



Bundesstelle für Seeunfalluntersuchung  
Federal Bureau of Maritime Casualty Investigation

## **Interim Investigation Report**

### **Very Serious Marine Casualty 300/21**

**Fire in the engine room with subsequent foundering  
of the fishing vessel FREYJA in Schleswig-  
Holstein's Wadden Sea during the night of  
17 to 18 September 2021**

2 September 2022

Pursuant to the second sentence of Article 28(1) of the Law to improve safety of shipping by investigating marine casualties and other incidents (Maritime Safety Investigation Law – SUG) in conjunction with the second sentence of Article 14(2) of Directive 2009/18/EC of the European Parliament and of the Council of 23 April 2009 establishing the fundamental principles governing the investigation of accidents in the maritime transport sector, the Federal Bureau of Maritime Casualty Investigation publishes an interim investigation report within a period of 12 months of a very serious or serious marine casualty if it is not possible to complete the corresponding investigation report within that period.

This interim investigation report should not be used in court proceedings or proceedings of the Maritime Board. Reference is made to Article 34(4) SUG.

The German text shall prevail in the interpretation of this interim investigation report.

Issued by:  
Bundesstelle für Seeunfalluntersuchung – BSU  
(Federal Bureau of Maritime Casualty Investigation)  
Bernhard-Nocht-Str. 78  
D-20359 Hamburg



Director: Ulf Kaspera  
Phone: +49 40 3190 8300  
posteingang@bsu-bund.de

Fax: +49 40 3190 8340  
www.bsu-bund.de

## Table of Amendments

Page	Amendment	Date
4	Figure 1 replaced and source reference changed	06/09/22
8	Source reference of figure 4 changed	06/09/22

## 1 FACTUAL INFORMATION

### 1.1 Photograph of the Fishing vessel FREYJA



Figure 1: Fishing vessel FREYJA<sup>1</sup>

### 1.2 Ship particulars: Fishing vessel FREYJA

Name of ship:	FREYJA
Type of ship:	Fishing vessel
Flag:	Germany
Port of registry:	Wyk/Föhr
Fisheries code:	SW 008
Call sign:	DISO
Year built:	1971
Shipyard:	Schiffs- und Bootswerft Peter Bieritz, Friedrichskoog
Yard number:	88
Length overall:	17.35 m
Breadth overall:	5.21 m
Draught (max.):	1.75 m
Gross tonnage:	35
Engine rating:	221 kW
Main engine:	MAN D 2866 LXE47 diesel engine
(Service) Speed:	8 kts
Hull material:	Timber
Minimum safe manning:	2

### 1.3 Voyage particulars: Fishing vessel FREYJA

Port of departure:	Büsum, Germany
Planned port of call:	Büsum, Germany

<sup>1</sup> Source: Martin Perkuhn, State Office for Agriculture, Environment and Rural Areas of Schleswig-Holstein; Fisheries Control Büsum.

Ref.: 300/21

Type of voyage: Coastal fishing in Schleswig-Holstein's Wadden Sea between the islands of Amrum and Japsand

Draught at time of accident: n/a

Manning: 2

#### 1.4 Marine casualty or incident information

Type of marine casualty: Very serious marine casualty; foundered due to a fire

Date/Time: 17/09/2021, approx. 2130 (fire breaks out)  
18/09/2021, approx. 0245 (the burnt-out wreck founders; mast protruding from the water)

Location: Schleswig-Holstein's Wadden Sea

Latitude/Longitude:  $\phi$  54°36.4'N  $\lambda$  008°29.6'E (position at which the vessel foundered)

Ship operation and voyage segment: At anchor (fishing suspended)

Place on board: Fire in the engine room

Consequences: Fishing vessel foundered; two injured crew members (smoke poisoning or shock); water pollution due to escaping operating fluids (mainly diesel)

Extract from Navigational Chart TERSCHELLING TO ESBJERG, DE50 (INT 1045), BSH<sup>2</sup>



Figure 2: Scene of the accident

<sup>2</sup> BSH: Federal Maritime and Hydrographic Agency.

## **1.5 Shore authority involvement and emergency response**

Agencies involved:	MRCC Bremen; DGzRS [German Maritime Search and Rescue Service]; Northern HeliCopter GmbH; Waterway Police (WSP) Brunsbüttel; WSP Hamburg; the German Central Command for Maritime Emergencies (CCME) in Cuxhaven; VTS Cuxhaven; Waterways and Shipping Office (WSA) Elbe-Nordsee; Federal Maritime Police; BSH; Germany's National Meteorological Service (DWD); the State Agency for Coastal Protection, National Park and Marine Conservation of Schleswig-Holstein (LKN.SH); Naval Air Wing 3 Nordholz; Volunteer Fire Brigade (FF) Pellworm; Taucher Frey GmbH, Hamburg; Fechner Marine Surveys, Hamburg; NF Seefracht GmbH, Mildstedt
Resources used:	Rescue helicopter NORTHERN RESCUE 01; rescue cruisers ERNST MEIER-HEDDE and EISWETTE; WSP patrol boat BÜRGERMEISTER WEICHMANN; WSP coastal patrol boat SYLT; pollution control plane Do228; helicopters from the Federal Police; oil containment boat from FF Pellworm; floating crane ENAK; tug ARION; service vessels CATJAN and SANDSHÖRN
Actions taken:	The two crew members were rescued by rescue helicopter and transported to a hospital in Heide; abandonment of attempts to extinguish the fire due to suspected risk of explosion; exploratory actions with regard to the discharge of pollutants from the wreck of the fishing vessel; oil barrier set up around the wreck by FF Pellworm; publication of a temporary notice to mariners by WSA Elbe-Nordsee to warn shipping of the dangers posed by the wreck of the fishing vessel; inspection of the wreck by divers; partial dismantling of the wreck at the scene of the accident; salvage and removal of all parts of the wreck for disposal ashore

## 2 SUMMARY

The German fishing vessel FREYJA had left the port of Büsum with a skipper and deckhand (fishing hand) on board at about 1330<sup>3</sup> on the day of the accident. At about 1730, they started fishing for crab about 25 nm from Büsum as the crow flies in the Schmaltief channel, which runs between the North Frisian islands of Amrum and Japsand.

After nightfall, the skipper decided to suspend fishing for several hours at about 2115 and anchored the fishing vessel at the northern edge of the channel south-east of the island of Amrum at about 2135. The two fishermen were then occupied with processing the latest catch on the illuminated working deck in front of the wheelhouse.

After a short while, they noticed an acrid smell and smoke coming from an open door on the aft edge of the wheelhouse. Due to the rapid development of smoke, the crew was unable to reach the engine room via the companionway behind this door in order to identify the source of the fire, which given the circumstances was located there. Instead, the skipper switched off the main engine and the auxiliary diesel engine and he and the deckhand ensured watertight integrity prevailed. The skipper then activated the extinguishing system for fires in the engine room by means of the device located in the compartment leading to the engine room companionway.

The two crew members then took the precaution of moving the liferaft from the aft deck to the bow of the fishing vessel. There was an explosion in the engine room immediately afterwards. The door to the companionway flew open with a loud bang. The resulting sudden influx of oxygen caused a massive fire to ignite, which spread from the engine room to the aft deck via the open door. The aft section of the fishing vessel was immediately enveloped in dense smoke, which made it impossible for the skipper to enter the wheelhouse to make a distress call from there. Instead, the two crew members threw the life raft overboard, triggered its inflation mechanism by pulling out the ripcord and entered the life raft once it was fully inflated. The two fishermen managed to move the life raft away from the burning fishing vessel with some difficulty.

About 30 minutes after leaving the fishing vessel, the two shipwrecked fishermen noticed a helicopter and set off a red flare to attract attention. The crew of the rescue helicopter, which was equipped with a winch and happened to be near the scene of the accident because of another mission, became aware of the burning vessel due to the distress signal. After consulting with MRCC Bremen, the helicopter was withdrawn from the originally planned mission and instead flew to the scene of the accident, where the liferaft was identified very quickly and the rescue of the two fishermen started. The latter were on board the helicopter by about 2246. The two fishermen were then immediately transported to a hospital in Heide for medical care and admitted there for a day as inpatients.

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<sup>3</sup> All times shown in this report are CEST (UTC + 2 hours).

At the same time as these activities were unfolding, MRCC BREMEN transmitted a mayday relay and instructed two rescue cruisers to proceed to the scene of the accident. A WSP boat also made for the burning fishing vessel. After the two crew members were rescued, it quickly became clear to the emergency services that further action, in particular a rapid and effective firefighting operation, was out of the question due to the water levels in the tidal flats but above all because of a suspected risk of explosion on the fishing vessel. The wooden vessel inevitably burnt out completely and foundered at about 0245. Only the top of the mast protruded from the surface of the water (see **Figure 3**).



Figure 3: Mast head of the foundered fishing vessel FREYJA protruding from the water<sup>4</sup>

After first light, units from the police, fire and coastal protection services assessed the situation at the wreck and in particular any environmental hazards posed by it. According to information obtained in the meantime from the skipper, there were some 3,000 litres of diesel on board the fishing vessel. A large part of this was presumably burnt. The spread of an oil slick could nevertheless be observed from the air during surveillance flights by helicopter and pollution control plane. However, it was extremely fragmented and began to dissipate as the day progressed. Further surveillance flights were carried out over the next few days. In addition, FF Pellworm set up a temporary oil barrier around the wreck on behalf of the LKN.SH. Due to the nature and (relatively quickly diminishing) scale of the water pollution, the LKN.SH refrained from extensive pollution control.

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<sup>4</sup> Source: Federal Police/Central Command for Maritime Emergencies.



Divers carried out a visual inspection of the wreck of the fishing vessel on 27 September 2021 in preparation for the planned salvage operation, which began on 6 October 2021 and was successfully completed with the help of floating crane ENAK on 9 October 2021. The hull of the FREYJA, which was stored on board the service vessel CATJAN, arrived in Husum on the afternoon of 10 October 2021.

The BSU was informed about the night-time fire and foundering of the fishing vessel FREYJA on the morning of 18 September. The investigation team approached the skipper shortly afterwards and also contacted the agencies involved in crisis management to find out about the accident and subsequent emergency measures. The investigation team sighted the vessel's file at the Ship Safety Division (BG Verkehr) for information on the fishing vessel's technical condition, survey results in this respect and current certificates. The BSU also contacted the engineering firm instructed to organise and carry out the salvage to obtain information on the progress of related activities.

The investigation team inspected the wreck of the FREYJA on 11 October 2021, which was stored on board the service vessel CATJAN and severely damaged by fire.

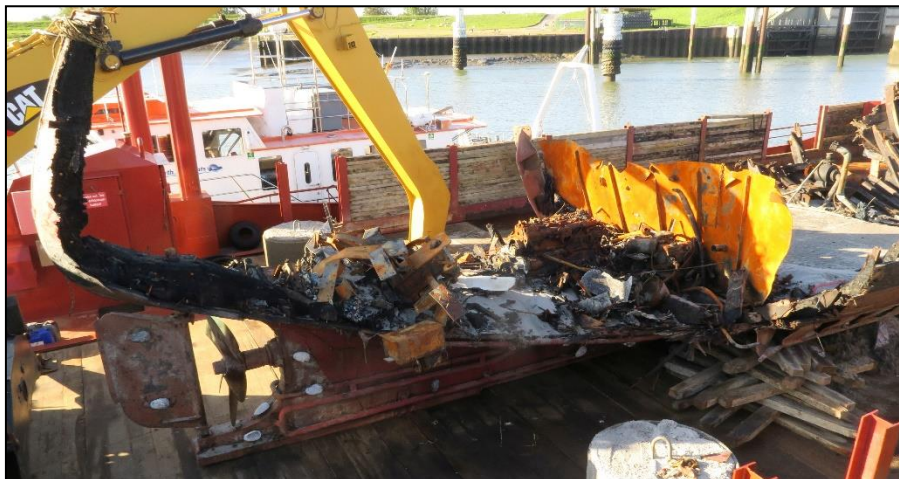


Figure 4: Burnt-out wreck of the Fishing vessel FREYJA  
(in this case the aft part of the vessel with propeller and the remains of the engine room)

The extensive findings of WSP Brunsbüttel, which the BSU was able to view, were another important component of the investigation.

The analysis of all the above findings has now been completed. The BSU is currently preparing the investigation report on this very serious marine casualty. Since it has not been possible to adhere to the time limit of one year, as set for its publication by the European Union and transposed into national law by the Federal Republic of Germany, the public is informed on the progress of the investigation by means of this interim report.