

SAFETY ADVISORY BULLETIN 97-4

Washington State Board of Pilotage Commissioners

December 1997

A recent incident resulted in the sinking of the tugboat *STINGER*, while it was assisting a trawler type fishing vessel into the large Hiram M. Chittenden Lock. This sinking appears to have resulted primarily because of the design of the tug, and it is another example of the importance of having the right tug for a specific vessel movement.

Description of the Incident:

The fishing vessel was proceeding to a shipyard on Lake Union and was just entering the large lock when the sinking occurred. The fishing vessel was 204 feet in length and 45 feet in width. It was powered with a controllable pitch CP propeller mounted in a shroud. The tug *STINGER* was assisting the fishing vessel through the lock. The *STINGER* is a 20 foot long tug with a 300 hp diesel engine, and it is unique because of its open boat design.

As the fishing vessel was about to enter the large lock, the engines were stopped to slow its headway. With its zero pitched rotating blades, the propeller presented a virtual blockage to water flow to the rudder, and there was some loss of steering as is characteristic with CP propellers. At the same time, the aft section of the vessel was impacted by a current of water coming through the permeable south timber wall from the open flood gates, causing the stern to move to the north. This movement also caused the bow to move to starboard, pinching the tug against the wall. The dynamics of the tug's small size and its position at the bow of the fishing vessel caused its port side to roll under water, and the open boat design then allowed it to fill with water and consequently sink.

Lessons Learned:

- Although this small tug was of adequate power and had been used for assignments on Lake Union and in the H.M.C. Locks in the past, its unique open boat design made it susceptible to swamping when pinched between the ship and the wall of the lock. Such a pinching action should be considered a possibility during transits of the locks. The Board found that there was no indication of pilot error as a cause of the incident, but it does want to alert pilots and ship owners/agents to the potential hazards of using a non-conventional open boat design tug at the H.M.C. Locks or at other locations where a tug may be pinched against a wall.