

Bob LaGassa Insights on USS Scorpion

Bob LaGassa offers his insight on the USS Scorpion disaster. Comments from any classmates are welcomed.

I believe my explanation below, possibly classified at the time, gives a more valid picture of what the submarine force believes happened. The torpedo battery explosion, circular run Mk 37 torpedo and Soviet SSN attack theories are just a lot of hype to sell books.

The truth, I believe, was a lot more mundane and can be understood in the context of how we changed our submarine and reactor operating procedures after SCORPION's loss .. Just like we did after the THRESHER loss.

Bye the way, if one researches the history of nuclear submarine battery replacements, particularly at advanced sites (not in shipyards which was the usual practice), you will find a surprising number were done commencing in about 1969-1971. We found that we NUKES were mistreating them and they were in bad shape. On ETHAN ALLEN (I was Engineer) we had to disconnect several of our battery cells for a patrol until we did a replacement in Rota in 1970.

The following is from a letter from Bob LaGassa to Dr. Bob Ballard which unfortunately was never answered.

I just watched NatlGeographic's "Titanic: Ballard's Secret Mission" and I was very interested in the evidence you showed that debunked the Soviet Attack and the Circular Run Torpedo theories for Scorpion's loss. It fits with the information I learned while serving as a submariner from 1963 to 1991.

I am a 1963 USNA graduate who served in five Atlantic Fleet submarines and served as Commanding Officer of the USS Von Steuben, SSB(N)632 Blue from 1979-1984. My first ship was the USS Skipjack, SSN-585 during its Subsafe overhaul at Charleston Naval Shipyard in 1965-67. I served as DCA/Auxiliary Division Officer in late '67 until detached in May 1968.

Serving in Submarine Squadron Six in Norfolk, I qualified in submarines following an interview board conducted by Cdr. Francis X Slattery, CO, Scorpion in late December 1967. I did my ship walk-through on Scorpion, and had several discussions with Lt. "Mickey" Lambert, my classmate and counterpart on the Scorpion. I noted that Scorpion had an "interim" Subsafe package installed during her shortened overhaul that preceded Skipjack's. We discussed periodic problems they had with failure of the EMBT blow (air) actuator valves that resulted in liquification of the non-metallic portions of the actuators and resulted

in partial loss of air pressure to operate the main blow valves. I do not think this was material in Scorpion's loss, which also took the lives of two other classmates: Lt's. Jack Burke and George Farrin.

In mid-May 1968, I detached Skipjack for duty as Engineer Officer, USS Ethan Allen SSBN632B. The CO of Allen (whose name I do not remember, but was previously involved in a collision) was detached and served on the Scorpion Board of Inquiry. A year or so later, he sent a note and photos taken of Scorpion on the bottom. Before discussing that material, I will discuss what was evolving in the nuclear submarine force during the period I served as Engineer Officer (1968-71).

The Operational Reactor Safeguards Examination (ORSE) board was established under the direction of RADM. Paul J. Early in 1967, as I remember it. While on the Skipjack, I had served as an Engineer Officer of the Watch (EOOW) during her first ORSE in 1967. We were exposed to a new demanding casualty: a submerged casualty that resulted in a reactor SCRAM, and a delayed restart of the reactor until the ship went shallow, cleared "baffles" and got up to snorkel to provide diesel generator power to supplement the battery (a planned 20 minute delay). I fumbled the drill badly not having practiced it before, and the ORSE board terminated it when battery and reactor temperature constraints were reached. They allowed us to bring the reactor critical using a Fast Recovery procedure and get on with the rest of the examination, which we did pass.

As Engineer of the Ethan Allen, I prepared for and completed three ORSE Exams over the next three years. Before I left, we were successfully doing the "submerged flooding, reactor SCRAM, delayed recovery" casualty drill, with delays approaching one hour. We on the Allen, read the Board of Inquiry notes and saw the Scorpion photos from the previous CO in late 1969, I believe. I KNOW the Skipjack class ship, probably better than any other officer who served on that class; I also served as XO Shark during her 1976-77 overhaul. I have "dived" almost every tank and void (internal and external) during shipyard "close-outs". Based on the notes and the photos, it was general opinion (and my conclusion) that Scorpion suffered a cataclysmic explosion in the Operations Compartment lower level, and probably as the result of a Main Storage Battery cell explosion. Subsequent incidents and changes in Submarine Operating Procedures confirmed my belief, unchanged throughout the years.

Starting with my second ORSE on Allen in late 1969, the focus of the Board was Battery theory and knowledge, and the effects of extremely high and prolonged discharge rates on Individual Cell Voltages. We found that while Total Battery Voltage would stay within limits during the emergency discharge, ICV's could approach the critical point where a cell voltage reversal would occur, causing all other cells to charge that cell causing near instantaneous hydrogen gassing and

explosion. Depending on the number of cells reversed, there would be ample energy to rupture the hull adjacent to the battery compartment in the lower level OPS Compartment. Prior to 1969, there was no requirement nor was it a practice to closely monitor ICVs at the panel in the Lower Level Operation Compartment. Thereafter, we always closely monitored ICVs directly to the Electric Plant Operator in Maneuvering during such casualties. We were shocked to see how closely we were to catastrophic cell reversal. In fact, during that period ('69-'71) many submarines had to isolate "jumper out" more than one weakened cell that approached reversal. On Allen, we permanently isolated four of the 126 cells until we conducted an unprecedented battery replacement along side the tender in Rota, Spain in 1970. There were several submarines that had to conduct similar cell isolations and battery replacements.

During the period leading up to the Scorpion loss, we were conducting the "new" Delayed SCRAM Recovery drill submerged, while heavily loading the ship's storage battery without knowing the real dangers to the battery and the ship. We had no formal procedures to "Rig Ship for Reduced Electrical Power" and battery discharge rate often approached 3000 AmpsDC, which was the Half Hour rate for a fully charged S5W powered ship (assuming all cells were in equal condition). By 1970, we had formalized procedures and verified their effectiveness during many ORSE exams, achieving reduced electrical power levels that were typically below 1800 AmpsDC discharge, giving enough time to delay reactor recovery for up to an hour, before reaching a reactor safety constraint.

I believe that Scorpion, like most submarines returning from deployment, was getting ready for the next ORSE and practicing a Delayed SCRAM Recovery drill below periscope depth. She would have heavily load a perhaps weakened battery, and while reversing course to clear baffles prior to going up to snorkel, suffered a battery explosion that blew out the lower level operations compartment, instantaneously killing everyone in that compartment. The isolated Torpedo Room and Reactor Compartment, and aft would have been subject to the damage observed in the subsequent investigation. The Engineering Spaces telescoped into the Auxiliary Machinery Space and Reactor Compartment because of the failed transition joints in the AMS. In the isolated Torpedo Room, the watch or members in Crew's Berthing there would probably have taken refuge in the Escape Trunk and carried out procedures for escape, setting up the hatches to open once equalized with sea pressure, which did not occur until the compartment flooded. Once equalized the spring mechanism automatically opened the unlatched hatches.

I never bought Dr. Craven's Torpedo Hot Run theory, for the above and other reasons, nor did I accept the novelist's Soviet Retribution theory for reasons of operational experience. No Soviet Submarine in 1968 could detect, track, approach and attack any Skipjack or later class U.S. submarine.