

Navy Outlines Errors Preceding Fatal Submarine Crash

By CHRISTOPHER DREW

APRA HARBOR, Guam, May 7 — Navy investigators have found that a series of mistakes both at sea and in preparations onshore helped cause a nuclear submarine to crash into an undersea mountain in January, killing one sailor and injuring 97 others.

In a report to be released here on Sunday, the Navy pins most of the blame on the top officers of the submarine. But investigators also have found that deficiencies in navigation charts and in giving the submarine its routing helped set the stage for the accident, Navy officials said.

The submarine, the San Francisco, was traveling at top speed and at a depth of more than 500 feet when it smashed into the mountain on Jan. 8.

Perhaps the most unusual aspect of the crash was that the mountain had never been identified on any navigation charts. But a potential hazard was noted on most charts about three miles from the crash site, and that should have provided enough warning to skirt the area, officials say.

Yet it turns out that neither the submarine's crew nor the officers onshore who set its basic routing studied those charts. Investigators found that they relied instead on the one chart that did not show the danger zone, which gave them all the impression that the submarine's track was clear.

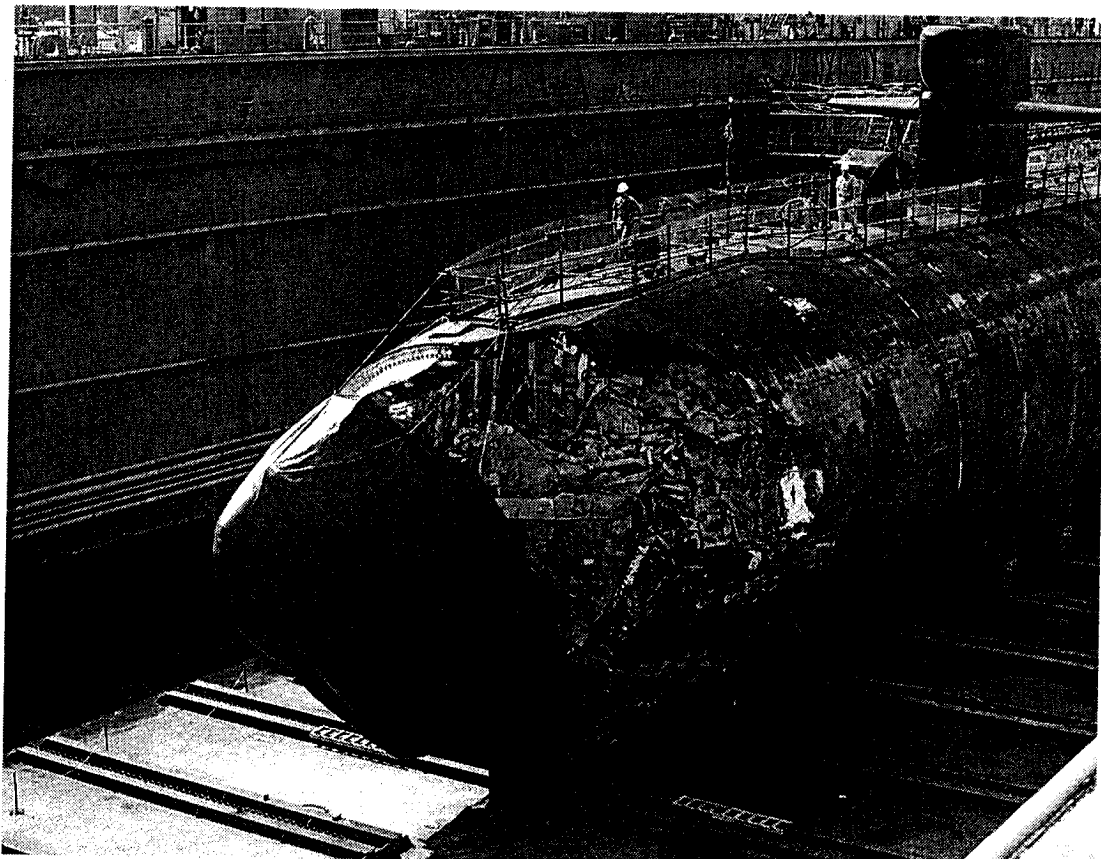
The accident occurred about 360 miles southeast of Guam as the San Francisco was headed for Australia.

One enlisted man was killed after being thrown 20 feet and hitting his head on a metal casing, and more than 20 others were hurt so badly that they could not stand watch as the vessel limped back to its base here.

The submarine's bow was crushed, but an inner protective hull held, preventing flooding and allowing the vessel to get back to the surface. Navy officials said repairs could cost \$100 million.

The submarine's captain and six other crew members were relieved of duty after the accident. Under Navy rules, they had the primary responsibility for keeping the vessel safe.

Navy officials said the crew should have cross-checked all the charts for the area and taken more



Mark Allen Leonasio/Navy via Associated Press

The nuclear submarine San Francisco in dry dock in Guam after it crashed into an undersea mountain in January, killing one crew member. Navy officials said repairs could cost \$100 million.

frequent depth soundings.

The accident occurred amid the Caroline Islands, just north of the Equator. And given how much is known about other undersea moun-

Deficiencies in charts and routing are described as factors in an accident.

tains in that area, the submarine should have been going much slower than 33 knots, officials say.

But the investigators found that oversights in the creation of the charts and in the Navy's planning for submarine routes added to the risks.

The National Geospatial-Intelli-

gence Agency, a part of the Defense Department, created the main charts for the area.

Agency officials acknowledged earlier this year that government satellites photographed the undersea mountain in 1999 and in 2004. But they said they never had the resources to use that kind of imagery to update sea charts.

The investigators also found that while all of the other agency charts noted the potential hazard about three miles from the crash site, the one used by the submarine crew and its routing planner — which focused on the seabed contours — did not.

Officials at the National Geospatial-Intelligence Agency said in a statement that the Navy had never asked them to include such danger zones on this type of chart. They also said they were now reviewing all their charts "to ensure consistency in hazard depiction."

The investigation also found that

the route that the San Francisco was given through the Caroline Islands had never been used before — and that the officer who created it sent it to the submarine only two days before it left Guam, rather than three to five days in advance, as required under Navy rules.

According to another recent Navy report, submarines had made 10 successful transits through the Caroline Islands over the five years before the accident. But the office that plans the routes in that area — a part of the Navy's Seventh Fleet, based in Japan — did not have a system to keep track of past routings.

Navy officials said that office was supposed to produce routes that were navigationally feasible, and that the San Francisco's officers mistakenly assumed that their track had been tested before.

But the officials said it was still up to the submarine's crew to spot the discrepancies in the charts and be more cautious.