MARINE OCCURRENCE REPORT

GROUNDING

OF THE BULK CARRIER "ALGOLAKE"
IN THE CANADIAN CANAL UPPER APPROACH CHANNEL
SAULT STE. MARIE, ONTARIO
17 APRIL 1997

REPORT NUMBER M97C0013

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Summary

While downbound in the ice-covered St. Mary's River, in the channel leading to the Algoma Steel dock, the "ALGOLAKE" suddenly developed heavy vibration and came to a halt. The vessel was positioned in the centre of the channel and it was later determined that the vessel had come into contact with a bottom accumulation of rock debris and suffered significant hull damage.

Other Factual Information

	"ALGOLAKE"
Port of Registry	Sault Ste. Marie
Flag	Canada
Registry/Licence Number	318430
Type	Self - unloading, Bulk carrier
Gross Tonnage	22, 852
Length	219
Draught	F: 7.44 m. A: 7.44 m.
Built	1977, Collingwood, Ont
Propulsion	Pielstick diesel motor 2 V 4SA 9,000 BHP
Number of Crew	27
Number of Passengers	0
Registered Owner	3013286 Canada Inc. Sault Ste. Marie, Ontario

On 17 April, 1997, the "ALGOLAKE" was downbound in the St Mary's River, in the Canadian canal upper approach channel (also known locally as the Canadian channel) bound for the Algoma Steel dock at Sault Ste. Marie. The waterway was ice-covered and the vessel was proceeding in the middle of the 160 m wide channel, when, at about 1740, the master felt the ship beginning to vibrate. He immediately put the propulsion machinery to full astern. The vessel was loaded with 24,073 tonnes of iron ore pellets from Marquette, Michigan, and her momentum carried her forward, for a distance later estimated to be a further 61 m, before she stopped. The "ALGOLAKE" remained in that position until she came free at 1030 the following morning after being lightered by 2300 tonnes. A post-casualty inspection revealed the vessel had sustained hull perforation damage, over the length of 61 m, in way of port DB tanks No's 1 and 2 between the keel and the turn-of-the-bilge.

Water Depth

At 1640 the master of the "ALGOLAKE" called the ('Sault Control') U.S. Coast Guard Traffic Control by VHF radio to determine the water level for the area above the Sault locks. He was advised the water level was 0.43 m over chart datum, based on NOAA instrumentation. This gauge level reading is used to represent the general area, including the Canadian side around the Algoma Steel dock above the Canadian and U.S. locks.

Three days after the occurrence, the Canadian Coast Guard ship "SAMUEL RISLEY" conducted a sounding survey of the Canadian channel, the detail of which was restricted due to the limited equipment aboard, but which found no shallow spot. A more detailed survey was commenced by the U.S. Army Corps of Engineers as a courtesy to Canada, and this found all the channel conformed to the controlling depth of 7.62m. The "ALGOLAKE" was drawing 7.44m forward and aft. Prior to the occurrence, the last survey of the channel was conducted by the U.S. Army Corps of Engineers on 26 September 1996 and that survey did not reveal any high spots. The interval between soundings was between 5 and 10 metres.

Bottom Debris

The Canadian channel was constructed over 30 years ago by means of explosives, which left fragmented rock on the bottom in the vicinity of the channel. After this occurrence, divers examined the bottom of the channel in the vicinity of the area where the vessel sustained damage and found rock debris with paint scrapes. A video tape showed the bottom rock debris to be irregular in shape, mostly shot-rock of sandstone variety, created when the channel was constructed. Rock debris from shallower water can be moved towards the ship channel when ice shifts during the spring thaw or during ice-breaking operations. Rocks forming bottom debris can also come free from the edge of the channel through natural underwater degradation of the channel sides and when large vessels manoeuvre in the confines of the ship channel.

Navigation to the Algoma Steel Dock

The Canadian channel runs for approximately a mile and a half off the main shipping channel giving access to the Algoma Steel dock and leading to the Sault Ste Marie (Canada) Canal and lock. Vessels calling at the Algoma Steel dock of necessity proceed at a minimum safe speed in order to negotiate a turn near the end of the channel and dock at the facility. Nine other vessels with a similar loaded draught had cleared in and out of the Algoma Steel dock since the start of the 1997 navigation season. The Transportation Safety Board has no record of a similar shipping accident, involving a vessel striking debris in the middle of the channel, being reported in the area since TSB's computerized records were commenced in 1975.

Findings

1. The blasting procedure used to create the Canadian channel resulted in considerable rock debris remaining in the vicinity of the waterway.

2. Rock debris accumulated in the shipping channel.

3. While proceeding in the middle of the channel, the "ALGOLAKE" contacted an accumulation of rock debris which was sufficiently large to "ground" the vessel.

Causes and Contributing Factors

The "ALGOLAKE" was brought to a stop and sustained significant damage to her hull when she contacted rock debris in the centre of the Canadian channel. Natural, and vessel induced, degradation of the channel sides and ice-breaking operations likely contributed to the accumulation of rock debris in the channel

This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board, consisting of Chairperson Benoît Bouchard, and members Maurice Harquail, Charles Simpson and W.A. Tadros, authorized the release of this report on 29 September 1998.