Your reference **Your message from**	**My reference** (please state on reply) 315/16	☎ + 49 (0) 40 31 90 – 0 E-Mail: posteingang-bsu@bsh.de	**Date** 21 September 2016

Safety Recommendation with respect to wooden masts

The Federal Bureau of Maritime Casualty Investigation (BSU) supports the Onderzoeksraad voor Veiligheid (investigation authority for safety) in investigating the fatal accident on board the Sail Passenger Vessel AMICITIA.

Due to the severity of the accident and since this does not constitute an individual case, the BSU issues the following safety recommendation, which is available on http://www.bsu-bund.de and can be downloaded there.

Fatal accident on board the sail passenger vessel AMICITIA off the port of Harlingen/Netherlands on 21 August 2016

Course of the accident

Due to the current state of affairs the following course of the accident can be assumed:

On 21 August 2016, the Dutch sail passenger ship AMICITIA was at sea, in the Wadden Sea off Harlingen. The ship was manned with a Dutch skipper and a crewmember.
At the time of the accident, the ship sailed on starboard bow with the foresail taken in and the mainsail fully set and bellied out to starboard. Light wind prevailed and there was almost no swell, when the fore mast broke at about 1350 off the entrance to the port of Harlingen. The upper part of the mast with a length of 5.90 m, the gaff with a length of 5.70 m as well as the rigging, stays and the set mainsail fell on the forecastle without prior warning. Three German passengers staying alone on the

forecastle did not stand a chance to seek shelter and were killed by debris crashing down.

Investigation

The BSU and their Dutch colleagues inspected the vessel and the broken mast on 26 August 2016 in Harlingen.

Sail Passenger Ship AMICITIA

The wooden fore mast had a total length of about 19.50 m. The breaking point was about 12.55 m far from the pivot point of the Mastkoker-bolts. At the breaking point, the mast had a circumference of 96 cm and a diameter of 30 cm, respectively. The breaking point of the mast is located at the lower edge of a non-circulating, bolted stainless steel collar.
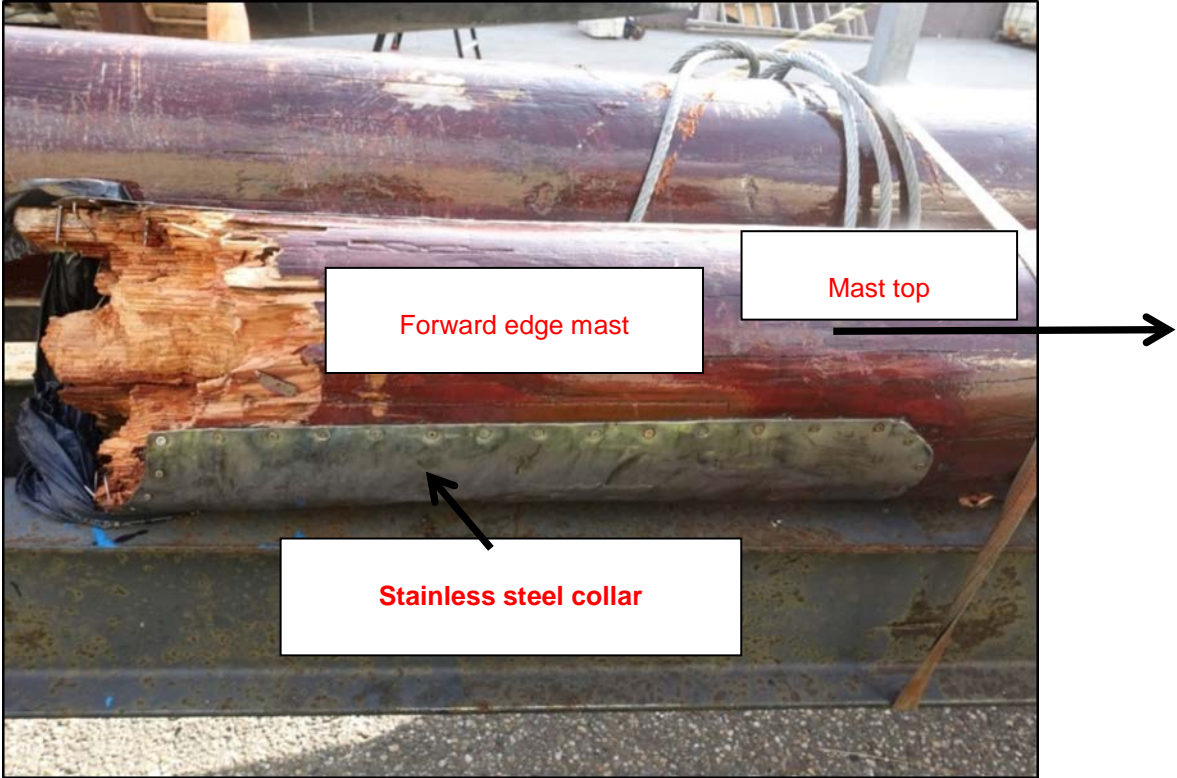
Upper part of the mast fallen down

Unprofessional repairs, that were invisible, were obviously carried out at the mas below the stainless steel collar. Altogether, at least 4 wooden wedges were found in this part. There were apparently used to repair foul and abraded parts, respectively.
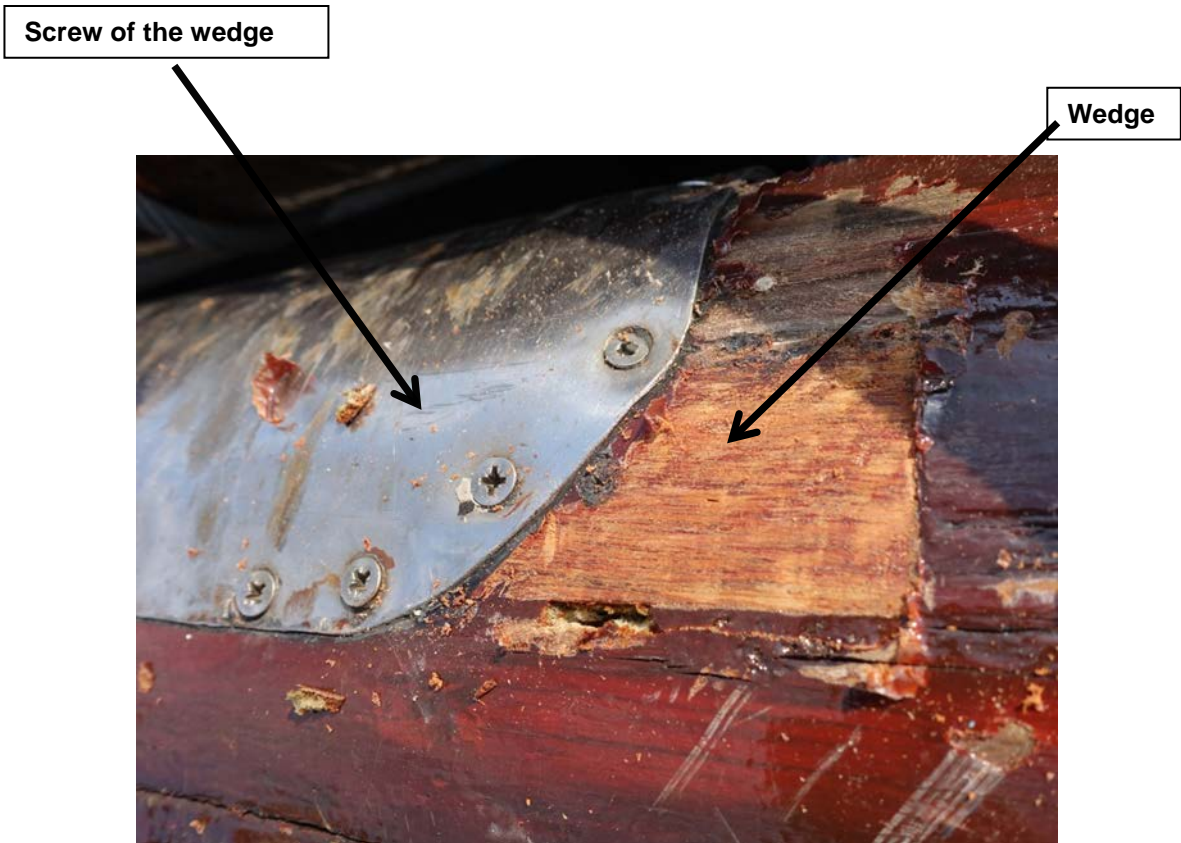

Wooden wedges

Additionally, water could accumulate below the stainless steel collar, leading to the core getting foul. In all likelihood, these repairs and the water ingress resulted in the fact that only 25% of the original mast cross section was available for the strength.

Breaking point on the remaining part of the mast**.**

Moisture beyond the core

Screw of the wedge

Wedge

Mast mended with wedges

<u>Safety recommendation</u>

This accident could as well have occurred on a German ship or in German territorial waters. For this reason, the BSU calls upon the ships owners and operators of shipse equipped with wooden masts. These masts should be checked with respect to their strength, particularly on ships with a gaff rigging.

Chapter 15 a – Special Provisions for sail passenger vessels – according to the Directive 2006/87/EG – should be adhered to as minimum standard for the masts, the rigging and their inspection.

The BSU points out that this safety recommendation is issued on the occasion of the ongoing investigation into the aforementioned accident, but does not constitute an anticipation of the investigation results.

Volker Schellhammer
Director