

MARINE OCCURRENCE REPORT

SWAMPING AND CAPSIZE WITH LOSS OF LIFE

SMALL FISHING VESSEL CFV 151816

OFF BRIG BAY, NEWFOUNDLAND

15 MAY 1997

REPORT NUMBER M97N0067

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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### *Summary*

The small fishing vessel, licence no.151816, with two persons on board and carrying a load of lobster traps, departed Brig Bay, Newfoundland, bound for the fishing grounds. On reaching open water, the vessel encountered swells of 2-3 metres and began to take on water forward. The shipped water could not drain quickly from the forward section of the boat and the vessel became swamped and capsized. The crewmember was rescued unharmed but the owner/operator lost his life. The boat was later recovered without any apparent damage and no environmental pollution was reported.

*Ce rapport est également disponible en français.*

### *Other Factual Information*

	"No Name"
Port of Registry	Brig Bay, Newfoundland
Flag	Canada
CFV Licence Number	151816
Type	Small Fishing Vessel
Length	8.5 m
Beam	2.6 m
Built	1988
Propulsion	one 44.76 kW outboard motor
Number of Crew	two
Registered Owner	Isaac Wells Brig Bay, Newfoundland

The CFV 151816 is a small open fishing vessel of wooden construction and the owner had recently sheathed the vessel with glass-reinforced plastic (GRP). The vessel was built by the owner for use in the lobster and herring fisheries and is divided by four athwartship bulkheads which were positioned to restrict the movement of the catch when fishing for herring. The bulkheads were not constructed to be watertight and they permit water to slowly drain aft to the bilge pump. Being less than 15 gross tons, the vessel had not been inspected by Transport Canada, nor was she required to be. Neither had she been voluntarily inspected although such a service is available to vessels such as the CFV 151816 for a fee.

At approximately 0620<sup>1</sup> on 15 May, 1997, the CFV 151816 left the dock in Brig Bay for fishing grounds about two miles off the coast. On board were the owner/operator and a crew member . The vessel was carrying 72 lobster traps which were stacked four and five high and overhung the port and starboard gunwales of the vessel. May 15 was the first day of the 1997 lobster fishing season for the area of Brig Bay and the lobster licence held by the owner permitted him to set a total of 420 traps. A good catch was expected and it was planned to make every effort to place all of the traps in the water on the first day of the season; the first load of traps had been loaded on the CFV 151816 early that morning.

The reported weather at the time of the vessel's departure was patchy fog with wind from the northwest at between 20 and 25 knots. The vessel was heavily laden with little freeboard on leaving the dock and as the

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<sup>1</sup> All times are NDT (Coordinated Universal Time minus two and one-half hours) unless otherwise noted.

CFV 151816 left the relatively sheltered waters of Brig Bay and moved into the open sea she encountered a 2-3m swell. The crew member soon noticed that the bow was apparently becoming deeper in the water and told the operator. The operator immediately throttled back the vessel's outboard engine to the idle position but, at about 0636, the bow became submerged and the vessel swamped. The position of the vessel at this time was about 2 cables west of Entrance Island, off the entrance to Brig Bay.

The owner/operator held on to one of the portable five gallon (22.7 L) fuel tanks and drifted away from the vessel. The crew member floated clear as the vessel slowly capsized. The crew member was able to get on top of the overturned hull by using the keel as a hand-grip. He was rescued by a passing fisherman who had initially mistaken him for a seal on a pan of ice. There was no sign of the operator at this time and the crew member was taken back to the dock at 0645.

An extensive air and sea search for the owner/operator was conducted using two helicopters, Labrador R-301, from Search and Rescue, Gander, and CG-360, from the CCGS "HENRY LARSEN", as well as the Coast Guard auxiliary vessel "MORRIS ELAINE" and some 15 to 20 local vessels. The operator's body was recovered by RCMP divers the following day. He was found entangled in the fishing gear in approximately 60 feet (18.3 m) of water. An autopsy reported the cause of death as drowning. The CFV 151816 was recovered with no apparent damage.

Regulations require small fishing vessels to carry an approved lifejacket for each person but there were no life jackets or PFDs carried on the vessel at the time of the occurrence.

#### Setting Lobster Traps

There is an advantage to placing all of one's traps in the water on the first day of a lobster fishing season. The best possible spots to place the traps are quickly and permanently taken by those who get there first and lobster prices are generally higher at the beginning of a season.

#### Forward Visibility

The height of the stow of traps together with the overhang of approximately 30 cm at each side, made it impossible for the crew, who were situated aft, to directly view the forward end of the vessel. Their first indication that the vessel had begun to ship water forward was when they noted an apparent increase in the forward draught.

#### Stability

Fishermen operating small fishing vessels are not required to have any formal training in vessel stability and the crew of the CFV 151816 had no such training. Many operators are not aware that structural alterations, such as the fibreglassing carried out on the VFV 151816, can have an adverse effect on vessel stability, and have the potential to jeopardize the safety of the crew. The Board, concerned about crew safety, recommended to the Department of Transport that a safety awareness programme be instituted to make personnel better aware of the

adverse effects of structural modifications on vessel stability.<sup>2</sup> Information is available through several government agencies for vessel owners who are planning to make structural changes to their vessels, including information on the consequent effects on such things as stability.

There were two drain holes in the forward thwartship bulkhead to allow water shipped in the forward section to drain aft to the bilge pump. These holes were approximately 3.5 cm in diameter and drilled in the bulkhead in the vicinity of the bilges.

The lobster traps each weighed approximately 17.7 kg and the total weight of the load including traps, lines and buoys was estimated at 1400 kg. With the vessel so heavily laden there was little freeboard remaining on leaving the dock. The crew had no formal training in vessel stability.

## *Analysis*

The heavy load of traps and to a lesser extent the fibreglass sheathing both contributed to reducing the vessel's freeboard. This made her prone to shipping water in the prevailing conditions and when the shipped water in the forward section could not quickly drain aft the vessel became swamped. With her transverse stability already reduced by the high, heavy load, the CFV 151816 capsized.

Even though the weather was less than favourable the owner/operator chose to take the heavily loaded vessel to sea. Several factors may have influenced this decision including that traps which are set promptly at the beginning of the season can be placed in prime locations and the early catch in a lobster season is likely to bring the higher monetary return. Thus it can be considered that there is significant pressure to set the traps as quickly as possible and this can lead a crew to take risks that otherwise they would not take.

Open fishing vessels are susceptible to taking on water over the bulwarks, particularly in conditions where low freeboard and rough seas prevail. It is not common for open boat operators to have had the formal training which would allow them to fully appreciate the hazards associated with heavy loads and the free surface effect of water shipped on board their vessels. Consequently, they may have limited understanding of the dynamic factors affecting the stability of open fishing boats which are vulnerable to swamping and capsizing.

Because the surface of glass-reinforced plastic is very smooth, it is difficult for a person in the water to get up on an overturned hull. Due to the small size and narrow beam of the CFV 151816, the crew member was able to reach the keel of the capsized vessel and climb up onto the hull. This likely saved his life.

## *Findings*

1. The centre of gravity of the vessel was raised by the height of the load of lobster traps.

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<sup>2</sup> TSB Recommendation M94-31

2. The heavy load of traps reduced the freeboard and this caused the small open vessel to ship water forward when outside the relatively protected waters of Brig Bay.
3. The transverse stability of the vessel was further compromised by shipped water not being quickly removed from the vessel.
4. The water retained in the forward section led to the swamping and capsize of the vessel.
5. The crew were initially unaware water was being shipped over the bow because the load of traps restricted their view forward.
6. The owner/operator's decision to undertake the trip in the deeply laden vessel in unfavourable weather conditions was likely influenced, in part, by economic considerations.
7. There were no life jackets or PFDs carried on the vessel at the time of the occurrence.
8. The crew had no formal training in vessel stability.
9. The crew member's life was likely saved because he was able to reach the keel of the capsized vessel and climb onto the overturned hull.

### *Causes and Contributing Factors*

The small fishing vessel CFV151816 swamped and capsized after shipping water forward shortly after leaving the relatively protected waters of Brig Bay. The heavy load of traps had reduced the vessel's transverse stability by raising the centre of gravity and reducing the freeboard. The crew were initially unaware that the vessel was taking on water as their view of the forepart of the vessel was blocked by the load of traps.

*This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board, consisting of Chairperson Benôt Bouchard, and members Maurice Harquail, Charles Simpson and W.A. Tadros, authorized the release of this report on 10 December 1998.*