

Investigation Report 155/04

15. June 2005

very serious marine casualty:

Collision MV PUDONG SENATOR with MT ENA2 and capsizing of MT ENA 2 on 28 June 2004 in the Port of Hamburg Parkhafen Waltershofer Hafen and Petroleumhafen

1 summary of the marine casualty

Shortly after 18:22 h¹ on 28 June 2004 the inland motor tanker ENA 2, designed to transport sulphuric acid, ran into the Parkhafen from the main Norderelbe navigation channel within the Port of Hamburg in order to continue further to the Petroleumhafen.

At the same time the container vessel PUDONG SENATOR departed from its berth at the Eurogate container terminal and was running out of the Waltershofer Hafen on its way towards Rotterdam.

The two vessels collided in the area where the Parkhafen opens into the Norderelbe. PUDONG SENATOR survived the collision without any major damage and after approval from the VTS Hamburg ran into the Elbe navigation channel and continued its voyage downstream along the River Elbe. Before Brunsbüttel it was checked by Waterway Police officers from a boat from the water. Since no further damage apart from paint abrasion could be seen, the vessel was allowed to continue the voyage to Rotterdam with the provision that it will be surveyed there by the Classification Society Germanische Lloyd.

The special transport vessel ENA 2 carrying a cargo of sulphuric acid was damaged on its port side. Parts of the outer plating in the foreship area were deformed, water flooded in to the forward port wing tank. In addition the port Schottel drive in the aft area became inoperable as a result of the collision with PUDONG SENATOR. However, ENA 2 initially remained floating, continued under its own power without losing cargo into the Petroleumhafen and tied up with a slight list to port at the intended berth. The Waterway Police and two fireboats of the fire brigade hurried to the damaged vessel.

An officer from the Waterway Police Hamburg² stated in his report that he noticed "a strong smell of alcohol on the breath" of the Master. The latter had not been in a position to provide "comprehensible information" about the course of the accident.³ His considerable blood alcohol level was subsequently confirmed by the blood sample that was immediately ordered.

The fire brigade tried in vain to keep ENA 2 floating; its list to port increased further. At about 19:05 h ENA 2 capsized and floated keel upwards in the port basin. Sulphuric acid now escaped.

In the following days a salvage firm secured and subsequently uprighted ENA 2. Owing to the highly aggressive cargo and the risk of explosion resulting from chemical reactions and the associated formation of dangerous gases, extreme care had to be exercised in the recovery and salvage measures. The salvage organised under the direction of the Hamburg Fire Brigade with participation by the owner, the operator, the superior port office, the Waterway Police and various sectoral authorities, was finally successfully completed in the evening of 3 July 2004 with the uprighting of ENA 2 and restoration of its floating capability. In the meantime a large part of the cargo had found its way into the port water. The rapid dilution of the acid there meant that the major environmental pollution initially feared did not materialise.

Thanks to the prudent direction and coordination of the salvage measures by the Hamburg Fire Brigade and the constructive cooperation of all the above named decision makers involved and other parties, there were no personal injuries within the framework of the very dangerous securing and uprighting of ENA 2.

¹ All times in the report are local time = Central European Summer Time = UTC + 2h.

² Hereinafter referred to as WSP.

³ In the WSP assignment report it is stated literally: "Comprehensible information was not possible."

2 Safety recommendation(s)

2.1 Alcohol at the workplace

Norddeutsche Affinerie as producer and shipper of the sulphuric acid and as owner and **Hanseatische Transportlogistik** as operator are advised to review the implementation of their high internal safety standards regarding the ban of activities under the influence of alcohol for any possible weaknesses.

It must be made clear to **staff of all port and operator firms** repeatedly that colleagues under the influence of alcohol and especially on board vessels endanger not only themselves but above all other persons and the environment substantially. In the case of contraventions uncompromising measures must therefore be taken in order to prevent the exercise of further activities by colleagues under the influence of alcohol.

2.2 Legal blood alcohol limit in shipping traffic

The BSU is not involved in the political discussion that flared up as a result of the collision between ENA 2 and PUDONG SENATOR concerning an amendment of the legal blood alcohol content within the Seeschiffahrtsstraßen-Ordnung (cf. § 3 Para. 4 SeeSchStrO).

However, **owners** and **operators** of vessels are called upon to review the possibility of a complete ban on alcohol seriously, at least for staff on watch duty, irrespective of the results of any modifications of the legal specifications.

Captains, officers, engineers and all **other crewmembers** are advised to deal responsibly with alcohol consumption on board by themselves and others, independently of current and future legal and company regulations.

2.3 Proper look-out

The **Superior Port Authority of the Free and Hanseatic City of Hamburg** and the competent responsible **authorities** in the other **German ports** are advised to review whether under certain circumstances it should be made mandatory to provide a look out for small and port vessels in the port, possibly depending on their cargo and bridge height, within the context of the HVO or the relevant regulations.

The large number of ship movements in ports, the endangerment of these vessels by a low eye level in combination with poorer recognisability on the part of large vessels and the only restrictedly possible traffic assistance by the VTS are facts that speak out in favour of the necessity of relieving the burden on the Master within the framework of his traffic observation.

The recommendation of making the use of radar facilities on board obligatory aims at the same target.

2.4 Movement rules

All **owners** and **operators of port vessels and inland vessels** are advised to expressly draw the attention of their Masters to observation of the movement rules in accordance with the port traffic regulations Hamburg and of other relevant ports and the SeeSchStrO. If it is necessary to deviate from these movement rules due to the traffic situation from case to case, this is to be reported unmistakably via the VHF work channels provided for this purpose. In addition, if necessary, clear individual traffic agreements are to be made with other vessels.

2.5 Right of way

Vessel commands and **port pilots** of large vessels are advised to consider the use of right of way connected with the showing of signals for vessels restricted in their ability to manoeuvre in accordance with the COLREGs (in the Port of Hamburg in conjunction with § 12 Para 3 HVO) seriously, **when and in so far as**

- navigation against the general rules is urgently necessary because, for example, a waiting / evasion obligation cannot be sufficiently fulfilled due to special morphological features and/or weather conditions (strong wind pressure),
- there is a threat of insoluble contradiction between the factual requirement and features on the one hand and the right of way regulations on the other hand **and**
- individual agreements to be made with priority are not promising.

2.6 Right of way ruling

The marine accident examined here has shown that under certain circumstances there is only conditional agreement between the right of way rules arising from § 5 Port Traffic and Navigation Law (parallel standard: § 3 Para 1 SeeSchStrO, general need to show consideration) and rights and obligations of vessel commands partly embodied in customary law. The **regulation makers** of the **government** (Federal Ministry of Transport, Building and Housing) and the **states** (for example the Senate of the Free and Hanseatic City of Hamburg) responsible for regulating traffic on waterways and in ports are advised to review in their relevant areas of competence in cooperation with the **Traffic and Pilotage Water Centres** and the **Pilot Associations** and **Water Police** whether and to what extent written law and customary habits are in fact in harmony in practice.

Should these examinations reveal that practical rectifications and individual agreements or (under very narrow conditions!) the claiming of a right of way (cf. 7.5 above) to create reliable legal framework conditions for vessel commands and pilots do not suffice in individual cases, the adaptation of existing right of way rules and/or traffic steering elements to practical requirements and circumstances is advisable locally.

2.7 Land radar advice

Vessel commands **and** port pilots are further advised to review the use of land radar advice depending on the situation⁴ in addition to advisory services by the port pilot on board.

2.8 Use of VHF radio telephone

Vessel commands and **port pilots** are advised to carry out direct ship-to-ship traffic agreements at an early stage and unambiguously via the communication channel provided for this (in the Port of Hamburg VHF channel 74).

Pilots are advised to familiarise vessel commands with the way in which VTS support traffic and where appropriate to "translate" customary "port vocabulary" (e.g. "Everything free from below") in cases where misunderstandings might otherwise be possible.

2.9 Radio discipline

Vessel commands and **port pilots** are urgently called upon to observe the radio discipline set out in the relevant telecommunications regulations. Refraining from stating one's own name or addressing another vessel without expressly calling it may partly conform with practice, especially in port radio traffic. However, the accident has shown once again that radio messages and warnings that cannot be easily be allocated may mean an accident risk that should not be underestimated.

⁴ Note: In the subject case there was no appropriate requirement.

2.10 Manning of the VTS in the Port of Hamburg

The Superior Port Authority of the Free and Hanseatic City of Hamburg is advised to review at regular intervals the appropriateness of only staffing the VTS with one Master Mariner on Duty and one nautical assistant in view of the growing number of ship movements in the Port of Hamburg and the increasing measure of responsibility.

2.11 Leakage stability of the inland motor tankers

The **Centralised Ship's Inspectorate Commission (ZSUK)** and the **Classification Society** are advised to review whether their admission / test criteria for the (leak) stability of inland water craft, especially of tank vessels of category type N open have in fact been observed by ENA 1 and ENA 2. If this was the case, it should be reviewed whether the crucial building regulations should be modified with a view to improving the leak stability.