Torpoint in the river. The ferry's hull is split near the bows, leaving a three-foot-wide gash from handrail to waterline. The frigate continued down river for the sea.

01/23/73: The Royal Navy frigates HMS **Russell** and HMS **Hardy** collide with minor damage in Portsmouth harbor, U.K. as they maneuver for a formation departure. Both continued to their exercise area.

01/27/73: The USS **Jason** (AR-8) suffers minor damage when struck by the Japanese cargo ship **Koro Maru** while en route from Sasebo, Japan, to Keelung, Taiwan.

02/04/73: The USS **Tolovana** (AO-64) is slightly damaged by a fire apparently of electrical origin while in port at Subic Bay, Philippines.

02/05/73: The USS **Basilone** (DD-824) suffers a boiler room explosion during training 120 miles southeast of New York City, killing seven.

02/07/73: An explosion of fuel leaking from a broken pipe sets off an engine room fire on the USS **Agerholm** (DD-826) while the ship is off San Diego, California, killing three.

02/10/73: The USS **Fairfax County** (LST-1193) is holed by an uncharted reef during amphibious exercises off Carbonaras, Spain, but is able to continue participation.

02/23/73: The USS **Franklin D. Roosevelt** (CVA-42) suffers minor damage from a brief fire in the hangar

deck while the carrier is undergoing restricted availability in Mayport, Florida.

03/11/73: The USS **Manitowoc** (LST-1180) experiences a brief fire in a pump room while in port at Little Creek, Virginia. There are no injuries.

03/27/73: The USS **Hammerhead** (SSN-663), operating east of the Virginia Capes area at about 300 feet, strikes a submerged object of unknown nature thought to be non-metallic, perhaps a whale. The impact was heavy enough to be heard and felt throughout the ship. There was no discernable damage.

03/27/73: The USS **Greenling** (SSN-614) goes below its safe diving level while training about 250 miles northwest of Bermuda because a needle on a depth gauge sticks. The true depth is disclosed on another gauge before the submarine reaches a depth that would have crushed her hull. On 30 March the submarine arrives at its homeport of Groton, Connecticut. On 10 April the **Greenling** docks at Portsmouth Naval Shipyard, New Hampshire, for a thorough check.

04/04/73: The USS **Beacon** (PG-99) runs aground at Beaufort Inlet, North Carolina, during "Exotic Dancer VI" exercises and is refloated the next day.

04/05/73: While sailing in the Virginia Capes area, the USS **Independence** (CVA-62) suffers a 45-minute fire in a catapult ventilation system which affects its operational readiness.

04/10/73: The USS **Guadalupe** (AO-32) runs aground off Harbor Island in San Diego Bay, California, no reported injuries.

04/21/73: The USS **Guardfish** (SSN-612) experiences a primary coolant leak while running submerged about 370 miles south-southwest of Puget Sound. The submarine surfaces and is ventilated and decontaminated, and repairs the

casualty unassisted. Four crewmen are transferred to the Puget Sound Naval Hospital for monitoring.

04/23/73: The USS **Force** (MSO-445) catches fire and sinks about 820 miles west of Guam in the Philippine Sea. Seventy crewmen who abandon the **Force** are picked up the next day by the British merchant ship **Spratnes**.

05/21/73: The USS **Sturgeon** (SSN-637) strikes the bottom of the ocean suffering minor damage while operating in deep water during a dive off the U.S. Virgin Islands. The Navy says there were no injuries to the crew and the submarine's nuclear power plant was not affected. The submarine put into the nearest U.S. port at Frederiksted, St. Croix, under its own power.

05/28/73: The USS **Charles Berry** (DE-1035) and a Japanese cargo ship suffer minor damage in a collision in Kobe harbor, Japan.

06/03/73: The USS **Hull** (DD-945) suffers a minor fire in an air conditioning unit while in port at San Diego, California.

06/04/73: The USS **Higbee** (DD-806) suffers damage to its sonar dome when it is grounded for five hours at Subic Bay, Philippines.

06/06/73: The USS **Skipjack** (SSN-585) hits an uncharted sea mount during "Dawn Patrol" exercises in the Mediterranean Sea. The submarine suffers minor damage and proceeds on the surface to Soudha Bay, Crete, for hull inspection.

07/14/73: The USS **Robert H. McCard** (DD-822) damages its sonar dome when it runs aground on an uncharted sand bar while exiting Tampa Bay, Florida.

07/17/73: The U.S. Army Reserve transport ship **Hickory Knoll** collides with U.S. Coast Guard buoy tender **Firebrush** in Baltimore harbor,

Maryland, shortly after being freed from a sand bar. Neither ship is seriously damaged. The Army says the **Firebrush** failed to concede the right of way.

07/28/73: The Canadian diesel submarine **Okanagan** and the tanker **Grey Rover** collide off the Scottish coast, no reported injuries.

08/03/73: The USS **Victoria** (AK-281) experiences an engine room fire while berthed at Eire Basin, Brooklyn, New York, delaying its sailing by two weeks in order to make repairs.

09/05/73: The U.S. Defense Department reports that a damaged Soviet Echo II class nuclear-powered cruise missile submarine has been sighted in the Caribbean south of Cuba with an eight-foot gash in the port bow deck. This is apparently the result of a collision with another Soviet ship, perhaps a cruiser with visible scrapes on its hull, during maneuvers of the Soviet Caribbean task force. The Pentagon spokesman said the submarine did not appear to be in danger of sinking.

09/09/73: The USS **Claud Jones** (DE-1033) experiences an engine room fire while en route to Pearl Harbor, Hawaii, causing substantial damage but no casualties.

09/22/73: The USS **Saratoga** (CVA-60) experiences a fire on the third deck, between the flight deck and the hangar deck, which takes nine hours to extinguish while the ship is in drydock at Norfolk, Virginia.

10/07/73: The Soviet Kanin class guided missile destroyer 252 accidentally releases a torpedo after an explosion in a torpedo tube while shadowing the Royal Navy aircraft carrier **HMS Hermes** during NATO "Swift Move" exercises in the North Sea. Other torpedoes are jettisoned to clear the tubes near the fire.

11/01/73: A U.S. Navy 100-foot underwater demolition team's vessel

rams a minisubmarine in San Diego harbor, California, as both vessels are returning to Coronado amphibious base from routine exercises with 40 other vessels, killing one.

12/11/73: A fire, probably due to a fuel line failure, occurs in the main engine room on board the USS **Kitty Hawk** (CVA-63) while the ship is 700 miles east of the Philippines, killing six.

12/12/73: An explosion rips through the stack of the USS **Detroit's** (AOE-4) after engine room, causing much material damage while the ship is in Newport, Rhode Island, for repairs and upkeep.

12/29/73: An oil slick 11 miles in length results when a fuel tank of the USS **Pvt Joseph F. Merrell** (T-AK-275) is opened in a collision with the Liberian freighter **Pearl Venture** off the Californian coast. The **Pvt Joseph F. Merrell** is towed into San Luis Obispo Bay the next day while the oil slick dissipates at sea.

01/08/74: The USS **Kittiwake** (ASR-13) receives minor hull damage in a collision with the USS **Finback** (SSN-670) at the destroyer-submarine piers at the Norfolk Naval Base, Virginia.

01/21/74: The U.S. Navy says it is investigating possible sabotage in the cutting of electrical wires in the USS **Spadefish** (SSN-668), which is undergoing a one-year overhaul in the Norfolk Naval Shipyard, Virginia. Electrical wires on the submarine had been cut several times since the fall of 1973, prompting the Navy to investigate.

02/13/74: The USS **Gurke** (DD-783) experiences an electrical fire while operating in the Okinawa area, which damages a switchboard and associated equipment and injures two.

02/14/74: The USS **Schofield** (DEG-3) suffers a propulsion casualty and is taken in tow by the USS **Bainbridge**

(DLGN-25) near the entrance of the Red Sea in the Indian Ocean. Repairs are completed the next day.

04/07/74: The USS **Wyandot** (T-AKA-92) is in collision with merchant ship **Sacramento Venture** off the entrance to Keelung, Taiwan. There were no casualties.

04/17/74: The Royal Navy nuclear-powered ballistic missile submarine HMS **Renown** strikes the seabed while carrying out an exercise in the Firth of Clyde. The submarine had just completed an expensive refit in Rosyth but was not carrying nuclear warheads. The captain Commander Robin Whiteside faced a court-martial on 11 June.

04/25/74: The USS **DuPont** (DD-941) collides with the left swing span of a bridge at Yorktown, Virginia. The ship suffers damage to the forward mast while the bridge is closed to traffic for about an hour.

05/01/74: In May the USS **Pintado** (SSN-672) reportedly collides almost head-on with a Soviet Yankee class nuclear-powered ballistic missile submarine while cruising 200 feet deep in the approaches to the Petropavlovsk naval base on the Kamchatka Peninsula. The Soviet submarine surfaced immediately, but the extent of damage was not known. The **Pintado** departed from the area at top underwater speed and proceeded to Guam where it entered drydock for repairs lasting seven weeks. The collision smashed much of the **Pintado's** detection sonar, a starboard side torpedo hatch was jammed shut and diving plane received moderate damage. The **Pintado** was on an intelligence gathering mission in Soviet territorial waters.

05/06/74: The USS **Jallao** (SS-368) experiences an explosion in the engine room while providing services in the Guantanamo Bay, Cuba, operating area. An electrical arc ignited the engine room

atmosphere causing a quick flash. The submarine surfaces and returns to port needing minor repairs and soot clean-up. Sixteen crewmembers are hospitalized with smoke inhalation effects and one with burns.

05/23/74: An explosion in the hold of USS **John R. Craig** (DD-885) under overhaul in drydock at a civilian shipyard at Swan Island, Oregon, rocks the destroyer and buckles its plates, injuring 18. Welding was being done in the area where the explosion occurred.

07/27/74: The USS **Enterprise** (CVAN-65) suffers a fire in an electrical maintenance area off California, no reported injuries.

08/03/74: A wave sweeps over the forward deck of the USS **Hawkins** (DD-873) as it is refueling from the USS **Marias** (T-AO-57) in the Indian Ocean, injuring seven. An emergency visit to Diego Suarez, Madagascar, is made so the men can be treated at a hospital.

08/05/74: The USS **Lipan** (ATF-85) collides with the tanker **Atlantic Prestige** between Vancouver Island and Washington while towing another vessel.

08/31/74: The Royal Navy coastal minesweeper HMS **Brinton** collides with a museum ship.

09/01/74: The first and only Japanese nuclear-powered merchant ship, the **Mutsu**, develops a reactor leak during its first test voyage in the Pacific. The leakage apparently results from a faulty design in the reactor's shielding system and involves the release of radiation -- gamma rays and neutrons escaping through a hatch cover -- rather than a leak of actual radioactive materials. Emergency repairs are made reportedly with a thick layer of sticky boiled rice. However, the ship drifts for weeks off northern Japan due to protests by fishermen who are concerned about contamination of their scallop beds in the vicinity of the ship's homeport of Mutsu

and refuse to allow the the ship to dock. The fishermen end their protest after the government promises compensation and the ship docks in Mutsu on 15 October. In 1978 the ship is moved to Sasebo, Japan, and work on repairing the leak begins in August 1980 at the Sasebo Heavy Industries Company.

09/03/74: Shortly after getting underway in Norfolk, Virginia, the USS **Butte** (AE-27) suffers a major fire in the main switchboard, disrupting all ship support electrical supply. The **Butte** is towed back to the naval base for repairs which include replacing the switchboard.

09/19/74: The Royal Navy nuclear-powered attack submarine HMS **Sovereign** develops a steering defect during exercises off the west coast of Scotland while on the surface. On 23 September the ship is towed from the Coulport naval base to the submarine base at Faslane, Scotland, for investigation and repair.

09/27/74: The New York Times reports that Turkey's semi-official Anatolian News Agency said that a Soviet Kashin class guided missile destroyer exploded and sank in the Black Sea with no survivors about two weeks ago. Both Turkish Navy officials and the U.S. Defense Department refuse to confirm reports of the sinking. The Kashin class can carry nuclear-capable SA-N-1 Goa surface-to-air missiles, but qualified sources doubted the destroyer was carrying any nuclear-armed versions since the ship was on its sea trials. Later newspaper accounts based on U.S. intelligence sources report that 75 or more people may have been rescued, but even so a minimum of 275 perished.

10/19/74: The USS **Richard S. Edwards** (DD-950) experiences one-foot deep flooding in the fire room while in Pearl Harbor, Hawaii. The water is pumped out.

11/02/74: A four-hour fire aboard the Royal Navy cruiser HMS **Bristol**

damages the turbine and boiler rooms and injures four sailors. The ship was on sea trials off Pembrokeshire, U.K., and had to be towed back to port.

11/03/74: The USS **James Madison** (SSBN-627) collides with an unknown Soviet submarine in the North Sea according to Jack Anderson's regular newspaper column of 1 January 1975. The collision left a nine-foot scrape in the **Madison**. According to Anderson the two submarines came within inches of sinking one another. The **Madison** proceeded to Holy Loch, Scotland, to effect repairs. The U.S. Navy refused to comment on the incident.

12/06/74: The USS **Yukon** (T-AO-152) experiences a fire in the electrical control board which renders the ship dead in the water in the western Mediterranean. The fire occurs in heavy weather and the ship drifts toward the Algerian coast.

12/12/74: The USS **Edson** (DD-946) experiences a fire in the after fire room while training with USS **Coral Sea** (CVA-43) off Hawaii. The fire was caused by the ignition of oil which was spraying from a rupture in a lube oil gauge line. The area was secured and fire extinguished with no personnel casualties. The destroyer returned to Pearl Harbor under its own power for repairs.

12/13/74: The USS **Saratoga** (CV-60) suffers a major aircraft accident when a jet blast deflector is inadvertently raised into the the turning propeller of a plane while the ship is involved in exercise "National Week XVII" in the Tyrrhenian Sea, injuring five crewmen and damaging five planes.

12/14/74: The USS **Kamehameha** (SSBN-642) strikes submerged fishing gear during independent exercises in the central Mediterranean. Deep hull scrapes on the port side, a sheared underwater log sword, and a damaged screw result. The vessel returns to port under its own power for repairs.

12/24/74: The Argentine warship **Candido de Lasala** suffers an explosion in its boiler room in the English Channel, killing two and injuring three.

12/31/74: Before 1975, a U.S. submarine engaged in a Holystone intelligence gathering mission reportedly is temporarily grounded in Vladivostok harbor. This apparently occurs when the vessel was running on low power to avoid detection and strikes the harbor bottom. It eventually frees itself. (See 5/25/75 entry. This accident is specifically reported as separate from other New York Times accounts of Holystone operations.)

01/05/75: The USS **Enhance** (MSO-437) is disabled by an engine room fire when a ruptured "O" ring in a lube oil filter causes the turbo charger to explode while operating off San Diego, California.

01/20/75: The USS **Newman K. Perry** (DD-883) strikes an unknown object off New Jersey, cutting a small hole in the engine room and causing minor flooding.

02/16/75: The USS **Swordfish** (SSN-579) runs aground near Lanai, Hawaii, while conducting post-overhaul trials. The submarine surfaces safely and returns to Pearl Harbor for inspection and repair. The Navy says the submarine damaged sensor devices mounted on hull, but there were no breaks in the hull. The Honolulu Star-Bulletin, however, receives reports that a torpedo room flooded. The Navy denies this.

02/24/75: The USS **Kansas City** (AOR-3) is struck by the USS **Henry B. Wilson** (DDG-7) while moored at Subic Bay, Philippines, and both ships receive minor damage.

03/03/75: The USS **Iwo Jima** (LPH-2) and USS **Nashville** (LPD-13) are severely damaged when the **Iwo Jima** loses steering control and rams into the **Nashville** during highline transfer about

1,000 miles southwest of the Azores.

03/05/75: The USS **Edward McDonnell** (FF-1043) is struck from astern by a Finnish merchant ship while entering Hamburg, West Germany, in rain and fog. The collision opens an eight-foot-square hole above the waterline of the frigate.

03/24/75: The USS **Dace** (SSN-607) collides with a fishing vessel while surfaced in the Narraganset Bay area off Rhode Island. There was no reported damage to the submarine.

03/26/75: The USS **Holland** (AS-32) suffers a Class Alpha fire caused by spontaneous combustion of fiber glass materials in a sanding room while undergoing overhaul at the Puget Sound Naval Shipyard, Washington.

04/08/75: The USS **Koelsch** (FF-1049) experiences flooding in the diesel generator room when an air conditioning main ruptures while in Mayport, Florida.

04/08/75: The USS **Meredith** (DD-890) suffers an explosion and fire in a freshwater tank in the forward fire room while undergoing overhaul in Jacksonville, Florida, killing two civilian workers.

04/23/75: The USS **Snook** (SSN-592) becomes entangled in a net of a probable Soviet fishing trawler while submerged at a depth of 150 feet in a submarine diving area 30 miles off San Francisco, California. The **Snook** is pulled to periscope depth immediately astern of the fishing ship, however it breaks free and clears the area. About 25 Soviet fishing vessels are in the area when the incident occurs.

04/29/75: The USS **Patterson** (FF-1061) experiences flooding in a machinery room when an air compressor saltwater cooling line ruptures while in upkeep in Mayport, Florida.

05/25/75: A lengthy story in the New

York Times details a secret U.S. Navy submarine intelligence gathering program code-named Holystone. Using specially equipped submarines the Navy has spied on the Soviet Union and other countries since the early 1960s, at times within their three-mile limit. Several accidents resulted from these missions including the damaging of a U.S. submarine which surfaced under a Soviet ship during a Soviet fleet exercise as well as accidents listed at 12/31/65, 12/31/67, 12/31/68, 10/31/69, 11/14/69, 3/31/71, 5/1/74, and 12/31/74. Further exposes of the Holystone program are in the Washington Post (1/4/74), New York Times (7/4 and 7/6/75), Village Voice (2/16/76), Chicago Tribune (12/4/77) and Baltimore Sun (4/18/81). According to the reports, most of the submarines involved in Holystone missions were Sturgeon class nuclear-powered attack submarines, which also were armed with nuclear weapons.

06/10/75: The USS **Kitty Hawk** (CV-63) suffers major flooding in its Number 1 machinery room while 135 nautical miles northwest of Wake Island, crossing to the western Pacific.

06/15/75: A boiler flareback explosion damages two boilers and adjacent uptakes of the USS **Independence** (CV-62) while moored at Norfolk, Virginia.

06/20/75: The Navy announces eight minor fires that occurred aboard the USS **John F. Kennedy** (CV-67) earlier in the week may have been set by a sailor in an effort to forestall its departure from Norfolk, Virginia, on a seven-month deployment.

08/05/75: The Royal Navy Reserve minesweeper HMS **Killiecrankie** rams a yacht, sinking it, and damages two other pleasure craft in Great Yarmouth harbor, U.K., when the minesweeper tries to turn while leaving Yarmouth at the end of a courtesy visit.

08/07/75: The USS **Dahlgren**

(DDG-43) collides with the Panamanian freighter **Eurybates** about three-and-one-half miles east of Port Colon in the Panama Canal Zone. There are no injuries.

09/29/75: The USS **Albany** (CG-10) suffers a Class Bravo fire after a fuel oil strainer explosion east of Norfolk while en route to northern Europe, killing one. On 1 October the **Albany** rejoins the Second Fleet task group headed for northern Europe, with repairs scheduled to take place in Europe.

10/24/75: The USS **Farragut** (DDG-37) is momentarily grounded while departing Den Helder, Netherlands, for Brest, France. Both sonar domes are damaged and the ship proceeds at reduced speed.

11/12/75: The Royal Navy frigate **Achilles** collides with the tanker **Olympic Alliance** in thick fog in the English Channel, no reported injuries.

11/20/75: The USS **Independence** (CV-62) is in a minor collision with the USS **Denebola** (AF-56) during night replenishment in the North Sea.

11/21/75: The USS **Belknap** (CG-26) is involved in an oil spill during refueling with the USS **Waccamaw** (T-AO-109) in the Ionian Sea about 25 nautical miles from Italy.

11/22/75: The USS **John F. Kennedy** (CV-67) and the USS **Belknap** (CG-26) collide in rough seas at night during air exercises about 70 miles east of Sicily. The overhanging flight deck of the carrier cuts into the superstructure of the cruiser setting off fires on the **Belknap** which are not controlled for two-and-one-half hours on account of frequent flarebacks. The commander of Carrier Striking Forces for the U.S. Sixth fleet, reporting to higher commands shortly after the collision, declares a possible nuclear weapons accident -- a Broken Arrow -- stating there was a "high probability that nuclear weapons [W45 Terrier missile warheads] on the

USS **Belknap** were involved in fire and explosions," but there were "no direct communications with the **Belknap** at this time," and "no positive indications that explosions were directly related to nuclear weapons." He also notes that casualties recovered thus far show no exposure to radiation. Nonetheless, monitoring and medical teams were "alerted to the possibility of contamination." He adds that the nuclear weapons on board the **Kennedy** were not affected. An hour after the Broken Arrow message was sent the USS **Claude V. Ricketts** (DDG-5), alongside the **Belknap** fighting the fire, reported that **Belknap** personnel said "no radiation hazard exists aboard." Six people aboard the **Belknap** and one aboard the **Kennedy** are killed. The **Belknap** suffers serious damage, is put out of commission, and towed back to the U.S. to effect repairs lasting four years. It returns to the fleet in 1980. Smaller fires and other damage on the **Kennedy** are quickly contained and the carrier continues operations.

11/24/75: An ASROC motor prematurely ignites seriously burning one man while the USS **Richard S. Edwards** (DD-950) is en route to the Pacific Missile Range Facility, Barking Sands, Kauai, from Pearl Harbor, Hawaii. A manufacturing defect in one of the rocket motor components is determined to be the accident's cause.

11/25/75: A plane attempting to land on the USS **Midway** (CV-41) strikes the ramp, bolts, impacts the barricade, and strikes another plane during post-"Midlink" exercises in the Indian Ocean. Flying debris injures two crewmen.

12/06/75: The USS **Haddock** (SSN-621) develops a leak and floods during a deep dive while on a test run near Hawaii. The U.S. Navy confirms the incident, but denies the vessel is unsafe as crew members had charged in late October. A number of enlisted men had protested sending the ship to sea, claiming it had cracks in the main

cooling piping, leaks, and malfunctions and deficiencies in other systems, including the steering mechanism. The Navy replied that in accordance with strict safety procedures any problems are corrected before the ship goes to sea.

12/15/75: The USS **Saratoga** (CV-60) and the USS **Mississinewa** (AO-144) are in a minor collision during underway replenishment off the Florida coast.

12/16/75: The USS **Inchon** (LPH-12) and the USS **Caloosahatchee** (AO-98) are in a minor collision during refueling in rough seas west of Italy.

12/20/75: The USS **Santa Barbara** (AE-28) suffers a Class Alpha fire while moored at Charleston, South Carolina, without crew and ammunition in preparation for regular overhaul.

12/31/75: Around 1975, according to The Virginian-Pilot and The Ledger-Star, the USS **California** (CGN-36) spills 15 to 20 gallons of primary coolant while the ship is at the Norfolk Naval Base, Virginia.

01/27/76: The USS **Guadalcanal** (LPH-7) exiting Augusta Bay, Sicily, goes aground on a peak of coral which pushes in areas on either side of the bow, but does not crack or hole the ship. On 30 January, with cargo, personnel, helicopters, and fuel off-loaded to assist the effort, the ship is refloated.

01/27/76: While anchored in Augusta Bay, Sicily, the USS **Spiegel Grove** (LSD-32) is struck on the bow and starboard quarter by the Panamanian merchant vessel **Honesty** which had dragged anchor during winds of 50 knots.

02/13/76: The USS **Iwo Jima** (LPH-2) experiences a boiler casualty while participating in a "Rum Punch" exercise in the Caribbean. The casualty limits the ship's speed to 15 knots and half power. An embarked Royal Netherlands Marine Unit was airlifted to Roosevelt Roads,

Puerto Rico, and the helicopter carrier got underway for New Orleans.

02/29/76: The USS **New Orleans** (LPH-11), crossing from the western Pacific to San Diego, California, suffers vibrations at speeds above ten knots. It is discovered that one blade is missing from the four-bladed screw. On 2 March it alters course from California to Hawaii as the damage impedes its progress.

02/29/76: The USS **Sellers** (DDG-11) conducted an emergency underway at Iskenderun, Turkey, as heavy weather made its position at the NATO fuel pier untenable. The destroyer suffered some scraping and minor damage along the main deck but was able to clear without injuries to crew or damage below the waterline.

03/21/76: The British iron ore carrier **Cape Ortegale** is hit by a rocket, believed to be fired by a Japanese defense force aircraft during an exercise.

03/30/76: The USS **Elmer Montgomery** (FF-1082) suffers a fire in a storeroom while in port at Norfolk, Virginia. The ship's crew with assistance from the USS **Mitscher** (DDG-35) and the base fire department extinguish the fire. No personnel are injured and the damage is minor.

04/16/76: The USS **Albany** (CG-10) experiences a nuclear weapons incident -- Dull Sword -- when during handling of TALOS nuclear warhead trainers a top-side hoist fails as the ship is finishing repairs and upkeep at the Norfolk Naval Shipyard, Virginia. On 4 May 1976 a TALOS safety working group convenes aboard the **Albany** to observe and evaluate modifications made to the hoist as a result of the accident.

05/01/76: Early May -- a Norwegian fishing vessel in international waters off Murmansk snags a Soviet nuclear-powered attack submarine's fin at about 450 feet below the surface. The Soviet boat surfaced and the fisherman

could see the Soviet crewmen cutting at the entangling cables with hammer and chisels. The submarine was later towed toward Murmansk by Soviet rescue ships.

05/01/76: In May fuel oil leaks into the lower level of the ballistic missile magazine aboard the USS **Proteus** (AS-19) while the ship is in Apra Harbor, Guam. According to the Navy, the leak was detected by magazine personnel and stopped.

05/01/76: The Sixth Fleet flagship USS **Little Rock** (CG-4) experiences a casualty in the main engine lube oil system in the Tyrrhenian Sea. On 2 May it enters Naples for repairs.

05/02/76: The Royal Navy nuclear-powered attack submarine HMS **Warspite** suffers a fire in a diesel generating room while berthed in Royal Seaforth Dock, Crosby on the Mersey, U.K., injuring three. The Ministry of Defense says "There is absolutely no nuclear hazard." Originally it is anticipated that its patrol would be delayed one week. However, in January 1979 it is reported that the fire was caused by a failure of a coupling on a lubricating oil pipe, which allowed oil to be sprayed over a diesel generator. And, that repairs were still believed to be continuing at a cost of 5,194,000 pounds sterling.

05/08/76: The USS **Corry** (DD-817) while sailing outbound on the Delaware River is struck on the starboard side by the West German merchantman **Mormannia**. The **Corry** suffers minor hull damage above the waterline with no personnel injuries.

05/31/76: The USS **Vesole** (DD-878) suffers a fire while moored alongside a pier at Taranto, Italy. It was started by a yard worker welding on the base of the Number 1 stack. Electrical cables were shorted and the destroyer's operational capability was affected. There were no injuries.

06/09/76: The USS **Wabash** (AOR-5) and USS **Flint** (AE-32) collide while conducting towing exercises about 900 nautical miles northwest of Hawaii. Both ships continue onward to a western Pacific deployment.

07/01/76: The Norwegian fishing trawler **Sjovik** snags the bow of a Soviet November class nuclear-powered attack submarine and is dragged backward for about a mile in the Barents Sea north of the Soviet naval base at Murmansk. The submarine surfaces, cuts itself free, and proceeds on the surface toward Murmansk.

07/02/76: A fire breaks out in the main engine room of the USS **Kilauea** (AE-26), while it is drydocked for overhaul at Richmond, Virginia.

08/11/76: The Royal Navy patrol vessel HMS **Reward** collides with the freighter **Plainsman** and sinks off the coast of Scotland. All 40 crewmen are rescued.

08/25/76: The USS **Conyngham** (DDG-17) and USS **Josephus Daniels** (CG-27) are in a minor collision during "National Week 21" exercises in the western Mediterranean.

08/25/76: The USS **Pollack** (SSN-603) snags the nets of Japanese fishing boats in the eastern channel of the the Tsushima Strait. Two boats cut away and abandon their nets. The **Pollack** suffers no major damage and there is no known damage to the fishing boats.

08/28/76: A Soviet Echo II class nuclear-powered cruise missile submarine strikes the USS **Voge** (FF-1047) with its sail on the port quarter below the helicopter hangar, about 150 miles southwest of Souda Bay, Crete. The submarine departs the area under its own power to the Kithera Anchorage off Greece escorted by Soviet ships. The **Voge** suffers split bulkheads, buckled plating, and a damaged propeller and is towed to Souda Bay by the

**Moinster** (FF-1097) and **Preserver** (ARS-8). The submarine damages its sail. In September the **Voge** is towed to Toulon, France. On 7 September the U.S. State Department announces that the U.S. and Soviet Union had exchanged notes, each blaming the other for the collision.

09/01/76: The Turkish diesel submarine **Dumlupinar** and the freighter **Fizik Vavilov** collide in the Dardanelles, no reported casualties.

09/14/76: The USS **Raleigh** (LPD-1) leaves Moorehead City, North Carolina, after a week's delay caused by inoperative feed pumps to participate in the "Teamwork" exercises off Norway. While crossing the Atlantic, the ship experiences further engineering problems, causing the ship to be diverted to Plymouth, U.K. The ship arrives 24 September for two weeks of repairs to the feed pumps before sailing on 9 October.

09/14/76: The USS **Bordelon** (DD-881) experiences steering control difficulties during refueling and collides with the USS **John F. Kennedy** (CV-67) 75 miles northwest of Scapa Flow, Scotland, causing topside damage to the **Bordelon** and injuring six. Damage to the **Kennedy** is minor. The **Bordelon** proceeds to Plymouth, U.K., for repairs before going to the United States. The Navy subsequently decommissions the ship because repairs would be too expensive.

09/20/76: The Royal Navy frigate HMS **Mermaid** and the minesweeper HMS **Fittleton** collide during the NATO exercise "Teamwork 76" in the North Sea. The **Fittleton** capsizes and sinks, killing 12.

09/24/76: The Royal Navy destroyer HMS **Glasgow** suffers a fire while being fitted out at Swan Hunter Tyneside yard, Newcastle-Upon-Tyne, U.K., killing eight workmen.

10/01/76: According to raw CIA intelligence reports, during October the launch compartment of a Soviet nuclear submarine of unknown class catches fire in the Atlantic. Three officers are reported killed. The submarine is able to return to port under its own power.

10/08/76: A Japanese fishing vessel snags a Soviet Charlie class nuclear-powered cruise missile submarine off the Kamchatka Peninsula. The fishing boat is dragged backward until it reels in its nets and the submarine surfaces. The nets are cut to free the submarine.

11/02/76: A major explosion takes place in a boiler of the USS **Ponchatoula** (AO-148) in port at Pearl Harbor, Hawaii. The explosion blows out the side and back wall of the Number 2 boiler.

12/19/76: A F-14 Tomcat aircraft misses a landing on the USS **Enterprise** (CVN-65), and its wingtip strikes two other aircraft on the flight deck before it veers out of control and crashes into the South China Sea.

12/31/76: In 1976 a barge carrying 500-lb. bombs breaks away from the USS **Detroit** (AOE-4) and floats down the York River, Virginia. The barge was stopped after 30 minutes and no damage was reported.

12/31/76: According to raw CIA intelligence reports, during 1976 a sailor who had served on board a Soviet nuclear-powered ballistic missile submarine of unknown class dies of "excessive exposure to radiation." He was exposed to radiation on board through his own negligence at least a year prior to his death and was in and out of hospitals before being permanently hospitalized in 1975.

01/02/77: A Pakistani midget submarine is lost off Karachi, Pakistan, killing eight.

01/02/77: The USS **Mizar** (T-AGOR-11) suffers a casualty to the port main propulsion drive shafting while en route to Karachi, Pakistan, to participate in Arabian Sea survey operations.

01/12/77: The USS **Franklin D. Roosevelt** (CV-42) collides with the Liberian freighter **Oceanus** as the **Roosevelt** proceeds south through the Strait of Messina. Both ships are able to proceed to port under their own power.

01/17/77: An LCM-6 landing boat from the USS **Trenton** (LPD-14) carrying more than 100 marines and sailors returning from liberty overturns in a collision with the Spanish freighter **Uriea** in Barcelona harbor, Spain, killing 48.

02/08/77: A fire breaks out in the engine room of the USS **Preserver** (ARS-8) near the Bahamas. The ship is towed by the USS **Bowen** (FF-1079) to Mayport, Florida, for repairs.

02/08/77: A minor boiler explosion occurs aboard the USS **Fanning** (FF-1076) as the ship operates 15 miles from San Francisco, California, injuring three.

02/11/77: The USS **Barnstable County** (LST-1197) collides with the moored Liberian ship **Poumentes** while clearing berth under pilot control at Curaao, Netherlands Antilles, resulting in minor damage.

02/20/77: The USS **Ranger** (CV-61) experiences a Class Alpha fire in the anchor machinery room while drydocked at Puget Sound Naval Shipyard, Washington.

03/12/77: The USS **Mauna Kea** (AE-22) loses propulsion because of a mechanical failure in the Number 1 boiler while en route from Guam to Okinawa. It enters Apra harbor, Guam, the next day under tow.

03/16/77: The USS **Manley** (DD-940) suffers a flash-back in a mount during gunnery exercises off Guantanamo Bay, Cuba, injuring four. The mount is placed out of commission due to fire and water damage when a second powder casing explodes after the mount is evacuated.

03/18/77: The USS **Hepburn** (FF-1055) suffers a Class Alpha fire caused by spontaneous combustion of refuse while off San Diego, California.

03/18/77: The Royal Navy coastal minesweeper HMS **Maxton** accidentally fires at the Royal Navy frigate HMS **Achilles** off the Scottish coast when live shells instead of blanks are used in a practice firing. Two shells hit and cause moderate damage to the **Achilles**.

03/20/77: The USS **Dyess** (DD-880) suffers a wardroom fire apparently caused by arson while in port at Mayport, Florida. There is minor damage.

03/24/77: An inquest records accidental death verdicts for three sailors who died in an engine room fire aboard the Royal Navy frigate HMS **Ashanti**.

04/07/77: All nine ships in U.S. Navy Task Group 21.2 including the USS **Independence** (CV-62) suffer varying amounts of damage when they encounter a storm with 20-foot seas about 1,000 miles west of Rota, Spain. Some **Independence** planes land at Lajes Air Base in the Azores.

04/20/77: The USS **Independence** (CV-62) and the USS **Truckee** (AO-147) collide in the Tyrrhenian Sea during underway replenishment when the **Truckee** loses steering control.

05/14/77: The USS **Neches** (T-AO-183) runs aground in the inner anchorage at Port Suez, Egypt, while awaiting a pilot. It is refloated three days later following four failed attempts.

05/19/77: The USS **Mizar**

(T-AGOR-11) suffers an engine room explosion and fire while west of Sumatra, Indonesia. The ship proceeds on one engine to Singapore for repairs.

05/29/77: The USS **Sampson** (DDG-10) runs aground at the entrance to San Juan, Puerto Rico, but is cleared within an hour by the ship's engines and one tug. The sonar dome is slightly damaged.

06/06/77: Several U.S. Navy ships, including the USS **California** (CGN-36) and the USS **El Paso** (LKA-117), part their moorings and suffer minor damage during high winds in the Norfolk, Virginia, area.

06/15/77: The USS **Trippe** (FF-1075) suffers damage to its sonar dome during a search and rescue operation for a crashed Kuwaiti helicopter in the Persian Gulf.

07/12/77: The USS **Rich** (DD-820) and the USS **Caloosahatchee** (AO-98) collide north of the U.S. Virgin Islands following underway replenishment when the **Rich** loses steering control, strikes the oiler's starboard bow, and then continues across the bow raking the **Rich's** port side. The **Rich** is escorted to Mayport, Florida.

07/20/77: The USS **Direct** (MSO-430) is badly damaged by a two-hour engine room fire about 120 miles southeast of Newport, Rhode Island, and is taken under tow to Newport where it arrives the next day.

07/22/77: The USS **Henry L. Stimson** (SSBN-655) fouls the fishing nets of a Spanish trawler while undergoing refresher training in the Rota area off Spain.

08/06/77: A major Class Bravo fire occurs in the forward engine room of USS **Hunley** (AS-31) while the ship is part of the Atlantic Fleet. "The excellent response of the Duty Damage Control Party and action of other individuals on board limited the fire to the forward

engine room and extinguished it 25 minutes from its start. Fire, smoke, and/or firefighting water damaged the Number 2 main engine, Numbers 1 and 2 main propulsion generators, Numbers 1 and 2 ship service generators, Numbers 1 and 2 low pressure air compressors, Number 2 force draft blower, Number 2 evaporator and salinity indicating system, plus runs of electrical cable in the vicinity of the fire. The forward switchboard, 1S, was grounded by firefighting water rendering the forward part of the ship without normal electrical power."

08/23/77: While the USS **Saratoga** (CV-60) is en route to the Strait of Messina, an aerosol can explodes in the Number 2 incinerator of the ship, causing a fire which threatens the aircraft of Hangar Bay Number 2. According to the Navy, "The fast and professional reaction of the crew and the decision to call away GQ [General Quarters] can be directly credited for the successful handling of the potential disaster."

09/20/77: The USS **Ray** (SSN-653) strikes the bottom south of Sardinia, Italy, damaging its bow area. The **Ray** surfaces and proceeds to La Maddalena naval base on Sardinia escorted by the USS **Grayling** (SSN-646).

09/29/77: The USS **Archerfish** (SSN-678) and USS **Philadelphia** (SSN-690) collide stern to stern at slow speeds at the Groton submarine base, Connecticut, with minor damage reported.

10/06/77: The USS **Saratoga** (CV-60) collides with the Austrian container ship **Ville d'Orient** in the Strait of Messina with no injuries and minor damage reported.

10/12/77: The USS **Sealift Atlantic** (T-AO-172) becomes dead in the water about 800 miles northeast of Puerto Rico after suffering a propeller casualty. On 15 October the ship is placed under tow by the USS **Gear** (T-ARS-34) headed

toward Puerto Rico.

10/27/77: A seaman is acquitted of starting fires on the Royal Navy frigate HMS **Gurkha**.

11/24/77: The Washington Post reports NATO sources believe that the Soviet Navy is experiencing trouble with its Yak-36 V/STOL aircraft after an incident where the flight deck of the **Kiev** assault ship was set on fire by one of the aircraft. The **Kiev** itself had only been at sea for two weeks since deployment to the Northern Fleet in Fall 1976.

12/04/77: The USS **W.S. Sims** (FF-1059) loses power after a boiler casualty results in the loss of a generator during training 70 miles south of Bermuda. The frigate is able to get underway for Mayport, Florida, after the USS **Ainsworth** (FF-1090) rigs emergency power from alongside.

12/06/77: The USS **Pintado** (SSN-672) sustains damage to the top of its rudder in a minor collision with a South Korean Navy ship during exercises off Korea. The **Pintado** initiated emergency deep dive procedures when the surface ship turned toward the submarine at close range.

12/31/77: Around 1977, according to a report in The Virginian-Pilot and The Ledger-Star, 40 to 50 gallons of primary coolant spill from the USS **California** (CGN-36) while the ship is in Norfolk, Virginia.

12/31/77: According to raw CIA intelligence reports, in 1977 a Soviet nuclear-powered submarine suffers an internal fire while in the Indian Ocean. The submarine is forced to surface in an attempt to fight the fire which takes several days to extinguish. A Soviet trawler subsequently tows the submarine to a port near Vladivostok.

12/31/77: According to raw CIA intelligence reports, in 1977 about 12

Soviet naval officers serving on a nuclear-powered submarine in the Atlantic return to Leningrad via an Aeroflot flight from Canada. The reason for the return was not announced but it was known at the time that these officers were taken from a Soviet submarine in the Atlantic by a Soviet fishing trawler and subsequently transported to Canada where they boarded the plane. The CIA sources suggest this may have been a medical emergency connected with radiation exposure.

12/31/77: Sometime during 1976-77, the Royal Navy nuclear-powered ballistic missile submarine HMS **Repulse** suffers a fire, causing 200,000 pounds sterling damage.

01/12/78: The French Navy escort vessel **Duperre** is pulled off by a tug after it runs aground in a storm off Brittany at night. The ship is towed into Brest, France.

01/15/78: An A-7 Corsair II aircraft crashes upon landing aboard the USS **Forrestal** (CV-59) while the carrier operates about 50 miles off St. Augustine, Florida, killing one and injuring ten.

01/18/78: The USS **Cree** (ATF-84) is struck by three Mark 82 bombs near a target ship during exercises by planes of the USS **Enterprise** (CVN-65) off San Diego, California. Two explosions close to the **Cree** cause flooding while a third lodges in the starboard side and is later defused by an explosives ordnance disposal team. The tug is taken in tow after damage control teams control the flooding.

02/22/78: The USS **L.Y. Spear** (AS-36) and the Liberian merchant ship **Zephyros** receive minor damage in a collision in the Mississippi River.

04/01/78: The USS **Sealift Mediterranean** (T-AO-173) runs aground off Rondo Island, Indonesia, about 30 nautical miles off Sumatra's

northwestern tip.

04/03/78: The USS **Fort Snelling** (LSD-30) and the USS **Waccamaw** (T-AO-109) receive structural damage in a collision north of Corsica, France, when the **Waccamaw** loses steering control during refueling. Both proceed under their own power to Naples, Italy, for repairs.

04/25/78: The USS **Concord** (AFS-5) is badly damaged by a fire in its cargo spaces while moored at Palma de Majorca, Spain. One hundred and five people are treated for smoke inhalation and minor burns.

05/03/78: The USS **Dewey** (DDG-45) suffers a fire which damages the missile fire control system while in port at Naples, Italy.

05/14/78: While surfacing in the western Pacific the USS **Darter** (SS-576) suffers flooding when about 45,000 pounds of seawater enter the engine room after a snorkel head valve fails. The USS **Schofield** (FFG-3) escorts the submarine toward Yokosuka, Japan. It arrives 19 May for repairs.

05/23/78: While workers are draining a piping system aboard the USS **Puffer** (SSN-652), radioactive water spills on the drydock surface at the Puget Sound Naval Shipyard, Bremerton, Washington.

A Navy spokesman says that "less than 5 gallons" of slightly radioactive water spilled as the workers were draining the liquid into two five-gallon plastic containers, a routine operation. The spill, says the Navy, was due to the inattention of the personnel doing the draining. The water being drained reportedly was part of the submarine's secondary cooling system. The drydock drain was contaminated, but was closed before any spillage escaped into the sea. According to the Navy, no workers were contaminated. Shipyard employees disputed the Navy's account, saying that the spill was much bigger, about 100 gallons; that response to the spill was

slow; and that several workers suffered skin contamination. These reports could not be verified. Subsequently a contaminated 15-by 20-foot section of drydock is jackhammered up, sealed in drums and shipped to a nuclear waste site in Hanford, Washington.

05/26/78: About two cups of radioactive water leak from a pipe fitting aboard the USS **Aspro** (SSN-648) while the submarine is in the Puget Sound Naval Shipyard, Washington, when a worker fails to shut a valve tightly. According to the Navy, no personnel suffered skin exposure, but the worker detected a small spot of radioactivity on his pants, which was removed and disposed of as radioactive waste. No radioactivity escaped to the outside environment.

05/31/78: The USS **Midway** (CV-41) suffers a fire which originates in the exhaust ventilation system, quickly spreads through the 3A boiler uptakes on the second deck, and terminates in the main uptake space, while it is docked in Yokosuka, Japan. The cause of the fire is later thought to be welding in a vent system containing a fine oil mist which ignited and spread.

06/16/78: The propeller shaft of the USS **Tullibee** (SSN-597) snaps just outside the hull causing limited engine room flooding and loss of propulsion while it is submerged in the Mediterranean. The flooding is stopped by tightening the emergency packing on the propeller shaft. The submarine quickly surfaces and is assisted by other U.S. naval vessels. Subsequently it is towed to Rota, Spain, for repairs.

07/19/78: A helicopter crashes after striking the Royal Navy destroyer HMS **Devonshire** while executing a flyby of the ship during an air display off the U.K.

07/25/78: The USS **Opportune** (ARS-41) is struck by a dummy training round fired from a U.S. destroyer south of Guantanamo Bay, Cuba, while towing

a target sled during gunnery exercises.

08/19/78: A Soviet Echo II class nuclear-powered cruise missile submarine is sighted dead in the water near Rockall Bank 140 miles northwest of Scotland after experiencing problems with her nuclear power plant. On 20 August a U.S. P-3 Orion aircraft observes the submarine under tow to the Soviet Union south of the Faroe Islands.

The exact cause of the problem and the number of possible personnel casualties is unknown.

08/21/78: While operating in the Mediterranean, the crew of the USS **Forrestal** (CV-59) is called to general quarters about noon due to widespread smoke reported on the third deck amidships. Shortly afterwards, burning boxes are discovered in a fourth deck storeroom. The fire is put out within ten minutes of the initial alarm.

09/27/78: The USS **Detector** (MSO-429) suffers a fire in the main engine room ten miles south of New London, Connecticut, and is towed to Newport, Rhode Island.

09/28/78: The USS **General H.H. Arnold** (T-AGM-9) is adrift for several hours about 300 nautical miles northwest of Adak, Alaska, in the Bering Sea after failure of the main reduction gear bearing.

09/29/78: The USS **Fairfax County** (LST-1193) suffers extensive damage to its Number 3 engine room and second division berthing compartment in a major fire while en route to Naples, Italy. Two crewmembers are injured and the ship is placed in tow.

10/19/78: The commander of the Royal Navy diesel submarine HMS **Oracle** is reprimanded for allowing his ship to touch bottom during trials in the narrow Loch Fyne, Strathclyde, Scotland. The bump dented four torpedo tubes, but the hull remained intact and the submarine rose safely to the surface. The

submarine was running deeper than usual to avoid a yacht on the surface, but failed to monitor how close it was to the bottom.

10/31/78: The Royal Navy frigate HMS **Minerva** suffers an explosion.

11/01/78: In November the Royal Navy fleet auxiliary HMS **Hebe** suffers a fire started by a crewmen while at the Gibraltar naval base.

11/02/78: The Greek trawler **Ayos Nikolaos** sinks after colliding with a **Turkish** gunboat in the Mediterranean, killing one.

11/20/78: The USS **Coral Sea** (CV-43) suffers a fire of unknown origin while moored at Puget Sound Naval Shipyard, Washington, which causes damage to the medical and dental spaces.

11/21/78: The USS **Saratoga** (CV-60) and the USS **Waccamaw** (T-AO-109) collide during refueling operations 50 miles south of Crete, with only minor damage and no injuries.

12/04/78: The Royal Navy diesel submarine HMS **Olympus** dives too slowly and is struck by an unknown merchant ship in the Portland, U.K., exercise area.

12/06/78: The USS **Ranger** (CV-61) experiences an explosion and flash fire during fleet exercises off Baja California which result in minor burns to nine crewmen.

12/13/78: The Royal Navy helicopter carrier HMS **Hermes** is damaged by fire in a mess deck. Damage is not severe.

01/17/79: A mechanic who helped to contain a steam burst after an explosion in the engine room aboard the Royal Navy nuclear-powered ballistic missile submarine HMS **Revenge** wins the Queen's Gallantry Medal. He crawled along a foot-wide catwalk below a hot cloud of escaping high-pressure steam as

he searched for the leak in the turbo-generator room.

01/22/79: The USS **Aylwin** (FF-1081) suffers a disabling casualty and is towed to Charleston, South Carolina, by the USS **Petrel** (ASR-14).

02/01/79: In February a fire breaks out in the forward boiler room of the USS **Manley** (DD-940) during preparation to get underway from Mayport, Florida. Twelve men are injured, one later dies and the cost is put at \$75 million.

02/09/79: The USS **Davidson** (FF-1045) loses power after a brief fire puts out a boiler in the Philippine Sea. The frigate is towed to Subic Bay where it arrives five day later.

03/01/79: The French diesel submarine **Marsouin** is caught in the nets of the French trawler **St. Blaise** off Brittany. Neither vessel is damaged.

03/04/79: The USS **Francis Marion** (LPA-249) is holed above the waterline and receives structural damage when it is struck by the Greek bulk carrier **Starlight** near the entrance to Chesapeake Bay off Cape Henry, Virginia.

03/07/79: The USS **Alexander Hamilton** (SSBN-617) becomes tangled in the nets of a Scottish fishing trawler in the sound of Jura off the west coast of Scotland. The **Hamilton** tows the trawler backward for about 45 minutes until the nets are cut. No injuries or serious damage result.

03/14/79: The USS **Wainwright** (CG-28) runs aground for six hours in Charleston harbor, South Carolina, near the Mount Pleasant Range.

03/28/79: The USS **Independence** (CV-62) experiences a brief control room fire in the Roosevelt Roads area off Puerto Rico. Thirty people suffer from minor smoke inhalation.

03/29/79: The USS **Ranger** (CV-61) suffers a main engine turbine casualty requiring extensive repair while training in the Subic Bay operations area off the Philippines.

04/04/79: The USS **Ranger** (CV-61) sustains substantial damage in a collision with the Liberian tanker **Fortune** near the eastern approaches to the Strait of Malacca. There are no injuries and the **Ranger** heads toward Subic Bay while the tanker, holed in the port side from the main deck to the waterline, is towed to Singapore. On 20 April the **Ranger** voyages to Yokosuka, Japan, after completing interim repairs to her bow.

04/09/79: Five fires set by an arsonist aboard the USS **John F. Kennedy** (CV-67) kill one shipyard worker and injure 34 other people while the carrier undergoes overhaul at Norfolk Naval Shipyard, Virginia.

04/27/79: The USS **Pargo** (SSN-650) is briefly grounded while entering New London, Connecticut, harbor in heavy fog.

05/09/79: The USS **Savannah** (AOR-4) collides with the USS **Forrestal** (CV-59) after suffering a gyro casualty while servicing the **Forrestal** in the Caribbean. Both ships suffer minor damage with no personnel casualties.

05/11/79: Primary coolant water leaks from one of the two nuclear reactors aboard the USS **Nimitz** (CVN-68). A Navy spokesman says there was no release of radioactivity, no danger to the core, and no danger to the ship's crew. The ship was operating off the Virginia coast.

05/14/79: The USS **Cook** (FF-1083) and the USS **Mars** (AFS-1) collide off Point Loma near San Diego, California, injuring seven.

05/24/79: The USS **Andrew Jackson** (SSBN-619) incurs slight damage to its rudder when it runs aground briefly

while entering the New London, Connecticut, harbor in reduced visibility.

05/26/79: The USS **Gray's** (FF-1054) living barge receives structural damage of over \$1,000,000 in a fire caused by arson while the ship is berthed at Todd Pacific Shipyard, Seattle, Washington.

06/04/79: The USS **George Washington Carver** (SSBN-656) snags the nets of a Spanish fishing vessel and drags the boat through the water off Rota, Spain.

06/04/79: The USS **Woodrow Wilson** (SSBN-624) runs aground in heavy fog at Race Rock while en route to New London, Connecticut. The submarine backs off and proceeds to port for inspection and damage assessment.

06/05/79: Two fires break out aboard the USS **John F. Kennedy** (CV-67) at the Norfolk Naval Shipyard, Virginia, but cause no injuries or significant damage.

06/12/79: A Mk 48 conventional torpedo jams between loading equipment and a bulkhead when a chain breaks on the loading mechanism allowing the torpedo to drop several feet aboard the USS **Memphis** (SSN-691) docked at the Norfolk Naval Station, Virginia. The torpedo is removed two days later. It did not have a triggering device, but Navy sources say had it exploded it easily could have sunk the submarine.

06/20/79: The USS **Hawkbill** (SSN-666) reactor's primary coolant system develops a leak while the submarine is on maneuvers in Hawaiian waters which lasts for four days. Originally the leak is about two gallons an hour, but by the time the submarine docks at Pearl Harbor, Hawaii, on 23 June, the leak has been reduced to three-quarters an hour. On 24 June it is stopped. The Navy says none of the water escaped, as it was captured and stored in tanks designed for such contingencies and that none of the crew

was in danger. Supplemental coolant water was pumped in to prevent overheating. According to the Navy, "The leakage was caused by normal wear of inside parts of valves. Such leaks happen occasionally."

06/21/79: The USS **Enterprise** (CVN-65), under overhaul at the Puget Sound Naval Shipyard, sustains a two-hour Class Alpha fire in a catapult room, machine shop, and passageway.

06/26/79: The USS **Forrestal** (CV-59) suffers three minor fires while in Mayport, Florida. Arson is suspected.

06/29/79: A steward is sentenced for setting fires aboard the Royal Navy frigate HMS **Sirius** while docked at Devonport, U.K.

07/03/79: The Royal Navy diesel submarine HMS **Onyx** is freed from the fishing nets of a stationary trawler off Holy Island in the Firth of Clyde, Scotland.

07/03/79: While at Norfolk Naval Shipyard, a fire sweeps through two berthing spaces aboard the USS **Iwo Jima** (LPH-2), injuring five. A sailor is arrested on arson charges on 6 July.

07/06/79: The USS **Lexington** (AVT-16) suffers a Class Alpha fire off Pensacola, Florida, and is dead in the water for over an hour when all boilers are shut down as a result.

07/12/79: The USS **Sealift China Sea** (T-AO-170) loses power over 150 nautical miles off Subic Bay, Philippines, as a result of an engine casualty. The USS **Beaufort** (ATS-2) is directed to rendezvous and render assistance.

07/13/79: The USS **Conyngham** (DDG-17) suffers two minor fires on consecutive days in the First Division Berthing Compartment and the Anchor Windlass Room. An investigation leads to the arrest of an arsonist on 14 July, the day of the second fire.

08/02/79: The USS **Comte de Grasse** (DD-974) incurs extensive smoke damage in a three-hour engine room fire while berthed at Norfolk, Virginia.

08/09/79: A fire, caused by a broken acetylene line, breaks out aboard the USS **Midway** (CV-41) while berthed at Yokosuka, Japan, killing one worker and injuring 17 sailors.

09/02/79: The USS **Truxtun** (CGN-35) spills some 13 gallons of radioactive "high-purity water" into San Diego Bay, California. A U.S. Navy spokesman says the spill contained a small amount of radioactivity which was too small to have an impact on the environment. Initial reports had said the ship spilled as much as 80 to 100 gallons of radioactive water.

09/19/79: The Dutch diesel submarine **Tonijn** experiences a fire in the port engine room and loses power while en route for Naples, Italy. The USS **Harlan County** (LST-1196) leaves Cartagena, Spain, to provide towing assistance to Gibraltar.

11/06/79: Two part-time officers are reprimanded after the Royal Navy coastal minesweeper HMS **Alfriston** runs aground.

12/16/79: Storm-force winds over southern England cause a giant crane at the Royal Navy Devonport dockyard to collapse. Thousands of pounds sterling damage to the Royal Navy frigates HMS **Minerva** and HMS **Ambuscade** result.

01/03/80: The Malaysian oil tanker **Santo Prestige** loses power and collides with the USS **Milwaukee** (AOR-2) moored at portside in Norfolk, Virginia. The collision results in a 40- by 15-foot gash in the hull of the **Milwaukee**.

01/04/80: The USS **Pecos** (AO-65) collides with the moored USS **Bradley** (FF-1041) at Terminal Island, Los Angeles, California, injuring one, and causing minor damage to the **Bradley**

and a two-foot hole in the **Pecos**.

01/16/80: The USS **Okinawa** (LPH-3) is placed in tow when it suffers an engineering casualty. The casualty is corrected on 18 January.

02/05/80: The USS **Inchon** (LPH-12) collides with the USS **Spiegel Grove** (LSD-32) while refueling in the Atlantic while en route to the Mediterranean Sea, with reportedly no injuries and only minor damage.

03/03/80: The USS **William H. Standley** (CG-32) sustains a ruptured tube casualty to the Number 1B boiler during exercises off the Strait of Hormuz and proceeds to the U.S. Navy Facility at Diego Garcia.

04/18/80: A Soviet Mirka class frigate collides with the Danish minesweeper **Fyen** in the Baltic Sea during Warsaw Pact exercises. The Danish Ministry of Foreign Affairs protests the incident, but receives no formal reply.

05/05/80: Two West German Navy ships collide in the Mediterranean off Toulon, France; no injuries.

05/13/80: The Royal Navy diesel submarine HMS **Onyx** runs aground in Portsmouth harbor, U.K. It takes a tug 20 minutes to pull the ship free.

06/04/80: A lieutenant on the Royal Navy frigate HMS **Nubian** is reprimanded for negligence following a collision with a Dutch ship.

06/26/80: The USS **Constellation** (CV-64) collides with a Bangladesh merchant ship in the Arabian Sea. The U.S. Navy says there was minor damage to both ships.

07/08/80: The small Danish Home Guard cutter **MHV 94** is rammed by the East German minesweeper **Komet** nine miles south of Gedser, Denmark, in the Baltic Sea. The collision causes severe damage to the front of the cutter.

Denmark protests to East Germany over incident.

07/20/80: The USS **Gurnard** (SSN-662) spills 30 gallons of water containing radioactive material into San Diego Bay, California. A Navy spokesman says the leak occurred when a crewman of the **Gurnard** accidentally opened a valve allowing the water to escape. The spokesman said a water sample was taken and there was no increase in the general background radioactive level in the area where the spill happened.

07/26/80: The Royal Navy patrol boat HMS **Sabre** crashes at Alderney, Channel Islands, in the English Channel.

07/29/80: The USS **Midway** (CV-41) collides with the Panamanian merchant ship **Cactus** while transiting the passage between Palawan Island of the Philippines and the coast of Northern Borneo 450 nautical miles southwest of Subic Bay en route to Singapore. The **Midway**, the U.S. Navy says, sustained no serious damage although two U.S. sailors were killed, three were injured, and three F-4 Phantom aircraft parked on the flight deck were damaged.

08/12/80: The Royal Navy nuclear-powered attack submarine HMS **Sovereign** breaks down during routine tests in Plymouth Sound, U.K. According to the Royal Navy the breakdown was caused by a "minor mechanical defect." The submarine was towed back to Devonport, U.K.

08/21/80: A Soviet Echo class nuclear-powered submarine suffers a serious casualty and loses power about 85 miles off the east coast of Okinawa. At least nine crewmembers are believed to have died from a probable fire in the propulsion spaces. A Soviet freighter arrives to evacuate the crew and a tugboat is readied to tow the submarine to Vladivostok escorted by several warships. The next day Japan advises ships to avoid the area, citing possible

radiation leaks and refuses to allow the submarine to pass through Japanese territorial waters unless Moscow guarantees there are no nuclear weapons aboard and no danger of radiation leaks.

The Soviets initially refuse to guarantee the safety of the reactor and enter Japanese waters despite Japan's warnings. But on 24 August, Moscow acquiesces to Japan's demands concerning safety, and informs Japan there was no radioactive leakage or nuclear weapons on board. Subsequently, Japanese examination of air and water in the area reportedly finds evidence of radioactive contamination.

08/31/80: In late August some cracks in the USS **Vulcan**'s (AR-5) outer hull which allow oil seepage are discovered. These are repaired while the ship is in Norfolk, Virginia, and afterward the ship sails for Norway.

09/09/80: The USS **Valdez** (FF-1096) suffers a material failure to the ship's sole gyro compass following a departure from Antwerp, Belgium. The ship operates on magnetic compass only for the next six weeks, throughout exercise "Teamwork 80." This degrades the performance of weapons systems and satellite navigation, and makes refueling at sea more complicated.

10/20/80: The USS **Saratoga** (CV-60) suffers five minor fires from 20 to 26 October while undergoing a major overhaul at the Philadelphia Naval Shipyard, Pennsylvania. The Navy investigates the possibility of arson.

12/01/80: In December the Royal Navy frigate HMS **Amazon** strikes a coral reef off Belize in the Caribbean.

12/01/80: In December, the Royal Navy nuclear-powered attack submarine HMS **Dreadnought** suffers serious machinery damage -- reportedly cracks in the secondary cooling system -- which necessitate a complete reactor shutdown.

This damage and troubles with scheduling a refit lead to a decision to

retire the aging submarine.

12/03/80: During a test, about 150 gallons of low-level radioactive water leak from a faulty valve on the USS **Hawkbill** (SSN-666) undergoing overhaul at the Puget Sound Naval Shipyard, Washington. Five workers receive low-level radioactive contamination. A Navy spokesman says they received a dose of radiation "less than that typically received by a chest X-ray."

12/03/80: The USS **America** (CV-66) and USS **Caloosahatchee** (AO-98) collide during an underway replenishment maneuver 250 miles east of Charleston, South Carolina, when the oiler loses rudder control. Despite an emergency breakaway, the **America** suffers minor damage to a catwalk, a storage compartment, and a flight deck safety net rail. But there are no injuries and both ships continue operations.

01/10/81: The USS **Biddle** (CG-34) and USS **Raleigh** (LPD-1) are slightly damaged when the **Biddle** strikes the moored **Raleigh** while approaching a pier in Norfolk, Virginia.

01/23/81: The USS **Birmingham** (SSN-695) suffers a failed sonar dome while operating in the Mediterranean and is ordered into Gibraltar for damage assessment. On 30 January the ship is in Gibraltar for repairs.

01/27/81: The USS **Guam** (LPH-9) suffers a minor fire of suspicious origin in an unoccupied compartment while in Norfolk, Virginia.

01/28/81: The USS **Sylvania** (AFS-2) and USS **Kalamazoo** (AOR-6) collide amidships during underway replenishment in the Virginia Capes area with no serious damage.

02/20/81: The USS **Downes** (FF-1070) is under tow by the USS **Narragansett** (T-ATF-167) from Diego Garcia to Subic Bay, Philippines, for repairs

following casualties to both boilers. On 22 February the **Downes** is able to bring one boiler back into operation and continues to Subic Bay on its own power in company with the **Narragansett**.

02/21/81: The USS **Okinawa** (LPH-3) experiences a brief fire during training off San Clemente Island, California, but the ship continues its scheduled operations.

03/14/81: The naval reserve destroyer USS **Cone** (DD-866) is temporarily grounded while departing Charleston, South Carolina. After being freed by a tug the **Cone** returns to Charleston for hull damage assessment.

03/19/81: The USS **Yellowstone** (AD-41) and the USS **Robert A. Owens** (DD-827) collide off Florida, causing extensive damage but no casualties.

03/26/81: The USS **Guardfish** (SSN-612) touches ground while in the San Pedro Channel on the way to San Diego, California. There were no personnel injuries and an on-board inspection revealed no hull or equipment damage.

04/03/81: A fire breaks out in the engine room of the USS **Taluga** (T-AO-62) while the ship is operating 80 miles west of San Diego, California. Two injured crew members are airlifted to San Diego by helicopter. The fire is extinguished and the **Taluga** proceeds to port.

04/04/81: Workers at Coastal Drydock in New York (formerly Brooklyn Navy Yard) inadvertently cause a fire on the USS **Aylwin** (FF-1081) while welding. The frigate's Combat Information Center is damaged.

04/09/81: The USS **George Washington** (SSBN-598) collides with the 2,350-ton Japanese freighter **Nissho Maru** in the East China Sea about 110 miles south-southwest of Sasebo, Japan. As it is surfacing, it runs into the underside of the freighter, damages its it

hull and causes it to sink in approximately 15 minutes, killing two Japanese crewmen (13 others are rescued). The submarine suffers minor damage to a small section of its sail. The accident sparks a political furor in Japan, straining U.S.-Japanese relations a month before a meeting between Prime Minister Zenko Suzuki and President Ronald Reagan. The United States is criticized because: it took over 24 hours to notify Japanese authorities; the submarine and a U.S. P-3 Orion aircraft overhead did not make a rescue attempt; and the submarine was operating so close to Japan, less than 20 miles outside the 12-mile limit. The U.S. Navy initially says the submarine surfaced but could not see any ship in distress due to fog and rain. On 11 April President Reagan and other U.S. officials express regret over the accident, make offers of compensation and reassure the Japanese there is no cause for worry about radioactive contamination, but refuse to say what the submarine was doing so close to Japan or whether it was armed with nuclear missiles. Over the next several months as the controversy continues, the U.S. Navy: accepts responsibility to preclude lengthy litigation; is criticized for its preliminary report which says the submarine and Orion claimed not to have realized the freighter was sinking; and relieves and reprimands the commanding officer and officer of the deck of the submarine. On 31 August the Navy releases a final report which concludes the accident resulted from a highly coincidental set of circumstances, compounded by errors on the part of some members of the submarine crew.

04/13/81: The USS **William H. Bates** (SSN-680) is reported to run into gillnets near the Hood Canal in Washington state.

04/27/81: The USS **Manitowoc** (LST-1180) and the USS **Trenton** (LPD-14) begin a five-day visit to Alexandria, Egypt. The USS **Jack** (SSN-605) also is in port. The **Trenton**

and **Jack** suffer minor damage when the **Jack**, moored alongside, surges against the **Trenton** in a sea swell.

05/01/81: In May the Royal Navy destroyer HMS **Glasgow** collides with the Soviet cruiser **Admiral Isakov** in the Barents Sea. The **Glasgow's** captain reports the Soviet ship was maneuvering dangerously.

05/15/81: A hairline crack is discovered in the main cooling system of the Royal Navy nuclear-powered attack submarine HMS **Valiant** as it returns to Devonport, U.K., after developing a fault in its cooling system while operating off the Cornish coast. The crack does not affect the operation of the reactor and the vessel returns to Devonport under its own power. The Royal Navy denies claims that contaminated water was discharged into Plymouth Sound, saying "A very small quantity of water leaked out and this was drained off into a lead tank in a barge for treatment." The reactor is cooled down before the leak is plugged.

05/26/81: A Marine EA-6B Prowler aircraft crashes while landing on the USS **Nimitz** (CVN-68) operating 70 miles off Jacksonville, Florida, killing 14 and injuring 48. The aircraft reportedly applied power as it was landing and then suddenly drifted to the right, running into parked aircraft, causing ammunition to explode, and starting numerous fires that took at least one hour to put out. Three F-14 Tomcats are destroyed and 16 other aircraft are damaged, and, overall, approximately \$100 million in damage results. The **Nimitz** returns to Norfolk, Virginia, for several days of repairs. The crash sparks a five-month debate between Representative Joseph P. Addabbo (D-NY) Chairman of the House Defense Appropriations Subcommittee and the Navy over whether drug use on board the carrier may have contributed to the crash.

06/01/81: The USS **Nitro** (AE-23) is badly damaged by a fire in the main

machinery room while en route to Athens, Greece, 60 miles northeast of Souda Bay, Crete. It is taken under tow the next day by the USS **Neosho** (T-AO-143) for Souda Bay.

06/04/81: A Soviet Kondor class minesweeper suffered heavy damage when she was in a collision in international waters with a Danish naval oiler in the southern area of the Baltic Sea.

06/10/81: The USS **Detroit** (AOE-4) runs aground on a sandbar near Old Point Comfort, Hampton Roads, Virginia, as the ship is preparing to enter port at Norfolk. There are no injuries or apparent damage. The ship is refloated the next day after off-loading its fuel.

06/29/81: The USS **Dahlgren** (DDG-43) suffers a two-hour fire in the radiomen's storeroom while in the Caribbean. The damage is light and the ship proceeds to Guadeloupe.

07/14/81: The USS **Coontz** (DDG-40) accidentally fires a Harpoon anti-ship missile with a high-explosive warhead during a maintenance test about 70 miles from St. Croix, U.S. Virgin Islands. The missile impacts and is lost at sea.

07/19/81: A U.S. Marine Corps Reserve CH-53 Sea Stallion helicopter crashes and burns while landing aboard the USS **Guam** (LPH-9) during training operations in the Atlantic 35 miles southeast of Moorehead City, North Carolina, killing four and injuring 11 other Marine and Navy personnel.

08/06/81: Wardroom 1 of the USS **Ranger** (CV-61) catches fire, causing extensive damage while the ship is moored at Naval Air Station North Island, San Diego, California. Reportedly "reconstruction was monumental" and "communication's problems extended into work-ups."

08/15/81: A fire on board the USS **Independence** (CV-62) while in

overhaul at the Norfolk Naval Shipyard, Virginia, damages the air operations and carrier control approach spaces. There are no injuries.

08/27/81: The USS **Dallas** (SSN-700) damages the lower portion of its rudder when it runs aground while approaching the Atlantic Underwater Test and Evaluation Center site at Andros Island, Bahamas. The submarine works itself free after several hours and returns to New London, Connecticut, on the surface for repairs.

09/01/81: According to raw CIA intelligence reports, in September a Soviet nuclear submarine operating in the Baltic "underwent a series of strong and sudden physical shocks. An emergency was declared and ... crew members were sealed into the compartment in which they were standing duty. The submarine was no longer navigable following the shocks and was taken under tow. It was towed for a total of 36 hours but was actually only moved during darkness." The submarine was towed to Kaliningrad and "the sailors that had been sealed in the compartment were then flown to Riga and hospitalized." The CIA source reports all the sailors exhibited signs of terminal radiation sickness.

09/06/81: A landing A-7 II Corsair aircraft collides with a taxiing F-14 Tomcat fighter on the USS **Kitty Hawk** (CV-63) killing one crewman and injuring two others while the carrier is operating in the Indian Ocean. The A-7 is recovered and the F-14 crew ejects safely, but the F-14 rolls overboard.

09/17/81: A U.S. Marine Corps CH-53C Sea Stallion helicopter crashes while attempting to land on the USS **Guadalcanal** (LPH-7) during Sixth Fleet training exercises in the Mediterranean near Sardinia, Italy, killing all five crewmen.

09/20/81: The USS **Conyngham** (DDG-17) runs aground momentarily

while making a slow approach to the Mauritian coast causing minor damage to the sonar.

09/20/81: The Philippine Navy frigate **Datu Kalantiaw** is forced aground by 127 miles per hour winds from Typhoon Clara while on anchor near Calayan Island, 340 miles north of Manila, with only 18 of 97 crew surviving.

09/24/81: The USS **Guadalcanal** (LPH-7) and the USS **Waccamaw** (T-AO-109) collide during underway replenishment south of Sardinia, Italy, causing minor damage but no injuries.

09/25/81: An Israeli missile boat runs aground on a Saudi Arabian reef in the Gulf of Eilat after its electrical system goes bad, knocking out its navigational equipment. The Saudis permit the Israelis to rescue the boat; 12 days later it is removed.

09/30/81: The USS **Pegasus** (PHM-1) collides with the USS **Newport** (LST-1179) while making an approach to connect for towing north of Cuba, causing minor damage.

10/07/81: The USS **Inchon** (LPH-12) suffers a boiler explosion while preparing to get underway from Norfolk, Virginia.

10/13/81: The USS **Waccamaw** (T-AO-109) collides with the USS **Raleigh** (LPD-1) while the USS **Detroit** (AOE-4) is alongside. The ships are underway in the Mediterranean.

10/17/81: The USS **Waccamaw** (T-AO-109) is struck by an Italian tug in Cagliari, Sardinia, Italy, when the tug loses control while making an approach to aid in maneuvering. The oiler is holed but no pollution results.

10/21/81: The USS **Cook** (FF-1083) observes a Soviet Foxtrot class diesel-powered attack submarine under tow while conducting intelligence operations off Socotra Island in the

Indian Ocean.

10/27/81: A Soviet Whiskey class diesel-powered attack submarine runs aground 10 kilometers from the Swedish naval base of Karlskrona, 300 miles south of Stockholm. The Swedish government alleges the submarine was engaged in illegal reconnaissance or mine-laying work and there was good reason to believe the vessel is carrying nuclear weapons. The Swedes demand an apology and an explanation. When the submarine captain is questioned he contends bad weather and a faulty compass led to the inadvertent intrusion into Swedish waters. But the Swedish authorities maintain that good navigation was necessary for the vessel to come this far into their waters. On 29 October a Soviet tug is turned back by Swedish warships and another unidentified submarine is spotted within Swedish waters and is pursued by Swedish antisubmarine warfare helicopters until it disappears. On 2 November the submarine is refloated by Swedish tugs to prevent heavy seas from battering the ship. On 5 November the Swedish government announces that the submarine probably has nuclear weapons aboard. Foreign Minister Ullsten says "it must be very embarrassing" to have this information released when the Soviets "have created the impression that they are more in favor than the United States" of arms control. On 6 November the submarine is returned to the Soviets. The same day the Swedish government expresses the view that previous Soviet proposals in regard to the Baltic as a "sea of peace" were no longer credible. Officials said the incident would affect Swedish attitudes toward Nordic nuclear-free-zone proposals from the Soviet Union. It is later reported on 6 May 1982 that the Soviet government had agreed to pay Swedish costs of \$212,000 arising from the incident.

11/02/81: At the Holy Loch naval base in Scotland a Poseidon submarine-launched ballistic missile is dropped 13 to 15 feet as it is moved

aboard the submarine tender USS **Holland** (AS-32) after an error by the crane operator. The fall is arrested by a safety device, but critics suggest there was a serious chance that a conventional explosion could have taken place, dispersing radioactive material. This explosion could have occurred because the Poseidon warhead uses an unstable conventional high explosive called LX-09. Moreover, the Navy is upbraided for not immediately reporting the incident or notifying surrounding communities of possible danger. The U.S. Navy refuses to confirm or deny whether there were nuclear weapons on the missile and states "there was no damage done, no injuries occurred; there was no danger to personnel."

12/03/81: An arresting wire breaks during the landing of an A-7 Corsair aircraft on the USS **John F. Kennedy** (CV-67) while operating in the Caribbean Sea, killing two men and injuring three. Four aircraft including the A-7 are damaged.

01/04/82: A U.S. Navy ship collides with an Italian tanker in the Straits of Messina.

01/10/82: The USS **Mispillion** (T-AO-105) and the civilian tanker **Texas Trader**, under Navy contract, collide during a routine fuel transfer in the Indian Ocean. There are no personnel injuries and no serious damage to either ship.

01/16/82: Five U.S. Navy personnel die in a diving accident aboard the USS **Grayback** (SS-574) off the coast of Subic Bay, Philippines.

02/01/82: In early February, the USS **Seattle** (AOE-3) is hit by a tugboat while getting underway from Craney Island, Norfolk, Virginia, causing extensive damage to equipment on the ship's aft end.

02/02/82: The USS **Ponce** (LPD-15) collides with the USS **Fort Snelling**

(LSD-30) during a towing exercise which causes minor damage to the **Ponce's** port side, mainly to the accommodation ladder and flight deck catwalk. The two ships were en route to Portsmouth, U.K.

02/18/82: The South African Navy flagship the frigate **President Kreuger Tafelberg** during night maneuvers in rough seas and gale force winds south of the Cape of Good Hope and sinks. Thirteen of her crew are reported missing and 177 sailors are saved.

03/01/82: In March both of the USS **Inchon's** (LPH-12) emergency diesel generators become inoperable during training in the Caribbean. The ship is unable to finish training. A portable emergency diesel generator is attached to the flight deck and the ship is escorted back to Norfolk, Virginia, by the USS **Pensacola** (LSD-38).

03/13/82: Fourteen aircraft from the carrier USS **Forrestal** (CV-59) are diverted to Homestead Air Force Base, Florida, after a boiler failure causes a "partial electrical failure" on the carrier. The ship was on exercises off Guantanamo Bay, Cuba.

03/18/82: The USS **Newport** (LST-1179) suffers a Bravo Class fire in a main engineering space while anchored at Berbera, Somalia.

03/22/82: The USS **Jacksonville** (SSN-699) collides with the Turkish cargo ship the **General Z. Dogan** while running on the surface 25 miles east of Cape Charles, Virginia. Damage to the **Jacksonville** is reported as minor and characterized as "bumps and scrapes," while bow damage is reported on the **General Z. Dogan**.

04/10/82: The West German built submarine **Pisagua**, built for Venezuela, collides in the Danish Straits with a merchant ship as it is completing its sea trials. The ship is towed to Kiel,

Germany.

04/19/82: The Irish fishing boat **Sharelga** capsizes and sinks in the Irish Sea after being dragged by the Royal Navy diesel submarine HMS **Porpoise** which had become entangled in the trawler's nets. The British government initially denies a submarine was in the area, and then admits responsibility two weeks later.

04/20/82: Seven people are injured in an explosion aboard the USS **Garcia** (FF-1040) which is being overhauled at General Shipyard in Boston, Massachusetts.

04/20/82: The USS **Brewton** (FF-1086) suffers a casualty to its service diesel generator, curtailing the ship's participation in "Rimpac 82" exercises.

05/08/82: The USS **Chauvenet** (T-AGS-29) runs hard aground on Dausan Reef in the Cagayan Islands in the Sulu Sea while underway from Subic Bay, Philippines, to survey grounds in Indonesian waters. After two-and-one-half weeks of salvage efforts, the ship is refloated by U.S. Navy salvage teams and towed to the Ship Repair Facility in Subic Bay.

05/15/82: Swedish coastal authorities report a Soviet destroyer or large frigate is on fire in the Baltic Sea, 22 miles off Latvia.

05/22/82: The USS **Fletcher** (DD-992) strikes the USS **Towers** (DDG-9) and the USS **Francis Hammond** (FF-1067) causing minor damage while attempting to moor alongside the two ships in Subic Bay, Philippines.

06/11/82: The USS **Seattle** (AOE-3) and the USS **Aylwin** (FF-1081) collide when the **Seattle** loses steering control while refueling the frigate during transit across the Atlantic to the Mediterranean.

06/12/82: The USS **Bonefish** (SS-582) suffers main engine casualties when all

three main engine spaces are flooded while operating on the surface in the Pacific. No material damage on personnel injuries occur.

06/12/82: The USS **Cleveland** (LPD-7) and the USS **Ashtabula** (AO-51) collide in the Gulf of Thailand during underway replenishment. Damage is minor and there are no injuries.

06/17/82: Ten persons are injured when a 1,200-lb. steam valve ruptures aboard the USS **Saratoga** (CV-60), which is undergoing a Service Life Extension Program overhaul in Philadelphia Naval Shipyard, Pennsylvania.

06/20/82: A target hulk being towed by the USS **Reclaimer** (ARS-42) scrapes a Chinese tanker while the vessels are leaving Singapore. There are no injuries and damage is minor.

07/12/82: The USS **Seattle** (AOE-3) suffers a "freak explosion" in the after portion of the ship while moored alongside a fuel pier at Porto Torres, Sardinia, Italy. A chemical reaction between fuel vapors and a chemical stored in one of the blast-torn spaces causes the explosion which damages the after steering compartment and Enlisted Dining Facility. The **Seattle** is able to get underway for Naples less than 12 hours after the general quarters alarm was first sounded.

07/15/82: In mid-July the 30-foot yacht **Fyfield Five** is struck by an underwater object off the Tuskar Rock off Ireland and sinks. The owner Ken Roberts insists he was sunk by a submarine -- reportedly a periscope crashed up through the keel of his boat. The press is initially skeptical, but then a dockyard worker tells the **Morning Star** newspaper that the Royal Navy diesel submarine HMS **Opossum** was having emergency repairs done to her conning tower in Portsmouth. The Ministry of Defense admits the **Opossum** was damaged in a collision at sea 400 miles west of Plymouth, U.K., on the day

Robert's boat sank, but says this is well to the west of where Robert's vessel went down. The Ministry of Defense is unwilling or unable to provide details, but does not deny reports the **Opossum** was hit by a Soviet spy trawler.

08/19/82: A Royal Navy board is set up to investigate damage done to the Royal Navy nuclear-powered ballistic missile submarine HMS **Revenge's** gearbox caused by the presence of a small, extraneous piece of metal as the submarine is nearing the end of a two-and-a-half-year major refit at Rosyth, Scotland. The damage delays the submarine's scheduled completion date.

09/21/82: The U.S. shrimp boat **Howard M.** operating in the Pacific off Washington state snags what may have been a Soviet submarine, according to the U.S. Department of Defense. The skipper of the boat Danny Parker reports he was dragged about a mile and a half until a cable snapped.

09/28/82: The USS **Sam Houston** (SSN-609) spills less than 50 gallons of low-level radioactive water during a test while it is in the Puget Sound Naval Shipyard, Bremerton, Washington, undergoing routine maintenance, according to the Navy. The spill was stopped, the water was contained within the ship, and no radioactivity was released to the environment. The submarine's reactor was not operating. Two individuals were in the area during the spill and one of these individuals received low-level radioactive contamination.

11/29/82: The USS **Thomas A. Edison** (SSN-610) collides with the USS **Leftwich** (DD-984) in the South China Sea 40 miles east of Subic Bay, Philippines. The **Edison** was at periscope depth preparing to surface; it damaged its sail and sail planes, but there was no flooding. Both ships remain operational after the accident.

12/01/82: The Royal Navy nuclear-powered attack submarine HMS **Spartan** is caught in the nets of the English trawler **Algrie** off Land's End, Cornwall, U.K., in the Celtic Sea. As the trawler is dragged forward the fishermen radio to shore, and several minutes later the submarine surfaces with the nets and tackle laying across the vessel. The nets, costing 7-8,000 pounds sterling, are cut free, and the submarine continues on its patrol.

12/31/82: In late 1982 the USS **Permit** (SSN-594), cruising on the surface, collides with the USS **La Jolla** (SSN-701), at periscope depth, while they are on sea trials about 30 miles off San Francisco. The **Permit** receives a ten-foot-long, three-foot-wide "scrape" in the paint on the keel, while the **La Jolla** suffers minor rudder damage.

01/03/83: The USS **Arkansas** (CGN-41) collides with the Italian merchantman **Megara Ilea** in the Strait of Messina, and is "slightly damaged on the port side."

01/19/83: The USS **Kitty Hawk** (CV-63) has a minor collision with the Canadian Maritime Forces Ship **Yukon** off the coast of Washington state. There are no personnel injuries or serious damage.

01/22/83: The East German passenger ship **Volkerfreundschaft** collides with a **West German** submarine north of Rostock, East Germany, in the Baltic Sea with no injuries resulting.

02/10/83: In the Atlantic the USS **Antrim** (FFG-20) suffers a fire in the wardroom and Computer/Radar Electronics spaces after it is struck by a drone during live firing of the Phalanx self-defense close-in-weapon-system Gatling gun. A civilian instructor dies from burns caused by the ignition of residual fuel in the target drone.

02/25/83: The Royal Navy minehunter HMS **Brocklesby** and the coastal

minesweeper HMS **Nurton** collide about two miles off Portland harbor, U.K., during routine exercises.

03/11/83: A Danish trawler catches a Danish submarine in its nets off Bornholm Island in the Baltic Sea.

03/15/83: About 15 miles south of the Danish island of Bornholm in the Baltic Sea, the West German fishing trawler **Gertraud** catches a Soviet or Polish Whiskey class diesel-powered attack submarine in its nets. The trawler is surrounded by Warsaw Pact warships on maneuvers in the area as the submarine surfaces so its the crew can cut the submarine free. The submarine resubmerges, leaving the trawler with a damaged net.

03/16/83: The USS **Antrim** (FFG-20) collides with the USS **Flatley** (FFG-21) 160 miles north of Puerto Rico during training exercises. Both received only superficial damage.

04/01/83: In April during an Indian Ocean deployment the USS **Dale** (CG-19) collides with the Royal Navy frigate HMS **Ambascade**. The **Ambascade** is laid up in Bombay during May while work on "new bow material" is carried out.

04/28/83: The USS **Enterprise** (CVN-65) runs aground within sight of the port of San Francisco, California, after eight months at sea; it is stranded for five hours until the tide and tugs pull it free.

06/01/83: In June a Soviet Charlie class nuclear-powered cruise missile submarine sinks somewhere east of the Soviet naval base of Petropavlovsk, near the southern tip of the Kamchatka peninsula in the Pacific. U.S. intelligence reports most or all of the 90-person crew are lost. The cause of the accident is not known, but the lack of radioactive contamination is said to indicate that the accident was probably due to mechanical failure, not a nuclear

power plant accident. The submarine is salvaged by the Soviet Navy in early August 1983.

07/01/83: In July a gunnery computer malfunction causes the USS **George Philip** (FFG-12) to fire a 3-inch shell toward a Mexican merchant vessel during a drill about 40 miles off San Francisco, California. According to the Navy the round landed nine miles behind the merchant ship, but some **George Philip** crewmen say it actually landed just one mile behind the ship.

07/18/83: The USS **Ranger** (CV-61) collides with the USS **Wichita** (AOR-1) during refueling 100 miles off San Diego, California. The **Ranger's** flight deck elevator is damaged, but no injuries are reported. The **Wichita** damages its refueling capability. The port fueling riggings are put out of commission, including the loss of all fuel hoses. Also part of the **Wichita's** aft superstructure is crushed on the starboard side.

07/19/83: The USS **Texas** (CGN-39) is holed above the waterline after hitting a quay while leaving the port of Brisbane, Australia.

07/26/83: A West German reconnaissance ship collides with an East German naval vessel.

08/01/83: In August the USS **Davidson** (FF-1045) suffers a Class Alpha fire while in the Pacific.

09/18/83: The Royal Navy nuclear-powered attack submarine HMS **Conqueror** suffers a fire while in drydock in Devonport, U.K., for a refit. No injuries are reported.

09/30/83: The Royal Navy assault ship HMS **Fearless** is slightly damaged in collision with a West German tanker.

10/26/83: The Brixham, U.K., trawler **Esther Colleen** is badly holed when it rams the Royal Navy frigate HMS **Ambuscade** in heavy fog off Torbay,

Devon, U.K. The frigate suffered minor damage.

10/26/83: A seaman is dismissed and jailed for starting a fire aboard the Royal Navy frigate HMS **Penelope**.

10/31/83: The USS **McCloy** (FF-1038) is towing a sonar array west of Bermuda when suddenly the cable goes slack. The next day a Soviet Victor III class nuclear-powered attack submarine is sighted motionless on the surface 282 miles west of Bermuda and 470 miles east of Charleston, South Carolina, by a U.S. P-3 Orion patrol aircraft. U.S. Navy officials believe that while the submarine was following the **McCloy**, the sonar array caught in the submarine's propeller. There is no indication of leaking radiation, according to a Navy spokesman. On 5 November the submarine is taken under tow by a Soviet salvage ship in the direction of the Cuban port of Cienfuegos. Further observation while the submarine is under tow leads the Navy to believe the damage is relatively minor and relates to the submarine's propeller.

11/01/83: A fire breaks out aboard the USS **Ranger** (CV-61) while deployed in the North Arabian Sea, killing six and injuring 35. The fire is in one of the four main machinery spaces and reportedly is extinguished within an hour although there is one reflash which is extinguished. The vessel continues operations in the North Arabian Sea.

11/17/83: The Soviet Krivak I class frigate **Razyaschy** collides with the USS **Fife** (DD-991) in the North Arabian Sea, causing minor damage to the **Fife** but no casualties. Reportedly the **Razyaschy** attempted to approach the USS **Ranger** (CV-61). When the **Fife** attempted to head off the Soviet ship, the two ships grazed hulls, leaving two 15-foot scrapes in the **Fife's** paint. Reports say the Soviet ship earlier narrowly had missed a collision with another U.S. vessel.

11/22/83: The USS **Kitty Hawk**

(CV-63) and the USS **Wabash** (AOR-5) have a minor collision during refueling in Oakland, California.

11/27/83: The lead ship of the Soviet Slava class cruisers returns to the Black Sea after sustaining possible engine damage while on its maiden voyage to the Soviet Northern Fleet. The ship had left the Black Sea on 16 September.

12/10/83: The crew of the Royal Navy patrol boat HMS **Vigilant** is rescued after the vessel gets into difficulties off Northern Ireland.

12/19/83: The Trident submarine USS **Florida** (SSBN-728) is slightly damaged when it hits an unidentified object while submerged during sea trials in Long Island Sound. No one is injured and a Navy spokesman says he has no cost estimate on the damage.

12/31/83: In 1983 hull collision damage was repaired and the sonar dome rubber window was changed on the USS **Leftwich** (DD-984).

12/31/83: In 1983 extensive temporary sail repairs are accomplished on the USS **Thomas A. Edison** (SSN-610).

01/09/84: The USS **Detroit** (AOE-4) suffers a Class Bravo fire in the 1A1 Forced Draft Blower while moored at Souda Bay, Crete. Several crew members are treated for smoke inhalation.

02/14/84: During attempts to move an assault craft to Radio Island, near Moorehead City, North Carolina, the USS **Ponce** (LPD-15) suffers a major casualty when her sterngate is damaged and eventually lost. The **Ponce** goes to Philadelphia Naval Shipyard for repairs.

02/15/84: The U.S. Navy's Nuclear Weapons Training Group Atlantic submits an "OPREP-3 Navy Blue Bent Spear [nuclear weapons incident] as a result of a material failure in a W80 trainer [warhead for the] (Tomahawk)

[sea-launched cruise missile]."

03/01/84: A Soviet Kresta II class cruiser suffers a two-hour fire while it is monitoring a NATO exercise in the Mediterranean.

03/08/84: An unidentified submarine drags the Clogherhead, Ireland, trawler **Oriel** astern for two miles east of County Louth, Ireland. The skipper cuts the nets to free his boat. An official Irish Ministry of Transport inquiry takes place but its findings are never made public.

03/21/84: The USS **Kitty Hawk** (CV-63) is struck during night operations by a surfacing Soviet Victor I nuclear-powered attack submarine in the southern Sea of Japan, approximately 100 miles from mainland Japan, while en route to the Yellow Sea. The **Kitty Hawk** sustains a minor hole below the waterline in an aircraft fuel tank on the starboard side and continues normal operations. The Soviet vessel is observed dead in the water for a while with a dent across its aft deck. It is assisted by the Soviet Kara class cruiser **Petropavlovsk** and later is towed by a Soviet salvage vessel to the Vladivostok naval base. U.S. Navy officers say there was no evidence of nuclear leakage from the submarine. The **Kitty Hawk** had been taking part in joint U.S.-Korea "Team Spirit 84" exercises. The submarine had been following the **Kitty Hawk** carrier group with other surface ships for several days. Navy officials claim the carrier's escort ships deliberately broke contact with the submarine after simulating its destruction 15 times to begin a new phase in the exercise where the **Kitty Hawk** would use deception techniques to lose the trailing Soviet surface ships. The Soviet submarine apparently lost track of the **Kitty Hawk** and was surfacing to find it when the collision occurred.

03/29/84: The Danish fishing boat **Ane Kathrine** is dragged under by the West German diesel submarine **Simpson**, which was on sea trials in the North Sea

prior to delivery to Chile, killing three.

04/01/84: In April the USS **Barbour County** (LST-1195) runs aground on the Coronado strand in San Diego, California, but the ship is successfully extracted in less than 24 hours.

04/02/84: The Glasgow Herald reports the U.S. Navy at Holy Loch, Scotland admits that the paint on the USS **Sam Rayburn** (SSBN-635) was mildly radioactive when it returned from patrol in February 1984. The Navy says this is very low-level radioactivity, so low that it could not be detected by a geiger counter. Reports about the radiation had been circulating for a month, leading to claims that the **Sam Rayburn** had been in a collision sometime in the fall of 1983 which had caused the ship to leak or become contaminated with radiation. The Navy's statements serve to add to the controversy.

04/02/84: At midday in the South China Sea the Soviet carrier **Minsk** fires eight signal flares at the USS **Harold E. Holt** (FF-1074) when the latter passes the **Minsk's** starboard side at a distance of 300 meters after disregarding a request from the **Minsk** to stand clear. Three flares strike the **Holt** but no one is injured. A U.S. Navy official acknowledges equal U.S. blame for the incident.

04/12/84: The Royal Navy frigate HMS **Plymouth** collides with the West German frigate **Braunschweig** in heavy fog while taking part in NATO exercises in the Baltic Sea.

04/23/84: While getting underway from Norfolk, Virginia, the USS **Kittiwake** (ASR-13) backs down on the USS **Bergall** (SSN-667), causing damage to the **Bergall's** sonar dome and the **Kittiwake's** propeller.

05/17/84: A fire breaks out aboard the USS **Guitarro** (SSN-665) during a training exercise 65 miles northwest of San Diego, California, near San

Clemente Island. Officials said that the fire originated in the submarine's battery well due to high heat from electrical discharge on one of the cells. A sailor making rounds discovered heat, steam, and a glow emitting from the battery well when he opened a well hatch. The submarine headed for port and the crew had the fire under control but still burning when the submarine arrived.

05/19/84: The Royal Navy Antarctic support ship HMS **Endurance** returns from Antarctica with a hole in its hull.

06/06/84: The USS **Sumter** (LST-1181) undergoes repairs to the starboard propeller shaft until 18 June at the Little Creek Amphibious Base, Virginia. Sections of the pitch control rod and hydraulic control components within the starboard shaft and propeller assembly are repaired.

06/11/84: During work-ups off the coast of North Carolina the USS **Inchon** (LPH-12) develops a leak in the fuel oil transfer system and returns to Norfolk, Virginia, for repairs.

06/14/84: The Royal Navy frigate HMS **Jupiter** hits the London Bridge while attempting a U-turn in the Thames River.

06/15/84: While operating in the Indian Ocean, a F-14 Tomcat aircraft from Fighter Squadron 33 crashes on the flight deck of the USS **America** (CV-66) in a Class Alpha accident causing more than \$500,000 in damage but no injuries.

06/20/84: A Soviet Whiskey class diesel-powered attack submarine is trapped for three and a half hours in fishing wire of a Norwegian trawler in international waters in the North Sea. The submarine is freed only after surfacing and being aided by the Norwegian Coast Guard.

08/11/84: The USS **Nathanael Greene** (SSBN-636) reportedly loses her propeller in the Irish Sea. The submarine proceeds back to Holy Loch,

Scotland, using its secondary propulsion system. Facilities at the U.S. base are unavailable, so the submarine is towed to the nearby British submarine base at Faslane, Scotland.

08/11/84: The Royal Navy large fleet tanker HMS **Olwen** is hit by a storm 700 miles northeast of the Falkland Islands, killing two.

08/14/84: An unidentified submarine drags the British trawler **Joanne C.** around the English Channel for three hours at night after becoming entangled in the trawler's nets eight miles off the U.K.'s southwest coast. When the boat radioed for help the Coast Guard told it to cut its nets as the Royal Navy did have a submarine in the area. The Ministry of Defense later says the only Royal Navy submarine in the area was 30 miles away and that no U.S. submarines were nearby, leading to speculation the submarine belongs to the Soviet Union or another Warsaw Pact nation. Yet on 15 September the skipper of the **Joanne C.** receives compensation of more than 2,000 pounds sterling from the Ministry of Defense, something the Ministry earlier said it would do if a Royal Navy ship was found to be at fault.

08/18/84: A fire reportedly breaks out on board a drydock at the Faslane Royal Navy nuclear submarine base in Scotland while the USS **Nathanael Greene** (SSBN-636) is in the dock for repairs. A U.K. Ministry of Defense official says the fire was caused by an electrical fault in a capstan motor which ignited a small quantity of canvas atop the motor. He denies the fire threatened the submarine, since it broke out in a sealed compartment some distance from the boat. A spokesman for the U.S. Navy confirms the submarine was not damaged, though he refuses to say whether the ship had nuclear weapons on board.

09/10/84: Fire in the exhaust vent of the USS **Ticonderoga** (CG-47) injures 13 crew members and forces the vessel to

return to its home base of Norfolk, Virginia, for repairs. The cause of the fire is unknown.

09/18/84: A Soviet Victor I class nuclear-powered attack submarine is badly damaged in a collision with a Soviet tanker in the Strait of Gibraltar. The submarine reportedly was travelling in the "noise shadow" of the tanker while exiting the Mediterranean Sea. Jane's Defense Weekly notes that the alternating layers of cold and warm water in the narrows of the Strait make it likely for a submarine "to encounter sudden thermal gradients which make her porpoise upwards," and this is thought to be the cause of the accident. The collision rips off the twin-hulled submarine's bow section, exposing the sonar and torpedo tube compartments. The submarine proceeds to the Soviet anchorage at Hammament, Tunisia, for emergency repairs, before returning to its homeport on the Kola peninsula in early October.

09/18/84: The Japanese shrimping boat **Sumiyoshi Maru** catches a submarine in its net in the Sea of Japan. The vessel is pulled backward until the 3-centimeter steel wire holding the net is cut. On 20 September a Soviet Golf II class diesel-powered ballistic missile submarine is sighted on the surface with white smoke coming out of its conning tower in the Sea of Japan, 380 miles west of Tokyo. Reports speculate the smoke comes from a fire started by an electrical overload caused by the snagging of the fishing boat's net. Over the next two days the submarine is attended by several Soviet ships, before proceeding toward Vladivostok under its own power on the 23 September.

09/21/84: The USS **Jacksonville** (SSN-699) collides with a Navy barge off Norfolk, Virginia, while travelling on the surface. The **Jacksonville** strikes the barge amidships and is reported to have caused minor damage to her bow.

09/26/84: The USS **Shasta** (AE-33)

collides with the USS **Cleveland** (LPD-7) during a practice replenishment at sea 30 miles west of Long Beach, California. Both ships sustain minor damage. The **Shasta** is able to continue normal operations.

10/19/84: The Royal Navy frigate HMS **Glamorgan** collides with the German frigate **Bremen** in a gale.

10/26/84: The USS **John A. Moore** (FFG-19) collides with the USS **Ouellet** (FF-1077) near Hawaii during "FleetEx 85-1" exercises in the Pacific, causing minor damage.

10/29/84: The USS **Roanoke** (AOR-7) is grounded just outside the entrance to Pearl Harbor, Hawaii, after suffering a steering casualty, but rides free eight hours later and returns to port.

12/17/84: The USS **Coral Sea** (CV-43) suffers a minor engine room fire during overhaul at Norfolk Naval Shipyard, Virginia. The fire is extinguished in an hour with three men injured and \$6,000 damage to the vessel.

12/31/84: In 1984 the USS **Tattnall** (DDG-19) suffers a major fire.

12/31/84: In 1984 the USS **Sterett** (CG-31) has an emergency drydocking to repair the sonar dome rubber window, replace the inflatable shaft boots, repack the rudder posts, and do other various underwater hull work.

12/31/84: In 1984 the USS **Beaufort** (ATS-2) receives underwater hull, shafting, and controllable pitch propeller repairs for damage sustained as a result of a grounding.

12/31/84: In 1984 the USS **Thomaston** (LSD-28) has an emergency drydocking to accomplish underwater hull repairs sustained as a result of a grounding.

12/31/84: In 1984 the USS **Ranger** (CV-61) suffers two major fires.

12/31/84: In 1984 ship repair contractors in Sasebo, Japan, accomplish \$288,965 of repair work on the USS **Darter** (SS-576) during an emergency 45-day drydocking to repair damages following a collision.

02/05/85: The USS **Ingersoll** (DD-990) suffers a casualty to the port oil distribution box, requiring the ship to leave its battle group in the Indian Ocean.

04/11/85: The USS **Coral Sea** (CV-43) collides with the Ecuadorean tanker **Napo** during air operations 45 miles southwest of Guantanamo Bay, Cuba. A 30-foot hole in the carrier's bow is punched in, and some radar and communications equipment is damaged. The **Coral Sea** returns to drydock in Norfolk Naval Shipyard, Virginia. Eleven aircraft airborne at the time of the accident are diverted to Guantanamo Bay. The **Napo** is holed above the waterline and spills 7,600 barrels of oil before reaching Guantanamo for repairs. A formal investigation later blames the Commanding Officer of the **Coral Sea** for the incident, saying he "used poor judgment in electing to be absent from the bridge during the entire launch and recovery cycle ... with a Soviet vessel within 1,500 yards and with other vessels well within" the closest point of approach limits the captain had established.

06/10/85: The Royal Navy nuclear-powered ballistic missile submarine HMS **Resolution** is struck by the U.S. yacht **Proud Mary** off Cape Canaveral, Florida, in the early morning. The submarine suffers minor damage, but the yacht has to be towed back to port. The **Resolution** on its way to test-fire one of her Polaris missiles on the U.S. Navy's Atlantic Test Range after undergoing a major refit in Rosyth naval shipyard, Scotland.

07/22/85: A dive team embarks on board the USS **Powhatan** (T-ATF-166) to debauch the USS **Boulder**

(LST-1190) in Chesapeake Bay.

08/05/85: The Royal Navy aircraft carrier HMS **Ark Royal** is blown from its berth at Portland, U.K., by 50-mile-per-hour winds. No damage is done and two Navy tugs move the ship back into place.

09/01/85: In the Pacific, an H-46 helicopter crashes on board the USS **Fife** (DD-991) and slips off the deck, but is somehow held to the side by the **Fife's** crew. Nearby vessels provide assistance and no injuries occur.

09/01/85: In September the USS **Darter** (SS-576) collides with a Bahamian merchant ship about 10 kilometers off Pusan, South Korea. The U.S. Navy says there were no injuries.

09/25/85: The Soviet military training auxiliary ship **Khasan** collides with the Turkish fast attack craft **Meltem** in the Bosphorus, slicing it in two. There is thick fog at the time of the collision.

10/15/85: The USS **Estocin** (FFG-15) runs aground near Key West, Florida.

10/24/85: The USS **Swordfish** (SSN-579) suffers a propulsion casualty while operating as part of the U.S. Pacific Fleet.

10/31/85: A Soviet minesweeper collides with a Swedish spy ship in the Baltic Sea.

11/02/85: The USS **Enterprise** (CVN-65) is grounded on Bishop's Rock shoal about 100 miles west of San Diego, California. Reports say the **Enterprise** sustains a 60-foot gash in the outer hull and damages one propeller. The aircraft carrier continues planned operations, taking part in the "ReadiEx 86-1" exercise before going into drydock on 27 November.

11/04/85: The USS **Caloosahatchee** (AO-98) grounds on the Elizabeth River near Norfolk, Virginia, taking two days

to refloat.

11/17/85: The CH-46 vertical replenishment helicopter of the USS **San Diego** (AFS-6) crashes into a parked Marine Corps helicopter on board the USS **Iwo Jima** (LPH-2) during a night replenishment, killing one and injuring four personnel.

11/25/85: The USS **W.S. Sims** (FF-1059) and USS **Moosbrugger** (DD-980) collide at sea in the Guantanamo Bay, Cuba, operating area.

12/10/85: The USS **Lockwood** (FF-1064) collides with the Philippine merchant ship **Santo Nino** while crossing the Uraga Suido outbound of traffic lanes at the entrance to Tokyo Bay, Japan. Damage includes a hole 15-feet wide and 12-feet deep running 25 feet down the starboard side, with three crew injuries. The **Santo Nino** suffers damage above the waterline.

12/31/85: The USS **Narwhal** (SSN-671) drifts for several hours in Palma Bay, Palma Majorca, Spain, after its mooring cable breaks on New Year's Eve.

12/31/85: In 1985 the USS **Forrestal** (CV-59) is discovered to have a reduction gear problem unrelated to its Service Life Extension Program overhaul work (which finished 20 May). The defect forced the ship to return to her homeport of Mayport, Florida, with one propeller trailing to undergo repairs later in the year.

01/13/86: A Japanese maritime patrol aircraft spots a Soviet Echo II class nuclear-powered cruise missile submarine under tow by a Soviet salvage ship about 280 miles northwest of Okinawa in the East China Sea, heading northward. The submarine evidently suffered a propulsion casualty.

01/29/86: The USS **Ingersoll** (DD-990) makes a heavy landing against the Canadian tug **Provider** at Esquimalt, British Columbia. Responsibility is

charged to an inexperienced tug operator and to brisk winds. Damage to both vessels is minimal.

02/10/86: The USS **Willamette** (AO-180) collides with the USS **Jason** (AR-8) 75 miles southwest of Pearl Harbor, Hawaii, during a formation steaming exercise, killing one and injuring eight. The collision smashes the **Willamette's** starboard bow from the rail to below the waterline. A large vertical rupture from deck to waterline on the port side of the **Jason** forces the ship to be towed back to port.

03/13/86: The USS **Nathanael Greene** (SSBN-636) runs aground in the Irish Sea, suffering external damage to its ballast tanks and rudder. A spokesman for the U.S. Navy says "There was no effect on the propulsion, no injuries and no damage to the Poseidon nuclear missiles." The submarine initially sails to Holy Loch, Scotland, under its own power for emergency repairs. It then leaves Scotland on 25 April and travels submerged to Charleston, South Carolina. The extent of the damage subsequently leads to a decision to decommission the vessel, partly in order to satisfy SALT II limitations.

03/22/86: The USS **Secota** (YTM-415) loses power and collides with the stern planes of the Trident submarine USS **Georgia** (SSBN-729) off Midway Island in the Pacific and sinks, just after completing a personnel transfer. Ten crew are rescued, but two drown. The **Georgia** is undamaged.

03/23/86: The USS **Midway** (CV-41) collides with a South Korean fishing boat in the Yellow Sea, damaging the boat but leaving the carrier unscathed.

04/04/86: The Royal Navy aircraft carrier HMS **Illustrious** suffers an explosion and severe gearbox fire, costing some four million pounds sterling in repairs.

04/04/86: The USS **William H.**

**Standley** (CG-32) suffers a main space fire in its Number 1 engine room during "Readiex 86-3" exercises, causing minor damage and no injuries. The **Standley** continues operations.

04/29/86: The USS **Atlanta** (SSN-712) runs aground in the Strait of Gibraltar, damaging sonar gear and puncturing a ballast tank in the bow section. Navy officials stress that no radiation leaked from the nuclear reactor and no crew members were injured. The vessel limps to Gibraltar for repairs, with water entering through holes in the ballast tank.

05/14/86: The Soviet Navy logistic support ship **Berezina** collides with the Soviet ship Capitan **Soroka** while proceeding into the Mediterranean near Istanbul, Turkey. The **Berezina** receives a breached hull to the waterline on the port side.

07/02/86: The USS **Roanoke** (AOR-7) collides with the Liberian oil tanker **Mint Prosperity** while steaming into Long Beach, California, in low visibility. The **Roanoke** sustains only minor damage to its bow and enters Naval Station Long Beach under its own power.

07/29/86: A inquiry begins into a recent boiler fire aboard the Royal Navy frigate HMS **Plymouth** which killed one.

07/30/86: A U.S. Navy Sidewinder air-to-air missile hits the 30,000-ton tanker **Western Sun** carrying 26,000 barrels of oil 60 miles east of Norfolk, Virginia, leaving a reported two-to-three foot gash in the ship's superstructure. One report says the impact started several small fires. The Navy states that it was an inert missile used by an F-14 Tomcat fighter in an exercise within a designated warning area, and that a notice to ships of the exercise had been sent on 24 July.

07/31/86: In late July the USS **Guitarro** (SSN-665) reportedly suffers a minor mishap involving a shipboard valve while at sea. In response to inquiries the

Navy says no serious equipment or safety problems occurred aboard the **Guitarro**.

08/13/86: The USS **Inchon** (LPH-12) suffers a casualty to the ship's evaporators while underway for Moorehead City, North Carolina, causing the ship to return to Norfolk, Virginia, for two days of repairs.

08/16/86: A freak wave crashes over the USS **Carl Vinson** (CVN-70) injuring one man and sweeping seven others into the Pacific Ocean. They were quickly rescued.

09/09/86: A CH-46 Sea Knight helicopter crashes into a CH-53 Sea Stallion helicopter on the flight deck of the USS **Saipan** (LHA-2) while operating off northern Norway during "Northern Wedding" exercises. The Sea Knight flips into the water, killing nine.

09/22/86: The USS **Yellowstone** (AD-41) collides with the USS **Truckee** (T-AO-147) during underway replenishment off Virginia. The **Truckee** has minor superstructure damage, while the **Yellowstone** sustains a two-foot gash in the hull on the port side.

10/03/86: A Soviet Yankee I class nuclear-powered ballistic missile submarine suffers an explosion and fire in one of its missile tubes 480 miles east of Bermuda, killing at least three. General Secretary Gorbachev sends President Reagan a private communication regarding the accident in advance of the public announcement on 4 October, assuring him that there was no danger of nuclear explosion, radioactive contamination, or accidental launching of nuclear missiles. U.S. forces sample the air and water around the submarine and detect no radioactivity. The submarine sinks under tow on 6 October in 18,000 feet of water about 600 miles northeast of Bermuda. U.S. sources said that the explosion probably originated in the liquid fuel of one of the missiles.

10/31/86: In late October the USS **Augusta** (SSN-710) is damaged in an undersea collision while on a routine training patrol in the Atlantic. No crew members are injured and the submarine returns to Groton, Connecticut, for \$2.7 million worth of repairs by year's end. Reportedly, according to unnamed U.S. Defense Department sources, it is unclear whether the submarine struck the ocean floor or an underwater object, but there was no risk of the submarine sinking or danger to the nuclear reactor. A Defense Department spokesman refuses to comment on a CBS news report that the submarine "very possibly" collided with a Soviet submarine.

11/03/86: The USS **Towers** (DDG-9) hits the wharf in the Port of Cairns in northern Queensland, Australia, damaging the wharf.

12/31/86: During Fiscal Year 1986 the USS **William V. Pratt** (DDG-44) runs aground while going from Naval Station Charleston, South Carolina, to Naval Weapons Station Charleston, South Carolina, causing \$1.3 million damage to her sonar domes.

01/01/87: Sometime in the first half of January the Royal Navy nuclear-powered attack submarine HMS **Splendid** loses its towed array sonar system during a close encounter with a Soviet submarine in the Barents Sea off Murmansk. Reportedly the submarine was a Soviet Typhoon class nuclear-powered ballistic missile submarine. It is unclear whether the Soviet submarine severed the **Splendid's** tow-line accidentally or deliberately in an effort to obtain the sensitive technology. The submarine returns to Devonport, U.K., on 31 January.

01/13/87: The USS **Berkeley** (DDG-15) suffers a casualty to the forward sonar dome pressurization system, forcing the ship to reduce speed to 10 knots in heavy seas, and necessitating an unexpected

stop in Guam to ascertain the level of damage and make temporary repairs.

01/14/87: The USS **William H. Standley** (CG-32) sustains minor damage when several ammunition barges which had been secured alongside begin to break loose and pound the sides of the ship in heavy winds and high seas while the ship is anchored in San Francisco Bay, California. The barges are promptly secured, preventing significant damage or their becoming adrift in a crowded waterway.

01/22/87: The USS **Ogden** (LPD-5) suffers a Class Charlie fire.

02/18/87: The Irish trawler **Summer Morn** is dragged backward for 10 to 20 miles for two and one half hours by a U.S. nuclear-powered submarine before it cuts its nets to free the submarine about 14 miles northwest of the Isle of Man in the Irish Sea. The trawler hauls in a submarine communications buoy stuck in its nets. The U.S. Defense Department confirms the submarine was American, but declines to say which submarine it was.

04/07/87: Two sailors are swept from the deck of the USS **Ulysses S. Grant** (SSBN-631) in rough seas three miles outside of the Portsmouth, New Hampshire, harbor; one is rescued but is pronounced dead and the other is lost at sea.

04/21/87: The USS **Richard L. Page** (FFG-5) collides with and sinks the disabled fishing vessel **Chickadee**, which was under tow by another fishing boat, during a high-speed run in heavy fog off Virginia. The incident leads to calls for more drug testing of sailors, though no use on the **Richard L. Page** is ever uncovered.

04/25/87: The USS **Daniel Boone** (SSBN-629) goes aground in the St. James River at Newport News, Virginia, during sea trials following a \$115 million dollar overhaul. The grounding delays

the ship's return to service.

04/29/87: The USS **LaMoure County** (LST-1194) collides with the USS **Hermitage** (LSD-34) about 300 miles off the Georgia coast while the ships are practicing a resupply exercise. The **Hermitage** sustains a five-foot hole in its bow stem above the waterline while the **LaMoure County** sustains superficial damage to its left side. The commanding officer of the **LaMoure County** is relieved pending an investigation of the accident.

05/27/87: The USS **Belleau Wood** (LHA-3) suffers casualties to both boilers' super heater tubes.

06/03/87: The USS **Patterson** (FF-1061) returns to sea after suffering several small fires from efforts to restart a faulty generator while the ship is conducting drills in the Caribbean. The ship was towed to the Roosevelt Roads naval station, Puerto Rico, for one day of repairs. There were no injuries and no damage to the ship.

06/15/87: The West German supply vessel **Neckar** is struck by 46 mm anti-missile and anti-ship gun shells reportedly fired from a Polish vessel while observing a Warsaw Pact exercise in the Bay of Gdansk, about 375 miles east of Kiel. Four shells strike the **Neckar's** starboard side and one lodges near its rear engine room. The ship springs a leak and fire breaks out, but damage is only minor. A West German Defense Ministry spokesman says "there are indications pointing to technical or human failure... There is no reason to think it was done deliberately."

06/25/87: The Royal Australian Navy ship **Parramatta** hits the wharf at the Port of Cairns, northern Queensland, Australia, damaging the wharf.

06/30/87: In late June or early July, the Trident submarine USS **Nevada** (SSBN-733) suffers a breakdown while conducting routine operations following

the improper installation of a power transmission gear during a recent February to April maintenance stop at the Newport News shipyard, Virginia. The damage is estimated at several million dollars, and causes the **Nevada** to cancel a special call at its new home port of Bangor, Washington. In response to queries the Navy says "The safety of the ship and crew was never an issue and the ship is continuing its operations."

07/27/87: U.S. Navy planes conducting bombing practice at night near Okinawa hit the Malaysain freighter **Pomex Saga**, injuring one.

08/15/87: The Royal Australian Navy convenes a board of inquiry to discover why the diesel submarine **Otama** submerged during exercises off New South Wales, Australia, while two submariners were working outside the pressure hull. Both men were killed.

08/26/87: The Royal Navy nuclear-powered attack submarine HMS **Conqueror** suffers a fire while at Devonport, U.K., for a four-month overhaul, damaging its engine room. The British Navy stresses that the fire was far from the submarine's nuclear reactors.

10/01/87: The Royal Navy nuclear-powered ballistic missile submarine HMS **Renown** suffers a leak of reactor coolant during tests in the reactor compartment while at the Rosyth naval base, Scotland, for a refit. The Navy says it was a minor incident, "without any radiation hazard."

11/09/87: The Irish County Down trawler **Angary** is pulled along for a few seconds until its tackle snaps off at deck level, breaking a steel chain tested at 32 tons of stress, and disappears without a trace about 17 miles north of the Isle of Man in the Irish Sea. The fishermen suspect a submarine is responsible, but the U.K. Ministry of Defense says no British submarine was operating in the vicinity.

12/01/87: In December the West German Navy destroyer **Moelders** suffers a major fire while in the English Channel, returning from the Mediterranean. The fire originates in the galley and produces heavy, poisonous smoke which spreads through vents and cable conduits to a number of decks and compartments. It burns for several hours before being brought under control with the assistance of the frigate **Niedersachsen** which then tows the ship to its homeport of Wilhelmshaven.

01/26/88: The Royal Navy nuclear-powered ballistic missile submarine HMS **Resolution** suffers an electrical malfunction while docked in Faslane, Scotland. The Observer newspaper claims that the malfunction shuts down the primary coolant pumps, almost leading to a core meltdown. And, that a crew member who was exposed to radiation had to be scrubbed down for 24 hours. The Ministry of Defense denies these stories, saying the submarine suffered a "minor electrical malfunction;" those that said the submarine's reactor could have melted down didn't know what they "are talking about;" and there had been "absolutely no danger to the crew or the general public."

02/12/88: The USS **Yorktown** (CG-48) and USS **Caron** (DD-970) are bumped by a Soviet destroyer and frigate, respectively, nine miles off the coast of the Crimean Peninsula in the Black Sea. The action came after the two U.S. ships entered the Soviet's 12-mile territorial water limit.

03/06/88: A West German diesel submarine collides with a Norwegian oil platform in the North Sea while taking part in an antisubmarine warfare exercise. The submarine collided with the anchor chain of the oil rig Oseberg B, and while trying get loose struck the rig at 30 meters. The submarine manages to surface in about an hour and proceeds to Bergen, Norway, for inspection and

repair.

04/24/88: The USS **Bonefish** (SS-582) suffers explosions and fire in its battery compartment during operations with the USS **John F. Kennedy** (CV-67) and the USS **Carr** (FFG-52) in the Caribbean, killing three. Submarine experts say that the most likely cause was the accumulation of hydrogen gas while the batteries were being recharged, which probably was ignited by a spark.

04/29/88: The USS **Sam Houston** (SSN-609) runs aground in Carr Inlet off the southeast tip of Fox Island in Puget Sound, Washington, while operating in shallow water to determine how quiet the vessel is in water. The submarine is freed the next day by four tugs and the USS **Florikan** (ASR-9) while the submarine's 142-man crew remains aboard. The submarine suffers minor damage to exterior hull equipment.

05/17/88: The Royal Navy nuclear-powered attack submarine HMS **Conqueror** suffers a fire while docked in Gibraltar. The flames are quickly put out and do not affect the nuclear reactor.

06/01/88: In the first week of June the Royal Navy nuclear-powered attack submarine HMS **Conqueror** is accidentally hit by an unarmed training torpedo dropped by an antisubmarine warfare helicopter during exercises off the west coast of Scotland. The deck plating of the submarine is bent on impact and the submarine proceeds to the Faslane submarine base, Scotland, for repairs.

06/18/88: In mid-June the trawler **Strantail** has its nets torn to shreds by a submarine 18 miles north of Tory Island, Ireland. The submarine which bore no identification markings surfaced near the trawler and cleared itself of the remnants of the nets.

07/02/88: The Royal Navy nuclear-powered attack submarine HMS **Courageous** collides with and sinks the

privately chartered yacht **Dalriada** at night in the North Channel of the Irish Sea. The four persons on board the yacht are rescued by the Royal Navy frigate HMS **Battleaxe** 35 minutes later.

07/16/88: The 78-foot racing yacht **Drum** collides with the partially surfaced Royal Navy diesel submarine HMS **Otus** in the middle of the night as it makes its way around the Mull of Kintyre off the west coast of Scotland. The **Drum** suffers a serious gash on the port side, but is able to make it to Crinan, Scotland, at reduced speed. The **Otus** comes on the radio 20 minutes after the incident offering assistance.

07/17/88: A French navy Super Etendard fighter crashes into the French aircraft carrier **Clemenceau** during a night landing off of Djibouti, killing the pilot.

07/23/88: The Japanese Defense Force diesel submarine **Nadashio** collides with the Japanese sport fishing boat **Fuji Maru** in Tokyo Bay, sinking the boat, killing 30 and causing a political furor over the submarine's lack of efforts to save drowning seamen.

08/02/88: The USS **Constellation** (CV-64) suffers an engine room fire which forces the carrier to cancel scheduled operations and return to port in San Diego, California. The fire, believed caused by a fuel oil leak, begins with an explosion in one of the ship's four engine rooms around noon and is finally extinguished about nine hours later after several subsequent explosions caused by heat from the initial fire. Twenty sailors suffer burns, bruises, and smoke inhalation.

08/28/88: A Japanese freighter collides with a Peruvian navy diesel submarine off Peru, sinking the submarine and killing seven.

08/29/88: The USS **Dwight D. Eisenhower** (CVN-69) collides with an anchored coal ship in Hampton Roads,

Virginia, while entering the harbor to dock at Norfolk Naval Station, when wind and current push the carrier off course. Damage is minor to both ships.

09/01/88: In September the Royal Navy destroyer HMS **Southampton** collides with the container vessel **Torbay** 70 kilometers north of the United Arab Emirates, injuring three aboard the destroyer.

09/03/88: The USS **Berkeley** (DDG-15) strikes the civilian tour boat **Coralita** while trying to dock in Cairns Harbor, northern Queensland, Australia, causing considerable internal damage to the **Coralita**.

09/12/88: The Royal Navy frigate HMS **Penelope** collides with the Canadian naval support ship **Preserver** while participating in the NATO "Teamwork 88" exercise, suffering considerable damage.

09/12/88: The USS **Boulder** (LST-1190) runs aground off Norway during the NATO "Teamwork 88" exercise due to bad weather or uncharted underwater obstructions, causing some major scrapes and tears in the bottom of the hull.

09/15/88: In mid September a Belgian naval ship goes aground off Norway during the NATO "Teamwork 88" exercise due to bad weather or uncharted underwater obstructions.

09/15/88: In mid September a Canadian naval ship goes aground off Norway during the NATO "Teamwork 88" exercise due to bad weather or uncharted underwater obstructions.

09/22/88: An Exocet missile accidentally drops from the Royal Navy fleet auxiliary ship HMS **Regent** onto a barge as it is being unloaded in Plymouth Sound, U.K., almost hitting two men in the barge.

10/23/88: The USS **Hayler** (DD-997)

collides with the West German Navy replenishment tanker **Rhon** while exercising in the North Sea. Both vessels take on water. The **Hayler** receives a gash on her starboard side and proceeds to Rosyth, Scotland, for emergency repairs.

11/01/88: In November, according to a Soviet press account, the Soviet nuclear-powered icebreaker **Rossia** almost suffers a nuclear reactor meltdown when cooling fluid is accidentally released while the ship is in Murmansk. Emergency procedures prevent the core from overheating, averting a possible major accident.

11/09/88: The USS **Towers** (DDG-9) narrowly misses a Japanese helicopter patrol boat with a volley of exercise shells, while exercising off the Boso Peninsula southeast of Tokyo Bay, resulting in a political incident with the Japanese.

11/30/88: A 20 mm cannon on an A-7 Corsair aircraft accidentally fires during maintenance setting six other aircraft ablaze aboard the USS **Nimitz** (CVN-68), operating in the Arabian Sea, killing one. The **Nimitz** continues operations.

12/06/88: The Royal Navy diesel submarine HMS **Ocelot** is reported to return to the Clyde, Scotland, with a forward sonar dome ripped open. The Ministry of Defense denies the tearing is caused by a fishing trawl or cable, saying it was done by wave damage.

12/11/88: A U.S. F/A-18 Hornet aircraft from the USS **Constellation** (CV-64) accidentally strikes an Indian merchant ship with a unarmed Harpoon missile during training operations about 200 miles northwest of Honolulu, Hawaii, killing one. The missile confused a target hulk with the merchant ship which was in the exercise area.

00/00/00: Undated but after 1964 when it was commissioned -- The USS **Von**

**Steuben** (SSBN-632) suffers a reactor scram while the diesel engine is disassembled for maintenance. Large amounts of electricity are needed for a reactor restart, and the battery is exhausted without restarting the reactor. The submarine wallows on the surface for at least several hours as the diesel motor is reassembled by flashlight.

00/00/00: Undated but seemingly in the 1950s or early 1960s -- The USS **Nautilus** (SSN-571) suffers an involuntary reactor shutdown which took 24 hours to overcome, during which she only had steerageway on the surface with her diesel engines.

## Appendix A: Sources and Acknowledgements

This report is based upon a two-year comprehensive search of public information sources, numerous requests for information under the Freedom of Information Act (FOIA), research into U.S. Navy archives and historical documents, and interviews with naval officials and experts. Even so, the report is incomplete, mainly as a result of government secrecy. Little effort has been made on the part of the navies to inform the public as to the extent of naval accidents, particularly those which occur on the high seas. Nuclear weapons and reactor-related accidents, in addition, are hidden by an even greater veil of secrecy.

Yet in the end, using primary sources, we have been able to identify over 1,200 accidents. The overwhelming majority of these are U.S. accidents. The suspicion is that the Soviet Union has an even greater accident record than the U.S., but specific information was not obtainable. A conservative estimate, however, would put the total of major accidents at over 2,000 since the end of World War II, or about one accident every week in the postwar era.

The chronology was begun relying on the work done by a number of other researchers and journalists who have previously looked at nuclear and naval accidents. David Kaplan of the Fund for Constitutional Government and the Center for Investigative Reporting has done the most extensive work to date on accidents in the nuclear navy. Kaplan's first report, "The Nuclear Navy," (Washington, D.C.: FCG, 1983) gives an account of a number of submarine and reactor accidents, some of which could not be confirmed and were excluded from this report. Subsequent articles by Kaplan and various coauthors added some additional information, and these were also evaluated, as were the original newspaper reports Kaplan dug up, as well as his interviews with former crewmen. One set of documents worth mentioning were released to Kaplan partially redacted under the FOIA. They consist of raw intelligence reports submitted by the Domestic Collection Division of the Central Intelligence Agency, on Soviet submarine accidents; they were compiled from interviews with Soviet emigres and defectors, who were asked to recall what they knew about accidents. The reports are unevaluated intelligence reports submitted to U.S. intelligence analysts for their use, and do not reflect what the U.S. intelligence community actually knows about Soviet submarine accidents.

Another set of documents found very useful were released under the FOIA to Ian Lind of the American Friends Service Committee. These documents, "Summary of Nuclear Weapon Accidents and Incidents: 1965-1977," (NWEF Technical Report No. 1070 and supplements; Kirtland AFB, New Mexico: Naval Weapons Evaluation Facility, March 1973) contain statistical data reporting on nuclear incidents in the Navy over an approximate decade long period. The chapter in the yearbook of the

Stockholm International Peace Research Institute (SIPRI) for 1977 by Milton Leitenberg, "Accidents of Nuclear Weapons Systems," World Armaments and Disarmament SIPRI Yearbook 1977 (Stockholm, Sweden, 1977) proved a useful departure point for tracking down major accidents.

The annual "Chronology of U.S. Naval Events" compiled by the Operational Archives Division of the Naval Historical Center from 1960 to 1981, was the main new primary information source. Annual command histories and daily deck logs of selected individual ships and commands, and the histories of the Commander of the Pacific Fleet from 1980 to 1987, proved invaluable. The volume of this material prevented a complete review, but many accidents that were previously unreported were contained in these documents, which were either provided by the Navy under the Freedom of Information Act, or reviewed by the authors or research assistants. Files at the National Archives were also consulted. The official "Narrative Summaries of Accidents Involving Nuclear Weapons," released by the Department of Defense in April 1981 is the Pentagon's last word on the subject of nuclear weapons accidents. The criteria for reporting and defining accidents may need to be updated given the new information uncovered in this report. The study by Robert B. Mahoney, U.S. Navy Responses to International Incidents and Crises, 1955-1975, (Alexandria, Virginia: Center for Naval Analysis, 1977), released under the FOIA, was the best chronology of gunboat diplomacy and crisis naval deployments.

The research for the chronology included a comprehensive search of the New York Times and the Times of London indexes, selected Facts on File Yearbooks and Keesing's Contemporary Archives. Miscellaneous newspaper articles from around the world and Associated Press files were also consulted, as well as articles on the subject of naval and nuclear weapons accidents which have appeared in the military trade press, particularly Jane's Defence Weekly, Proceedings, Seapower, Naval Forces, Navy International, Navy Times, The Hook, Submarine Review, and Aviation Week & Space Technology. Chronologies of the U.S. Naval Institute which appear annually in Proceedings in the May "Naval Review" issue, and the compilation published by the Naval Institute Press in 1973, Naval and Maritime Chronology: 1961-1971, proved invaluable. The history and chronologies contained in U.S. Navy, United States Naval Aviation: 1910-1980 (Washington, DC: Government Printing Office, 1981); David Cooney, Chronology of the U.S. Navy: 1775-1965 (New York: Franklin Watts, Inc., 1975); the annual Asian Security (Tokyo, Japan: Research Institute for Peace and Security); and Norman Polmar's Guide to the Soviet Navy (4th ed. Annapolis, Maryland: Naval Institute Press, 1986) were most useful.

Other books, studies and articles that were consulted and yielded significant original information included William R. Anderson and Clay Blair, Jr., Nautilus 90 North (Cleveland, Ohio: The World Publishing Company, 1959); Edward L. Beach, Around the World Submerged: The Voyage of the Triton (New York: Holt, Rinehart and Winston, 1962); Jan S. Breemer, "Soviet Submarine Accidents: Background and Chronology," Navy International, May 1986; Richard G. Hewlett and Duncan Francis, Nuclear Navy: 1946-1962 (University of Chicago Press, 1974); Norman Polmar and Thomas B. Allen, Rickover (New York: Simon and Schuster, 1982); Jack Sweetman, American Naval History: An Illustrated Chronology of the U.S. Navy and Marine Corps: 1775-Present (Annapolis, Maryland: Naval Institute Press, 1984); Mikhail Turetsky, The Introduction of Missile Systems into the Soviet Navy (1945-1962) (Falls Church, Virginia: Delphic Associates, 1983); U.S. Congress, House Armed Services Committee, "Naval Nuclear Propulsion Program - 1982," Hearings; and Roy Varner and Wayne Collier, A Matter of Risk: The Incredible Inside Story of the CIA's Hughes Glomar Explorer Mission to Raise a Russian Submarine (New York: Random House, 1978).

There are some reported accidents which are not included in this analysis. Thirty-four accidents which were previously recorded in reports, books, or newspaper stories, could not be confirmed. Nine of these come from Appendix F of the book Rickover (Polmar and Allen), which in turn is taken from a Soviet book by V. M. Bukalov and A. A. Narusbayev, Proyektirovaniye Atomnykh Podvodnykh Lodok [Design of Nuclear Submarines] printed in 1968. (David Kaplan included most of these accidents in his report on the nuclear navy.) The Soviet book lists 38 U.S. and two U.K. accidents involving nuclear-powered submarines. Thirty of the remaining 31 accidents are corroborated by other sources and are included in the main chronology. Several of these are listed at different dates than in Rickover, since

more precise dates or correct dates could be determined from other sources. One of the accidents listed was determined to be a double entry and was deleted.

Five Soviet submarine accidents from reports in Jane's Defence Weekly also were excluded. One accident, the meltdown of an Alfa submarine's reactor, is unconfirmed and is inconsistently reported in several Jane's reports. The other four are part of a review article containing a chronology of 27 Soviet submarine accidents with no sources listed. Twenty-two correspond with other information in the public domain and are included in the main chronology (the twenty-third accident was the Alfa).

The remaining entries concern accidents between trawlers and submarines, nuclear-powered submarine accidents, and nuclear-capable ship accidents. The trawler-submarine accidents either were drawn from undocumented or insufficiently documented surveys done in the United Kingdom and Ireland several years after the reputed accident occurred and could not be confirmed by contemporaneous press accounts; or there is still some doubt as to whether a submarine was involved; or official information to substantiate the claimed accident could not be located.

Similarly, the nuclear-powered submarine accidents and nuclear-capable ship accidents were reported several years after the purported accident occurred and could not be confirmed by contemporaneous reports or official information.

Special thanks to Matt Carlson, Damian Durrant, Sean Riley, and Amy Wickenheiser for their primary research help and diligence in slogging through reams of difficult technical material. Also thanks to Forrest Bittner for computer consulting and expertise with the database, to Michael Ross for production assistance, to Jackie Walsh and Julie Morrissey for their assistance, and to Nicolau Barcelo, Jacqui Barrington, Andrew Burrows, Faith Doherty, Amy Halloran, David Kaplan, Walter Kilroy, Hans Kristensen, Orla Ni Eale, Malcolm Spaven, Kris Thedens, and Karen Topakian for their contributions and responses to requests for information. Robert S. Norris reviewed the manuscript and offered numerous useful comments. Special thanks to Ruth Young for editing the report and chronology.

William M. Arkin and Joshua M. Handler, May 1989

## Appendix B: U.S. Ship Type Abbreviations

### A. Major Combatants

#### 1. Aircraft Carrier Type

CV	Multi-Purpose Aircraft Carrier
CVA	Attack Aircraft Carrier
CVAN	Nuclear-Powered Attack Aircraft Carrier
CVE	Escort Aircraft Carrier
CVL	Light Aircraft Carrier
CVN	Multipurpose Nuclear-Powered Aircraft Carrier
CVS	Anti-Submarine Warfare/Support Aircraft Carrier
CVU	Utility Aircraft Carrier

#### 2. Surface Combatant Type

BB	Battleship
CA	Heavy/Gun Cruiser
CAG	Guided-Missile Cruiser
CG	Guided-Missile Cruiser
CGN	Nuclear-Powered Guided-Missile Cruiser
CL	Light Cruiser
CLG	Light Guided-Missile Cruiser
DE	Destroyer Escort (reclassified to Frigates (FF) in 1975)
DEG	Guided-Missile Destroyer Escort (reclassified to Guided-Missile Frigates (FFG) in 1975)
DER	Radar Picket Destroyer Escort
DD	Destroyer
DDE	Escort Destroyer
DDG	Guided-Missile Destroyer
DDR	Radar Picket Destroyer
DL	Frigate (under pre-1975 classification system)
DLG	Guided-Missile Frigate (reclassified to Guided-Missile Cruiser (CG) in 1975)
DLGN	Nuclear-Powered Guided-Missile Frigate (reclassified to Nuclear-Powered Guided-Missile Cruiser (CGN) in 1975)
FF	Frigate
FFG	Guided-Missile Frigate

#### 3. Submarine Type

ASSO	Submarine converted to an oiler
SS	Diesel-Powered Attack Submarine
SSG	Diesel-Powered Cruise Missile

	Submarine
SSR	Diesel-Powered Radar Picket Submarine
SSN	Nuclear-Powered Attack Submarine
SSBN	Nuclear-Powered Ballistic Missile Submarine

### B. Other Combatant Classification

#### 1. Patrol Combatant Type

PCER	Submarine Chaser Escort Rescue vessel
PG	Patrol Combatant
PHM	Hydrofoil Guided-Missile Patrol Combatant

#### 2. Amphibious Warfare Type

AGC	Amphibious Force Flagship
LCC	Amphibious Command Ship
LHA	General Purpose Amphibious Assault Ship
LKA	Amphibious Cargo Ship
LPA	Amphibious Transport
LPH	Helicopter Amphibious Assault Ship
LSD	Dock Landing Ship
LST	Tank Landing Ship

#### 3. Mine Warfare Ships

AMS	Auxiliary Motor Minesweeper
DMS	Destroyer Minesweeper
MSC	Coastal Minesweeper
MSCO	Coastal Minesweeper, Old
MSO	Ocean Minesweeper

### C. Auxiliary Ship Classifications

#### 1. Mobile Logistic Type Ships -- Underway Replenishment

AE	Ammunition Ship
AF	Stores Ship
AFS	Combat Store Ship
AO	Oiler
AOE	Fast Combat Support Ship
AOR	Replenishment Oiler

#### 2. Mobile Logistic Type Ships -- Material Support

AD	Destroyer Tender
AR	Repair Ship
AS	Submarine Tender

3. Support Type Ships -- Fleet Support

ARS Salvage Ship  
ASR Submarine Rescue Ship  
ATF Fleet Ocean Tug  
ATS Salvage and Rescue Ship

4. Support Type Ships -- Other Auxiliaries

AC Collier  
AG Miscellaneous  
AGB Ice Breaker  
AGM Missile Range Instrumentation Ship  
AGOR Oceanographic Research Ship  
AGR Radar Ship  
AGS Surveying Ship  
AH Hospital Ship  
AK Cargo Ship  
AKA Cargo Ship, Attack  
AKL Cargo Ship, Light  
AKR Vehicle Cargo Ship  
AKV Cargo Ship and Aircraft Ferry  
AN Net Laying Ship  
AOG Gasoline Tanker  
AOT Transport Oiler  
AP Transport  
APA Transport, Attack  
APD High Speed Transport  
ARL Small Repair Ship  
AVP Seaplane Tender, Small  
AVT Auxiliary Aircraft Landing Training Ship  
CC Command Ship

**D. Support Craft Classifications**

1. Tugs (self-propelled)

YTM Medium Harbor Tug

2. Unclassified Miscellaneous Units

IX Unclassified Miscellaneous Unit

**E. Military Sealift Command**

T-Designates a ship operated by the U.S. Military Sealift Command.

**Table 1: Number of Ships by Type Involved in Accidents, 1945 - 1988**

	Submarine s	Aircraft Carriers	Surface Ships	Amphibious Ships	Support Ships	Other Military	Total Ships
19XX <sup>a</sup>	2	0	0	0	0	0	2
1945	1	1	6	0	3	6	17
1946	4	3	9	1	1	9	27
1947	4	1	5	0	2	0	12
1948	1	0	3	0	1	5	10
1949	3	1	11	0	2	4	21
1950	3	1	9	0	11	2	26
1951	2	2	7	2	3	4	20
1952	5	4	12	0	2	2	25
1953	2	7	11	0	0	6	26
1954	4	2	11	3	2	2	24
1955	6	3	21	4	2	4	40
1956	9	3	32	0	1	5	50
1957	7	8	8	0	7	4	34
1958	14	9	20	1	5	6	55
1959	9	9	19	0	6	4	47
1960	8	6	8	0	0	3	25
1961	7	8	7	0	2	4	28
1962	17	12	11	0	1	1	42
1963	16	10	15	0	6	3	50
1964	5	13	13	0	10	2	43
1965	10	8	7	0	1	0	26
1966	8	5	10	6	5	3	37
1967	14	11	14	7	7	3	56
1968	19	3	9	1	7	5	44
1969	12	7	8	2	1	4	34
1970	14	7	18	2	8	3	52
1971	14	8	9	1	10	4	46
1972	12	6	9	3	8	4	42
1973	9	4	13	2	7	6	41
1974	11	2	9	0	4	3	29
1975	5	7	15	3	6	2	38
1976	9	2	12	5	5	3	36
1977	9	7	18	2	11	5	52
1978	7	7	5	3	7	3	32
1979	11	10	11	2	4	2	40
1980	6	4	6	2	5	6	29
1981	10	5	11	10	11	3	50
1982	13	2	9	5	8	3	40
1983	8	5	16	1	2	6	38
1984	13	5	12	6	7	2	45
1985	4	4	6	2	1	4	21
1986	7	3	5	2	6	2	25
1987	10	0	5	4	0	4	23
1988	12	4	12	1	3	1	33
<b>Total:</b>	<b>376</b>	<b>229</b>	<b>487</b>	<b>83</b>	<b>201</b>	<b>157</b>	<b>1533</b>
Total Accidents Involving this Type of Ship:	359	228	406	75	182	142	1,263 <sup>b</sup>

a. Year unknown.

b. Total less than total accidents (1276) because total does not include accidents where the military ship is unknown. Total is less than total across (1392) because it is a total of all these types of ships (some accidents involve more than one type of ship).

**Table 2: Naval Accidents by Type of Event, 1945 - 1988**

	Col- lision	Fire	Ground ing	Exp- losion	Equip ment Fail	Sink ing	Weat her	Propul sion	Ord nance	Aircraft Crash	Flood ing	Misc. Event Total	Accident Total	
19XX	0	0	0	0	0	0	0	2	0	0	0	2	2	
1945	4	2	0	6	0	5	1	0	0	0	1	1	15	
1946	7	1	1	5	0	3	0	0	2	0	0	3	20	
1947	4	0	2	3	0	0	0	0	0	0	0	1	10	
1948	1	0	3	1	0	3	1	0	0	0	0	1	10	
1949	7	0	1	4	0	4	1	0	2	0	0	0	17	
1950	8	1	1	7	0	3	0	0	1	0	0	1	18	
1951	7	3	1	4	0	5	1	0	0	0	0	2	19	
1952	10	3	3	2	1	3	1	0	1	0	0	0	20	
1953	4	9	0	4	1	2	1	0	2	1	0	1	23	
1954	9	4	2	3	1	1	0	0	0	0	0	2	20	
1955	8	6	6	4	2	3	4	1	1	2	0	1	31	
1956	12	7	5	2	0	0	3	1	2	0	0	1	30	
1957	11	7	4	5	1	1	2	1	1	2	1	0	31	
1958	13	9	6	5	0	4	3	4	1	2	1	1	44	
1959	16	12	2	2	1	0	1	1	2	2	1	1	38	
1960	5	5	1	1	3	0	1	2	2	1	1	3	22	
1961	5	7	4	2	2	0	2	2	0	1	1	0	24	
1962	13	6	4	1	4	0	3	0	0	3	1	5	38	
1963	16	12	4	1	3	2	4	0	2	3	0	1	41	
1964	13	9	5	4	2	1	4	1	0	1	2	2	37	
1965	10	6	2	0	2	0	1	0	3	1	0	2	23	
1966	10	7	5	4	2	1	2	2	3	0	0	0	33	
1967	17	11	4	6	6	2	1	2	2	0	1	0	49	
1968	14	3	5	1	3	6	2	2	3	0	0	4	36	
1969	13	9	2	4	1	2	1	0	4	0	0	2	30	
1970	18	6	2	3	5	5	1	3	1	0	0	3	40	
1971	11	8	3	2	7	3	1	2	0	0	4	3	39	
1972	10	8	3	2	6	2	4	2	2	0	3	6	36	
1973	12	12	7	4	1	1	0	1	1	0	1	1	37	
1974	9	7	1	4	1	1	1	2	0	0	1	2	27	
1975	14	7	2	3	2	1	0	1	1	1	5	2	31	
1976	13	6	1	1	3	0	2	3	1	1	0	3	32	
1977	9	12	3	3	2	1	2	4	1	1	0	3	38	
1978	5	10	3	2	1	0	0	4	1	2	2	2	29	
1979	8	15	5	1	3	0	1	4	1	0	0	6	37	
1980	11	2	2	0	6	0	0	4	0	0	0	0	23	
1981	12	8	7	2	4	1	2	3	1	5	0	1	41	
1982	17	2	1	2	4	2	1	1	0	0	1	2	30	
1983	19	4	1	0	2	1	0	0	2	0	0	2	29	
1984	16	9	4	0	5	0	3	0	2	1	0	2	38	
1985	7	0	4	0	3	0	2	1	0	2	0	1	18	
1986	9	4	3	2	2	2	1	1	1	1	0	1	22	
1987	7	4	1	0	3	1	2	1	1	0	0	2	20	
1988	12	4	4	2	3	3	2	1	4	1	0	3	28	
<b>Total:</b>	<b>456</b>	<b>267</b>	<b>130</b>	<b>114</b>	<b>98</b>	<b>75</b>	<b>65</b>	<b>59</b>	<b>54</b>	<b>34</b>	<b>27</b>	<b>80</b>	<b>1,459<sup>a</sup></b>	<b>1,276</b>

a. Number of events greater than number of accidents because some accidents involved more than one event.

**Table 3: Surface Ship Explosive Mishaps, 1985 - 1988**

	Type of Explosive Mishap			Loss	
	Detonation	Malfunction	Other <sup>a</sup>	Death	Injuries
Jan-Oct 1988	11	46	83	0	5
1987	21	53	148	0	14
1986	15	87	226	1	13
1985 <sup>b</sup>	2	40	101	0	2
Total:	49	226	558	1	34

**Source:** Mech (The Naval Aviation Maintenance Safety Review), issues April-May 1985 to January-February 1989.

a. Ordnance item failed to pass test, had observed defect, or other recorded mishap.

b. Incomplete data for the year.

**Table 4: U.S. Naval Nuclear Weapons Incidents, 1965 - 1977**

Year	Nuclear Weapon Type Involved				Total
	Air-launched	Surface-launched	Sub-launched	Other/Unknown	
1965	16	11	6	3	36
1966	15	11	6	0	32
1967	4	12	5	0	21
1968	10	11	5	1	27
1969	13	12	7	4	36
1970	7	12	7	0	26
1971	16	14	8	0	38
1972	17	16	9	0	42
1973	14	16	2	1	33
1974	7	6	2	4	19 <sup>a</sup>
1975	8	9	1	6	24 <sup>b</sup>
1976	12	5	4	1	22 <sup>c</sup>
1977	6	9	2	10	27 <sup>d</sup>
Total:	145	144	64	30	383

**Source:** Official U.S. Navy statistics compiled by the Naval Weapons Evaluation Facility, based upon documents released under the Freedom of Information Act to Ian Lind of the American Friends Services Committee.

a. This includes 13 incidents and six significant incidents.

b. This includes 21 incidents and three significant incidents.

c. This includes 20 incidents and two significant incidents.

d. This includes 27 incidents and one significant incident.

**Table 5: Nuclear Weapons and Reactors Lost in the Oceans**

10 Mar 1956: A U.S. Air Force B-47 bomber carrying two capsules of nuclear materials for nuclear bombs, en route from MacDill AFB, Florida, to Europe, fails to meet its aerial refueling plane over the Mediterranean Sea. An extensive search fails to locate any traces of the missing aircraft or crew.

18 Apr 1959: The U.S. Navy dumps the sodium-cooled liquid metal reactor vessel and the reactor plant components of the USS **Seawolf** (SSN-575) into 9,000 feet of water about 120 miles off the Delaware-Maryland coast in the Atlantic Ocean. (38,30N, 76,06W)

4 Jun 1962: A nuclear test device atop a Thor rocket booster falls into the Pacific Ocean near Johnston Island after the rocket has to be destroyed as part of the United States' first high altitude atmospheric nuclear test attempt.

20 Jun 1962: A second attempt to detonate a nuclear device in the atmosphere fails when a Thor booster is destroyed over Johnston Island, and the nuclear device falls into the Pacific Ocean.

10 Apr 1963: The USS **Thresher** (SSN-593) implodes and sinks 100 miles east of Cape Cod, Massachusetts, in approximately 8,500 feet of water, killing all 129 aboard, including 17 civilian observers.

5 Dec 1965: An A-4E Skyhawk attack jet loaded with a B43 nuclear bomb rolls off the Number 2 elevator of the aircraft carrier USS **Ticonderoga** (CVA-14) and sinks in 2700 fathoms of water about 250 miles south of Kyushu Island and about 200 miles east of Okinawa (at 27,35,2N, 131,19.3E).

11 Apr 1968: A Soviet Golf class ballistic missile submarine with three SS-N-5 missiles and probably two nuclear torpedoes sinks in the Pacific, about 750 miles northwest of the island of Oahu, Hawaii.

21-27 May 1968: The USS **Scorpion** (SSN-589) sinks 400 miles southwest of the Azores in more than 10,000 feet of water, killing 99 crewmen. The ship was reportedly carrying two ASTOR nuclear torpedoes.

12 Apr 1970: A Soviet November class nuclear-powered attack submarine experiences a nuclear propulsion casualty while operating in heavy seas approximately 300 nautical miles northwest of Spain. After failing to rig a tow line to a Soviet bloc merchant ship which was standing nearby, the submarine apparently sank. The submarine was probably carrying two nuclear torpedoes.

6 Oct 1986: A Soviet Yankee I class nuclear-powered ballistic missile submarine with 16 SS-N-6 missiles and probably two nuclear torpedoes sinks 600 miles northeast of Bermuda. A fire and explosion, originating in the liquid fuel of a ballistic missile on 3 October led to the sinking.

**Table 6: Accidents Involving Nuclear Powered Ships and Submarines, 1954 - 1988**

Year	Ballistic Missile Submarines	Attack and Cruise Missile Submarines	Aircraft Carriers	Other Surface Ships	Total
19XX	1	1	0	0	2
1954	0	1	0	0	1
1955	0	1	0	0	1
1956	0	4	0	0	4
1957	0	2	0	0	2
1958	0	3	0	0	3
1959	0	5	0	0	5
1960	0	7	0	0	7
1961	1	1	0	0	2
1962	2	5	0	0	7
1963	2	4	2	0	8
1964	1	1	0	0	2
1965	1	6	0	0	7
1966	0	5	0	0	5
1967	3	4	0	0	7
1968	4	7	0	0	11
1969	1	2	1	0	4
1970	2	6	0	0	8
1971	3	3	0	0	6
1972	3	5	0	0	8
1973	0	7	0	0	7
1974	4	5	1	0	10
1975	0	5	0	1	6
1976	1	7	1	0	9
1977	2	6	0	2	10
1978	0	4	0	0	4
1979	5	3	2	1	11
1980	0	5	0	0	5
1981	1	7	1	0	9
1982	1	6	0	0	7
1983	1	4	1	2	8
1984	2	5	0	0	7
1985	1	2	1	0	4
1986	3	4	1	0	8
1987	4	4	0	0	8
1988	1	4	2	0	7
<b>Total Ships:</b>	<b>50</b>	<b>151</b>	<b>13</b>	<b>6</b>	<b>220</b>
Total Accidents Involving this Type of Ship:	49	146	13	6	212 <sup>a</sup>

a. Totals do not add across because some accidents involved more than one type of ship.

**Table 7: Submarine Force Mishaps, 1983 - 1987**

	1983		1984		1985		1986		1987		Total
	Atl	Pac									
-Groundings	2	0	0	2	2	0	3	0	1	2	<b>12</b>
-Collisions	16	5	7	3	5	3	1	3	10	3	<b>56</b>
Submarines	13	4	5	3	5	3	1	3	10	3	<b>50</b>
Support Ships	3	1	2	0	0	0	0	0	0	0	<b>6</b>
-Fires	22	14	19	14	23	3	15	7	26	6	<b>149</b>
Submarines	18	14	13	11	16	3	11	6	16	5	<b>113</b>
Support Ships	4	0	6	3	7	0	4	1	10	1	<b>36</b>
-Floodings	11	3	7	3	6	3	7	1	5	2	<b>48</b>
Submarines	11	3	4	2	4	3	5	1	3	2	<b>38</b>
Support Ships	0	0	3	1	2	0	2	0	2	0	<b>10</b>
-Ordnance Mishaps	10	6	6	0	8	2	18	12	9	14	<b>85</b>
Submarines	9	5	6	0	8	2	10	8	4	9	<b>61</b>
Support Ships	1	1	0	0	0	0	8	4	5	5	<b>24</b>
-Equipment Mishaps	12	10	12	4	10	7	7	3	12	5	<b>82</b>
-Explosions	0	0	3	1	3	2	3	0	1	1	<b>14</b>
-Heavy Weather	2	2	2	0	2	0	3	1	2	0	<b>14</b>
-Suicides	6	4	3	2	4	2	4	2	3	1	<b>31</b>

**Source:** Naval Safety Center, "Submarine Force: Mishap Statistical Summary, Calendar Years 1983 thru 1987," n.d. (released under the Freedom of Information Act).

**Note:** According to the source, data presented is representative of a statistically sound sample, but includes less than 50 percent of the required reportable mishaps. Does not include incidents directly involving nuclear reactors or nuclear weapons.

Figure 1: Naval Accidents by Year, 1945-1988

