

MARINE INVESTIGATION REPORT

M97W0152

COLLISION

BETWEEN THE FISHING VESSEL "WESTISLE"

AND

THE EMPTY BARGE "IB NO. 1"

PUSHED BY THE TUG "COASTAL DESTINATIONS"

IN THE STRAIT OF GEORGIA, BRITISH COLUMBIA

29 JULY 1997

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.

## Marine Investigation Report

### Collision

Between the Fishing Vessel “WESTISLE ”  
and  
the Empty Barge “IB NO. 1”  
Pushed by the Tug “COASTAL DESTINATIONS”  
in the Strait of Georgia, British Columbia

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### *Summary*

The empty barge “IB NO. 1” was being pushed by the tug “COASTAL DESTINATIONS” in a northerly direction in the Strait of Georgia where the fishing vessel “WESTISLE” was southbound. Visibility was good, the night was clear, and the weather calm. The vessels were in an end-on situation. The bridge watch on the fishing vessel saw but did not recognize the meaning of the navigation lights exhibited by the pusher tug and barge combination. The fishing vessel, and later the tug/barge took non-standard collision avoidance measures which led to a collision.

As both vessels were manoeuvring, the barge’s ramp struck a glancing blow to the port quarter of the fishing vessel causing damage to the above-deck machinery. No one was injured and there was no pollution.

*Ce rapport est également disponible en français.*



### *Other Factual Information*

	"WESTISLE"	"COASTAL DESTINATIONS"
Port of Registry	Vancouver, British Columbia (B.C.)	Vancouver, B.C.
Flag	Canada	Canada
Registry Number	812193	369113
Type	Fishing seiner	Tug
Gross Tons	99.49	118.93
Length	23 m	18.7 m
Draught	F: 2.1 m , A: 3 m	Undetermined
Built	1981 Vancouver, B.C.	1974 Port Alberni, B.C.
Propulsion	Caterpillar single-screw 425 hp	Twin-propeller and twin-engine, each 850 hp
Number of Crew	Five	Four
Registered Owner	British Columbia Packers Richmond, B.C.	Inlet Fuel and Barge Co. Campbell River, B.C.

	"IB NO. 1"	
Port of Registry	Edmonton, Alberta	
Flag	Canada	
Registry Number	368374	
Type	Steel barge	
Gross Tons	875.52	
Length	61 m	
Built	1975, Rebuilt 1995	
Propulsion	None	
Number of Crew	Nil	
Registered Owner	Inlet Fuel and Barge Co., Campbell River, B.C.	

### *Description of the Vessels*

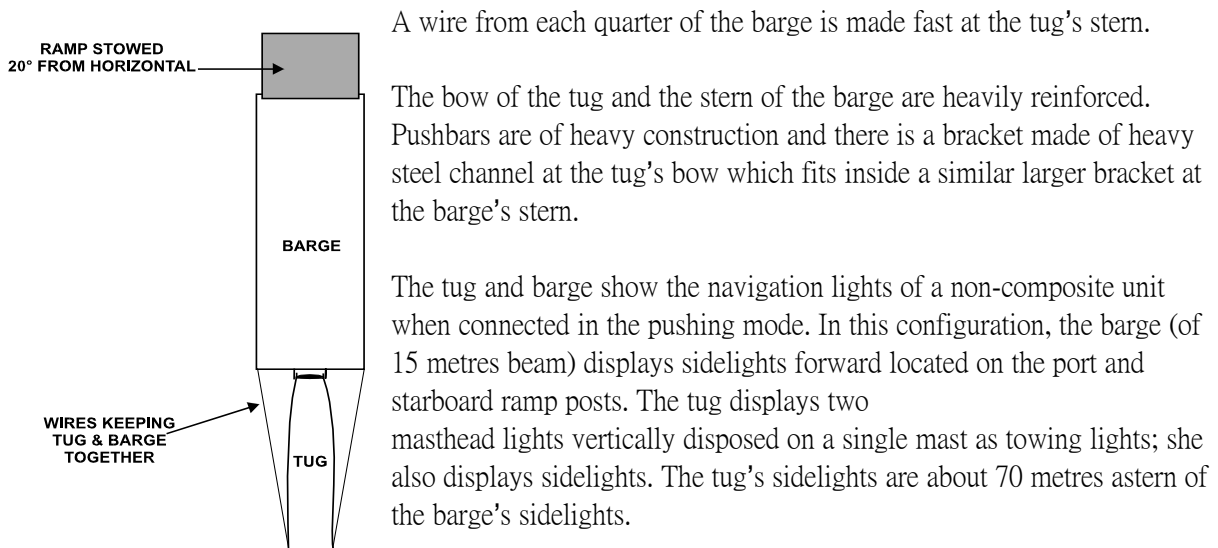
The "WESTISLE" is a steel purse seiner of carvel construction. The fibreglass-insulated fishholds are aft of the aluminium accommodation and are serviced by a swinging derrick and an aluminium net drum. A skiff is

housed on the afterdeck. The vessel is equipped with two radars, a Loran and a global positioning system (GPS).

The “WESTISLE” was last inspected by Transport Canada, Marine Safety (TCMS) in June 1994. The master of the “WESTISLE” possesses a certificate of competency as Fishing Master Class IV. The rest of his crew of four fishermen/deck-hands were not certificated nor were they required to be certificated.

The “COASTAL DESTINATIONS” is a shallow-draught, all-welded tug with a pusher bow and transom stern both suitably tire-fendered. The tug carries a radar and a GPS.

The barge “IB NO. 1” is a flat-deck barge of welded-steel construction fitted with a heavy duty bow ramp and lumber-fendered push brackets at the stern. The barge can carry fuel oil under deck and general cargo on deck. In the pushing mode, the “COASTAL DESTINATIONS” is connected to the “IB NO. 1” as follows:



The “COASTAL DESTINATIONS” was last inspected by TCMS in 1996. Both the tug and barge possess a Home Trade III trading area licence. The tug master has a certificate of competency as Home Trade Master for vessels up to 350 tons.

### *History of the Voyage*

#### *“WESTISLE”*

On 29 July 1997, the fishing seiner “WESTISLE”, with a master and a crew of four experienced fishermen/deck-hands, was southbound in the Strait of Georgia on a voyage from Campbell River to the Fraser River, B.C., where general repairs were to be carried out.

The sea was calm with a light south-westerly to westerly breeze of between five and ten knots and a visibility

of five to six miles.

At 2315 Pacific daylight time (PDT)<sup>1</sup>, the master set the auto pilot on a south-south-easterly course. The vessel was proceeding at about ten knots. The radar set was operational and the very high frequency (VHF) radiotelephone was set to receive channels 16 and 78. After handing over the watch to two watchkeepers, the master left the bridge and went aft to the galley. At approximately six minutes to midnight, with the vessel about 12 miles south-east of Cape Mudge, the master heard a change in engine revolutions and he returned to the wheel-house.

Prior to the master's arrival on the bridge, the watchkeepers had observed a radar target ahead at a range of six miles. The watchkeepers had first altered course ten degrees to port by auto pilot. When, at a closer range, the other vessel was seen to alter course to starboard, the watchkeepers altered the course of the "WESTISLE" to starboard, again by auto pilot. Upon his arrival on the bridge, the master, seeing the other vessel on a reciprocal course, disengaged the auto pilot and reportedly put the rudder hard-to-port until collision. The master and the watchkeepers on the "WESTISLE" did not identify the lights ahead exhibited by the other vessels.

#### *"COASTAL DESTINATIONS" / "IB NO. 1"*

On 29 July 1997, after having discharged the barge's cargo, the "COASTAL DESTINATIONS" commenced pushing the "IB NO. 1" on a voyage from the Fraser River towards Menzies Bay, B.C. On board was the master and a crew of three consisting of the mate, deck-hand and engineer.

The tug was pushing the barge at about 8.4 knots on a north-westerly course in the Strait of Georgia. Both the tug master and the mate of the "COASTAL DESTINATIONS" were on the bridge prior to a change of watch at midnight. The lights of another vessel (later identified as the "WESTISLE") were sighted ahead, on a reciprocal course at a distance of about six to eight miles. The master altered the course of the tug/barge combination ten degrees to starboard to effect a red-to red-passing.

The bridge watch then saw the lights of the "WESTISLE" showing that the fishing vessel had altered course to port. In an effort to avoid collision, the course of the "COASTAL DESTINATIONS" was also altered to port, and the vessel's spotlight was flashed first to the starboard side and then on to the ramp, reportedly blinding the crew on the "WESTISLE". When collision became imminent, the "COASTAL DESTINATIONS" put her engines full astern. At about the same time, the tug sounded a continuous long blast on her whistle; a sound signal prescribed for a "vessel in distress" in the *Collision Regulations*. Shortly before the collision, the master of the "COASTAL DESTINATIONS" reported observing the "WESTISLE" make a large alteration of course to starboard.

The ramp of the "IB NO. 1" was in seagoing position, at an angle of about twenty degrees above the horizontal. As the distance between the "WESTISLE" and the "IB NO. 1" decreased, the ramp cleared the accommodation of the fishing vessel but struck and damaged the seine drum on the afterdeck. Other structures above the main deck on the port side of the "WESTISLE", including the tilt stern, suffered damage. All damage on the

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<sup>1</sup> All times are PDT (Coordinated Universal Time (UTC) minus seven hours) unless otherwise noted.

“WESTISLE” was located above the waterline and confined to the afterdeck. No damage was apparent to the “COASTAL DESTINATIONS” or the “IB NO. 1”.

The “COASTAL DESTINATIONS” reportedly tried to contact the “WESTISLE” prior to the collision, but the calls were not heard on board the fishing vessel. Following the collision, no difficulty was encountered in establishing VHF contact between the two vessels. After exchanging information and reporting the collision to Vancouver Marine Traffic and Communications Services (MCTS), both vessels continued on their respective voyages.

The “COASTAL DESTINATIONS” reported two close-quarters situations with unknown fishing vessels on the same night.

## *Analysis*

The *International Regulations for Preventing Collisions at Sea with Canadian Modifications* require that all available means, including the use of radar and taking visual bearings of approaching targets, be used to assess the risk of collision and that any action taken to avoid collision must, if the circumstances of the case admit, be positive, made in ample time, and with due regard to the observance of good seamanship.

The rules also require that when two power-driven vessels are meeting on reciprocal or nearly reciprocal courses so as to involve risk of collision, each shall alter course to starboard so that each shall pass on the port side of the other.

There is conflicting information with respect to the last minute action of the “WESTISLE”. While the “WESTISLE” maintains the helm remained on hard-to-port until collision, the “COASTAL DESTINATIONS” reported observing the “WESTISLE” make a broad alteration to starboard. Damage to the upper deck structure of the port quarter of the “WESTISLE” is consistent with her altering course to starboard just before the collision. The “WESTISLE” was thus crossing ahead of the “IB NO. 1” when she was struck on the port quarter by the barge’s ramp. In any event, small reciprocal actions taken by each vessel resulted in the close-quarters situation. Neither vessel made a substantial course alteration nor did they stop their engines in good time to avert a collision. The non-standard collision avoidance action taken by each vessel without communicating their intent to each other culminated in the collision.

The collision avoidance action taken by both vessels suggests that neither vessel was aware of the intentions of the other. Despite this, neither vessel sounded the appropriate sound signal prescribed under the *Collision Regulations*. Instead, the “COASTAL DESTINATIONS” sounded a continuous long blast on the whistle which is reserved for a “vessel in distress”. At that time, the vessel’s head was swinging to port. This would suggest that the need to take collision avoidance measures that are consistent with the *Collision Regulations* was not fully appreciated by the crew of either vessel.

The master of the “COASTAL DESTINATIONS” reported two close-quarters situations with unknown fishing vessels on the same night during this voyage. This fact may indicate that the lights displayed by the tug/barge

combination cause confusion to the watchkeepers of other vessels. However, there is insufficient information to show that the lights exhibited by the tug/barge were the only cause of the close-quarters situations.

At a "Vessel Traffic Meeting" held in June 1993, local fishermen identified the issue of lights and poor visibility of barges and various tows as a "long-standing problem on the West Coast".

In 1993, the fishing vessel "BONA VISTA" collided with the tug/barge combination "ARCTIC TAGLU" / "LINK 100" (TSB report No. M93W1050). Since none of the six persons aboard the "BONA VISTA" survived the collision, it could not be determined if the navigation lights exhibited by the "ARCTIC TAGLU" (a similar arrangement to that of the "COASTAL DESTINATIONS" / "IB NO. 1") were a factor or confused the fishing vessel's operator.

In May 1994, the TSB forwarded a Marine Safety Advisory to the Canadian Coast Guard (CCG) (now TCMS) concerning the importance of the navigation lights displayed by vessels such as the "ARCTIC TAGLU" and "LINK 100" within the Canadian marine towing industry.

In response, the CCG stated that it had carried out an assessment of navigation light requirements for the "ARCTIC TAGLU" and "LINK 100" in 1988 before the vessels first entered into service. At that time, the CCG had decided that the vessels were not "rigidly" connected to form a "composite unit" and evaluated them as a tug-pushing-barge operation. The combination was not lit as a single ship or unit.

In July 1994, the Coroner's Inquest into the "ARCTIC TAGLU" / "BONA VISTA" accident found the tug/barge combination fell within the description of a "composite unit" and recommended, inter alia, that the CCG "review the various tug boat-barge configurations so that they are licensed in a manner under which they will be required to have navigation lights that will demonstrate their size and the direction in which they are travelling".

In November 1995, in view of the continuing risk of collisions of tug-barge operations in high-traffic areas, the Board recommended that:

The Department of Transport ensure that the navigation light requirements for tug-and-barge operations facilitate vessel detection and collision avoidance under all operating conditions, regardless of the tug-barge configuration.  
(M95 -13, issued November 1995)

In response, TC indicated that international requirements for the lighting arrangements for composite units not rigidly connected have been long established, and that these arrangements are well understood by properly trained professional mariners. However, TC indicated that it would conduct a review of the navigation light arrangements for these vessel combinations operating in Canadian waters. The navigation lights of a tug-and-barge composite unit were discussed at a committee meeting held at the May 1996 Canadian Marine Advisory Council (CMAC). The committee did not find that an amendment to the current requirement was needed. TCMS has indicated that no further review is planned.



In August 1996, the passenger vessel "STATENDAM" nearly collided with the tug/barge combination "BELLEISLE SOUND" / "RADIUM 622" in Discovery Passage, B.C. The tug/barge was exhibiting navigation lights arranged similarly to those displayed by the "COASTAL DESTINATIONS" / "IB NO. 1". The pilot of the passenger vessel, an experienced mariner, at first believed that the lights he saw were those of two fishing vessels; however, this was not the major contributing factor to the near-collision. This would suggest that difficulty in clearly identifying the navigation lights displayed by tug/barge units on the West Coast is not limited to the crews of fishing vessels.

In August 1997, in an Action *IN REM* and *IN PERSONAM* before the Federal Court of Canada, Trial Division, a family member of those lost on the "BONA VISTA" as a result of the collision with the "ARCTIC TAGLU" / "LINK 100" was awarded damages. The judge found, inter alia, that "Had the tug/barge combination been lit as a composite unit, it would have been immediately recognizable by mariners, as a single vessel of large size". It is understood that TC is appealing the ruling.

Information received by the TSB and recorded in its database shows that, since 1989, the "ARCTIC TAGLU" has been involved in two collisions and five near-collisions with other vessels at night. It is not known, however, if the navigation lights exhibited by the vessel were a factor in these occurrences.

## *Findings*

1. The "WESTISLE" and the "COASTAL DESTINATIONS" / "IB NO. 1" were headed on reciprocal courses and in sight of one another in the Strait of Georgia .
2. The "COASTAL DESTINATIONS" initially altered course only ten degrees to starboard.
3. The bridge watch of the "WESTISLE" did not recognize the lights on the "COASTAL DESTINATIONS" / "IB NO. 1" as those of a tug pushing a barge on a reciprocal course, and they altered course to port.
4. Both vessels deviated from the *Collision Regulations* without communicating their intentions to the other.
5. As the distance between the two vessels decreased, neither vessel made substantial course alterations nor did they stop their engines in sufficient time to avert collision or to allow them more time to assess the situation.
6. Notwithstanding the Board's recommendation M95-13, it appears that a safety deficiency continues to exist in the regulatory provisions that apply to the installation/display of navigation lights on tug/barge combinations in the B.C. towing industry.

## *Causes and Contributing Factors*

The "WESTISLE" collided with the "COASTAL DESTINATIONS" / "IB NO. 1" because the watchkeepers on the fishing vessel did not recognize the lights exhibited by the tug/barge combination and each vessel took non-standard collision avoidance action without communicating their intentions to the other. The fact that neither vessel made substantial course alterations nor did they stop their engines in sufficient time either to avert collision or to allow them more time to assess the situation contributed to the occurrence.

*This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board authorized the release of this report on 02 June 1999.*