



Luxembourg, 19 August 2020

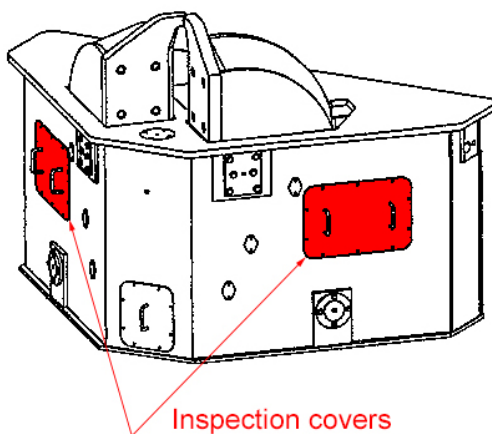
## **SAFETY BULLETIN LU-MA-SB/2020-001**

### 1. Context

The ongoing investigation of the sinking of the vessel Bourbon Rhode on 26 September 2019 in the Atlantic Ocean during a transit voyage from Las Palmas to Guyana has highlighted a safety issue that requires an immediate safety action.

### 2. Description

The Bourbon Rhode, an oceangoing anchor handling tug, was equipped with a system called shark jaws<sup>1</sup>, installed in the aft Z-Drive compartment, to secure chains or wires during anchor handling operations. During operation, water from the deck can enter the watertight housing frame, which has three drain fittings at the bottom plate. When not in use, the shark jaws are lowered into the housing frame and are flush with the deck. In lowered position, gaps around the shark jaws allow water to enter the housing frame.



**Figure 1.** - Shark jaws housing frame<sup>2</sup>



**Figure 2.** - Retracted shark jaws on Bourbon Rhesos<sup>3</sup>

During anchor handling activities, the manufacturer recommends maintenance of the shark jaws to be carried out once every week. One maintenance item is to remove the inspection covers at the side of the housing and to clean and remove sand, mud or any obstructions from

<sup>1</sup> Manufacturer: Plimsoll Smith Berger Hydraulic Shark Jaw system P3679-350MTTA

<sup>2</sup> Source: Plimsoll Corporation Pte Ltd

<sup>3</sup> Source: Bourbon Marine & Logistics

the inside of the housing frame. Upon completion of the maintenance, the inspection covers are to be installed with silicone sealant / gasket.



Figure 3. – Shark jaws inspection cover on Bourbon Rhesos<sup>4</sup>

Over time, the inspection covers of the shark jaws housing frame on the Bourbon Rhode have lost their watertight properties. The water leaking through the gaps between the housing frame and the inspection covers was collected in the bilge well at the bottom of the Z-Drive compartment and could be pumped out by activating the bilge pump system.

*The investigation has shown that under unfavorable circumstances and in combination with other safety-related factors that will be developed in the final report, the water quantity penetrating the compartment is likely to increase up to a point where, when unnoticed or unattended for a certain period of time, an unsafe condition may develop and lead to a major flooding with subsequent foundering.*

During the investigation, further analysis by the operator has identified other anchor handling vessels in his fleet with leaking inspection covers of the anchor handling systems<sup>5</sup>. This shows that the compromised watertightness of the anchor handling systems equipped with this type of inspection covers is not an isolated safety issue, but is likely to be encountered at a systemic level. This latent condition led to the issuance of the present safety recommendation.

### 3. Objective

The operator's Safety Management System (SMS) should address identified hazards by implementing strategies to either eliminate the hazard or mitigate the related risks.

As an immediate safety measure, it is recommended to put in place an additional safety barrier through the SMS by implementing a procedural defense to limit the risk of flooding from leaking inspection covers of anchor handling systems. In the long-term, design changes on new vessels or modifications on existing vessels to ensure continued watertightness of the anchor handling system should be considered as a more robust engineered defense (e.g. compartment encasing, redesign of inspection covers, modification of housing frame).

<sup>4</sup> Source: Bourbon Marine & Logistics

<sup>5</sup> Anchor handling systems include shark jaws, forks, towing pins.

#### 4. Safety action

The Administration of technical investigations advises all operators of vessels equipped with the Plimsoll Smith Berger Hydraulic Shark Jaw system P3679-350MTTA or anchor handling systems with similar designs of the inspection covers to implement in the vessel operator's Safety Management System a standard procedure for tasks requiring the opening of the inspection covers of the anchor handling system housing frame.

In addition to the existing maintenance instructions, the items to be addressed by this procedure should include:

- Preventive actions to mitigate the risk of water ingress through the inspection openings during maintenance tasks on the anchor handling systems (e.g. sea state limitations, installation of anchor handling system deck cover plates);
- Instructions for the appropriate sealing method when installing the inspection covers to ensure the watertightness of the anchor handling system housing (e.g. application of silicone sealant, installation of gasket);
- Instructions for testing the watertightness of the anchor handling system after completion of the works and installation of the inspection covers (e.g. flooding of anchor handling system housing frame with closed drainage by use of fire hose).
- Maintenance actions to prevent a degradation of the inspection covers and securing devices, which could compromise the watertightness of the anchor handling system;
- Appropriate documentation of the actions performed during the maintenance work.