

**Transport Safety Investigation Bureau
Safety Flyer – 2019/1**

Use of appropriate fairleads for mooring

Aim

1. This Safety Flyer¹ is issued with the intention of raising awareness on the use of appropriate fairleads for mooring operations, as well as to remind personnel involved in mooring operations of the potential hazards related to the use of inappropriate fairleads (e.g. roller open type), especially during Ship-to-Ship (STS) bunkering operations.
2. This Safety Flyer has been written with reference to the recommended guidelines from the Oil Companies International Marine Forum (OCIMF) Mooring Equipment Guide (MEG3) and the OCIMF Effective Mooring.

Recent Occurrence

3. In a recent incident during bunkering operations when a bunker tanker was supplying bunkers to a container vessel at the berth, one of the bunker tanker's stern mooring rope jumped off (whiplash) from the open fairlead in an upward direction. This was due to the railing (referred to as a "stopper bar" by the ship and company), directly above the roller fairlead, breaking from the welded seams.
4. Closer inspection conducted on board the bunker tanker revealed some safety concerns -
 - a. The "stopper bar" was a part of the ship's railing and not a part of mooring fitting. (See **figure 1**)
 - b. There were no records to indicate the strength of this railing which was not designed or tested for mooring purpose. Over the period of the bunker tanker's operational life cycle, this railing had always been wrongly considered by the crew as a part of the mooring fitting during STS bunkering operations. The mooring lines usually had an upward lead and this had likely caused strain on the railing over time. (See **figure 2**)
5. The company involved had changed all mooring fittings on the vessel to the universal type after the occurrence.

¹ The contents contained in the flyer are based on prima-facie evidence available at the time of publishing.

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Figure 1: The sheared off “stopper bar” above the roller fairleads



Figure 2: Arrow showing the bent railing above the roller fairleads at the aft mooring station

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Importance on the use of appropriate fairleads

6. Mooring lines should only be led through closed fairleads (referred to as universal fairleads) suitable for STS operations. The use of stopper bars to retrofit open fairleads is not recommended as they are not designed or tested to withstand mooring loads.
7. Each ship should be provided with information on the design of the mooring system (including proper fittings/fairleads to be used for mooring) with examples to show the loads likely to be experienced under particular conditions and to illustrate those situations under which the limit of the system is likely to be reached.
8. Ship's crew should always be aware of the lead of the mooring lines that could be expected during the operation and highlight the hazards to the company so that appropriate risk mitigating measures can be implemented timely.