MARINE OCCURRENCE REPORT

GROUNDING

OF THE CHARTERED CABIN CRUISER "TIME OUT" ON THE OUTER HARBOUR EAST HEADLAND, TORONTO HARBOUR 25 JUNE 1997

REPORT NUMBER M97C0055

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on the Outer Harbour East Headland,
Toronto Harbour
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Summary

As the small charter vessel "TIME OUT" was returning to Bluffers Park Marina, Scarborough, from a fireworks display near Ontario Place, Toronto, the vessel ran aground at high speed on the eastern extension of the man-made peninsula comprising the Outer Harbour East Headland, located to the east of the Main Harbour Channel to Toronto Harbour. The momentum of the vessel was such that the "TIME OUT" was propelled up a 60 degree incline and came to rest on flat ground, 4m above the level of the surrounding water. The operator, a crew member and one of the three passengers who were on board at the time of the grounding were taken by ambulance to a local hospital. All three received medical treatment before being released.

Other Factual Information

Particulars of the Vessel

Name	"TIME OUT"
Port of Registry	Cornwall, Ont.
Flag	Canada
Licence Number	10E8945
Type	Cabin Cruiser ' Holiday 25', lapstrake deep V hull with built in flotation
Gross Tonnage	2
Length	6.3m
Draught	0.5m
Built	1981, Cruisers Inc., U.S.A.
Propulsion	OMC 260 BHP, gasoline , single screw stern drive.
Owner	Derek Mitchell Toronto, Ont.

At 2320[1] on 25 June 1997, the "TIME OUT", with the operator, a crew member and three passengers on board, departed the area south of Ontario Place, Toronto, where a fireworks display had been taking place. The vessel's destination was her home marina at Bluffers Park in Scarborough, east of Toronto. The night was misty and dark and there was a slight chop on the surface of the water from the wind which was blowing 5 - 10 knots from the west - southwest. The atmosphere was warm and humid, with an air temperature of 21 degrees celsius, and the thunder showers that had been forecast for the area had not materialized. Visibility was estimated at some 3 - 4 nautical miles or less, although, for several miles downwind of the site of the fireworks display, local visibility was further reduced by the fine residue and smoke from spent fireworks that mixed with the humid atmosphere. As the vessel was proceeding eastward, south of the Toronto islands, lights from the many other boats also moving eastward were reflected in the windshield, forward of the operator's console. From the operator's vantage point, these reflected lights blended in with the shore lights from the distant higher ground of eastern Toronto and Scarborough.

The operator estimated that the vessel was approximately 3/4 of a nautical mile south of the buoys marking the entrance to the Main Harbour Channel when he increased speed to bring the boat up on to a plane. This was done to give him better forward visibility, since, at slower speeds, the vessel has a 'nose up' attitude which restricts the forward field of vision. With the vessel on a plane, the operator estimated that the speed was 28 mph or about 24½ kts. To assist with the navigation, the operator was using a Differential Geographical Positioning System
(DGPS) unit. This unit tracks a number of satellites to fix the vessel's position and has a feature which allows the user to enter the geographical co-ordinates of waypoints. With the vessel up on a plane, the operator actuated this feature for the previously entered Bluffers Park waypoint. The DGPS unit gave a course to steer and range which indicated that the vessel was 0.28 nautical miles to starboard of, and running parallel to, the course for Bluffers Park marina. When interviewed, the operator could not recall the exact course to steer

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[1] All times are EDT (Coordinated Universal Time minus four hours) unless otherwise noted.

indicated by the unit at that time.

At approximately 2342 the "TIME OUT" passed the south extremity of the man-made peninsula, Outer Harbour East Headland, also known locally as the Leslie Street Spit. This point of land is marked by the Toronto Harbour Aquatic Park light, a large automatic flashing red light set approximately 150 metres inshore from the water's edge.

In the cockpit area at this time were three persons, the operator, the crew member and one of the passengers. Conversation had been intermittent since leaving Ontario Place and all three were looking ahead. The crewman suggested that the operator should bring the vessel more to starboard which the operator did. The operator related that, at this point of the passage, he was not exactly sure of the vessel's position and that it seemed very dark ahead. Despite his apprehension he continued on without reducing speed for about 15 - 20 seconds. At about 2345, the vessel impacted with something unknown, throwing those in the cockpit forward into the console and windshield support struts, while the vessel was propelled upward to come to rest atop a 4m high plateau of land. At first the operator thought his vessel had collided with another which was not showing running lights. He did not realize the boat was on land until he saw seagulls walking about in the glare of the running lights. To lessen the possibility of the vessel falling over on its side, the operator asked those on board to remain still until help arrived and not to change their positions on board.

The operator announced a distress by VHF radio, giving a position of the general area of Leslie St. Spit. Those on board a small pleasure fishing boat nearby did not see the occurrence but having heard a loud bang, called the Metropolitan Toronto Police Marine Unit, which quickly responded. Ambulances were quickly dispatched, arriving at the site within 5 minutes.

The operator and the crew member suffered cuts and bruises, while the passenger who was in the cockpit required some facial reconstruction, having lost most of his front teeth, and all three required hospital treatment. The other two passengers had been seated facing aft at the time of the occurrence and were uninjured but suffered mild shock.

The location in which the vessel came ashore was part of the eastern extension of the man-made peninsula of the Outer Harbour East Headland. The "TIME OUT" initially struck a large submerged rock 6 cm below the surface of the water approximately 3m from the shoreline and from there proceeded up a 60 degree incline to land on flat ground some 16.5 metres from the submerged rock.

The damage was substantial. The stern drive was ripped off and the vessel was holed in numerous places . The "TIME OUT" had suffered significant elastic deformation of the fibreglass hull and in conjunction frames were tripped and cracked such that, when subsequently surveyed, the vessel was declared a constructive total loss.

The "TIME OUT" was properly equipped with lifesaving and fire-fighting equipment and also had permanently fixed foam flotation built into the hull to make the vessel unsinkable. The vessel was equipped with a depth sounder and remote-controlled spotlight mounted forward, however these were not used. The operator reported that the glare from the depth sounder instrument lighting, even at a low light setting, caused a visual distraction.

The operator had been operating power boats for many years and was a member of the 'Ontario Sport Fishers Guide Association'. He normally operated fishing charters out of Bluffers Park but was not very familiar with the Toronto Harbour area. This was the operator's first non-fishing charter of the year. He was not required to be, and was not, the holder of a marine certificate. Alcohol was not a factor in this occurrence.

Outer Harbour East Headland

The western extension to the Outer Harbour East Headland is located at the Main Harbour Channel to Toronto Harbour and the distance between it and the eastern extension is approximately 0.75 nautical miles. The shoreline in the bay thus formed is set in a maximum 0.4 nautical miles from a line joining the two points of land.

The Toronto Harbour Aquatic Park light on the western extension also serves as a mark for the entrance to the channel and is a flashing red light at a height of 22m with a visibility of eight nautical miles. The eastern extension light is on a structure 3.8 m in height, approximately 80 metres from the southern tip of the point of land. The light flashes red every 5 seconds with a nominal visibility (luminosity) of three miles. It is considerably less conspicuous than Aquatic Park light. At the top edge of the plateau of land forming part of the shoreline, foliage grew to a height of 0.6m - 1m. During the investigation it was determined that, when within the bay, one was not able to see the light on different approaches at distances of from 122 m to 215 m from the shore. In the area in which the "TIME OUT" went ashore the land-fill slope was such that there was approximately 11 m water depth, 45 m from the shore. While the shoreline would be conspicuous on a radar display, at night it remains relatively obscure to the eye. Since the occurrence, the Toronto Harbour Commission has embarked on a study to determine how to better light the protrusions of land, especially taking into consideration anyone navigating in the bay formed by the two points of land.

Navigation of the "TIME OUT"

The course, bearings and speed indicators given by the DGPS unit were determined to be accurate after a thorough inspection and analysis at the Metropolitan Toronto Police technical and electronics division and subsequent tests in a practical environment. The operator' s intent was to conduct point to point navigation, assisted by the DGPS unit. With the appropriate waypoint data inputted, the unit had the capability of providing the operator with the information he required to steer the courses necessary to clear intervening points of land on the homeward passage from Ontario Place to Scarborough. The 'off-track' feature of the DGPS unit would have allowed him to monitor the vessel's progress but the DGPS unit was essentially under-utilized.

Analysis

The operator could not recall the course to steer indicated by the DGPS unit on passing the east channel buoys but a course directly to the Scarborough marina from that vicinity does not clear the eastern extension of Outer Harbour East Headland. As a minimum, the vessel would have had to alter course at a waypoint south and east of the eastern extension to clear that point of land and safely proceed to a position off Bluffers Park marina.

The operator displayed a degree of compliance with the basic tenets of 'Bridge Resource Management' when he altered course to starboard at the suggestion of the crewmember. The crewmember's concern over the vessel's position which prompted the suggestion did not manifest itself in any further advice and the operator was not influenced to reduce speed or take any other measures to determine if the "TIME OUT" was standing into danger. The "TIME OUT" was equipped with a depth sounder and a spotlight, two pieces of equipment which had the potential to be useful to the operator.

The operator did not use the depth sounder because of the reported visual distraction of the instrument's lighting. Information gathered at the site indicated that the echo sounder would likely have contributed little in preventing the accident on a vessel travelling at 24 knots. The nature of the land fill slope at the shore line is steep, and, with the vessel closing at 12.5m/sec there would be little reaction time left to the operator when shelving began. The hazy atmosphere and other impediments to forward visibility that the operator was experiencing, make it difficult to determine whether or not the spotlight would have been effective in a vessel proceeding at high speed. Certainly, if the "TIME OUT" had been stopped, or even if the speed had been reduced, the spotlight was a useful piece of equipment to assist in the vessel's navigation.

Although the vessel was a total constructive loss as a result of striking the material which made up the shore (broken concrete slabs with metal projections and rocks) the damage to the vessel and the nature of the injuries to those on board was lessened because the vessel was deflected upwards after first striking a submerged rock.

Findings

1. The passage from Ontario Place to Scarborough was undertaken during the hours of darkness using only a DGPS unit to supplement visual navigation.

2. Airborne residue from the fireworks display and back scatter of lights in the windshield adversely affected the operator's forward vision.

3. Despite uncertainty on the part of the operator and the crew member regarding the position of the "TIME OUT", the vessel's high planing speed was not slackened.

4. The usefulness of other navigational equipment on the vessel was diminished because speed was not reduced to assess the vessel's situation.

5. The vessel was prematurely brought on to a course for the home marina without having made sufficient easting to clear the eastern extension of the Outer Harbour East Headland.

6. The light on the eastern extension of the Outer Harbour East Headland is markedly less conspicuous than that on the western extension and, on different approaches, it was obscured by vegetation when navigating within 220 m of the shore.

Causes and Contributing Factors

The "TIME OUT" ran aground on the Outer Harbour East Headland because the course was set for Bluffers Park marina before the vessel had cleared the eastern extension of the peninsula. Contributing factors to the occurrence were that speed was not reduced when there was uncertainty regarding the vessel's position and that the operator's visibility was impaired by the back scatter of lights in the windshield and by smoke from the fireworks display suspended in the humid atmosphere.

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 22 September 1998.