Neil,

Thank you for including me in this discussion. I am honored to be able to provide insight to this historical mystery.

I am a recently retired Chief Petty Officer with the U.S. Navy, having served for 21 years. I am Qualified in Submarines and Surface Warfare. I am associated with the Lost 52 Project as a photo and video analyst and have done research and photo interpretation for Navsource. My associate Ric Hedman and I are the cofounders of PigBoats.COM. I have authored the Visual Guide series of articles on U.S. Navy submarines and the article *No More Heads or Tails: The Adoption of Welding in U.S. Navy Submarines* recently published by the Naval Submarine League.

Anyway, having reviewed the video and photos you sent, I can’t definitively say what sank the Robalo. However, I would list the probably causes of her loss in this order:

1. Mine
2. Aerial bomb
3. Internal detonation of a torpedo warhead.
4. Enemy torpedo

The hull is broken either just ahead or just aft of the after torpedo room (ATR) bulkhead. The entire top of the pressure hull is missing, along with the torpedo tubes and the free flooding section outboard of the tubes. The walking deck in the ATR (actually the top of #7 main ballast tank) is intact, back to about ¾ of the length of the tank, everything aft of that is missing. The cut is almost surgical in its precision, as if someone took a giant knife and cut into the hull from top down, stopping at the top of #7 MBT, then cut aft along the deck, then straight down just before reaching the end of the tank.

To me this indicates a mine strike, probably a moored contact mine of one of the following types: Shimose 5 Mod 1, Type 4, Type 5, or the Aircraft Type 3 Mark 1 Model 1. All of these models have a relatively small warhead. I believe that a larger warhead (200-400+ lbs) would have caused a lot more destruction than we are seeing. The mine most likely struck at the top of the pressure hull between the breech ends of the torpedo tubes and the after escape trunk. There are two ways that this could have happened: 1. The boat was executing a turn and swung the stern into the mine, and 2. The bridge crew spotted mines ahead, stopped the boat, and backed down into the mine that killed them.

The mine theory makes sense if the mine in question was moored at or very near the surface. In this scenario most of the blast would have gone upward into the air. As strange as it may seem to say, the damage is relatively minor. A more powerful mine, or one that was moored deeper, would have caused more destruction than was seen, with ragged edges along the break points. The blast blew a large hole in the top of the pressure hull, and weakened the after part of #7 MBT. The weight of the tip of the stern, with the heavy torpedo tubes, caused the tip of the stern to break, tip downward, and break off, carrying the remains of the top of the pressure hull with it. The maneuvering room and motor room would have instantly flooded. The watertight door to the aft engine room would have most likely been open to facilitate communications between the men stationed there and the controllers in the maneuvering room. The aft engine room would have quickly flooded through this door. The boat would have immediately lost propulsion and taken a heavy aft down angle. The stern of the boat would have sunk quickly, probably submerging the boat up to the conning tower fairwater within 20-30 seconds.

The men in the forward engine room would have most likely had time to shut and dog the watertight door and the ventilation bulkhead flappers to the aft engine room and possibly the after battery before the compartment flooded. However, the compartment may have flooded through the engine air intake system if it didn’t get secured before the boat plunged under.

The only reason that the after battery hatch (leading to the crew’s mess below) would have been opened at this time would have been for the cooks to take garbage topside for dumping. This hatch is never routinely opened for leisure purposes in a war zone. Garbage dumping is the only reason it would have been opened. With a steep aft down angle on the boat it would have been difficult for anyone to get topside to shut the hatch and this compartment would have flooded through this hatch.

The explosion and sudden steep aft angle would have thrown the 4-5 man bridge crew askew. They may not have had the ability to scramble back to the bridge hatch to shut it before it too plunged under, completely flooding the conning tower in less than 30 seconds. It is possible that the control room below the conning tower stayed dry if they got the hatch between the two compartments shut in time.

Most likely the forward battery and the forward torpedo room remained dry and the men there suffocated to death. I can’t tell for sure from the video, but it appears that the escape hatch on the side of the forward escape trunk is shut, indicating that no escape was attempted from the forward torpedo room. The top hatch on the trunk is not the escape hatch. For a free ascent escape, the side hatch in the trunk is used. Why no escape was attempted is a mystery, as it seems likely that this compartment would have stayed dry after the sinking. It is possible that the surviving crew was overcome by chlorine gas generated by the forward battery and were too incapacitated to make an escape.

As for the other theories of her sinking, the aerial bomb theory can not be completely ruled out. If the bomb used was relatively small (100-250 lbs) it could have created the observed damage if it hit right at the stern. However, I see this as less likely as this happened at night and targeting a submarine at night and accurately bombing it would have been at the ragged edge of Japanese capabilities at this time.

The detonation of one of the boat’s own torpedoes is possible, but I consider this to be highly unlikely for all the reasons that I stated on Navsource. It was only possible if the boat was carrying a Mk 18 electric torpedo in the room. The much more common Mk 14 was steam powered and it was very nearly impossible to get the weapon to detonate inside the room. In addition, it seems to me that if this did happen, the damage would have been much more severe with most of the stern aft of the engine rooms gone.

It remains possible that an enemy submarine torpedoed the boat, with the weapon hitting right at the tip of the stern. I consider this to be the least likely scenario, as the Japanese Type 95 torpedo had a warhead between 893 lbs and 1213 lbs depending on the mod used. This would have caused an enormous amount of damage to the stern, far more than what is observed.

Even though I CAN NOT definitively say that the boat was sunk by a mine, this is what I believe to be the most likely scenario.

Notes from your .pdf:

It seems that most of the debris from the stern is buried in the sand at the aft end of the wreck. I saw two of the torpedo tubes sticking out from the bottom.

The grapnel is a mystery as well. It seems very large to have been used by a fishing boat. Perhaps the Japanese were attempting to locate the wreck and the grapnel got hung up.

The area where the outer hull is missing on the starboard side outboard of the engine rooms is not overly mysterious. Most likely is was caused by simple rusting and corrosion loss over the years.

The Robalo went to war with a variation of the Mod 4 conning tower fairwater (see the file I attached). This was nearly a unique configuration, with only one other boat known to have carried it. She was further modified once she arrived in theater by removing sections of (but not all) of the fairwater plating between the covered wagon ribs.

The last photos that I have seen of Robalo show her armed with a 4”/50 caliber Mk 9 deck gun, and two 20mm Oerlikon guns on the forward and aft fairwater gun decks mounted on Mk 10 open base mounts. The 20mm guns are gone along with their mounts, but the 4”/50 caliber gun in still there. I can confirm that this is the gun present, NOT the 3”/50 cal Mk 17 gun that you described.

Most of the lighter metal of the superstructure, along with the teak decking is indeed gone. This is consistent with other submarine wrecks that I have studied.

On the bridge you can see the mount for the Target Bearing Transmitter (TBT) in the center along the forward wind venturi. To its left is the gyrocompass repeater, mounted in its dual-axis gimbal mount.

This is a fascinating subject and is obviously open to debate. I welcome any input from anyone else that can clarify or explain anything else that has been seen.

Regards,

David Johnston, July 2020