

MARINE OCCURRENCE REPORT

CAPSIZE AND SINKING

**OF THE FISHING VESSEL "INSKIP"
OFF VANSITTART POINT, JOHNSTONE STRAITS
BRITISH COLUMBIA
29 AUGUST 1995**

REPORT NUMBER M95W0121

The Transportation Safety Board of Canada (TSB) investigated this occurrence for the purpose of advancing transportation safety. It is not the function of the Board to assign fault or determine civil or criminal liability.

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off Vansittart Point, Johnstone Straits,
British Columbia on 29 August 1995.

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Summary

On the morning of 29 August 1995, in calm and clear weather conditions in Johnstone Straits, the fishing vessel "INSKIP" suddenly capsized at about 0835 when a catch of salmon being lifted over the stern slid to port. Downflooding of the fish holds caused the wooden seiner to sink quickly as she was already fully laden with fish caught earlier. The crew and the skipper's family who lived on the "INSKIP" boarded the skiff being towed alongside and were rescued by another fishing vessel in the vicinity. Minor injuries were sustained by one crew member who was pinned to the bulwark when the fish catch slid over to port.

Ce rapport est également disponible en français.

¹ All times are PDT (Coordinated Universal Time minus 7 hours)

Other Factual Information

Particulars of the Vessel

Name: "INSKIP"
Port of Registry: Vancouver, B.C.
Flag: Canadian
Official Number: 140882
Type: Seiner
Gross Tonnage: 34.7
Crew: 5
Guest: 1 child
Length: 16m
Built: 1918, Vancouver, B.C.
Propulsion: One diesel engine (165 HP)
Fixed pitch propeller
Owners: Grayling Graham
Campbell River, B.C.

The "INSKIP" was a seiner of carvel construction with oak frames and fir planked. The fir plywood cabin was located forward of the fish hold. The fibreglassed insulated fish hold was subdivided into three slush tanks where the fish cargo was normally carried on ice.

A lazaret was located aft of the fish hold. The rigging included a boom which had a travelling block and was located atop the cabin. In the aft section there was an aluminum seine drum driven by two hydraulic motors, vertical rollers on spooling gear which guided the net as it came up over the stern and a hydraulically operated ramp. The slanting ramp could be raised hydraulically after the fish had been landed on it.

After having fished on 28 August off Ripple Point in Johnstone Straits, the "INSKIP" had on board about 9,100kg (20,000 lbs) of sockeye salmon and "champagne" in its fish hold. It anchored for the night and on the morning of 29 August proceeded south to fish a few hundred metres off Vansittart Point on West Thurlow Island.

The crew were aft tending the net and the gear as they commenced hauling the fish over the stern on to the stern ramp. When the crew lifted the first catch on to the stern ramp at about 0830, they felt that the drum winch was not taking the weight as it was an exceptionally heavy catch. No brailing was attempted, but the runner wire from the topped up derrick was quickly connected to support the net as the catch started sliding back into the water.

The skipper/owner's wife operated the derrick winch from atop the cabin which was forward of the fish holds. As the weight came on the derrick head block the fish in the net unexpectedly slid to port, pinning one of the crew members on to the port bulwark. The "INSKIP" heeled 90° to port suddenly and water started downflooding the fish holds, accommodation and engine room.

Fortunately, the seine skiff was in the water on the starboard side of the "INSKIP". The crew member who had been pinned to the bulwark

came free as the fish floated off when the vessel heeled. He, along with the other crew members and the skipper's family, boarded the skiff. They were rescued from the skiff by another fishing vessel which was in the vicinity.

The weather was clear with calm wind and smooth seas. The vessel sank in over one hundred fathoms of water and has not been recovered.

The crew of five included the skipper/owner's wife who helped with the deckwork. A sixth person on board was the skipper's seven year old son. One of the crew had a Watch Keeping Mate's certificate of competency and the rest of the crew including the skipper had considerable fishing experience but no certification. A fishing vessel of less than 100 gross tons does not require a certificated master or mate. The skipper and his family had been living on board the "INSKIP" since June 1995 when they had purchased the boat.

The vessel had undergone a steamship inspection in July 1995 and been granted a certificate of inspection valid up to 7 July 1999. As a small fishing vessel built before 6 July 1977, and not engaged in fishing for herring or capelin, the "INSKIP" was not required to comply with the stability requirements of Part 1, Section 29 of the Small Fishing Vessel Inspection Regulations. Thus no stability calculations are known to have been provided for the vessel.

The seaman who had been pinned by the fish suffered broken ribs and injuries to his abdomen.

Analysis

The "INSKIP" was lifting a large catch with the help of a heavy boom topped up. Based on the law of stability and physics, the weight of the catch would have effectively transferred to the derrick head when the winch operator took the strain on the winch. This would have raised the centre of gravity of the entire fishing vessel and nullified any residual positive metacentric height present. The vessel had minimal metacentric height present to start with as, being an old vessel of wooden construction, it had a narrow beam, was loaded and had free surface effects from the "champagne" in its fish hold. The "champagne" was known to be occupying the fish hold to a quarter of its height.

The crew, except for one, were untrained and hence did not realize the disastrous consequences which can result when the virtual centre of gravity is raised by free surface effect. They further compounded the effects of loss of positive stability by lifting weights with a topped-up boom which raised the virtual centre of gravity even more, and reduced the vessel's ability to right herself.

The Safe Work Practices for Commercial Fishing Vessels, a publication by the Workers Compensation Board of British Columbia lists the brailing procedures and recommends it when it is not safe to drum a net aboard. However, increased hydraulic power, stronger nets and ramps instil a false sense of security in the fisherman and the arduous

task of brailing is often avoided, leading to disastrous results, as in the case of the "INSKIP". There are other publications on the safety and health of fishermen published by Transport Canada, one notably on fishing vessel stability. Most fishermen are unaware of the existence of these publications.

Findings

1. The vessel was loading her first catch of the day and using a topped-up boom to help to take the weight along with the net drum.
2. As the vessel was very old and "grandfathered" regarding stability requirements, there had been no stability calculations done for the vessel, nor were they required to be done.
3. Reduction of the vessel's initial stability was caused by the virtual loss of metacentric height due to the topped up boom taking the load, free surface effect of the "champagne" and water in the fish holds, and the fish on deck.
4. The vessel capsized as the fish slid to the port side and downflooding of the fish holds occurred.
5. The crew and the skipper's family escaped the sinking vessel by boarding the skiff in which they were at the time of rescue.

Causes and Contributing Factors

The loss in stability suffered by the "INSKIP" caused it to capsize. Factors contributing to this were free surface effect caused by the sliding fish on deck and in the holds and the lifting of heavy weights by a topped-up boom.

This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board, consisting of Chairperson, Benoît Bouchard, and members Maurice Harquail and W.A. Tadros, authorized the release of this report on 14 August 1996.