

USS Hartford disaster



Report Details How USS Hartford Failed To Steer Clear Of Danger

By Robert A. Hamilton, New London Day, June 27, 2004

In July 2002, an expert navigator at the Naval Submarine Base in Groton warned that the USS Hartford's navigation team needed to improve how it set up for a turn, and how it logged the ship's position on maritime charts.

His assessment proved prophetic: Fifteen months later, navigation shortcomings, coupled with equipment failure, resulted in the Hartford grounding off Sardinia, Italy. The ship suffered more than \$9 million in damage and was taken out of service for seven months. Also, several promising careers came grinding to a halt. Hartford's captain and navigator had both reported aboard just weeks before the ship left for the Mediterranean. The Navy now conducts a review of critical staffing on submarines to make sure there are no wholesale crew transfers immediately prior to or during a deployment.

Some of the lessons learned from a months-long investigation of the accident have been incorporated into the Submarine On-Board Training Syllabus. The Navy has also asked the government of Italy to place more navigational buoys warning of shallow water near Sardinia.

But a 5-inch-thick report on the grounding, released to The Day this month after a request under the federal Freedom of Information Act, places the blame more on a failure to follow established procedures, despite years of efforts by Hartford's home squadron and the commander of Naval Submarine Forces to focus attention on navigation as a critical skill.

The report, which has been edited to remove classified information and all names of Navy personnel involved, gives a glimpse at the events leading up to the accident, and allows a minute-by-minute reconstruction of the day Hartford ran aground. As early as December 2001, the commander of Submarine Squadron 4 in Groton, Hartford's home squadron, warned that day-to-day navigation practices in the squadron "do not uniformly meet the submarine force's exacting professional standards."

After the Master Chief Electronics Technician rode Hartford on a trip out of Groton and noticed its navigational inadequacies, there were more warning signs. On April 14, 2003 on two occasions the Hartford navigation team, working in a trainer, approached a navigation channel off the approved track.

On June 3, 2003, during a simulation, the navigation team was cautioned to be more aggressive about making sure the ship was on track when it was in a channel. An assessment of piloting practices on June 7, 2003, turned up 13 deficiencies, including that the ship did not slow down when its navigation team failed to properly fix the ship's position on charts.

During a certification process known as POM, Preparation for Overseas Movement, in early 2003, "numerous plotting errors" were observed. In particular, the crew seemed to have trouble planning turns and making the turns on track on three occasions. The ship's navigation team did not meet the standards and had to be re-

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tested. They later passed, and overall the ship was rated in the top third of the fleet for training readiness.

Three days before the grounding, a rider from Submarine Squadron 22 gave Hartford's navigation team an "average" score as the ship pulled into the submarine base at La Maddalena on Sardinia.

But he also noted the team was not comparing its primary navigation system to its backup system often enough to catch discrepancies; that on one occasion approaching a turn the team went seven minutes between obtaining an accurate fix of the ship's position, more than twice the three-minute standard; and that the person fixing the ship's position on a maritime chart was taking too long, 1 minute 15 seconds for some, when it should take no longer than 35 seconds.

In addition, he noted, that while the ship's fathometer, which measures the water under the keel, was set to fathoms, the ship's charts were in meters, and the warning system was based on feet.

After departing Groton Oct. 9, 2003, Hartford arrived at La Maddalena Oct. 20, and berthed outboard of the USS Springfield at the tender USS Emory S. Land. It was supposed to leave on its patrol Oct. 24, but when a problem developed with its sonar the departure was delayed while it waited for replacement parts.

On Oct. 25, Springfield embarked, and USS Miami was coming into the tender for some work that would require that it take Springfield's place. The Hartford was ordered to go outside the harbor, and return later in the day, after those ship movements had taken place.

The eastern approach to La Maddalena is not considered challenging for submarines. There was excellent visibility, winds 12 to 15 knots from the east, and light chop in the harbor. Hartford had no mechanical problems that limited maneuvering. It was supposed to be an easy day.

Hartford got underway at 11:55 a.m. local time, pulling away from the tender, easing past the security barrier, and nosing into the channel. The trip was carefully planned: the submarine would make four turns, the longest leg of the trip being about 13/4 nautical miles, and be out in the open sea within 34 minutes. But almost immediately the ship's Voyage Management System froze up. The VMS, which provides electronic navigation charts and automatically fixes the ship's position, is a valuable piece of gear on modern ships.

"We have had similar problems on a half dozen or so occasions over the past two months, random failures for which no fault was identified, and which cleared after either re-booting or reloading the operating system," according to the statement of a 3rd class electronics technician.

But this time, none of the efforts to restart the system were successful. At 12:09 p.m., the navigation team noticed a four-knot difference in the speed readouts of the Ring Laser Gyro Navigator and the Electromagnetic log, two other pieces of navigation gear.

At 12:22, the captain ordered the ship to speed up to 12 knots, a variation from the approved plan that allowed for a speed of 9.5 knots the entire trip. About the same time, the assistant navigator and an electronics technician left the control room to try to determine what had caused the equipment failures, but the captain was never notified that key people were no longer at their stations.

The situation began to turn significantly worse at 12:28, as the ship turned into the third leg of the trip, almost 500 yards early. About the same time, a waypoint was entered into the Global Positioning System incorrectly, putting the turning

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point several hundred yards off its actual location.

The plotting party, which fixes the ship's position on the maritime charts, beset by the equipment problems, was struggling to get a good "fix."

"The early turn to 090 caused confusion because it was ordered from the bridge without warning, and the leg was a short leg requiring a lot of revision to the plan to accurately fix position," an electronics technician 2nd class later told investigators.

But he added: "At no point did I hear a report to the bridge of the inability to get a good fix plotted on the chart. At no time did I hear anyone recommend slowing until a fix was gotten."

The officer of the deck, a lieutenant, agreed: "After the early turn to 090 (the last leg) control slowly became more and more confused as to the location of the ship."

The assistant navigator, a chief electronics technician, would tell investigators "about this time I felt I was behind the problem and was about to recommend all stop to the Nav."

Two minutes later, there was another effort to fix the ship's position on the charts, and the investigation would later find the ship was about 400 yards closer to Bisce Island than believed. Nobody on the bridge was aware that the ship was off course, and the navigation team was so far off it was working with the wrong chart - one that does not show the shallow water they were approaching rapidly. The captain told a Navy tugboat that the Hartford would get the rest of the way out of the harbor on its own.

At 12:34, the ship turned onto the fourth leg of its trip out of the harbor. The captain would later tell investigators he thought the navigator ordered it. The navigator thought the order came from the bridge. The commodore of Submarine Squadron 22 said he heard the captain ask for the distance to the turn, and the ship began to turn. In any event, Hartford's deck log shows that the navigator concurred that the turn was safe. Hartford steamed north-northeast at almost 10 knots.

At 12:36, the navigation team finally fixed the ship's position tentatively, but they were unable to confirm it. About this time the executive officer blurted out, "Nav, where the **** are we?" an enlisted person recalled. "The captain was arguing with the XO and asked him if we 'have anything at all working down there,'" the enlisted person said.

A minute later, the sailor watching the fathometer warned the navigation team that the water depth, which had been reading 150 feet steadily during the trip out of the harbor, had suddenly decreased to 100 feet. That three-minute warning, Navy investigators said, should have been more than enough time for the captain, the commodore or others on the ship to take action, such as stopping the ship until its position was confirmed. But no one gave the order.

The civilian liaison between the Navy and the Italian Coast Guard who was aboard the tug that had just been waved off noticed that Hartford was not turning north as ships always do on the passage out of La Maddalena. He tried to call Hartford on the marine radio, without success. He tried to make a cell phone call to the commodore on the bridge, again with no response.

At 12:37:30, the fathometer watch warned the water level was down to 83 feet, and 15 seconds later he warned it was down to 50 feet. But Hartford steamed on.

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At 12:40, about the time that Hartford should have been reaching open water, it struck the bottom about 1,100 yards off Bisce Island. Almost immediately the ship began to slow, and the commodore, Capt. Greg Parker, afraid that it would be stranded, ordered "Speed on."

The commodore would later be relieved of command because of his order, which an investigation by Sixth Fleet concluded was given "without a full understanding or knowledge of Hartford's position."

"The mere fact that he was issuing an order or providing direction at this time had the potential to cause greater confusion on the bridge," the investigator concluded. "As it turned out, the order to increase speed was also the likely cause of more extensive damage to Hartford, as it continued to make contact with the bottom at the higher rate of speed."

The first collision was followed in rapid succession by two more hits, the third one the worst, which rolled the ship 10-12 degrees onto its port side. The tugboat, still within easy view, watched helplessly as the ship rose out of the water, rolled to the side, and finally emerged from the shoal water to the north of the island.

At 1:40 p.m., almost an hour after the accident, as the Hartford waited to return to La Maddalena, the assistant navigator suffered a panic attack and had to be removed from the control room and treated by the ship's corpsman for about 45 minutes.

The rest of the navigation team was not in much better shape, the executive officer told investigators. "It appeared most of the plotters and supervisors were obviously a little stunned, but functioning," he said.

Divers inspected the hull the next day and found large areas of the hull scraped down to bare metal, missing sound-dampening tiles, metal grates over the ballast tanks badly distorted and hydrophone systems damaged in three locations. But the worst damage was at the aft end of the ship, where the grounding had ripped off the bottom of the rudder.

Cmdr. Christopher R. Van Metre, captain of the Hartford, and Parker, the commodore of Submarine Squadron 22, were relieved of command and sent back to the United States.

Six other Hartford crewmen were charged with dereliction of duty and punished, including one officer and one enlisted man who were relieved of their duties and ordered back to Submarine Squadron Four.

Temporary repairs at La Maddalena allowed Hartford to return to Norfolk, Va., in January, where it went into the shipyard for about two months. It finally returned to Groton in March.