

MAIB SAFETY BULLETIN 2/2007

Failure of seat attachment in rigid inflatable boat,
resulting in the three crew falling overboard.

July 2007

Issued December 2007

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This document, containing safety lessons, has been produced for marine safety purposes only, on the basis of information available to date.

The Merchant Shipping (Accident Reporting and Investigation) Regulations 2005 provide for the Chief Inspector of Marine Accidents to make recommendations at any time during the course of an investigation if, in his opinion, it is necessary or desirable to do so.

In this accident, the seats of a rigid inflatable boat (RIB) became detached during a turn to starboard. All three occupants were thrown into the water, while the boat continued on out of control. Fortunately, all were rescued very quickly and suffered only minor injuries, but the potential for serious harm was significant.

This Safety Bulletin is issued so that the safety lessons from the MAIB's preliminary examination into the causes and circumstances of the incident are promulgated to RIB owners and operators to ensure checks can be made on their own craft to prevent a reoccurrence.

A handwritten signature in black ink, appearing to read 'Stephen Meyer', with a stylized flourish at the end.

Stephen Meyer
Chief Inspector of Marine Accidents

This bulletin is also available on our website: <http://www.maib.gov.uk>

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BACKGROUND

The RIB *Time Flies* was employed as a support boat for an event on the river Thames. The boat, a 6.3 m Ribquest craft, was powered by a 115 horsepower Yamaha outboard engine, giving a potential top speed in excess of 30 knots (**Figure 1**). The hull had been constructed in 2005 and the boat had only been used for a 4-month period prior to the current owners buying the vessel in May 2007.



Figure 1 - *Time Flies*

On the day of the accident, the boat was being used to transport event personnel out to barges moored in the river. At the time of the accident, the helmsman was positioned at the controls, standing astride of the starboard seat pod, a passenger was seated in the port seat, and a second passenger was standing behind the two seats, holding on to the seat backs. With both passengers on board, the helmsman manoeuvred clear of the last barge and, having asked his passengers if they were holding on, commenced a turn to starboard to head downriver. There was then a loud crack as the seat pods became detached from the deck and all three occupants were thrown into the river.

The boat was fitted with a kill-cord. However, because it had not been fitted correctly, the engine failed to stop when the helmsman fell into the water. Consequently, the boat careered on out of control and sustained damage when it collided with another vessel. Fortunately, the crew of another boat brought the runaway RIB under control very quickly, preventing serious injuries to those in the water. The auto-inflating lifejackets worn by all three men operated successfully, and within a few minutes they were rescued, having suffered only minor injuries.

The seat pods and boat were examined after the accident. The glass reinforced plastic (GRP) seat pods had each been attached using 6 x 25mm stainless steel self-tapping screws with penny washers and a bead of a sealant-like substance (**Figure 2**).

The deck construction was of 18mm plywood, with a 2-3mm GRP skin which was impregnated with small plastic granules to create a non slip surface. The sealant, although unable to be positively identified as a particular product, was found to contain urethane and was not silicone or acrylic based. Urethane based adhesive sealants normally provide good adhesion but, in this case, poor surface preparation had resulted in ineffective adhesion to the deck (**Figure 3**), leaving the self-tapping screws as the only means of securing the seats. Over time, water had seeped into the six screw holes and softened the plywood, resulting in the screws becoming loose, and as the RIB turned, the weight of the occupants created a lateral pull on the seat pods, which caused the pods to be pulled from their mountings.



Figure 2 - Bottom of seat pod



Figure 3 - Deck showing seat placements

THE SAFETY LESSON

The three occupants of the RIB were very fortunate not to have been more seriously injured during this accident. The potential consequences of RIB seat pods or consoles coming adrift, especially at speed, can be very serious indeed. MAIB has now received a number of reports of seats detaching from RIBs during use, fortunately to date with no fatalities recorded. MAIB has already reported on its investigation in to the Ribeye Open Tender 450 incident on 7 August 2005, in which the seat console was found to be incorrectly fitted and its detachment resulted in serious injuries to one of the RIB's occupants.

Ribquest has ceased trading and no definitive record of the numbers of vessels built has been found. Nor has an explanation been forthcoming for the inadequate preparation and attachment of the seat pods on this RIB. It is possible that more Ribquest RIBs may suffer from inadequate and, therefore, unsafe seat pod attachment.

To prevent a similar accident from occurring, owners and operators of Ribquest RIBs, with glued and screwed seat pods/consoles, are therefore recommended to make the followings checks:

- Physically try to move the seats and consoles by hand to ensure there is no movement.
- Check for loose screws and/or evidence of any screw movement.
- Examine the sealant between seat/consoles and the deck to check for breaks or cracks.
- Establish if there is any water seepage under the console/seat that may indicate the sealant is not fully attached.
- Where doubt exists, seek advice from a professional boat builder/repairer to ensure the seat pods/consoles have been attached in accordance with the manufacturer's guidance and remain secure.

These basics checks should be conducted regularly to provide the user with the confidence that their seats and console remain safe.

ISO 6185-4, providing a recognised standard for the testing of seat and console attachment in larger RIBs, is expected to be issued in the near future.

