



DMAIB

DANISH MARITIME ACCIDENT
INVESTIGATION BOARD

R 223

BUSTER & STAVFJORD

Summary report on collision

16 MAY 2021

SUMMARY REPORT ON COLLISION BETWEEN BUSTER AND STAVFJORD ON 16 MAY 2021

Published by

DMAIB
Batterivej 9
DK-4220 Korsøer
Denmark

This report has been published on
27.10.2021.

Photo: Damaged bow on BUSTER
Source: DMAIB

Read more on www.dmaib.com

The report may be reused in any format or medium. You must reuse it accurately and not in a misleading context. You must give the title of the source publication.

The investigations are carried out separately from the criminal investigation, without having used legal evidence procedures and with no other basic aim than learning about accidents with the purpose of gaining and promoting an understanding of safety. Consequently, any use of this report for other purposes may lead to erroneous or misleading interpretations.

This is a summary report about an accident investigated by the Danish Maritime Accident Investigation Board (DMAIB).

This summary is about a collision between the Danish flagged fishing ship BUSTER and the Dutch flagged general cargo ship STAVFJORD on 16 May 2021 in Kattegat, Denmark.

BUSTER: Ship particulars



Figure 1: BUSTER
Source: DMAIB

Name of ship:	BUSTER
Type of vessel:	Fishing vessel
Nationality/flag:	Denmark
Port of registry:	Nexø
Call sign:	5QFC
Year built:	1960
Shipyard/yard number:	Hvide Sande Skibs- og Baadbyggeri A/S
Overall length:	13.23 m
Breadth overall:	4.18 m
Draught max.:	1.77 m
Gross tonnage:	19.4
Engine rating:	141 kW
Hull material:	Wood

STAVFJORD: Ship particulars



Figure 2: STAVFJORD
Source: DMAIB

Name of ship:	STAVFJORD
Type of vessel:	General cargo vessel
Nationality/flag:	Netherlands
Port of registry:	Delfzijl
IMO no.:	5230529
DOC company:	Fonnes Shipping AS
Call sign:	PBIZ
Year built:	2005
Shipyard/yard number:	Niestern Sander
Overall length:	113.76 m
Breadth overall:	14.40 m
Draught max.:	6.33 m
Gross tonnage:	4206
Engine rating:	2999 kW
Hull material:	Steel

Sequence of events

Events on BUSTER

On 16 May 2021 at 0417, the single-handed fishing vessel BUSTER was heading towards Strandby, Denmark, after a night of fishing langoustines (figure 3).

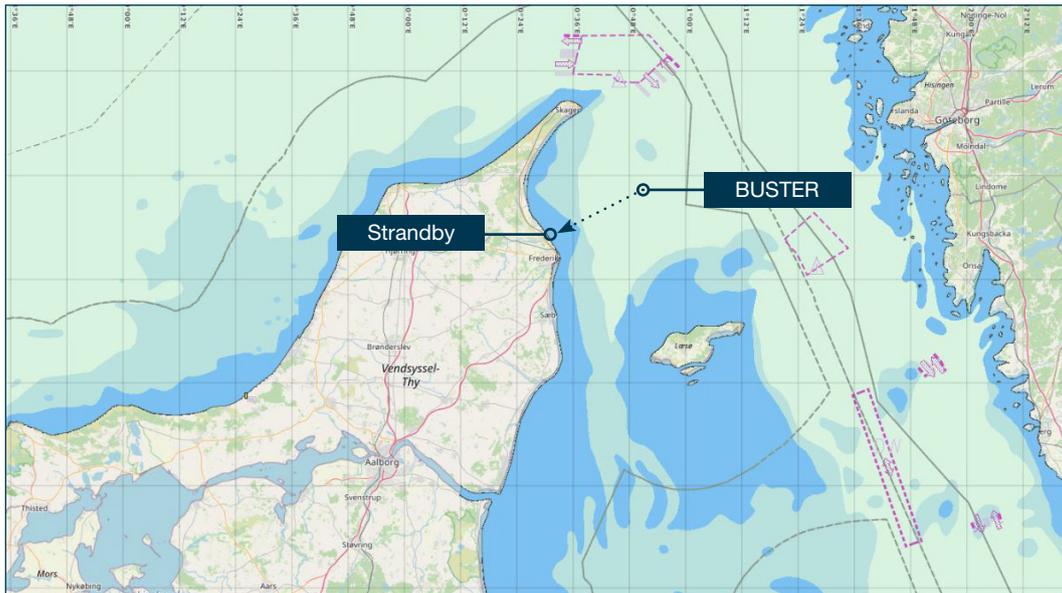


Figure 3: BUSTER heading for Strandby, Denmark

Source: © Made Smart Group BV 2021 © C-map AS 2021/DMAIB

The skipper had assessed the traffic in the area by means of radar and AIS, and did not see any ships that he needed to give way to. He therefore set the autopilot on a south-westerly course and went out on deck to clean the catch. As he was standing at the rinsing station, he was suddenly hurled against the table, and he looked straight into a large ship hull passing along BUSTER's starboard side. The skipper realised that a collision had occurred.

When BUSTER was clear of the other ship, the skipper ran to the front of the ship to see if there was any damage to the hull. In the companionway to the cabin, he saw water gushing in from a ruptured bulkhead near the keel plank. The skipper rushed to the wheelhouse and called the coastal radio station, Lyngby Radio (LYRA). He reported the collision and informed that BUSTER was taking in water. LYRA issued a MAYDAY relay, and rescue boats and a helicopter were dispatched to assist BUSTER. The skipper managed to keep the ship afloat by means of the on-board pumps, until the rescue services arrived with additional pumps and escorted BUSTER to the port of Strandby.

At the shipyard, it was determined that BUSTER's bow was severely damaged (figure 4, next page).



Figure 4: Damages on BUSTER's bow.
Source: DMAIB

Events on STAVFJORD

In the early morning of 16 May 2021, STAVFJORD was en route on a northerly course in Kattegat from Kolding, Denmark, to Jelsa, Norway (figure 5).



Figure 5: STAVFJORD heading for Jelsa, Norway
Source: Made Smart GroupBV 2021 @ C-Map AS 2021/ DMAIB

The chief officer had taken over the watch at 0400. The sun was rising, and the able seaman (AB) assisting with lookout at night-time was no longer necessary and left the bridge to perform other duties. Approx. 15 minutes after the lookout had left the bridge, the chief officer plotted BUSTER on the radar. The target vector indicated that BUSTER would pass astern of STAVFJORD at a safe distance.

Shortly after, the officer felt sick to his stomach and had to go to the toilet room located on the aft part of the bridge. He could visually see BUSTER approx. 15-20 degrees on the starboard bow at a distance of approx. 1.2 nm. The chief officer decided to signal BUSTER about STAVFJORD's presence by using the Aldis lamp. Afterwards he went to the toilet room on the bridge.

While in the toilet room, he heard a loud noise and felt STAVFJORD shake. He immediately realised that STAVFJORD had collided with an object and rushed out of the toilet room to the starboard bridge wing, where he saw BUSTER on STAVFJORD's starboard quarter. The chief officer called and informed the master about the collision.

When the master arrived on the bridge, STAVFJORD received a call from LYRA requesting STAVFJORD to turn around and assist BUSTER. When STAVFJORD reached BUSTER, the rescue services were already assisting BUSTER. LYRA then instructed STAVFJORD to anchor Off Skaw. During anchorage, it was determined that STAVFJORD had not sustained any serious damage, only a few scratches in the paint on starboard side by the forecastle and amidships.

The investigation

The sequence of events showed that the watchkeeping officer on STAVFJORD and the skipper on BUSTER were engaged in other activities than navigation and lookout at the time of the collision. Both were absent from the ships' conning stations prior to the collision. The focus of the investigation was therefore:

- To establish the time frame for when the conning stations on both ships were left unattended prior to the collision.
- To establish the watchkeeping on both ships to understand why the conning stations were left unattended. Additionally, to map the information on which the skipper and chief officer based their assessment of the traffic situation.

VDR data was retrieved from STAVFJORD by a certified VDR technician, but due to a malfunction on the equipment no data had been recorded since April 2021. Hence, no VDR data was available for DMAIB's investigation. Instead, the timeline of events prior to the collision was established by using information provided by AIS data and witness accounts.

The time frame of unattended conning stations

The skipper on BUSTER set course towards Strandby after having hauled the trawl nets. When the course was set on the autopilot, he went on deck. From the time the skipper went on deck, he was busy rinsing the catch and did not look at the radar or AIS information at the navigational equipment in the wheelhouse.

AIS data shows that BUSTER was proceeding at low speeds and varying courses (NNE-NE) from 0336-0413 on the morning of 16 May 2021. At 0417, the course was altered to a steady southwesterly course (233°), and the speed was increased to approx. 6 knots. At this point the ship was heading for port. At 0419, the heading was changed to 248°, resulting in a course over ground of 252°. At 0424, BUSTER's speed increased to 7 knots and was steady until the collision at 0434. The speed increase at 0424 is the last navigational adjustment according to AIS data. There is, however, no AIS information between 0419 and 0424, and hence the speed increase might have been initiated earlier than 0424. Figure 6 presents an overview of BUSTER's changing courses prior to the collision.

Based on AIS and interview data, DMAIB estimates that the conning station on BUSTER was unattended for a minimum of 10 minutes prior to the collision.

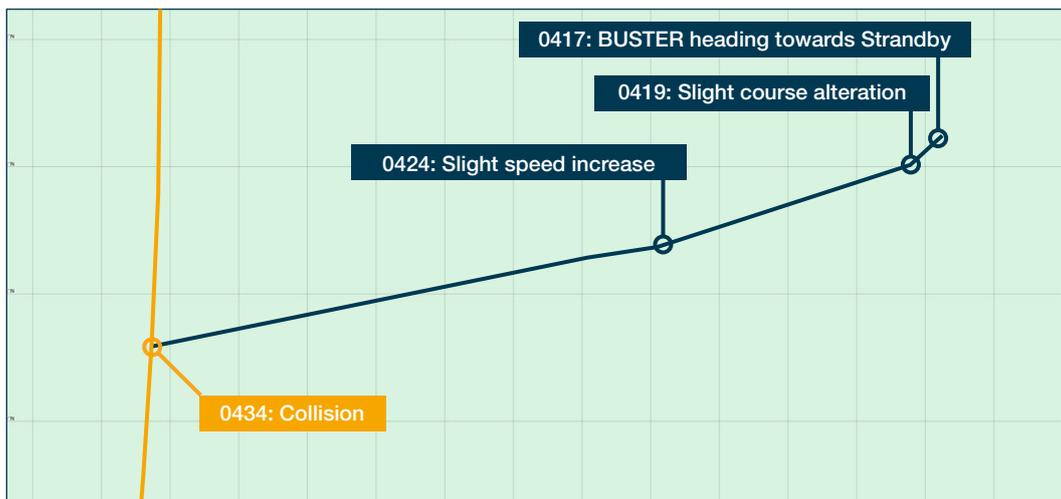


Figure 6: BUSTER's sailed route prior to the collision
Source: Made Smart GroupBV 2021 @ C-Map AS 2021/ DMAIB

On STAVFJORD, the chief officer observed BUSTER on the radar within its 3 nm range and selected the plotted target to examine the closest point of approach (CPA). The chief officer read the CPA to be approx. 1.2-1.8 nm, and the vector indicated that BUSTER would pass astern of STAVFJORD with a speed of 4-6 knots (figure 8).

DMAIB has analysed AIS data for both ships and calculated the CPA at various times prior to the collision. Based on this analysis, DMAIB has determined that the chief officer most likely observed BUSTER's CPA at approx. 0417 and concluded that there was no risk of collision. However, at that time, BUSTER made a significant course change which would give a vector in a south-westerly direction and a decreased CPA, but the radar's displayed CPA was based on BUSTER's recent northeasterly course, because the radar's CPA calculation had some delay. This analysis indicates that the chief officer did not look at BUSTER's CPA from 0417 until the collision.

Analysis of AIS data shows that the bearing between STAVFJORD and BUSTER was unchanged from 0417 until the collision which is a clear indication that the ships were on crossing courses so as to involve risk of collision.

The chief officer observed BUSTER visually through the bridge's front windows before he left to use the toilet. During the interview with DMAIB, he estimated that the distance to BUSTER was approx. 1.2 nm and that he was in the toilet room for approx. 5 minutes. During the investigation, DMAIB established that this estimation was plausible. An analysis of AIS data indicated that the distance between the ships was 1.2 nm 4 minutes before the collision.

Based on an assessment of AIS information and witness accounts, DMAIB concludes that the chief officer did not verify BUSTER's CPA for 17 minutes prior to the collision, and that the conning station was unattended for 4 minutes prior to the collision because the chief officer was in the toilet room. An overview of the main events is presented on figure 7.

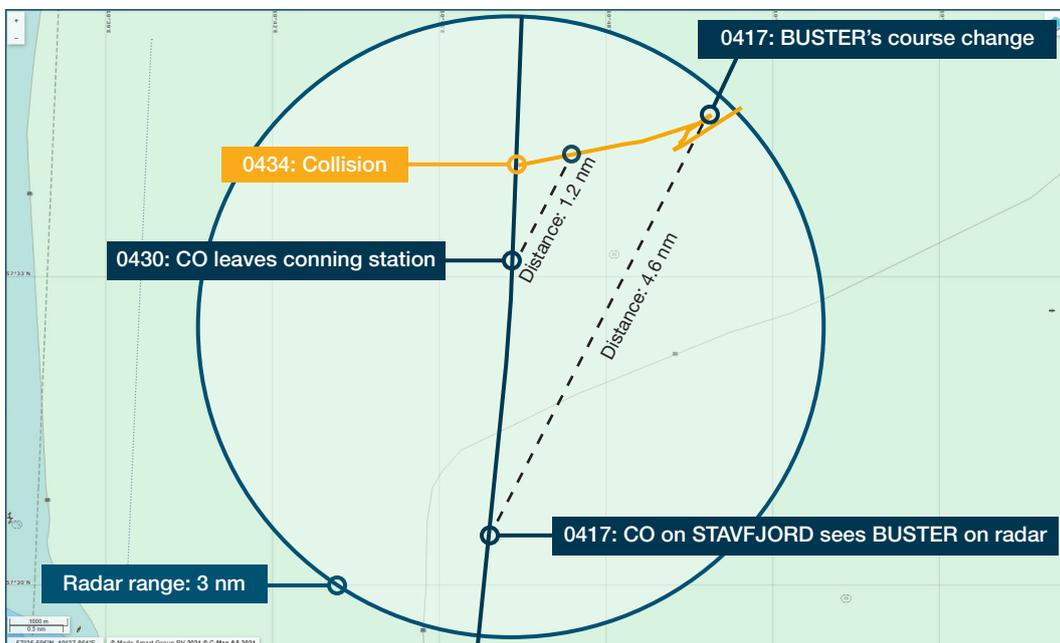


Figure 7: Distance and bearing at 0417 and 0430
Source: Made Smart GroupBV 2021 @ C-Map AS 2021/ DMAIB

Watchkeeping on BUSTER

BUSTER was a single-handed trawler, and the operation of the ship required the skipper to leave the wheelhouse to attend to the fishing gear and catch, while the ship was underway. Before leaving the wheelhouse to work on deck, the skipper assessed the traffic on the radar and AIS. He usually trusted that oncoming ships on port side would give way, and he thus focused on ships approaching from starboard side.

On deck, there was a rinsing station for cleaning the catch. When the skipper had rinsed enough langoustines to fill a basket, he carried them to the cleaning machine fitted on the port side. The deck was on port side enclosed by a shelter which made it impossible for the skipper to see oncoming ships from starboard side while working by the rinsing station and cleaning machine. Near the cleaning machine a chart plotter repeater screen integrated with automatic identification system (AIS) was fitted (figure 8, next page).

The skipper depended on the chart plotter repeater screen to monitor the traffic situation, though it only provided information about vessels equipped with an AIS transmitter. The skipper had established a work practise where he looked at the repeater screen each time he carried a basket of langoustines to the cleaning machine, which he usually did every 5 minutes. However, on the day of the collision, the catch was more difficult to clean, hence he did not monitor the repeater screen after he left the wheelhouse until the collision occurred.



Figure 8: Damages on BUSTER's bow.
Source: DMAIB

Watchkeeping on STAVFJORD

When the chief officer saw BUSTER on the radar prior to the collision, he perceived BUSTER to proceed at a speed which to him clearly indicated that BUSTER was underway and not fishing. He therefore did not expect BUSTER to suddenly change course and speed, which fishing vessels in his experience typically did while fishing. Since the radar's CPA indicated that BUSTER would pass astern of STAVFJORD at a safe distance, he took no action.

When the chief officer felt an urgent need to use the toilet, he signalled BUSTER using the Aldis lamp. The chief officer had not revisited the information on the CPA and still remained confident that BUSTER would pass on STAVFJORD's stern, but wanted to attract BUSTER's attention before he left for the toilet room. However, this type of signal required STAVFJORD to be visible for the skipper on BUSTER. At this point, the skipper on BUSTER was situated on the shelter deck and unable to see STAVFJORD and the flashing Aldis lamp.

The chief officer's toilet break was spontaneous and considered as a brief interruption of the watchkeeping, he did not find it necessary to be relieved from the watch by another officer on board. It was not a normal practise on STAVFJORD to call for assistance from other crew members during toilet breaks.

The bridge was equipped with a bridge watch alarm to warn against inactivity on the bridge, and the radar had various functionalities to warn against close quarter situations, such as a guard zone and CPA/TCPA alarms. None of these functionalities and alarms were in use on the day of the accident. Hence, no alarm sounded, when the chief officer was in the toilet room, while BUSTER came at close quarter.

Cause of the accident

The collision between STAVFJORD and BUSTER occurred as the chief officer on STAVFJORD and the skipper on BUSTER were simultaneously absent from the conning stations, and hence neither ship took action to give way to the other ship.

Both navigators thought they had taken precautions which rendered it possible to temporarily pause the continuous lookout, however the situation developed differently than they expected.

On BUSTER, the skipper expected ships coming on BUSTER's port side to give way and did not take into account a situation where a ship did not recognise the risk of collision. On STAVFJORD, the chief officer had not considered that the CPA could change, and no alarms on the instruments were active to give warning in case of close quarter situations. As the situation developed while both navigators were not keeping a continuous lookout, neither of them was able to react to the changing circumstances and take action to avoid the collision.

