

Investigation Report 134/04

15. May 2005

very serious marine casualty:

Accident involving personal injury with fatal consequence on board MV HAMBURG EXPRESS on 7 June 2004 off the French Atlantic Coast

1 Summary of the marine casualty

On 7 June 2004 at 13.50 h ship's time a fatal accident during work involving a Philippine seaman occurred on board MV HAMBURG EXPRESS at position ϕ 47°17'N λ 006°49'W in the Bay of Biscay on a voyage from Singapore to Southampton. At 13.15 h the Philippine Second Officer and the seaman who subsequently sustained the accident were on the B-deck in order to grease the boat falls of the rescue boat. A further able bodied seaman and an ordinary seaman, both of Philippine nationality too, were on the same deck. These two seamen were engaged in greasing the hinges of the ventilator dampers of the engine room.

At about 13.50 h the boat fall was to be wound up bit by bit onto the winch again for greasing. When the Second Officer briefly actuated the electric switch of the boat winch to heave it, he heard the noise of a body falling and shortly after this saw the injured man lying on the ground next to the davit bleeding heavily from a head wound. First-aid measures were initiated immediately. The injured man was taken into the ship's hospital on a stretcher where he was given further medical treatment by the First Officer with medical advice by radio from Cuxhaven. A helicopter was requested from the French Station Cross Etel via the Maritime Rescue Coordination Centre (MRCC) Bremen. The injured man was flown to the La Cavale Blanche Hospital in Brest at 15.45 h escorted by an emergency physician. He died of his injuries during the transport.

The accident is attributable to the fact that contrary to the technical design, it was possible to operate the boat winch electrically with the crank-handle in place. As a result the injured man was hit fatally on the head by the crank-handle.

There had already been a similar accident with fatal consequence on another German container vessel on 19 May 2000.¹

In view of the wide-spread use of the said or similarly designed blocking systems, the particular dangers emanating from crank-handles turning with the winch motor and in order to avoid accidents of this kind from the outset, the BSU issued a safety recommendation (see Section 7) already on 29 June 2004 and called for design improvements to the boat winch.

¹ Cf. here BOSeeAE 8-10/01 P. 201 ff.

2 Safety recommendation(s)

2.1 Safety recommendation of 29 June 2004

The BSU issued a safety recommendation already shortly after the accident due to the particular danger in delaying in order to prevent future accidents attributable to the same or a similar cause. Even after completion of the investigation this recommendation still applies in full and is therefore repeated here:

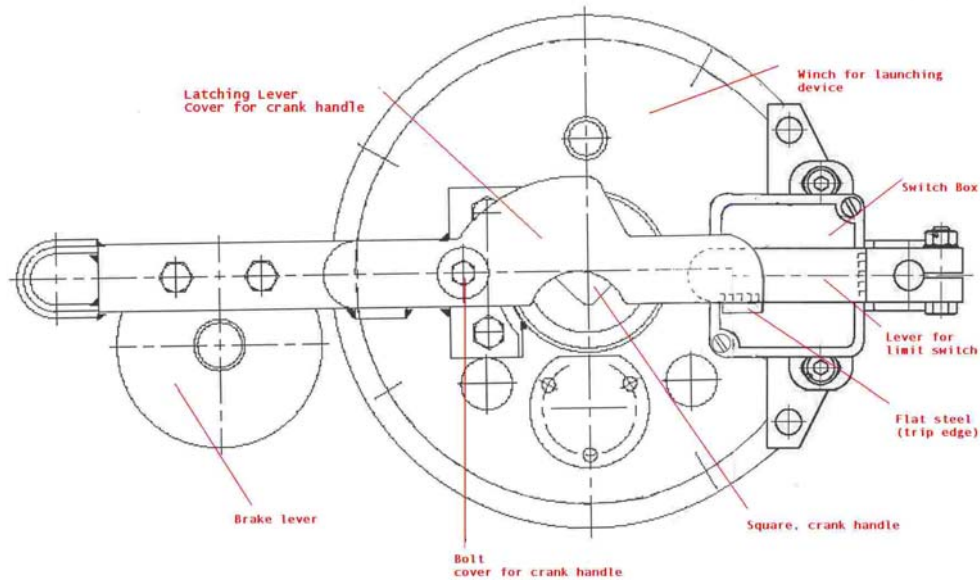
"The Federal Bureau of Maritime Casualty Investigation (BSU) issues the following safety recommendation in accordance with § 9 Para. 2 No. 2; § 15 Para. 1 and 10 of the Maritime Safety Investigation Law (SUG) of 16 June 2002 in conjunction with § 19 of the Law Relating to the Investigation into Accidents and Incidents Associated with the Operation of Civil Aircraft (FIUUG) of 26 August 1998:

The BSU is investigating the death of a Philippine seaman who sustained fatal injuries on 7 June 2004 while performing maintenance work on the launching device for the rescue boat on board the German container vessel H. The investigation proceedings have not yet been completed. However, it is certain that a second crew member had briefly started the electrically operated winch motor when the victim of the accident fell to the ground with a serious head injury. The BSU currently assumes that when the motor was switched on, the seaman must have been hit on the head with great force by the mounted crank handle turning with the motor. A similar fatal accident had already occurred on another German container vessel on 19 May 2000.

In both cases the fatal consequences of the accidents are in all probability attributable to the fact that it was possible to start up the winch motor despite the crank handle being in place. The rotating crank handle thus became an uncontrollable striking tool. According to Chapter VI No. 6.1.2.6 of the International Life Saving Appliances (LSA) Code, it is stipulated for launching and embarking devices that crank handles and hand wheels may not rotate with moving parts of the winch when heaving down or heaving up with (electrical) power drive. The launching device used on the vessel H. basically satisfies these design requirements. In the launching device used the heaving down movement is blocked with the aid of a latching lever. This lever must be moved by hand (upwards). This operation alone releases the square mounting onto which crank handle can be fitted and blocks the heaving down movement. By drawing up the latching lever over a trip edge at its bottom side (flat steel), a second lever is activated that triggers a limit switch. This ensures that the electricity supply to the winch motor is interrupted (see attached sketch). During trial operation on board the vessel the entire system functioned without any problem.

The blocking system described above is installed on many vessels in this or a similar version and has basically proved successful in practice. The system is not known to be susceptible to any particular malfunctions. Despite this a second fatal accident has occurred because the winch motor started despite the fact that the crank handle was in place. It is not yet clear in detail how the accident currently being investigated could occur and why the blocking system failed. However, within the framework of the investigation to date it has been generally ascertained that although the safety system used functions soundly and is suitable for use in practice in every respect, there is at any rate a theoretical possibility that the safety mechanism can be switched off

relatively simply – for whatever reasons and possibly in ignorance of the accompanying dangers. On the one hand it is possible to unscrew the latching lever quite easily – it is only secured to the housing box by a bolt. In addition it is possible by using a little force to push the lever of the limit switch past the trip edge of the latching lever and press it downwards, thus cancelling the current interruption to the limit switch.



In view of the widespread use of these blocking systems or those of similar design and the special dangers emanating from crank handles turning with the motor, and in order to preclude accidents of this type from the outset, the BSU addresses the manufacturers of boat launching devices, (repair) shipyards, and owners, operators, vessel commands and supervisory organs to draw their attention to the following:

On all vessels whose boat launching systems have a mechanism corresponding or similar to that shown in the sketch for blocking the electric winch when a crank handle is mounted, the latching lever should be secured especially, for example by the use of a bolt with a split pin, in order to raise the inhibition level for thoughtless, negligent dismantling by simply loosening the only screw. In addition it is recommended that the flat steel beneath the latching lever (trip edge) be extended in order to make it impossible to force the limit switch lever past the latching lever.

In addition a weatherproof, permanent warning (sticker or the like) should be affixed both in the area of the crank and close to the winch switch drawing attention to the fact that winch operation with the crank handle in place can involve the risk of fatal injury and is strictly prohibited."

2.2 Further recommendations

1. It is recommended that **manufacturers of launching devices** for boats should reconsider their safety mechanisms for boat winches for new installations, and if appropriate develop higher design barriers to make it more difficult to make the safety system used inoperable.
2. It is recommended that **manufacturers of launching devices** for boats (repair) **shipyards, owners and operators of sea-going vessels**, should replace existing crank-handles by hand-wheels for manual operation as a simple measure to increase safety, so that blows by crank-handles turning uncontrolled, such as have evidently already occurred in other installations, are avoided. When new installations are designed it should be considered installing a clutch separating the drive from the transmission during manual operation.
3. The **See-Berufsgenossenschaft**² is called upon to check possibilities of modifying the relevant regulations (especially the LSA Code) with a view to generally replacing the use of crank-handles on vessels by the use of hand-wheels and ensuring a safe separation between manual and motor operation.
4. If the testing recommended under No. 3 reveals that the use of hand-wheels is generally to be preferred to the use of crank-handles in the area of launching devices for boats, it is recommended that the **Federal Ministry of Transport, Building and Housing** should promote appropriate modification of the LSA-Code in dealings with the International Maritime Organisation (IMO) in order to raise the safety standard internationally too.
5. The **manufacturers of launching devices** must ensure that the maintenance and operating instructions for the equipment they bring into traffic provides information in the necessary detail and in easily understandable manner about the nature, frequency and procedure of maintenance work. This also includes clear indications of particular dangers and risks in connection with the work to be carried out.
6. The **owners and operators of sea-going vessels** and the **vessel commands** are called upon to ensure that the relevant operating and maintenance instructions at least in English and possibly in German are available on board and are kept up with the technical status of the equipment.
7. The **addressees named under No. 6** must ensure that persons carrying out maintenance work on board and/or operating the launching equipments as well as other equipment and installations involving danger are informed about their mode of operation of these and of dangers and risks to an adequate extent and are trained appropriately. This applies especially for those crewmembers who are to supervise and direct such activities.
8. **Training facilities that carry out ships safety courses**, especially training to acquire rescue boat certificates, are called upon to point out specifically the particular dangers in launching devices caused by crank-handles turning with the winches.

² See-BG = German Marine Insurance and Safety Association.